CONSERVATION MANAGEMENT PLAN

LINDFIELD LEARNING VILLAGE

14 APRIL 2020
P0005885
INTERIM CMP REVIEW
PREPARED FOR DEPARTMENT OF EDUCATION

URBIS

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Project Code	P0005885		
Report Number	01	05/11//2018	Draft – Version 1
	02	16/11/2018	Final – Version 1
	03	14/04/2020	Draft – Version 2

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EXECUTIVE SUMMARY

Urbis was engaged to prepare this Conservation Management Plan (CMP) by Design Inc on behalf of the Department of Education to manage the significant elements of the Lindfield Learning Village (LLV). The purpose of this CMP is to guide the conservation and management of the significant elements of the site. It is also intended to assist the Department of Education to manage maintenance and new works to the site. The CMP provides a careful analysis of the site in terms of heritage significance and context. Based on this analysis, conservation policies appropriate to the subject site have been provided.

The Lindfield Learning Village is an item of local heritage significance. It is identified as an item of local heritage significance under Part 1 of Schedule 5 of the Ku-ring-gai Local Environmental Plan (LEP) 2015 as 'UTS Ku-ring-gai Campus main building including the gymnasium and footbridge' (Item no. I422).

This document constitutes Version 2 of the CMP originally prepared by Urbis in 2018. Version 1 of this document was prepared prior to the execution of the major works approved under SSD_8114 (Stage 1 School). The implementation of the Stage 1 school required major alterations to the northern section of the school (refer to Figure 3). This version of the document updates previous information relevant to the now altered Stage 1 area. A final version of this document will be prepared upon completion of Stages 2 and 3 of LLV.

The areas within the school which are subject to updated information in this version (Version 2) of the CMP include most of Stage 2, Stage 3 and Stage 4 (refer Figure 2). These stages constitute the areas which are subject to the Phase 1 project milestone for LLV and which therefore have been physical altered since the preparation of the Version 1 CMP. The information pertinent to Stage 1 and Stage 5 (Phase 2 and 3 project milestones) has not been updated at this time and will be updated following the complete implementation of LLV.

What is the heritage significance of the site?

The Lindfield Learning Village is of historic significance at State level, primarily due to the important role of the Campus in the development of Australian Architecture in the second half of the twentieth century, and the role of the Campus in the development of Australian landscape design, and an appreciation for natural bush settings associated with the influential Sydney School. The Campus also influenced the design of educational buildings, with an emphasis on spatial planning to create a social environment. The Campus is also historically significant for its place in the development of teachers' education in NSW, and is representative of the substantial investment by State and Federal Government into Higher Education in the 1960s and 1970s. The Campus also has historical significance at a local level, for the role the Campus has played in education on the North Shore. The alterations to the campus in 2018 responded to a unique new education philosophy and demonstrate the changing nature of education in the 21st century.

The Lindfield Learning Village has significant associations with important government and private practice architects and landscape architects, including David Turner and Peter Stronach. The original associations with Bruce Mackenzie and Alan Correy are particularly important, as the Campus retains the ability to clearly illustrate the landscape design and construction techniques closely associated with the work of these influential landscape designers. The site is a major example of the application of Mackenzie's philosophy of building carefully within a pristine natural environment rather than starting with a cleared site and creating an 'artificial' natural landscape.

The Lindfield Learning Village has a high level of aesthetic significance, arising from the natural bushland setting, the buildings themselves and the landscape design and has won several awards including the Sulman Medal in 1978, a 1972 RAIA Merit Award and a Royal Australian Horticultural Society Award for Bush Landscape Design. The Campus is a seminal example of the Neo-Brutalist style in Australia, moderated by the influence of the Sydney School of architecture and the landscape design philosophies of Bruce Mackenzie and Alan Correy. Removal of some of the surrounding vegetation due to bushfire requirements has been undertaken however the integration of the buildings with the natural bushland setting and topography of the site remains particularly significant. The campus was originally influential in the design of educational buildings, with an emphasis on spatial planning to create a social environment for students and staff. The campus has now been adapted to respond to a new model of education in 2018 and represents the changing approaches to education in the 21st century.

Former staff and students of the Lindfield Learning Village, during its time as various tertiary institutions have a special association with the site from working and studying at the unique site. The significance to the community is continued through the ongoing education use of the place facilitated by its reuse as a K-12 school. The entry of the Campus on the Royal Australian Institute of Architects' Register of 20th Century

Heritage, and nomination for State Heritage Register listing, indicates an appreciation for the site in terms of its significance for the development of Australian architecture and landscape architecture in the second half of the twentieth century.

The Campus is both a representative example of the design influences present in the building and its landscaped setting, and also rare in the combination of Neo-Brutalist and Sydney School influences on such a scale and with such a high degree of success. The presence of protected, rare, vulnerable and uncommon indigenous plant species in the vegetation of the site and its surroundings adds to the rarity value

How should the site be conserved?

Sections 8 and 9 of this CMP provide an overview of heritage opportunities and constraints specific to the property, as well as conservation policies and guidelines to assist in the management of the site's heritage values. The Lindfield Learning Village is of significance, and any proposed modifications to it must take into consideration identified significance and must have regard for the total resource.

Change should also be considered with a goal of conserving and enhancing the identified heritage values of the Lindfield Learning Village, wherever possible. The Cyclical Maintenance Plan contained in Section 10 and the Schedule of Conservation Works prepared by Apex Diagnostics, contained in Appendix A must be adhered to in order to ensure the long-term conservation of the Lindfield Learning Village.

When undertaking works to the site, assessment under relevant legislation (Section 7) should consider whether the works are likely to impact on the site's heritage significance and/or nominated significant fabric, as identified in this CMP. Reference should be made to the site's statement of heritage significance (Section 5.2), diagrams of significance (Section 5.5) and schedule of significant elements (Section 5.4). A heritage impact statement or archaeological assessment should be prepared by a suitably qualified consultant in accordance with guidelines of the NSW Heritage Division (formerly Heritage Office).

To assist the property owners in managing the heritage significance of the subject property, as well as its functional requirements, a cyclical maintenance plan and a schedule of conservation works (Section 10 and Appendix A) are provided. This CMP and the schedules should be adopted and implemented.

1. INTRODUCTION

1.1. BRIEF

Urbis has been engaged by Design Inc on behalf of the Department of Education to prepare this Conservation Management Plan (CMP) for the Lindfield Learning Village which is located at 100 Eton Road, Lindfield.

The purpose of a CMP is to assess and consider the significance of an item and guide future conservation, management, maintenance and, where appropriate, future development and adaptive reuse opportunities. The CMP provides a careful analysis of why the item is significant, policies on how to retain its significance, and conservation strategies to ensure its long-term viability.

This document constitutes Version 2 of the CMP originally prepared by Urbis in 2018. The original version of this document was prepared prior to the execution of the major works approved under SSD_8114 (Stage 1 School). The implementation of the Stage 1 school required major alterations to the northern section of the school (refer to Figure 3). This version of the document updates previous information relevant to the now altered Stage 1 area. A final version of this document will be prepared upon completion of Stages 2 and 3 of LLV.

Throughout this CMP the subject site is referred to as the 'Lindfield Learning Village'. The site has had various names throughout its history including the William Balmain Teachers College, Ku-ring-gai College of Advanced Education and the UTS Ku-ring-gai Campus.

1.2. SITE LOCATION

The Lindfield Learning Village is located at 100 Eton Road, Lindfield. The lot is legally described as Lot 2 of Deposited Plan 1151638. The site is located within the Ku-ring-gai Local Government Area (LGA) and comprises an irregular parcel of land with a total area of approximately 3.6ha. The location of the Lindfield Learning Village is shown in Figure 1 below.

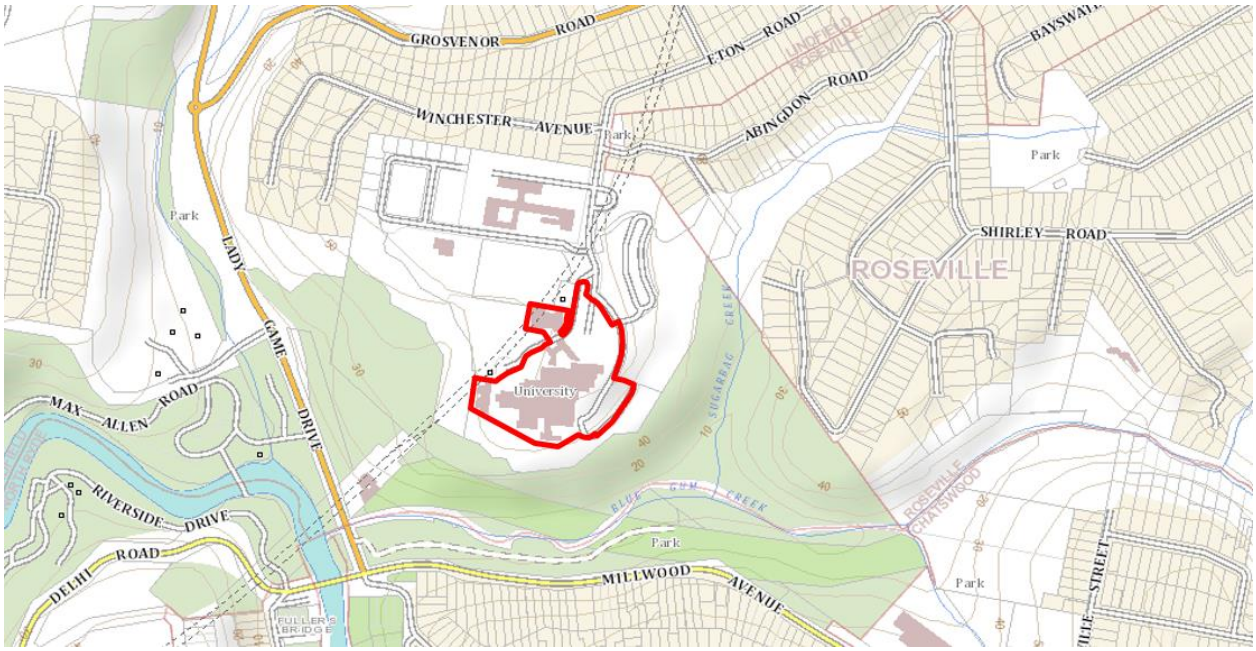


Figure 1 – Locality map

Source: SIX Maps 2018

1.3. METHODOLOGY

This Conservation Management Plan has been prepared in accordance with the *NSW Heritage Manual* (1996), the *Australia ICOMOS Burra Charter* (2013) and *The Conservation Plan* by James Semple Kerr (2000).

This Conservation Management Plan has been prepared with reference to the below reports:

- City Plan Heritage, *Heritage Assessment, UTS Ku-ring-gai Campus* (August 2004)
- Graham Brooks and Associates, *Heritage Assessment & Conservation Strategy, UTS Campus Ku-ring-gai* (July 2004)

The following sections of this CMP have relied on these two previous reports

- Historical Overview (Sections 3.2.2 to 3.2.15 and 3.2.19)

The report is structured as follows:

Table 1 – Report Structure

Section	Subsection
1. Introduction	Project brief, methodology, limitation, author identification and acknowledgements
2. Site Description	Site location, asset and site description, use and operation, curtilage and condition assessment
3. Historical Overview	Historical overview of the heritage item and relevant historical themes
4. Aboriginal and Historical Archaeological Assessment	Assessment of the Aboriginal and historical archaeological potential of the site
5. Comparative Analysis	Comparative assessment of the buildings considering national and international examples of the period and style
6. Heritage Significance	Assessment and statement of heritage significance, identification of significant elements and archaeological potential
7. Statutory and Non-Statutory Obligations	Statutory heritage listings, obligations under relevant legislation
8. Opportunities & Constraints	Constraints and obligations as part of the process for developing conservation policies
9. Conservation Policies	Policies to manage the items significance and implementation strategies for the policies
10. Cyclical Maintenance Plan	Cyclical Maintenance Plan for guidance for the ongoing maintenance to maintain the condition of the building
11. Bibliography	Bibliography of all references referred to throughout report
Appendices	Appendix A AHIMS Extensive Search Appendix B Historical Journal Articles

	Appendix C Historic Photographs including UTS Archive photographs, Max Dupain photographs and State Library of New South Wales photographs

Throughout this report the five buildings of the Lindfield Learning Village are referred to by their stages of development as follows and displayed in:

Stage 1	1968 - 1971
Stage 2	1972 - 1973
Stage 3	1974 - 1976
Stage 4	1977 - 1983
Stage 5	1984

These stages of development have informed the structure of this report. These stages do not refer to the stages of development of the existing State Significant Development or construction phases which are currently ongoing at the site (which are identified as Phases and which are set out in Section 1.5 below.

The areas within the school which are subject to updated information in this version (Version 2) of the CMP include most of Stage 2, Stage 3 and Stage 4 (refer figure below). These stages constitute the areas which are subject to the Phase 1 project milestone for LLV and which therefore have been physical altered since the preparation of the Version 1 CMP. The information pertinent to Stage 1 and Stage 5 (Phase 2 and 3 project milestones) has not been updated at this time and will be updated following the complete implementation of LLV.

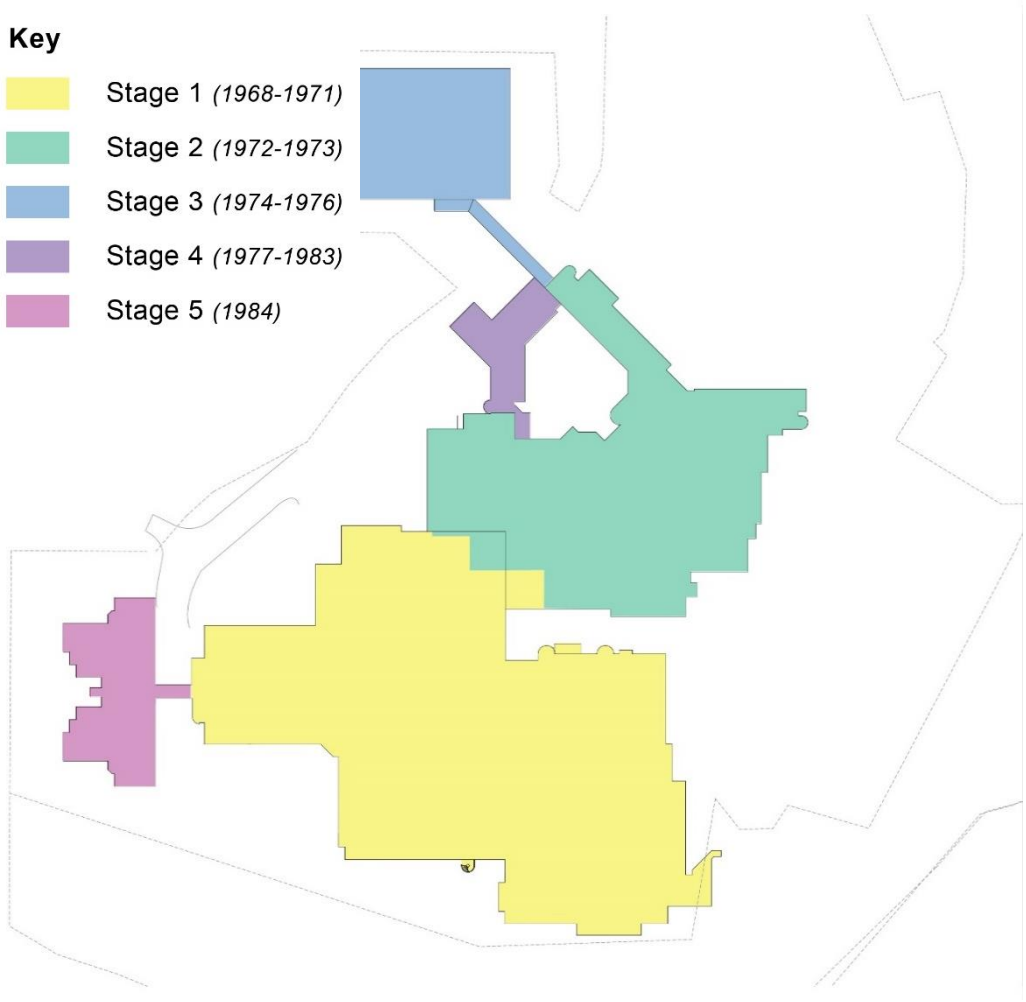


Figure 2 – Phases of development

1.4. AUTHOR IDENTIFICATION & ACKNOWLEDGEMENTS

The following report has been prepared by the following Urbis Pty Ltd staff:

- Stephen Davies (Director – Heritage) – Strategic oversight of CMP policies
- Fiona Binns (Associate Director – Heritage) – CMP preparation and review, strategic oversight of CMP policies
- Alexandria Barnier Barnier (Senior Heritage Consultant) – CMP preparation and management
- Keira De Rosa (Heritage Consultant) – CMP preparation
- Léonie Masson (Historian) – Review and revision (where required) of historical overview

The Aboriginal and historical archaeological assessment included within this CMP has been sourced by previous reporting prepared for the site by the following Urbis staff:

- Karyn Virgin (Senior Heritage Consultant/Archaeologist);
- Holly Maclean (Senior Heritage Consultant); and
- Erin Dethridge (Senior Consultant).

Unless otherwise stated, all drawings, illustrations and photographs are the work of Urbis. An archival recording of the Lindfield Learning Village site was undertaken by Alexander Mayes in July 2018. Images from the archival recording have been included throughout Section 2 of this report.

The authors would like to thank the following people for their assistance with the compilation of this plan:

- Alexander Mayes, Alexander Mayes Photography Pty Ltd;
- Jonathan McCray, Apex Diagnostics;
- Trevor Waters, Waterstone Concrete;
- Lew Short, BlackAsh Consulting;
- Design Inc; and
- Australian Institute of Architects (AIA).

The Historic Overview in this Conservation Management Plan (Section 3) has been substantially sourced from the two following reports. The authors of these documents are acknowledged with thanks.

- City Plan Heritage, *Heritage Assessment, UTS Ku-ring-gai Campus* (August 2004)
- Graham Brooks and Associates, *Heritage Assessment & Conservation Strategy, UTS Campus Ku-ring-gai* (July 2004)

Both reports contain a comprehensive site history using virtually identical resources and references. However, for the purposes of this CMP Section 3.2.1 is reproduced in full from the City Plan Heritage Report, while Sections 3.2.2 to 3.2.15 and 3.2.19 of this report are reproduced directly from Graham Brooks and Associates Pty Ltd, *UTS Campus Ku-ring-gai Heritage Assessment and Conservation Strategy*, 2004.

1.5. LIMITATIONS AND EXCLUSIONS

A State Significant Development Application (SSDA) was submitted to the Department of Planning and the Environment in September 2018 and received partial approval on 24 October 2018. The SSDA sought approval for the reconfiguration and refurbishment of the former UTS Ku-ring-gai campus for the purposes of new kindergarten to Year 12 school, to be named the Lindfield Learning Village (refer to Section 8.8.1 for further information). The reconfiguration and refurbishment of the site has been divided into three phases of development, which have achieved /will achieve the following milestones:

- Phase 1: Operation of a school of 350 students from Kindergarten to Year 12 (delivered in Term 1, 2019). This Phase affected Stages 2, 3 and 4 described in the above section;
- Phase 2: Operation of a school of 1,000 students from Kindergarten to Year 12 (to be delivered by mid-2021). This Phase will affect Stage 1 described in the above section; and
- Phase 3: Operation of a school of 2,100 students from Kindergarten to Year 12 (timeline to be determined dependant on construction and operational dates pending enrolments). This Phase will affect Stage 5 described in the above section.

The location of each of these Phases is diagrammed in Figure 3.

At the time this document was prepared Phase 1 was complete and the revised SSD application for Phase 2 was nearing completion.

This CMP is limited to discussing the remnant fabric on the site at the time of writing and the fabric to be retained in accordance with the approved SSD application. However, images in this document of Stage 1 and Stage 5 areas were taken prior to the commencement of the early works (prior to Phase 1 milestone).

In Section 8 this document outlines the principles which guided the design of the Partial School. Specifically, the solutions which have been designed to respond to compliance requirements are set out and may be used as a basis for design of the future stages.

It is anticipated that there will be one further review of this document. This iteration constitutes the first updated following the completion of construction works to the Partial School (Phase 1). The second update should be at the completion of construction works for the balance of the site (Phases 2 and 3). Note that these updates are to include current pictures of the site at that time and revised significance mapping based on current plans. The site description is also to be updated to describe the later layer of development. No further changes to the policies are considered to be appropriate.

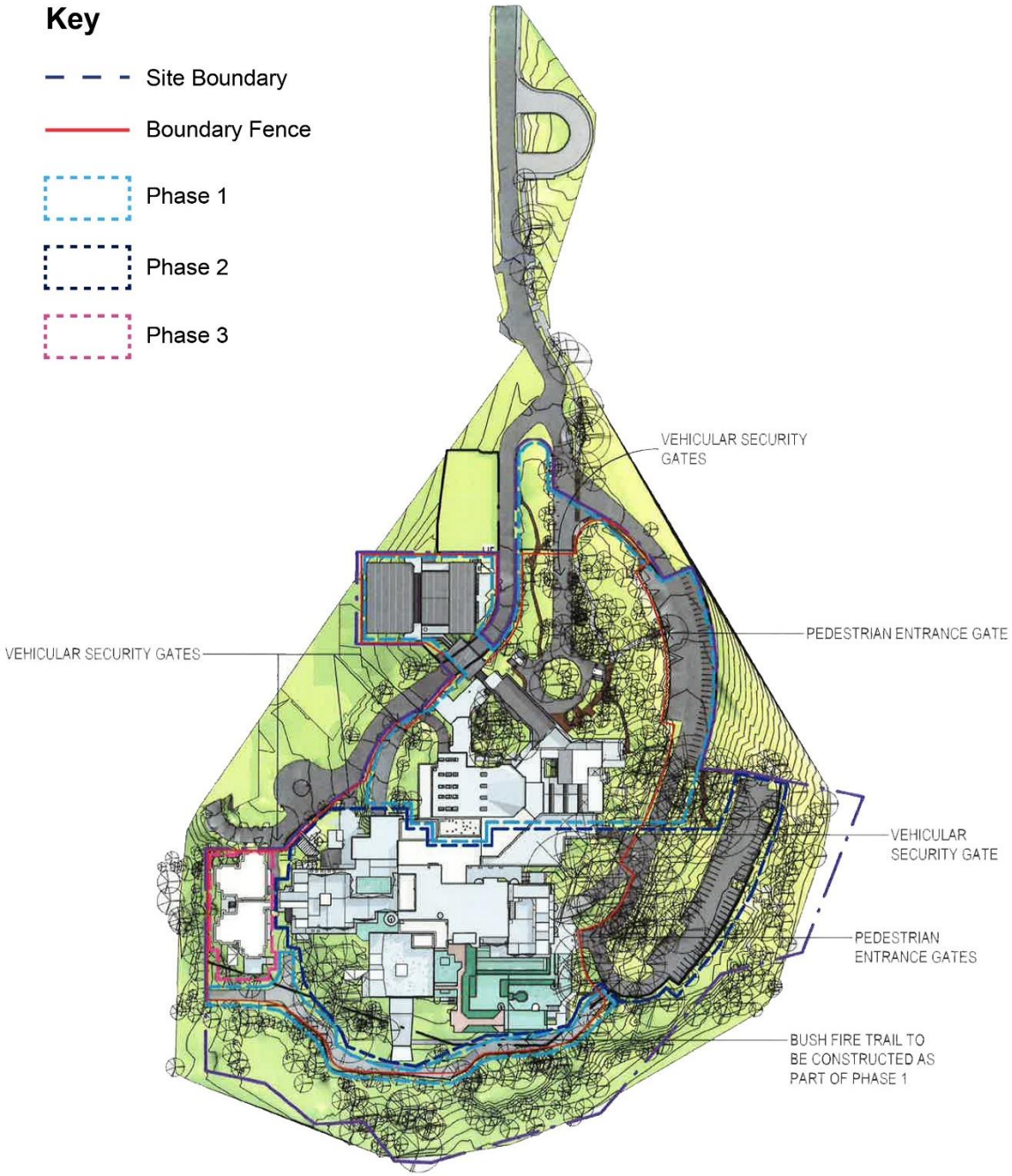


Figure 3 – Map of development phases for SSDA

Source: Design Inc

1.6. ABBREVIATIONS & DEFINITIONS

Common abbreviations and definitions used throughout the report are provided in the table below:

Table 2 – Abbreviations

Abbreviation	Definition
ACHAR	Aboriginal Cultural Heritage Assessment Report
APZ	Asset Protection Zone
BCA	Building Code of Australia
CM	Construction Manager
CMP	Conservation Management Plan
EMP	Environmental Management Plan
EFSG	Educational Facilities Standards and Guidelines
HAMS	Heritage Asset Management Strategy
HC	Heritage Consultant
HMF	Heritage Management Framework
LEP	Local Environmental Plan
PBP	Planning for Bushfire Protection
REF	Review of Environmental Factors
RFS	NSW Rural Fire Service
RNE	Register of the National Estate
S170R	Section 170 Heritage and Conservation Register (under the *Heritage Act 1977*)
SA	Site Architect
SEPP	State Environmental Planning Policy
SHR	State Heritage Register of New South Wales (under the *Heritage Act 1977*)
SSD	State Significant Development
TAMP	Total Asset Management Plan
TBS	To be specified
TFD	To future detail
TME	To match existing
TMOF	To match original finish

Table 3 – Terms & Definitions

Abbreviation	Definition
Aboriginal object	A statutory term meaning any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non- Aboriginal extraction, and includes Aboriginal remains
Aboriginal place	A statutory term meaning any place declared to be an Aboriginal place (under s.84 of the *National Parks and Wildlife Act 1974*) by the Minister administering the NPW Act, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture; it may or may not contain Aboriginal objects
Archaeological assessment	A study undertaken to establish the archaeological significance (research potential) of a particular site and to identify appropriate management actions
Archaeological potential	The degree of physical evidence present at an archaeological site, usually assessed on the basis of physical evaluation and historical research
Archaeology	The study of past human cultures, behaviours and activities through the recording and excavation of archaeological sites and the analysis of physical evidence
Asset Protection Zone	Also known as a fire protection zone, it aims to protect human life, property and highly valued asset. It is a buffer zone between a bush fire hazard and buildings, which is progressively to minimise fuel load an reduce the potential radiant heat levels, flame contact, ember and smoke attach on life and property.
Australia ICOMOS	The national committee of the International Council on Monuments and Sites
Burra Charter	Charter adopted by Australia ICOMOS, which establishes the nationally accepted principles for the conservation of places of cultural significance; Although the *Burra Charter* is not cited formally in an Act, it is nationally recognised as a document that shapes the policies of the Heritage Council of NSW
Conservation	All the processes of looking after an item so as to retain its cultural significance; it includes maintenance and may, according to circumstances, include preservation, restoration, reconstruction and adaptation, and will be commonly a combination of more than one of these
Conservation Management Plan	A document explaining the significance of a heritage item, including a heritage conservation area, and proposing policies to retain that significance; it can include guidelines for additional development or maintenance of the place
Conservation policy	A proposal to conserve a heritage item arising out of the opportunities and constraints presented by the statement of heritage significance and other considerations
Context	The specific character, quality, physical, historical and social characteristics of a building's setting; depending on the nature of the proposal, the context could be as small as a road or entire suburb

Curtilage	The geographical area that provides the physical context for an item, and which contributes to its heritage significance; land title boundaries do not necessarily coincide
Heritage and Conservation Registers	A register of heritage assets owned, occupied or controlled by a State agency, prepared in accordance with section 170 of the Heritage Act
Heritage assets	Items of heritage significance identified in a State Government Agency's Heritage and Conservation Register, including items of cultural and natural significance
Heritage Asset Management Strategy	A strategy prepared by a State Government Agency to document how the principles and guidelines outlined in the *Management of Heritage Assets by NSW Government Agencies* will be implemented in the management of heritage assets
Heritage item	A landscape, place, building, structure, relic or other work of heritage significance
Heritage significance	Of aesthetic, historic, scientific, cultural, social, archaeological, natural or aesthetic value for past, present or future generations
Heritage value	Often used interchangeably with the term 'heritage significance'; there are four nature of significance values used in heritage assessments (historical, aesthetic, social and technical/research) and two comparative significance values (representative and rarity)
Integrity	A heritage item is said to have integrity if its assessment and statement of significance is supported by sound research and analysis, and its fabric and curtilage and still largely intact
Interpretation	Interpretation explains the heritage significance of a place to the users and the community; the need to interpret heritage significance is likely to drive the design of new elements and the layout or planning of the place
Maintenance	Continuous protective care of the fabric and setting of a place; to be distinguished from repair; repair involves restoration or reconstruction
Relics	Relic is defined under the Heritage Act 1977 (NSW) as any deposit, object or material evidence which relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and is of state or local heritage significance
Scar trees	Scarred trees have scars where a section of bark was removed by Aboriginal people in order to make canoes, shields or baskets; footsteps were also cut into the tree trunk to gain access to possums or honey in tree tops; scar trees are different to carved trees
Setting	The area around a heritage place or item that contributes to its heritage significance, which may include views to and from the heritage item; the listing boundary or curtilage of a heritage place does not always include the whole of its setting
Shell middens	Term is referred to in Australia as an archaeological deposit in which shells are the predominant visible cultural items; shells are principally the remains of past meals; some middens also consist of bones, stone and other artefacts

Total Asset Management Policy	Total Asset Management is a NSW Government policy introduced to achieve better planning and management of the State's assets. Total Asset Management is the strategic management of physical assets to best support the delivery of agency services. It is part of a planning framework in which the Government's social, ecological and financial service outcomes are achieved by the most efficient means and within the resource limits of the community. It provides a structured and systematic resource allocation approach to infrastructure and physical asset management so that resources are aligned with the service objectives of State agencies. This approach achieves reduced costs and best value for money.
Use	Means the functions of a place, as well, as the activities and the practices that may occur at the place; a compatible use respects the cultural significance of a place

2. SITE DESCRIPTION

2.1. GENERAL LOCALITY AND SURROUNDING DEVELOPMENT

The subject site known as the Lindfield Learning Village is located at 100 Eton Road, Lindfield in Sydney's north -western suburbs. The site is located approximately 13 kilometres (by direct line) north-west of the Sydney Central Business District (CBD) and is located within the Ku-ring-gai Local Government Area (LGA). The site is set on the ridgeline above the Lane Cover River and is surrounded by bushland on its eastern and southern boundaries (Lane Cove National Park). To the north of the site lies new and established residential area along Eton Road. The Chatswood to Epping railway line runs directly under the western and north-western constraints of the site.

The immediate context of the Lindfield Learning Village has undergone significant change since 2011. The original site of the former UTS Ku-ring-gai campus included approximately 20.8 hectares of land which included the main buildings, oval, tennis courts, child care centre and carparking. In 2011, 13.8 hectares of this land was acquired by Defence Housing Australia and has since been development as 'Crimson Hill', a master planned residential community (Figure 5). Crimson Hill has been developed on the part of the former UTS Ku-ring-gai campus which contained the tennis courts, child-care centre and some car parking facilities.

The oval located directly on the northern border of the site which was once also part of the campus has been transferred to the ownership of Ku-ring-gai Council and is known as the Charles Bean Sports field. The former Screen Australia site, located to the north of the sports field, was recently sold and is currently awaiting construction of a new residential development.

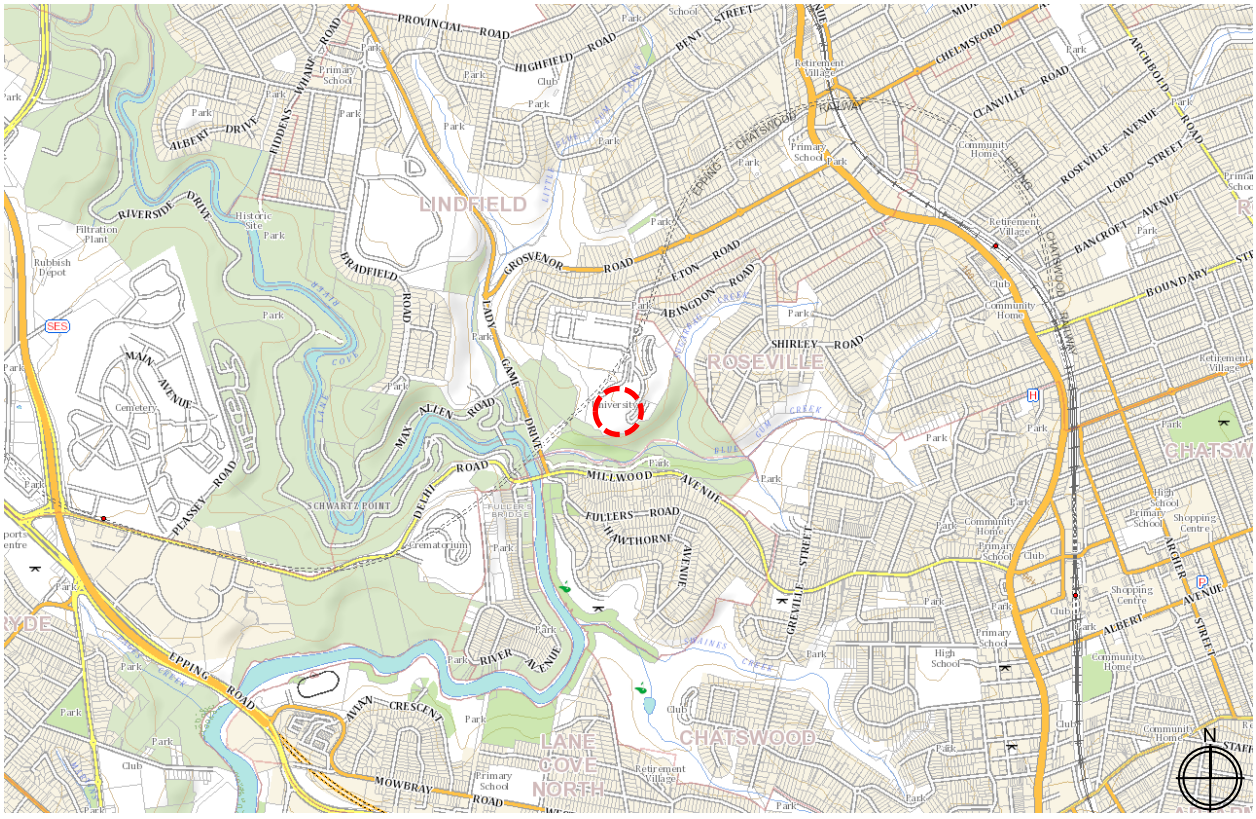


Figure 4 – Locality maps indicating the location of the Lindfield Learning Village

Source: SIX Maps 2018

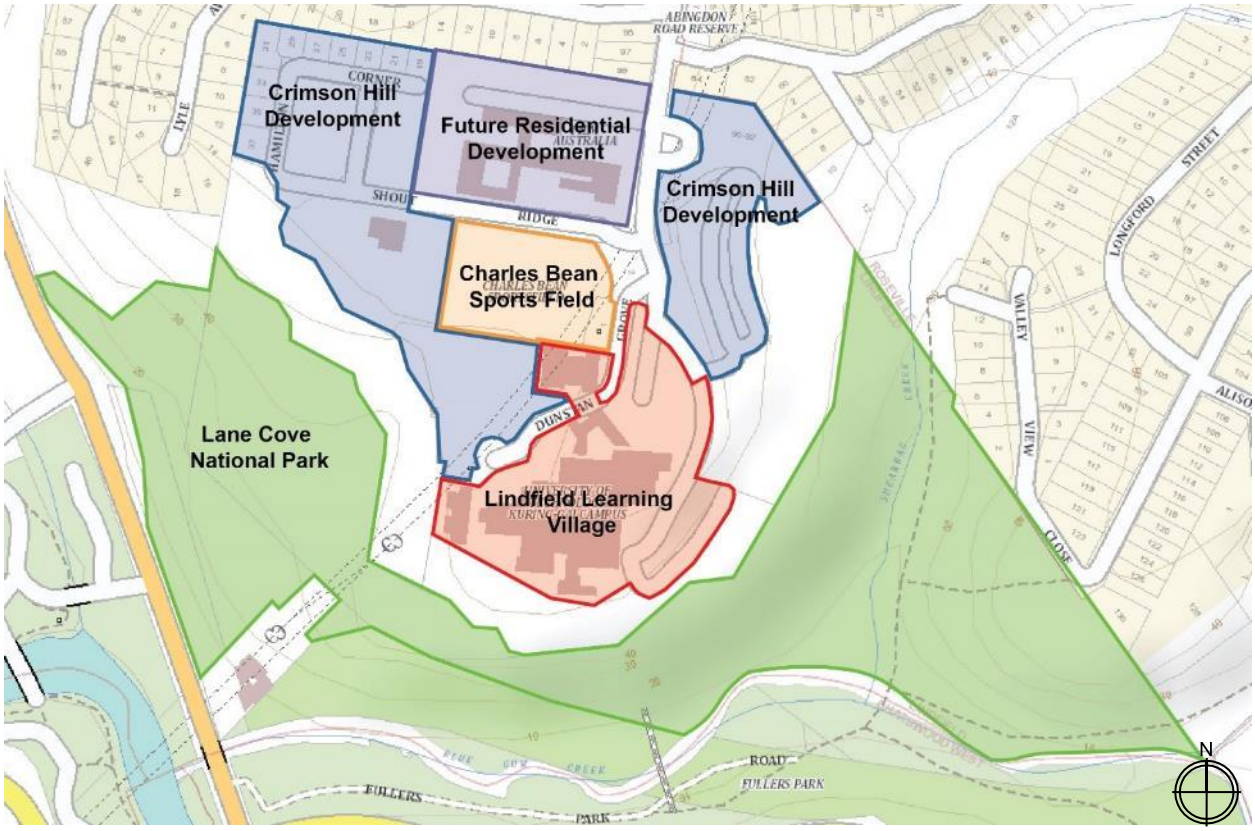


Figure 5 – Locality maps indicating the location of the Lindfield Learning Village, outlined in red.

Source: SIX Maps 2018 with Urbis annotations

2.2. SITE DESCRIPTION

The site is legally described as Lot 2 of Deposited Plan 1151638 and comprises an irregular parcel of land with a total area of approximately 3.6ha. As described above, the former UTS Ku-ring-gai campus site originally encompassed approximately 20.8 hectares but has since been reduced to its current size following the acquisition of 13.8 hectares by Defence Housing Australia in 2011 and the transfer of the Charles Bean Sportsfield to Ku-ring-gai Council. The site drops steeply away on its western, southern and eastern sides down to two small tributaries of the Lane Cover River to the south within the Lane Cove National Park.



Figure 6 – Aerial view of Lindfield Learning Village

Source: Google Earth

The current site is dominated by the building complex which is surrounded by its bushland landscape. Roadways including Eton Road and Dunstan Road traverse through the northern portions of the site and provide access through to two staggered carparks located on the eastern side of the site. The carparks conform to the steep topography of the site and are surrounded by native vegetation.

The primary access point into the building complex is via the eastern elevation of the Stage 2 section, adjacent to the roundabout at the termination of Eton Road. Key secondary access points are also located in the eastern portion Stage 1 and 2 buildings via the courtyard and into the Stage 5 building in the western portion of the site.

A total of 184 marked parking spaces are available within the site, including 35 space within the basement of the main building and 149 at-grade spaces in the two carparks (eastern and far-eastern), and smaller parking areas located adjacent to the Stage 2 and Stage 5 buildings. Footpaths also traverse through the bushland landscape of the site, primarily leading from Eton Road through to the Stage 2 main building. A large open grassed area is located at the southern side of the site and extends into the adjacent lot outside of the site of the subject site. Further discussion of the site landscape is provided in Section 2.3.

General components of the site are shown at Figure 7 below.

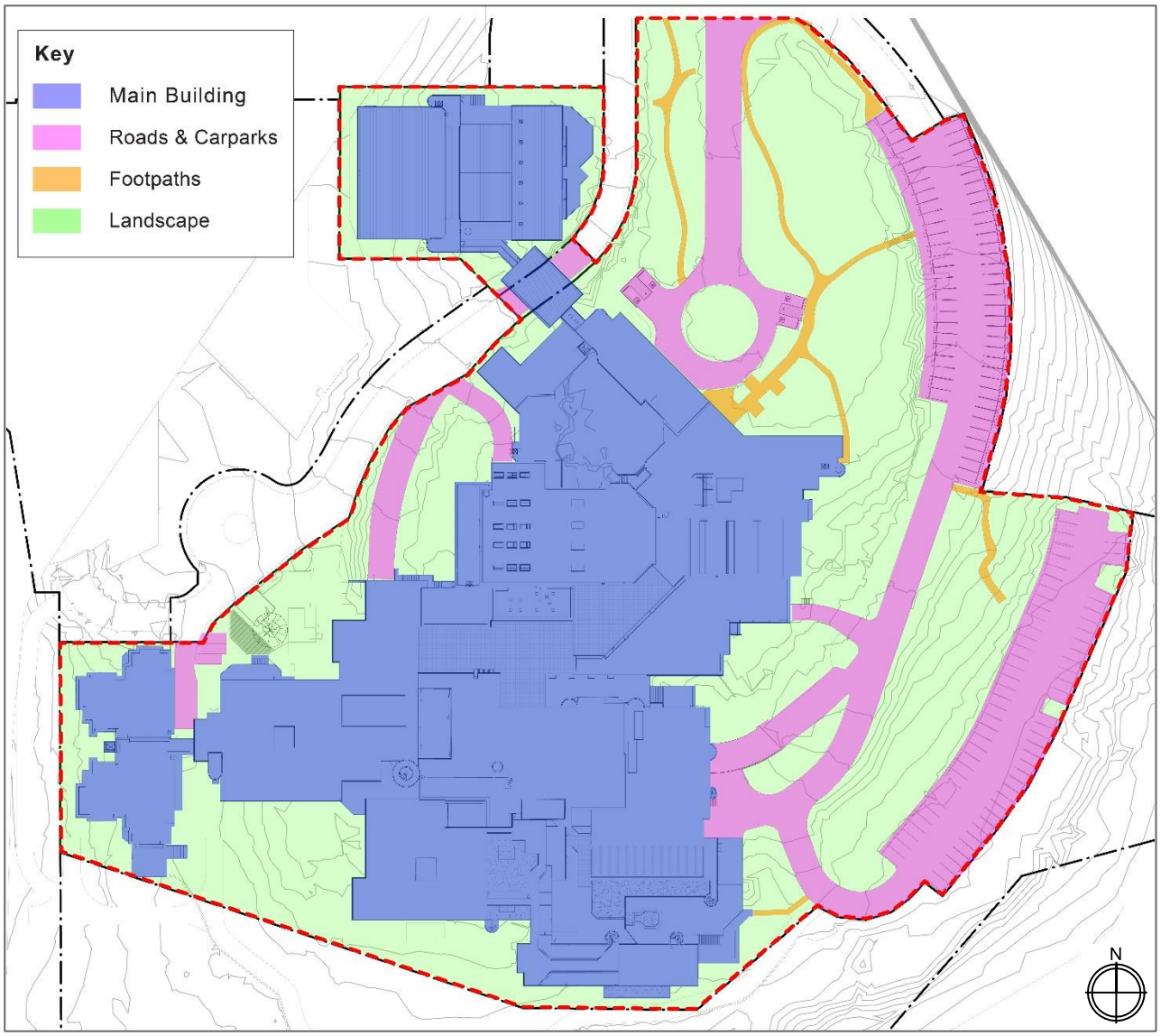


Figure 7 – Components of Site

Source: DesignInc with Urbis annotation



Figure 8 – View south towards the entry to site via Eton Road



Figure 9 – View north towards the entry to site via Eton Road.



Figure 10 – View north of the eastern carpark



Figure 11 – View across the eastern carpark



Figure 12 – Roadway extending along eastern side of the building to Stage 1 building and far-eastern carpark



Figure 13 – View from roadway extending down eastern side of the building. Eastern carpark on the left and access to Stage 1 building on the right.



Figure 14 – View north across far-eastern carpark



Figure 15 – Natural rock-outcrops adjacent to (west of) eastern carpark.



Figure 16 – View south west along Dunstan Grove adjacent to the Stage 3 building (right)



Figure 17 – Dunstan Grove extending under link bridge, leading down to the Stage 5 building.



Figure 18 – Access off Dunstan Grove to the Stage 5 building, looking south-west



Figure 19 – Access off Dunstan Grove to the Stage 5 building, looking north-west

2.3. LANDSCAPE ELEMENTS

The landscape of the Lindfield Learning Village has cultural significance equal to the building complex. Designed by Bruce Mackenzie, the natural bushland of the site played a primary role in defining the location of buildings on the site. The placement of buildings aimed to preserve the environment.

The landscape of the site is primarily characterised by the undulating topography, rock outcrops, trees and native vegetation. The bushland landscape is brought up to, surrounds and through the building complex. The native bushland is characterised by two natural vegetation communities and one area of modified vegetation, including smooth-barked apple – red bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast; dwarf apple – broad-leaved scribbly gum – Sydney peppermint low open woodland on sandstone ridges with subtle enrichment in northern Sydney; and cleared land exotics and exotic/non-indigenous plantings.[1] Key landscape elements are discussed in detail in the following subsections. The following diagram identifies the location of the main landscape features of the site (Figure 20).

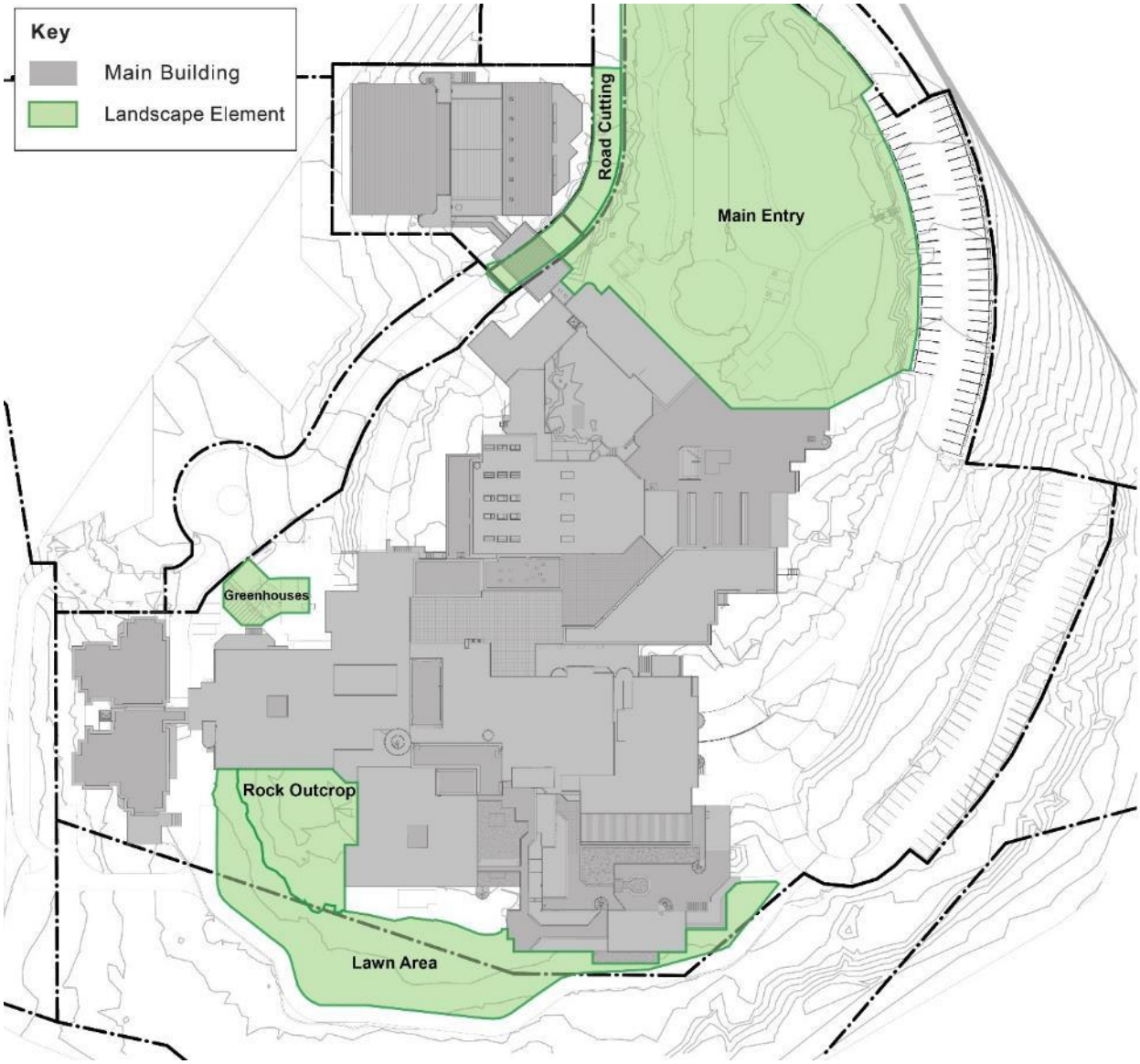


Figure 20 – Landscape features of Lindfield Learning Village site

Source: Design Inc with Urbis overlay

[1] Kleinfelder, *Landscape Management Plan, Lindfield Learning Village, Eton Road, Lindfield NSW* (18 October 2018)

2.3.1. Main Entry

The main pedestrian and vehicular drop-off entrance to the site is located at the southern end of the southern extension of Eton Road, on the eastern side of the Stage 2 building. The main entry is understated, with the natural bushland predominantly set within the undulating rock outcrops. The roadway of Eton Road comes to end at the turning circle at the entrance way, with the roundabout dominated by native bushland trees. A series of small foot paths run through the main entry way, linking to Dunstan Grove to the west and the carparks to the east. The landscape of the main entry was designed by Bruce Mackenzie as an example of the practice of fencing-off bushland remnants to protect them during construction.



Figure 21 – Main entry to Stage 2 building from vehicle drop-off

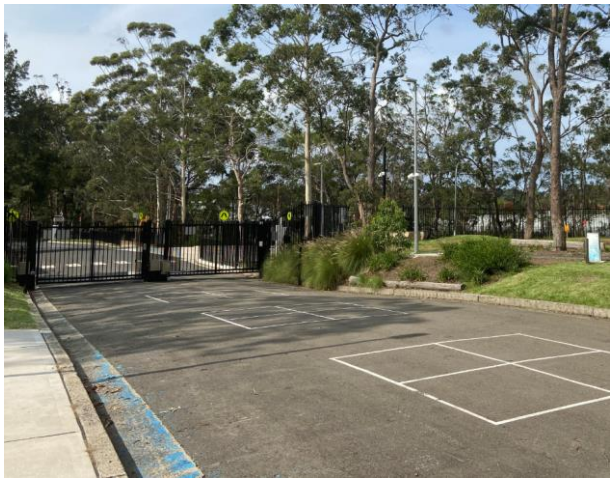


Figure 22 – Main gates to Stage 2 entry and vehicle drop-off.



Figure 23 – View south across vehicle drop-off outside Stage 2. Main entrance to right of image.



Figure 24 – View across Dunstan Grove towards main entrance to Stage 2.

2.3.2. Large Rock Outcrop

Located directly to the south-west of the Stage 1 building is a large rock outcrop of Hawkesbury Sandstone which was carefully protected during the construction stage to ensure the preservation of the natural site features.



Figure 25 - Rock outcrop located to the south west of the Stage 1 building



Figure 26 – Rock outcrop located to the south west of the Stage 1 building, looking west

Source: Alexander Mayes



Figure 27 – Rock outcrop located to the south west of the Stage 1 building, looking north

Source: Alexander Mayes

2.3.3. Road Cutting and Rock Infills

The road cutting was created during Stage 1 to provide access to the western part of the site. The road created by the rock cutting is now known as Dunstan Grove and now also provides access to a portion of the Crimson Hill residential development. The road cutting is softened by the planting of native vegetation such as tree ferns.



Figure 28 – Road cutting for Dunstan Grove, looking south-west

Source: Alexander Mayes



Figure 29 – Rock cutting viewed from the link bridge of Stage 5 building, looking north



Figure 30 – Rock cutting with rock infills section circled in red.

2.3.4. Lawn Area

A large open lawn area is located directly to the south of the Stage 1 building and extends outside of the bounds of the site to the south. This area is the only open landscaped space on the site and was created to ensure fire separation between the building complex and the bushland to the south.

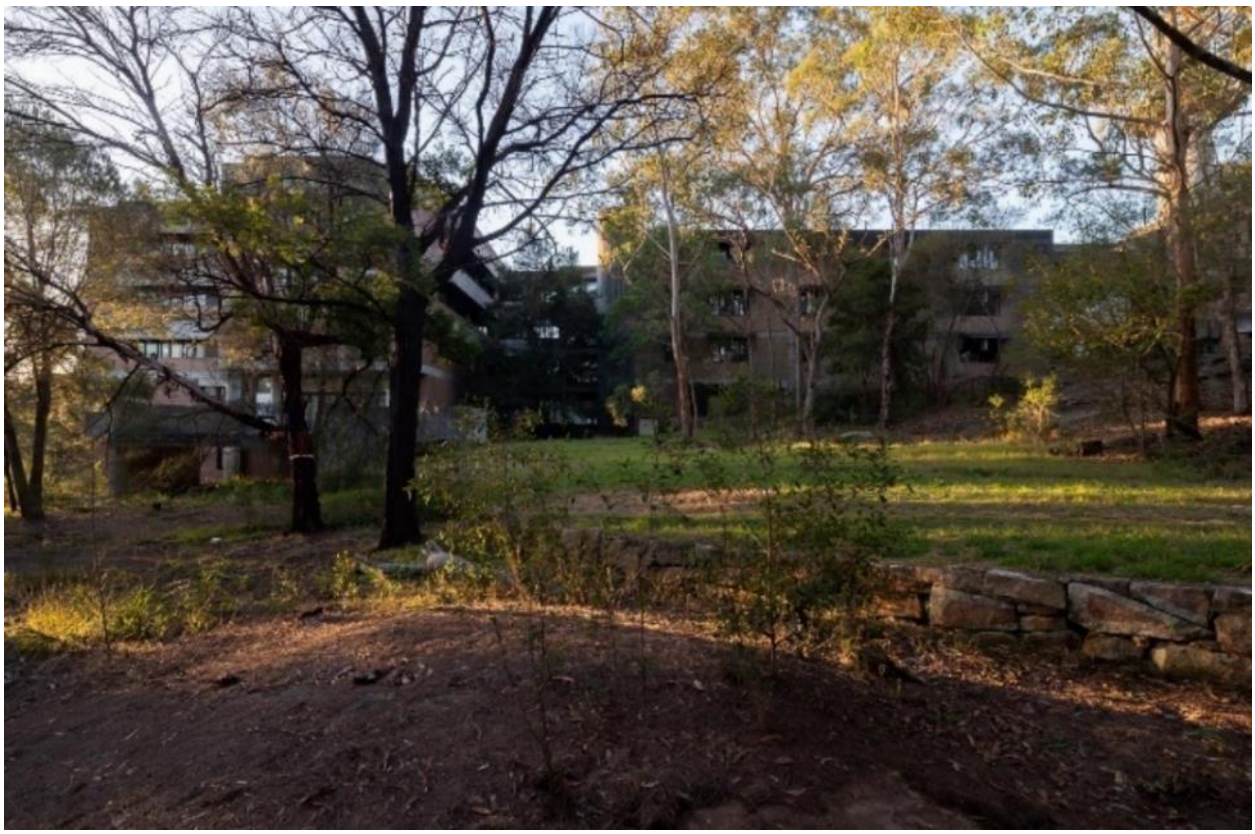


Figure 31 – Lawn area viewed from the south of Stage 5 and Stage 1 buildings, with low stone retaining wall.

Source: Alexander Mayes



Figure 32 – Lawn area to the south of the Stage 1 building, looking south, with low stone wall visible.



Figure 33 – Lawn area to the south of the Stage 1 building, looking west

2.3.5. Greenhouses

A set of small structures, formally used as green houses, are located directly to the north-west of the Stage 1 building and adjacent to the Dunstan Grove. The greenhouse are primarily constructed of off-board concrete, with aluminium framed windows for walls and roofs. A small brick structure is also located directly adjacent to the greenhouses.



Figure 34 – The brick outbuilding and greenhouse

Source: Alexander Mayes



Figure 35 – The concrete greenhouse

Source: Alexander Mayes

2.4. LINDFIELD LEARNING VILLAGE

The William Balmain Teachers' College at Lindfield blended the influences from both the Sydney School and the New Brutalism streams of architectural thought that were a major feature of Australian architecture for two decades from the late 1950s.

The Lindfield Learning Village complex was constructed in 5 stages which now present as a single (up to) six-storey structure with basement, rooftop plant rooms and an astronomy observation tower. The massing of the building consists of various heights, which step down in response to the topography of the site. The bulk of the complex is broken up due to its highly articulated and modulated form, constructed of high-quality off-board concrete with brick infill, concrete window hoods and sun louvres, and raised rooftop deck and terraces. The building complex is linked together through an internal circulation route which navigates throughout the five stages. The whole structure nestles into its landscaped bushland setting.

The overall height of the existing building is 24m. The various forms of the building range in height from 2 storeys (6.3m) to five storeys (17m). The building footprint covers an area of approximately 12,200sqm, which represents a site coverage of 33.9 per cent. The total internal floor area of the building is approximately 28,900sqm.

The five buildings of the Lindfield Learning Village reflect the five building stages of the site, as follows:

Stage 1	1968 - 1971
Stage 2	1972 - 1973
Stage 3	1974 - 1976
Stage 4	1977 - 1983
Stage 5	1984

The styles are consistent and followed the same aesthetic as the original stage 1.

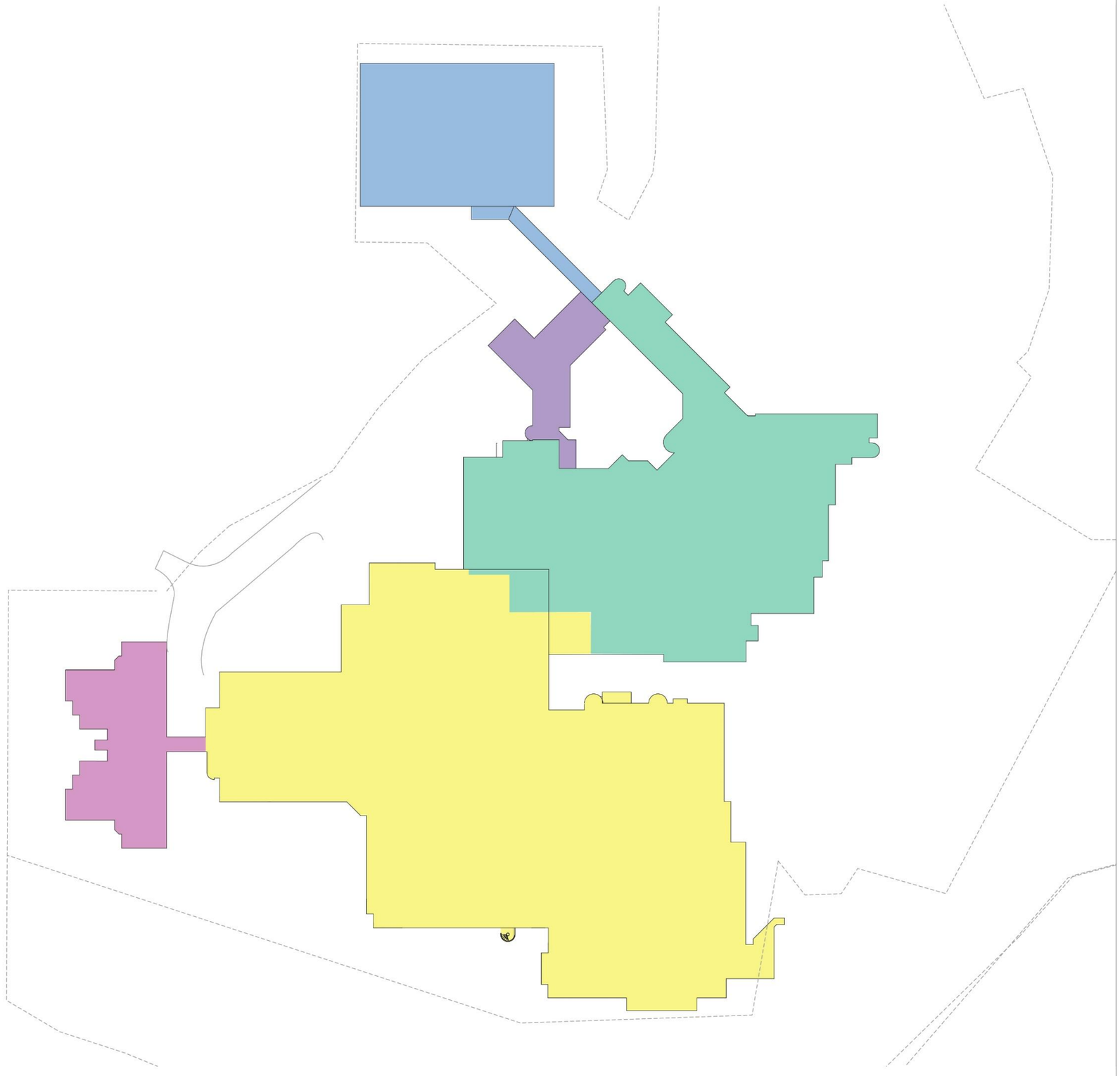
The following subsections provide an overview of each building of the Lindfield Learning Village, and the types of spaces contained within each.



Figure 36 – Oblique aerial views of Lindfield Learning Village

Source: Alexander Mayes, 2018

BUILDING COMPONENTS



Key

- Stage 1 *(1968-1971)*
- Stage 2 *(1972-1973)*
- Stage 3 *(1977-1983)*
- Stage 4 *(1977-1983)*
- Stage 5 *(1984)*

2.4.1. Building Component Diagrams

This section was included in the Version 1 CMP and provided an overview of the types of internal and external spaces of the Lindfield Learning Village complex. Each space has been identified as one of the following nine key descriptors.

This section has been omitted from the interim review (this Version 2 document) however will be inserted reflecting the final state of the building upon the complete implementation of LLV.

Table 4 – Building Component Diagram Key Descriptions

Key	Description
Circulation	Corridors, stairs and lifts
Learning & Teaching	Classrooms, offices, library, laboratories, studios, storerooms
Auditorium	All auditoriums, including back of house spaces
Sports	Basketball courts and squash courts
Cafeteria	Cafeteria, including kitchen and mezzanine level
Service / Utility	Plant rooms, all service/utility related cupboards, kitchenettes and loading docks
Amenity	Bathrooms and changerooms
Carpark	Internal carparking
Outdoor Space	Courtyards, balconies, roof gardens, external stairs and ramps

2.4.2. Stage 1



Figure 37 – Aerial view of Stage 1 building, outlined in red

Source: Alexander Mayes

2.4.2.1. Stage 1 - Exterior

The Stage 1 building was completed by 1971 and was the first structure to be completed for the site. The building is located in the south-eastern section of the subject site. The building was originally constructed to consist of lecture rooms and facilities, a library, art-craft centre, TV studios and temporary administration and student union facilities. The south-eastern corner of Stage 1 is characterized by a series of rooftop gardens and two courtyards accessible by original stairs directly from the surrounding landscape.

The original entrance to the building is located at the end of the courtyard which extends west from the eastern side of the building between the Stage 1 library and Stage 2. This entrance has double height glazing and concrete sun hoods, and still presents as a key entrance. Its use as the main entry was superseded by the construction of Stage 2, with the new main entry located to the north east side of Stage 2 at the termination of Eton Road.

The design of the subsequent four stages of the site were based on the style and materiality of the Stage 1 building, utilising off-board concrete and face brickwork throughout the exteriors and interiors of the building. The concrete elements of the Stage 1 building, and similarly with the Stage 2 building, which integrates within it forms, are massed together to present contrasts between the warm brick tones and the monolithic concrete structures, including the extensive use of pre-cast concrete sunshades which are present throughout the majority of the elevations of the building. The lower levels of the building at its south end are predominantly brick with off form concrete slabs, window hoods, sunshades, roof parapets and stairwells.

All external windows are black aluminium framed. The roofs have a waterproof membrane – failing in some areas. The building does not present a single elevation but appears as form follows function with the exterior being the outward modelling of functional areas within the building. The building was also designed in such a manner as to allow for further additions in an agglutinative fashion.

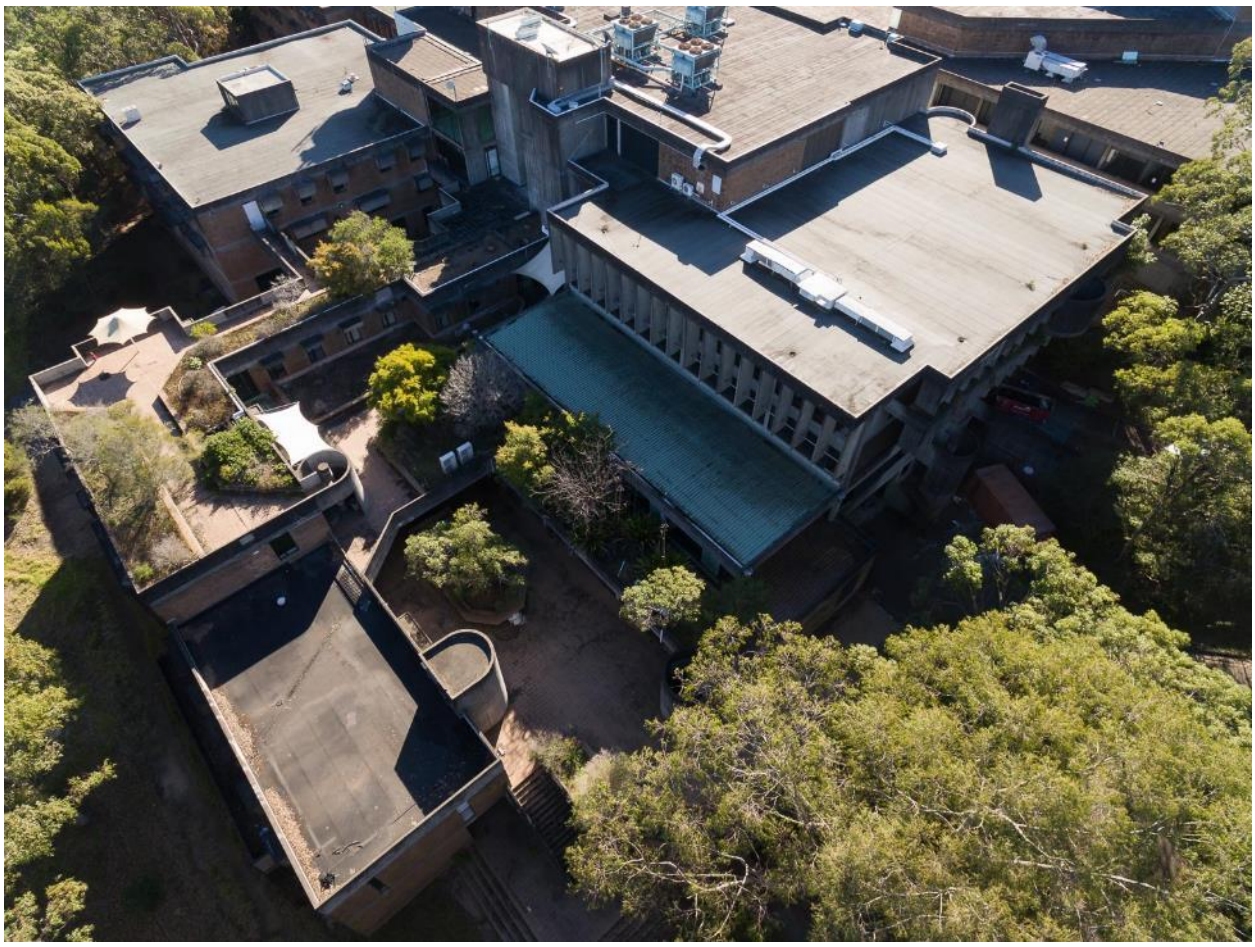


Figure 38 – Oblique aerial view showing the south-eastern portion of Stage 1 building, with extensive use of off-board concrete and face brickwork, integrated with rooftop gardens and courtyards.

Source: Alexander Mayes



Figure 39 – Portion of western elevation, featuring pre-cast concrete window hoods

Source: Alexander Mayes



Figure 40 – Portion of northern elevation with facebrick work and pre-cast concrete window hoods

Source: Alexander Mayes



Figure 41 – Portion of north-western elevation with entrance to carpark at Level 3

Source: Alexander Mayes



Figure 42 – Portion of southern elevation, with massing of off-board concrete forms and pre-cast concrete window hoods

Source: Alexander Mayes



Figure 43 – Portion of southern elevation, with face brickwork and pre-cast concrete sunshades and window hoods

Source: Alexander Mayes



Figure 44 – Portion of western elevation

Source: Alexander Mayes



Figure 45 – Portion of eastern elevation with large sections of off-board concrete and sunshades

Source: Alexander Mayes



Figure 46 – Portion of eastern elevation with stairs extending up to courtyard.

Source: Alexander Mayes

2.4.2.2. Stage 1 - Interior

The original internal layout of the Stage 1 building was constructed around the various academic disciplines of the teacher's college, including a science block (western portion), teaching education block (south-western portion) and an arts and crafts block (south-eastern portion). Each of these blocks was linked to the communal library block which was located in the north-eastern portion of the building. The present stage 1 area comprises interconnecting circulation spaces, learning and teaching spaces, two auditoriums, a carpark, multiple outdoors spaces and accompanying amenity and service/utility spaces. Throughout the majority of interior spaces, views to the exterior and surrounding bushland can be appreciated, linking the interior to the outside topography and environment. The materials featured throughout the Stage 1 building include off-board concrete, facebrick and waffle-slab ceilings. Internal doors are primarily constructed of timber with either metal or timber door cases and architraves. The following subsections provide an overview of the spaces within the Stage 1 building.

Internal doors are primarily constructed of timber with either metal or timber door cases and architraves.

Circulation

The internal circulation spaces within the Stage 1 building include a variety of different spaces, ranging from wide open partly double height spaces on Levels 4 and 5 to the west of the former library, to enclosed corridors which loop around the learning and spaces across Levels 1 to 5. The partly double-height circulation spaces are located on Levels 4 and 5 in between the former library and the two auditoriums in the north-western portion of the building. The circulation space is only double height in sections of Level 4 where there are large voids in the slab at Level 5 surrounded by concrete. The main circulation space extends north to the Stage 2 building where it becomes more expansive and entirely double height from Level 5 to Level 6.

Large black aluminium framed windows provide views to internal courtyards and the exterior setting of the building throughout the main circulation spaces. These circulation spaces feature off-board concrete balustrades and walls, with some areas of brick walls and rectangular waffle slab ceilings. The space has solid green carpet.

The smaller corridors throughout the Stage 1 building loop around the various learning and teaching spaces within the former blocks designated for science, teaching education and arts and crafts. These corridors are generally narrower and feature off-board concrete and brick walls, waffle slab or plasterboard ceilings and green carpets. Two lightwells are incorporated into the circulation spaces on Levels 2 to 4 in the former science and teaching and education blocks.

Staircases throughout the Stage 1 building feature off-board concrete and/or brick walls, with pink metal handrails. Distinctive services and lighting is featured throughout some of the circulation spaces, including orange spherical lights and strategically placed services following the grid pattern of the waffle slab ceilings.

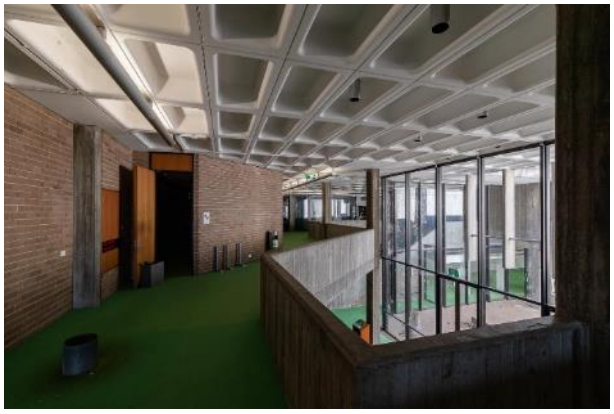


Figure 47 – Level 5 corridor to the east of the auditoriums showing voids to Level 4

Source: Alexander Mayes



Figure 48 – Level 5 corridor to the west of the former library showing balustrades around voids to Level 4

Source: Alexander Mayes



Figure 49 – Level 5 circulation spaces, with spiral staircase leading down to Level 4

Source: Alexander Mayes



Figure 50 – Spiral staircase located on Level 4 opposite to the former library

Source: Alexander Mayes



Figure 51 – Staircase and corridors located adjacent to the courtyard on Level 4 and the original main entrance

Source: Alexander Mayes



Figure 52 – Corridor on Level 4 to the west of the former library

Source: Alexander Mayes

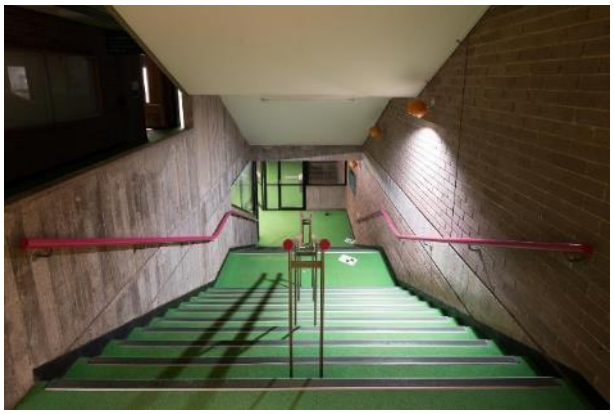


Figure 53 – Staircase leading from Level 3 to Level 2 located in the western portion of Stage 1 showing the distinctive pink handrails and spherical lights

Source: Alexander Mayes



Figure 54 – Corridor to music rooms, Level 4

Source: Alexander Mayes

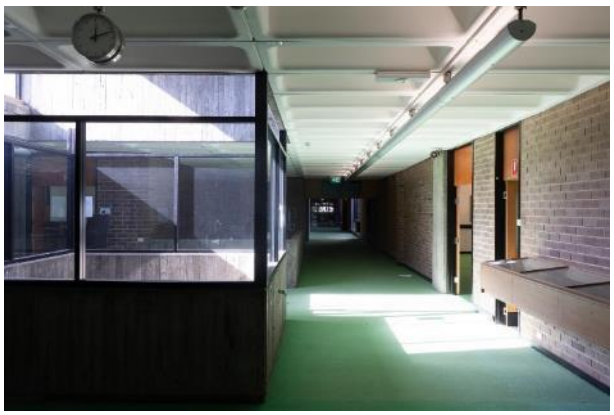


Figure 55 – Corridor with lightwell, left, located in the western portion of Level 4

Source: Alexander Mayes



Figure 56 – Staircase with lightwell and surrounding corridor located in the southern portion of Level 4

Source: Alexander Mayes

Learning & Teaching

A variety of learning teaching spaces are provided within the Stage 1 building, which were used for various purposes, including the former library, classrooms, laboratories, music rooms, offices, art rooms and TV studios. Ceilings within each of the various spaces range from waffle-slab ceilings, timber-boarded, off-board concrete, plasterboard and suspended ceilings. Walls too vary from off-board concrete, brick, plasterboard and glazed panels. A range of different floor covering are utilised including carpet, timber floorboards, tiles, vinyl flooring and concrete. The majority of the learning and teaching spaces have views to the outside, whether it be to the surrounding setting, to courtyards or other outside spaces, or into other internal spaces. Distinctive services and lighting is featured throughout some of the learning and teaching spaces, including bright orange cable trays on waffle slab ceilings, bright yellow air-conditioning ducts and strategically placed services following the grid pattern of the waffle slab ceilings. The following images provide an overview of the various learning and teaching spaces within the Stage 1 building.

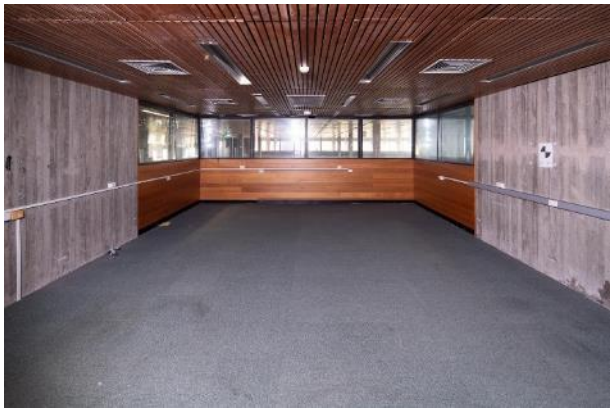


Figure 57 – Space within former library located on Level 5 showing the distinctive battened ceiling and off board concrete walls

Source: Alexander Mayes



Figure 58 – Space within former library, located on Level 5.

Source: Alexander Mayes



Figure 59 – Former library space located on Level 5

Source: Alexander Mayes



Figure 60 – Former library space located on Level 4 and void to level 5

Source: Alexander Mayes

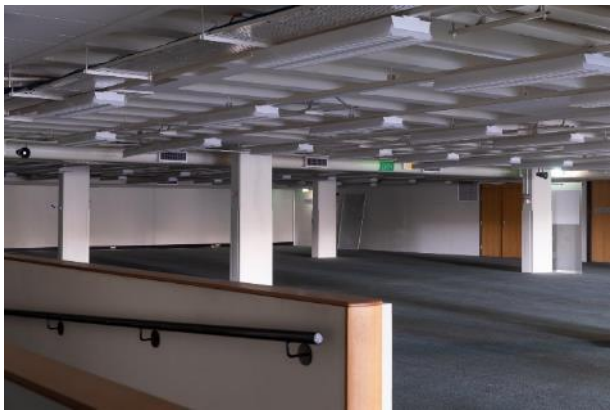


Figure 61 – Former library space located on Level 3

Source: Alexander Mayes

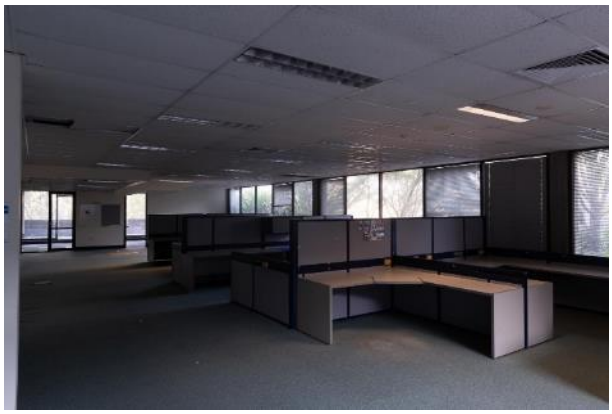


Figure 62 –Extension to the former library space located on Level 3

Source: Alexander Mayes



Figure 63 – Large learning and teaching space in the north-western portion of Level 4

Source: Alexander Mayes

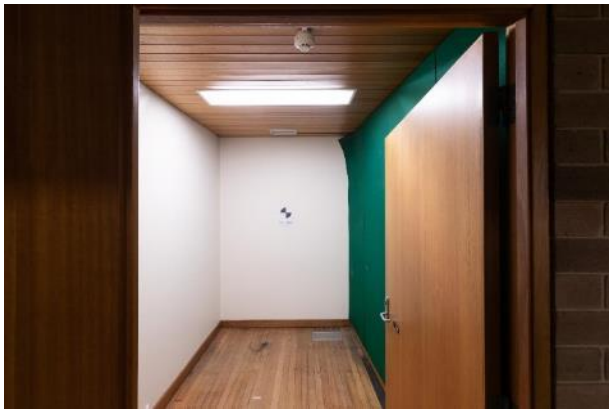


Figure 64 – Typical former music room on Level 4

Source: Alexander Mayes



Figure 65 – Former laboratory in western portion of Level 4

Source: Alexander Mayes



Figure 66 – Learning and teaching space on Level 3

Source: Alexander Mayes

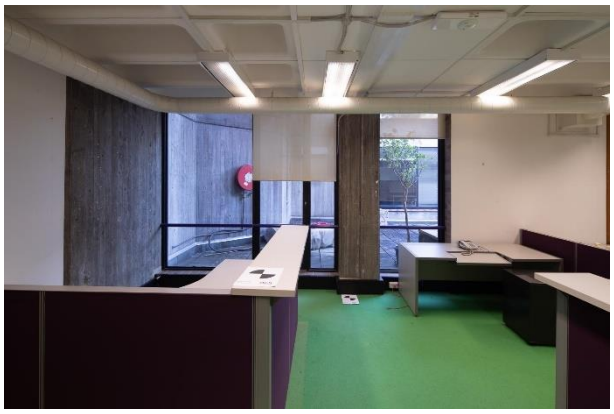


Figure 67 – Learning and teaching space on Level 3

Source: Alexander Mayes



Figure 68 – Learning and teaching space on Level 2

Source: Alexander Mayes



Figure 69 – Former TV Studio space on Level 2

Source: Alexander Mayes



Figure 70 – Former TV Studio space on Level 2

Source: Alexander Mayes

Auditorium

Two auditoriums are located within the Stage 1 building and are very similar in their design, although one is larger than the other. Both auditoriums are located in the centre of Levels 4 and 5 of the Stage 1 building. Both feature stepped floors with stepped plasterboard ceilings, off-board concrete and timber-batten walls, and green carpet.



Figure 71 – Small Auditorium at Level 5

Source: Alexander Mayes



Figure 72 – Small Auditorium at Level 5

Source: Alexander Mayes



Figure 73 – Medium Auditorium at Level 5

Source: Alexander Mayes



Figure 74 – Medium Auditorium at Level 5

Source: Alexander Mayes

Service/Utility Spaces

The Stage 1 building has multiple service areas primarily located on Level 2. Two loading docks are located on Level 2, one on the eastern side and one on the western side. Other service areas, including plantrooms and storage areas, built in the bedrock are located in the centre of the level. Various service cupboards are also located throughout all levels of the Stage 1 building.

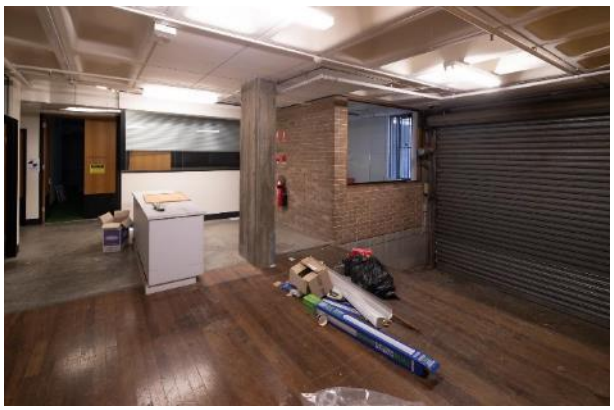


Figure 75 – Loading Dock located on eastern side of Level 2

Source: Alexander Mayes



Figure 76 – Loading dock located on western portion of Level 2

Source: Alexander Mayes



Figure 77 – Level 2 service space

Source: Alexander Mayes



Figure 78 – Level 2 service space

Source: Alexander Mayes

Amenities

Bathrooms are located across Levels 1 to 4 of the Stage 1 building. The spaces feature tiled floors, painted walls and dropped plasterboard ceilings. All bathrooms within area Partial School (Phase 1 in the Stage 1 building are to be refurbished. The remaining bathrooms are anticipated to the refurbished at later stages of development.



Figure 79 – Bathroom on Level 4

Source: Alexander Mayes

Carpark

An internal carpark is located on Level 3 of the Stage 1 building, accessed from Dunstan Grove. The carpark has painted concrete floors, with concrete columns and waffle slab ceilings. Air-conditioning ducts which snake around the ceiling are painted bright yellow, and the fire sprinkler system is painted bright red, both contrasting with the white of the ceilings.

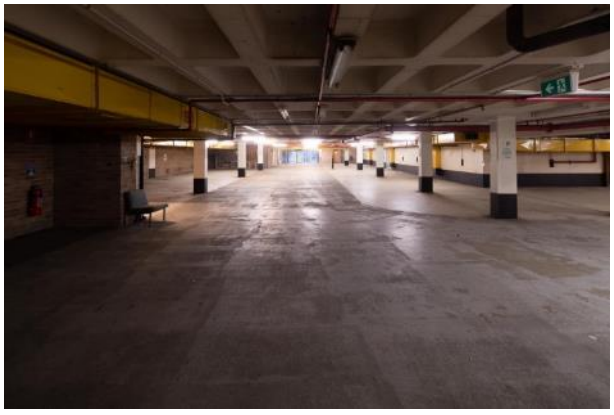


Figure 80 – View of the carpark at Level 3

Source: Alexander Mayes

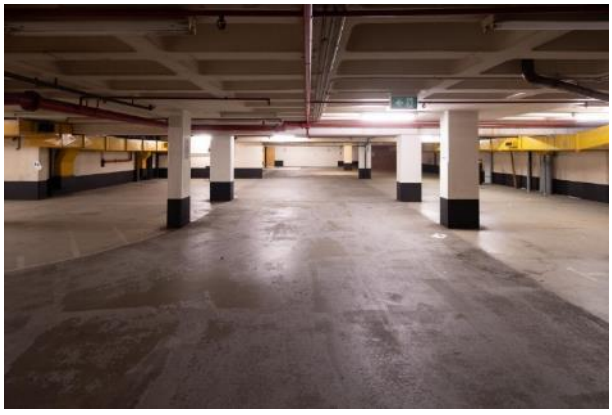


Figure 81 – View of the carpark at Level 3

Source: Alexander Mayes

Outdoor Space

The Stage 1 buildings features a range of different outdoors spaces, including courtyards on Levels 2 and 4 rooftop gardens and walkways on Levels 3 and 4 and balconies on Levels 3 to 5. The rooftop gardens and walkways located in the southern portion of the building are one of the principal features of the Stage 1

building. While alterations have been made to the spaces over time, many of the original planters in the spaces remain intact. Three large courtyards are located on Levels 2 and 4 and a series of balconies are located on the eastern side of the building.



Figure 82 – Rooftop garden on Level 4

Source: Alexander Mayes



Figure 83 – Courtyard on Level 2 and roof top gardens

Source: Alexander Mayes



Figure 84 – Courtyard located between Stage 1 and 2 building on Level 4

Source: Alexander Mayes

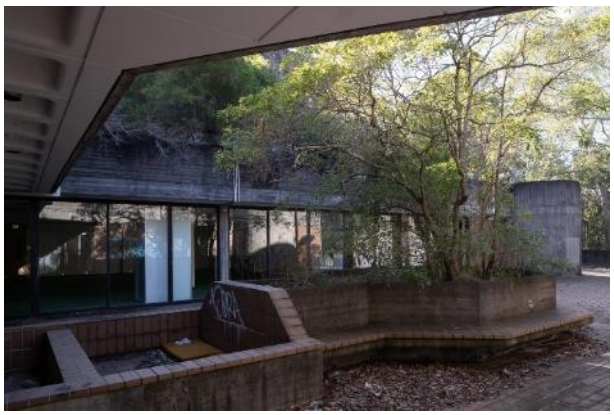


Figure 85 – Courtyard with water feature on Level 2

Source: Alexander Mayes



Figure 86 – Rooftop garden on Level 3

Source: Alexander Mayes

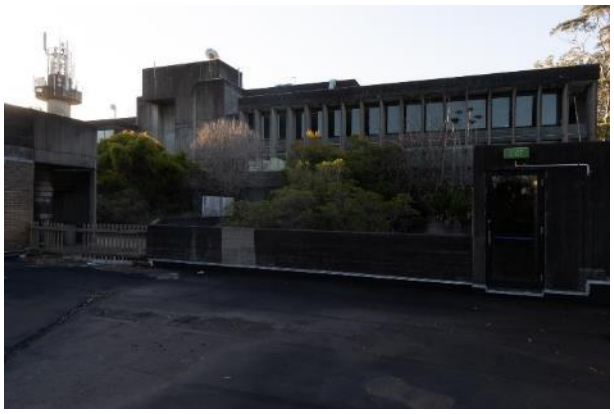


Figure 87 – Rooftop garden on Level 3

Source: Alexander Mayes



Figure 88 – Balcony located on the eastern side of Level 5

Source: Alexander Mayes

2.4.3. Stage 2

The Stage 2 building was completed by 1974 and was constructed in the same manner as the Stage 1 building, integrating with its form. Stage 2 was subject to substantial alterations and addition in 2019 and features a contemporary layer of fabric.



Figure 89 – Aerial view of Stage 2 building

Source: Alexander Mayes

2.4.3.1. Stage 2 - Exterior

Externally there is little distinction between the Stage 1 and Stage 2 buildings due to the seamless stylistic integration of the two stages. The Stage 2 building was originally constructed to include an auditorium, dining area (cafeteria) and administration areas. There is also an unenclosed extension to the cafeteria which was original used as an outdoor eating space. The building spans over Levels 3 to 6, however presents primarily as a stepped two storey building.

Stage 2 defines the southern and western boundaries of the highly significant internal courtyard (which is also partly bound by Stage 4). The main entrance to the building is from the north eastern façade of Stage 2 and features double height glazing and an elaborate pre cast concrete sun shade and decorative blade walls.

The same materials and detailing are utilised in the Stage 2 building as in the Stage 1 building. Extensive use of pre-cast concrete sunshades is continued which presents across the majority of the elevations, along with off-board concrete slabs, windowhoods, roof parapets and external stairwells. Most windows are original black aluminium framed with contemporary fire shutters. All windows/doors without associated fire shutters are non-original and steel framed however all have been designed to respect the existing relationships between the original window frames and externally exposed waffle slabs. The roofs are clad in a membrane.



Figure 90 – Main entrance to the Stage 2 building on the north-eastern elevation

Source: Urbis



Figure 91 – Section of eastern elevation (outside cafeteria space) featuring pre-cast concrete sunshade

Source: Urbis



Figure 92 – Courtyard elevation, featuring pre-cast concrete sunshades

Source: Urbis



Figure 93 – Southern elevation adjacent to courtyard (bound to the south by Stage 1), featuring off-board concrete

Source: Alexander Mayes



Figure 94 – Portion of Eastern elevation featuring pre-cast concrete sunshades

Source: Alexander Mayes

2.4.3.2. Stage 2 - Interior

The Stage 2 building was originally designed to provide spaces for a dining area (cafeteria), a large auditorium and additional spaces for administrative needs. Each of these spaces within the Stage 2 building are linked by generous circulation spaces which act as a network of streets within the building.

Various spaces are present within the Stage 2 building, including the expansive interconnecting circulation spaces, learning and teaching spaces, an auditorium, cafeteria, outdoor spaces and accompanying amenity and service/utility spaces. The circulation spaces originally connected defined learning areas enclosed by brick and glazed walls. A number of these walls were removed to facilitate the implementation of the LLV and the open learning spaces required of the new education model.

The original materials featured throughout the Stage 2 building included off-board concrete, face brick and waffle-slab ceilings. Later materials largely constitute glazed dividing walls and colored elements for compliance (including original balustrades and pink handrails – which were painted to match the original). Internal doors are primarily constructed of timber with either metal or timber door cases and architraves. The materials for the contemporary doors have been to match the original.

Similar to the Stage 1 building, throughout the majority of interior spaces, views to the exterior and surrounding bushland can be appreciated, linking the interior to the outside topography and environment, which was a critical aspect of the design intent.

The following subsections provide an overview of the spaces within the Stage 2 building.

Circulation

The internal circulation spaces within the Stage 2 building include a variety of different spaces, ranging from the main entrance with expansive double-height space at Levels 5 and 6 which link the cafeteria and large auditorium to smaller spaces across Levels 4 to 6 which also function as open plan learning spaces.

The main entrance of the Lindfield Learning Village complex is located in the north-western portion of the Stage 2 building at Level 5. The main entrance features a double-height space filled with light from the atrium/fishpond adjacent and windows scattered throughout the space. Mezzanine walkways extend around the space at Level 6. Recent orange extensions surmount the original concrete balustrades for compliance. Large expanses of off-board concrete line the walls of the main circulation spine, with waffle slab ceilings. An early school bell is remnant at the Level 6 ceiling.

The smaller corridors throughout Stage 2 branch off the main circulation spine and provide access to the learning and teaches spaces across Levels 4 to 6. The brick walls which bounded the original smaller learning spaces have been removed and the learning spaces are now open plan and integrated with the original corridors extending from the main circulation spine.

Staircases throughout the Stage 1 building feature off-board concrete and/or brick walls, with metal double handrails painted pink to match the color of the original pink handrails exactly. Stage 2 features the most original built in bench seating which is constructed of timber with leather seats. These are predominantly

located in the main circulation spine, with some also located in secondary circulation areas and adjoining stair wells. Distinctive services and lighting are featured throughout some of the circulation spaces, including orange spherical lights, with some additional cylindrical lighting as well as strategically placed services (original and recent) following the grid pattern of the waffle slab ceilings.

The original green carpet has been removed throughout the building however has been interpreted. Custom design carpet is predominantly grey. However, different colors are used to assist children in locating home bases. Further, bright green has been utilized in the main circulation spine on Level 5 to high the most significant areas including stairs and the auditorium.

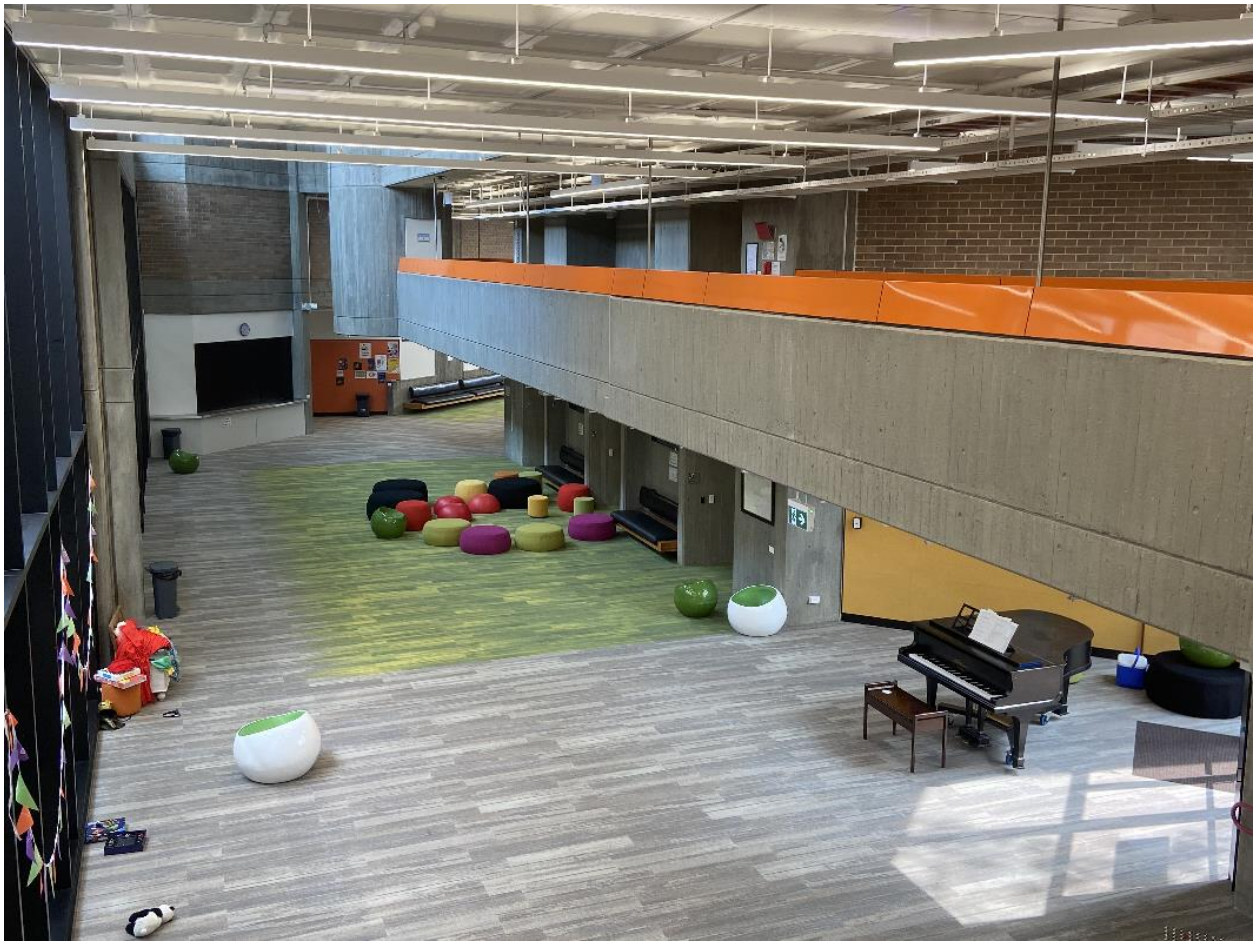


Figure 95 – View from the Level 6 walkway across the double height main circulation spine of the Stage 2 building (Level 5) showing the atrium/fishpond to the left, auditorium to the right and original built in seating.

Source: Urbis

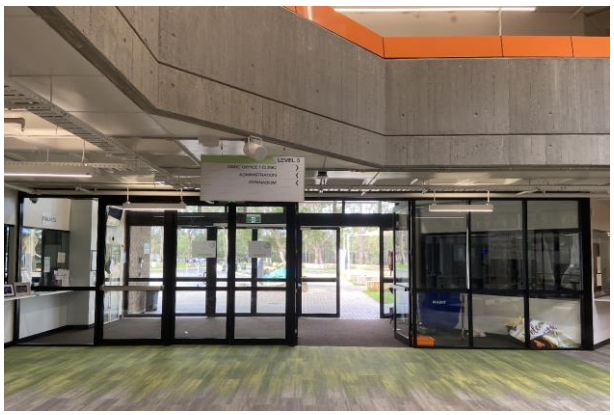


Figure 96 – Main entrance to Stage 2 building at Level 5

Source: Urbis

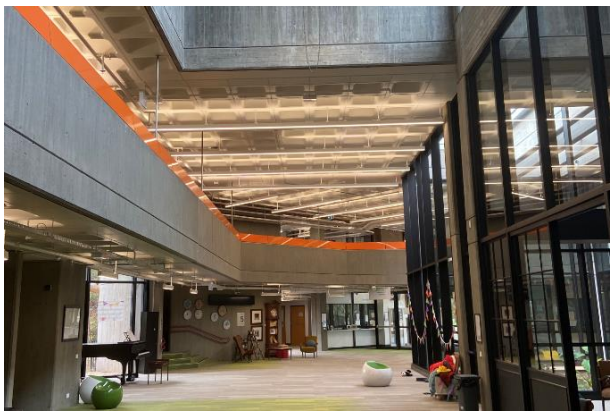


Figure 97 – View towards the main entrance to Stage 2 building at Level 5 showing the double height main circulation spine and walkway to level 6 above

Source: Urbis

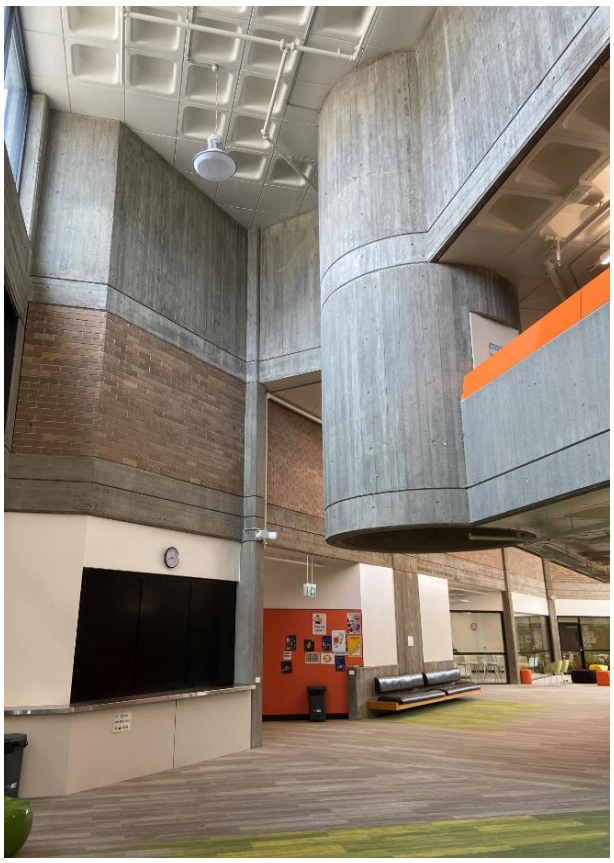


Figure 98 – Suspended walkway and stairwell at Level 6 viewed from Level 5

Source: Urbis

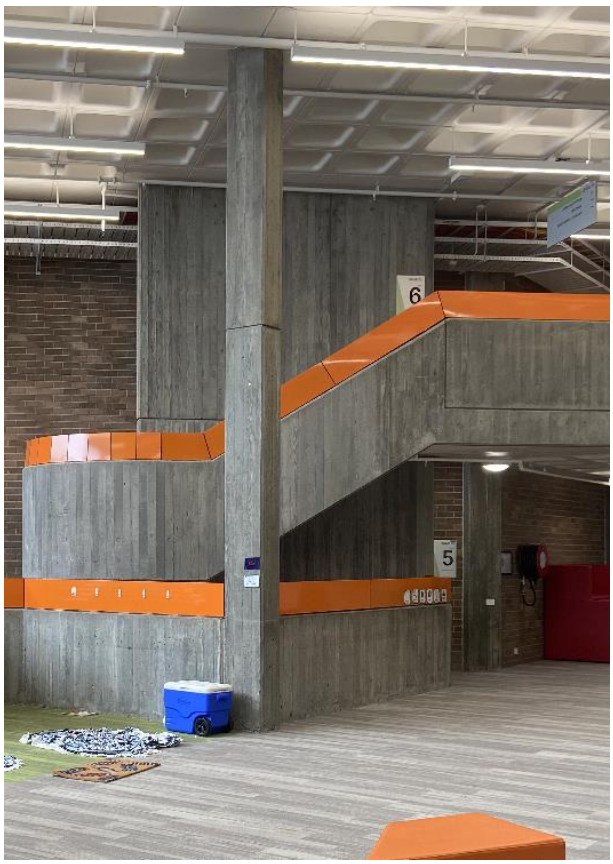


Figure 99 – Circulation space and stairs to the south of Stage 2 at Level 5.

Source: Urbis

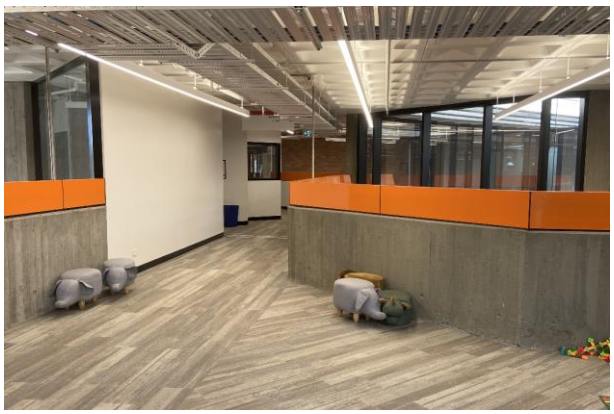


Figure 100 – Level 6 walkway.

Source: Urbis

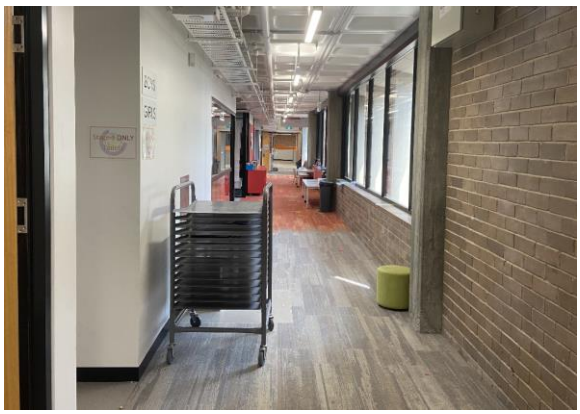


Figure 101 – Typical corridor view to learning and teaching spaces in the northern section of Level 6

Source: Urbis



Figure 102 – Level 4, entrance from courtyard

Source: Alexander Mayes



Figure 103 – Corridor to music rooms, Level 4

Source: Alexander Mayes

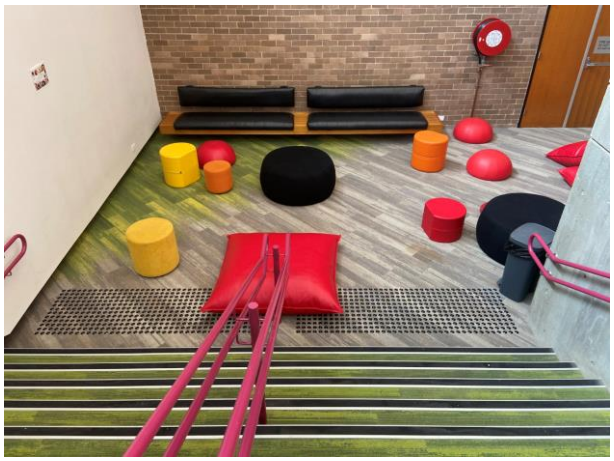


Figure 104 – Staircase from Level 5, down to Level 4

Source: Urbis

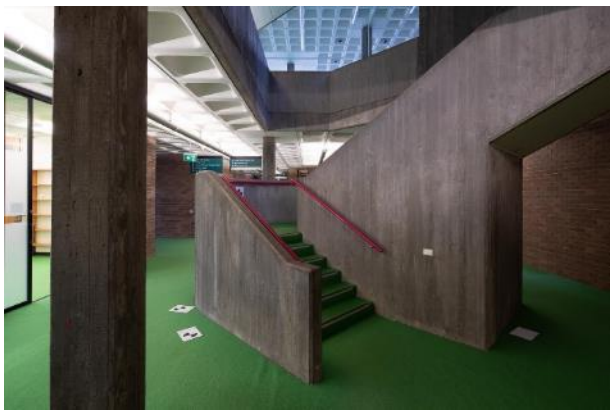


Figure 105 – Level 4, staircase located in southern portion of Stage 2 building

Source: Alexander Mayes



Figure 106 – Level 6 staircase in northern section of Stage 2 going down to Level 5

Source: Urbis

Learning & Teaching

A variety of learning teaching spaces are provided within the Stage 2 building, including offices, classrooms and spaces associated with the large auditorium. Learning and teaching spaces are concentrated to the northern and eastern extensions of the stage.

Similar to stage 1, ceilings within each of the various spaces range from waffle-slab ceilings, plasterboard and suspended ceilings. Walls too vary from off-board concrete, brick, plasterboard and glazed panels. Some brick walls were removed during the implemented of the LLW and new plasterboard walls have been constructed. A range of different floor coverings are utilised including carpet, timber floorboards and vinyl flooring. The original green carpet has been replaced with predominantly grey carpet with different colors in specific learning areas to assist with wayfinding.

The majority of the learning and teaching spaces have views to the outside, whether it be to the broader surrounding setting, courtyards or into other internal spaces, in keeping with the design intent to integrate the site with, and respond to the physical environment.

Most services throughout the learning and teaching spaces are strategically placed to correspond with the grid pattern of the waffle slab ceilings. The new services have been designed to be exposed in keeping with the original.

The following images provide an overview of the various and typical learning and teaching spaces within the Stage 2 building.



Figure 107 – Learning and teaching space in the east portion of Level 5

Source: Urbis

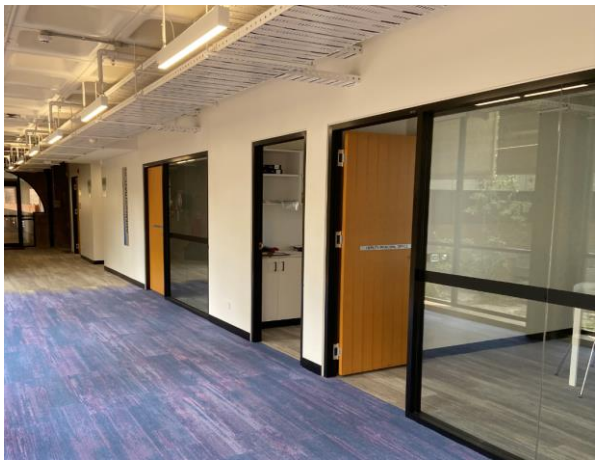


Figure 108 – Learning and teaching space in the north-eastern portion of Level 5

Source: Urbis

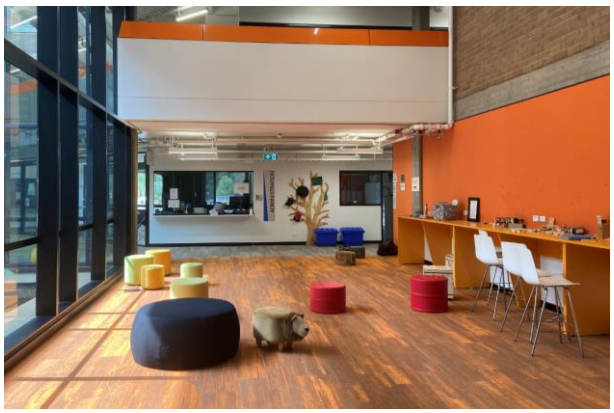


Figure 109 – Learning and teaching space in the north-eastern portion of Level 5

Source: Urbis

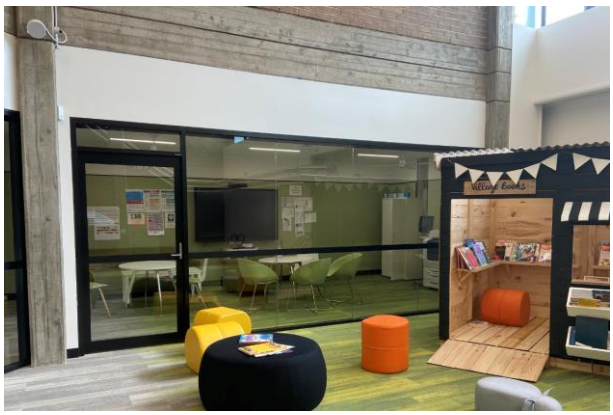


Figure 110 – Learning and teaching space in the southern portion of Level 5

Source: Urbis



Figure 111 – Learning and teaching space in the south-western portion of Level 5

Source: Alexander Mayes



Figure 112 – Learning and teaching space located to the north of the courtyard on Level 4

Source: Alexander Mayes

Auditorium

The main (and largest) auditorium is located on the western side of the Stage 2 building on Levels 4 to 6. The auditorium is known as the Greenhalgh Auditorium and is the only auditorium within the Phase 1 school. Multiple entry points are provided into the various levels of the auditorium, including into the main seating area on Levels 4 and 5 (from the main circulation spine), the dress circle on Level 6 and backstage areas including dressing rooms, green room and bathrooms.

The auditorium features a stepped raked floor. The walls feature off-board concrete slabs and columns, painted black, with brick infill and orange paneling. A series of catwalks line the ceiling with bright red handrails. The original purple seats within the auditorium were replaced with new red seats in slightly varying shades in 2019. Distinctive services intermingle with the primarily black catwalk including spherical lights.



Figure 113 – Auditorium at Level 4

Source: Urbis

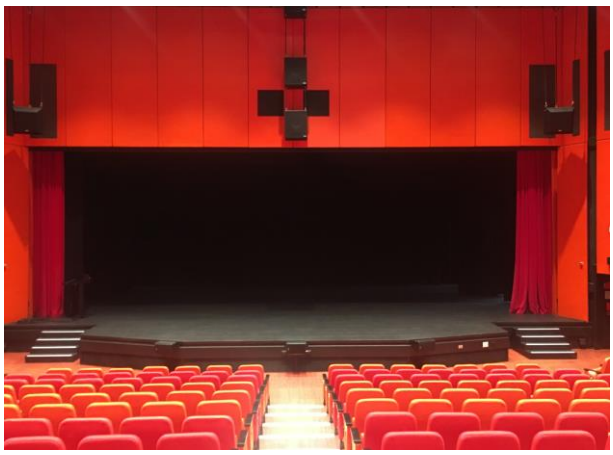


Figure 114 – Auditorium at Level 4 towards the stage

Source: Urbis

Cafeteria

The Cafeteria of the Stage 2 building includes multiple spaces within it, including the main double-height space for the dining area, a mezzanine level, kitchen, servery, storage and other related spaces. Following the implementation of the Phase 1 school the Cafeteria dining area was bisected by a fire wall which was constructed to achieve a 100mm buffer between the school and the vegetation to the south. As such, the mezzanine and ancillary areas associated with the cafeteria are not accessible at this time. The quality of the space will be reinstated following the implementation of Stage 2 of the LLV.

The main dining room is lit by overhead skylights and the glassed walled atrium located adjacent to its north-western corner. The walls feature timber-paneling and painted concrete surfaces. The ceiling features painted concrete with inset acoustic panels. The mezzanine level of the cafeteria is located in the eastern portion of the room and is accessed via a staircase, clad in timber boards. The associated servery is located to the south and has a timber batten ceiling similar to the library in Stage 1. Kitchen, service and storage areas of the cafeteria are located in the southern portion of the space. The kitchen also has a stair access from Level 5 down to the loading dock on Level 4.



Figure 115 – View from the cafeteria at Level 5

Source: Urbis



Figure 116 – Cafeteria at Level 5

Source: Urbis

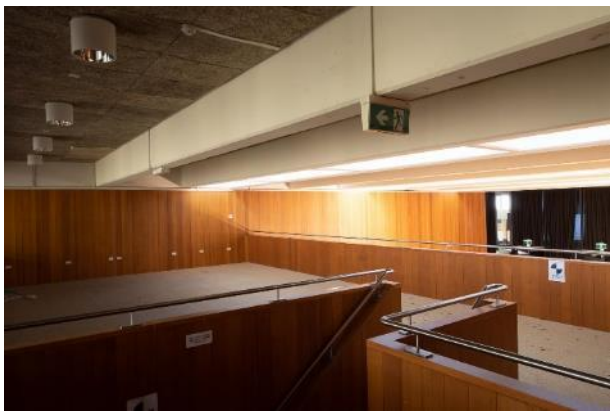


Figure 117 – Mezzanine Level in Cafeteria (behind temporary fire wall).

Source: Alexander Mayes



Figure 118 – Kitchen area of Cafeteria (behind temporary fire wall).

Source: Alexander Mayes

Service/Utility Spaces

The Stage 2 buildings has various service areas. A plant room is located to the rear of auditorium at Level 5 and a loading dock area is located on Level 4 on the eastern side of the Stage 2 building. Service cupboards are also located throughout all levels of the Stage 1 building. Services were generally upgraded in accordance with the implementation of the LLV.



Figure 119 – Plant room on Level 5 at the rear of Auditorium

Source: Alexander Mayes



Figure 120 – Exterior of loading dock in eastern portion of Level 4

Source: Alexander Mayes

Amenities

Bathrooms are located across Levels 4 to 6 of the Stage 2 building. The spaces feature tiled floors, painted walls and dropped plasterboard ceilings. All of the bathrooms within the Phase 1 school were refurbished as part of the SSDA.

Outdoor Space

The Stage 2 building features a range of different outdoors spaces primarily located at Level 5, including a bushland courtyard, glass atrium with water feature/fishpond, terraced outdoor space off the cafeteria and balconies. These outdoors spaces remain essentially in their original state.

The enclosed bushland courtyard located adjacent to the northern section of Stage 1 was created by the construction of the Stage 4 building. The courtyard features remnant native trees, shrubs and ground covers, and a natural rock outcrop. The courtyard is set at two different levels, with the lower level occupied by a path which connect Stage 2 to Stage 4.

Directly to the south-east of the bushland courtyard is a glassed atrium space which adjoins the main circulation spine and cafeteria. A water feature with pond and planting feature in the space and pre-cast concrete fins span across the opening.

A terraced pre-cast concrete outdoor space with red heavy plastic outdoor furniture is located directly to the east of the Cafeteria, accessed via an enclosed balcony. Small balconies are also located along the eastern and southern portion of the building from learning and teaching spaces.



Figure 121 – Bush courtyard, located between Stage 2 and Stage 4 buildings with natural rock outcrop and native plantings and contemporary additional to balustrades (left of image).

Source: Urbis

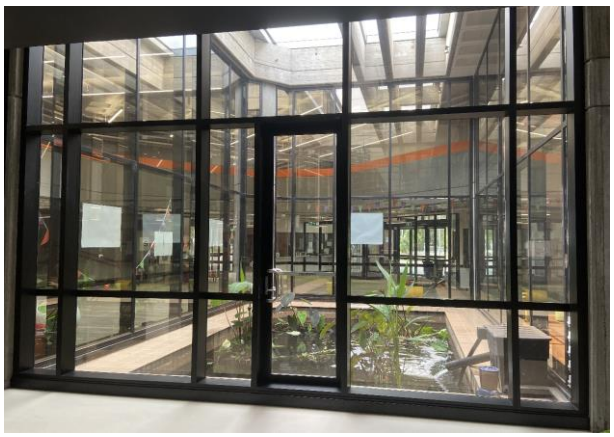


Figure 122 – Atrium at Level 5 with pond and plantings

Source: Urbis



Figure 123 – Atrium at Levels 5 with pre-cast concrete fins spanning across the pond/ open space.

Source: Urbis



Figure 124 – Terraced outdoor space to the east of Stage 2 showing original/ early orange outdoor seating

Source: Urbis



Figure 125 – Balconies in north-eastern corner Level 5

Source: Alexander Mayes



Figure 126 – Balcony located to the east off the Cafeteria

Source: Alexander Mayes

2.4.4. Stage 3

The Stage 3 building was completed in 1976 and was originally designed as a gymnasium. Following the implementation of Phase 1 of the LLW the element is still utilized for its original purpose.



Figure 127 – Aerial view of Stage 3 buildings, circled in red

Source: Alexander Mayes

2.4.4.1. Stage 3 - Exterior

The Stage 3 building is located in the northern section of the site and is linked to the Stage 2 building via an elevated link bridge at Level 5 and 6, spanning across Dunstan Grove. The building is constructed on a sandstone outcrop and spans over five storeys from Level 2 to 6. As with all the buildings within the LLV,

Stage 3 is stylistically consistent with the Stage 1 building. However, due to budget cutbacks, the Stage 3 building was constructed in a simpler manner and with less expensive materials and finishes.

The building is rectangular in form with curved off-board concrete stairwells extending from the middle of the of the northern and southern elevations. The exterior walls of the building primarily feature face brick infill between off-board concrete. Contemporary orange extension to the original concrete balustrades have been added for compliance.

Pre-cast concrete sunhoods feature on the eastern elevation of the building over an outdoor terrace with a pre-cast concrete ramp leading to the outdoor space. The soffit of Level 2 to the west of the gym is clad in timber. All external windows are original black aluminium framed or later steel framed for fire compliance. The roof is primarily clad with corrugated metal sheeting, apart from the roofs of the stairwells, which have only the waterproof membrane.



Figure 128 – Eastern elevation of Stage 3 building viewed from Dunstan Grove.

Source: Urbis



Figure 129 – View from Dunstone Grove of the Stage 3 gymnasium, with the road cutting visible in the foreground.

Source: Urbis



Figure 130 – Northern elevation of Stage 3 building, viewed from Charles Bean Sportsfield.

Source: Alexander Mayes



Figure 131 – Northern elevation of the Stage 3 building set on natural sandstone base, with facebrick walls

Source: Urbis



Figure 132 – Exterior stairwell on northern elevation of the Stage 3 building

Source: Urbis



Figure 133 – Part of southern elevation of the Stage 3 building (left) with the link bridge.

Source: Urbis



Figure 134 – Southern elevation of the Stage 3 building

Source: Urbis

2.4.4.2. Stage 3 - Interior

Internally, the Stage 3 building primarily consists of sports related spaces including basketball court, squash courts, and related learning and teaching spaces and amenities. The materials featured include the characteristic palette of off-board concrete, facebrick and timber paneling. Some new plasterboards walls have been introduced in line with the learning spaces.

Internal doors are primarily constructed of timber (most have been replaced to match existing for compliance) with either metal or timber door cases and architraves. The following subsections provide further details of the various spaces contained within the Stage 3 building.

Circulation

The internal circulation spaces within the Stage 3 building are primarily located in the centre of the building on Levels 5 and 6, with secondary corridors running perpendicular to the main central walkways on each level, providing access to learning and teaching spaces on Level 6 and access to bathrooms and change rooms on Level 5. The primary walkway is open to the triple height basketball space to the west.

The corridors primarily feature off-board concrete columns with brick infill and green carpeted floors, while the ceilings vary between off-board concrete, plasterboard and timber boarded ceilings Staircases are located at the northern and southern ends of the main corridors in the centre of the building providing access to each level. The stairwells feature off form concrete walls with pink metal handrails and tiled treads.

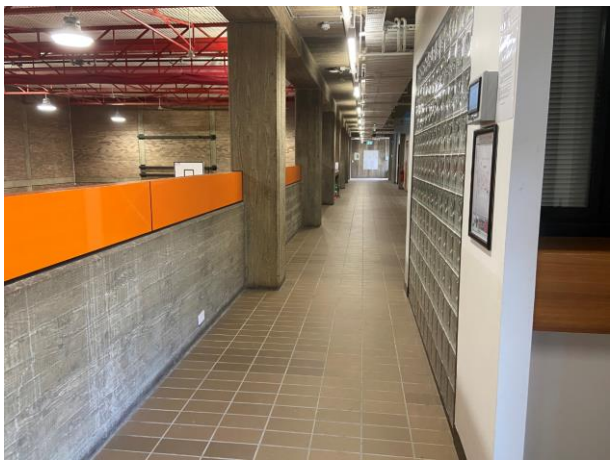


Figure 135 – Mezzanine on Level 5, overlooking the basketball courts (at left)

Source: Urbis

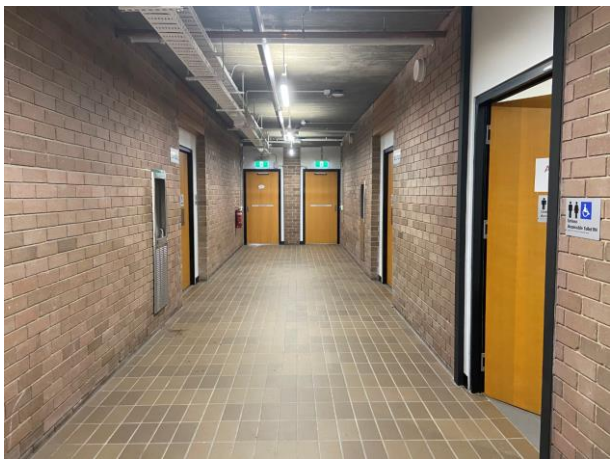


Figure 136 – Corridor on Level 5

Source: Urbis

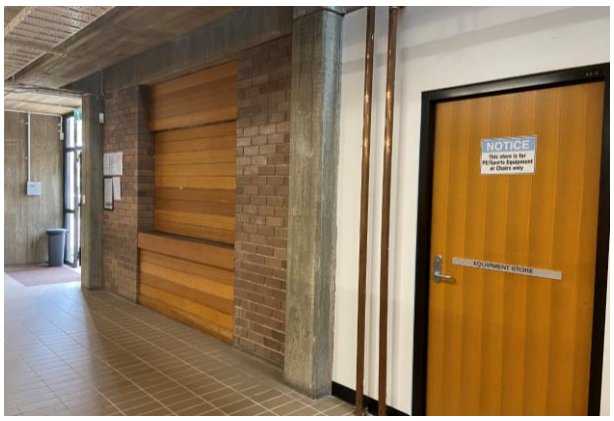


Figure 137 – Corridor on Level 5, showing original canteen opening.

Source: Urbis

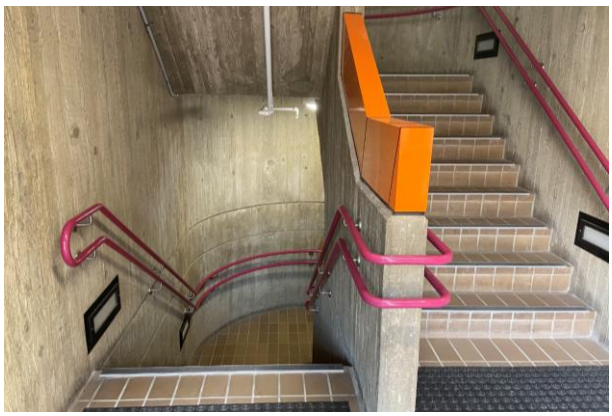


Figure 138 – Spiral staircase with characteristic pink handrail painted to match original.

Source: Urbis

Learning & Teaching

A variety of learning teaching spaces are provided within the Stage 5 building, located across Levels 4, 5 and 6. A double-height space is located at Level 5, which formerly served as a dance studio and is now used as aa woodwork studio (Figure 139). The walls of the space feature off-board concrete columns and exposed floor slabs with brick infill and timber skirting. The ceilings feature exposed steel beams painted red.

At Level 6 are a variety of smaller spaces with plasterboard clad partition walls and ceilings, each opening onto balconies on the northern and southern sides (Figure 140). Another space is located in the middle of Level 6, also featuring plasterboard clad walls and ceilings. These spaces are primarily used for science instruction. At Level 4, there is a long open space located behind the basketball courts, which features brick walls and suspended ceiling.



Figure 139 – Former dance studio now used as woodwork studio.

Source: Urbis



Figure 140 – Science room on Level 6.

Source: Urbis

Sports - Basketball Court and Squash Courts

The Stage 3 buildings is the only building to contain sporting facilities. A basketball court is located on Level 4 (**Error! Reference source not found.** and Figure 141). The space expands over three levels and can be viewed from the elevated walkways which line the eastern wall of the basketball court space. The walls of the space feature off-board concrete columns and exposed floor slabs with brick infill. The ceilings feature exposed steel beams painted red, with a matted straw ceiling. The southern wall of the basketball court featuring timber paneling, with two tilt up doors providing access to storage areas. Two squash courts are located on Level 2, accessed via the southern stairwell (Figure 142 and Figure 143).



Figure 141 – Basketball Court on Level 4, eastern wall

Source: Urbis



Figure 142 – Squash Courts on Level 2

Source: Alexander Mayes

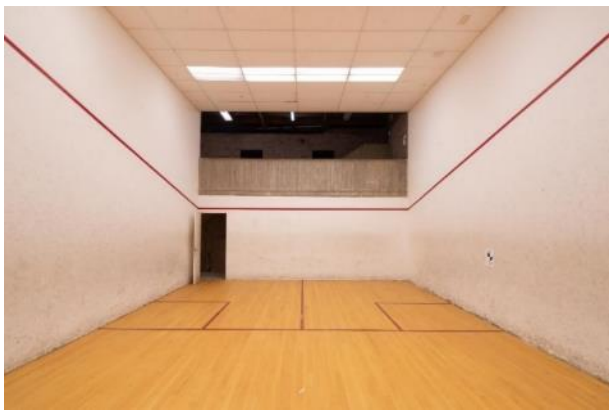


Figure 143 – Squash Court on Level 2

Source: Alexander Mayes

Services/Utilities Spaces

A small number of service and utility spaces are located across Level 2, 4, 5 and 6 of Stage 5. A plantroom is located on Level 4, small service/utility cupboards are located on Levels 2, 4, 5 and 6, and a small kitchenette is located on Level 6 (Figure 145).



Figure 144 – Plantroom on Level 4

Source: Alexander Mayes



Figure 145 – Kitchenette on Level 6

Source: Alexander Mayes

Amenities

Bathrooms and changerooms are located in the center of Level 5. Two individual bathrooms are located on Level 6. The spaces were refurbishment during the implementation of the LLV.

Outdoor Space

Two balconies are located on Level 6 on the northern and southern side of the Stage 3 building, accessed via the learning and teaching spaces (Figure 147). An open paved terraced is located on Level 5, with pre-cast concrete sunhoods extending over the space (Figure 146).



Figure 146 – Views towards terrace outside dance studio located on Level 5

Source: Urbis



Figure 147 – Balcony located on Level 6.

Source: Alexander Mayes

2.4.4.3. Link Bridge

The link bridge is built over two levels and spans across Dunstan Grove. The bridge is located at Levels 5 and 6 and connects the Stage 3 building to the main building complex via the Stage 2 building. The link bridge features off-board concrete and waffle slab ceilings on both levels. The lower level, Level 5 is an open walkway, whilst the upper level, Level 6 is enclosed with aluminium framed windows, providing additional learning and teaching spaces. The original concrete balustrades are surmounting by contemporary extensions for compliance.



Figure 148 – Link bridge viewed from the north-east, with the Stage 3 building visible on the right.

Source: Urbis

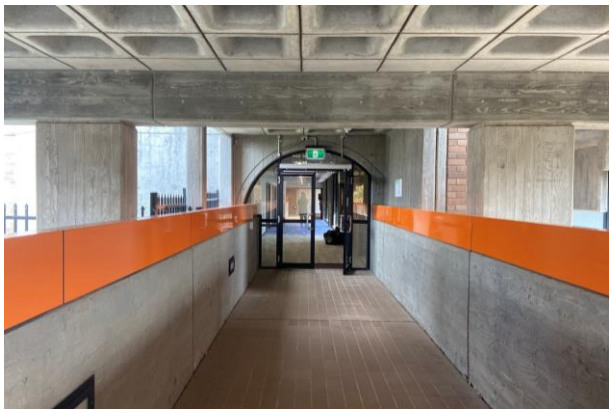


Figure 149 – Link bridge at Level 5

Source: Urbis

2.4.5. Stage 4

The Stage 4 building was completed in 1979 and was originally designed to provide additional teaching and administrative space, staff offices, a computer centre and audio visual services. Following the implementation of LLV Phase 1 this area is now primarily used as open teaching and learning spaces.



Figure 150 – Aerial view of Stage 4 building, circled in red

Source: Alexander Mayes

2.4.5.1. Stage 4 - Exterior

The building is an irregular Y-shaped form which spans across three levels. The building adjoins the Stage 2 building including the main auditorium to the south and the very northern extent of the Stage 2 building. The Stage 4 building created an enclosed courtyard between the stage 2 and 4 buildings. The Stage 4 building matches the earlier buildings in its design and materials, incorporating the characteristic palette of facebrick walls and off-board concrete slabs and details including precast window hoods. The latter stages however tend to comprise more brick construction, with concrete accents. All external windows are black aluminium framed and the roof is clad with a waterproof membrane.



Figure 151 – View south towards section of the north-western elevation of the Stage 4 building

Source: Urbis



Figure 152 – Section of the north-western elevation of the Stage 4 building

Source: Urbis



Figure 153 – Section of the south-western elevation of the Stage 4 building (yellow arrow) and part of the northern elevation of Stage 2 building (red arrow)

Source: Alexander Mayes



Figure 154 – View of courtyard formed by Stage 2 (red arrow) and Stage 4 (yellow arrow) buildings

Source: Urbis

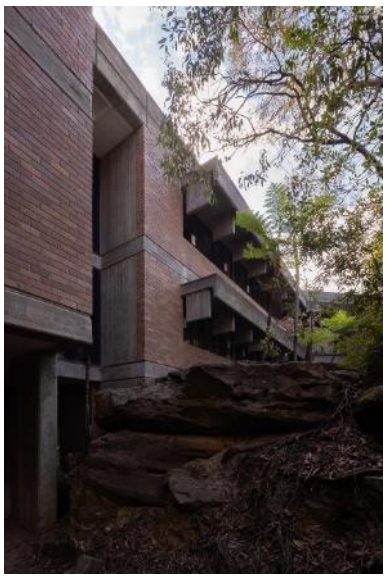


Figure 155 – Section of the eastern elevation viewed from the courtyard.

Source: Alexander Mayes

2.4.5.2. Stage 4 - Interior

Internally, the Stage 4 building primarily consists of leaning and teaching spaces and follows the same layout across each of its three levels. The materials featured internally include off-board concrete and facebrick, with waffle slab ceilings. The following subsections provide further details of the various spaces contained within the Stage 4 building.

Circulation/Teaching and Learning Spaces

The original internal circulation spaces within the Stage 4 building were located in the centre of each of the three levels of the buildings, with access to each of the flanking learning and teaching spaces directly from central hallways. However, the original bricks walls which defined the corridors have largely been removed in this area and the circulation/teaching and learning spaces are now open plan without obvious distinction.

Waffle slab ceilings and exposed services and evident throughout. A staircase is located at the southern end of the building providing access to all three floors and a second staircase is located between Levels 4 and 5. Both staircases feature off-board concrete walls and metal handrails.

Learning and Teaching spaces in Stage 4 are differentiated by the contemporary colored carpet on each floor.

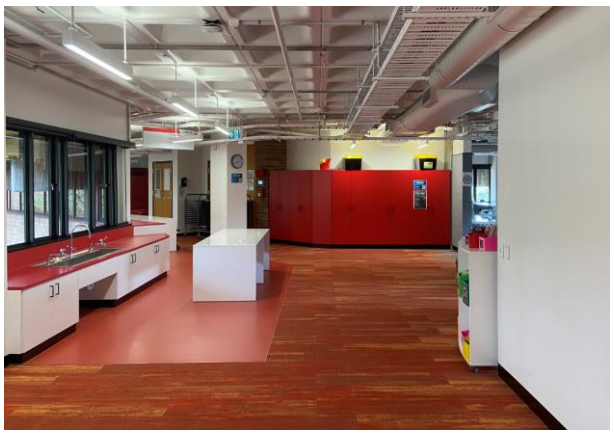


Figure 156 – Teaching/Learning Space on Level 6

Source: Urbis

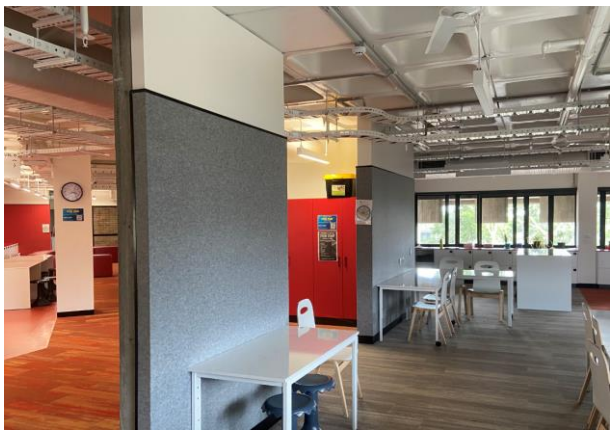


Figure 157 – Teaching/Learning Spaces on Level 6

Source: Urbis



Figure 158 – Teaching/Learning Spaces on Level 6

Source: Urbis

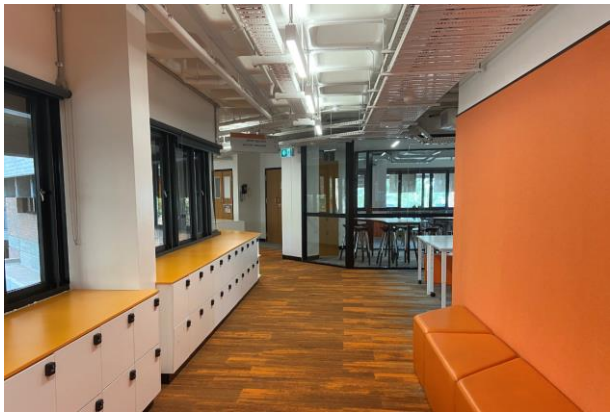


Figure 159 – Teaching/Learning Spaces on Level 5.

Source: Urbis

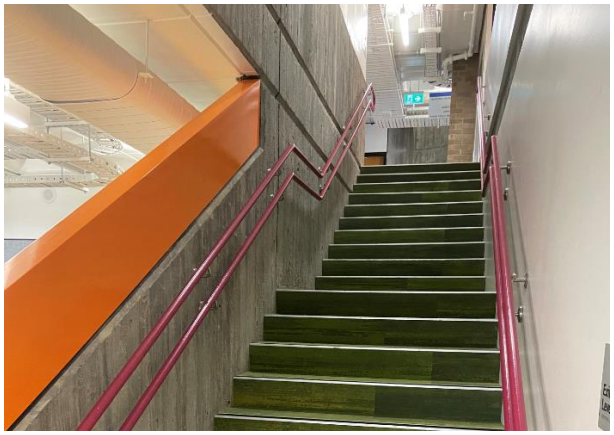


Figure 160 – Staircase between Level 4 and 5.

Source: Urbis

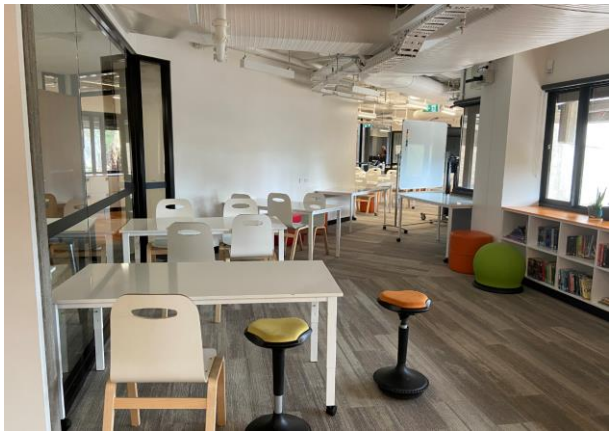


Figure 161 – Teaching/Learning Spaces on Level 5.

Source: Urbis

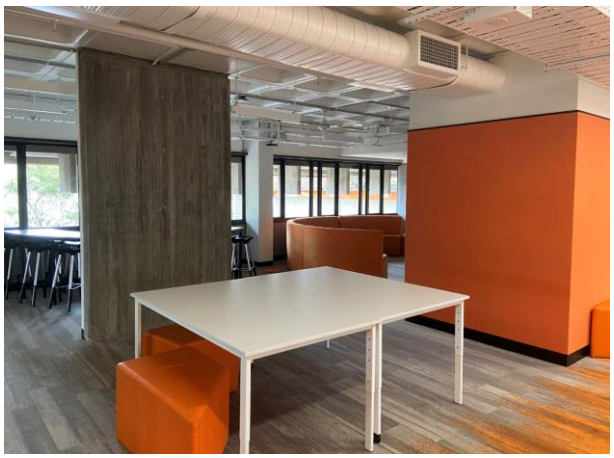


Figure 162 – Teaching/Learning Spaces on Level 5.

Source: Urbis

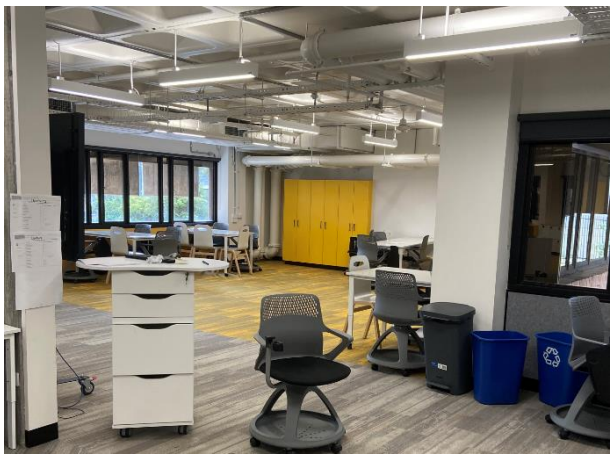


Figure 163 – Teaching/Learning Spaces on Level 4.

Source: Urbis

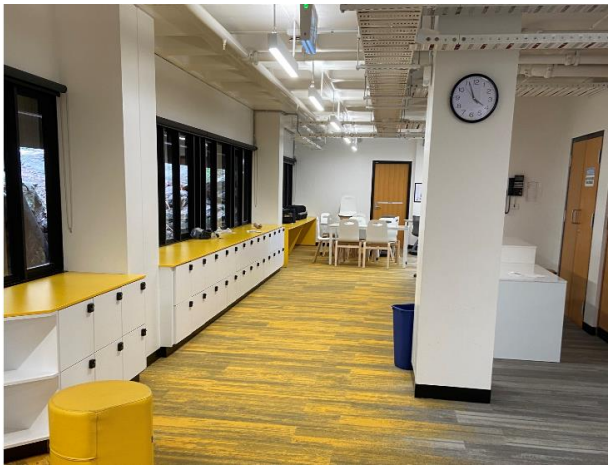


Figure 164 – Teaching/Learning Spaces on Level 4.

Source: Urbis



Figure 165 – Teaching/Learning Spaces on Level 4.

Source: Urbis

Services/Utilities Spaces

A small utility room is located in the north-western branch of each of the three levels of the buildings. Service cupboards are located in the middle of the building on each level.

Amenities

Two single bathrooms are located on each of the three levels, located in the north-western branch of the building. All bathrooms within the Stage 4 building have been recently refurbished.

2.4.6. Stage 5

The Stage 5 building was completed in 1988 and and was originally designed to provide additional teaching facilities and accommodation for the Student Union.



Figure 166 – Aerial view of Stage 5 building, outlined in red

Source: Alexander Mayes

2.4.6.1. Stage 5 - Exterior

The Stage 5 building spans over five levels and is located in the south-western portion of the Lindfield Learning Village site. It is linked to the Stage 1 building via an internally linked walkway at Levels 1 to 4. The Stage 5 building matches the earlier buildings in its design and materials, incorporating the characteristic palette of facebrick walls and off-board concrete slabs and details including precast concrete window hoods, with waffle slab ceiling inserts. The latter stages however tend to comprise more brick construction, with concrete accents.



Figure 167 – Western elevation of Stage 5 building

Source: Alexander Mayes



Figure 168 – Northern elevation of Stage 5 building

Source: Alexander Mayes



Figure 169 – Angled view of western elevation

Source: Alexander Mayes



Figure 170 – Southern elevation of Stage 5 building

Source: Alexander Mayes



Figure 171 – Southern and eastern elevation of Stage 5 building

Source: Alexander Mayes

2.4.6.2. Stage 5 - Interior

The interior of the Stage 5 building primarily consists of learning and teaching spaces. Each level of the Stage 5 building is arranged similarly. The materials featured included off-board concrete facebrick and timber panelling. Internal doors are primarily constructed of timber with either metal or timber door cases and architraves. The following subsections provides an overview of the spaces within the Stage 5 building.

Circulation

The internal circulation spaces within the Stage 5 building consists of one main corridor and secondary corridors across each level, two staircases and a lift. Internal circulation spaces within the Stage 5 building provides access to the learning and teaching spaces spread across each level. The corridors primarily feature off form concrete columns with brick infill and green carpeted floors. The ceilings of Levels 0, 2, 3 and 4 feature waffle slab ceilings and suspended ceilings.

Level 1 differs to the other levels in its finishes, due to more recent alterations. Walls of circulation spaces feature small areas of off-board concrete and brick; however the walls are primarily partition walls clad with plaster board. Ceilings are dropped and clad with plaster board.

A lift is located on the western side of the building in the central of the main corridor. The two staircases are located to the north and south of the lift well, however separated due to the step in the buildings elevation. Consistent with the earlier stages, the staircases feature off-board concrete walls with metal handrails and tiled treads.

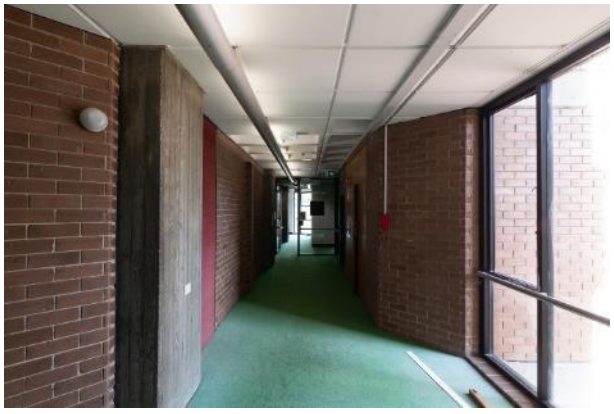


Figure 172 – Typical main corridor on Level 0, 2, 3 and 4

Source: Alexander Mayes



Figure 173 – Typical secondary corridor on Level 0, 2, 3 and 4

Source: Alexander Mayes



Figure 174 – Typical main corridor on Level 0, 2, 3 and 4

Source: Alexander Mayes

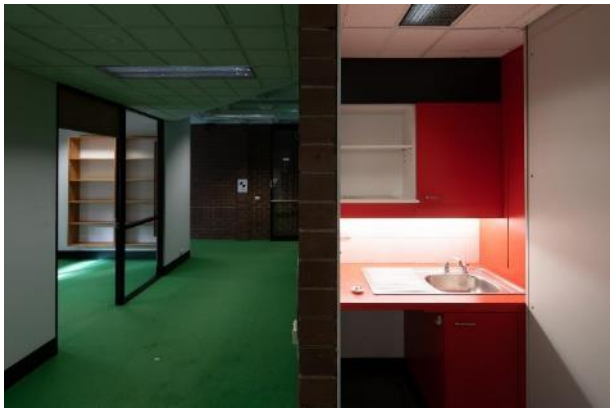


Figure 175 – Typical secondary circulation space with kitchenette on Level 0, 2, 3 and 4

Source: Alexander Mayes



Figure 176 – Circulation space on Level 1

Source: Alexander Mayes



Figure 177 – Secondary circulation space on Level 1

Source: Alexander Mayes



Figure 178 – Stairwell

Source: Alexander Mayes

Learning & Teaching

Learning and Teaching spaces are present across all five levels of the Stage 5 building and are located in the same position across each floor. The Learning and Teaching spaces on Levels 0, 2, 3 and 4 plasterboard partition walls (where they adjoin another learning and teaching space), facebrick walls (where they adjoin circulation spaces). Ceilings are typically waffle slab or suspended.

Level 1 differs from the other levels in its finishes due to its more recent alterations. Walls in the Learning and Teaching spaces feature small areas of off-board concrete and brick, however the walls are primarily partition walls clad with plaster board. Ceilings are dropped and clad with plaster board.



Figure 179 – Typical large learning and teaching space on Level 0, 2, 3 and 4

Source: Alexander Mayes



Figure 180 – Typical large learning and teaching space on Level 0, 2, 3 and 4

Source: Alexander Mayes



Figure 181 – Typical small learning and teaching space on Level 0, 2, 3 and 4

Source: Alexander Mayes



Figure 182 – Typical large learning and teaching space on Level 0, 2, 3 and 4

Source: Alexander Mayes



Figure 183 – Large Learning and Teaching space on Level 1

Source: Alexander Mayes



Figure 184 – Large Learning and Teaching space on Level 1

Source: Alexander Mayes

Services/Utilities

Small service cupboards are located on the western wall of the main corridors of each level of the Stage 5 building. Service cupboards are located in the middle of the building on each level. The eastern half of Level 0 is built into the sandstone bedrock and is used are service spaces, including a plant room.



Figure 185 – Service space on the eastern half of Level 0

Source: Alexander Mayes



Figure 186 – Plant Room on Level 0

Source: Alexander Mayes

Outdoor Space

Outdoor spaces in the Stage 5 building are located only on Level 1 and are location on the northern and southern ends of the floor. Balustrades for the northern and southern outdoor spaces are of off-board concrete, while the two small corner balconies have metal and glazed balustrades.



Figure 187 – Balcony on Level 1 on northern elevation

Source: Alexander Mayes



Figure 188 – Balcony on Level 1 on northern elevation

Source: Alexander Mayes

3. HISTORICAL OVERVIEW

3.1. HISTORICAL SOURCES

In 2004, two heritage consultancy firms undertook separate heritage assessments of the UTS Ku-ring-gai Campus, namely:

- Graham Brooks and Associates Pty Ltd, *UTS Campus Ku-ring-gai Heritage Assessment and Conservation Strategy*, 2004; and
- City Plan Heritage, *UTS Ku-ring-gai Campus Heritage Assessment*, August 2004.

Both reports contain a comprehensive site history using virtually identical resources and references. However, for the purposes of this CMP Section 3.2.1 is reproduced in full from the City Plan Heritage Report, while Sections 3.2.2 to 3.2.15 and 3.2.19 of this report are reproduced directly from Graham Brooks and Associates Pty Ltd, *UTS Campus Ku-ring-gai Heritage Assessment and Conservation Strategy*, 2004.

The original research methodology for both firms included the resources of UTS Archives, NSW Land Registry Services, National Library of Australia (Trove), NSW State Archives & Records, Ku-ring-gai Council, NSW Department of Commerce, former Government Architects Office and NSW Public Works. In addition, GBA consulted with the original Project Architect, David Don Turner, and Landscape Architect, Bruce Mackenzie.

As there has been a considerable passage of time since publication of both heritage assessment reports, the research focus for this CMP has been on the later history of UTS Ku-ring-gai Campus, namely, 2004 to date.

A complete Bibliography is contained in Section 10.4 of this report.

3.2. HISTORY OF THE PLACE

3.2.1. Introduction

A major part of today's Campus site is located on two early land grants to Thomas Jenkins. According to historical research the first land grant of 103 acres occurred in February 1869 and the second land grant of 69 acres occurred three years later in August 1872 (Portions 441 and 440). Both of these land grants bordered Blue Gum Creek. The land remained undeveloped until his widow Maria Elizabeth Jenkins decided to subdivide the property, in order to facilitate the sale of the land. In this regard, sales of the newly subdivided lots commenced in 1913. It took several years to sell the lots with the final lots sold in 1923.

John Jenkins (a fruit merchant of Chatswood who it is believed was probably related to Maria Jenkins) purchased several lots around the end of Shirley Road. Each lot had a covenant to ensure that any building constructed thereon was worth no less than 300 pounds. In 1915 the Commonwealth of Australia acquired part of John Jenkins original land grant.

In September 1876, a grant adjacent to Thomas Jenkins land was made to Alexander Couper and Hugh Henry Ould. Two years later the ownership of the land was transferred by James Channon (manufacturer), Isaac Doust (importer) and Thomas Edward Bray to several tenants-in-common. They were James Channon, Isaac Doust, Maria Thomas (widow), Robert Thomas (storekeeper of Parkes), Emily Bray (wife of Thomas Bray), Charles Stockwell (engineer), Edward Nathan (Cobb & Co manager of Forbes), and Henry Crouch (surveyor of Orange). The Commonwealth resumed parts of this land totalling 22 acres in 1915 and 1916.

An earlier grant of 40 acres was made to Henry Wood, in January 1842. When this land was later subdivided, Lots 4 and 5 totalled just over 2 acres with a frontage to Greville Street. This land was later purchased by the Commonwealth of Australia in 1925. In the same year the Commonwealth of Australia also acquired a strip of land along the Lane Cove River, totalling around 1 acre, which had been granted to Maria Jenkins in March 1895. By the end of 1925 the Commonwealth holding was around 73 acres.

In 1935 ownership of part of the Commonwealth property was transferred to Ku-ring-gai Council for road works together with additional resumed land located to the south of Blue Gum Creek. By 1939, the Commonwealth's total holding had increased to just over 107 acres. The only recorded user of this land during this period was the Army who had rifle range on the slopes between 1915-1917. The land was used

by an Army base located on the former CSIRO Site on Delhi Road during World War II. The Commonwealth sold parts of these lands in 1958 and 1959.

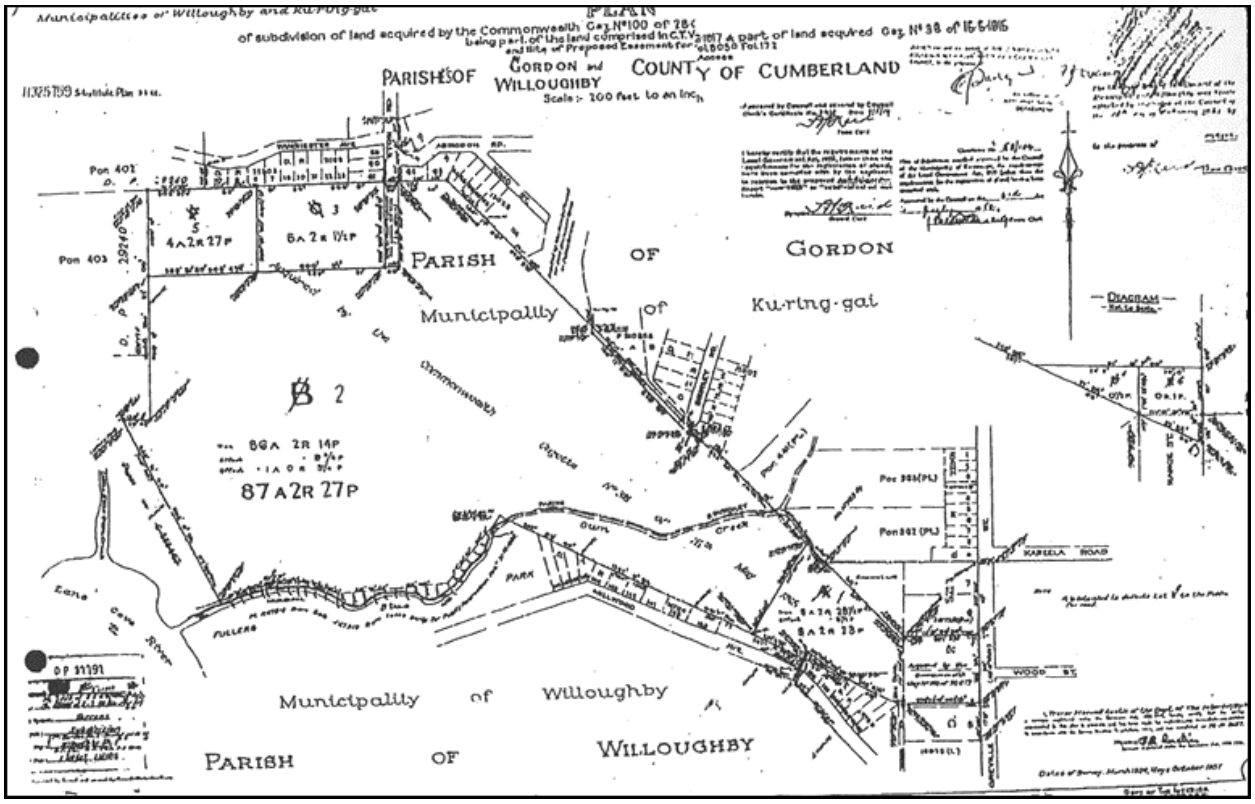


Figure 189 - Deposited Plan 32292, showing the Commonwealth land holding after several sales in the late 1950s. Lot 2 was subsequently subdivided further in Deposited Plan 523448.

Source: NSW LRS

In 1961, the Minister of Education for the State of New South Wales acquired the subject site (Lot 1 of Deposited Plan 523448, 18.9 hectares and Lot 5 of Deposited Plan 32292, 1.9 hectares, illustrated below) from the Commonwealth.

In September 1971, the William Balmain Teachers College located to the site. After the College was taken over by the University of Technology, Sydney, ownership of the car park land (Lot 5) was transferred to UTS in 1994 and finally the ownership of Lot 1 (the main Campus) was transferred to UTS in 1997.

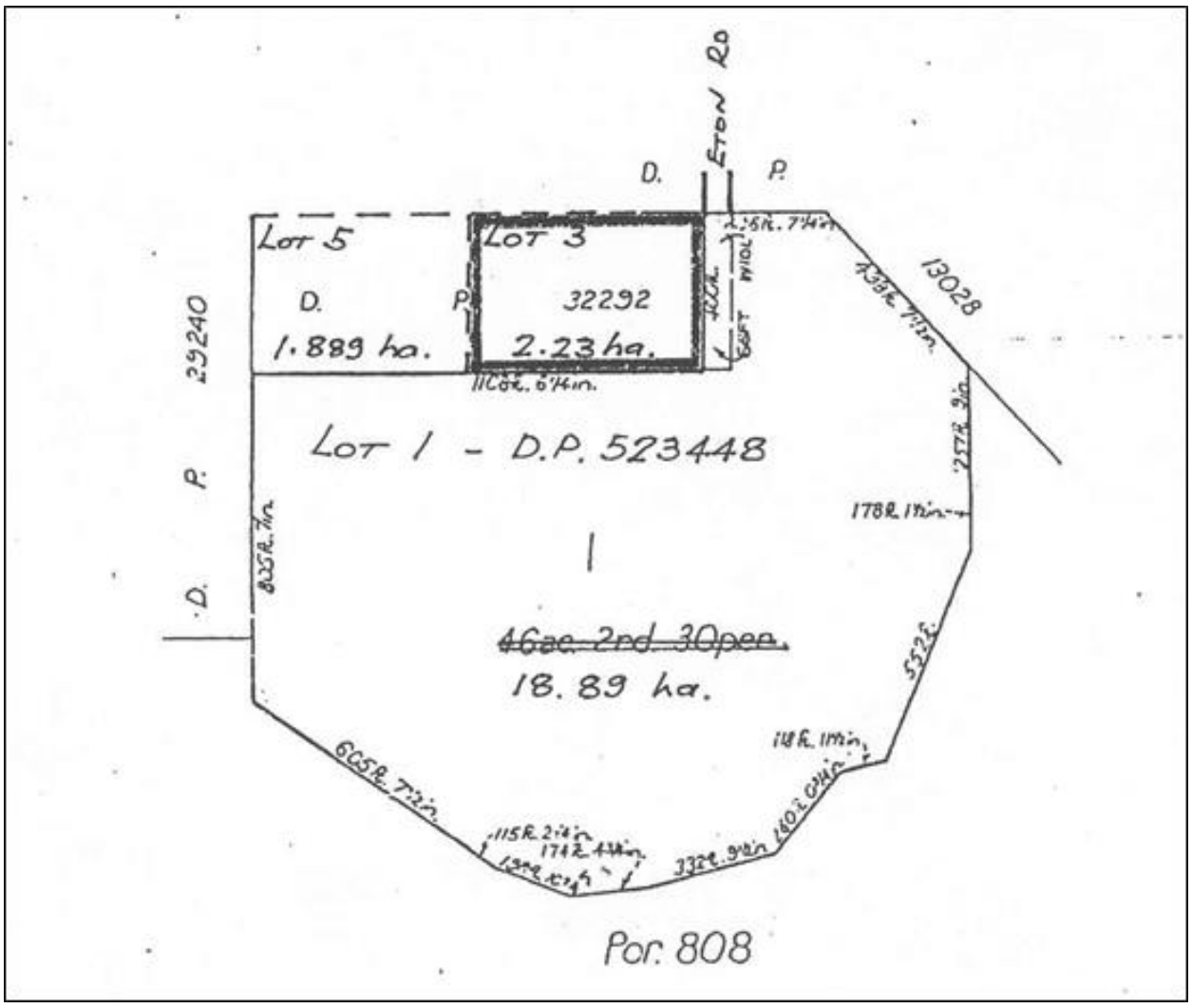


Figure 190 - Plan of the College site (Lot 1 – DP 523448).

Source: NSW LRS

3.2.2. William Balmain Teachers College, Balmain

The William Balmain Teacher's College began its life in the suburb of Balmain in 1946, occupying the buildings formerly known as the Smith Street School. It opened in 1887 and served as a public school until 1945, with only a small interruption of activities from 1890 to the beginning of 1915 when it was known as a Superior Public School.

Due in great measure to World War II, there was a considerable shortage of teachers in New South Wales; by the end of 1942 the Department of Education had closed 79 schools. This shortage worsened at the close of the war, with a concerted effort required on the government's part to boost the numbers of teachers in active service. This related to catering to the increasing population, expanding curriculum into secondary schooling, raising the minimum leaving age, and an increase in immigration.

The William Balmain College was the first institution to attempt redressing this shortage. The site itself did not seem ideal:

> *Old Smith Street school, quietly decaying in its slum setting, hardly seemed a good choice even for what to be a temporary college. But there it was… more than half unoccupied, fairly centrally placed, repairable*.[2]

[2] Cited in Taylor & Turner, *To Enlighten Them Our Task*, p12

A report by the Minister of Public Instruction in 1946 hailed the opening of the College as a ”practical expression of the intention to increase the number of fully-trained teachers in public schools.” The only other institution that could compare with the Balmain College was Armidale Teachers’ College and Sydney Teachers’ College, and they had suffered similar problems.

The Sydney Teachers’ College, originating from the Fort Street Model School, was opened in 1905 in second-hand buildings at Blackfriars, and moved after World War I to new buildings at the University of Sydney. Principal Mackie emphasised core knowledge of disciplines and curriculum rather than theories and practices of teaching. With a shortage of teachers in country areas, and growing discontent at the sole teaching institution in New South Wales, it was evident that some change had to be made. The Minister of Public Instruction, D.H. Drummond, contended that Sydney Teachers College as the single institution in the state, urged country children to relocate and leave a void in the regional areas. Once “country children had savoured” the delights of the city, they were unlikely to return. This led to the formation of the Armidale Teachers’ College in 1928.[3]

To compete with the Sydney Teachers’ College and Armidale Teachers’ College, mass renovations were required to render the former Smith Street school fit for training. For the first six months of training, the would-be teachers learnt against a background of continual hammering, sawdust, paint fumes, and construction noise. Modifications to the site cost twelve thousand pounds; alterations and furniture was estimated at seven thousand pounds, with the remainder to be spent on books and equipment including a reference library. Even by May 1946, basic electrical fittings and connections were incomplete; while most of the wiring was in place, the switchboard was inoperative. One week before the official opening, the electrical work had not been completed, with the school only recently receiving microscopes (on loan from Armidale Teachers’ College) and other essentials. In summary, Balmain Teachers’ College was clearly established as a makeshift temporary college, refurbished and furnished on a post-war shoestring budget.

Ideologically it was highly conservative, with an emphasis on reproduction of traditional practices rather than innovative teaching strategies. Such policies became noticeably old fashioned in the 1960s, with schools searching for new ways to present information, motivate and manage students, and explore technology. This coincided with wider socio-cultural changes in science, politics, society and education, affecting all aspects of teacher education including music, biology, and history. Current affairs relating to gender and cultural equality, rights and freedoms were absorbed and reflected in the student body, and the Balmain College sought to address such pedagogic shifts in perspective as well as provide resources for a rapidly increasing number of enrolments. This last factor was a severe limitation at the Smith Street School, and it soon became clear that the student body had outgrown the capacity of the College. Despite the struggles over physical and spatial shortcomings and influences by current events, the students remembered a state of ‘belongingness,’ with a warm and friendly atmosphere reminiscent of a “close knit community.” A building program of the mid-1950s and 1960s saw the addition of two lecture rooms and a Common Room for Women students, but these extensions failed to halt the overcrowding. In 1962 Principal Greenhalgh wrote that:

> *The grounds are inadequate in size (half an acre), 270 students, 30 staff, a huddle of buildings and additions, ‘the tree’ (a College tradition) and a two-teacher infants’ school, occupy the…area…The College buildings are cramped and inadequate. The lingering grace of cedar doors and moulded fittings does not compensate for lack of space*.[4]

Following hard on Balmain’s heels, providing additional competition for limited resources, were several new colleges around NSW, including Wagga Wagga in 1947, Newcastle in 1949 and Bathurst in 1951. As early as 1956 the poor educational conditions across the state became a subject for discussion at the NSW Teachers’ Federation conferences. In that year a motion was passed to intensify a campaign for new teachers’ colleges to be built in NSW, including one at Wollongong, but it took a further fifteen years before a Commonwealth grant provided an opportunity to achieve this proposal. By this time the College had been condemned as “The Black Hole of Balmain,” known as a “death trap” and “a disgrace.”[5] In the meantime, temporary arrangements to limit overcrowding were made between Balmain and Orange Grove Public School from 1957 to 1969, followed by North Sydney Technical High School from 1970. This spill over continued during the initial construction and occupation of the new and larger Ku-ring-gai campus site.

The proposal for a new Ku-ring-gai campus was part of a wider educational and architectural movement that saw the incorporation of several styles into a new pedagogic form. Ku-ring-gai was part of what became a

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[3] Turney, C & Taylor, J., To Enlighten The Our Task, 1996, , p21

[44] *Loc. Cit*., p121

[5] *The Sun*, 31 August 1966

family of bushland campuses built throughout Australia in the late 1960s and 1970s that were linked through their siting and designs. Such institutions included the Macquarie University in the nearby suburb of Ryde, Mitchell College of Advanced Education in Bathurst, the Townsville Teachers' College (later College of Advanced Education, then James Cook University), Curtin University in Western Australia, and Griffith University in Brisbane, Queensland.[6]

3.2.3. Establishment of the College at Lindfield

Dr Harold Wyndham, Director-General of Education in NSW between 1952 and 1968 indicated in 1955 that a new site for the Balmain college had been under consideration and that a possible new site had been identified. He was apparently aware that the Chatswood Rifle Range had been abandoned by the Army and possibly available for purchase by the State. It was Wyndham's policy in this period to utilise surplus Departmental funding at the end of successive Treasury financial years to purchase more land for schools and teachers' colleges. This practice ensured that there were sites available when circumstances permitted the construction of new facilities. "To Enlighten Them Our Task" describes an interview with Rae McLintock, a former Liaison Officer in the Department of Education during the planning of new colleges at Lindfield, Newcastle and Goulburn. In the interview McLintock states his belief that it was Wyndham, well known as a forceful personality, who wanted a college on the North Shore. McLintock described the heavily wooded land as "an appalling site in terms of access, transport and parking, the bottom of the barrel of sites available for a teachers' college".[7]

There is a file card in the Properties Unit of the Department of School Education, headed Chatswood Teachers' College, that implies there was consideration being given to the site as early as 1955. A plan in that file, prepared by the Public Works Department, apparently in 1960, also indicates that the Department was considering the site prior to its purchase from the Commonwealth in 1961. Land in Chatswood had already been secured for a high school as early as 1954, with the resumption of a site in Centennial Avenue.

Although a number of alternative sites were considered for a possible teachers' college on the North Shore, it is apparent that Wyndham had already determined that the old rifle range site would be the most suitable. At the time land was available near the newly announced Macquarie University. The future college was intended to serve the population on the Manly peninsular and sites in Manly and Narrabeen were among the many investigated. Wyndham's view prevailed, despite the transportation and access difficulties that the site would present.

From the beginning of the 1950s the NSW Teachers' Federation had begun calling for new teachers' colleges to be built, a campaign that intensified after the 1956 Annual Conference. Increased pressure came from other interest groups, as in 1955 the Lane Cove Trustees resolved to ask for some of the former Chatswood Rifle Range, given that not all was expected to be used as a Teachers' Training College:

> *Mr Max Allen submitted plan of this area which he has ascertained was to be used for a Teachers' Training College. As it was possible that the whole area would not be required, it was decided to write to the Dept of the Interior and Dept. of Education asking that a portion of the area not required for educational purposes be added to the Park reserve.*[8]

The land was transferred from the Commonwealth to the NSW Minister of Education on 3 February 1961. It then comprised a parcel of 92 acres (about 40 hectares), at a cost of 44,000 pounds. It was acquired "for the purposes of the Public Instruction Act of 1880", but was not initially identified for any specific reason. The land had originally been part of the lands granted to Henry Wheeler, Alexander Cooper and Henry Ould, and Thomas Jenkins, and initially part of the one thousand acres promised to William Henry by Governor Bligh.[9]

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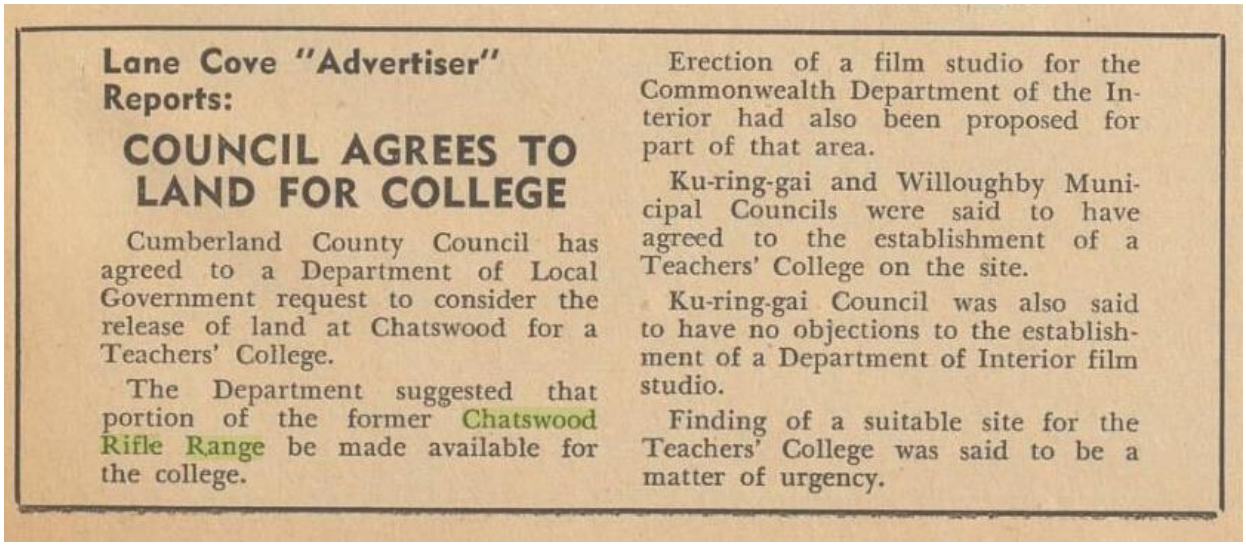
[6] Jacqueline Urford, cited in "Landmark Site Under Threat", *Architecture Bulletin*, January 2004

[7] Cite in Turney, To Enlighten Them Our Task, p. 127.

[8] Minutes of Meeting of Lane Cove Trustees, 29 October 1955.

[9] Lane Cove National Park Records, file #249, 1985



Lane Cove "Advertiser" Reports:

COUNCIL AGREES TO LAND FOR COLLEGE

Cumberland County Council has agreed to a Department of Local Government request to consider the release of land at Chatswood for a Teachers' College.

The Department suggested that portion of the former Chatswood Rifle Range be made available for the college.

Erection of a film studio for the Commonwealth Department of the Interior had also been proposed for part of that area.

Ku-ring-gai and Willoughby Municipal Councils were said to have agreed to the establishment of a Teachers' College on the site.

Ku-ring-gai Council was also said to have no objections to the establishment of a Department of Interior film studio.

Finding of a suitable site for the Teachers' College was said to be a matter of urgency.

Figure 191 – Lane Cove "Advertiser" Reports: Council Agrees to Land for College

Source: Education: journal of the NSW Public School Teachers Association, Vol 39 No 12 (1 October 1958), p7

The land parcels acquired by the State Government for educational purposes comprised Lots B and F of the Commonwealth land. These eventually became Lots 2 and 5 of DP 32292. By the time the land was transferred to the University of Technology Sydney, through its amalgamation with the Ku-ring-gai College of Advanced Education in 1992, the overall parcel had been reduced to approximately 20.8 ha. The remainder of the land had been acquired at various times by Lane Cove National Park, Film Australia and the Commonwealth Acoustic Laboratories.

By 1964, there seemed to be a widely held belief within the staff at Balmain that their new college would inevitably be erected at the Chatswood site. Despite his strong support for the selection of the site, lack of funding meant that the new college was not erected until after Wyndham had retired.

The decision to locate a new teachers' college in Ku-ring-gai also had to wait for the election of a Liberal Government, given the unlikely tendency for a Labor Government to take such an initiative. Mr Harry Jago, Member for Gordon in the newly elected Askin Government was quickly under pressure from staff at Balmain to move toward a decision about the siting of a new college. An article in *Education,* on 1 December 1965, stated:

> *The Askin Government came into office blushing with promises for education – "A New Look for Education" – the speeding up of school building, greater expenditure on kindergartens, the establishment of new teachers' colleges. These promises are not consonant with a proposal for a sharp cut in the works programme for education. They cannot be allowed to dissolve like gossamer cobwebs before the first difficulties encountered.34*

The 1963 choice of Ryde as the site for the new Macquarie University may have also influenced the choice of the former Chatswood Rifle Range site. By the early 1950s, some 42% of the first-year enrolments at Sydney University came from the greater North Shore area, stretching from Hornsby to Warringah.

On 14 February 1967, the Government formally announced that the Balmain Teachers' College would be relocated to Lindfield. The long-term planning that had seen the Director-General pushing for the purchase of the site since the late 1950s facilitated this decision. Strong community pressure from a group known as ACEANS, the Association for the Civic and Educational Advancement of the Northern Suburbs of Sydney, which had been influential in articulating the case for Macquarie University, was also a factor in the eventual choice.

3.2.4. Project Formulation, 1967

3.2.4.1. New Colleges at Ku-ring-gai, Goulburn and Newcastle

On 14 February 1967, the Commonwealth Government announced the provision of $7.5 million in unmatched grants to the NSW Government for the building of three new teachers' colleges, at Ku-ring-gai, Goulburn and Newcastle.

The *Sydney Morning Herald* carried the following announcement on 15 February:

One of the colleges to cost $3 million and accommodate 850 trainee teachers, will be built at Chatswood. It will be on a site near Fullers Bridge in an area bounded by Lady Game Drive, Winchester Avenue and Millwood Avenue and will replace the antiquated Balmain Teachers' College, which now accommodates 350 trainee teachers… Mr Cutler (Minister for Education) said the Commonwealth grant was an outright grant and resulted from the Commonwealth Government's election promise to help in financing teachers' college construction if returned to office.35

A three man Committee was appointed to oversee the building of the new colleges, including the preparation of the educational brief for the buildings. The Committee members were Rae McLintock, David Turner and Rob Underwood. Rae McLintock had been a Registrar at Armidale Teachers' College between 1954 and 1963, when he returned to the NSW Department of Education to work on the teachers' college buildings. David Turner, an Englishman, was an architect who had joined Government Architect's Branch of the NSW Department of Public Works in 1963. Ron Underwood was a Balmain College lecturer who had been seconded to the Education Department as liaison officer for the colleges.

At the end of 1968, Dr Harold Wyndham retired, to be replaced as Director-General of Education by David Verco, who had been the senior officer to McLintock and Underwood in the planning for future teachers' colleges. George Muir, who was later to become the first Principal of the Kuring-gai College of Advanced Education, became Director of Teacher Education in NSW. By this stage plans for the new college were well under way. The New Colleges Committee planned and oversaw the construction of the new college on the Lindfield site.

From 1967 David Don Turner was administratively responsible for the architectural supervision of the new colleges at Newcastle and Goulburn. He was however personally responsible for the design of the new Lindfield college. The planning and design of the new Ku-ring-gai College was thus carried out simultaneously with that for the two other institutions. The architectural imagery for each college varied considerably from its sisters, due in part to discussions held with existing college staff to determine their individual needs:

> *It was agreed that each college should have a unique identity. The buildings form an interesting contrast, each with different sites, considerably differing educational briefs, and each making use of different constructional techniques and materials*.[10]

Goulburn College, whilst anticipating similar levels of student enrolment to Ku-ring-gai, catered primarily for primary school teacher training, and included student residential accommodation. The design brief for Goulburn College was to:

> *Provide a self contained residential teacher training college. The general concept was to create a pedestrian village with the union building, assembly hall, library, theatre, and main quadrangle as the centre of activity. The residential buildings are linked to the centre through the union building and the teaching blocks through the library. Roads and car parks are external to the building complex and all buildings are accessible to each other under cover*.[11]

The building complex was set on 45 acres of cleared land with uninterrupted views in all directions. Situated on the Wollondilly River just outside of Goulburn, the site was on high ground and the buildings followed the contours of the land. While an attempt was made to make the pitched tiled roofs blend with their surrounds, the land clearing prior to construction differed from the approach at Ku-ring-gai campus, and following construction of Stage One extensive tree planting and windbreaks were required. All buildings at Goulburn were heated to compensate for the colder climate. Externally the walls were of cream face brick, topped with swiss-pattern terracotta roof tiles. Internal colour schemes and materials were painted plaster and cream face brick, brown quarry tiles on the floors with parquet and carpet, and the ceilings were finished with painted off-board concrete, timber boarding and painted plasterboard.

In contrast, Newcastle was designed for a larger student body, with 1300 enrolments that extended across the basic secondary school training and into industrial arts, science, commerce and music. It was designed as:

> *A large single-level flat roof under which is housed an integrated multi-level complex comprising all activities except physical education and the stores/maintenance workshops…Stage 1 is planned*

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[10] Architecture in Australia, June 1971, p?

[11] *ibid.*

around a central paved courtyard which provides an 'identity' for the department and functions also as an outdoor work area…. Teaching departments are planned around a major courtyard with shared facilities such as the lecture theatres and library/resources centre being centrally located to all departments. All sections of the college complex are accessible by a central indoor street or concourse. The outline of the 'main building' and the multiple variations in floor levels are largely obedient to the contours of the site…. The college building group will have immediate visual impact when seen from the future motorway.[12]

This concept was closer to that represented at the Ku-ring-gai campus, following the topography and using an internal street.

The Newcastle Training College was set on 58 acres adjoining the Shortland Campus of the University of New South Wales, and the land covered by tall spotted gums and light undergrowth, excepting 6 acres of cleared land. The external walls featured 20ft column centres and deep recesses; internally it involved brick box-style columns with 10ft centres supporting the roof and floor levels. The external walls were of cream face brick with ribbed aluminium roofing. Internally, the walls were of painted plaster and cream face brick, with floor finishes of glazed red quarry tiles, parquet and carpet and a ceiling of sprayed asbestos, a painted ribbed concrete floor structure and painted plasterboard.

The William Balmain College, however, was intended as a more secluded structure, to be set discreetly within the natural landscape rather than creating a visual impact. As the third of the colleges, William Balmain would keep the focus on secondary teachers, specialising in science-related disciplines. When finished, the Lindfield-based William Balmain College was designed to allow free flow on five levels for teaching flexibility with large folding doors to central circulation spaces. Unlike the Goulburn and Newcastle sites, with their externals of cream face brick, the William Balmain building used infill face brick and a built up membrane for the roofing, as well as polystyrene insulation, and ceramic or asbestos cement tiles.

Ceiling finishes were of painted concrete, timber or plaster, with suspended ceilings in airconditioned spaces. Overall, William Balmain was the most costly project at a total of $3.4m for Stage 1, compared to $2.7m for Goulburn and only $930,000 for Newcastle. While both William Balmain and Goulburn sites were located close to riverfront land, the Newcastle site was primarily defined by the deep gully near the western boundary and a somewhat shallower gully in the north – east, and bounded on two sides by roadways.

The three colleges bore a relationship to each other in terms of siting, structure, design and materials, but were architecturally distinctive according to their respective requirements and in response to the environment. The Government Architects Office at the time, under the leadership of Peter Webber, gave strong support to the individual design talents of its staff.

An article in the June 1971 edition of *Architecture in Australia*, pp. 422, covered the three new colleges:

These three colleges are the first new colleges to be built in NSW for many years. Funded by the Commonwealth Government to each state, it was determined that these buildings should be of high quality and set new standards for the teaching profession.

In NSW, the Department of Education made available from the outset a full time planning unit with an educationist, R Underwood, and an administration officer, R McLintock (succeeded by B Howle). They were responsible for close collaboration with the Public Works Department, Government Architect's Branch and the architects involved. Discussions were held with existing teachers college staff for final requirements.

It was agreed that each college should have a unique identity. The buildings form an interesting contrast, each with different sites considerably differing educational briefs, and each making use of different constructional techniques and materials…Thus whilst the three colleges were designed in the same office by separate architects in a planning team they reflect these different influences. Stage One of the colleges is now complete, stage two is either commenced or shortly to do so while the later stages are in planning only.[13]

3.2.5. Site Planning and Organisation

David Don Turner became the architect within the Public Works Department responsible for the design of the new college at Lindfield, under the overall responsibility of the Government Architect, E H Farmer. Turner

[12] *ibid.*

[13] *ibid.*

had worked on smaller projects for other teachers' colleges and had been successful with a Blackett Award from the NSW Royal Australian Institute of Architects for his Public Works Administrative Building in Albury.

There was extensive consultation with the staff on the facilities and equipment that would be needed for teacher education at the new college. At the Balmain Staff Meeting of 20 March 1967, Ron Underwood advised staff that there was "a unique opportunity for Public Service employees to have a say in their future working facilities".[14] The Balmain staff also had an influence on what was built at Newcastle and especially at Goulburn. Underwood's previous connections at Balmain may have been the reason for this close consultation and it appears that consensus was arrived at fairly quickly.

The Commonwealth provided all of the funds for the new colleges and in amounts that were previously unheard of in State teachers' colleges. The Commonwealth Government set up a supervisory committee under Professor Madgwick, Vice Chancellor of the University of New England, to ensure that the grant was used to develop teacher education and to make sure that it was used for high quality buildings. It appears that the Madgwick Committee actually facilitated enhanced levels of spending, with the new college planned and built on an undreamt of scale.

Most of the detailed planning was done in consultation with McLintock and Underwood, who filtered the ideas back from the college Principal and staff to the architect. Turner was willing to adapt his design to cater for the educational ideas of the staff, who with so little at Balmain were not hard to please as the new designs took shape. Staff would have individual offices, accessed by corridors that seemed generously wide after the crowded school hallways of Balmain. Much of the technical equipment was purpose-designed.

The College Principal, Mr Greenhalgh, was not pleased about the alterations to the plan which reduced the size of the staff common room and dining room. Papers held by UTS record:

> *I hold that a College as large as this runs the danger of breaking into cliques, to the disadvantage of student training. One way to avoid this is to have a good deal of staff mixing (the famous 'cross fertilisation of ideas') and discussion often on a casual or informal basis. The easy way to do this is through adequate common room and dining room facilities. In this College those rooms have been reduced so that they are not adequate for the size of the present staff let alone a larger or more multifarious one. A basic element in the planning for the formation and development of interdepartmental thinking was distorted or overlooked.*[15]

David Turner had met Greenhalgh quite early in the planning stage and was reportedly a little disconcerted by the gap between his own vision and that of the College Principal, who had ideas of classical architecture and terraces with rose gardens. Greenhalgh had preferred that the new college be constructed as "one block rather than something dispersed everywhere, like a dog's dinner", on the grounds that modern architectural trends tended "to ramble all over a landscape with buildings and thus to isolate staff and students in pockets, hidey-holes and cliques…[which] littered the site and destroyed any hope of corporate loyalty."[16]

By the time the construction had been completed, however, he had come around to accept Turner's design. Greenhalgh was however very concerned to maintain the intimacy of the old college in its new surroundings. In addition to the central staff room, he insisted that his office was to be on the ground floor with direct access to the main entry area, so that he could easily walk out and be among the students.

Both the architect and the College Principal agreed on the need to keep the building as compact as possible. Greenhalgh wanted to recreate the compactness and closeness of the past at Balmain, while Turner was happy to build his "Italian Hill Village", based on a similar concept as John Andrews' Scarborough College in Canada, with its functionally generated forms and planning organisation linked by an internal pedestrian street. This formed the spine of the complex and kept all parts of the building as close together as possible. A tightly planned footprint also suited the architect's desire to minimise the intervention into the bushland-covered site. When only Stage One had been completed the college tended to be congested, because little of the main circulation route had been built. This was rectified with the construction of Stage Two.

The original concept for the new College comprised the building components that were eventually encompassed in Stages 1 to 3. They included all of the main teaching spaces, the main Auditorium, Library, student areas, Gymnasium and Administration offices, all linked by the main circulation spine. The original

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[14] *Turley, To Enlighten Them Our Task, p. 138.*

[15] UTS Papers, S113 Box 2, File 73/793, 15 January 1971

[16] Turley, *To Enlighten Them Our Task*, p76

brief also required the provision for an Oval and tennis courts, plus a small external change facility to enable the sporting facilities to be used by members of the public outside normal educational hours.

In previous discussions with Graham Brooks and Associates, David Turner stated that the intent of the project was always to locate the main building campus on the top of the escarpment, overlooking the river valley. He approached the project in full recognition of the wonderful opportunities available on such a magnificent site, while being very conscious of the need to make the complex as compact as possible to reduce its physical impact on the bushland. He was keen to give a bushland entry experience as part of the approach to the new buildings, reinforcing the unique location as the visitor left the surrounding suburban housing behind. It was almost as though the visitor and regular users stepped over a well defined threshold when entering the site.

David also noted that the location of the Oval was chosen to retain its proximity with the main building complex. By contrast a location in the north western corner of the site, while flatter, would have been too remote. The Oval was constructed across the top of a flat gully that drained to the south west. It required a substantial retaining wall across its southern edge to establish the main platform. The initial design was for a simple concrete retaining wall. Bruce Mackenzie remains proud that he was able to influence the developing design and have the concrete wall replaced with a sandstone boulder wall, similar to those recently used in the construction of the Newcastle Freeway.

David Turner was associated with the development of the college buildings over a period of more than 20 years. He was involved with the design and supervision of the college until he left the Government Architect's Branch in 1973. In 1974, he was given the task of completing the design and documentation of Stage Three, the Gymnasium and teaching spaces for his former office. In 1975, the College appointed him architect to work in close cooperation with their in-house architect, David Lake, who was in charge of maintenance and minor works. Further commissions followed, which included Stage Four, further lecture rooms and offices, then in 1977, the Dining Terraces, 1984, Stage Five with more lecture rooms and offices and in 1985, Child Care Facilities.

The close continuing relationship, from 1967 until 1992, of the original architect with his creation gave a very unusual degree of continuity and integrity to the character of the main building complex.

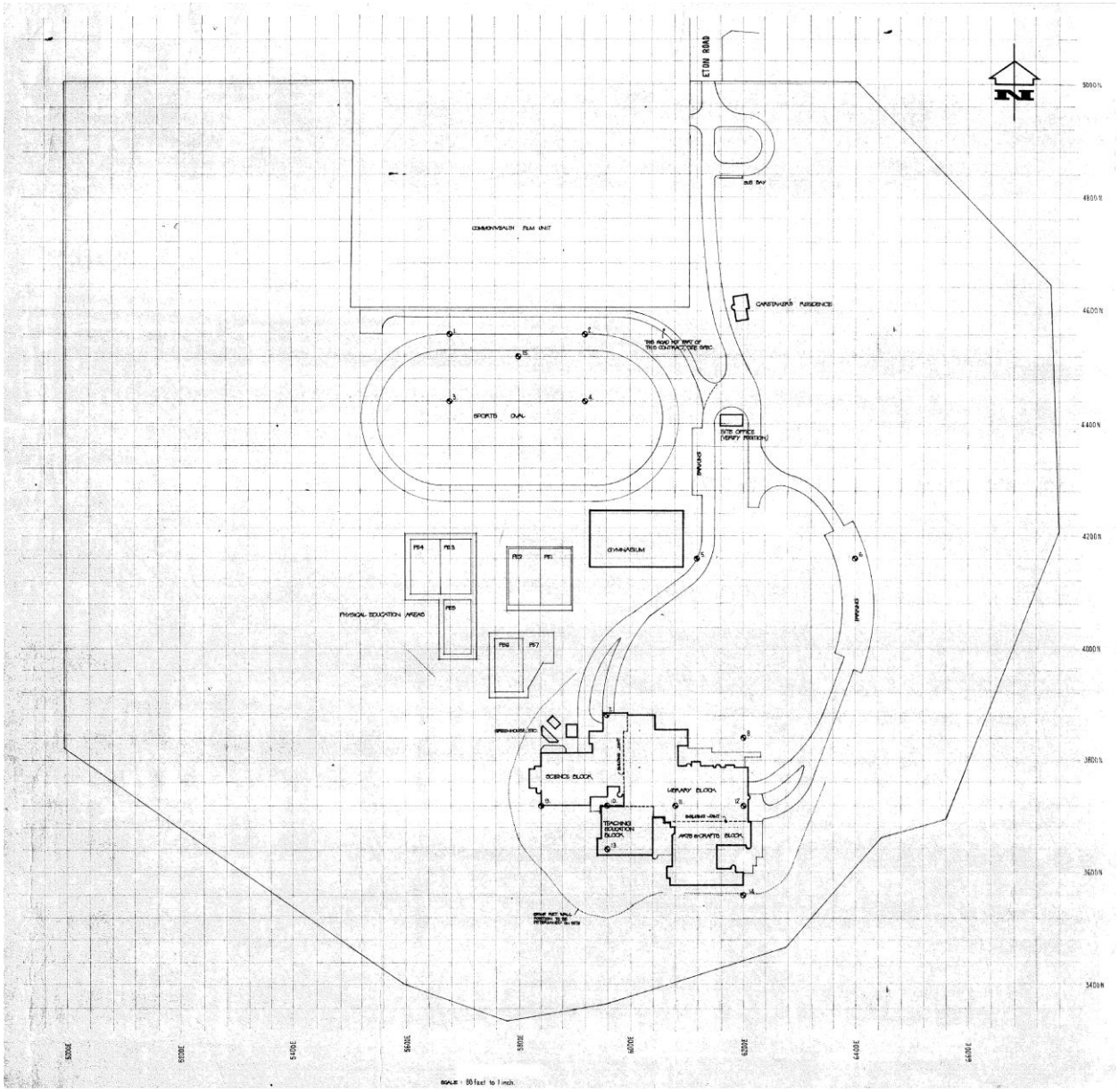

Figure 192 – William Balmain Teachers College Stage 1 – Site Plan (sheet number 4)

Source: NSW Department of Commerce

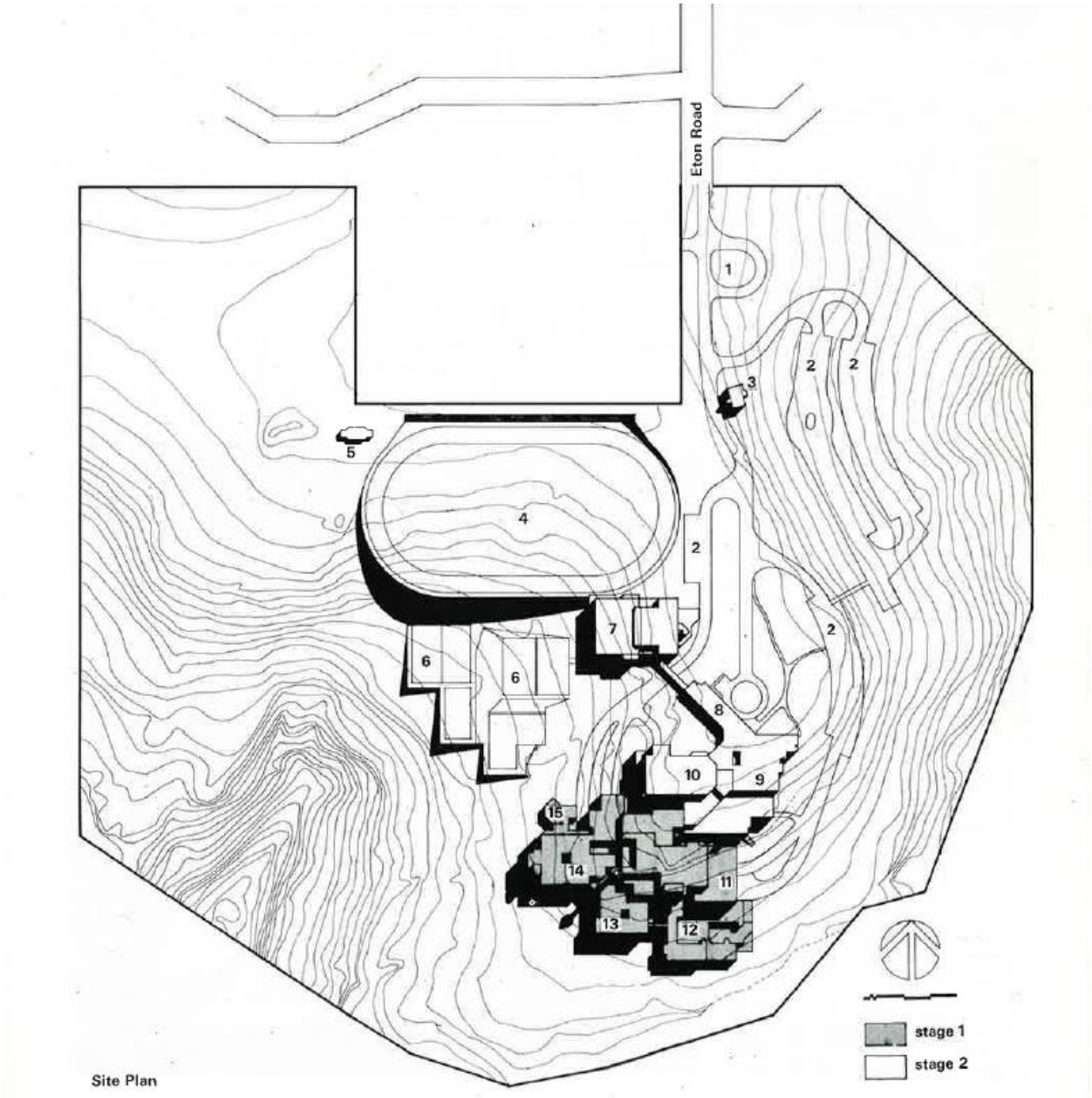

Figure 193 – The William Balmain Teachers College - site plan 1971

Legend: 1 bus bay; 2 parking; 3 caretaker's flat; 4 oval; 5 change rooms; 6 basketball courts; 7 gymnasia ;8 medical and teaching block; 9 union and administration; 10 assembly hall; 11 library block; 12 arts and crafts; 13 teaching education; 14 science block; 15 greenhouse.

Source: *Constructional Review, November 1971, p57*

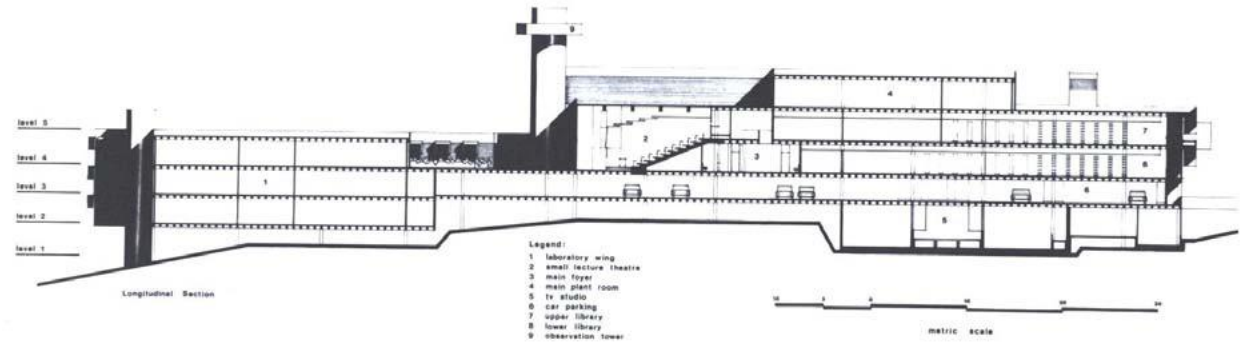

Figure 194 – The William Balmain Teachers College – cross section with legend

Source: GBA, p26

According to City Plan Heritage (2004):

> *The following steps were taken to ensure the successful integration of the natural and built forms on the site:*
>
> • *Produce a schematic plan of the conceivable extent of the college;*
>
> • *From that plan outline a total building footprint, this could then be dropped onto the site and delineated. Within the footprint, areas were earmarked as conservation zones, i.e. not be impacted upon during clearing and construction;*
>
> • *The footprint area of the building as well as conservation zones were to be fenced off.*
>
> • *Footprint areas cleared;*
>
> • *The site was therefore already prepared prior to building contractors going on site. Contracts contained prohibitions and penalties in order to ensure that the zones marked for preservation were not damaged; and finally*
>
> • *At the end of the construction phase, when the fencing was removed, the transition between disturbed and undisturbed areas was landscaped, but generally requiring a minimum of new planting.*
>
> *Despite, the damage caused by the bushfire in the late 1960s which seriously affected the site immediately prior to construction, by completion of Stage 1, the landscape had completely recovered and Mackenzie was able to implement the above steps to achieve the sense of the College having been dropped into the site.*

3.2.6. Architectural and Landscape Design

3.2.6.1. Blending Architecture and the Landscape

The William Balmain Teachers' College at Lindfield blended the influences from both the Sydney School and the New Brutalism streams of architectural thought that were a major feature of Australian architecture for two decades from the late 1950s.

The 1960s saw the expansion of Sydney's residential suburbs, especially around the North Shore, spreading off the well settled ridges into the steeply sloping, heavily wooded, surrounding terrain that had held back development in the late 19th and first half of the 20th centuries. As architects and planners came to grips with the challenges of building in this new landscape they progressively developed what became known as the Sydney School of Architecture. A relatively large number of young architects worked on domestic scale private projects, while a number of significant public buildings allowed others, including those working within or as consultants to the Government Architects Office, to develop their theories on major projects. Many of the young architects worked closely together through these decades, sharing their professional enthusiasm

and testing their emerging ideas. From this milieu came the blending of the two themes now categorised as the Sydney School and New Brutalism.

In an email, dated 10 November 2003 to Jacqueline Urford and made available by the RAIA, David Turner described the design philosophy for the new college at Lindfield:

> *As it was a magnificent area of natural bushland, the exercise was to compact the buildings and facilities as much as possible for preservation of the environment and continue the use of native plants throughout the buildings including in courtyards and on the roof. Although some clearance for fighting bushfires was made in the south, the concept was to insert the building into the native landscape, and make it survive intact in a bushfire, as it did in 1994. The landscape reflected the influence of Frank Lloyd Wright, and also Walter Burley Griffin and Marion Mahony Griffin, in the desire to preserve and enhance the existing landscape and this was admirably furthered by Allan Correy and Bruce Mackenzie… The other concept was an Italian Hill village with internal circulation, and a building that was energy efficient (only the Library, TV Studios and Assembly Hall were air conditioned) with external sun breakers, and access to the surroundings.*

This interaction between architecture and landscape was reinforced from the early days of the College. As a complex structure, the college both blended into the landscape as well as providing contrast. The William Balmain College was described in 1971 as:

> *One of the most exciting and successful works of architecture built in Sydney for some time. The site of the college spreads over 45 acres of untamed bushland with wide views, trees, rocks and undergrowth coming right up to the edge of the building. Split levels adapt the college to this rugged topography. Elevated concrete bridges, enclosed courtyards, planted terraces, sometimes a window at the end of a corridor, all help to link the building further to its surroundings.*
>
> *But it is not a building which merges with its environment. The bold sculptural forms of boardmarked concrete contrast vividly with it. Curved stairs expressed on the outside, small turrets concealing precast concrete spiral stairs, suspended precast sunshades, foot bridges, sweeping curved balustrades – all this adds up to a rich vocabulary of forms, to variety and interest, and yet all is unified by the use of natural materials which fit in well with the olive green of the surrounding bush.*[17]

Indeed, the landscape of the site ranked of equal significance in design terms as the buildings, arguably the element on which the success of the site depended. Throughout the site, the topography, rocks and trees were key factors in the placement and composition of the built environment. The preference for native species, capable of flourishing in a harsh environment, was a pragmatic as well as ideological one. Mackenzie's intervention was deliberately minimal, so that the completed building nestled as much as possible into the cradle of an intact and genuine landscape. Taylor likens his appreciation of native species to the fresh perspective provided by the Heidelberg School of painters of the 1880s, with a romanticism applied to the notion of the 'natural' landscape.

> *The site planning by Allan Correy with Turner is sensitive with the building located on a rocky plateau so as to preserve as much of the fine native vegetation as possible. The building is staggered over five levels and its craggy forms are visually tied to the setting. Its bulk is broken up by raised terraces and small units such as sun hoods that interrupt the planes of its façade. But it is the unified statement of buildings and landscape that gives this building its conviction. The landscape work by Bruce Mackenzie brings the bushland up to, around and through the architecture. The parts of the building read as small, related segments at close range, but from a distance the whole has an heroic presence. Much of Ku-ring-gai College's empathy with the landscape derives from the preservation and planting of native species. As the Sydney School architecture drew its forms and materials from the site, the setting was of paramount significance. Mackenzie's interests and abilities as a landscape designer were in harmony with those of the architects. Mackenzie wrote of (and in his work demonstrated) the appropriateness of conservation and the extension of the use of indigenous flora into gardens.*[18]

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[17] *Architecture in Australia*, July 1971, p11

[18] Taylor, *Australian Architecture since 1960*, p85

However, Mackenzie also expressed a more pragmatic outlook than simple participation in romantic architectural ideals: “Unless the native plant can fulfil the role expected of it in terms of function, aesthetics and performance we can discard it. Nostalgia is not sufficient.”[19]

Bruce Mackenzie developed his strong sense of working closely between architecture and landscape from his experience with the project homes developed by Pettit and Sevitt. In previous discussions with Graham Brooks and Associates, Bruce indicated that his involvement in these projects, as landscape designer and contractor, gave him a pragmatism that had been lacking in most earlier residential development around Sydney. He reacted against the old policies of completely clearing the building site and then adding back a landscaped setting, for an approach that carefully defined the building footprint, driveways and areas for contractor access. Beyond these areas the natural landscape was protected and automatically incorporated into the final outcome.

Bruce spoke of the extraordinary interaction within the group of architects and landscape designers at a time when the profession of landscape architecture had yet to emerge. The post war architectural graduates of Sydney University, UNSW and Sydney Technical College, combined with international architects and those returning from work or study overseas, produced a dynamism and awareness of the bushland that was to become very influential.

Mackenzie’s loyalty to native plant species also echoed that of Walter Burley Griffin, who felt that indigenous plants were integral to the overall architectural concept. In the early part of the century, Walter and Marion Griffin’s designs for the suburb of Castlecrag had strongly indicated their enthusiasm of and reliance upon the incorporation of built structures into the natural landscape. Their design for the residential suburb included bushland reserves in which major landforms and rock outcrops were preserved, foreshore reserves, a network of linking walkways, and roads that followed the contours and respected the landforms. The houses were designed to blend harmoniously with the landscape, and to capture the light and sun. The campus site, within its bushland setting, reflected and reproduced these ideas in an effective and aesthetic manner, some sixty years after the Griffins’ architectural style that had been noticeably different to the Australian mainstream in that era. In such an approach, Mackenzie’s work at the campus site made it distinctive in the late twentieth century; few developments attempted to follow the form and character of sites, but rather neglected such environmentalist principles in favour of more dominant styles.

The close integration of the new college buildings and the natural landscape remains as one of the defining features of the campus, particularly on its southern and south eastern sectors.

The large open playing field and tennis courts broke this mould, but were an integral part of the design brief.

3.2.6.2. The Sydney School

In her important book Australian Architecture Since 1960, Professor Jennifer Taylor claimed that:

> *The Ku-ring-gai College, 1976, most clearly demonstrated the extension of the Sydney School ethic into large concrete buildings… It is the unified statement of buildings and landscape that gives the building its conviction. The landscaping by Bruce Mackenzie brings the bushland up to, around and through the architecture…*
>
> *Much of Ku-ring-gai College’s empathy with the landscape derives from the preservation and planting of native species. As the Sydney School architecture drew its form and materials from the site, the setting was of paramount significance. Mackenzie’s interests and abilities as a landscape designer were in harmony with those of the architects.*[20]

In describing the “Sydney School” that emerged in the late 1950s, Taylor noted a distinctive, picturesque architecture with a craft aesthetic, which was mostly applied to the domestic architecture that dominated the style.

> *Fundamental to the development of the new architecture was an appreciation of the native landscape… The desire to work with rather than against the landscape made Frank Lloyd Wright a more appealing figure than the rationalists of Europe.*[21]

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[19] Mackenzie, “The Landscape Environment – a wasted potential” in *Architecture in Australia*, November 1966

[20] Taylor, *op. cit*., p46

[21] *ibid*., p35

Taylor observes that a number of State Government departments adopted positive policies towards the use of landscape consultants in the late 1960s.

> *As with architecture, the NSW Government Architect's Branch under E H Farmer and Peter Webber played an important part in establishing sound landscape design in the Sydney area. In 1967 a policy was introduced requiring input from a landscape consultant for each project designated by the government and the first full time position was created in the newly formed Landscape Section. This was held by Allan Correy who, together with Peter Spooner and Bruce Rickard, was among the initial landscape architects who received their training abroad…Correy was influential in establishing an ecological approach to landscape design. The site design of Ku-ring-gai … clearly demonstrated his design principles…*
>
> *With its emphasis on climatic control by natural means and its respect for land forms and flora it was a sympathetic way in which to build… The fact that it was so widely and rapidly accepted and that for more than a decade it continued to hold a persuasive influence on Australian architecture, testifies to its relevance and validity.*[22]

Taylor commented that:

> *The principles of Brutalism, such as its insistence on the integrity of direct architectural expression and the importance of a 'memorable image' directly generated from such an expression, were fundamental to the particular nature of the emerging Sydney School of architecture… The Sydney architects had evolved an ethic that was against pretension and public display and that made the given conditions of site, climate, function and local trade practices the principal determinants of design. Strong too was the insistence on the logic of the structure and the frank exposure of the materials of the building fabric. Most important was an architectural expression consistent with its setting.*[23]

Elements inherent in the Sydney School were also attributed to a romantic movement that arose in opposition to the International architectural trend. This romantic backlash originated from both America and Japan, and rejected the inevitability of technology in modern life, opting instead for "a continuing communication between man and nature, what Wright called an 'organic' relationship. The activities that were expected to occur within buildings dictated the zoning and organisation, with separation effectively carried out through the use of differing floor levels or distance.

Richard Apperley et al also paid homage to the influences on the Sydney School in Identifying Australian Architecture, attributing its pervasiveness to the flood of post-war architects and the rapid transmission of ideas between Australia and Europe. The Sydney School incorporated brutalist styling within a virgin landscape, with trees, placement of large rocks and views considered as important as the building itself. Following the topography of the site was paramount in order to interpret the role of the building within its setting. Apperley considered that:

> *Perhaps influenced by varying combinations of Brutalism, Arts and Crafts, traditional Japanese architecture and the work of Frank Lloyd Wright, Sydney School architects injected a feeling of warmth into their houses by exploiting the textural and tactile qualities of traditional, so-called natural materials: painted common bricks or gnarled clinkers, tiled roofs, and unpainted timber which was sometimes left in its sawn state. Ideally, the building site was left untouched; any introduced landscaping made use of informal arrangements of Australian flora, the exclusive use of which was mandatory.*[24]

The Ku-ring-gai campus became habitually referred to as "the site" rather than "the building", due to the strong integration of the natural landscape and the building itself, which made it:

> *So unique. The era of English lawns and rose gardens was gone and being replaced by the native Australian bush setting. This was very much part of the Sydney School philosophy…*[25]

Interestingly, in a comment to Graham Brooks and Associates in March 2004, David Turner indicated that as a relatively recently arrived Englishman, he did not readily feel part of the group of architects who gathered under the umbrella of what became known as the Sydney School. Nevertheless, his completed campus

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[22] *ibid.*, p49

[23] *ibid*., p38

[24] Apperley, et. al., *Identifying Australian Architecture*, p240

[25] Deputy mayor of Ku-ring-gai, Ian de Vulder, cited in *Architecture Bulletin*, January 2004, p?

amply demonstrated his key concept, which he so clearly described, as a compact arrangement that requires as little physical intervention into the bushland as possible.

3.2.6.3. The Rational and The Robust

In exploring the sources for a phase that she describes as The Rational and The Robust, Jennifer Taylor observed:

> *Before the mid 1960s there were few buildings in Australia that showed an affiliation with the robust and raw, sculptural architecture that in other countries had been widely accepted as appropriate for the pragmatic and aesthetic priorities of the time. The original inspiration for these works lay in the later buildings by Le Corbusier. His Unite d'Habitation at Marseilles in 1952, and his Jaoul houses, Neuilly, 1954, demonstrated an attitude to materials and construction that was to influence architecture through the following decades… The delight of space and shape of the Chapel of Notre-Dame-du-Haut at Ronchamp, 1955 and the haunting imagery of the buildings at Chandigarh, 1957-1964, indicated the rich possibilities of the exploitation of the plastic properties of reinforced concrete for sculptural form.*
>
> *During the 1970s "beton brut', with the accompanying articulation of masses and stress on the expression of internal, functional arrangements became a favoured medium particularly for public buildings and those for tertiary institutions… In its more dramatic treatment (it gave rise) to a lively architecture of indented forms with a three dimensional quality that was emphasized by the deep shadows cast by the strong sun. These buildings had in common the display of structural materials and a certain heroic presence but their broader, ideological bases were often diverse.*[26]

Taylor went on to discuss examples of this style including the Cameron Offices, School of Music and High Court in Canberra, Hale School Memorial Hall, Perth, Social Sciences Building at Flinders University in Adelaide and the YMCA Building in Fiji, the Wentworth Union Building at Sydney University among others. A major example was Colin Still's Alexander Mackie College of Advanced Education in Oatley Sydney, 1980, for the NSW Government Architect.

> *Also stemming from the European building and planning concepts of the late 1950s was the idea of a building as an open-ended structure responsive to growth and change. Andrews' Scarborough College, with its rugged concrete, its functionally generated forms and its organisation of the parts of the complex along an internal pedestrian 'spine' demonstrated these principles in built form. The large spreading office complexes for Canberra area are based on the same form. Ku-ring-gai College provides a further example.*[27]

In previous discussions with Graham Brooks and Associates in November 2003, Ken Woolley recollected that many of the architects working in Sydney and elsewhere at the time had either studied or worked extensively overseas in the mid 1950s or later. They were very aware of the work of Le Corbusier in Europe, Kenzo Tange in Japan and elsewhere. He observed that this phase of Australian architecture was able to pick up on international developments much more quickly than had been the case previously.

In her book *John Andrews, Architecture a Performing Art*, Jennifer Taylor captures the roots of the architecture espoused by Andrews and his colleagues.

> *The formal language, as with all who build in concrete, must inevitably relate to that of the early modern movement, and particularly to le Corbusier. In this Andrews is no exception, and many of the devices he employs derive from the dynamic imagery of the mechanical preoccupation of that time. The Brutalist ethic is strongly expressed; yet raw materialism direct details, exposed structure and services derive not from a particular philosophical stance but 'because it makes sense'…*
>
> *Scarborough College, completed in 1965, was immediately recognised as the first built major statement of the concept of an open ended lineal structure, organising and relating functional units…Where possible the buildings are kept low and spread within a controlling geometrical structure to allow for diversity without disintegration.*
>
> *With a strong commitment to architecture as the setting for human action and experience, he (Andrews) concentrates, in overall planning and in detail, on providing opportunity for communication between individuals, and between individuals and buildings. The importance he gives to circulation*

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[26] *ibid.*

[27] Taylor, *John Andrews: Architecture a Performing Art*, pp18-19

and informal areas arises from his understanding of the suitability of such spaces for social contact – movement becomes the primary generator of the physical and social framework.[28]

Andrews is quoted in the book speaking of his intent regarding the pedestrian street:

A university as a learning environment does not consist solely of the formal academic learning spaces. Learning occurs in the informal spaces in which people meet; the circulation system, the lounges, the cafeterias and other communal facilities. Our intent was to increase the effectiveness of these informal learning spaces.[29]

In describing the planning process for Scarborough, Taylor notes:

From the site Andrews drew the dramatic ridge and allowed the buildings to follow the contours. The fine stands of maples and beeches on the adjacent slopes remained untouched and the building rears over them like a fortress.[30]

John Andrews made a well publicised return to Australia in 1969 and exerted a strong influence on local architectural thinking for major building projects.

David Turner had studied in the UK and worked in the US before coming to Australia. Soon after graduation he worked on the initial stages of the massive Barbican development in central London, a major statement of the Modern Movement in Architecture. He was able to blend these influences in a confident and masterful composition for the new college. David commented to the author in March 2004 that the major international influences on the design of the college were those of Le Corbusier, particularly the Marseilles residential building, with its elevated street and strongly expressed external architectural expression, and his monastery at La Tourette, north of Lyon in France. He also nominated Scarborough College (Figure 195), noting however, that he considered the Ku-ring-gai campus as more successful for its main circulation spine which was buried deeply within the functional arrangement, compared with Scarborough with its longer, single loaded internal pedestrian street. In identifying the international influences, David noted that there were really no buildings in Australia that he could clearly nominate as being closely related to his vision for Ku-ring-gai.

While the internal linear circulation routes in Scarborough College made absolute sense in relation to the extremes of the Toronto climate, Turner, in partnership with Mackenzie drew the students at Ku-ring-gai into the college to minimise direct physical contact with the surrounding bush. Rather than try to relax within the relatively unyielding landscape, the bush became the visual backdrop to student activity. Views outward from the major circulation spaces and Library, through huge expanses of glass, to the bush immediately outside, or a close encounter from an external terrace, heightened the experience without exposing either the bush or the students to damage or danger. The extensive use of landscaped roof terraces, with their strong sculptural forms and external artwork, was a further expression of the need to provide outdoor recreation areas that were separated from the bushland. The wonderful outwards views from these terraces, across the wooded valleys, was a major feature of these terraces.

Another notable feature of the Rational and Robust architectural expression of the period was the strong use of concrete elements for sun protection. Elevations of both low rise and high rise buildings of the period in Australia, particularly in NSW, were notable for the sun protection devices and dramatic modelling, usually resulting in heavy shadowing to complement and reinforce the architecture. Examples in Sydney include the high rise State Law Courts and Water Board (1965) buildings, both by McConnel Smith and Johnson, and the Masonic Centre by Joseland and Gilling. Turner's use of expressive vertical concrete blades at the original and subsequent main entrance, of projecting sun hoods over the majority of windows to the teaching areas, and of the vertical blades across the Library, are all examples of this architectural expression. The vertical blades at the Stage 1 entry were originally fitted with glass infills between the blades, in order to re-create the old idea of the Australian verandah. Unfortunately, the differential movement between the Stage 1 and Stage 2 buildings caused the glass to crack and the College ordered their removal.

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[28] Taylor, *John Andrews: Architecture a Performing Art*, pp18-19

[29] John Andrews, cited in *loc. cit.,* p34

[30] *ibid.*, p28

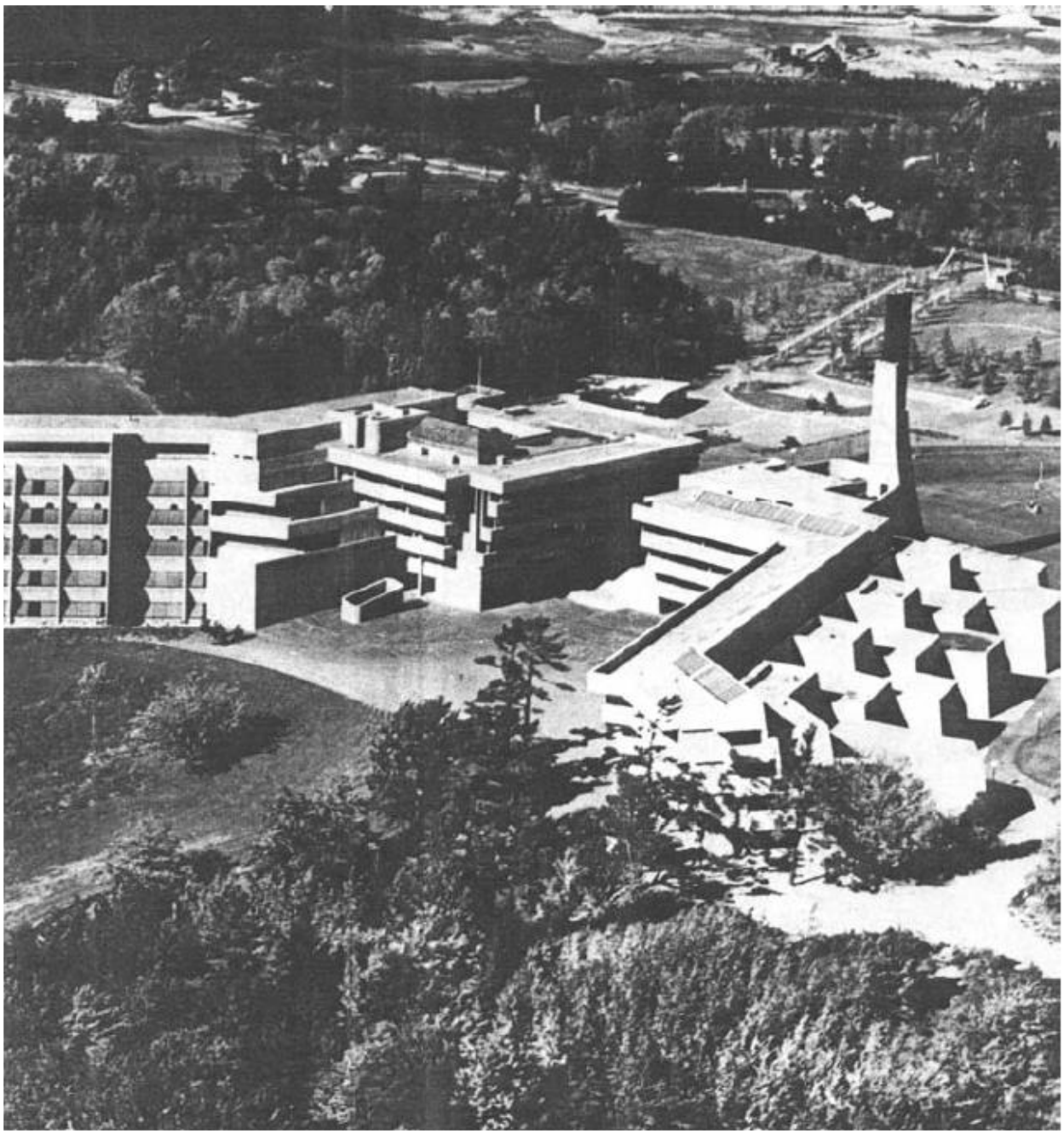

Figure 195 – Aerial view of Scarborough College, Toronto, Canada by John Andrews

Source: GBA, p33

3.2.6.4. The Architectural Concept

The design of the college itself strongly reflected international trends from its inception in 1967, with the government keen to demonstrate a modern outlook in both teaching college facilities and methodologies. The ideology in place for the new teacher colleges sought to address individual needs of each site, while advocating the most advanced architectural pedagogy. In order to "avoid obsolescence in the foreseeable future":

> *The teachers college must be seen as a corporate body composed of unique personalities, and within which can be discovered a number of groups of both formal and informal structure, engaged upon a wide variety of activities. The groups are not fixed, but are constantly changing, restructuring as new needs arise.*
>
> *…[T]he college will be composed of a number of learning spaces of differing capacity, most of them multi-functional, some space-variable. There will be rooms to accommodate small groups… larger*

> *spaces for twenty and for thirty students, and lecture theatres…. The heart of every college, and the focal point of all student and lecturer activity must be the library. This can no longer be a mere repository for books, but should be an enticing centre for individual and group learning.*[31]

It was felt that the William Balmain College would be readily distinguishable from the Newcastle and Goulburn Teachers College in terms of physical distribution across the site, facilities available, and in providing for the "cultural, social and physical development of the student."[32] Such an ideology expected that demand for specialised amenities would vary between campuses, but be consolidated by the union centre, acting as a hub around which the students were expected to circulate. Providing the union centre was a relaxing and stimulating social environment for the students, fields of interest – and their consequent facilities – would radiate from this gathering place in a natural progression. With different pedagogies placing differing levels of importance on fields of study such as drama or physical education, the evolution of the site, and the consequent usage of the site, would vary from campus to campus. The modernist approach allowed for the needs of the student body while complying with broad boundaries that shaped the growth of the site. The architectural concept was:

> *To standardise such facilities whilst at the same time conceding the right of a college to give effect to a system derived from a particular philosophy, would be to pay lip service to a principle. However, planning can be based on certain parameters, which provide a starting point for determining the final accommodation plans. The most important of these are the ultimate student capacity of the college, and the nature of the courses that will be offered within the college. The first of these is of prime importance when considering future development….*
>
> *As the principle [sic] of a large tertiary institution recently commented, "the college which is permitted to grow like Topsy, too often ends up topsy-turvy." The nature of courses will inevitably govern the extent and nature of specialist facilities required…. The new colleges in New South Wales represent a sincere attempt to satisfy the philosophical needs of teacher education, and should provide staffs with opportunities to implement programmes hitherto impossible. They will provide students with a new and stimulating environment, with opportunities for discovery not previously known.*[33]

This "new and stimulating environment" was expressed on the Lindfield site through a range of twentieth century architectural influences. With such a philosophy as a starting point, the design of the college needed to cater for site evolution in addition to external elements such as politics and funding. The practical nature of its architecture was praised as:

> *Visually the college is a very complex building and its floor plans and functions are equally complicated. This is the result of a complicated problem: a college for 900 students with all the completely different spaces the teaching programme demands. In most universities, for example, libraries or workshops would be housed in different buildings. Here, everything provided in the first section of the project is in one building.*[34]

Deputy Government Architect Peter Mould, who also favoured its overall concept, considered the institution:

> *One of the iconic buildings of the 1970s. The feeling of a campus was created by the combination of the internal street and the related series of courtyards…. A large bold building sitting so comfortably in its bush setting. The modulation of the massing successfully breaks down the bulk of the building so that it reads on the ridge as an extension of the rocky outcrop on which it sits. This college set the agenda for a series of buildings that followed both in the organisational framework and the use of materials.*[35]

In previous discussions with Graham Brooks and Associates, David Turner stressed his desire for a compact design arrangement, with the teaching, administration and student areas closely spaced around the central circulation spine. He wanted to encourage students to walk to as many of the destinations within the college, avoiding the use of lifts. In a similar way to Scarborough College, Turner made use of the topography to place the main pedestrian circulation at ground level with other levels above and below the main routes.

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[31] *Architecture in Australia*, June 1971, p?

[32] *ibid.*

[33] *ibid*.

[34] *Architecture Today*, July 1971, p?

[35] Peter Mould, cited in *Architecture Bulletin*, January 2004, p

The strong sculptural forms used at Ku-ring-gai had been explored by Turner at the NSW Government Offices in Albury. He regards that building as his own precursor to the design of the new college. Interestingly the consultant architects for detailed design and documentation at Albury, Edwards Madigan Torzillo and Briggs, also produced the Warren Shire Library building, in rural NSW, at the same time. Both buildings were designed with bold and expressive use of external and internal concrete, although the Albury building was then clad in an applied finish, described as “Fabbro” after its applicators. The Government Architect at the time was not convinced that exposed off-board concrete was an appropriate presentation for a government office building. Turner spoke of how he worked very closely with the consultant teams appointed to document his buildings, a process that was apparent with Kuring-gai. Colin Madigan went on to apply these architectural philosophies to the High Court and National Gallery projects in Canberra in the early 1970s. The design concepts explored at Albury were developed further for the Government Office buildings at Narrabri and Inverell.

Interestingly, the Albury Public Works building and the Warren Library shared the Blacket Prize for architecture in 1968, soon after they were completed. The Blacket Award was given annually by the NSW Chapter of the Royal Australian Institute of Architects for a building of outstanding merit in the country areas of the State.

The jury comments for the Award were published in Building in October 1969:

> *The NSW Government Offices at Albury is a fine example of the mainstream of the international tradition…The modern movement, now over 50 years old, here achieves a successful urban expression, apt for such government buildings.*
>
> *In the Albury offices, the planning of verandah access balconies is a tradition of administration and military buildings, but the colonnade has not been allowed to become pompous or neoclassic. The public forecourt treatment is bold and simple…The building scale has apt relation to a large country centre. Its crisp form, elegantly finished concrete and smooth detailing all add up to a direct and handsome statement…The building was designed to complement the adjacent classical balcony style of the technical College, and to keep in scale with the other main buildings on Dean Street – Town Hall, Court House etc.*[36]

Above all, David Turner regarded the Ku-ring-gai project as a wonderful opportunity to produce a building in a strong bushland setting, one that created a strong imagery within its architectural expression, while respecting the surrounding bushland. He chose to push the building to the edge of the southern escarpment, providing space for an extended entry to differentiate the college from its surrounding residential backdrop.

[36] *Building*, October 1969, p44

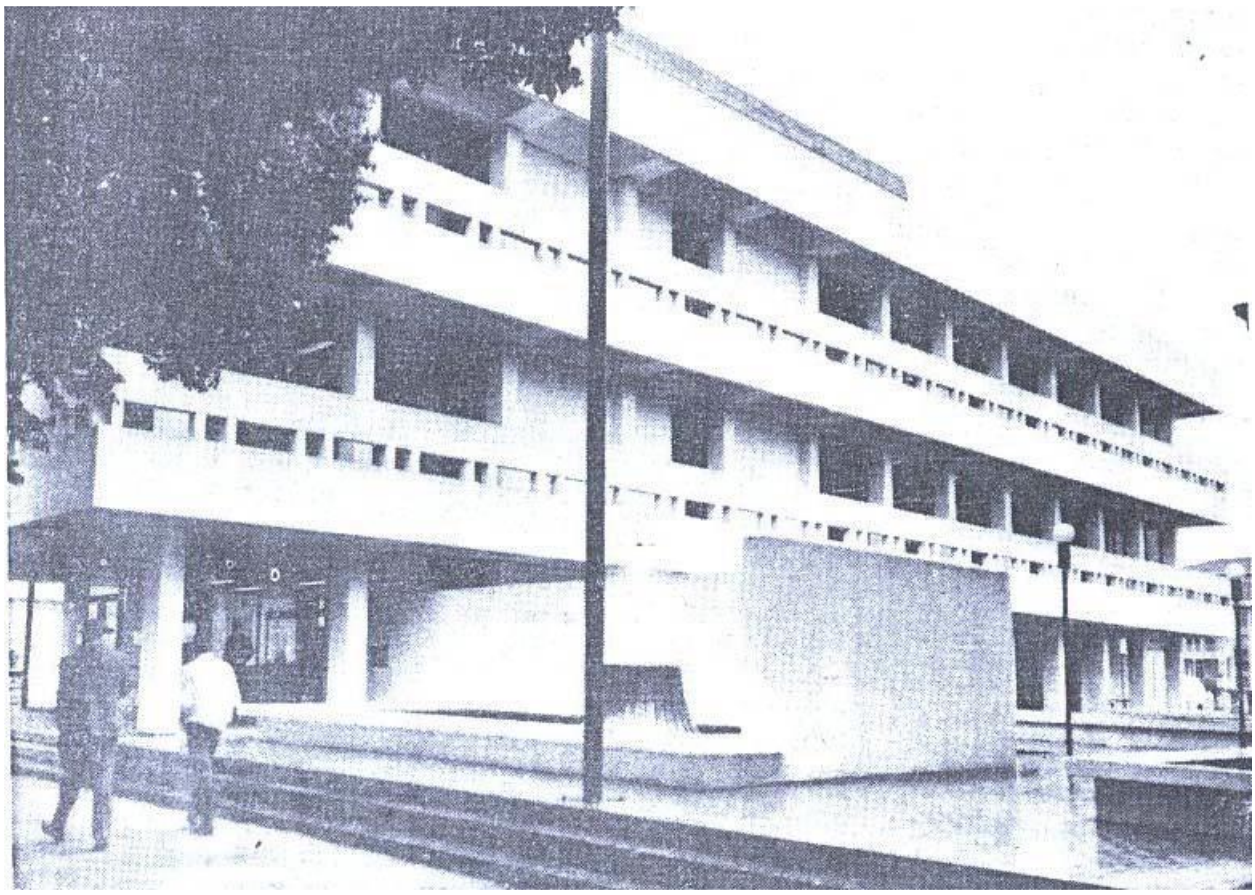

Figure 196 – Albury Government Office Building, 1968. David Turner, design architect

Source: GBA, p37

3.2.6.5. Landscape Design and Conservation

In November 2003, from an article published in the January 2004 *Architectural Bulletin*, Bruce Mackenzie recorded his views about the landscape design and conservation that was an integral part of the conceptual formulation for the new college. The following extracts are taken from that material, which was provided by the RAIA.

> *I remember well an afternoon meeting with the Principal of the college and David Turner, design architect with NSW Department of Public Works, for the purpose of discussing landscape issues and intentions. My determined endeavour to extol on this truly impressive site of native flora and grand Hawkesbury Sandstone outcropping, seemed to fall largely on deaf ears in the case of the intended head of college. The 'bush' was fine as far as he was concerned assuming of course that it was kept well in the background. A more civilised approach was what he had in mind and roses appeared to be the symbol of everything appropriate in this respect, especially at the important entry to the complex. Fortunately I had a strong ally in David Turner and one way or another we pursued and achieved our aims. By the time the principal was to see the outcome of the committed landscape setting it was already rather impressive. The site had responded marvellously to careful management. Importantly praise was being directed towards its intricate blending of bold architecture and complex nature so that the principal had become by then just a little proud of his new domain and possibly, his personal contribution to the project. At the time of course it was early days for the advocates of the indigenous design ethos and still earlier times as far as conservation of nature on urban properties was concerned. Rather than being dismayed by the College Principal's assumption of a proprietary share in the joy of his landscape, I was delighted. The change of heart signified a major victory for the cause of Australian indigenous landscape principles. These principles were to grow in stature during the years to follow.*
>
> *It is most important to acknowledge at this point that very little in the way of plant material was installed into the finished work at close proximity to the buildings, yet the buildings, constructed in stages, appeared as though they had been lowered gently into place, with the landscape of plants*

and rocks intimately fused onto the very walls and windows of the construction. To a large extent the roads too, especially those entrenched deeply into rock, enjoyed complex plant communities still visible as integral margins on the cut rock ledges.

Well before the buildings had advanced to the stage of contract documentation, site surveys by my office had clearly delineated the magic elements of features of the site.

This enabled us to prepare a composite map of the proposed buildings and their surroundings in a legible definition of impact and potential conservation opportunities. We were dealing with a significant example of remnant nature surviving intact on this land at East Lindfield overlooking the Lane Cove River valley. My initial reactions after discerning the intensity and richness of the site's flora, punctuated with rock outcropping, included a sense of horror that it was to accommodate a very large introduction of buildings, roads, car parks and a football oval.

However, just a few years later I was to judge this building personally, as the one to consider in Sydney, after the Opera House. Its special attributes for me encompassed the boldness of its architectural statement, its complexity matching that of the conserved nature surrounding it and the adventurous, intriguing environment that permeated the complicated but fascinating interior … the whole amalgamated more or less seamlessly.[37]

Mackenzie's insistence on indigenous plant species in the campus design both adhered to organic principles and respected the ideologies set forward by the Griffins in the early twentieth century. He argued in "The landscape environment" that:

The best way of acquiring an Australian atmosphere is by growing Australian plants. So it is the desire to make Australian gardens Australian, rather than the urge to preserve the species, that motivates me primarily. Many other benefits are to be gained by their use. Their ability to meet hazardous and trying conditions with an unbelievable tenacity to survive is very satisfying…Fortunately, "natives" are becoming popular and fashionable …[and] the indigenous nature of the framework should reign supreme whether it be a home garden, a neighbourhood environment or a whole city. [A] splendid opportunity exists to exude a strong national character in all our developments via the medium of landscape promotion compared to other design fields where bricks and mortar convey such a universal image.[38]

In discussions with Graham Brooks and Associates , Mackenzie provided more of the detail behind his approach to the landscape design and conservation at Ku-ring-gai.

He relied on a strong definition of edges, of the distinction between built form and natural bushland. In the case of the excavation for the car parking platforms on the eastern slopes, for example, he confined the soil behind retaining walls rather than letting it simply spill down the slope to form a new embankment. The excavation for the roadways down to the lower levels of the building were undertaken by machinery confined within the boundaries of the cut. This enabled the undisturbed retention of the natural vegetation right up to the edges of the cutting.

The ultimate success of the landscape policies and practices espoused by Mackenzie can be seen in the way the bushland has survived and continues to define the character and setting of the architecture. Two major fires, the first as construction was about to commence, which stripped the bush right back to stumps, sandstone and soil, and a second in 1994 that swept right over the buildings, combined with the construction and operation of a major university campus, have not prevented the bushland from regenerating in a most robust manner.

Fire management had been a major design criteria from the beginning and an area of bushland was cleared or reduced to the south of the campus. In addition, the main buildings were designed and constructed to withstand fire, a fact that was severely but successfully tested in 1994.

Unfortunately budget restrictions in the early phases prevented the installation of stormwater drainage lines right down to the river or creeks below the site. The inevitable run off into the upper creek lines has encouraged some growth of exotics and weeds in these areas. In discussion however, both Mackenzie and Turner agreed that the end result was probably the best since the construction of stormwater lines right down the major slopes would have left major scars in the topography and bushland.

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[37] *Architectural Bulletin*, January 2004

[38] *Architecture in Australia*, November 1966

3.2.7. Stage One, 1968-1971

As early as September 1967, Minister for Education Charles Cutler announced that sketch plans for the new college had been completed. The following announcement was carried in the *Western Suburbs News Mail* on 28 September 1967:

> *The new college at Chatswood, on a site located on Eton Road and adjacent to the Commonwealth Film Laboratories, will replace the Balmain Teachers' College. It will be called the William Balmain Teachers' College to retain its association with Balmain. Construction on the 55 acre site will have a split level design and will retain as much of the natural beauty of the trees, shrubs and rock as possible. Construction will be an integrated complex of buildings varying from one to four storeys. Accommodation and facilities will include lecturing facilities, libraries, playing fields and off street parking.*[39]

On 13 December 1968, *The Sydney Morning Herald* carried an announcement by the Minister for Education that a contract had been let to build Stage One of the project. He said that the contract was the biggest ever approved by the Education Department. Stage One was to consist of lecture rooms and facilities, a library, an art-craft centre, TV studios, playing fields and temporary administration and students' union facilities.

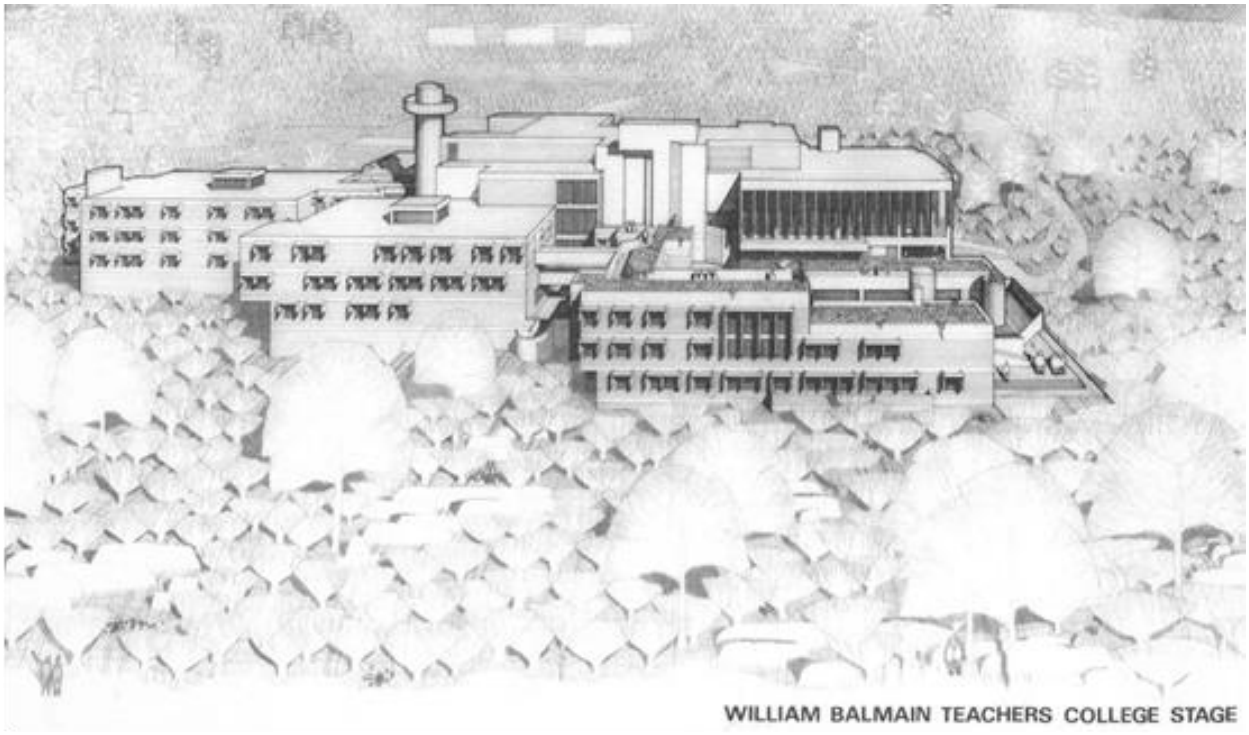

Figure 197 – NSW Government Architect's Office perspective of the William Balmain Teachers College (Stage 1, 1968)

Source: Department of Public Works NSW, Annual Report 1968/1969; also Architecture in Australia, June 1971, p.429, modified.

The June 1971 edition of *Architecture in Australia* recorded the project team members, all of whom worked closely with the design architect to achieve the final outcome:

- Architect: E H Farmer, Government Architect;
- Project Design Architect: David Turner;
- Contract Documentation: Allen Jack & Cottier;
- Structural Engineer: Taylor Thompson & Whitting;
- Mechanical and Electrical Engineer: D Rudd & Partners;

[39] *Western Suburbs News Mail*, 28 September 1967, p?

- Acoustic Consultants: Carr & Wilkinson;
- Landscape Architect: B Mackenzie and Associates; and
- Quantity Surveyors: Nethercote & de Rome.

The use of external consultants to document public building designed with the Government Architect's Branch was common practice at the time. It continued into the late 20th century. All of the consultant firms engaged in this project were highly respected in their respective fields at the time. In previous discussions with Graham Brooks and Associates, David Turner noted that he selected Allen Jack and Cottier as the Documentation Architect because he was impressed with their work and was confident that they could execute his design intent. Keith Cottier was the lead architect and worked with David to develop the characteristic sun-screen system of concrete hoods and blades. Geoff Markham was the project Structural Engineer. The selection of off-board concrete as the primary external finish for the main parts of the campus was facilitated by the presence in Sydney of a large number of skilled Italian form workers. David expressed his confidence in their ability to achieve a fine quality surface finish. As it transpired, only one section had to be pulled down and redone, more the result of poor concrete compaction than poor form work.

E A Watts Pty Ltd built Stage One, under contract from the Public Works Department. The cost was $3.4 million. They were later chosen to build Stage Two at a cost of $1.8 million.

In the initial stages, funding was liberally provided by the Government, on a scale previously unseen in the educational fields. Consequently, there were few brakes on expenditure and on the new campus, subject departments were brought together in separate areas so that everyone working on one subject was on the one floor. Special amenities included art and craft studios and workshops, music rooms, tape recorder bays, a typing room, mapping room and a one-way observation room where children could be studied. The resources Centre which consisted of the library and the audio-visual department was generously equipped. The library had a shelf capacity of 70,000 books, a large general reading area and rooms for private study and group discussion. The audio-visual centre had television facilities for by Ken Unsworth and Persian carpets were purchased for the college.

Overall, policy changes resulted in some wastage of money, such as the expenses incurred for the establishment of laboratory and astronomy towers, unused until the early 1990s when Optus was permitted to install transmitters on the tower. In practical terms, however, much of the work was admirable, in that staff typically had individual offices, the corridors were generous in dimension and much of the desired equipment was built to the exact specifications outlined by the staff. Aesthetically, colour schemes within and without the College were intended to interact with the bushland setting and off-board concrete. Bruce Mackenzie noted that:

> *Within the spacious foyer, made park-like with its lurid green carpet, students responded accordingly and lounged about in groups as if on grass. It was a pleasing sight.*

Before construction work commenced the construction area was clearly marked out on site and all the trees labelled as either 'to be removed" or preserved. Access routes and open areas had been carefully planned on the basis of vegetation that was worthy of being preserved. Just before construction commenced, a severe bushfire razed most of the site, and destroyed the vast majority of the vegetation.



Figure 198 - Bush Fire damages vegetation within the site prior to the commencement of construction works associated with Stage 1

Source: Max Dupain

Such a tragedy in landscape terms did not hinder Mackenzie's plans for the project.

> *The devastating wildfire which raged at the very time of the clearing and site preparation could have defeated the concept, but as has always been the case, the resilience and regenerating power of a natural environment, especially that of the Hawkesbury Sandstone, was irrepressible. From scorched earth to finished Stage 1, from devastation to burgeoning luxuriance, the landscape recovered impressively.*
>
> *In early stages, (after the big fire) advising the builders that the scorched earth on the other side of the no-go fence was sacrosanct, raised some querulous expressions. But on the approved side of the construction fence it was gratifying to see later a large booted-foot hesitate and avoid crushing a bright little emerging Boronia, Banksia or Grevillea…From many points within the finished building complex, veteran specimens of a primeval nature were caused to survive the building process and be able to add intriguing detail just metres from window and doorway.*[40]

His approach to the Ku-ring-gai site was typical of his general work practice, enhanced through prior experience on diverse landscape and conservation projects. The campus site was, Mackenzie believed, distinctive for three reasons:

> *a) Each of the two stages in the development was of massive proportions and roads, carparks, sports fields and ancillary buildings indicated a large site cover.*
>
> *b) Although only say 8km from the Sydney CBD in a straight line, the example of dense unspoiled Hawkesbury Sandstone flora was truly exceptional. The site also offered massive surface rock formations over a flattened ridgeline leading down to the Lane Cove River.*
>
> *c) Bringing together the two situations of proposed extensive built structure and the site qualities described above raised the prospect for me of an environmental calamity.*

[40] Mackenzie, *An Exploration in Landscape Architecture*, September 1999

Unknowing of just how well the combination of disparate elements was eventually to turn out, I set about, reluctantly, to install the conservation techniques [used on residential display homes sites]. A pre-emptive outline plan of building perimeters, roads, car parks, sports fields etc plus access and other attendant requirements was devised. This outline was surveyed on site and delineated with a man-proof wire mesh fence. A contractor was engaged to clear within the complex fenced shape so that tenderers on this multi-million dollar construction job would be presented with a cleared, fenced and committed building site.

Contract documents prescribed the conditions that applied to access and preservation requirements. Needless to say the process was extremely unorthodox but with the full cooperation of David Turner the NSW Public Works Department's project architect, the programme was formally accepted and acted upon. Another trick was to have the contractor install a 600mm thick blanket of site fill material over selected sandstone surfaces, one large enough to become a substantial storage and access area. The contract demanded, also, a removal of the fill blanket at project end, by machine, by shovel, by rake, broom and fire hose – in that order. The outcome was very satisfying using this sequential method previously trialled successfully on the rock faces of the Peacock Point park.

The test and proof of the validity of the conservation policy and the justification of its initial nuisance value with some associated cost, was borne out clearly when an almost impossible juxtaposition of wild nature and new, bulky, sophisticated concrete and glass envelopes, was finally revealed.[41]

It had been envisaged that Stage One would be finished and the college ready for occupation in 1970. However, although construction began in 1969, action by local residents and Kuring-gai Council protesting about the expected traffic, the need for off street parking and damage done to roads by construction vehicles, delayed the building process. In early 1970 the Council decided to put weight limits on vehicles using Eton and Abingdon Roads because the Department of Education had refused to share costs of road repairs and improvements. Council inspectors stopped vehicles containing building materials at the entry to the college site. This veto almost stopped construction, and was only lifted when the State Government agreed to meet part of the cost of road strengthening and improvements. Local complaints about parking and access continued to plague the college during the building period and beyond. In July 1970, the Government contributed $16,000 to the Ku-ring-gai Council towards the reconstruction, kerbing and guttering of Eton Road.

An aerial photo taken in 1970 (Figure 199) shows a large portion of the centre of the site largely cleared of bushland, ready to accept the oval, tennis courts and parking area at the north western corner of the overall site. Stage One is nearing completion, with a large section of bushland retained within the area that was soon to be used for Stage Two. The main lower or eastern car parking area was constructed, as was the bus turning circle. The area of bushland that was to become the main north eastern carparking area remained undisturbed.

A Report by the Student Representative Council, clearly exhilarated at the prospect of the new campus, wrote in early 1971 that students found it:

Hard to imagine the students in a huge concrete and brick mass near Fuller's Bridge, but finally the time is approaching…The new college is so big that old [Balmain Teachers' College] will fit into the science lab![42]

Overcrowding at the Balmain College in Smith Street had by this stage reached crisis point. While the new institution was viewed as a way around this problem, delays in construction prevented students from relocating when anticipated. The Secretary of the Balmain Branch of the Teachers' College Lecturers Association (TCLA) noted that:

The belief that a teachers' college is no more than a glorified high school has been current for a long time, but the building of William Balmain Teachers' College at Lindfield with the use of Commonwealth money has changed all that. It has proved very expensive, it has been in some respects very well equipped and it has taken a very long time to reach the stage at which students can begin to occupy it. It was supposed to have been opened at the beginning of last year. The delay has been unfortunate…[43]

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[41] *ibid.*

[42] Cited in Turley, *To Enlighten Them Our Task*, p146

[43] *ibid.*

Students began to occupy the campus in 1971 due to the overcrowding on the original Balmain College site, despite the construction works still uncompleted. This echoed the early days of operation of the original Balmain Teachers' College, which had also seen its first students studying amidst the construction works and debris. Relocation was imperative given that in 1971 about 900 students were crammed into Balmain, which had been designed for 200 students and could at best accommodate 400. In consequence, Stage One of the Lindfield campus commenced classes in mid 1971 with a skeleton staff. The library was not opened to the students until six weeks before end-of-year exams.



Figure 199 – Detail from aerial survey of Sydney showing subject site, 1970

Source: NSW LRS



Figure 200 - William Balmain Teachers College Stage One under construction, March 1970

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education



Figure 201 – William Balmain Teachers College Stage One under construction, March 1970

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education



Figure 202 - William Balmain Teachers College Stage One under construction, March 1970

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education



Figure 203 – William Balmain Teachers College Stage One under construction, 1971

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education

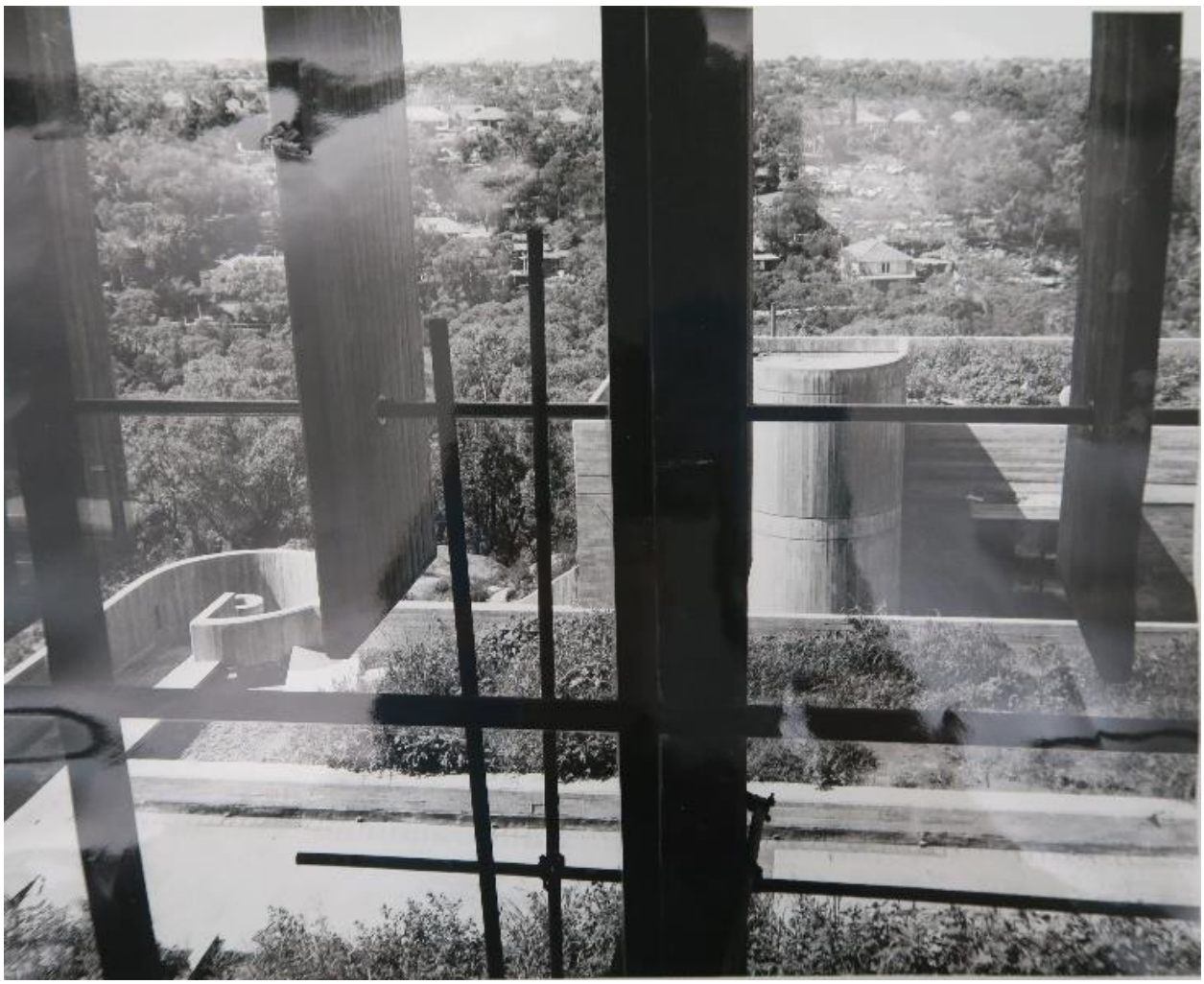

Figure 204 – William Balmain Teachers College Stage One under construction, 1971

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education



Figure 205 – Careful protection placed around natural landscape during construction works

Source: Bruce Mackenzie



Figure 206 – Battered slope and natural rock retaining wall to Oval, with concrete wall for future Gymnasium

Source: Bruce Mackenzie

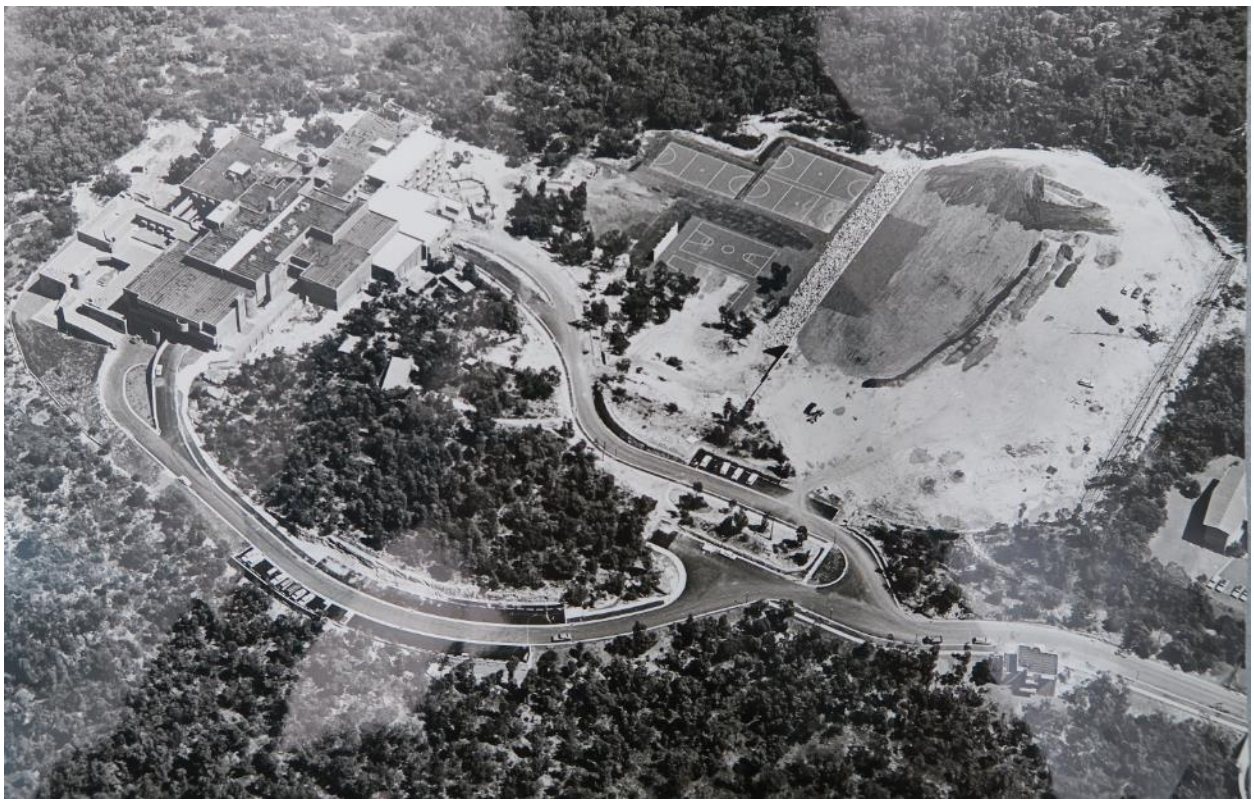

Figure 207 – Aerial view of William Balmain Teachers College Stage 1, March 1971, looking south-east

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education

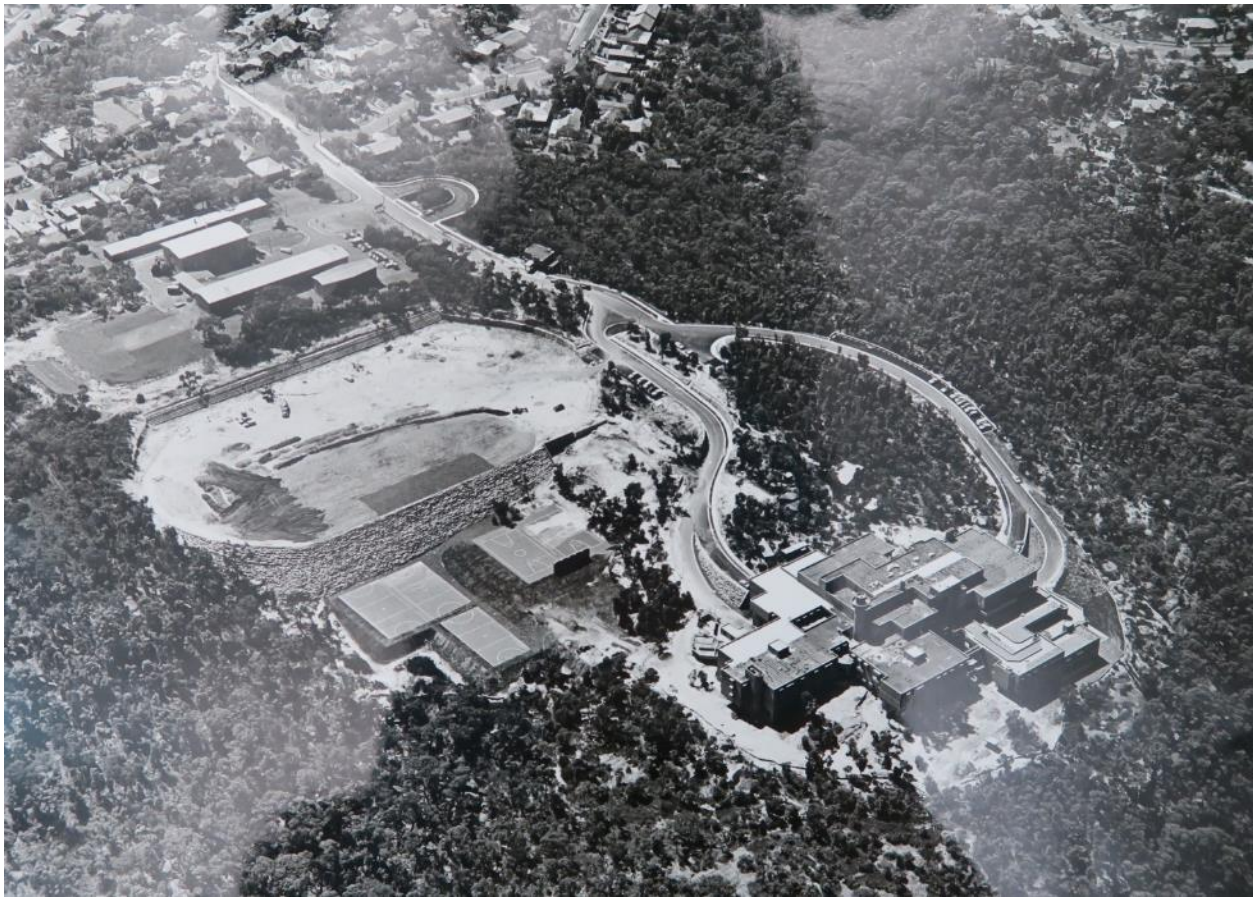

Figure 208 - Aerial view of William Balmain Teachers College Stage 1, March 1971, looking north-east

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education

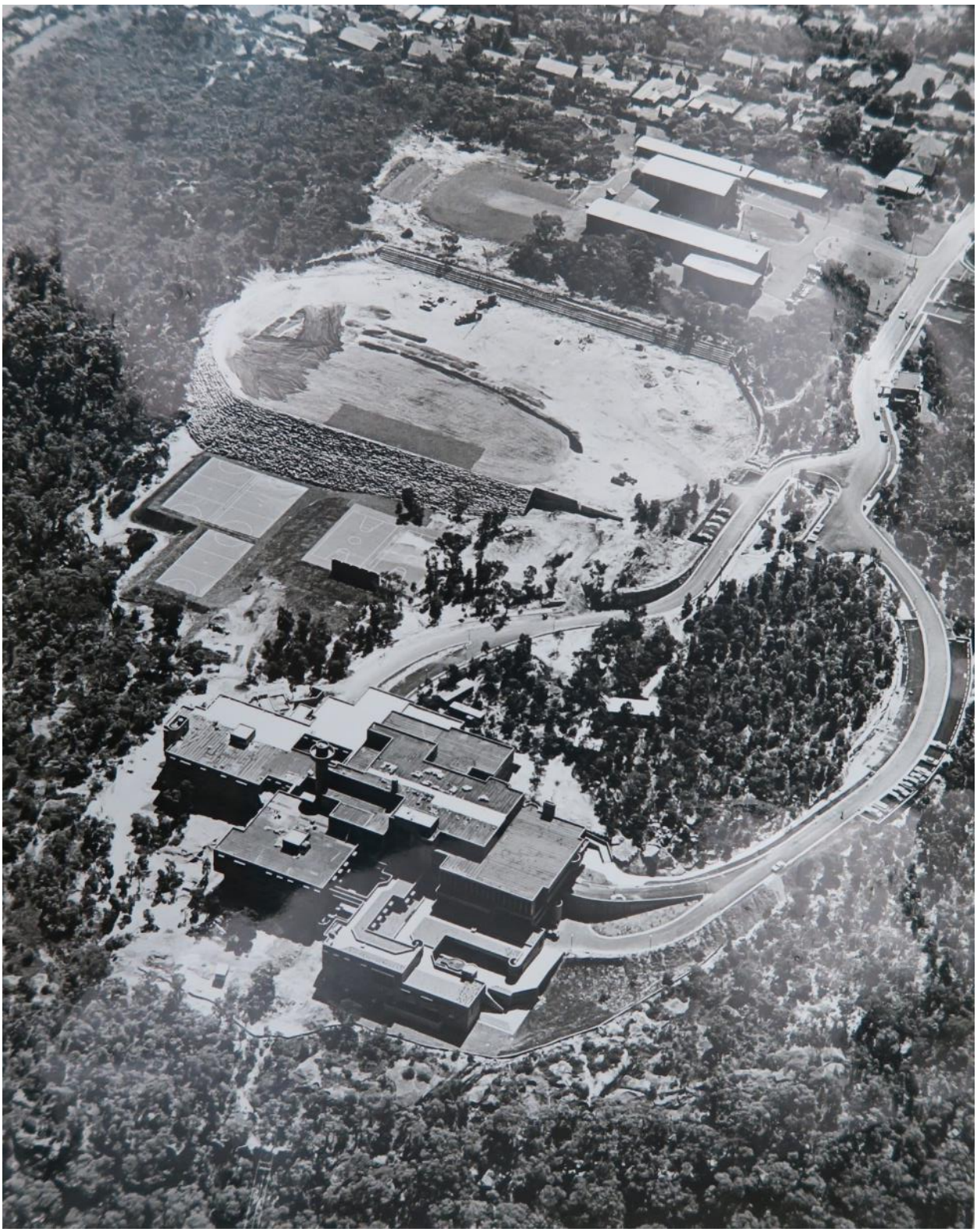

Figure 209 – William Balmain Teachers College Stage One, March 1971, looking north-west

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education

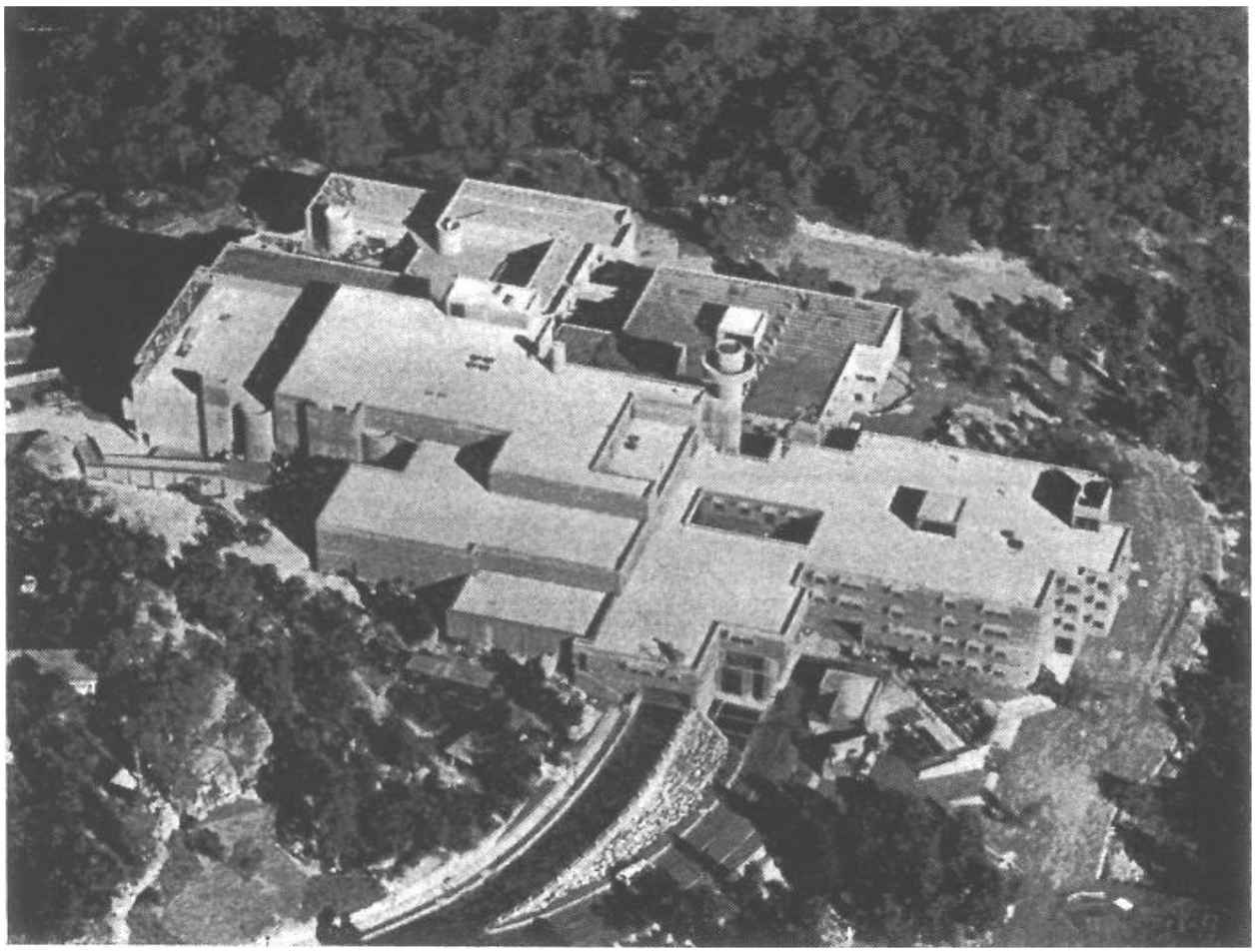

Figure 210 – Aerial view of the William Balmain Teachers College, Stage 1 completed, looking south

Source: UTS Archives



Figure 211 – William Balmain Teachers College Stage One, Library (left) and Interior view (right), 17 September 1971

Source: SLNSW



Figure 212 – William Balmain Teachers College, Lindfield – Stage One, eastern elevation of Library

Source: Department of Public Works, NSW, Annual Report 1971

By the completion of Stage One, the College had received favourable reviews for its design. *Stateworks* had noted approvingly in September 1971 that:

> *The College is constructed on split levels, giving a fortress like appearance in its setting of 55 acres of fine bush-land, steeply contoured to the Lane Cove River. The project introduces a bold concept in teacher college design, with emphasis on compactness. The design ingeniously brings together the widely varied activities of the college under the one roof, allowing a free flow of students from one area to another through central circulation spaces. The exterior design features off-the-form and pre-cast concrete, with small turrets concealing external spiral stairways, tiny courtyards, and elevated concrete bridges linking the various sections. The design concept is based on the activity zones of the college, with the central zone incorporating the library, students' union, assembly hall, lecture theatres and associated tutorial spaces…*
>
> *A striking feature of the interior design is the bright green carpet which forms an effective contrast with the natural concrete and brick finishes of the internal walls. The bright carpet gives a feeling of light and cheerfulness, important to students working within the college environment…*
>
> *The bushland settling of the college extends to the very edges of the buildings, and students have immediate access to recreation areas to provide relief from the pressures of the curriculum.*[44]

[44] Stateworks, September 1971.

The success of the design of the Ku-ring-gai campus earned a Merit Award from the RAIA NSW Chapter for Commercial and Public Buildings in 1972, and an Honourable Mention in 1973 in Japan.



Figure 213 – William Balmain Teachers College Stage One, Roof Garden, undated

Source: Bruce Mackenzie



Figure 214 – Treeplanting ceremony, 1971

Source: UTS Archives

3.2.8. Stage Two, 1972-1974

The construction of Stage Two followed almost immediately on the completion of Stage One, with the expectation that Stage Three would be hard on its heels. Stage Two added an Assembly Hall, Students' Union, offices and more lecture rooms. It was anticipated that the Stage Two construction phase would complete the Lindfield College, to be used by 900 students, bringing the total Government commitment for teachers' colleges at Lindfield, Goulburn and Newcastle to $15.5 million. According to CPH (2004), "the second phase of development commenced in April 1971 with a planned completion date of March 1973".

Although money had been freely available for Stage One, about half way through Stage Two there was a change in the Federal Government and the Whitlam Government decided that cutbacks in Stage Two were necessary. Money had been allocated for art works, a fountain and an organ in the hall, but these were cut out and the concrete roof of the Gymnasium, eventually built as Stage Three, was replaced with a cheaper medium. Stage Two, reaching completion in 1972, comprised the Assembly Hall, Students Union, Administrative Offices and additional lecture rooms.

On 1st July 1973, it was announced that the College would become autonomously governed and multi-purpose, in a clear departure from its hitherto existing role as a teacher training college. By 1974, the William Balmain College had become the Ku-ring-gai College of Advanced Education (KCAE), despite opposition from Greenhalgh, who felt that teachers' colleges needed to retain their identity as separate institutions rather than being absorbed into the multi-purpose Colleges of Advanced Education. The name change also served to identify the college with its location and its surrounding community. During initial consideration of the scheme he argued that:

> *Teachers colleges, formerly so called, as single-purpose institutions, were more effective over past years, than other institutions which turn out teachers. Yet teachers colleges are being modified. Some should at least be kept as single purpose institutions on the old style...I suggest that most careful considerations be made before this College at least be made multipurpose…The building*

was planned for one purpose. Just for once see how it works to complete a project, planned for, and see whether it justifies itself.[45]

Greenhalgh's protests were in vain, and in September 1971 all New South Wales Teachers' Colleges were technically made Colleges of Advanced Education, with incorporation projected in 1974. When the College became a corporate body in 1974, it was no longer tied to the Public Works Department and was able to choose its own architect. Turner was chosen to design the additions to the college over a twenty-year period, providing a rare degree of continuity in the design. This relationship was maintained until 1992, when the amalgamation of the CAE with UTS allowed for the appointment of another architect.

1974 was also the year in which teacher training courses were conducted within the School of Teacher Education. In addition, the College expanded with the establishment of a School of Financial and Administrative Studies. These were added to the already existing Library and Information Studies and the Practical Legal Training, based at the College of Law at St. Leonard's.



Figure 215 – William Balmain Teachers College Stage Two, basketballs courts, c.1972-4

Source: State Archives & Records, #1059 Kuring-gai College of Advanced Education

In June 1975, the College submitted a Development Application to Council for Stage Four. However, Council decided to delay approval until they had seen plans for an alternative access from Lady Game Drive to the campus, to service both students and staff as well as facilitate construction of Stage Four and projected future development of the site. The issue of alternative access was not to be resolved until the mid-1990s, when approval for such an access road was finally granted. This approval eventually lapsed.

[45] Principal Greenhalgh, 1972 Annual Report, cited in *Enlighten Them our Task*, p.153



Figure 216 - Exterior, KCAE, c.1974 showing Stage One building with Stage Two in background

Source: Max Dupain



Figure 217 - Car Parking and traffic congestion at KCAE, c.1974

Source: UTS Archives



Figure 218 – Construction of Stage Two, KCAE, 1972-74

Source: UTS Archives

3.2.9. Stage Three, 1976

David Turner's association with the college continued over an unusually long period. He had left the Public Works Department by the time Stage Three, which comprised the Gymnasium and additional teaching spaces, was completed. He did the design and documentation of Stage Three but had no direct involvement with the construction. In total, the Stage Three Gymnasium block cost $1.2 million.

In November 1976, the College applied for Commonwealth funding to cover costs of the alternative access road. In addition, 1976 saw the establishment of the School of Library and Information Studies; the following year the College of Law at St. Leonards affiliated with KCAE and became the School of Practical Legal Training within the academic structure of Kuring-gai College.



Figure 219 – Entrance to KCAE, 1975

Source: UTS Archives



Figure 220 – Construction of Stage Three,1975

Source: UTS Archives



Figure 221 – Construction of Stage Three, 1975

Source: UTS Archives



Figure 222 – Construction of Stage Three, 1975

Source: UTS Archives

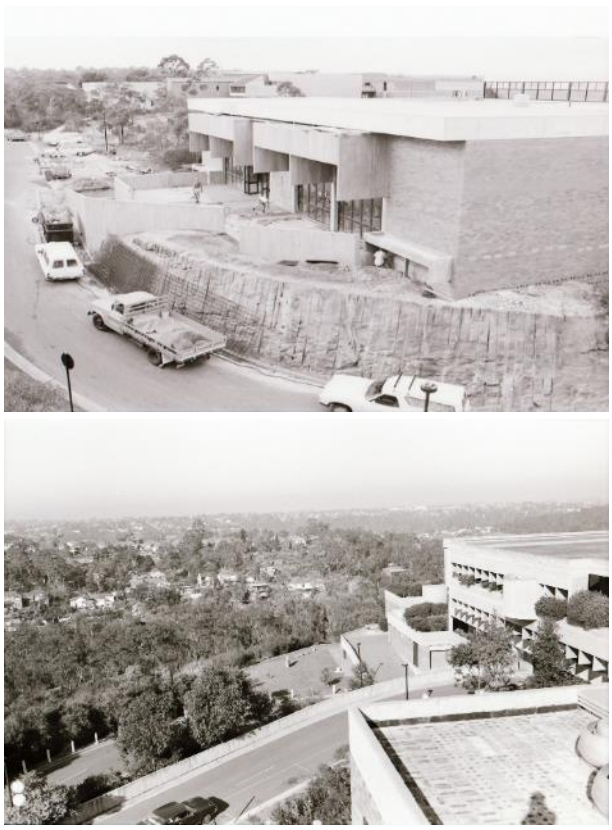

Figure 223 – Construction of Stage Three, 1975

Source: UTS Archives

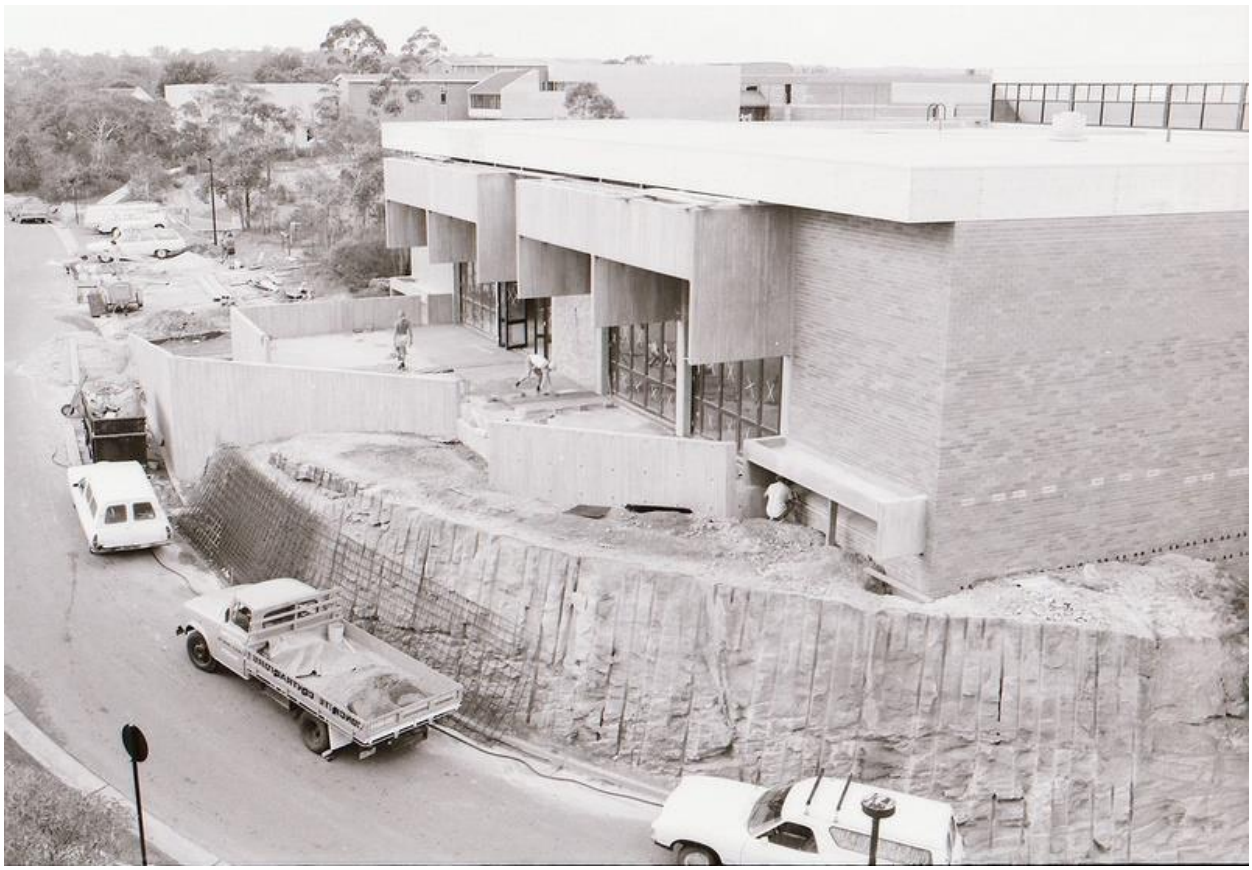

Figure 224 – Stage Three construction, KCAE, 1976

Source: UTS Archives



Figure 225 – Elevated building over the walkway to Stage Three, KCAE c. 1990s

Source: GBA, p55

An aerial photo taken in 1978 shows the college in a largely completed form, lacking only the infill section of Stage Four and the western extension, known as Stage Five (Figure 226). The north western and north eastern car parking areas are functioning, although the south eastern car park has yet to be constructed. The main oval and associated tennis courts are well established and the enhanced landscape character around the buildings and external works is gaining a stronghold. There are a few major trees identifiable in the north western carpark, and the nearby child care facilities are in place.

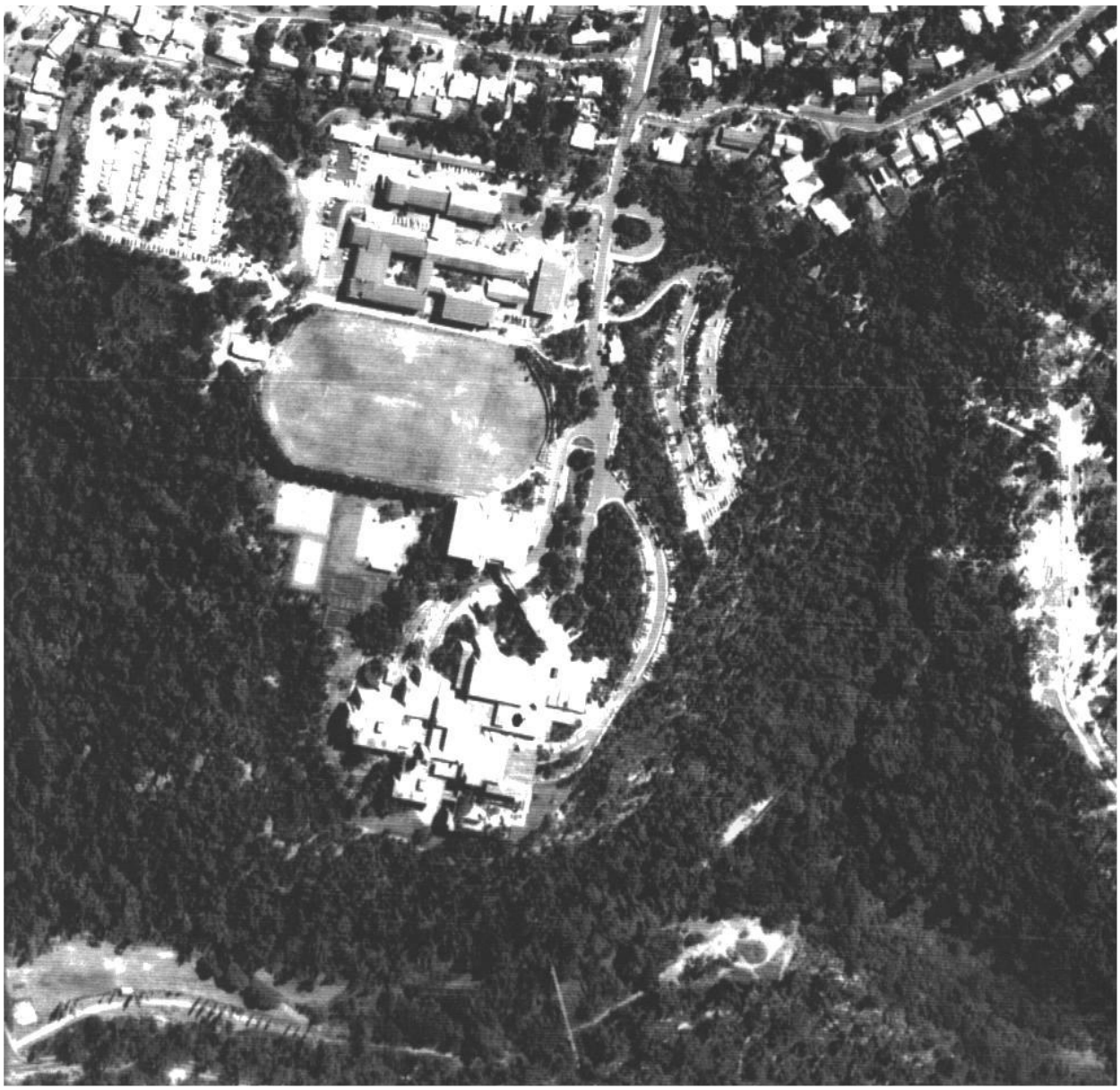

Figure 226 – Aerial view of subject site, 1978

Source: GBA, p53

3.2.10. Stage Four, 1980

David Turner recollected that he was involved with the design of the Dining Terraces in 1977. Stage Four also comprised a small structure that linked the northern extension of Stage Two with the Greenhalgh Theatre, as well as more lecture rooms and a staff office wing.

Other changes to the site in this period related to car parking at the campus: in 1979 when development consent was given for a 120 space extension to the north western car park, and in 1983 another 32 car spaces were approved. The layout of the north western carpark was carefully undertaken to protect the main trees.

The need to expand the original college complex emerged in the late 1970s, with a variety of locations being explored for new buildings. This was the first of a number of times that the issue was faced. In a memo prepared in the late 1970s, Bruce Mackenzie reviewed the likely impact on the landscape context that might arise from the various options then under consideration.

> *The main issue for response from a landscape viewpoint, in the face of proposals for expansion, is the question of ability to accommodate the additional structures and facilities without finally ensuring*

the destruction of the visual and physical qualities of the site. This issue affects the well-being of the College population, of the community in residence within its visual domain and the large numbers of people in transit along the river valley floor.[46]

The memo examined options for a new building to the south east of the main complex, to the south west, on the edge of the plateau, on the recently completed north west carpark, and on the space occupied by the oval, which would then need to be relocated. He also examined the options being explored for additional car parking areas and for the long running issue regarding the access road from Lady Game Drive. His conclusion clearly illustrates the dilemmas that faced the College in the late 1970s, dilemmas that were responded to in the late 1980s and are again on the table for careful examination as future directions for the campus are under consideration:

The whole prospect of expansion of the College presents continuing difficulties in almost all aspects when considered from the viewpoint of environmental impact. The basic premise of the validity of expansion must be measured against these important concepts if the community's interests are to be respected.

If the need to develop the expanded College function becomes inevitable for other reasons, then the requirements of integration with and preservation of existing site qualities will be very demanding and major compromise will be unavoidable.[47]

It is apparent that these comments were taken into account with the planning for Stage 4, which was eventually located on the north western edge of the Stage 2 footprint and enclosed a small courtyard that contained what Bruce Mackenzie later described as a small section of virgin bushland. This indent in the original composition of Stage 2 had been a significant design feature, allowing this special section of landscape to "penetrate" into the architectural arrangement and enhance the character of the new public foyer.

Further expansion of the campus was heralded by the introduction of nursing programs in 1985, and the establishment of the School of Nursing in 1986. This was an outcome of State Government initiatives to move nursing education out of hospitals and into colleges of advanced education. The School of Leisure, Tourism and Community Studies was also established in 1986, the College having offered programs in this area since 1979.

In about 1987 the function of the Building Committee, which had been set up many years earlier by Dr Ken Doyle, Secretary of the College, and on which either David Turner or his associate Juoko Keppo has participated on a relatively continuous basis, was replaced by a Building Manager. Subsequent minor alterations, such as wheel chair ramps, were installed without David's direct involvement or comment. David lived in England between 1978 and 1986, during which time Juoko Keppo maintained the professional relationship with the College.

A separate development, in tandem with the Stage 4 development, saw the construction of an elevated building above the walkway that connected across to the Gymnasium, to provide computer teaching areas. This walkway had originally been intended to be fitted with a barrel-vaulted roof for weather protection, but initial funding had forced the deletion of this item. The subsequent construction of the elevated building provided this protection.

In summary, Stage Four comprised

- Computer centre in the office building;
- Dining terraces;
- Installation of lights to north west car park;
- Human Performance Laboratories commenced in the gymnasium;
- Additional works to the gymnasium; and
- Extensions to north west and lower car park.

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[46] Mackenzie & Associates, *Kuring-gai College of Advanced Education – Proposed Expansion of College: Landscape Report (Preliminary Draft)*, p.1.

[47] *Ibid.*



Figure 227 – Stage Four construction, canteen extension, KCAE, 1978-80

Source: UTS Archives



Figure 228 – Stage Four construction, canteen extension, KCAE, 1978-80

Source: UTS Archives



Figure 229 – Stage Four construction, KCAE, 1978-80

Source: UTS Archives



Figure 230 – Distant view of KCAE, 1978

Source: UTS Archives



Figure 231 – Stage Four construction, KCAE, 1979

Source: UTS Archives



Figure 232 – Stage Four construction, KCAE, 1979

Source: UTS Archives



Figure 233 – Stage Four construction, KCAE, 1979
Source: Google Earth



Figure 234 – Stage Four construction, KCAE, 1979
Source: UTS Archives



Figure 235 – Stage Four construction, KCAE, 1979
Source: UTS Archives

3.2.11. Stage Five, 1988

The design of what became known as Stage Five commenced in 1984, with the appointment of David Turner as architect for additional lecture rooms and offices. This four storey section was also to provide additional teaching facilities as well as accommodation for the Student Union. The Director of the Department of Planning and Environment approved the DA in December 1985.

With Stage 5, the decision was taken to again expand the original footprint rather than opt for a separate building envelope. Although the south western location was favoured, the new wing was closely connected back to the original circulation spine, bringing it directly within the architectural frame of Stage 1.

In 1984 Ku-ring-gai College submitted a Development Application to Council for Stage Five.

The problems regarding access to the College were again raised by Council. The issue was summarised in a report by Engineers, Taylor Thomson Whitting:

> *Since the initial planning of Stage 4 in 1975, Ku-ring-gai Municipal Council has been requesting KCAE to provide additional on-site car parking and a direct access road to Lady Game Drive. The Stage 5 application heightened this pressure which stems from regular complaints from residents, mainly in Eton Road, Austral Avenue and Grosvenor Road, concerning loss of residential amenity due to the volume and time distribution of College traffic and overflow parking on the street. To assist in the orderly flow of campus traffic from Grosvenor Road into Austral Avenue, Ku-ring-gai Council has, in 1989, installed a roundabout at the intersection of Grosvenor Road and Austral Avenue. Due to limitations in road reserve width, the geometry of this is sub-optimal.*[48]

Council reserved their decision until a consensus had been reached about the alternative access to the site from Lady Game Drive. By March 1985 a plan for a new access road was also submitted to Council, but four months later Council deemed an alternative access road unnecessary, focussing instead on traffic conditions relating to Eton Road. Ku-ring-gai College lodged an appeal to the Land and Environment Court in October 1985, with the Minister for Planning generally approving construction of Stage Five without commitment given the problem of the access road.

In August 1985, Ku-ring-gai College again lodged a Development Application to Council for the construction of an access road on the south-western side of the campus. Ku-ring-gai Municipal Council eventually agreed to the concept on principle, providing the Lane Cove River State Recreation Area approved of the road crossing twenty metres of their land between Lady Game Drive and the campus boundary. While this proposal was eventually rejected in 1992, an attempt was made to find a compromise, with Council and interest groups such as the Lane Cove Recreation Area, National Parks and Wildlife Service, etc, together with local environmental groups, recommending the development of a modified southern access route to the campus. As part of this arrangement, NPWS eventually gave approval for the lodgement of the Development Application by UTS.

These discussions about college expansion intersected with the introduction of new policies on higher education, brought into being by the Commonwealth government. These new policies resulted in a further transformation from the College of Advanced Education, into an amalgamation with the University of Technology, Sydney. This was brought about on grounds that “in general, larger institutions offer a number of educational and related benefits.”[49]

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[48] Proposed Access Road for the Kuring-gai Campus of the University of Technology, Attachment F: Background Fact Sheet, p.ii.

[49] Turley, *op. cit.,* p179



Figure 236 – Stage Five construction prior to landscaping, August 1987

Source: UTS Archives



Figure 237 – Stage Five construction work at KCAE, 1986

Source: UTS Archives, S222.19



Figure 238 – Stage Five construction work at KCAE, 1986

Source: UTS Archives, S222.19



Figure 239 – Stage Five construction work at KCAE, 1986

Source: UTS Archives

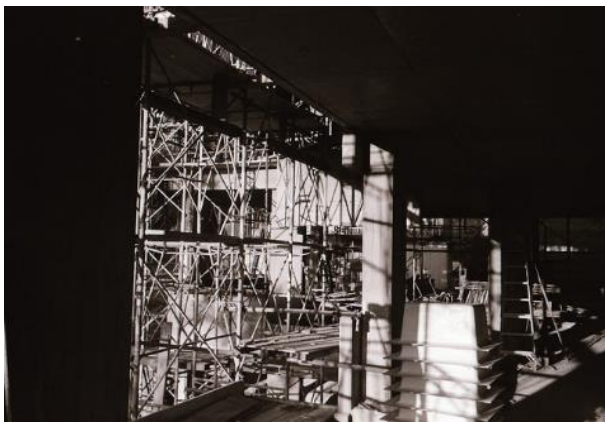

Figure 240 – Stage Five construction work at KCAE, 1986

Source: UTS Archives



Figure 241 – Stage Five construction work at KCAE, 1986

Source: UTS Archives



Figure 242 – Stage Five construction work at KCAE, 1986

Source: UTS Archives



Figure 243 – Stage Five construction work at KCAE, 1986

Source: UTS Archives



Figure 244 – Stage Five construction work at KCAE, 1986

Source: UTS Archives



Figure 245 – Stage Five construction work at KCAE, 1986

Source: UTS Archives



Figure 246 – Stage Five, located to the east of Stage One, KCAE

Source: GBA, p56

3.2.12. Stage 6 (Child Care Facilities and Library Extension)

In 1993, UTS submitted a development application to provide child care facilities, to expand the library and access road. Though this DA was accompanied by a more detailed and sympathetic Environmental Impact Statement than that which accompanied a previous DA lodged in 1991 with the Council for two new access roads, the Council refused permission for the access road and approved the new library works. The extension to the library was completed in 1994. The extension of the library included extensions at Level 3 which extended the space out onto an outdoor terrace, removing on of the rooftop planter boxes.

3.2.13. Additional Works

Following the major construction phases noted above, the expanding needs and general maintenance of the College were facilitated through minor works. Some of these works are briefly described in this section.

In 1982, the College considered upgrading the Greenhalgh Auditorium as well as the relocation of the bank, bookshop and student publications office. During the same year the College approached the NSW Higher Education Board for a special capital works grant to replace the college roof, which was now in a serious state of disrepair. In this regard, the Public Works Department and the Delhi Road CSIRO Experimental Building Station were consulted to determine the best means of repairing or replacing the existing roofing system. The approved roof works were conducted in 1983 and included the repairs of roofs over the library and administration blocks. Further works were to be conducted as funds became available. It should be noted that from this time the resurfacing of the College roof continues as an ongoing project. The proposed upgrade of the Auditorium was not conducted.

The takeover of the College by UTS in 1989 spelled the end of Turner's direct involvement. Aside from some initial design and documentation for alterations for the College architect, further consultation was not forthcoming. Turner was not short listed for the expansion and redesign of the library, and despite the offer of his services, the Campus has not sought them in the intervening period.

David Turner in his letter to Jacqueline Urford notes the changes to the main college building as follows: replacement of carpets, exposed conduits and unsympathetic emergency lighting, library alterations, additional floor inserted to dining hall, unsympathetic disabled access arrangements, seating in the dining hall and outside meeting terrace.[50] In addition, David Turner further notes that he was unaware when the alterations had been carried out and he believed that the final design had been altered without consultation with the original architect contrary to legislation.

3.2.14. Teaching and Expansion of the College

The Ku-ring-gai UTS Campus of the University of Technology, Sydney, has its origins in the Balmain Teachers College. The post war baby boom and influx of new immigrants into NSW resulted in a need for more teachers. It was therefore decided by the Department of Education in the 1960s to build three new teacher colleges.

Teaching at the College did not commence until May 1971, with the Balmain Teachers College finally closing its doors in July of the same year. Alton Greenhalgh, assumed the role of the first principal of the College and upon moving to the new building he instructed his ground staff to uproot a tree from the old Balmain site and replant it on the College grounds during a small ceremony. It is reported that the tree died the next day.

On the 1st September 1971, the William Balmain Teachers College was declared a College of Advanced Education. This was the first step towards achieving autonomy as a corporate College. Two years later, the College became an autonomously governed and multi-purpose College. Over the following years the teacher training courses expanded with the establishment of the School of Teacher Education, the School of Financial and Administrative Studies both in 1974, the School of Library and Information Studies in 1976 and the College of Law in 1977.

The College achieved full corporate status in 1977 and a College Council was constituted. One of the first changes of the new governing body was to change the name of the College to Kuring-gai College of Advanced Education. In the same year the College was affiliated with the St Leonard's College of Law and the Practical Legal Training Department was added to the Colleges teaching areas.

Since the College opened its doors it has strived to maintain a policy of providing community access to its facilities, including the library, theatres, lecture rooms and recreational facilities, for example though the Greenhalgh Auditorium was not at this stage able to be used as a public hall the College undertook to investigate obtaining a licence for its use as a public hall.

The College was originally designed to cater for 900 students. By 1980, the College had more than 3,000 students with a wide variety of courses available ranging from recreation to legal. Further expansion occurred during this decade not only as a result of the growing numbers but also as a direct response to the State Government's initiative to move nursing education out of hospitals and into colleges. As a consequence, the School of Nursing and the School of Leisure, Tourism and Community Studies was established in 1986.

As the College continued to expand the surrounding residents became increasingly concerned about the problems associated with student and staff parking and traffic. To alleviate the problem the local residents' group pursued Council to provide a new access road while at the same time environmental groups protested against the damage that would result should such a road be constructed. By 1989, the Council placed parking restrictions in the surrounding streets. As these areas remained largely unpoliced these were of little use.

In January 1990, Kuring-gai College of Advanced Education merged with the UTS and the student population on campus rose to between 4,000 and 5,000. During the same year, UTS started to lobby Council for a new access road. The favoured solution was Lady Game Drive which was in the ownership of the National Parks & Wildlife Services. Following discussions with National Parks & Wildlife Services the right to take this access road became known as the Conservation Agreement. However, UTS did not sign this agreement and the proposed two new routes did not proceed.

By the 1990s, student numbers within the University began to decline despite projections of future growth. Despite this the number of students with cars continued to rise and UTS submitted another development application to Council in 1994. The new access road was approved in 1995 subject to conditions which also included that UTS sign the Conservation Agreement for bushland management.

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[50] Letter from David Turner to Jacqueline Urford, dated 10 November, 2003.

3.2.15. Major Reorganisation, 1996

By 1995, an audit by UTS staff had identified considerable amounts of vacant space within the buildings, with 30% recorded as idle. As an outcome of this audit, a large scale internal reorganisation was carried out at Ku-ringgai to create new teaching spaces and facilitate a new academic and administrative structure. This was a further step in the integration of the UTS Haymarket, Ku-ring-gai CAE and ITATE operations. The plan was to create three major concentrations of use within the existing buildings.

The works were required to be undertaken during the 12-week summer vacation at the end of 1995. The tight programme was of such concern to the UTS project managers that they broke the works into three packages for separate building organisations to undertake. The project architects for this work were Brewster Hjorth.

In essence the project comprised the following:

- Relocation of the Nursing Faculty from Gore Hill into the western section of the complex.
- Consolidation of the Business Faculty into the north east section of the complex, including on the level above the Gymnasium.
- Consolidation of the Education Faculty into the south eastern section of the complex.

In addition, the Student Union moved from its main location in Stage 5 to a new location within the Stage 2 building. It was to be expanded in 1998 with the construction of the mezzanine floor. The majority of the senior administration were relocated back to the Haymarket campus.

Remaining works were largely confined to the internal sections of the buildings and had little effect on the internal corridors or main public spaces. The internal alterations, which were sympathetic to the existing structure, were estimated at $3.5 million, and included new partitioning, upgraded communications, fire alarms, air conditioning, services and features such as lighting.

The following year, 1996, a telecommunications facility was added, along with a Telstra mobile phone base. An extension was added to the Child Care Centre, designed by Howard Tanner, in 1996-98.

A series of other works were also carried out on the campus site in the last years of the century. These included progressive upgrading for building code compliance, re-roofing of some 60% of the roof membranes, smoke detectors, exit and emergency lighting, new seats and carpets in the main auditorium.

The construction of the new road was put on hold by the University as a result of the planned Parramatta Rail Link as it was considered that a station on its campus would provide them with an alternative means of access for students. The railway station on the Campus did not eventuate as Government realised that the predicted patronage of the University was overly optimistic.

3.2.16. Review and Closure of the UTS Ku-ring-gai Campus

In 2003, UTS decided to undertake a major review of the Ku-ring-gai campus, as part of its general review of operations and accommodation. The University engaged CRI Australia Pty Ltd to prepare a planning study to investigate alternative uses for the campus in response to a growing student preference to study in the city or at universities with access to convenient public transport, including its potential rezoning and the development of an accompanying concept plan. Simultaneously, UTS commissioned Graham Brooks and Associates to prepare a Heritage Assessment and Conservation Strategy as part of that research.

The University set up a Community Reference Group (CRG) in late 2003. The committee met eight times in 2003 and 2004, with the CRG steadfastly rejecting any residential development of the site. Despite opposition from the local community, the UTS Council decided to proceed with a rezoning application of the site.

> *The proposed rezoning will enable the University to remain operating from the site, if required. It will also enable the site to be re-used for a potential combination of educational, commercial, community and recreational uses.*

UTS submitted the rezoning proposal in 2006, however the Ku-ring-gai Council resolved that the plan would not be formally exhibited it “in its present form”; secondly, “Council staff work with UTS to determine a more feasible and appropriate development opportunity for the site”; and thirdly, that the proposal included a

Council approved management plan for the bushland component of the site to protect habitat and threatened species.[51]

UTS and Ku-ring-gai Council could not reach agreement on the rezoning plan, so in June 2007, Frank Sartor, Minister for Planning, registered the proposal as significant and called the proposed under Part 3A of the Environmental Planning and Assessment Act 1979. This move angered members of the community and raised the ire of Barry O'Farrell, Member for Ku-ring-gai and Leader of the Opposition.

> *I report a theft! On behalf of the Ku-ring-gai community I represent—and the wider public interest—I raise the theft of a public asset. Just when we thought it could not get any worse under Minister Frank Sartor's regime, it does. Just over 24 hours following the passage through the Legislative Council—in the dead of night—of the Iemma Government's disastrous new planning laws, Minister Sartor has again used his powers to override a local community. Yesterday afternoon the planning Minister approved the redevelopment of the University of Technology Kuring-gai site at Lindfield for 345 dwellings. This is a $216 million development that will involve replacing the existing educational facilities with 10-double storey, unattached dwellings; 25-double storey integrated or townhouse dwellings; 310 units in nine buildings of up to five storeys.*
>
> *It is a gross overdevelopment of a site that is located deep in a residential suburb and which overlooks the Lane Cove National Park. It is a gross waste of a site that could and should continue to be used for educational purposes, if not tertiary education, then secondary or primary, or a combination of both. It is a gross victory for greed over good—a site obtained from the State for just a single dollar. It is now to be part of a $216 million development, a site earmarked for educational usage—a site about to deliver a massive windfall profit in which the State's taxpayers will not share, even if they agreed with this proposed development.*
>
> *The nine-hectare University of Technology, Sydney site is located at the end of Eton Road, Lindfield, a local suburban street. Unlike other development sites in Ku-ring-gai and elsewhere, it is not adjacent to a railway station or a major or regional road. The development agreed by Minister Sartor will have a significant impact on local traffic, during both the construction phase and afterwards. The university's activities already have an impact, but nothing like what can be expected under this planned development. Residents will face a dramatic increase in local traffic on Eton Road and surrounding residential streets. Combined with the existing traffic volumes, rat-running on local streets during peak periods and limited traffic light controlled points of access to the Pacific Highway, this decision will create a traffic nightmare for the area's residents.*

UTS lodged a proposal with the NSW Department of Planning in October 2007 for rezoning the site, partly demolishing existing campus facilities for residential development [retaining the main campus building for education or adaptive reuse], developing approximately 440 new dwellings with residential buildings up to five storeys in height, incorporating car parking, internal roads and a pedestrian network while conserving bushland and creating a village green park.[52] The following year, the Minister for Planning approved Concept Plan MP06-130, and rezoned the UTS Ku-ring-gai Campus through an amendment to Schedule 3 of the then State Environmental Planning Policy (SEPP) (Major Projects) 2005. The amendment to Schedule 3 approved the redevelopment of the site for residential development and educational uses. It also provided for the heritage conservation of the main Campus building and set out development controls in relation to other matters including the height of buildings and the maximum number of dwellings.

In 2010, UTS invited tenders for a 13.8-hectare portion of the UTS Ku-ring-gai campus for a residential development opportunity. Defence Housing Australia (DHA) submitted a successful tender for the Lindfield site with Ministerial approval. The DHA tender was successful and the acquisition of the property was settled on 17 March 2011.

DHA commenced construction of the residential development in mid-2013. It was named "Crimson Hill Lindfield" after the colour of the Victoria Cross medal ribbon. Each of the precincts in the housing estate is named after recipients of the Victoria Cross.

In the intervening period, UTS Ku-ring-gai Campus functioned as normal while development of additional consolidated facilities were built on the City campus. During 2011, UTS carried out work on public spaces at Lindfield to provide group learning and informal study spaces, and install audio-visual booths around the

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[51] 250 UTS Rezoning Proposal File: S03621, Ku-ring-gai Council, *Minutes of Ordinary Meeting of Council*, 28 June 2005
[52] *UTS Annual Report 2007*, pp85-6

campus.[53] At the end of November 2012, the UTS Council approved entering an agreement in-principal with the New South Wales Government whereby UTS would swap the Kuring-gai campus for a state-owned asset in Ultimo – NSW TAFE's Building U on its Ultimo campus.

> *We are mindful of the effect of this move on the staff and students at Kuring-gai campus. Existing students who will complete their courses by the end of 2015, will do so at the Kuring-gai campus and, come 2016, all other students will be able to complete their courses at the City campus. I am excited that we will all be together on the one dynamic, revitalised campus*. [54]

The following year, UTS announced in the 2013 annual report that the Business School students would be relocated to the City campus one year earlier than originally planned. However, there would be no change to the Faculty of Health and Faculty of Arts and Sciences.[55] The Business School moved into the new Dr Chau Chak Wing Building in November 2014.

In 2015, ownership of the Ku-ring-gai campus reverted to the State Government in exchange for an expanded footprint for UTS's city campus. At the end of the year, the last staff and students based at Ku-ring-gai relocated to the City campus. UTS Vice-Chancellor Professor Attila Brungs reported in September that:

> *The unification of our campus is a key aspect of our billion-dollar-plus City Campus Master Plan. We have created a revitalised, state-of-the-art, urban campus that offers all our staff and students exceptional learning and research facilities, and fosters connection, collaboration and creativity.*
>
> *The transfer of learning and research activities from Kuring-gai to the city from semester one 2016 will enhance the vibrancy of the campus and the culture of the UTS community.*[56]

The staged transfer took place in four staged moves between late November and early December, involving around 100 staff from the Faculty of Health, Library and Faculty of Arts and Social Sciences. The majority of staff were relocated to Building 10 on the City campus which was accordingly refurbished in preparation for the move. The final day of teaching was on 5 November 2015.

3.2.17. Lindfield Learning Village

In the last decade, there has been under investment in New South Wales government school infrastructure and diminishing funding for maintenance of existing physical assets. At the same time, New South Wales has experienced rapid population growth, especially in the Sydney metropolitan region. Consequently, many schools are at capacity and there are more students than can be accommodated in existing classrooms. According to the NSW Auditor General, "the condition of classrooms has been declining due to insufficient maintenance, and many are not configured to support contemporary and desired future learning and teaching methods."[57]

The year before UTS Ku-ring-gai campus was handed over to the government, Infrastructure NSW released the *State Infrastructure Strategy Update 2014*. One of the key recommendations was a reservation of $700 million from the Rebuilding NSW program to create a 10-year Schools Growth Program for education infrastructure to service growing student populations. Infrastructure NSW also recommended that the Department of Education finalise the School Asset Strategic Plan. Coinciding with the publication of this report, and before the site was officially handed over to the Department of Education and Communities (DEC), in July and August 2014, the first stage in public consultation on the Lindfield Learning Village took place.

Around the same time the Department of Education and Training (DEC) appointed SHAC to undertake an existing condition report of the UTS Ku-ring-gai campus and propose masterplan options associated with its conversion into a K-12 school.

> *The Lindfield project included the development of a new model for education and teaching, with students housed in 'neighbourhoods', to create the Lindfield Learning Village, as well as utilising the*

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[53] UTS Annual Report 2011, p78

[54] UTS Annual Report 2012, p5

[55] UTS Annual Report 2013, p63

[56] "UTS celebrates a new beginning for its Kuring-gai campus", 3 September 2015, UTS Newsroom, http://newsroom.uts.edu.au/news/2015/09/uts-celebrates-new-beginning-its-kuring-gai-campus, accessed 7 September 2017

[57] NSW Auditor General's Report to Parliament, *Planning for school infrastructure*, 2017, p2

existing facilities within the brutalist 1970's building for specialist teaching. The key focus of the second stage of masterplan options was to provide affordability, flexibility, adaptability, sustainability as well as practicality.[58]

The Department of Education (DoE) decided to deliver the Lindfield Learning Village in two stages to increase capacity as demand grows. Tenders were invited in early 2018 for Phase 1 of the project, comprising 13 classrooms to house the first 350 students – to be completed by the start of Term 1, 2019. Work commenced on site in mid-2018 and was completed as planned prior to the beginning of Term 1, 2019.

The works associated with the Phase 1 school included a major layer of development within the existing structure to facilitate the implementation of a new education model which was based on open plan and stage-based learning. The works were designed by DesignInc in conjunction with Lacoste Stevenson. Key changes as a result of Phase 1 of LLV include:

- Removal of a number of internal brick walls to create open learning spaces.
- Retention of the main circulation spine at Levels 4 and 5 including the off-board concrete which defines the spaces. Retention of the existing use of the gym, cafeteria and auditorium.
- Compliance upgrades throughout.

Planning for the Phase 2 of the school was underway at the time of writing Volume 2 of this CMP. Phase 2 works will include alterations and additions to the southern areas of the school (original construction Stage 1)

3.2.18. David Donald Turner, project architect

David Donald Turner was born in 1931 in Maidstone, Kent, UK and was educated at Malvern College where he received his school certificate. Between 1949 and 1953 he was employed with a succession of architects including Maxwell Fry & Jane Drew and Yorke Rosenberg & Mardell. During this period, he studied at Regent Street Polytechnic, London. He became an Associate of the RIBA in 1955. He went on to achieve his AA Diploma in 1959 in the UK.

From 1955 to 1957 Turner took part in National Service with the Royal Engineers in Cyprus, then served as Supervisor of Construction & Landscape Design where he designed several residences for the Army & RAF and Commanders in Chief in the Middle East.

He returned to private practice in the UK and USA from 1957 to 1961. The following year he arrived in Australia and commenced work as the Design Architect for the NSW Department of Public Works. In this role he was responsible for the design of several schools, government office buildings, police station and teachers colleges. From 1967 to 1973 he was Architect-in-Charge of Teacher's Colleges and Colleges of Advanced Education, acting as Project Architect for the Masterplan of the Kuring-gai CAE – later to become the UTS Ku-ring-gai Campus. This site went on to win several awards, including the Sir John Sulman Award for Architecture (1977) RAIA Merit Award (1973), the Concrete Institute Award (1973) and the Horticultural Award of Merit (1977).

Turner split the following decade between the UK and Australia, running his private practice, David Donald Turner Associates. By 1986, Turner was back in Australia, living and working in the Blue Mountains. He has since retired.[59]

[58] http://www.shac.com.au/portfolio/education-masterplans, accessed 10 September 2018

[59] "Australian Institute of Architects NSW Architects Biographical Information, David Donald Turner, FRAIA, ARIBA", RAIS NSW Chapter

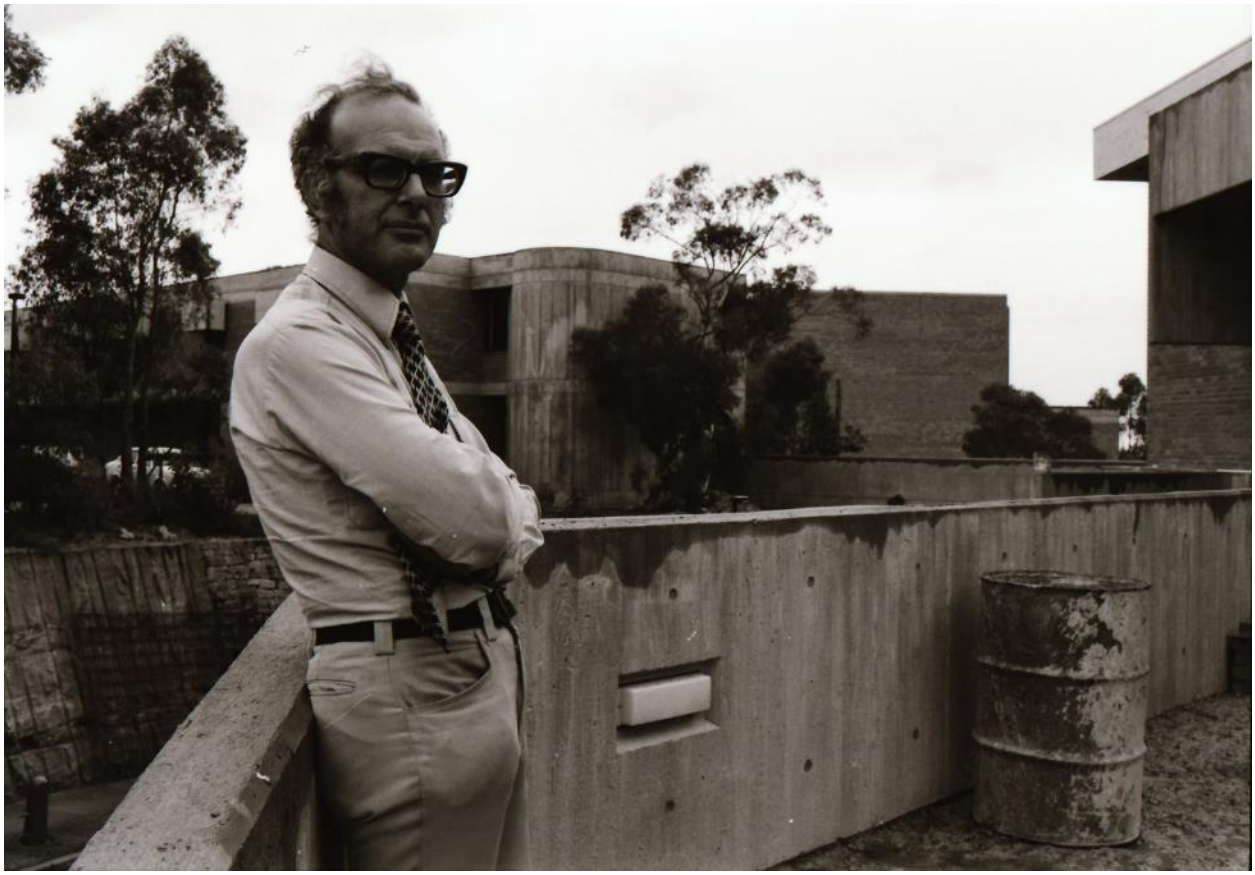


Figure 247 – David Donald Turner, project architect c, 1980s

Source: UTS Archives

3.2.19. Sulman Award 1978

In 1978, the then Ku-ring-gai College of Advanced Education was awarded the Sulman Award by the NSW Chapter of the Royal Australian Institute of Architects. The Jury Comments published at the time of the award stated:

> *Ku-ring-gai College of Advanced Education is a visually strong and dramatic structure, heavily articulated in both internal and external form.*
>
> *The landscaping, which is an important element of the building design contributes greatly to its close integration with the site, especially along the Millwood Avenue approach.*
>
> *Strength of expression is retained in the detailed consideration of the building elements. The off-board concrete which predominates is expertly handled in design and construction.*
>
> *The quality of the design concept is evident as one enters the central spine of the building which is its circulation space, its internal street.*
>
> *It is here evident that this building is the first in Australia to come to grips successfully with the essence of a college as a close collection of teachers and students – a social entity.*
>
> *All the functions of the college are drawn together by this street, which offers spaces of great variety of scale and character, inviting its users to enjoy them in passing through, in lingering and in relaxing.*
>
> *The building invites and rewards exploration. It does not reveal its variety and complexity at once but continues to offer surprise and stimulation to the user.*

Individual spaces, in particular the library and the main auditorium exemplify the care in detailed design which maintains the building's consistency of character.

The building capitalises on its location with views, vistas, light shafts and roof decks. It is here that the detailed consideration of landscape design makes its most significant contribution to its success.

Choice of materials and integration of services have been carried out with great care so that maintenance is minimised. Colour is introduced in material and finishes which by nature are renewable. The use of colours complements and emphasises the quality of the beautifully modulated and studied spatial relationship.

There is a strong sense that there has been effective and continuous control and co-ordination of the design and construction process.

The building has been in use for some time – its quality as a piece of social architecture, accessible to the community is best evidenced in the enjoyment and enthusiasm it engenders in its users.[60]

Due to the timing of the Sulman Award in 1978 and the progressive construction of the building complex, it has not been established definitively exactly what are the sections of the complex that were actually recognised with the Award. Stages One and Two had been completed by the time of the RAIA Merit Award in 1973, while the Gymnasium was erected in the years before the Sulman Award.

Equally, it cannot be assumed that as the Sulman Award was given in 1978, those sections of the complex that were subsequently erected are automatically recognised by default.

The complex also won the 1978 Horticulture Award of Merit.





Figure 248 – Presentation of Sulman Award for Architectural Merit, 1978. George Muir holding medal on right.

Source: UTS Archives

[60] NSW Awards 1978, in *Architecture in Australia*, 1978-9, p.20



Figure 249 - Unveiling of the Sulman Award for Architectural Merit, 1978. George Muir on far left, David Don Turner (second from right)

Source: DPWS

3.3. CHRONOLOGY OF CONSTRUCTION, ALTERATIONS AND ADDITIONS

The following Table (Table 5) and accompanying diagrams in Sections 3.4 provide an overview of the development of the Lindfield Learning Village site and a detailed list of alterations and additions to the site.

The development of the Lindfield Learning Village can be generally divided into six stages of development, as follows:

Stage 1	1968 - 1971
Stage 2	1972 - 1973
Stage 3	1974 - 1976
Stage 4	1977 - 1983
Stage 5	1984
Stage 6	1985 – 2015
Stage 7 LLV	2015

Table 5 – Lindfield Learning Village chronology of constructions, alterations and additions

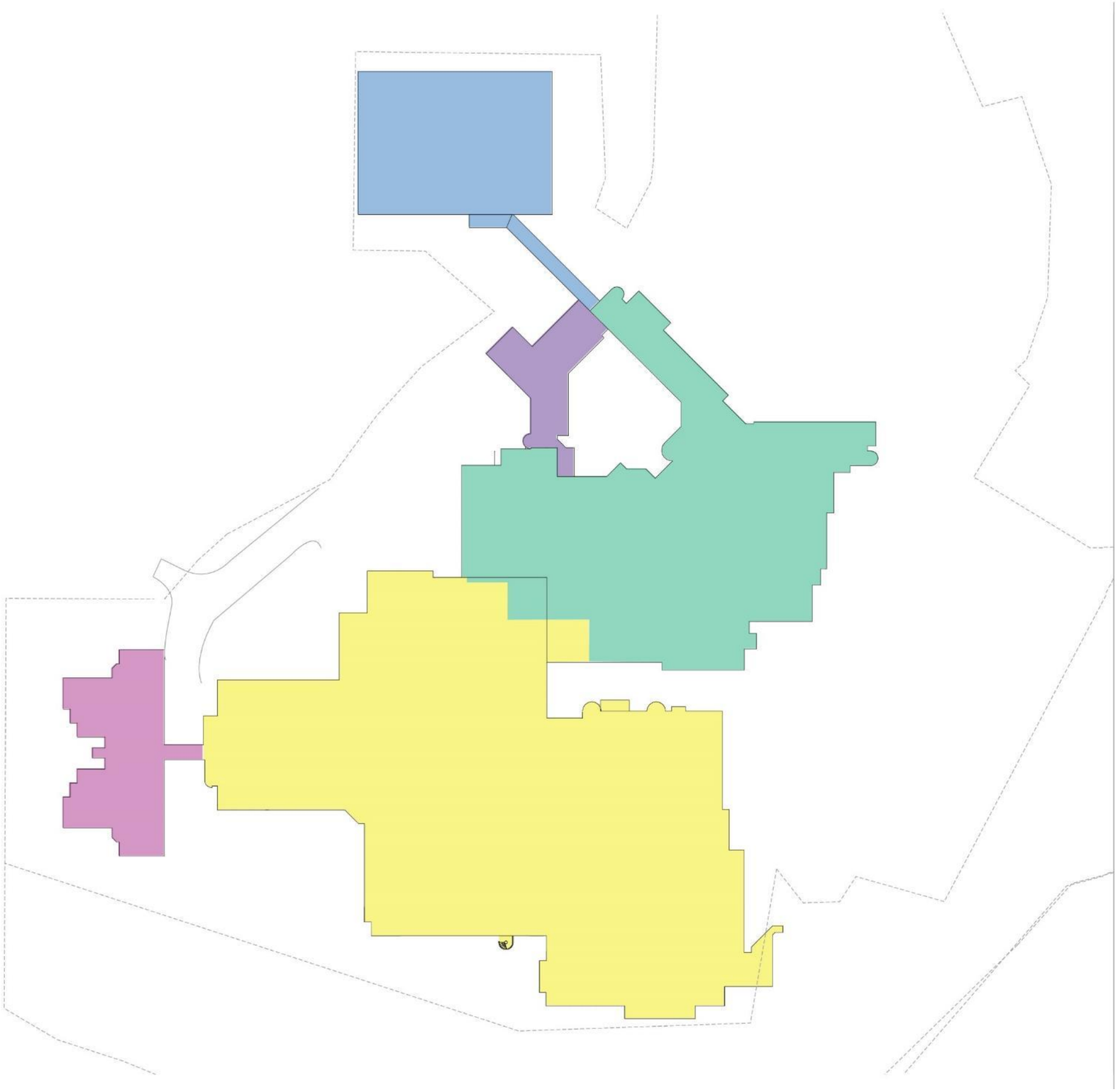
Date	Description
Stage 1	
1968/71	Library, lower lecture rooms, art/craft area, TV studio, teaching spaces, science block astronomy tower, internal car parking and temporary accommodation for ancillary uses
Stage 2	
1972	Sports field, basketball courts, medical teaching block, union and administration area, assembly hall, and additional parking to north and east of main building
Stage 3	
1974/75	Physical education facilities and accommodation for lecturing staff: gymnasium and sports facilities linked via a walkway from the main complex: general physical education facilities, rooms for lecture staff, dance studio, student work rooms, stores, change/shower rooms, lecture room with AV equipment, anatomical aids, special human performance equipment and lecturer's studies, two squash courts
1976	Landscaping works near north western car park; additional car parking; attendants booth at main entrance
Stage 4	
1978/79	Academic office block comprising, computer centre in office building, dining terraces, installation of lights to north west car park, human performance laboratories in the gymnasium, additional works to the gymnasium, extension to north west and lower carparks
1982	Conversion of smaller tutorial rooms on level 3 to larger general purpose lecture rooms
1983	Repairs to roofs above library and administration blocks

1984	Additional lecture rooms and offices
1985	Office areas on level 6 converted to enable relocation of student administration and finance departments, and relocation of research and planning and the publicity departments to other areas of college. Ceramics laboratory, woodwork room and observation rooms converted to general purpose teaching space. Replacement roofing membrane and insulation system
Stage 5	
1985/86	Child care facilities
1986	Re-roofing Roof ventilators installed in roof of Greenhalgh Theatre
1986/87	New teaching and staff accommodation wing; conversion of two classrooms adjacent to existing office areas for use by student administration centre, college bookshop relocated
1988	Landscaping surrounds to new wing of College, construction of ponding system for stormwater drainage
Stage 6	
1994	Extension to the library
Stage 7 (LLV)	
2019	Alterations and additions to facilitate Phase 1 of the LLV and to accommodate 350 students.

3.4. PHASES OF DEVELOPMENT DIAGRAM

The following diagram present the development of the Lindfield Learning Village from the development of Stage 1 in 1968 to the development of Stage 5 in 1984. Note that Stage 7 (LLV) includes a contemporary layer of alterations and additions across the entire site.

PHASES OF DEVELOPMENT



Key

- Stage 1 *(1968-1971)*
- Stage 2 *(1972-1973)*
- Stage 3 *(1974-1976)*
- Stage 4 *(1977-1983)*
- Stage 5 *(1984)*

3.5. HISTORICAL THEMES

Historical themes can be used to understand the context of a place, such as what influences have shaped that place over time. The Heritage Council of NSW established 35 historical themes relevant to the State of New South Wales. These themes correlate with National and Local historical themes.

Historical themes at each level that are relevant to the place are provided in Table 6.

Table 6 – Historical Themes

Australian theme	NSW theme	Local theme	Discussion
3 Developing local regional and national economies	Environment – cultural landscape	Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	The natural bushland setting, and topography of the site is an integral component of the Lindfield Learning Village site. The design of the complex to integrate with the bushland setting through the protection and adaption of the existing vegetation was a key component in the landscape design philosophy of Bruce Mackenzie. The bushland setting of the site blends with the complementary built form with the bushland serving as the visual backdrop to the internal spaces of the building complex. The landscape design of the complex was awarded the Royal Australian Horticultural Society Award for Bush Landscape Design.
6 Educating	Education	Activities associated with teaching and learning by children and adults, formally and informally	The Lindfield Learning Village was constructed as one of three teacher's colleges during the late 1960s. Originally opened as the William Balmain Teachers College in 1971 and becoming the Ku-ring-gai College of Advanced Education in 1974 and the Ku-ring-gai Campus of the University of Technology from 1989 to 2015, the site has been linked with tertiary education since its construction. The site is currently being converted into the Lindfield Learning Village, proposed to be an innovative K-12 School, which continues a related educational function.,
7 Governing	Defence	Activities associated with defending places from hostile takeover and occupation	Land used as a rifle range from 1919 until its abandonment in 1955. During this time, the rifle range was used by the Army and local rifle clubs including Roseville, Chatswood and North Sydney.

8 Developing Australia's cultural life	Creative endeavour	Activities associated with the production and performance of literary, artistic, architectural and other imaginative, interpretive or inventive works; and/or associated with the production and expression of cultural phenomena; and/or environments that have inspired such creative activities.	The complex is a seminal example of Neo-Brutalist style architecture in Australia and moderated by the influence of the Sydney School, the architecture of David Turner and the landscape design philosophies of Bruce Mackenzie and Alan Correy. The innovative design of the complex was influential in the design of educational building particularly for its influence on spatial planning to create a social environmental for students and staff. The landscape design philosophy of Mackenzie helped to pioneer and develop important Australian indigenous landscape design principles, particularly in the careful integration of large building into the bushland setting and in measures to protect significant vegetation during the construction phase. The complex is recognised for its architectural significance through the inclusion of the Campus in published works on modern Australian architecture, the Royal Australia Institute of Architects 20th Century Heritage Register, and the award of the Sulman Medal in 1978 and a 1972 Merit Award.

4. COMPARATIVE ANALYSIS

The following comparative analysis has been based off the analysis prepared by City Plan Heritage in the *UTS Ku-ring-gai Campus Heritage Assessment* (August 2004) with additional information added where needed.

This comparative analysis focuses on the architectural form and expression of the main building complex of the site and the landscape which forms an integral part of the sites design. In each of the following subsections Post-War advanced education colleges and university campuses are explored in relation to Brutalism and the Sydney School architectural styles, as well as works by both the architect David Turner, and landscape architect Bruce Mackenzie.

4.1. SYDNEY SCHOOL AND NEO BRUTALISM

In the decade prior to the construction of the college at Kuring-gai "a distinctive, picturesque architecture with a craft aesthetic emerged in the Sydney area".[61] The development of the Sydney School (also referred to as 'Port Jackson Romantic') architectural style was a result of a backlash against the increasing invasion of outside influences from the hard-edged forms of the 'International Style', and also a response to social and environmental concerns. Fundamental to the development of this new style of architecture was "an appreciation of the native landscape" and the attempt to provide appropriate socially conscious buildings within the Australian environment.[62]

Prevalent amongst the early Sydney School practitioners, for example Bruce Rickard, was an acknowledgement of the tradition of Frank Lloyd Wright and the union of landscape, environment and architecture, in contrast to the modernist European tradition.[63] Over time, the Sydney School style became expressed diversely in form, from architect designed homes to educational buildings designed to house interactive communities. The Sydney School design philosophy resulted in building forms which related closely to the setting and landscape of the site itself.

Lloyd Rees played an important role in fostering the love of the Australian landscape. As a lecturer and artist, his "paintings reveal the beauty of the land, and his lectures on the history of art in the Architecture Department of the University of Sydney" helped to foster the idea amongst the public and architecture students of working 'with' rather than 'against', the indigenous landscape. Rees found figures like Frank Lloyd Wright more appealing than the rationalist architects dominating in Europe. For many architects the idea of adapting the ideals and language of Wright to Australian conditions increasingly made sense. The result was architecture eminently more suitable for Australia and comfortable at home on bushland sites.[64] At the beginning, the influence of this Sydney School architectural style was restricted to domestic work, particularly in houses designed by local architects for their own use, examples including houses by Bruce Rickard, Tony Moore, Peter Johnson, and Ken Woolley.

The Harry Seidler House, built in 1967, provides a contrast to the general Sydney School norms in its horizontality of appearance and the use of high quality though robust materials (i.e. off-form concrete and stonework). The traditional Sydney School buildings were characterised by rougher textures of exposed materials.[65] There is a closer analogy between the Harry Seidler House and the Ku-ring-gai College, than between the usual Sydney School domestic forms. One of the criticisms of the Sydney School was that the "basis in craft and traditional materials" was "retrogressive".[66] This criticism certainly cannot be applied to the Ku-ring-gai College.

The opportunity arose to test the values of the Sydney School in non-domestic architecture in 1963 when Philip Cox was commissioned to design the St. Andrews Presbyterian Preparatory College at Leppington.[67]

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[61] Taylor, Jennifer. 'Australian Architecture – Since the 1960s'. The Law Book Company Limited, Brisbane Queensland, 1986, p.34.

[62] Reference: Correy Allan, 'Land Values: Changing Attitudes Towards the Australian Environment'. Planning Outlook, Vol. 20, No. 2, 1977, p.14. Source: Taylor, 1986 p.34.

[63] Taylor, 1986, pp. 36-37.

[64] Taylor, 1986, pp. 35-36.

[65] Taylor, 1986, p. 41.

[66] Taylor, 1986, pp. 47-48.

[67] Note: Ian Cox is a graduate from the University of Sydney who joined with Ian Mackay in partnership to complete the St. Andrews Presbyterian Preparatory College.

Alongside the Christian Brothers Presbyterian Agricultural College at Tocal, these two buildings can be pin-pointed as the first major expressions of Sydney School architecture in educational buildings.[68]

The Leppington College's form and character are established by the expression of the heavy timber structure and the use of the economical materials of rows of brickwork, asbestos sheeting and corrugated iron. According to Taylor "in its simple materials and dusty colours that blend with the landscape it shows the influence of the rural vernacular and a romantic empathy with its setting".[69] The site at Tocal was more challenging with issues ranging from the provision of repetitive sleeping areas, main hall and chapel. Taylor also points out that the vitality in this style of architecture is "imparted by the quick rhythm of the projecting dark rafters and the ends that are painted white in the Japanese manner".[70] The Japanese influence is also evoked in the chapel and the roof of the dining hall with their heavy complex of trusses that support dramatic steep pyramidal roof structures.

Both buildings share the use of similar materials (mainly brick and timber) with the same tonal values and contrasts. In contrast to the Ku-ring-gai College, the St. Andrews and Tocal College buildings were closely tied to the characteristic elements of the Sydney School architectural style, including the predominant use of brick surfaces, pitched roof forms, and exposed timber surfaces.[71]

The Newcastle University Staff and Student Union buildings are also good examples of the Sydney School style applied to educational buildings. The site for the University buildings was slightly hilly and contained abundant vegetation. In Woolley's design for these buildings he managed to hide most of the buildings among the hills and vegetation, "with the exception of some heroic displays in the trusses of the Union Building, the architecture is strong and simple".[72]

Overall, the architectural style that is apparent here is consistent with the style other Sydney School institutional and domestic buildings with its sloping roofs, tiled roofs, use of similar materials (brick, timber and concrete) that displayed an affinity with the surrounding landscape. In addition, they are considered to be a much more consistent expression of the essential characteristics of the Sydney School architectural tradition in comparison to the Ku-ring-gai College.[73]

According to Taylor, the Dee Why Library and Kuring-gai College are noted as being successful in extending Sydney School principles into more complex buildings, with the use of more "advanced technology".[74] The Kuring-gai College is considered to be one of the finest examples of this architectural style with its massed form physically adapting and integrating with the natural landscape.

The design of the College was also heavily influenced by the Neo-Brutalist Movement. According to Taylor, Brutalism's "insistence on the integrity of direct architectural expression and the importance of a 'memorable image' directly generated from such an expression, were fundamental to the particular nature of the emerging Sydney School of architecture".[75] In many ways economic considerations such as financial limitations influenced the major design determinants, the structural systems and the material choices that gave these buildings particular character. In addition, this architectural movement was driven by ethics which included "social concern, urban responsibility and integrity in the expression of material, structure and function".[76] Buildings of this tradition are often described as having a "heroic" presence, expressing their internal functions and arrangements in their exterior form, which can be clearly seen in the Kuring-gai College.

The influence of Brutalism is particularly present in the role that structural systems and materials driven by economic choices made on the appearance of these buildings, and the "direct architectural expression" of form and function.[77] Taylor notes that the ideological basis of the different types of buildings characteristic of this movement was "divergent, and as an example, compare the High Court building in Canberra, to the

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[68] Taylor, 1986, p. 43.

[69] Taylor, 1986, p. 41.

[70] Taylor, 1986, p. 43.

[71] Taylor, 1986, p. 43-45.

[72] Taylor, 1986, p. 43.

[73] Taylor, Jennifer. 'Australian Architecture – Since the 1960s'. The Law Book Company, Brisbane Queensland, 1986, pp. 43-45.

[74] Taylor, 1986, pp 47-48.

[75] Taylor, 1986, p. 38.

[76] Taylor, 1986, p. 38

[77] Architecture in Australia, June 1971, pp. 422-423.

'social-urban construct' of the Cameron Office, also in Canberra". The rhetoric of the High Court in Australia building is strong. "Its ceremonial nature is immediately evident in the great Public Hall that serves as the grand entrance foyer and the central circulation space of the building".[78] Unlike the Kuring-gai College site, the landscape design by Harry Howard and Barbara Buchanan surrounding the High Court building is naturalistic yet more sculptural in form.[79]

The following table provides and overview of comparable Sydney School and Brutalist buildings as discussed above.

Table 7 – Sydney School and Neo Brutalist Comparative Analysis

Site	Image
Harry Seidler House **Date:** 1970 **Architect:** Harry Seidler **Heritage Listing:** Woollahra LEP 2012	 Figure 250 – Harry Seidler House *Source: https://architectureau.com/articles/killara-house/*

[78] Taylor, Jennifer. 'Australian Architecture – Since the 1960s'. The Law Book Company, 1986, p.99.

[79] Note: Harry Howard was born in Sydney in 1930 and described himself as a student and a "convinced modernist devotee, of Gopius, Le Corbusier, Mies Van der Rohe and Harry Seidler". (Byline: Weirick, James, Sydney Morning Herald, Section: News and Features, 14/10/2000, p. 67). In 1996, Howard received the Australian Award, the highest accolade of the Australian Institute of Landscape Architects, for his lifework which was described as gentle, simple, unforced, useful, enjoyable relaxing and Australian.

Christian Brothers Presbyterian Agricultural Collage, Tocal

Date: 1965

Architect: Phillip Cox

Heritage Listing: N/A



Figure 251 – Christian Brothers Alexander College, Tocal by Ian McKay and Philip Cox, Architects in Association, image by Max Dupain

Source: https://architectureau.com/articles/philip-cox-remembers-Ian-McKay/

Student Union Building, University of Newcastle

Date: 1965-1969

Architect: Ancher Mortlock Murray and Ken Woolley

Heritage Listing: N/A



Figure 252 – The Student Union Building, the University of Newcastle

Source: https://livinghistories.newcastle.edu.au/nodes/view/39661

Dee Why Library

Date: 1966

Architect: Col Madigan

Heritage Listing: Warringah LEP 2011 (Item no. I50)



Figure 253 – Dee Why Library in 1966

Source: https://cdn.newsapi.com.au/image/v1/ae6742d1bf7b633caff529dda38ad8b0?width=1024

High Court of Australia, Canberra

Date: 1980

Architect: Edwards Madigan Torzillo & Briggs

Heritage Listing: National Heritage List (105745)

Commonwealth Heritage List (105557 and 105544)



Figure 254 – High Court of Australia, Canberra

Source: http://www.abc.net.au/news/2013-05-13/high-court-of-australia--canberra/4685972

4.2. POST-WAR UNIVERSITIES AND ADVANCED EDUCATION COLLEGES

University campuses and Colleges Advanced Education Colleges designed and built following the conclusion of World War II in Australia, embodied innovations of their time, extending from the theory and practice of architecture and planning, to social reform and civic expression. Ten new universities were built during the tertiary education boom period between 1958 and 1975, which included the development of the campuses of Macquarie, La Trobe, Monash, Flinders, Griffith, and Wollongong, reflective of the international climate of growth in the tertiary education sector. As discussed in Section 3.2.4.1, two other colleges were given grants by the NSW Government for the building of new teacher's colleges in 1967, these including Ku-ring-gai, Goulburn and Newcastle.

Primarily constructed on greenfield and bush sites, these new universities and advanced education colleges offered the opportunity for planners and architects alike, to explore and translate social and educational aspirations within the physicality of the university campus, whilst further enabling contemporary theories and practices of their fields to be tested within the framework of modern academic and pedagogical practices. At the heart of the majority of new campuses was a vision to plan for rapid growth and change responding to increasing student numbers, new teaching models and the constant development of new technology. The interplay of nature and the synthetic dominated many of these modern campuses, with concerted efforts to integrate new built form with harmonious landscape design.

In terms of post-war university campuses, Monash, La Trobe, Griffith, and Macquarie all sought to ensure that their campuses would be able to accommodate growth and change throughout their futures, through the inbuilt provisions of flexibility, as well as the space for growth. The means by which each architect-planner, or master planner, would achieve this goal played out in different ways across each of the post-war campuses. Whilst central pedestrianised zones set with an academic core was a common feature amongst all campuses, the way in which these were organised differed. Monash and La Trobe each had their 'Forum' and 'Agora', surrounded by the buildings which served as the hearts of each of the campuses, including the library, union, administration, and lecture theatres. In contrast, Griffith organised its major buildings along its pedestrian spine, which ran directly south to north, interweaving with the landscape. Surrounding these central areas, whether they be a core or spine, the academic buildings constructed the second ring of development, with each Faculty or School taking their designed positions. For La Trobe, Griffith and Macquarie, who adopted School models for their academic structures, the fluidity between each School was not to be restricted by their designated physical space. Unity of building forms, but not always their materiality, across the campus was desired in order to create the character and sense of place of each campus. The influence of Brutalism upon these post-war campuses is clearly seen, through the prolific use of concrete and brick, which stood in stark contrast against the natural forms of the landscape. In order to ensure cohesion and to create a sense of place, landscape design would draw together each of the disparate parts of the campus, to create a unified whole. The realisation of the initial plans, or revised plans as was often the case, was not just a setting out of designated building forms. Instead Wally, McCutcheon, Simpson, and Johnson all created plans which aimed for a cohesion between planning, architecture, and the landscape. In their planning for uncertainty, each created different cultural landscapes, shaped and formed by the staff and students who would work and study at each campus over their histories.

In comparison the advanced education colleges of Goulburn, Newcastle and Ku-ring-gai also shared similar traits, albeit at a smaller scale, each bearing a relationship to each other in terms of siting, structure, design and materials, but were architecturally distinctive according to their respective requirements and in response to their respective environments and as previously discussed in Section 3.2.4.1. The Ku-ring-gai College can also be compared with the Alexander Mackie College of Advanced Education at Oatley. Though built in 1980, this building, also by the Government Architect's Office, was designed around a central pedestrian spine, stepping down the levels of the site and with a design philosophy constructed around the community ethos of the college.[80] "The former Alexander Mackie College is a heroic contrast between the ruggedness of the site (a former brick pit) and the boldness of the structure… The building is both sculptural and geometric"[81]. There is an emphasis on "spines and voids, formal massing, and a belief that concrete and formwork could achieve an entire building expression". Bruce Mackenzie provided the landscape design for the site.[82] Though not contemporary with the earlier phases of the Ku-ring-gai College, the Alexander Mackie College illustrates a continuation of similar themes to the Ku-ring-gai College, though conducted in a raw

[80] Taylor, 1986, p.79.

[81] Jahn, Graham, 'Sydney Architecture', The Watermark Press, Sydney, 1997, p. 181.

[82] Taylor, 1986, pp. 88-89.

disturbed setting, not a bushland site.[83] Graham Jahn described the Alexander Mackie College as "Australian Brutalism at its most mannered".[84]

The following table provides an overview of comparable post-war advanced education colleges and university campuses as discussed above.

Table 8 – Post-War Advanced Education Colleges and University Campuses, Comparative Analysis

Site	Images
Newcastle College of Advanced Education **Date:** 1970 **Architect:** Architect J. McKinnery **Heritage Listing:** N/A	 Figure 255 – Newcastle College of Advanced Education, under construction *Source: https://www.flickr.com/photos/8571926@N06/5032535828*

[83] Taylor, 1986, pp. 88-89.
[84] Jahn, 1997, p. 181

Goulburn College of Advanced Education

Date: 1970

Architect: J Kinstler, project architect

Heritage Listing: N/A



Figure 256 – Goulburn College of Advanced Education

Source: https://www.environment.nsw.gov.au/resources/heritagebranch

Alexander Mackie College of Advanced Education, Oatley

Date: 1975-1980

Architect: Lees Reedman (principal architect), Colin Still (project architect), Bruce Mackenzie (landscape architect)

Heritage Listing: N/A



Figure 266 – Alexander Mackie College of Advanced Education, 1980

Source: http://digital.sl.nsw.gov.au

Macquarie University

Date: 1964

Architect: Wally Abraham, architect planner

Heritage Listing: No Listing, but stone ruins listed under Ryde LEP 2014 (item no. I10)



Figure 265 – View of Macquarie University Centre, c. 1972-1978

Source: https://www.mq.edu.au/macquariematters/walking-down-memory-lane/

La Trobe University, Bundorra Campus

Date: 1964

Architect: Roy Simpson, Yuncken Freeman Architects (Principal Architects)

Landscape Consultant: Lindsay Pryor

Heritage Listing: Darebin City (Place ID 27363)



Figure 265 – The Agora at La Trobe University Bundorra Campus, 1972

Source: https://50years.latrobe/future-ready/

Griffith University, Nathan Campus

Date: 1971

Architect: Roger Johnson (1972), Alan Cole, (1973-1978), Sam Ragusa (1978-1990s)

Heritage Listing: N/A



Figure 265 – Griffith University Campus

Source: https://architectureau.com/articles/bush-civics/

Monash University, Clayton Campus

Date: 1958

Architect: Osborn McCutcheon (principal architect)

Landscape Consultant/Architect: John Steven, Mervyn Davis, Lindsay Pryor, Gordon Ford, Beryln Mann

Heritage Listing: The campus is not listed, but the Religious Centre is individually listed on the Victorian Heritage Register (H2188)

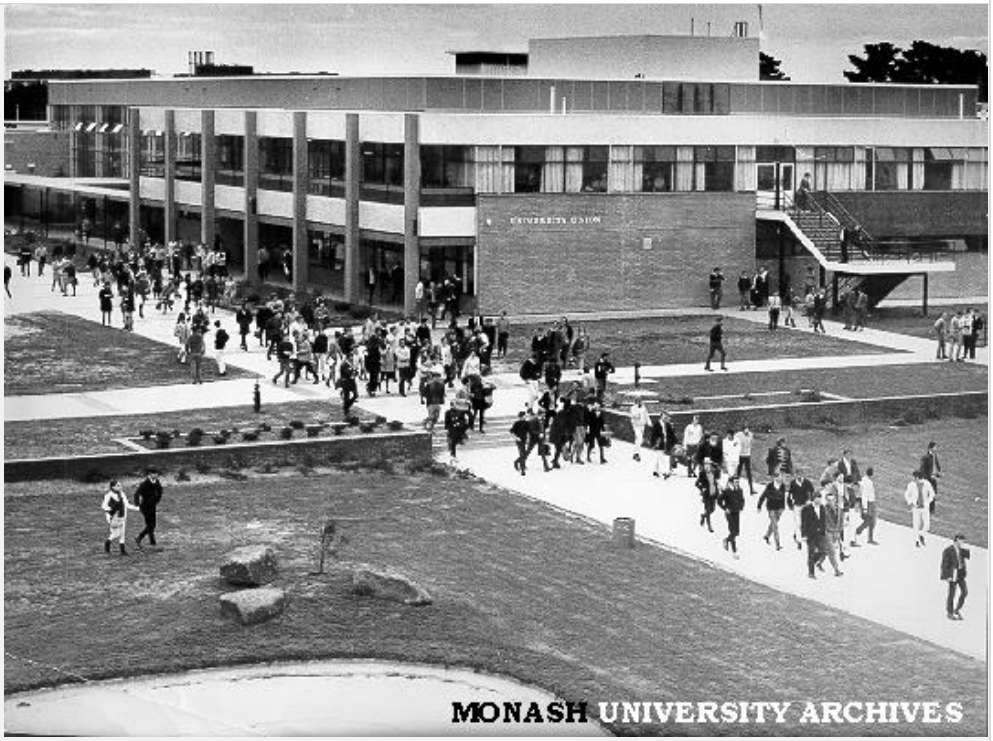


Figure 265 – Monash University Clayton Campus, 1968

Source: https://adm.monash.edu/records-archives

4.3. DAVID TURNER

As previously discussed in Sections 3.2.6.3 and 3.2.18, David Tuner was associated with the development of the Ku-ring-gai site for a period of more than 20 years. He was involved with the design and supervision of the college until he left the Government Architect's Branch in 1973. In 1974, he was given the task of completing the design and documentation of Stage Three, the Gymnasium and teaching spaces for his former office. In 1975, the College appointed him architect to work in close cooperation with their in-house architect, David Lake, who was in charge of maintenance and minor works. Further commissions followed, which included Stage Four, further lecture rooms and offices, then in 1977, the Dining Terraces, 1984, Stage Five with more lecture rooms and offices and in 1985, Child Care Facilities.

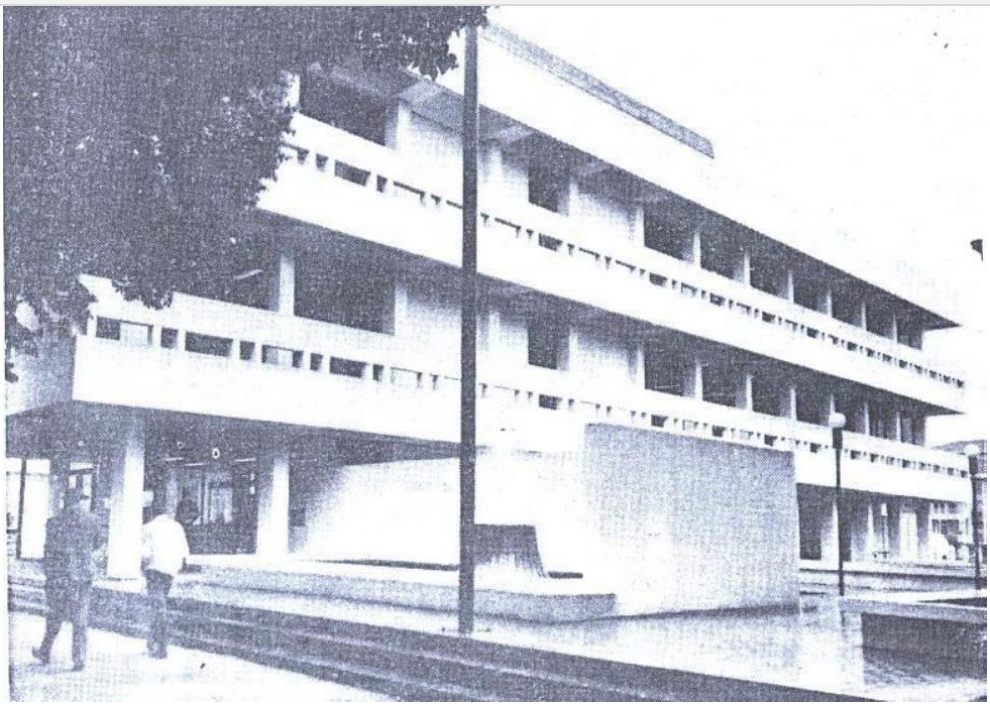
During his time as an architect both in the UK, US and in Australia, Turner designed a range of different buildings, however his most notable are those were designed during his time as Design Architect of Public Works from 1962 to 1967 and as Architect-in-Charge of the Teacher's Colleges and Colleges of Advanced Education from 1967 to 1973.

During his time at the NSW Department of Public Works, Turner's most notable design included Broken Hill Primary School and the Government Office Buildings at Albury, Narrabri and Inverell. As project architect for Broken Hill Primary School, along with Don Coleman as design architect, the school has been described as having 'paid great attention to local climate. The kindergarten and primary blocks were arranged around courtyards containing play spaces and assembly areas. To combat heat external windows were placed at high level and protected by deep eaves. Those facing courts were fully glazed and shaded by covered walkways. A double roof system was ventilated with louvres.'[85]

Most notable of the Government Office Buildings was the Albury building located on Dean Street. Regarded by Turner as a precursor to the design of the Ku-ring-gai campus, it was described as a fine example of the main stream of the International tradition, achieving a successful urban expression with crisp form, elegantly finished concrete and smooth detailing all adding to the handsome statement of the overall building. It was awarded the Blacket Award by the NSW Chapter of the RAIA in 1968. The design concept explored at the Albury office were further developed in the same year for the two other Government Office building at Narrabri and Inverell. Turner also designed a number of other smaller buildings during his time at the NSW Department of Public Works, including the Boiler House at Wagga Wagga Teachers College and the Women's Dormitory at the Bathurst Teachers College, and the police stations at Jindabyne and Walgett (1965).

Due to the over 20 years Turner spent engaged in works at the Ku-ring-gai campus, no other of his works are close to representing the uniqueness of the Ku-ring-gai site. Whilst Turner was administratively responsible for the architectural supervision of the development of the Advanced Teachers Colleges at Newcastle and Goulburn, he was not responsible for their design.

[85] HerCon Consulting, The Modern Movement in New South Wales, A Thematic Study and Survey of Places (August 2013), accessed via https://www.environment.nsw.gov.au/resources/heritagebranch/heritage/ModernHeritage4.pdf

Site	Images
Broken Hill Primary School **Date:** 1962-1967 **Heritage Listing:** N/A	 Figure 265 – Broken Hill Primary School, 1970 *Source: http://www.environment.gov.au/cgi-bin/heritage/photodb*
Albury Government Office Building **Date:** 1964 **Heritage Listing:** N/A	 Figure 265 – Albury Government Office Building, 1968 *Source: GBA, p37*

Inverell Government Office Building **Date:** 1964 **Heritage Listing:** N/A	 Figure 265 – Inverell Government Office Building, 1967 *Source: http://digital.sl.nsw.gov.au*
Narrabri Government Office Building **Date:** 1964 **Heritage Listing:** N/A	 Figure 265 – Narrabri Government Office Building *Source: Google Street View, 2008*

4.4. BRUCE MACKENZIE – LANDSCAPE ARCHITECTURE

For Australian landscape architecture, the relationship between design projects and their indigenous setting has long been a significant intellectual question. This preoccupation was described by Bruce Mackenzie thus: “unique opportunity exists for achieving a cohesive and powerful theme for landscape design throughout this country by realising and promoting the potential of the indigenous environment”.[86] Since that time, most celebrated landscape projects from the 1960s onwards have attempted in some way to address this challenge and question how capable we are of making and living with designed landscapes that respond more directly to the essential qualities of the places they inhabit. According to Raxworthy, “harmony and appropriateness have become the twentieth-century Australian equivalent of ‘taste’ in 18th Century discourse on the Picturesque” landscapes.[87]

Mackenzie’s work demonstrated the new interest and acceptance for the use of native species, conservation and the extension of the indigenous environment in landscaping schemes. This concern for the appropriate conservation and the extension of the indigenous environment is evident in most of his works carried out at this time. On sites like Kuring-gai College his intervention is seen as minimal. Taylor notes that “on natural sites his intervention is just sufficient to make them more habitable so that the marks of change are hardly discernible”.[88] As a result, for many the landscape design on sites like Ku-ring-gai is taken for granted precisely because it feels so natural. According to James Weirick, Professor of Landscape Architecture at the University of NSW “the effect might be naturalistic but it’s not natural. This naturalness has taken incredible artistry.”[89]

Mackenzie’s involvement in the public works projects at Illoura Reserve, Peacock Point, Balmain and Yurulbin Park, Long Nose Point, Birchgrove, are seen as some of his most important commissions and it is considered that the outcome at these parks can be paralleled to that achieved at Kuring-gai site. “All these parks comprised a series of spaces edged by trees” and their success lies in that “they defined space, and space flowed through them at the same time”.[90] However, they differed from Ku-ring-gai in that they had been substantially modified prior to Mackenzie’s intervention.

At the Illoura Reserve site, there was unfortunately little left of the natural features or indigenous planting of the site “but the gaunt, rocky levels of its sandstone structure”.[91] The new elements introduced onto this site ranging from retaining waterfront walls to children’s play swings are composed of natural and robust materials which are balanced alongside a strong planting scheme that helps to emphasise the setting of Sydney harbour. The site design for Kuring-gai College and Illoura Reserve both echo ecological approaches to landscape design.

The same could be said of the Millennium Parklands which received the Presidents Award as part of the public domain at Sydney Olympic Park. The jury commented that Millennium Parklands had successfully blended Japanese and Australian elements and provides a new model for urban parklands.[92]

Interpretations of ‘Australian-ness’ pervade Mackenzie’s landscape design for the Kuring-gai College site, the Alexander Mackie College, Illoura Reserve to his input in the Millennium Parklands. Millennium Parklands is one of Mackenzie’s more recent schemes where he worked in collaboration with Hassell and Peter Walker William & Partners Group. The end result is that one can see that a complexity has developed over time that ensures the idea of environmentally responsible treatment of the site and has adapted naturalistic landscape architecture into a work of art.[93]

For many, Mackenzie’s designs did not just provide ecological solutions but they also were part of a cultural phenomenon that is often overlooked. As a result, Raxworthy argues that the projects often “appear as being didactic rather than having the dynamic interplay that one would expect from a compelling dialogue”.[94]

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[86] Raxworthy, Julain, ‘Architecture Australia’, March/April 2003. Source: www.architecturemedia.com/aa/aaissue.php?issueid=200303&article=4&typeon=1

[87] Taylor, 1986, p. 49.

[88] Taylor, 1986, p. 49.

[89] Anne Susskind, Sydney Morning Herald, 24-10-1995, Section News and Features – Subsection Arts, p. 14.

[90] Ibid

[91] Taylor, 1986, p. 49.

[92] Geraldine O’Brien, Sydney Morning Herald, Section: News and Features, p. 9.

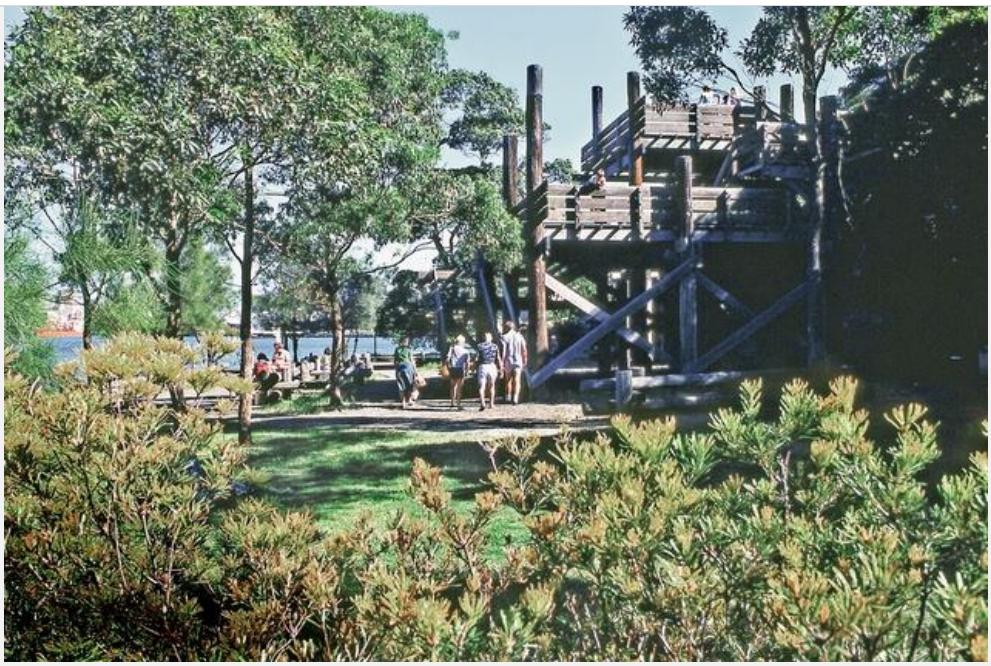
[93] Moore, Matthew, Sydney Morning Herald, Section: News and Features, p. 4.

[94] Taylor, 1986, p. 49.

The emergence of a new cultural expression of ‘Australian-ness’ also has strong links to American Modernism which was also influencing the shifts in architectural styles and movements favoured in Australia at this time. New interest in conservation, site planning, and outdoor living had a direct influence on many practitioners in Australia who often studied overseas and travelled extensively, e.g. Harry Seidler, Ian Cox and Bruce Mackenzie.

The development of ‘Australian-ness’ in landscape architecture as a preference mirrored what happened to other colonial cousins and it is important to understand its role in the development of Australian architectural history. “Like all historical documentation and discussion, each discussion of landscape architecture represents a threshold of sophistication upon which successive histories will build, until we develop a seriously rich and diverse understanding of our history”.[95]

Table 9 – Bruce Mackenzie Comparative Analysis

Site	Image
Illoura Reserve **Date:** 1970 **Architect:** Bruce Mackenzie **Heritage Listing:** Leichhardt LEP 2013 (Item no. I436)	 Figure 257 – Timber Deck at Illoura Reserve *Source: https://architectureau.com/articles/bruce-mackenzie-design-with-landscape/#img=5*

[95] Raxworthy, Julain, ‘Architecture Australia’, March/April 2003.

Yurulbin Park

Date: 1972-1977

Architect: Bruce Mackenzie

Heritage Listing: Leichhardt LEP 2013 (Item no. I436)



Figure 258 – View of Yurulbin Park, looking toward the Sydney Opera House

Source: https://www.environment.nsw.gov.au/heritageapp/HeritageItemImage.aspx?ID=1940572#ad-image-4

Millennium Parklands

Date: 1997-2000

Architect: Bruce Mackenzie

Heritage Listing: N/A



Figure 259 – Millennium Parklands, now Sydney Olympic Park

Source: https://architectureau.com/articles/bruce-mackenzie-design-with-landscape/#img=65

5. HERITAGE SIGNIFICANCE

Before making decisions to change a heritage item, an item within a heritage conservation area, or an item located in proximity to a heritage listed item, it is important to understand its values and the values of its context. This leads to decisions that will retain these values in the future. Statements of heritage significance summarise the heritage values of a place; why it is important, why a statutory listing was made to protect these values.

5.1. BUILT HERITAGE SIGNIFICANCE ASSESSMENT

The Heritage Council of NSW has developed a set of seven (7) criteria for assessing heritage significance, which can be used to make decisions about the heritage value of a place or item. The following assessment of heritage significance has been prepared in accordance with the NSW heritage Division's 'Assessing Heritage Significance' guidelines.

The following assessment of heritage significance has been sourced directly from the Heritage Assessment prepared by City Plan Heritage in 2004. Urbis has reviewed the assessment and concurs with the conclusions.

Table 10 – Assessment of Heritage Significance

Criteria	Significance Assessment
A – Historical Significance *An item is important in the course or pattern of the local area's cultural or natural history.*	The Lindfield Learning Village was one of three teacher's colleges constructed during the late 1960s to meet the growing demand for teacher training in NSW. It was the third purpose built teachers college to be constructed in NSW. The Campus provides evidence of the investment by State and Federal Government in the late 1960s and 1970s into Higher Education. The scale and architectural quality of the Ku-ring-gai Campus is particularly illustrative of the unprecedented scale of the investment into the new teacher's colleges. The location of the Campus at Lindfield is reflective of the campaigning by residents of the North Shore for the Campus to be located there, and of the influential role of the then Director General of Education, Dr Harold Wyndham, who favoured the location of the new Campus on the North Shore. The Campus was one of the most important products of the NSW Government Architect's office under Government Architect E.H. Farmer, and demonstrates the work of respected architects David Turner and Peter Stronach (Allen, Jack & Cottier), and innovative landscape architects Bruce Mackenzie and Alan Correy. The Campus is historically important for its role in the development of architecture in Australia in the second half of the twentieth century. In particular the Campus provides evidence of the Neo-Brutalist architectural style which became especially popular for public buildings during the period. The Campus was important in influencing contemporary and subsequent buildings in the Neo-Brutalist style. The Campus represents a

	significant variation to the style, illustrating the simultaneous influence of the Sydney School of Architecture in the softening of the 'Brutalist' aspects of the building. The Campus is historically important for its contribution to the development of landscape architecture in Australia, and especially the retention and adaptation of natural bushland settings, closely associated with the aims of the Sydney School. The Lindfield Learning Village meets this criterion for heritage listing at the state level.
Guidelines for Inclusion • shows evidence of a significant human activity ☒ • is associated with a significant activity or historical phase ☒ • maintains or shows the continuity of a historical process or activity ☒	*Guidelines for Exclusion* • has incidental or unsubstantiated connections with historically important activities or processes ☐ • provides evidence of activities or processes that are of dubious historical importance ☐ • has been so altered that it can no longer provide evidence of a particular association ☐
B – Associative Significance *An item has strong or special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.*	Stages 1 to 3 of the Campus were designed by the NSW Government Architect's office under E.H. Farmer, with architect David Turner undertaking the role of project architect. David Turner and the NSW Government Architect's Office played an important role in the changing nature of Australian Architecture during the 1960s and 1970s, in particular the role of Neo-Brutalism and its application to public and educational buildings. At the Lindfield Learning Village, this was merged with the ethos of the Sydney School and its concerns with the conjunction between the built and natural environment, and the social role of buildings. Noted landscape architect Bruce Mackenzie was responsible for the landscape design of the Campus, in which he implemented his philosophy of integrating the buildings into a natural bushland setting by protecting and adapting existing vegetation. Bruce Mackenzie had an important influence on the development of landscape architecture in Australia, which was still a young and developing branch of design in the 1960s. Mackenzie's techniques and emphasis on working with the natural environment had a definite effect on the developing appreciation for natural bushland settings and native species, which was complimentary to the ethos of the Sydney School of Architecture which was developing at the same time. At this site Mackenzie helped to pioneer and develop important Australian indigenous landscape design principles, particularly in the careful integration

	of large buildings into a bushland setting and in measures to protect significant vegetation during the construction phase. Input into the landscape design was also provided by Alan Correy of the Government Architect's Office, an influential figure in the development of landscape architecture in South Australia and New South Wales in the second half of the 20th century. Peter Stronach of Allen Jack & Cottier was the architect principally responsible for design documentation. The principal architects involved in the design of the Campus have each played important roles in the development of Australian Architecture in the second half of the twentieth century. The Campus is associated with Dr. Harold Wyndham, who was the Director General of Education in NSW from 1952 to 1968, and who played an important role in the establishment of the Campus, including selection of the Lindfield site and support for the construction of the new Sydney based teachers college. The Campus is also associated with Alton Greenhalgh, who was the principal of the Balmain Teachers College and subsequently the Ku-ring-gai College, and after whom the Greenhalgh Auditorium is named. The campus is associated with a long process of agitation by the NSW Teachers' Federation for improved teacher training facilities. The founding of the Campus was associated with the Association for the Civic and Educational Advancement of the Northern Suburbs of Sydney (ACEANS), who campaigned strongly in the 1960s to have educational institutions located on the North Shore, including the location of the Campus at the Lindfield site. The Campus has local significance in this respect. The Lindfield Learning Village meets this criterion for heritage listing at the state level.
Guidelines for Inclusion • shows evidence of a significant human occupation ☒ • is associated with a significant event, person, or group of persons ☒	*Guidelines for Exclusion* • has incidental or unsubstantiated connections with historically important people or events ☐ • provides evidence of people or events that are of dubious historical importance ☐ • has been so altered that it can no longer provide evidence of a particular association ☐

C – Aesthetic Significance *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area.*	The Lindfield Learning Village has high aesthetic values as a remnant natural environment with scientific and ecological significance for the Ku-ring-gai local government area and Sydney generally. Part of this value is derived from the intactness of the bushland and its contiguous relationship with reserved areas in Lane Cove National Park. The Lindfield Learning Village is recognised as a seminal example of Neo-Brutalist architecture in Australia, combined with the influence of the Sydney School which is apparent in its consideration of the natural environment and spatial planning to create a socially interactive environment. The Campus is one of the most expressive examples of the 1960-70s Neo-Brutalist buildings, and its "brutalism' is moderated by the way in which the Campus was designed to respond to the topography and bushland setting of the site. The design of the Campus also gave close attention to the role of the building as an educational facility, and the manner in which its spatial planning could facilitate interaction between students and teaching staff. The quality of the internal environment for learning and study is reflected in the use of bright colours for carpet and fixtures contrasted with the juxtaposition of textured off-form concrete and the warmth of internal brickwork. The Campus is largely intact and has the capacity to illustrate award winning design and construction and landscape techniques associated with the period and architectural styles with which the Campus is significantly associated. The architectural significance of the Campus is recognised through the inclusion of the Campus in published works on modern Australian Architecture, its listing on the Register of the National Estate, the Royal Australian Institute of Architects 20th Century Heritage Register, and the award of the Sulman Medal in 1978, and a 1972 RAIA Merit Award. The consideration given to the integration of the buildings into the site with as little impact on the existing topography/landforms, and native vegetation as possible, was the result of a clear and conscious effort to integrate the built and natural environments. The impact this approach had on contemporary design and landscape architecture, gives the Campus a high degree of significance for its ability to successfully demonstrate the attributes of an influential design in the development of Australian Architecture and Landscape Architecture in the second half of the twentieth century. Bruce MacKenzie's landscape design for the site is a fine demonstrator of his philosophy that existing

	contours, rocks and trees can be the main determinants of composition. The often subtle juxtapositions between built elements, soft landscaping and remnant bushland on the site demonstrate the careful attention to detail that went into the landscape design. This is reflected in the great variety of outlooks achieved from internal spaces. The internal courtyards, water feature and main roof garden are all fine examples of building and landscape design, providing staff and students with a mix of inspirational and practical environments for contemplation and passive recreation. The landscape architectural significance of the Campus is recognised through the award of the Royal Australian Horticultural Society Award for Bush Landscape Design. The Lindfield Learning Village meets this criterion for heritage listing at the state level.
Guidelines for Inclusion • shows or is associated with, creative or technical innovation or achievement ☒ • is the inspiration for a creative or technical innovation or achievement ☒ • is aesthetically distinctive ☒ • has landmark qualities ☒ • exemplifies a particular taste, style or technology ☒	*Guidelines for Exclusion* • is not a major work by an important designer or artist ☐ • has lost its design or technical integrity ☐ • its positive visual or sensory appeal or landmark and scenic qualities have been more than temporarily degraded ☐ • has only a loose association with a creative or technical achievement ☐
D – Social Significance *An item has strong or special association with a particular community or cultural group in the local area for social, cultural or spiritual reasons.*	The entry of the Campus on the Royal Australian Institute of Architects' Register of 20th Century Heritage, and nomination for State Heritage Register listing, indicates an appreciation for the site in terms of its significance for the development of Australian architecture and landscape architecture in the second half of the twentieth century. Former staff and students of the Lindfield Learning Village, during its time as various tertiary institutions have a special association with the site from working and studying at the unique site. The Lindfield Learning Village meets this criterion for heritage listing at the state level.
Guidelines for Inclusion • is important for its associations with an identifiable group ☒ • is important to a community's sense of place ☒	*Guidelines for Exclusion* • is only important to the community for amenity reasons ☐

	• is retained only in preference to a proposed alternative ☐
E – Research Potential *An item has potential to yield information that will contribute to an understanding of the local area's cultural or natural history.*	The Lindfield Learning Village is recognised as a seminal and rare example of Neo-Brutalist architecture in Australia, combined with the influence of the Sydney School which is apparent in its consideration of the natural environment and spatial planning to create a socially interactive environment. As such, it is likely to represent an important reference site. The historical archaeological potential of the site has been assessed to be low to nil. Any remains, if present, are likely to be of little to no research potential as a result of their isolation and probably disturbed and fragmentary nature. A visual inspection of the site was undertaken, and no Aboriginal objects were identified. The visual inspection confirmed that the site had been severely disturbed, and that the aboriginal archaeological potential of the site is low. The Lindfield Learning Village meets this criterion for heritage listing at the local level.
Guidelines for Inclusion • has the potential to yield new or further substantial scientific and/or archaeological information ☐ • is an important benchmark or reference site or type ☒ • provides evidence of past human cultures that is unavailable elsewhere ☐	*Guidelines for Exclusion* • the knowledge gained would be irrelevant to research on science, human history or culture ☐ • has little archaeological or research potential ☐ • only contains information that is readily available from other resources or archaeological sites ☐
F – Rarity *An item possesses uncommon, rare or endangered aspects of the local area's cultural or natural history.*	The Lindfield Learning Village is rare as an example of a Neo-Brutalist public building which was designed to be closely integrated with the topography and natural bushland setting of the chosen site. It illustrates a rare combination of the Neo-Brutalist fashion for public buildings merged with the natural landscape ethos closely associated with the contemporary Sydney School of architecture. The Brutalist nature of the building is relieved by the use of masonry walling and the strongly textured pattern given to the off-form concrete work. In its consideration for the impact on the natural environment, it is a rare example of this style. The site and adjoining bushland provide habitat for a number of protected, rare, vulnerable, not well known or uncommon indigenous plant species. Rare species

	likely to occur in the area include Boronia serrulata (Brown Boronia, 2RC), Lomandra brevis (Tufted Mat-rush, 2RC), and Pteris vittata (Chinese Brake, R). Vulnerable species include Darwinia biflora (Darwinia, 2VC) and Tetratheca glandulosa (Black-eyed Susan, 2VC). Epacris purpurascens var. purpurascens (Epacris, 2KC) is not well-known. The Lindfield Learning Village meets this criterion for heritage listing at the state level.
Guidelines for Inclusion • provides evidence of a defunct custom, way of life or process ☐ • demonstrates a process, custom or other human activity that is in danger of being lost ☐ • shows unusually accurate evidence of a significant human activity ☐ • is the only example of its type ☒ • demonstrates designs or techniques of exceptional interest ☒ • shows rare evidence of a significant human activity important to a community ☐	*Guidelines for Exclusion* • is not rare ☐ • is numerous but under threat ☐
G – Representative *An item is important in demonstrating the principal characteristics of a class of NSWs (or the local area's):* • *cultural or natural places; or* • *cultural or natural environments.*	The Lindfield Learning Village is an important representative example of the Neo- Brutalist style in Australian architecture of the later twentieth century, and also of landscape design and techniques associated with the Sydney School. The landscape setting of the Campus and the manner in which the buildings were constructed with minimal impact on the natural environment, is representative of the development of Australian landscape architecture in the 1960s and 1970s, and its concern with retaining and working with bushland sites and native species. The Campus is an important and influential representative example of both the Neo-Brutalist style and the landscape ethos of the Sydney School, and is representative of major educational buildings erected in the late 1960s and the 1970s. The landscape is an important representative example of the body of work of Bruce Mackenzie. The Lindfield Learning Village meets this criterion for heritage listing at the state level.

Guidelines for Inclusion		*Guidelines for Exclusion*	
• is a fine example of its type	☒	• is a poor example of its type	☐
• has the principal characteristics of an important class or group of items	☒	• does not include or has lost the range of characteristics of a type	☐
• has attributes typical of a particular way of life, philosophy, custom, significant process, design, technique or activity	☒	• does not represent well the characteristics that make up a significant variation of a type	☐
• is a significant variation to a class of items	☐		
• is part of a group which collectively illustrates a representative type	☐		
• is outstanding because of its setting, condition or size	☒		
• is outstanding because of its integrity or the esteem in which it is held	☒		

5.2. STATEMENT OF CULTURAL HERITAGE SIGNIFICANCE

The Lindfield Learning Village is of historic significance at State level, primarily due to the important role of the Campus in the development of Australian Architecture in the second half of the twentieth century, and the role of the Campus in the development of Australian landscape design, and an appreciation for natural bush settings associated with the influential Sydney School. The Campus also influenced the design of educational buildings, with an emphasis on spatial planning to create a social environment. The Campus is also historically significant for its place in the development of teachers' education in NSW, and is representative of the substantial investment by State and Federal Government into Higher Education in the 1960s and 1970s. The Campus also has historical significance at a local level, for the role the Campus has played in education on the North Shore. The alterations to the campus in 2018 responded to a unique new education philosophy and demonstrate the changing nature of education in the 21st century.

The Lindfield Learning Village has significant associations with important government and private practice architects and landscape architects, including David Turner and Peter Stronach. The original associations with Bruce Mackenzie and Alan Correy are particularly important, as the Campus retains the ability to clearly illustrate the landscape design and construction techniques closely associated with the work of these influential landscape designers. The site is a major example of the application of Mackenzie's philosophy of building carefully within a pristine natural environment rather than starting with a cleared site and creating an 'artificial' natural landscape.

The Lindfield Learning Village has a high level of aesthetic significance, arising from the natural bushland setting, the buildings themselves and the landscape design and has won several awards including the Sulman Medal in 1978, a 1972 RAIA Merit Award and a Royal Australian Horticultural Society Award for Bush Landscape Design. The Campus is a seminal example of the Neo-Brutalist style in Australia, moderated by the influence of the Sydney School of architecture and the landscape design philosophies of Bruce Mackenzie and Alan Correy. Removal of some of the surrounding vegetation due to compliance requirements has been undertaken however the integration of the buildings with the natural bushland setting and topography of the site remains particularly significant. The campus was originally influential in the design of educational buildings, with an emphasis on spatial planning to create a social environment for students and staff. The campus has now been adapted to respond to a new model of education in 2018 and represents the changing approaches to education in the 21st century.

Former staff and students of the Lindfield Learning Village, during its time as various tertiary institutions have a special association with the site from working and studying at the unique site. The significance to the community is continued through the ongoing education use of the place facilitated by its reuse as a K-12 school. The entry of the Campus on the Royal Australian Institute of Architects' Register of 20th Century Heritage, and nomination for State Heritage Register listing, indicates an appreciation for the site in terms of

its significance for the development of Australian architecture and landscape architecture in the second half of the twentieth century.

The Campus is both a representative example of the design influences present in the building and its landscaped setting, and also rare in the combination of Neo-Brutalist and Sydney School influences on such a scale and with such a high degree of success. The presence of protected, rare, vulnerable and uncommon indigenous plant species in the vegetation of the site and its surroundings adds to the rarity value

5.3. SIGNIFICANT VIEWS AND VISTAS

5.3.1. Views to Lindfield Learning Village

A series of public viewing points were selected as a representative example of distinct and more immediate views of the Lindfield Learning Village site. The resulting photographs provide a basis to assess the current visibility and visual prominence of the site. These photographs were taken from public areas such as roads, and bush trails where it would be expected that the visual relationship of the Lindfield Learning Village would form part of the day to day visual realm.

Due to the location of the site at the top of the ridgeline to the north of the Lane Cove National Park, it was expected that some views may exist across the valley of the Lane Cove River, primarily from Fullers Road and Millwood Avenue located directly to the south of the site across the valley which are at relatively the same elevation as the site. Similarly, it was expected that some limited views may also exist from Valley View Close located to the west of the site across the valley, also at a similar elevation to the site. Some further limited views from the bush trail of Fullers Park Road were hypothesised, due to the close proximity to the southern border of the site.

Historic images of the site dating from the 1970s shows that some significant views did exist from the surrounding setting, however the exact location of these images are unknown. An image of Max Dupain shows the complex nestled in to the bushland setting of the site, and is noted to have been taken from the south-east of the site. This view may have possibly been taken from Millwood Avenue, or perhaps from Fullers Avenue, however the location is undetermined. Today, very limited views of the complex are visible from the south and south-east of the site from Millwood Avenue and Fullers Avenue, as summarised in Table 11.

Views to the site from the south and south-east have been substantially limited due to the growth of the bushland surrounding and on the site. Comparison of oblique aerial views of the site from the 1970s and current day demonstrate the growth of the vegetation in and around the site, thus limiting any significant views to the south and south-east from Millwood Avenue, Fullers Road and Fullers Park Road.

Views from the north of the site have largely been restricted since the buildings construction, due to the complex primarily being built into the slope of the site, and only presenting as a two storey structure at the northern site of the site with surrounding bushland shielding the main complex from view. However, views to the northern and western elevations of the Stage 3 building have been visible from the Charles Bean Sportsfield since the ovals creation. Other views from the north, primarily including the location of the former tennis courts, have been removed, due to the recent constriction of the Crimson Hill development.

The following diagram (Figure 263) and Table 11 provides an overview of the existing views to the Lindfield Learning Village from the surrounding locality.

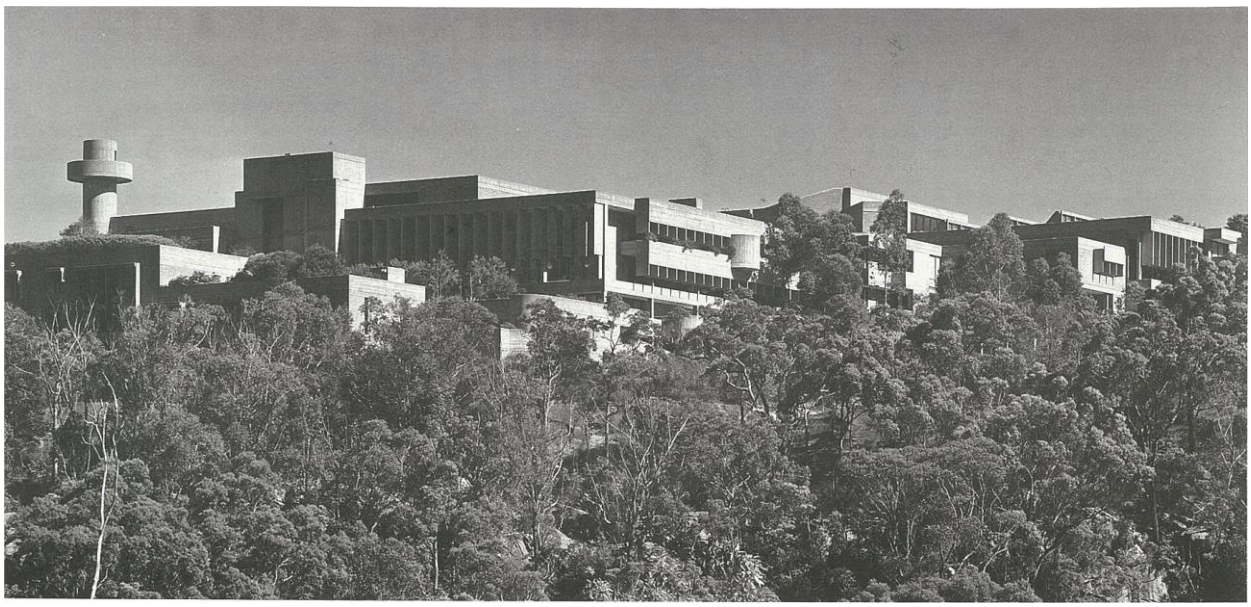


Figure 260 – 1976 photograph, looking toward the complex from the south-east of the site

Source: Max Dupain



Figure 261 – Undated photograph, with Stage 1 and 2 buildings complete. Note the density in vegetation surrounding the site in comparison with the contemporary aerial at Figure 262 – Oblique aerial photo taken 2018. The vegetation surrounding the site is significantly denser in comparison with the site during the 1970s.Figure 262.

Source: Max Dupain



Figure 262 – Oblique aerial photo taken 2018. The vegetation surrounding the site is significantly denser in comparison with the site during the 1970s.

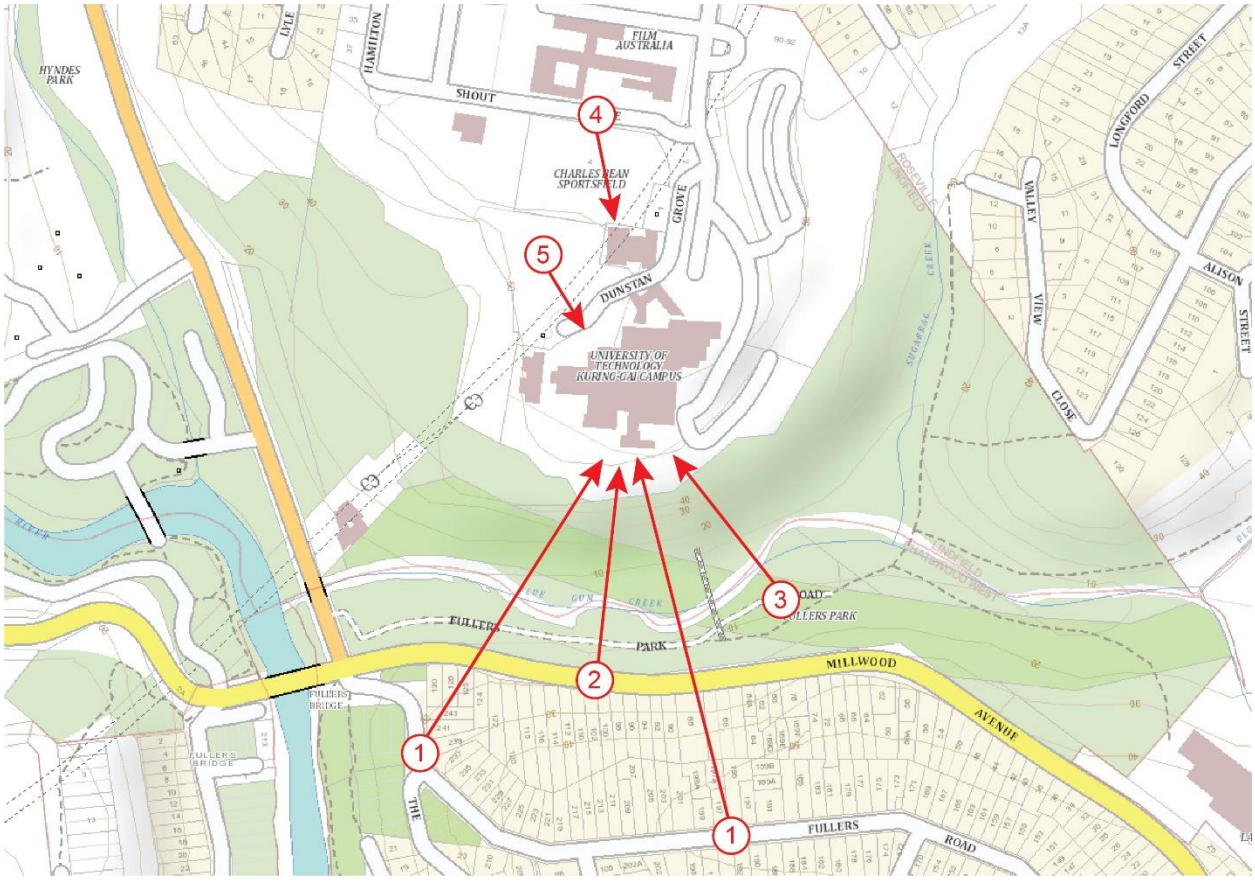


Figure 263 – Views to Lindfield Learning Village diagram

Source: SIX Maps 2018 with Urbis overlay

Table 11 – Views to Lindfield Learning Village

View Point	Description	Image
1	**FULLERS ROAD, CHATSWOOD WEST** **Distance:** Approx. 350m to the south, south-west of the site **Visibility:** Restricted views available of the site through Lane Cove National Park bushland and narrow view corridors between residential dwellings on Fullers Road. **Position:** Location is approximately level with the site **Present View:** The observation tower and parts of Levels 5 and 6 of the complex are visible in the distance, although substantially obscured by the surrounding bushland.	 Figure 264 – View from corner of Fullers Road and the Fairway, Chatswood West  Figure 265 – View from 197A Fullers Road
2	**MILLWOOD AVENUE, CHATSWOOD WEST** **Distance:** Approx. 220m to south of site **Visibility:** Very restricted views available of the site through trees **Position:** Located approximately mid slope of the with the site **Present View:** Some very restricted outlines of Levels 5 and 6 of the complex is visible through the dense bushland which surrounds the site	 Figure 266 – View from Millwood Avenue, Chatswood West

3	**FULLERS PARK ROAD, CHATSWOOD WEST** **Distance:** Approx. 180m to south of site **Visibility:** Very restricted views available of the site through trees **Position:** Located at the bottom of the valley of the Lane Cove River **Present View:** The outline of the southern elevation of the complex can be seen through the trees, however, it is very difficult to determine that a structure is there	 Figure 267 – View from Fullers Park Road, Chatswood West
4	**SHOUT RIDGE, LINDFIELD** **Distance:** Approx. 90m to the north of the site **Visibility:** Mostly unrestricted view to north-western border of site **Position:** Located above the slope of the site **Present View:** Views of the northern and western elevation of the Stage 5 building of the site are visible from Shout Ridge, however, views to the other buildings of the site are not visible.	 Figure 268 – View from Shout Ridge, Lindfield
5	**DUNSTAN GROVE, LINDFIELD** **Distance:** On north-western border of site **Visibility:** Unrestricted views of north-western elevations of complex **Position:** Located level with the site. **Present View:** Uninterrupted views of the north-western elevations of the complex	 Figure 269 – View from Arcadia on Dunstan Grove, Lindfield

5.3.2. Views from and within Lindfield Learning Village

Due to the location of the complex of the northern side of the valley of the Lane Cove River, the most significant views from the complex are those which provide sweeping views across the bushland valley to the south, east and partially to the west. The complex was designed to be like an Italian Village, nestled within the bushland on the slope, affording the building complex expansive views from exterior and interior spaces throughout the building.

Views across the valley are primarily viewed from the southern elevation of the building complex and from the roof terraces located in the Stage 1 building. Views to the west from the roof top spaces also present from Levels 5 and 6. From courtyards, balconies and interiors of the building complex, views out to the bushland setting are visible throughout. The bushland serves as a visual backdrop to the internal spaces of the building complex, bringing the outside in.

Despite this views, as indicated in the view analysis of the site from public viewing points, views from the site are slightly restricted due to the natural dens bushland which surrounds the site, wrapping around the east, south and west of the site.

The following diagram (Figure 270) and figures in table 12 provide an overview of the existing views from the Lindfield Learning Village from to the surrounding locality.



Figure 270 – Views from Lindfield Learning Village diagram

Table 12 – Views from and within the Lindfield Learning Village

View Point	Description	Image
1	**VIEWS TO THE SOUTH AND EAST** The most extensive views from the building is to the south and east of the site looking over the valley of the Lane Cove River. These views are best appreciated from the southern elevation of the Stage 1 building and the roof terraces located on Level 4.	 Figure 271 – View looking south from Stage 1 building
2	**VIEWS TO THE WEST** Views to the surrounding bushland to the west can be primarily viewed from Levels 5 and 6 of the Stage 1 building.	 Figure 272 – View looking west from Level 6 of Stage 1 building.
3	**VIEWS FROM COURTYARDS, TERRACES AND INTERIORS** Throughout the courtyards, balconies and interiors of the complex, extensive views of the surrounding bushland can be appreciated. The connection between the surrounding setting and the interior spaces is an intrinsic part of the design [philosophy of the building and landscape	 Figure 273 – View courtyard between Stage 1 and 2 building looking east toward the bushland



Figure 274 – View from Stage 5 building looking west.

5.4. LEVELS & GRADINGS

The Heritage Council of NSW recognises four (4) levels of heritage significance in NSW: Local, State, National and World. The level indicates the context in which a heritage place is important (for example, local heritage significance means the place is important to the local area or region). Heritage places that are rare, exceptional or outstanding beyond the local area or region may be of state or national significance.

In most cases, the level of heritage significance for a place has a corresponding statutory heritage listing and responsible authority for conserving them.

Different components of a place may contribute in different ways to its heritage value. The gradings of significance adopted for this CMP are based on those definitions as developed by the Heritage Council of NSW, and have been modified as follows:

Table 13 – Gradings of Significance

Grading	Justification	Status
Exceptional	Rare or outstanding elements that directly contribute to the place's overall heritage significance; they retain a high degree of integrity and intactness in fabric or use; any change should be minimal and retain significant values or fabric	Fulfils criteria for local or state listing
High	Element demonstrates a key aspect of the place's overall heritage significance; they have a high degree of original fabric or they retain their original use; alterations do not detract from significance	Fulfils criteria for local or state listing
Moderate	Element contributes to the place's overall heritage significance; they may have been altered but they still have the ability to demonstrate a function or use particular to the site; change is allowed so long as it does not adversely affect the place's overall heritage significance	Fulfils criteria for local listing
Little	Element may be difficult to interpret or may have been substantially modified which detracts from its heritage significance; change is allowed so long as it	Does not fulfil criteria for local or state listing

	does not adversely affect the place's overall heritage significance	
Neutral	Elements do not add or detract from the site's overall heritage significance; change allowed	Does not fulfil criteria for local or state listing
Intrusive	Elements are damaging to the place's overall heritage significance; can be considered for removal or alteration	Does not fulfil criteria for local or state listing

Each element's significance has been graded having specific regard to its contribution to the overall significance of the place, its period of construction and its condition. We have identified the corresponding time period and condition status for the elements as follows:

Table 14 – Table of Time Periods

Acronym	Corresponding Period / Phase
S1	Stage 1 (1968-1971)
S2	Stage 2 (1974-1976)
S3	Stage 3 (1974-1976)
S4	Stage 4 (1977-1983)
S5	Stage 5 1984
S6	Stage 6 (1985-Present)

Table 15 – Gradings of Condition

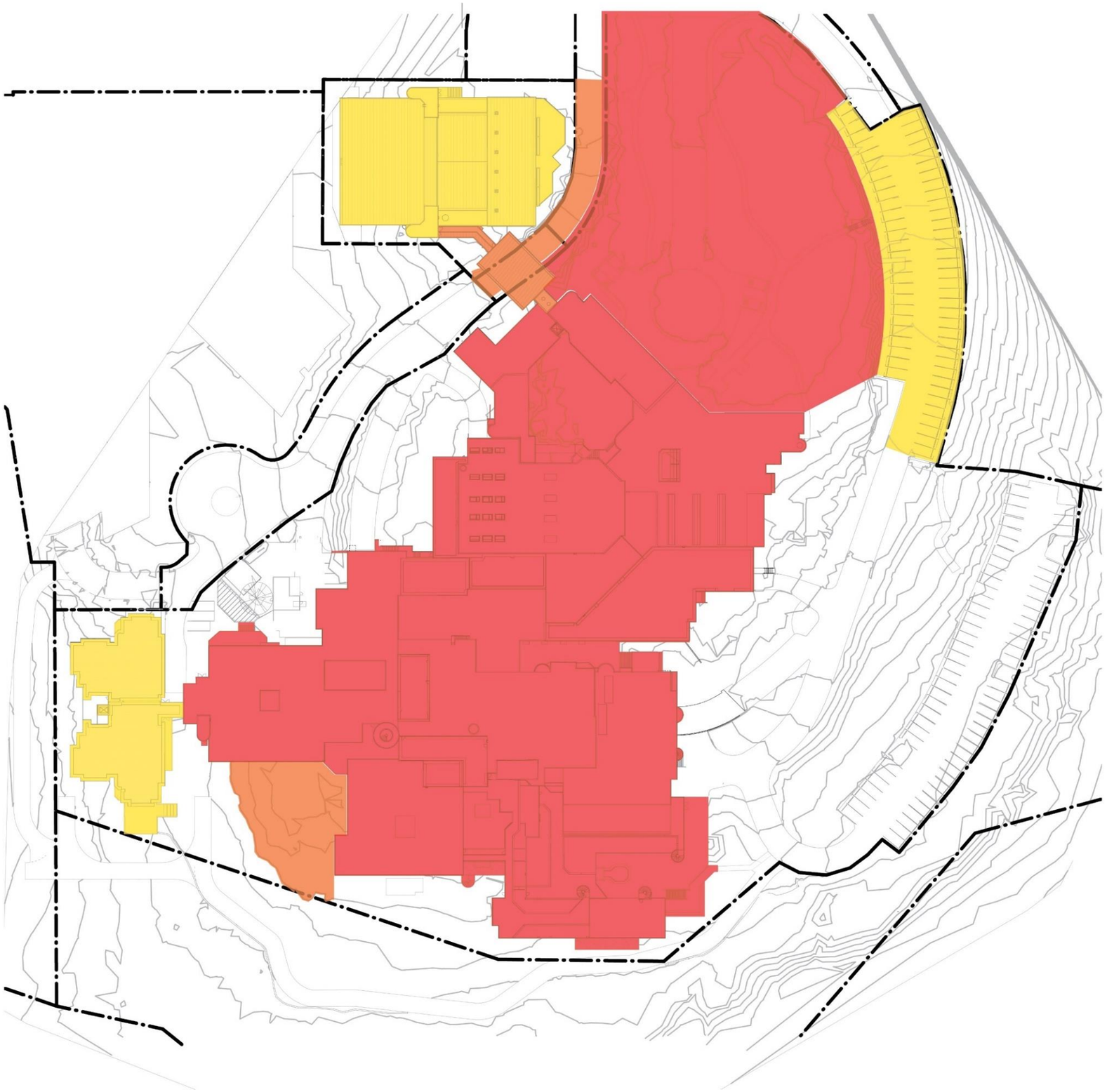
Grading	Justification
E (Excellent)	Element has no defects. Condition and appearance are stable and not deteriorating.
G (Good)	Element exhibits superficial wear and tear, minor defects, minor signs of deterioration to surface finishes, but does not require major maintenance. No major defects exist.
F (Fair)	Element is in average condition. Deteriorated surfaces require attention. Services are functional but require attention. Deferred maintenance work exists.
P (Poor)	Element has deteriorated badly. Serious structural problems exist. General appearance is poor with eroded protective coatings. Elements are defective, services are frequently failing, and significant number of major defects exists.
VP (Very Poor)	Element has failed. It is not operational and is unfit for occupancy or normal use.
U	Unknown. Unable to access to assess condition.

5.5. DIAGRAMS OF SIGNIFICANT ELEMENTS

The following diagrams identify and grade the significance elements of the Lindfield Learning Village. Please note the below schedule and diagrams of significant elements is to be read in conjunction with the schedule of significant elements contained in Section 5.4.

The following diagrams do not provide graded elevations. Refer to the Section 5.6.1 for overall grading of the elevations of the complex for building.

Grading of elements in the following diagrams only refer to the overall shape and form and do no rank significant fabric.



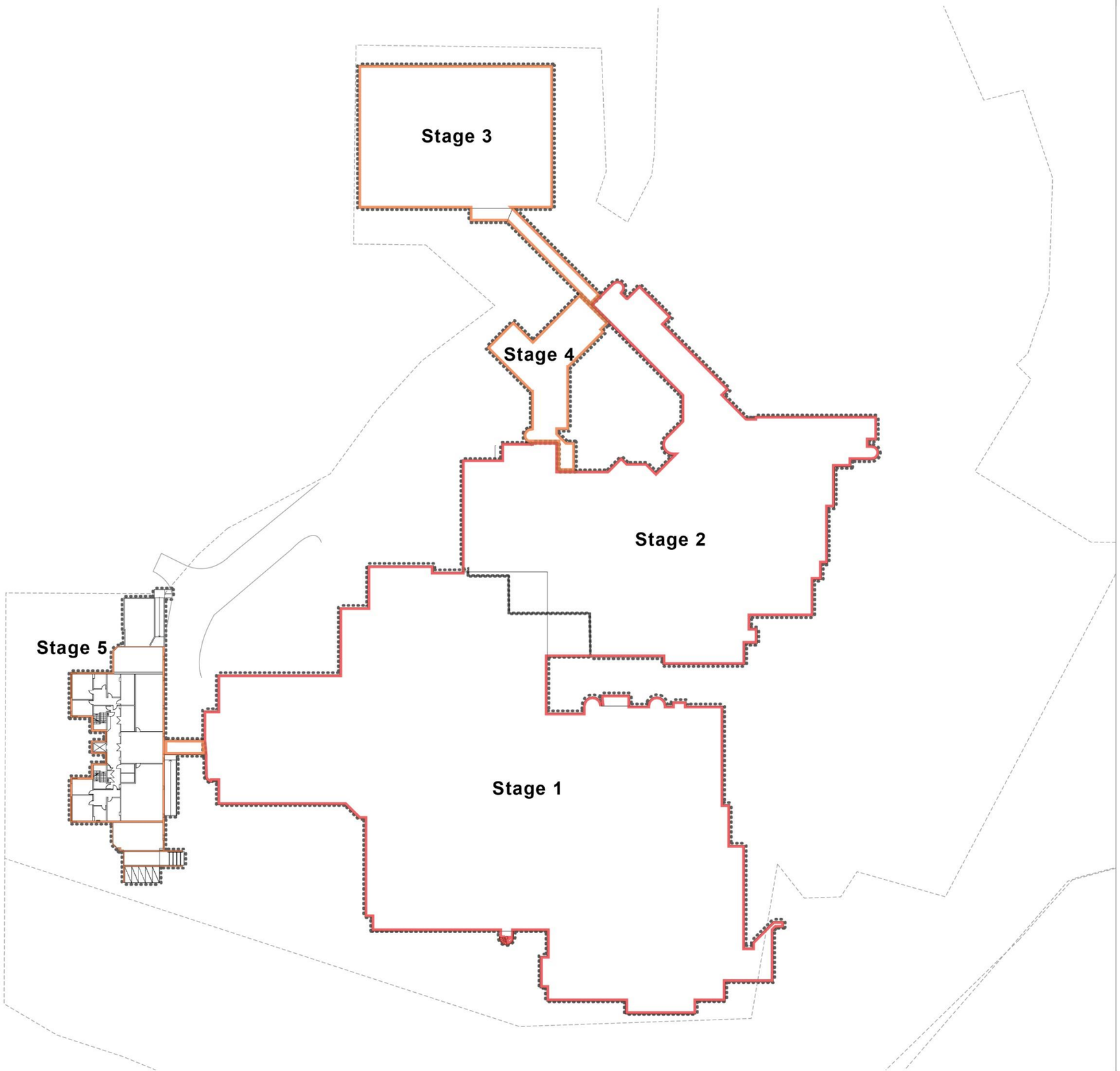
SIGNIFICANCE MAPPING

Overall

Grading refers to the significance of the overall form, and space. For significance ranking of fabric, refer to the Schedule of Elements in Section 5.6.

Key

- Exceptional
- High
- Moderate



SIGNIFICANCE MAPPING

Level 0

Grading refers to the significance of the overall form, and space. For significance ranking of fabric, refer to the Schedule of Elements in Section 5.6.

Key

- Exceptional
- High
- Moderate

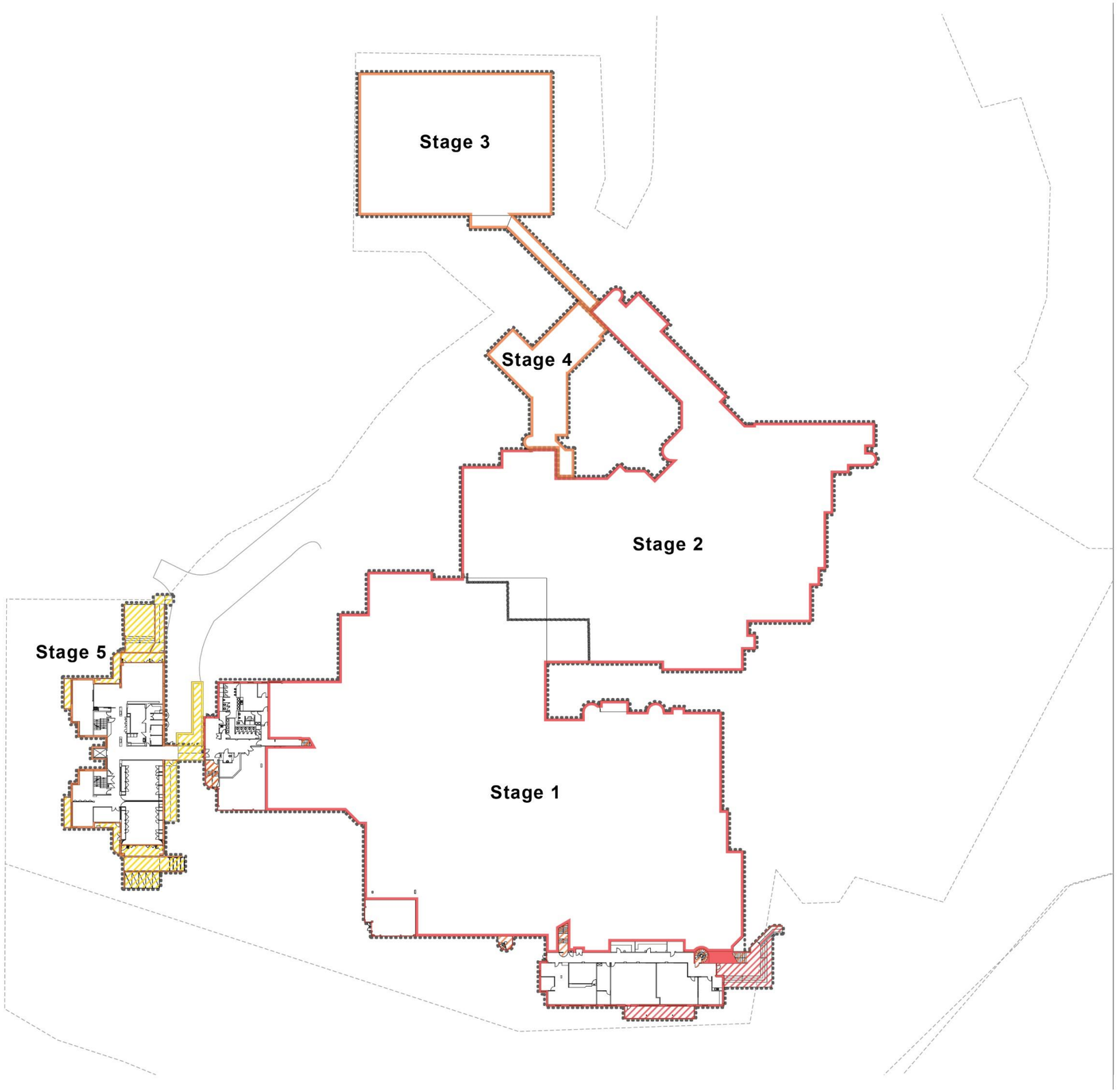
Form

- Exceptional
- High
- Moderate

Space

SIGNIFICANCE MAPPING

Level 1



Grading refers to the significance of the overall form, and space. For significance ranking of fabric, refer to the Schedule of Elements in Section 5.6.

Key

- Exceptional
- High
- Moderate

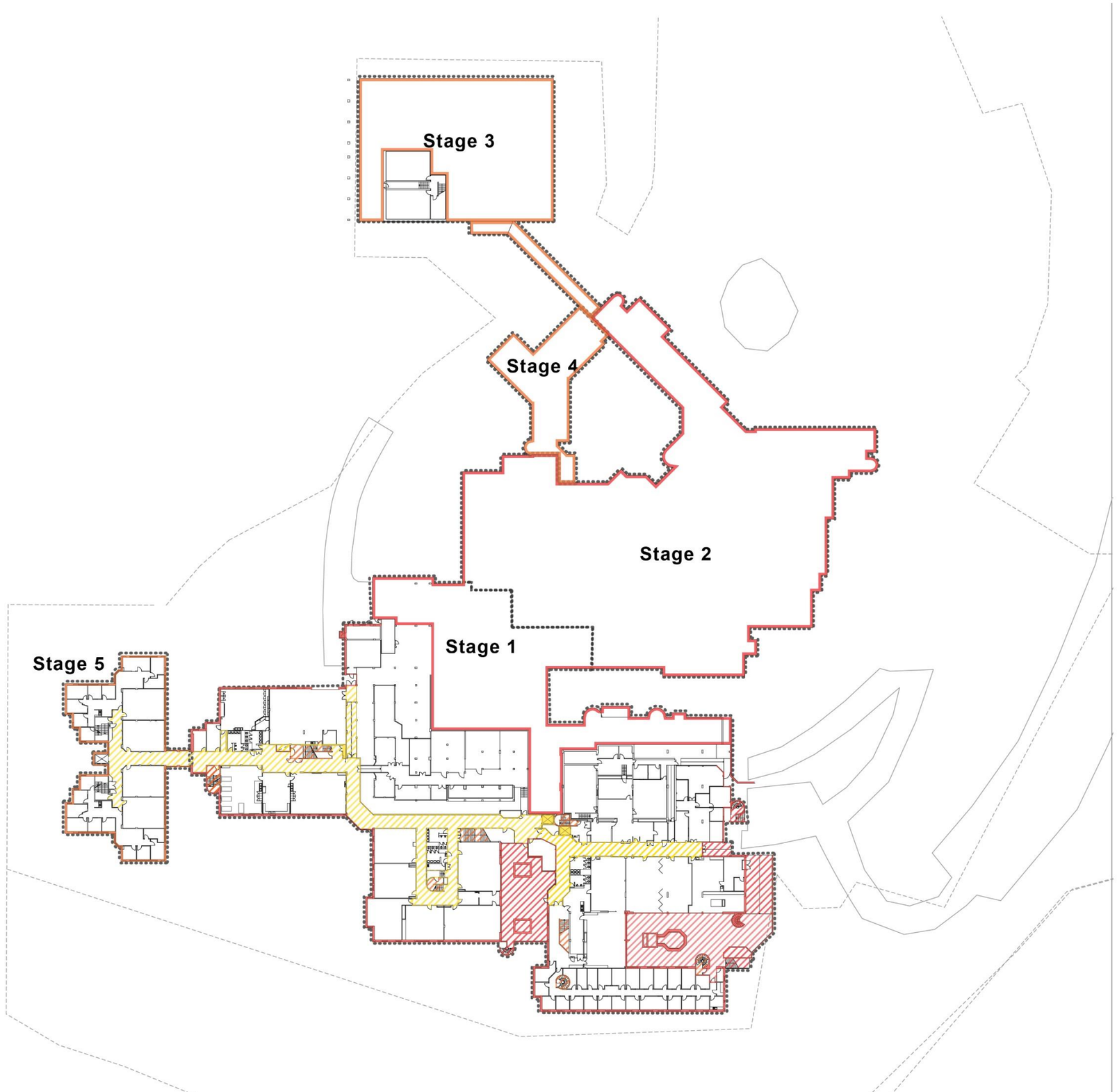
Form

- Exceptional
- High
- Moderate

Space

SIGNIFICANCE MAPPING

Level 2



Grading refers to the significance of the overall form, and space. For significance ranking of fabric, refer to the Schedule of Elements in Section 5.6.

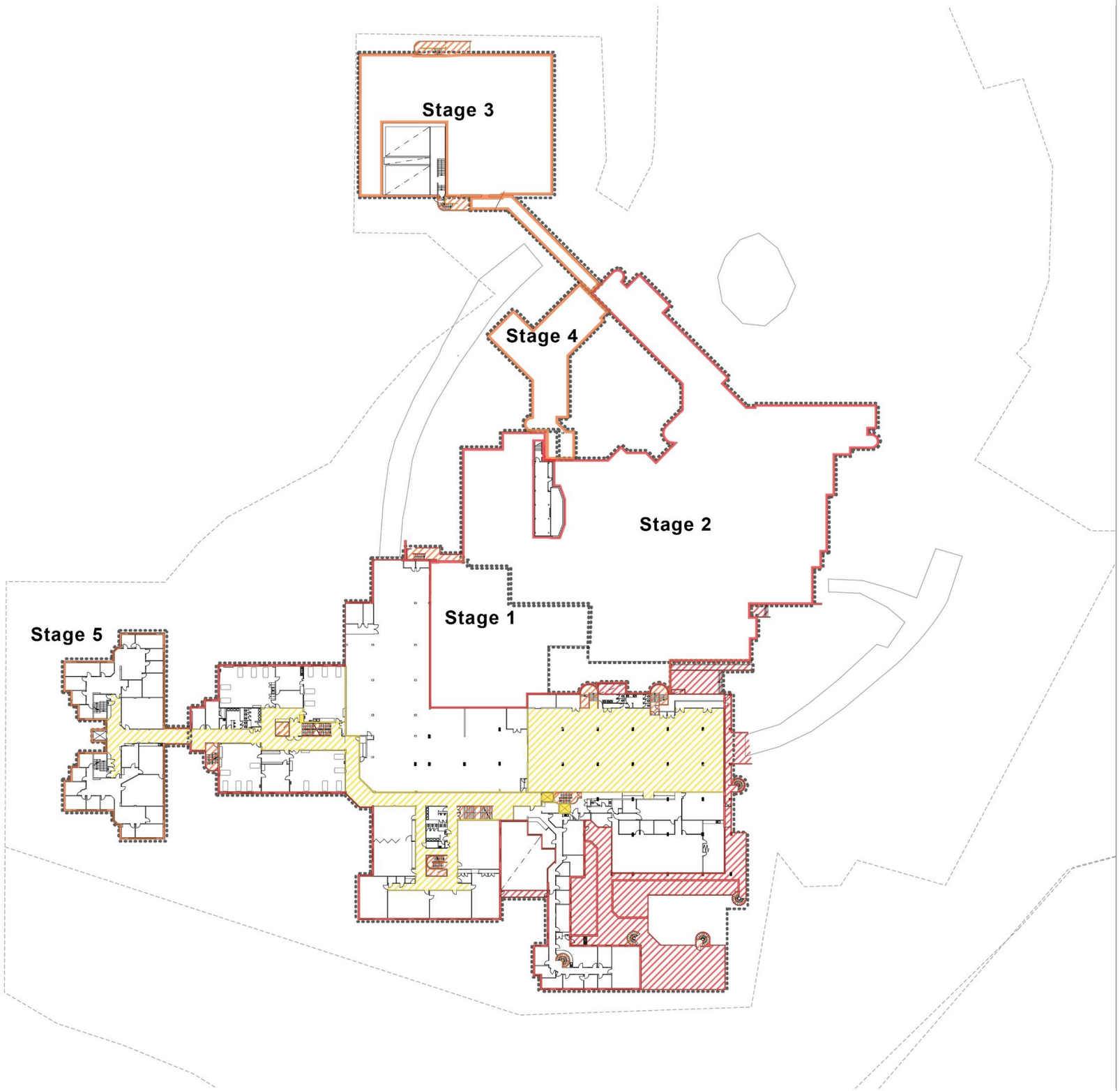
Key

- Exceptional
- High
- Moderate

Form

- Exceptional
- High
- Moderate

Space



SIGNIFICANCE MAPPING

Level 3

Grading refers to the significance of the overall form, and space. For significance ranking of fabric, refer to the Schedule of Elements in Section 5.6.

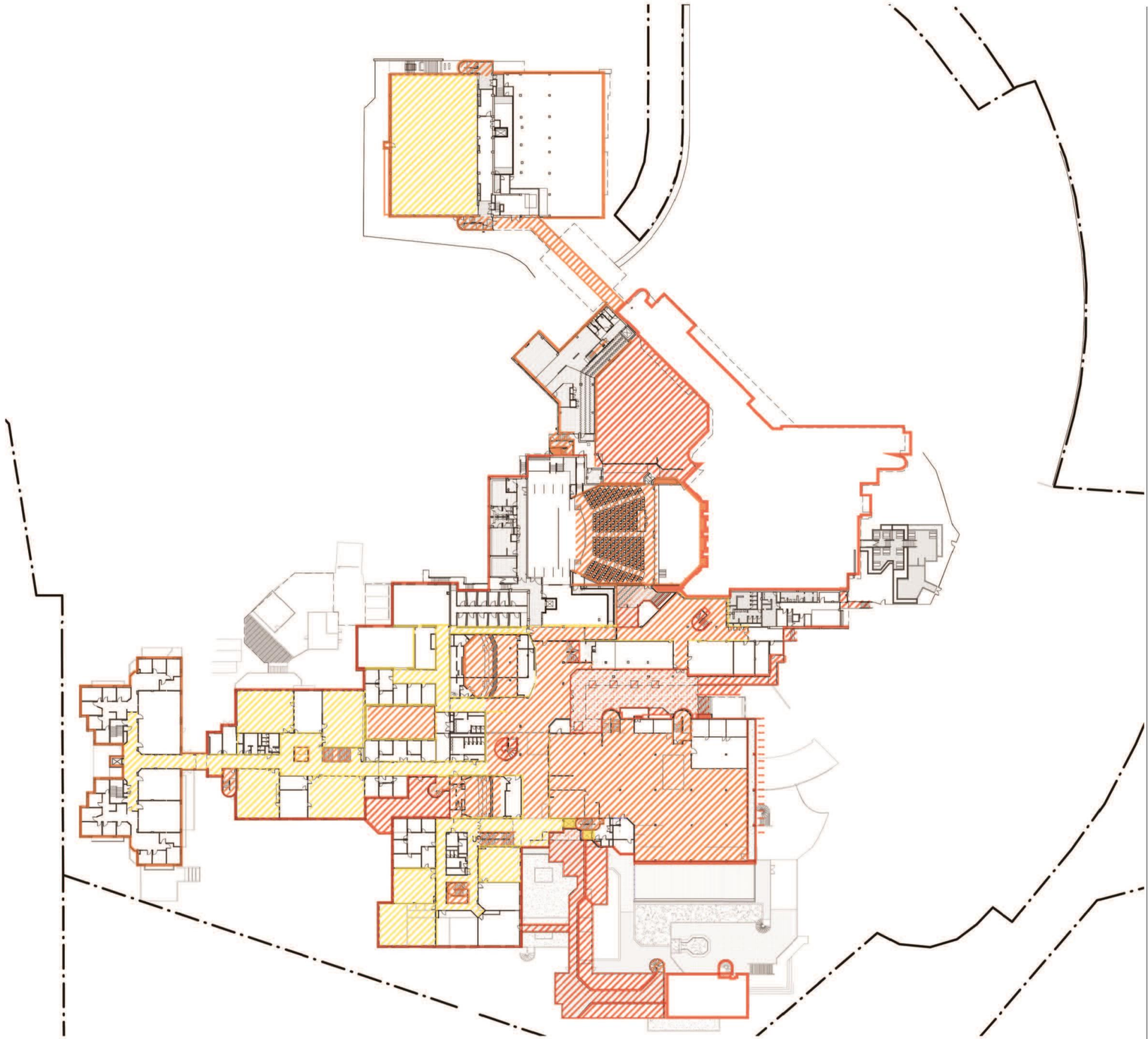
Key

- Exceptional
- High
- Moderate

Form

- Exceptional
- High
- Moderate

Space



SIGNIFICANCE MAPPING

Level 4

Grading refers to the significance of the overall form, and space. For significance ranking of fabric, refer to the Schedule of Elements in Section 5.6.

Key

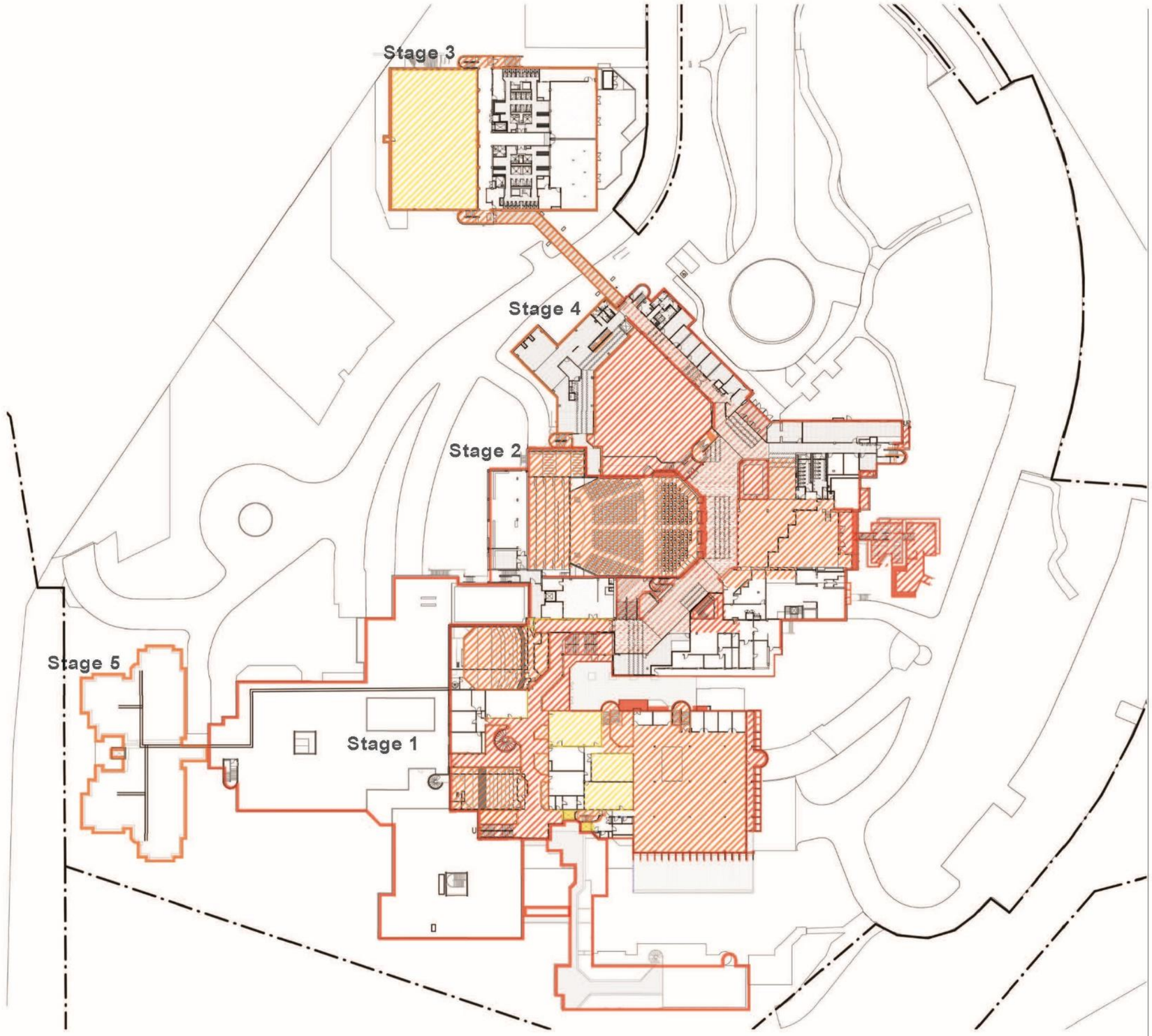
- Exceptional
- High
- Moderate

Form

- Exceptional
- High
- Moderate

Space

RBIS
2020



SIGNIFICANCE MAPPING

Level 5

Grading refers to the significance of the overall form, and space. For significance ranking of fabric, refer to the Schedule of Elements in Section 5.6

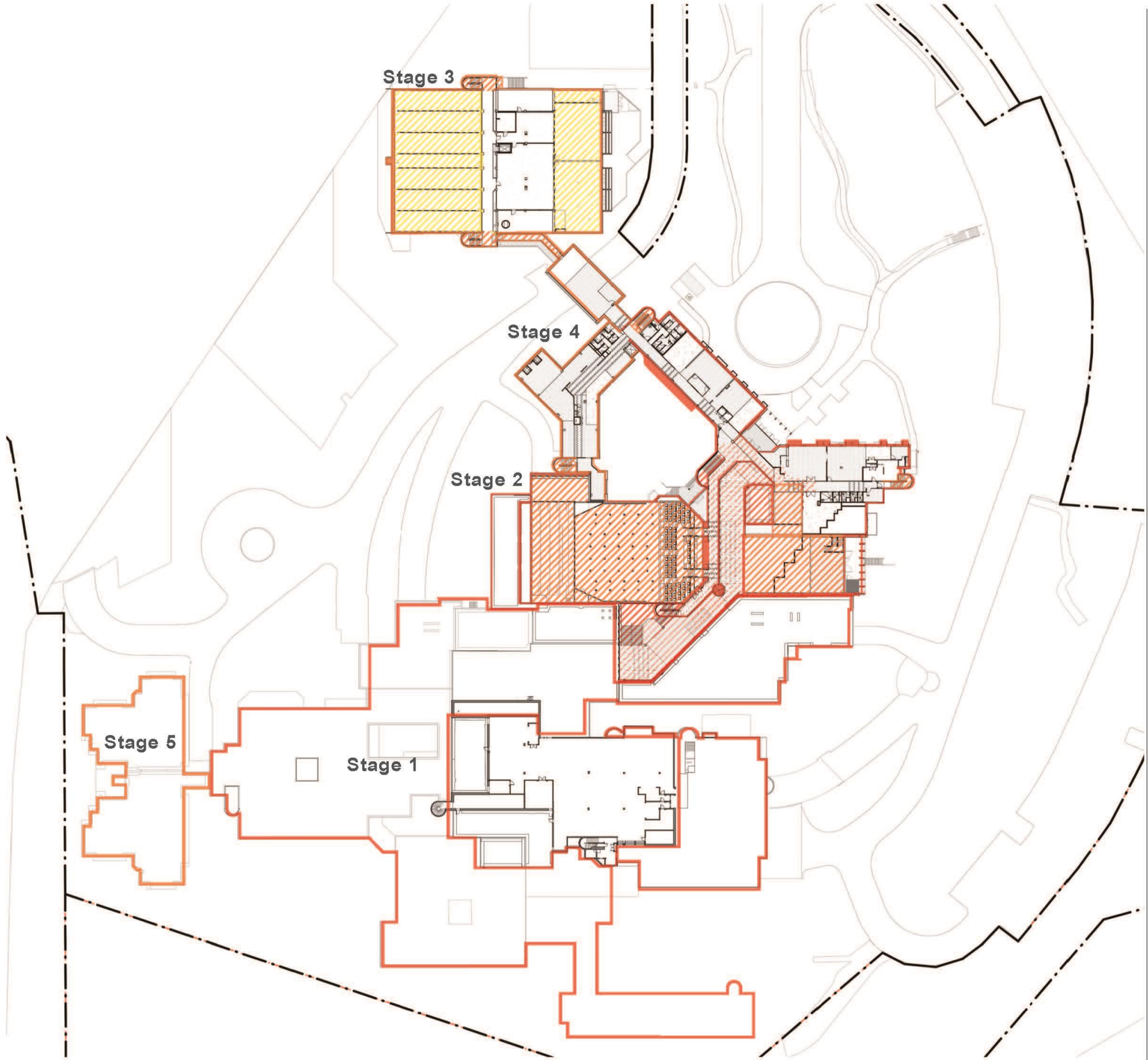
Key

- Exceptional
- High
- Moderate

Form

- Exceptional
- High
- Moderate

Space



SIGNIFICANCE MAPPING

Level 6

Grading refers to the significance of the overall form, and space. For significance ranking of fabric, refer to the Schedule of Elements in Section 5.6.

Key

- Exceptional
- High
- Moderate

Form

- Exceptional
- High
- Moderate

Space

5.6. SCHEDULE OF SIGNIFICANT ELEMENTS

Various elements of the place have been graded below in relation to their contribution to the overall heritage significance of the place. Elements include buildings, structures, landscape and other elements that are located within the site.

5.6.1. Overall Forms

Table 16 – Schedule of Significant Elements – Overall Form

Element	Description	Stage	Significance Ranking	Image
Stage 1 Building	Construction on the Stage 1 building was between 1968 and 1971. Stage 1 was constructed using earth toned face brickwork and off-form concrete. The otherwise brutal nature of the concrete is lessened by the strong grained textured pattern of the timber formwork. The concrete elements are also massed together so as to present contrasts between the warm brick tones and the more monolithic concrete structures, for example the library has a high concentration of concrete work, including the extensive use of pre-cast concrete sun shades. The lower levels of the building at its south end are predominantly brick with off form concrete slabs, window hoods, sunshades, roof parapets and stairwells. One of the principal features of Stage 1 are the roof top gardens and walkways above the art/craft block at the lower end of the building. The general layout of the rooftop gardens and their functions remains largely unaltered; however the original plantings appear to have been altered over time. Changes also appear to have been made as a result of repairs to the roofing of the building. Internally the configuration of the building is still largely intact. Classrooms appear to have been refurbished over time. The main circulation areas of the interior are largely as originally planned. Green carpet is still located throughout the principal circulation areas, and hand rails are still painted purple/pink. The interior finishes are of a high quality, with careful attention to the quality of the concrete form work. The Stage 1 building has a close relationship to the topography and environment outside	S1	Exceptional	 Figure 275 – Stage 1 Building

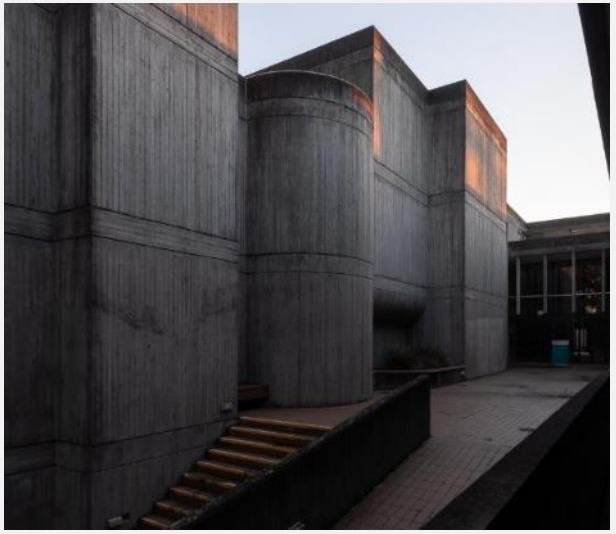
Element	Description	Stage	Significance Ranking	Image
	the building. The interior is provided with planned views to the exterior. The building does not present a single elevation as such, but appears as though designed from the inside out, the exterior being the outward modelling of functional areas within the building. The building was also designed in such a manner as to allow for further additions in an agglutinative fashion.			
Stage 2 Building	Stage 2 of the College was constructed in 1972. The college was constructed in the same manner as Stage 1 with the use of matching brickwork and detailing, and off-form concrete. The transition between the Stage 1 and Stage 2 buildings is virtually seamless. The principal features of the Stage 2 building are the main entry and circulation corridor, the Greenhalgh Auditorium and the dining areas. The central circulation space leading from the main entry past the eating areas and towards the library of the Stage 1 building is the core focus of the building. The central circulation space does not act as an enclosed corridor, but as a street within the building. The circulation space has a tall void space, and does not appear as an enclosed area. Green carpet throughout (possibly replaced), and pink/purple hand rails. The Stage 2 building is relatively low in scale, of two stories at its northern end, and when viewed from the north, sits comfortably and unobtrusively within the landscape.	S2	Exceptional	 Figure 276 – Stage 2 Building
Stage 3 Building	The Stage 3 building was completed in 1976 and entirely comprises the original gym. It is located to the northernmost portion of the site and north of the road cutting over which the link bridge (described below)	S3	High	

Element	Description	Stage	Significance Ranking	Image
	extends. This building features the same techniques as the earlier stages, with masonry walls, waffle slab and off-form concrete slabs and details, including precast window hoods. The eastern elevation of the building features substantial window hoods over double height windows.			 Figure 277 – Stage 3 Building
Stage 4 Building	The Stage 4 building (1977) comprised the construction of a link between the back of the Greenhalgh auditorium and the north arm of the Stage 2 building near the link bridge to the gymnasium. This link building was constructed using the same techniques as the earlier stages, with masonry walls and off-form concrete slabs and details, including precast window hoods. The building of this linking section created a courtyard enclosed on three sides which features a bedrock outcrop, and native plantings.	S4	High	 Figure 278 – Stage 4 Building

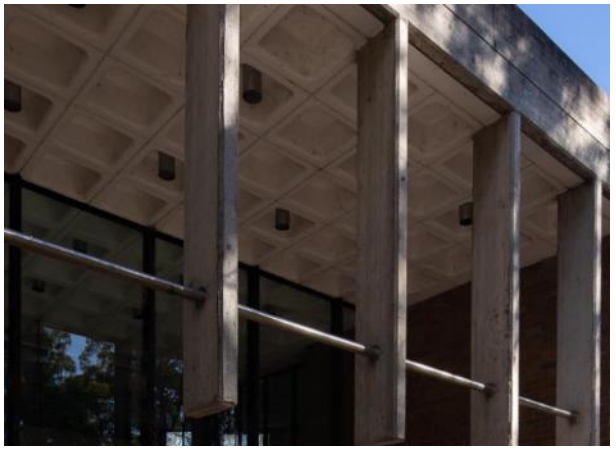
Element	Description	Stage	Significance Ranking	Image
Stage 5 Building	The Stage 5 building (1984) was constructed as an extension to the south west block of the Stage 1 building to meet the additional demand arising from the teaching of nursing at the College. The new block was built in the same manner as the Stage 1 and Stage 2 building. While closely integrated with the earlier Stage, the building does not feature quite the same level and attention to detail as the earlier Stages.	S5	High	 Figure 279 – Stage 5 Building
Link Bridge	Link bridge built to connect the north end of Stage 2 with the gymnasium. Off-form concrete construction with waffle-pan slab ceiling. The link between the earlier and later buildings is well blended, and the link is consistent in its construction method and appearance. The bridge has tiled floor and the same waffle ceiling evident in Stages 1 and 2. It has a contemporary orange extension to the original concrete balustrade at Level 5.	S3	High	 Figure 280 – Link Bridge

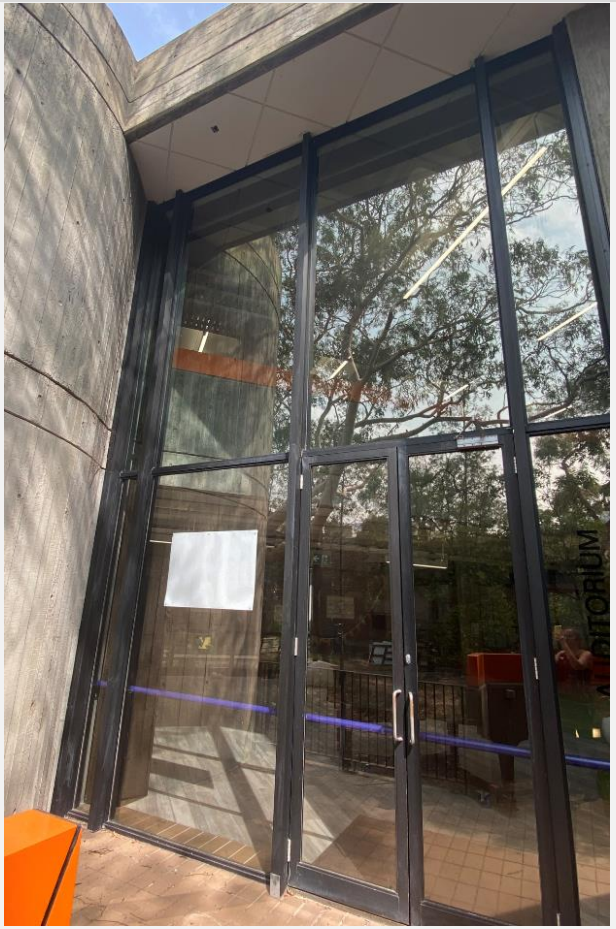
5.6.2. External Fabric

Table 17 – Schedule of Significant Elements – External Fabric

Element	Description/Significance	Stage	Significance Ranking	Image
Off board concrete including balustrades	The building is dominated by off board concrete. The use of the natural material for the formwork and the resultant textured pattern on the concrete offsets it's otherwise monolithic character. The composition of the geometric forms also serves this purpose as shown in the image opposite where an expression of the internal spaces (including stairwell) is reflected externally The off-board texture is integral to the predominant design philosophy of maintaining a connection to the natural landscape where possible. The concrete forms are highly intact and in fair condition. However, the weathering of the grey concrete has created a mottled effect which allows the building to blend in with the surrounding bush. The concrete highlights prominent areas of the building including the library which has a higher proportion of concrete than brick.	S1-S5	High	 Figure 281 – Off board concrete – Stage 1.

Element	Description/Significance	Stage	Significance Ranking	Image
Brick walls	In addition to the off-board concrete face brick is a dominant feature of the building. Entire walls are constructed of face brick (S1) contrasting the concrete exposed slab and sun hoods. In some areas the face brick constitutes infill between a frame of off board frame. The brickwork breaks up the form of the concrete with a contrasting material which has earth tones but also a tonal relationship to the concrete.	S1-S5	High	 Figure 282 – Brick walls – Stage 1.
Pre-cast concrete sun hoods and louvres	While the majority of the building is dominated by off board concrete, the sun hoods and louvres are pre-cast concrete. These details are predominantly used in contrast to the face brickwork walls behind and articulate the otherwise prismatic building. The hoods are fixed into the sides of the exposed slab. The hoods are of varying depth and have different effects on the quality of the internal spaces. Similarly, the vertical blades/louvres variously extend single or double height. The concrete shades at Stage 5 are not as intricate as those on the earlier stages.	S1-S5	High	 Figure 283 – Figure 284 – Pre-cast concrete sun shades – Stage 2.
Waffle slab	The waffle slab is expressed externally in key parts of the building's external spaces including the main entrance, the	S1-S3	High	

Element	Description/Significance	Stage	Significance Ranking	Image
	link bridge to the gym and the Stage 1 courtyard to the north of the library. The slab has a honeycomb pattern established by coffers separated by seams which extend across the bottom coffers in a grid. The slab is painted white. The waffle slab visibly continues from the outside to the inside spaces, separated by only glazed external walls. This continuity between the spaces is consistent with the predominant design philosophy of the building.			 Figure 285 – Waffle slab – Stage 2.
Exterior aluminium entry doors/windows (including internal courtyards) and contemporary steel doors/windows (replaced for compliance).	The windows and doors within the building do not constitute remarkable fabric in themselves, the windows have standard profiles and are in fair condition. Further, some original aluminium framed units have been replaced with contemporary steel framed units for fire compliance. However, the frames facilitate large expanses of glazing in considered locations which offset the surrounding masonry and open wide views to the surrounding landscape. In several key areas including the main entrance, central courtyard and Stage 1 courtyard adjacent to the library the glazing is double height. These dramatic areas of glazing provide relief from the heavy masonry and enhance the impression of scale and openness in the adjacent internal spaces, particularly the main circulation spine. The frames, specifically the arrangement of the mullions, relate to both the geometry of the waffle slab and the pre-	S1-S5	Moderate	

Element	Description/Significance	Stage	Significance Ranking	Image
	cast concrete blades/hoods i.e. the mullions generally run directly behind the hoods or have a rational and consistent offset from them. The contemporary units have been designed with the same intent.			 Figure 286 – Aluminium doors and windows – Stage 2.
Exterior Stairs	Numerous sets of stairs throughout the building connect the building to the surrounding landscape. Three sets of stairs around Stage 1 extend to highly significant courtyard	S1, S5	High	

Element	Description/Significance	Stage	Significance Ranking	Image
	spaces. This connection is integral to the design of the building. The contrasting forms of the flights of stairs reflects the general approach to the overall building forms i.e. a panoply of contrasting geometric forms. As shown in the adjacent image, wide flat areas are juxtaposed against narrow flights offset from the centre. The stairs are covered in pavers which complement the tones in the bricks and concrete however the pavers are not significant in themselves.			 Figure 287 – Exterior stairs – Stage 1.

5.6.3. Internal Spaces

Table 18 – Schedule of Significant Elements – Internal Spaces

Element	Description/Significance	Stage	Significance Ranking	Image
Main circulation corridor	The main circulation corridor is primarily considered to be the extension across Levels 5 and 6. The corridor extends partway across Level 4 however the quality of the space is lesser than the former which constitutes a double height space. The main entrance accesses the circulation spine at Level 5. The corridor has a Level 6 extension which primarily constitutes the mezzanine access to the upper floor of the main auditorium. Level 6 extends over the western side of the wider corridor at Level 5 and occupies part of the otherwise double height space. The corridor features all the key significant characteristics of the building including a composition of different concrete forms, brick infills, waffle slab and an expanse of glazing (in the form of the walls to the fishpond and the cafeteria). The original architect David Turner referenced an Italian Hill Village when speaking of the design of the building and described the central corridor as the circulation spine to the village.	S2 S1 S1	Exceptional (L5 and 6) High (L4) Moderate (L2 and 3)	 Figure 288 – Main circulation corridor – Stage 2 Level 5.
Greenhalgh Auditorium	The double height auditorium is accessed directly off the main circulation spine at Level 5. When the building was awarded the Sulman Award by the NSW Chapter of the RAIA they stated that *the auditorium did exemplify the care in detailed design which maintains the building's consistency of character.*	S2	High	

	The seating and the finishes in the auditorium were upgraded with the implementation of LLV.			 Figure 289 – Greenhalgh Auditorium – Stage 2.
Ancillary auditoriums	There are two auditoriums in addition to Greenhalgh Auditorium. Both are located in the Stage 1 building. These auditoriums reference the character of the remainder of the building more strongly with exposed concrete and timber panelling to the walls.	S1	High	 Figure 290 – Auditorium – Stage 2.
Original Library	The original library space is located in Stage 1 of the building. The library originally occupied part of level 4 and 5 however it was later extended to also occupy part of Level 3.	S1 S1 infill (L3)	High Moderate	

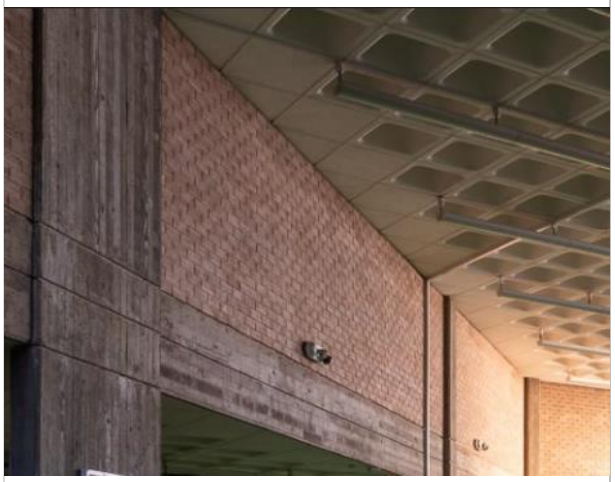
	The library has a strong visual connection with its natural surroundings. It has wide views to the bushland to the west and south through the long windows. The library also looks onto the rooftop courtyard to the south. The library has a significant original timber ceiling (discussed below)			 Figure 291 – Original library space – Stage 1.
Cafeteria	The cafeteria is located in Stage 2 of the building. The double height space is accessed directly from the main circulation spine. The quality of the space is enhanced by the clerestory windows and the adjacent atrium with water feature. The cafeteria features significant finishes, specifically, the timber parquetry floor and timber wall panelling. The space was bisected by an intrusive fire wall during the implementation of the Phase 1 school. This fire wall is to be removed following the implementation of Phase 2 to reinstate the significant original volume. The parquetry is also in storage and required to be reinstated.	S2	High	 Figure 292 – Cafeteria – Stage 2.

Main gym space (basketball court)	The basketball court is a triple height space in the original gym building to the north of the campus. The space features exposed concrete, timber wall joinery and original trusses. The space represents the original use of this area of the school.	S3	Moderate	 Figure 293 – Gym space – Stage 3.
Light wells	Light wells in Stage 1 enhance the quality of the adjacent spaces. The lights wells are located in areas which were original the centre of several classrooms and enhance the Italian Village design philosophy and general amenity. The light wells are partly constructed of concrete. They have been retrofitted with aluminium framed glazing for smoke separation requirements.	S1	High	 Figure 294 – Light well – Stage 1.

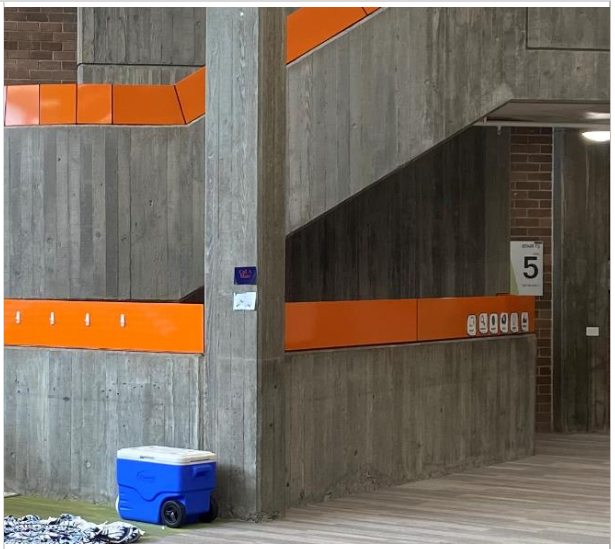
5.6.4. Internal Fabric

Table 19 – Schedule of Significant Elements – Internal Fabric

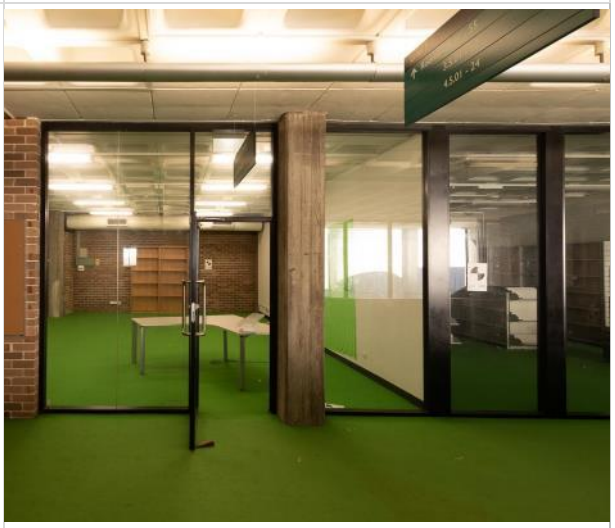
Element	Description/Significance	Stage	Significance Ranking	Image
Structure				
External expression of concrete slab	The building is constructed on a concrete slab. The slab is exposed on the external elevations throughout the building above the header of each row of windows. The slab is easily legible in contrast to the brick either side. Internally the slab is generally expressed as a waffle slab which is evident on the ceilings throughout.	S1, S5	High	 Figure 295 – Exposed Slab – Stage 1.
Timber floor structure	Section of timber floor structure are evident in the gym under the basketball court. The flooring reflects the original and continued use of the space as a basketball court.	S3	Moderate	 Figure 296 – Timber floor structure – Stage 3.

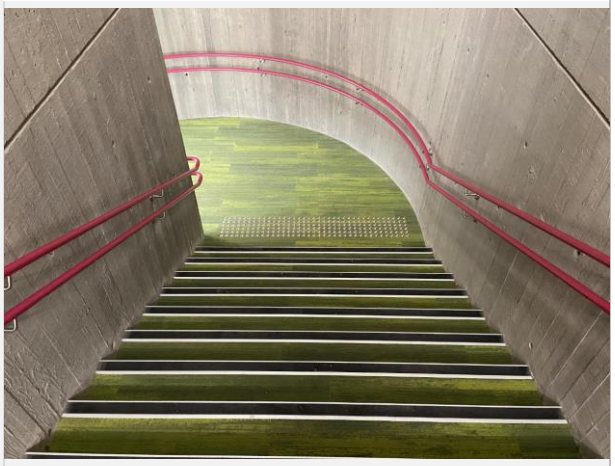
Element	Description/Significance	Stage	Significance Ranking	Image
Trusses	The trusses above the basketball court in the gym enhance the sense of scale in the double height space.	S3	Moderate	 Figure 297 – Trusses – Stage 3.
Walls				
Brick walls	Brick walls define some highly significant areas and in some areas the brick constitutes infill between a frame of off board concrete as shown in the image opposite. The brickwork breaks up the form of the concrete with a contrasting material which has earth tones but also a tonal relationship to the concrete.	S1 – S2 S3 - S5	High (where walls bound spaces of high significance)/ Moderate Moderate	 Figure 298 – Brick wall – Stage 2.

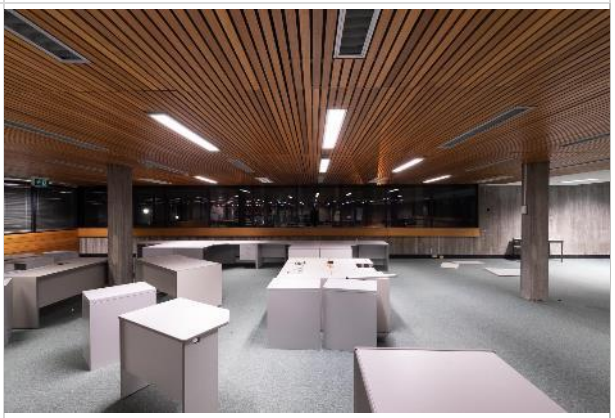
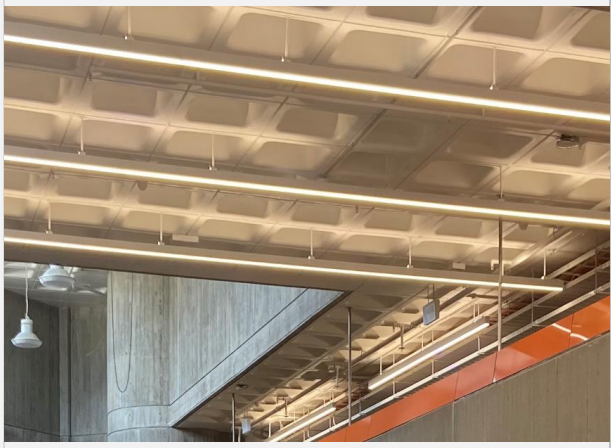
Element	Description/Significance	Stage	Significance Ranking	Image
Off form concrete walls (including balustrades)	The building is dominated by off board concrete. The use of the natural material for the formwork and the resultant textured pattern on the concrete offsets it's otherwise monolithic character. The composition of the geometric forms also serves this purpose as shown in the image opposite. The off-board texture is integral to the predominant design philosophy of maintaining a connection to the natural landscape where possible. The concrete forms are highly intact and in fair condition. The circular marks from the formwork fixings are visible in some areas. The concrete highlights prominent internal areas of the building. There is a predominance of concrete in the central circulation spine at Level 5 and concrete defines highly significant areas including the auditorium and the Level 6 mezzanine.	S1 – S5	Exceptional (where walls bound spaces of exceptional significance/High	 Figure 299 – Concrete walls – Stage 1.

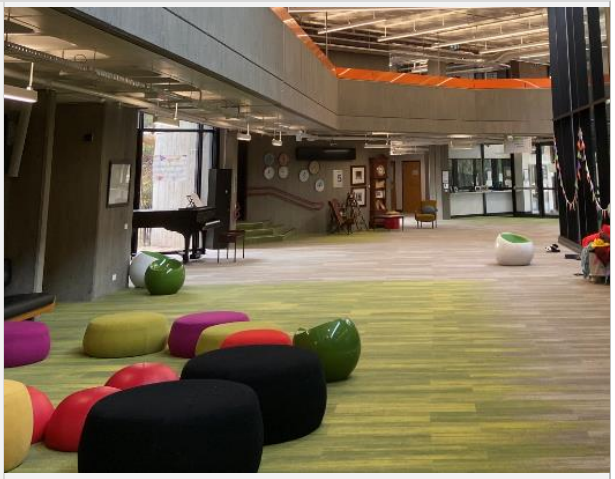
Element	Description/Significance	Stage	Significance Ranking	Image
Concrete Columns	Concrete columns are variously utilised throughout to provide a framework for bricks infill/used independently in the centre of circulation spaces as shown opposite. The columns have an off-board impression in keeping with the concrete walls.	S1 – S5	High	 Figure 300 – Concrete column – Stage 2.

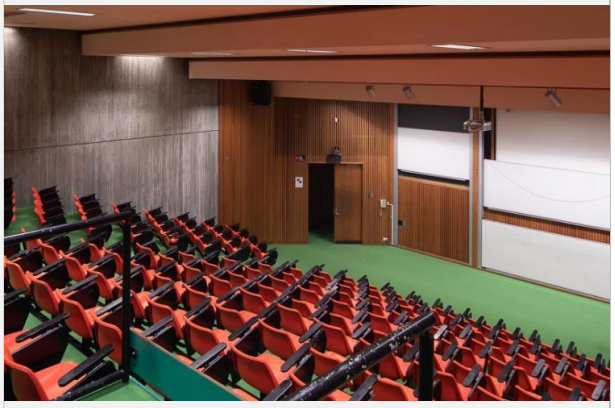
Element	Description/Significance	Stage	Significance Ranking	Image
Glass bricks	Small areas of glass bricks are used throughout the building. The glass bricks are unusual in the context of the building in that the palette of materials only otherwise includes transparent materials for the windows. The bricks interpret some of the monolithic quality of the concrete and bricks in that they are bricks rather than glazing panels. However, the glass walls interestingly do not define key spaces.	S1, S3 & S5	Little	 Figure 301 – Glass bricks – Stage 3.

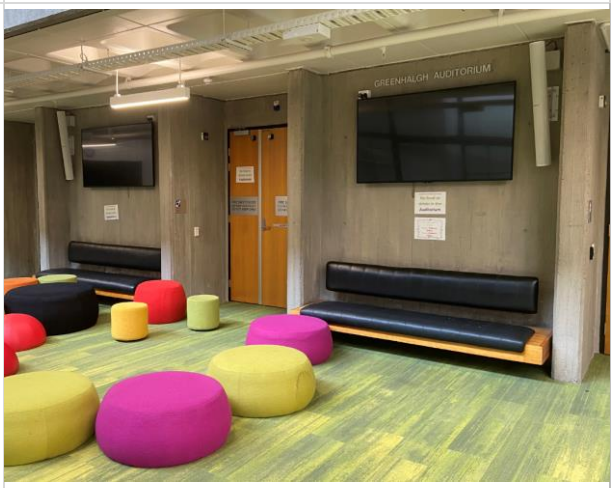
Element	Description/Significance	Stage	Significance Ranking	Image
Original glazed partition walls	The original glazed partition walls do continue the same aesthetic as the external faces and in some areas define the circulation spine. They feature aluminium frames and clear glazed panels. The glazed partition walls however are not remarkable where they define internal spaces. This does not include any of the exterior windows which define the internal courtyards.	Throughout	Little	 Figure 302 – Glazed partition walls – Stage 1.
Non-original glazed walls/partition walls	The later glazed partition walls throughout are in keeping with the character of the building however are not remarkable. A number of new partition walls were constructed in accordance with the implementation of the Phase 1 School. The locations of the walls were designed to respect the most significant spaces.	Throughout	Neutral	 Figure 303 – Glazed partition walls – Stage 1.

Element	Description/Significance	Stage	Significance Ranking	Image
Circulation				
Stairs	The stairs throughout including the stairwell walls are constructed of off board concrete. The internal stairwells contribute to the character of the adjoining spaces. Specifically, the cylindrical walls of the concrete stairwell at Level 6 are prominent above the main circulation spine at Level 5. These circular elements offset the predominant rectilinear lines within the building and contribute to the unique composition of built forms. The circular marks from the formwork fixings are particularly visible in the stairwells. Stairwells are characterised by coloured handrails throughout.	S1 – S5	High	 Figure 304 – Concrete stairwell – Stage 2.
Lifts	The lifts are utilitarian in character and don't comprise any remarkable fabric. This applies to the lift cars and associated doors and does not include the surrounding off-board concrete structure.	S1 S4 – S5	Little Little	 Figure 305 – Lift – Stage 1
Ceiling Treatment				

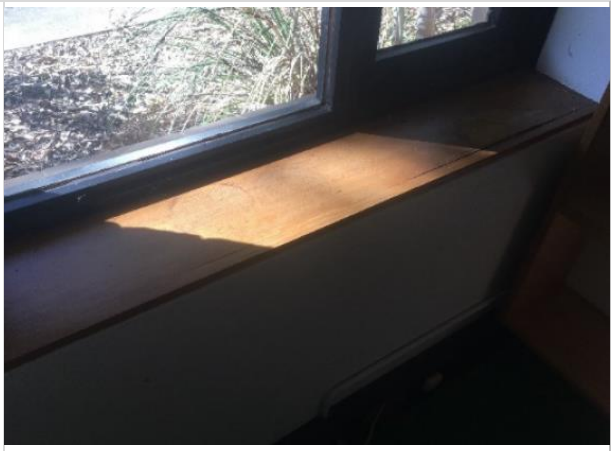
Element	Description/Significance	Stage	Significance Ranking	Image
Timber ceiling lining	Timber ceilings contribute to the character of the place and are in keeping with the natural design philosophy. The timber ceiling lining provides a counterpart to the concrete which retains impressions of the timber formwork. Small sections of timber ceiling lining are evident in the gym. The cafeteria and original library space have timber ceilings with thinner battens set further apart.	S1 S2 S3	High High Moderate	 Figure 306 – Timber ceiling lining – Stage 1
Waffle slab ceiling	The original waffle slab throughout presents as a series of rectangular coffers with rounded edges. The ceilings have a similarly geometric character seen throughout the building. The slab is painted white and represents a departure from the connection to the landscape evoked by other elements.	Throughout	High	 Figure 307 – Waffle slab ceiling – Stage 2
Floor Treatments				

Element	Description/Significance	Stage	Significance Ranking	Image
Green carpet	The significance of green carpet is vested in the contribution it makes to an understanding of the connection between the building and the surrounding landscape, i.e. the green continues from the surrounding bush throughout the building. The significance is associated with the design intent rather than the carpets fabric specifically. The original carpet was removed in Stage 2, 3 and 4 as part of the implementation of Phase 1 of the LLV. The replacement green carpet retains significance as an interpretation of a highly significant original design feature.	S2, S4 (Lvl 4, 5)	Moderate	 Figure 308 – Green carpet – Stage 2
Timber parquetry	The timber parquetry in the cafeteria is unique in the context of the building. It does however have the same tonal relationship to the remainder of the building as the wall and window joinery. The parquetry is also indicative of the original use of this space as an eating area. The parquetry is currently in storage and is to be reinstated following the removal of the fire wall which bisects the cafeteria.	S2 (cafeteria)	Moderate	 Figure 309 – Timber parquetry – Stage 2.

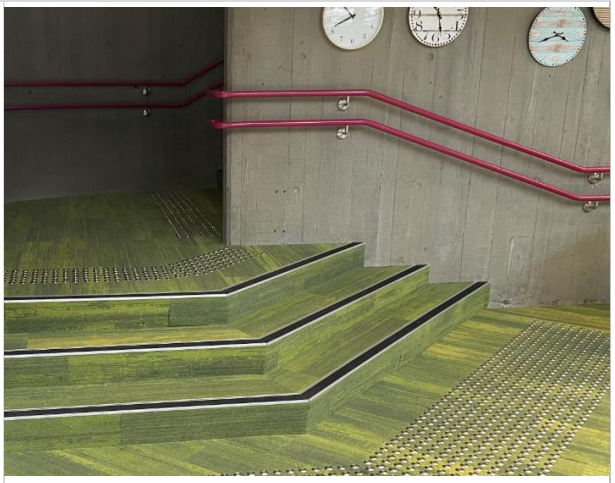
Element	Description/Significance	Stage	Significance Ranking	Image
Timber flooring	Timber flooring is evident in the gym to the large exercise spaces (basketball court). The floors are a functional requirement of the original use of the space.	S2 & S3	Moderate	 Figure 310 – Timber flooring – Stage 3.
Joinery				
Timber joinery (walls)	Timber joinery is extant to the cafeteria, library and the ancillary auditoriums, which includes The timber is in keeping with the natural character of the place overall and provides a counterpoint to the off board impression in the concrete.	S1, S2 S3	High (auditoriums) Moderate (library) Moderate (caf) Moderate (gym)	 Figure 311 – Wall joinery – Stage 1.

Element	Description/Significance	Stage	Significance Ranking	Image
Built in furniture (timber and leather benches	Built in furniture was originally constructed throughout and included benches, cupboards and notice boards. The furniture has a relationship with the material palette of the built fabric in that it features a stained timber similar to the wall joinery throughout and the original doors. The bespoke furniture is indicative of the level of quality of the building and the attention paid to small details. The built in benches have black vinyl cushion coverings in keeping with the grey, black and green colour palette.	S1 & S2	High	 Figure 312 – Built in benches – Stage 2.

Element	Description/Significance	Stage	Significance Ranking	Image
Built in furniture (display cases, science lab desks)	Built in furniture was originally constructed throughout and included benches, cupboards and notice boards. The furniture has a relationship with the material palette of the built fabric in that it features a stained timber similar to the wall joinery throughout and the original doors. The bespoke furniture is indicative of the level of quality of the building and the attention paid to small details. Throughout the building are a number of built in display cabinets, cabinets and science lab desks which are original and still in a good condition.	Throughout	Moderate	 Figure 313 – Science lab benches on Level 4 of Stage 1  Figure 314 – Built in cabinet

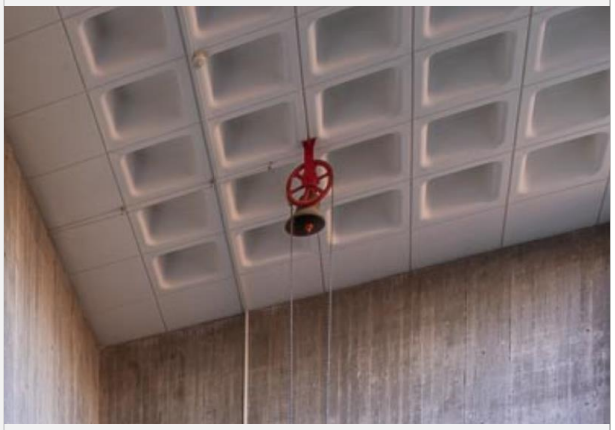
Element	Description/Significance	Stage	Significance Ranking	Image
Timber window details Including sills and surrounds.	Timber window details frame views through the aluminium windows to the landscape outside with a natural material. The finish and materiality of the details is similar to the wall joinery throughout and the original doors and contributes to a consistent palette of concrete, brick and timber throughout.	S2, S3, S4	Moderate	 Figure 315 – Timber window sill.

Element	Description/Significance	Stage	Significance Ranking	Image
Timber window shutters	The finish and materiality of the shutters is similar to the wall joinery throughout and the original doors and contributes to a consistent palette of concrete, brick and timber throughout. The shutters recess entirely within the walls and sit flush with the reveals. The shutters represent a bespoke shade solution which are indicative of the quality of the building overall and the attention paid to details. The shutters are primarily located on the southern wall of the Stage 1 building. A number of shutters have been damaged, painted shut or removed entirely.	S1	High	 Figure 316 – Timber window shutters – Stage 1.

Element	Description/Significance	Stage	Significance Ranking	Image
Handrails (painted pink)	The pink handrails are a remnant of the original design of the place. The pink handrails are viewed in direct contrast with the grey off form concrete behind. Small pops of colour are evident throughout the building and offset the neutral walls and grass green carpet. The pink handrails in Stage 2, 3 and 4 were replaced for compliance reasons during the implementation of LLV Phase 1. The replacements have double rails however have the same profile and colour as the original. The contemporary handrails therefore retain heritage significance.	S1 & S2	High	 Figure 317 – Pink Handrails – Stage 2.

Element	Description/Significance	Stage	Significance Ranking	Image
Handrails (painted purple)	Purple handrails are located throughout the building and are primarily located on the black aluminium framed windows and doors as either push bars or safety rails. The purple subtly contrasts with the black framed windows and doors and adds a small pop of colour through the building, offsetting the neutral walls and grass green carpet.	Throughout	Moderate	 Figure 318 – Purple Handrails – Stage 2.
Services				

Element	Description/Significance	Stage	Significance Ranking	Image
Light fittings (orange spherical fittings)	Orange spherical light fittings are visible in some stairwells and hallways. Small pops of colour are evident throughout the building and offset the neutral walls and grass green carpet.	S1, S2 & S4	High	 Figure 319 – Light fittings – Stage 2.
Light fittings (silver spherical fittings)	Silver spherical light fittings are located in the Greenhalgh Auditorium in the Stage 2 building.	S2	High	 Figure 320 – Light fittings Greenhalgh Auditorium - Stage 2
Other Internal Elements				

Element	Description/Significance	Stage	Significance Ranking	Image
Sulman Award Plaque	Bronze Sulman Award for Architectural Merit, 1978, awarded by the NSW Chapter of RAIA. The plaque is located on Level 5 of the Stage 2 building, adjacent to the main entry.	S2	Moderate	 Figure 321 – Sulman Award for Architectural Merit, 1978
Bell	Original bell at ceiling to Level 6 in main circulation spine.	S2	High	 Figure 322 – Bell

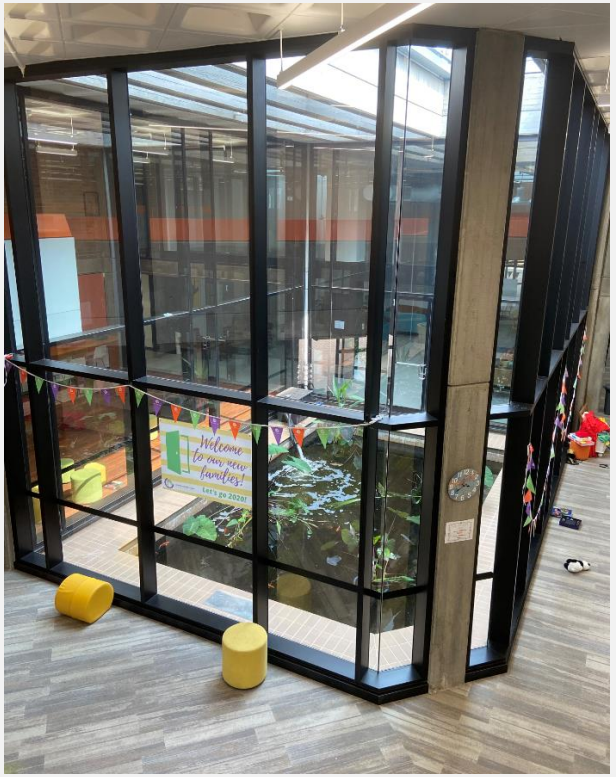
5.6.5. Landscape Elements

The information provided in the below table has informed by Chris Betteridge's input to the CPH 2004 Heritage Assessment.

Element	Description/Significance	Stage	Significance Ranking	Image
Main entry	Pedestrian entry and vehicle drop-off point with traffic turning circle, located at southern end of southern extension of Eton Road	S1	Exceptional	 Figure 323 – Main entry – Stage 2.

Rooftop gardens	Series of more formal spaces providing areas for study, meals, and observing panoramic views to the east, south and north. A mix of garden beds on impermeable membrane and containerised plants, with outdoor seating areas.	S1	Exceptional	 Figure 324 – Rooftop garden – Stage 1.
Verandas	Series of formal spaces often closely linked with emphasised concrete sun hoods which drop from above and into the views out to the surrounding landscaping (including from the cafeteria and original library).	S1 – S4 S5	Exceptional / High Moderate	 Figure 325 – Veranda – Stage 2

Central courtyard	Informal courtyard featuring remnant native trees, shrubs and ground covers and a rock outcrop, located between the auditorium and Stage 4 building. The courtyard is visible from the main circulation spine, Stage 4 building and areas to the north of the Stage 1 building. The courtyard enhances the connection between the building and it's surroundings. It is understood that this area of bush was not altered during the construction of the building.	Defined by S2, S4	Exceptional	 Figure 326 – Central bushland courtyard – Stage 2

Fountain / water feature	Water feature with trees and ferns within a glazed atrium space located adjacent to the circulation spine and cafeteria. The foundation constitutes a more formal outlook than the above courtyard. The atrium provides an opportunity to introduce natural light into the central spine which extends deeper into the building.	S2	Exceptional	 Figure 327 – Water feature – Stage 2.

Road cutting	Located between the Stage 2 and 3 buildings along Dunstan Grove the rock cutting shows the adaption of the landscape to accommodate buildings and vehicular access to the western portion of the site.	Between S2 and S3.	High	 Figure 328 – Road Cutting – between Stage 2 and 3.
Large Rock Outcrop	Located directly to the south-west of the Stage 1 building is a large rock outcrop of Hawkesbury Sandstone which was carefully protected during the construction stage to ensure the preservation of the natural site features.	S1	High	 Figure 329 – Large Rock Outcrop adjacent to Stage 1 building

East carparks	Series of carparking area cut into the slope and carved out of the bushland. Parking bay located on the main road down to Stage 1 building were constructed as part of the original building. The lower carparking area was added later to meet increasing demand for parking.	S1 S6	Moderate Little	 Figure 330 – Stage 1 eastern carpark  Figure 331 – Stage 6 far-eastern carpark

6. ABORIGINAL AND HISTORICAL ARCHAEOLOGICAL ASSESSMENT

The following section of this CMP has been sourced from the *Aboriginal Cultural Heritage Assessment Report, Lindfield Learning Village, Lindfield*, prepared by Urbis staff on 29 August 2018. This included consultation with the Metropolitan LALC. The recommendations from this report have also been included within Section 9 of this CMP.

6.1. ENVIRONMENTAL CONTEXT

An understanding of environmental context is important for the predictive modelling of Aboriginal sites, as well as for their interpretation. The local environment provided natural resources for Aboriginal people, such as stone (for manufacturing stone tools), food and medicines, wood and bark (for implements such as shields, spears, canoes, bowls, shelters, amongst others), in addition to areas for camping and other activities.

The nature of Aboriginal occupation and resource procurement is related to the local environment; understanding the local environment is therefore a critical component in undertaking an Aboriginal cultural heritage assessment.

6.1.1. Disturbance

The Study Area, and specifically the areas of proposed impact, have been subject to extensive disturbance in association with the construction of the former UTS campus buildings from 1968 to 1989.

To facilitate the development of the former UTS campus, the Study Area was subject to extensive vegetation clearance and re-grading. This is clearly shown in the below photographs, taken during the construction of the former campus buildings.

As is shown, the vast majority of original topsoil in the Study Area was removed and/or severely disturbed by these works. This, combined with subsequent re-landscaping works, including the introduction of fill to the Study Area to create a more level terrain, has resulted in severe disturbance across the entire Study Area. In areas where new fencing is proposed, a sandstone retaining wall that was introduced in association with the establishment of the former campus is present, further indicating the modifications to the landscape that have occurred.

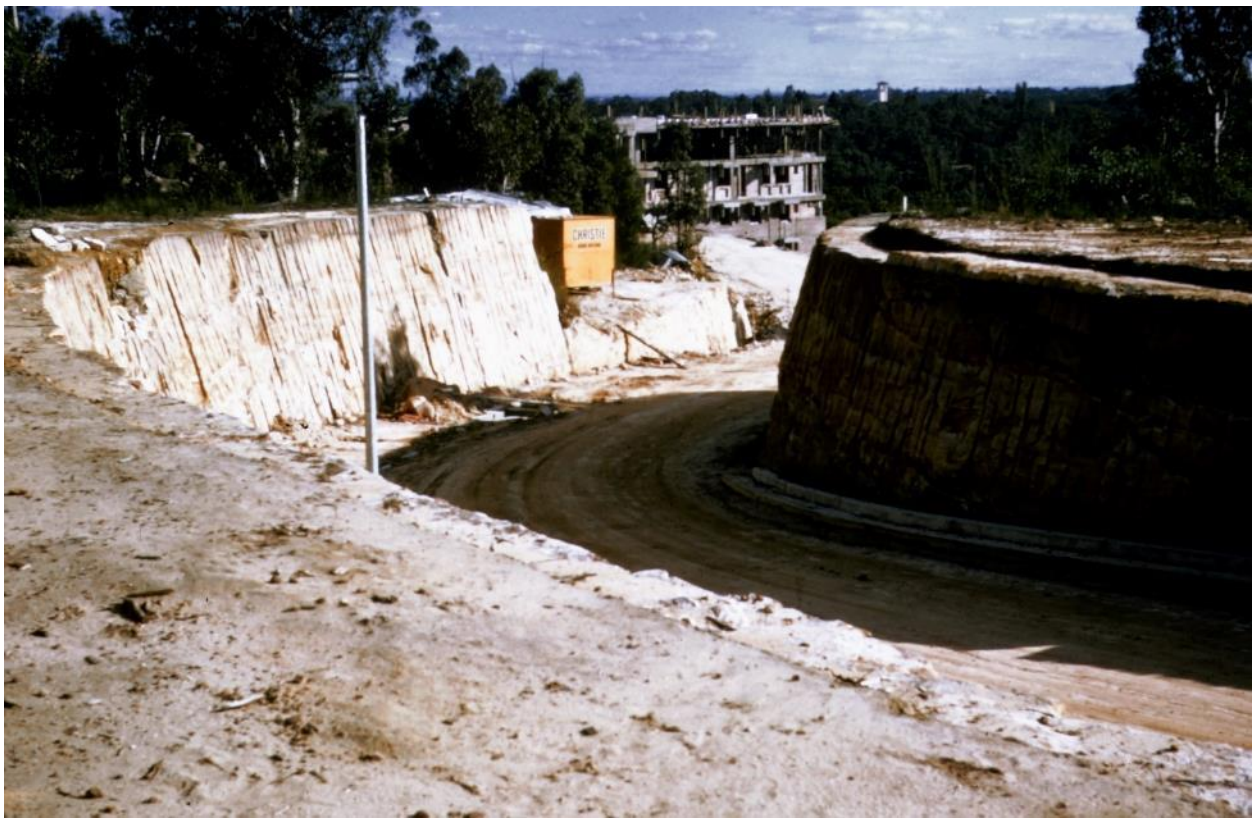


Figure 332 – Extensive disturbance associated with the construction Dunstan Road, early 1970s

Source: UTS Archives



Figure 333 – Extensive disturbance associated with the construction of the former UTS buildings, facing north. Remnant vegetation stands visible, early 1970s

Source: UTS Archives



Figure 334 – Clear disturbance associated with the construction of the former UTS buildings, showing general site preparation works, early 1970s

Source: UTS Archives



Figure 335 – Disturbance associated with the construction of the former UTS buildings

Source: UTS Archives



Figure 336 – Disturbance associated with the construction of the former UTS buildings

Source: UTS Archives



Figure 337 – Disturbance associated with the construction of the former UTS buildings

Source: UTS Archives



Figure 338 – Disturbance associated with the construction of the former UTS buildings

Source: UTS Archives

6.1.2. Geology and Soils

Geology

Aboriginal people often made stone tools using siliceous, metamorphic or igneous rocks, as such, understanding the local geology can provide important information regarding resources in a project area. The nature of stone exploitation by Aboriginal people depends on the characteristics of the source, for example, whether it outcrops on the surface (a primary source), or whether it occurs as gravels (a secondary source).[96]

As already mentioned, the Study Area is underlain by the Wiannamatta group of sedimentary rocks in the Sydney Basin, which directly overlies Hawkesbury Sandstone. These rock types were formed in the Triassic Period, and are characterised by shale with sporadic thin lithic sandstone (Wianamatta Group) and medium to coarse grained quartz sandstone with minor shale and laminate lenses (Hawkesbury Sandstone).

In association with this geology and prior to disturbance, the Study Area may have contained a limited amount of raw stone material, particularly sandstone, which is known to have been used by Aboriginal people in the past. For example, sandstone sheets were often used for sharpening hatchets; this process results in depressions in the sandstone identified as 'grinding grooves'.[97] Grinding grooves are typically located on suitable sandstone platforms in proximity to watercourses.

However, materials such as shale and ironstone, also present in these areas, were not generally used as a resource by Aboriginal people in the past due to their relative fragility; preferred raw stone materials, such as quartz, silcrete, chert, tuff and mudstone, are generally fine-grained and siliceous.[98] This relative absence of preferred geological resources means that the Study Area is unlikely to have been subject to particularly intensive or long-term habitation or use by Aboriginal people in the past, though it may have been subject to transient occupation or use.

Soils

In association with the Wianamatta Group and Hawkesbury Sandstone, soil profiles are typically characterised as follows:

- A horizon: The topsoil. This has the highest fertility, organic matter content and biological activity. It is generally sandy, and ranges from 10 to 40 centimetres in depth from the ground surface.
- B horizon: The subsoil. This is typically a yellow clayey sand with little to no organic matter. Its fertility is low. It ranges from 40 to 100 centimetres below the surface.

[96] Doelman, Torrence et al. 2008

[97] Attenbrow 2003: 120-122

[98] Attenbrow 2003: 120

- C horizon: Decomposed rock. This is typically clayey sand to sandy clay in texture and provides little more than moisture storage for plants. It ranges from one to four metres below the surface.

As subsoil (B horizon) layers are typically archaeologically sterile, it is not anticipated that any archaeological material would be present within these soil layers. This means that archaeological deposits, if present, are likely to be limited to the upper 10 to 40 centimetres of soil.

However, the historic removal of vegetation in the area, as well as the known disturbance of the Study Area, strongly suggests that the majority of topsoil layers within the Study Area would have either been severely disturbed or removed. This further limits the potential for *in situ* archaeological deposits to be present within the Study Area. In addition, topsoil layers in this landscape context are typically shallow and, particularly on sloping land, overlie sandstone bedrock that is exposed in many areas; such sandstone presents as outcrops and/or overhangs. The potential for sub-surface Aboriginal archaeological deposits within this kind of landscape is therefore limited, with more likely site types being PADs within rock shelters, rock art, or grinding groove sites in proximity to water courses.

This is supported by the findings of archaeological assessments undertaken in the general vicinity of the Study Area, in which similarly developed/used land has been found to be disturbed and to contain a very limited amount of *in situ* archaeological material, if any.

6.1.3. Topography and Hydrology

Prior to disturbance, the topography of the Study Area would have been characterised by gently undulating rises on Wianamatta Shale, with local relief of 10 – 30 metres, and relatively gentle slopes (<5% up to 10%). Crests and ridges are broad and rounded with convex upper slopes grading into concave lower slopes.

The height of the Study Area above sea level, being approximately 50 metres, means that it is a relatively elevated site within the landscape. means that it would have been easily accessible and navigable in the past. The land to the south, east and west of the former UTS campus slope steeply down into surrounding valley areas and associated watercourses.

The Study Area is therefore also surrounded by a number of watercourses, which it is located in very close proximity to, including:

- Lane Cove River (major watercourse), approximately 260 metres to the west;
- Blue Gum Creek (tributary), approximately 90 metres to the south;
- Little Blue Gum Creek (tributary), approximately 300 metres to the west
- Sugarbag Creek (tributary), approximately 100 metres to the east;
- Cabramatta Creek, approximately 2.8 kilometres to the west.

The Lane Cove River would have been a major resource for Aboriginal people in the past, providing both a water source and access to flora and fauna resources. Tributary creeks would have also provided intermittent access to resources, particularly during sustained periods of heavy rainfall. This is demonstrated by the results of the AHIMS search, which show a greater frequency of registered sites in proximity to these watercourses (refer **Section 6.3.1**, below). This is also generally in accordance with predictive models for the regional landscape.

Generally speaking, the topography and hydrology of the Study Area, and particularly the proximity of the Lane Cove River, demonstrate that the surrounding landscape would have provided sufficient subsistence resources and been generally accessible and navigable enough to sustain human occupation and use. This is despite the Study Area featuring relatively steep terrain on its southern, eastern and western sides.

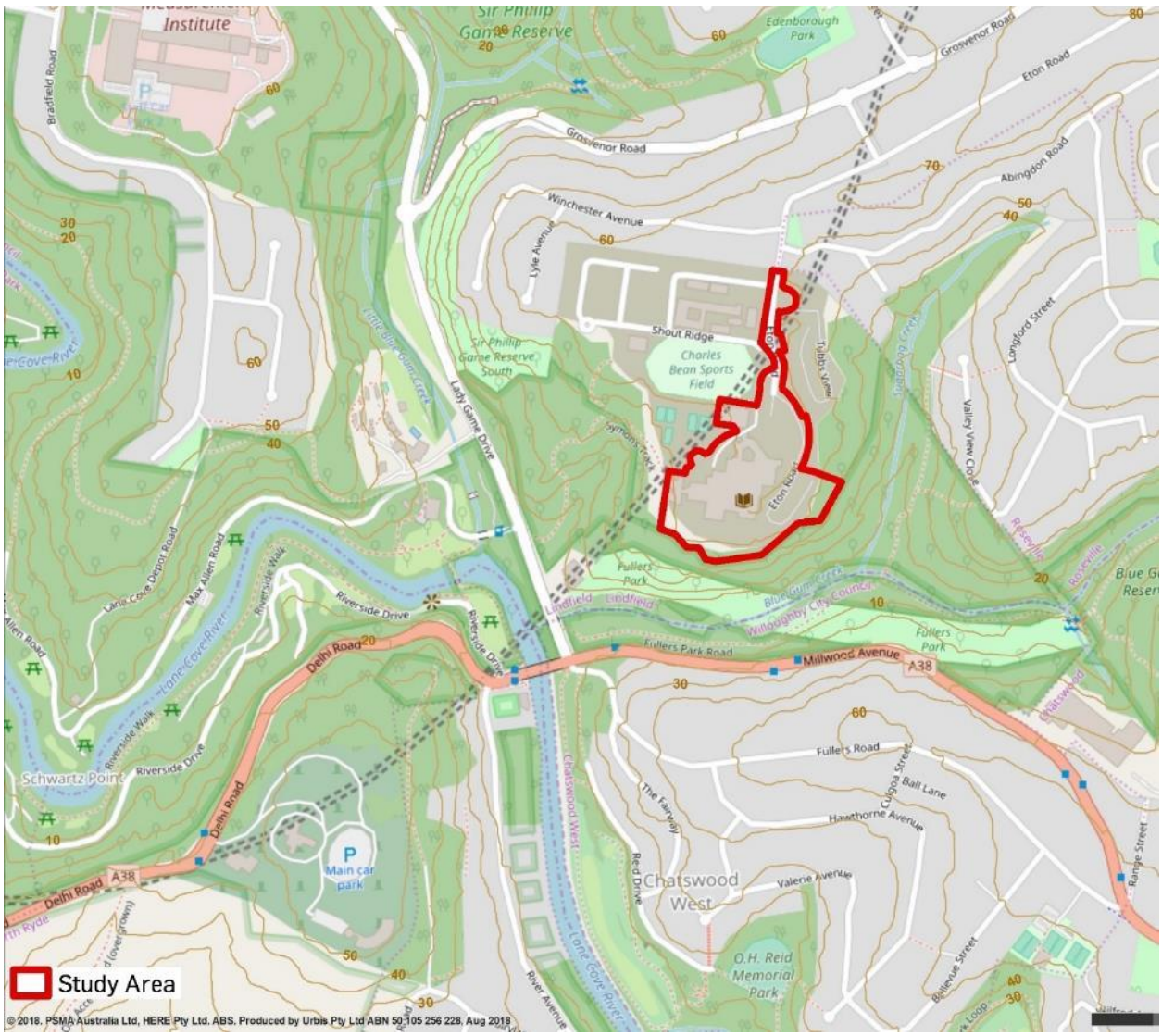


Figure 339 - Topographical map of the Study Area showing watercourses and relative land heights

Source: SIX Maps 2018

6.1.4. Flora and Fauna

As has been discussed, the majority of the Study Area has been subject to vegetation clearance in association with its development as an educational facility.

Vegetation distribution within the Sydney Basin is generally related to underlying soils landscapes, and is also influenced by moisture, aspect and European land use (including clearance, agriculture, weeds, etc). Remnant vegetation within the immediate Study Area comprise Sydney Sandstone Gully Forest, which is likely to be found wherever deep gullies have been eroded into sandstone and in association with the Lane Cove River and its tributaries.

Common tree species include the blackbutt, Sydney red gum, turpentine and watergum. Other species that may be present include Sydney peppermint, grey gum. Common understorey species include sally wattle, black she oak, blueberry ash, and grey myrtle. Dominant shrub species include sunshine wattle, old man banksia, yellow tea-tree and heath species.

Areas of Hawkesbury Sandstone, like the Study Area, were generally unsuited for agriculture due to underlying soils, and it is therefore likely that good natural stands of extant bushland are similar to original vegetation.

Prior to European settlement and the subsequent clearance of vegetation, this vegetation community would have provided habitats for a variety of animals, as well as potential food and raw material sources for

Aboriginal people. Eucalyptus trees were a particularly important resource; leaves were crushed and soaked for medicinal purposes, bowls, dishes, and canoes were made from the bark, and spears, boomerangs and shields were crafted from the hard wood.[99]

Typical animals which may have been harvested by Aboriginal people include kangaroos, wallabies, sugar gliders, possums, echidnas, a variety of lizards and snakes, birds, as well as rats and mice. The bones of such animals have been recovered from Aboriginal sites excavated in the Sydney region suggesting that they were sources of food,[100] although the hides, bones and teeth of some of the larger mammals may have been used for Aboriginal clothing, ornamentation, or other implements.

6.1.5. Synthesis of Environmental Context

The geology of the Study Area suggests that it is unlikely to have been specifically targeted or frequented for resource procurement, with stone quarry sites/raw stone resource sites located elsewhere within the Cumberland Plain. The absence of rock shelters (and therefore a lack of shelter) within the Study Area supports this, and further suggests that the immediate area may not have been suitable for sustained habitation or use.

However, it is still likely that the landscape would have been subject to transient use and/or occupation by Aboriginal people in the past, particularly due to the relative proximity of major watercourses, availability of flora resources such as eucalyptus trees, and the gentle topography. Known rock shelter sites are located in proximity to, but outside of the Study Area, in less disturbed areas in which more generous shelters suitable for more frequent use are present in closer proximity to watercourses. Similarly, grinding groove sites are only predicted to be located on suitable sandstone platforms in closer proximity to watercourses.

As discussed, the topography of the landscape means that it would have been relatively easily accessible and navigable, while the native vegetation coupled with the presence of a number of watercourses in the general vicinity, including the major Lane Cove River, would have provided sufficient resources for general subsistence activities.

It is reiterated, however, that archaeological material is generally more likely to have been deposited in closer proximity to these watercourses and on relatively flat land in association with campsites and resource procurement sites; this is clearly demonstrated by the results of the AHIMS search. Further, the relatively shallow soils typical of this landscape further limit the potential for intact, sub-surface archaeological deposits to be present.

A review of the environmental context of the Study Area suggests that, prior to European settlement and associated land disturbance, the surrounding landscape would have been suitable for transient occupation and use. However, general disturbance, modification of the landscape, the absence of suitable rock shelters and the removal of topsoil layers throughout the Study Area is likely to have significantly reduced the potential for in situ Aboriginal archaeological deposits to be present within the Study Area and particularly within/in the vicinity of proposed impact areas.

6.2. ETHNOHISTORICAL CONTEXT

The following ethnohistorical context has been sourced, in its entirety, from the *Central Region AboriginalSites Planning Study: Lane Cove River State Recreation Area*, prepared by the NSW National Parks and Wildlife Service in 1990.

Members of the First Fleet and other settlers and explorers made records of their observations of the Aboriginal people of Port Jackson. These records can be used, with information from linguistics and archaeology, to reconstruct different aspects of the culture of the original inhabitants of Sydney. While these ethnohistorical records are a valuable source of information they cannot be uncritically used for a number of reasons. Europeans were not unbiased recorders, being overly influenced by the concept of the noble savage or prone to denigrate a culture of which they had little understanding.

They also tended to emphasise the notable or visible at the expense of the commonplace. One example is fishing and shell fish gathering frequently referred to by early writers. Hunting by comparison is rarely mentioned, one can assume it took place in woodland or bush settings at some distance from European settlements, which would have displaced game. It was therefore an activity difficult to observe, unlike the

[99] Nash 2004: 4-8
[100] Attenbrow 2003:70-76

exploitation of marine and estuarine resources, which took place on the open waters and shores of the harbour. We know from archaeological evidence that the inhabitants of Port Jackson did not rely solely on marine resources.

Women's activities are also under-reported, perhaps because women took pains to avoid Europeans in early months of European settlement, rather than any lack of interest on the part of recorders.

The reports also contain some terms, such as tribe, which were used indiscriminately. A tribe is a group of people who speak a common language and share certain customs. A clan is a subgroup of a tribe, in whom ownership of land is vested and through whom descent is reckoned. Clans consist of a number of family groups (sometimes referred to as hordes), and around Port Jackson they numbered 30 or 40 people. British settlers seem to have believed that Aboriginal tribes were more hierarchical and authoritarian than was the case. Their habit of selecting elders as "chiefs", on whom they conferred breast plates so inscribed,[101] supports this misinterpretation. They also used the term to describe different clans or even hordes of the one tribe.

Finally, the evidence from these early sources can only be used to reflect the situation around the time of contact with Europeans and not to extrapolate into the distant past.

6.2.1. Clarification of Ethnohistorical Context Provide by Metropolitan LALC

It is noted that review and comment provided by the Metropolitan LALC (refer to Section 6.4.1) has provided further information regarding the ethnohistorical information provided below, as sourced directly from the *Central Region Aboriginal Sites Planning Study: Lane Cove River State Recreation Area*, prepared by the NSW National Parks and Wildlife Service in 1990.

Comments from the Metropolitan LALC in this regard are:

- Metropolitan LALC (MLALC) acknowledges Gameragal aka Cameragal of the Eora Nation as traditional owners of Lindfield being the site of the proposed development.
- MLALC affirms that Guringai is actually the 1st Nations of the Barrington Tops area. And notes that Guringai has been misappropriated by Non 1st Nations people as Traditional owners of the North Shore & Northern area of Sydney as it is known today. MLALC acknowledges Penal colony records attesting that Newcastle and Port Stephens 1st Nations people and or Aboriginal people were in Sydney's Domain and or Government house area in 1828 and more than likely is the cause of the misapprehension and wrongful application of the Guringai being Traditional owners of the Northern Sydney Metropolitan area. Attached is paper Filling the Void, by Aboriginal Heritage Office, to assist informing the misuse of Guringai as Traditional owners in Sydney
- Dharug is a creation of Non Aboriginal R H Mathews in 1905 as a untrained anthropologist whom created the word Dharug without any reference of Aboriginal & or 1st Nations informants or sources. MLALC notes this is promoted by Macquarie University academics without any consolation and or authority of Metropolitan LALC as the legislated authority for protection & preservation of Aboriginal Culture & Heritage for the area of this proposed development.
- MLALC notes that the Colony records attest that the Gameragal people resisted Colonisation of subject area for approximately 20 years until being forced by military and militias out of the area.

6.2.2. Tribes and Clans of Port Jackson

There is good historical and linguistic evidence for the existence of two tribes on the northern shore of Port Jackson. Along the coast lived the Guringai, whose territory extended from the southern shores of Broken Bay to the northern shores of Port Jackson and inland to the Lane Cove River, perhaps as far as Parramatta. The Dharug lived to the west, on the northern Cumberland Plain, as far as the Blue Mountains.[102] This evidence is outlined below.

Tribes

The Guringai seem to have shared the custom of ceremonial tooth evulsion. In 1788 Collins wrote:

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[101] Novosil'sky in Barratt, 1981: 29

[102] Ross, 1988: 5

"to the tribe of Cammeray also belonged the exclusive privilege of extracting a tooth from the natives of the other tribes inhabiting the sea coast"[103]

The latter part of his statement implies that those people living away from the coast did not share this custom, however it may not have been universal amongst the Guringai as Tench noted:

"the deficiency of one of the foreteeth of the upper jaw seen in almost all men"[104]

The rite evidently survived for at least a generation after contact because it was reported by Rossiysky (in 1814) as a marriage custom (incorrectly - it was an initiation ritual) and by Novosil'sky (in 1820). However both these writers report that two front teeth were removed in the ceremony not one.[105]

The people living inland on the northern Cumberland Plain did not have a custom of tooth evulsion. Tench and Phillip made a number of journeys to the west and the men they met around the Hawkesbury River possessed all their teeth.[106]

Supporting evidence for the tribal division is provided by linguistics. In 1820 Bellinghausen reported:

"Their language is not everywhere the same: the natives who live around Sydney understand each other but those who occupy the territories by Newcastle or Port Stephens, or who come from the other bank of the Nepean River, cannot understand the Sydney natives at all"[107]

The people living inland spoke a different language to those in Sydney (Ross, 1976: 20). In 1970 Capell used this evidence, word lists compiled by Collins and Hunter in the 1790's, and lists compiled by Threlkeld in 1824, to compile a map of the Sydney tribes. He concluded that the Guringai occupied the northern shore of Port Jackson on the coast and that the Dharug bordered them on the west.[108] He placed the boundary between the tribes in the vicinity of Lane Cove, though ethnohistorical records suggest it was further west near Parramatta.

Additional evidence for the tribal division comes from a number of other sources, though is somewhat less conclusive. Two men from the south side of Port Jackson accompanied Tench and Phillip on some of their expeditions to the west. Colbe and Ballederry (who both had their upper right incisors missing) were reported to know nothing of the western countryside or its people, whom they feared and disliked.[109] Also the "native paths" through the bush around Sydney, which were kept clear for travelling, were mainly aligned in a north-south direction[110] indicating little movement east to west.

It is worth emphasising that the tribe who lived in the Lane Cove area was the Guringai not the Karnilaroi, who lived in northern inland New South Wales. Lind[111] states that the north shore of Sydney Harbour was the southern limit of the Kamilaroi and this error has unfortunately been enshrined in some of the names in the Municipality, as well as being quoted elsewhere.

Clans

The names of the clans living around the Harbour and their territories are generally less well known. Collins recorded that:

"those who live on the north shore of Port Jackson are called Cam-mer-ray-gal ... we have heard Bennilong and other natives speak (before we knew them ourselves) as of a very powerful people"[112]

Tench also referred to the Cam-mer-ray-gal as a numerous and powerful people.[113] Their territory seems to have been the lower north shore from the coast to near Lane Cove. They are one of the clans most

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[103] Collins, 1788: 453
[104] Tench 1793: 46
[105] Barratt, 1981: 25 and 30
[106] Ross, 1988: 7
[107] Barratt, 1981: 39
[108] Ross, 1988: 9
[109] Ross, 1988: 5
[110] Ross, 1976: 21
[111] Lind 1983: 1
[112] Collins 1798: 453
[113] Tench 1789: 285

frequently referred to in the early accounts. As described above by Collins they were responsible for the initiation of other clans of the Guringai:

> *"through the exclusive and extraordinary privilege of extracting a tooth from the natives of other tribes of the sea coast, or of all such as were within their authority"*[114]

Whether their reported predominance extended into the recent prehistoric past cannot be determined from ethnography. It is possible that they were less immediately affected by the settlement at Sydney Cove than some of the groups on the south side of Port Jackson, and managed to retain ceremonies and traditions (such as initiation) for a longer period.

To the west of the Carn-mer-ray-gal was the Wal:urnedegal. They lived west of Lane Cove, according to Capell,[115] and their territory extended up the Parramatta River past Ryde.[116] The name of this clan was reported in a letter by Phillip, but little else is known about the group.

The evidence for the existence of these two clans in the study area is reasonable and it is possible that the boundary between them was marked by the Lane Cove River but this must still be considered speculative.

In view of the Kamilaroi error, mentioned above, it seems worthwhile to consider a report of a third clan or group in the study area. The existence of this third group was reported to the Trust in a letter from Rosemary Taplin, an amateur site recorder. The evidence for this group was said to be stylistic variation in the art in the Lane Cove River Valley. This was uncritically quoted by McLoughin and Wyatt in a report to the Trust in 1989. There is no archaeological, linguistic or ethnographic evidence of a third group. It should be clear from the foregoing discussion that the identification of different tribes (let alone clans) around Sydney is complex and requires the evaluation of a great deal of evidence. While tribal differences may be reflected in art styles (and this will be discussed later) Taplin provided no information to support her contention. A claim based on the consideration of a few art sites (which have not been properly recorded) and which is unsupported by other sources of evidence, cannot be seriously considered.

6.2.3. Economy

The Guringai were hunter-gatherers whose territory on the coastal strip ensured a different economic emphasis to the inland Dharug. As noted above the Guringai exploited maritime/estuarine resources to the extent that:

> *"fishing engrosses nearly the whole of their time"*[117]*, and*
>
> *"near Sydney the poor women have to sit all day in little craft and fish"*[118]
>
> *"their diet is chiefly fish which is immediately thrown onto burning coals in their boat"*[119]

Novosil 'sky also reported that the two joints of the little finger of the left hand of girls was removed supposedly to help winding in fishing line,[120], though this ceremony may in fact have been part of the initiation of girls, similar to tooth evulsion for boys.

Bradley and Phillip reported the following fish as being caught and eaten by the Guringai: jewfish, snapper, mullet, mackeral, whiting, dory, rock cod and leather-jackets. They said that stingrays and sharks were not eaten.[121] The stranding of a whale was the opportunity for a feast, with gatherings of up to two hundred people. Simonov wrote in 1820:

> *"they treat it as a festive occasion when a dead whale or fish is driven ashore by waves"*[122]

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[114] Collins 1798: 453
[115] Turbet, 1989: 22
[116] Morris in Rich, 1986: 38
[117] Tench, 1793: 48
[118] Bellinghausen in Barratt, 1981: 42
[119] Novosil'sky in Barratt, 1981: 30
[120] Barratt, 1981: 30
[121] Rich, 1986: 39
[122] Barratt, 1981, 48

A few references have noted the use of other estuarine and land resources. Tench wrote that if the weather prevented fishing, then people collected shell fish and hunted reptiles and small animals.[123] Rossiysky saw a small party gathering mussels, which they roasted on a fire and then ate.[124] Lazarev and Bellinghausen also refer to the collection of mussels. Earlier, Cook reported that oysters, cockles and mussels were the most commonly eaten shell fish around Botany Bay.[125] On Port Jackson cockles were also used as bait or burley.[126] Phillip also saw crawfish and lobsters being caught in small hoop nets. Ant eggs, some insects, birds, snakes and other reptiles and “animals of all kinds" were also exploited.[127]

These accounts do not provide much support for Poiner's hypothesis that winter was a time when the depletion of marine resources led to the fragmentation of clans into smaller, more mobile groups. These groups were thought to move into the coastal hinterland, where they relied on terrestrial resources. Summer, by contrast, was a time when the resources of the coast were able to support larger groups of people who lived a semi-nomadic existence. There clearly were times when terrestrial resources were important, but this is not on a well defined seasonal basis. The other complicating factor in the Sydney area was the existence of an inland tribe, the Dharug. There is no evidence at all of Guringai movement into the territory of their neighbours, and a fair amount to indicate restrictions on east-west movement (discussed above).

It also seems to have been accepted that winter is a time when marine resources are seriously depleted. While shell fish lose condition during this period some fish species seem to be more plentiful (flathead for example) or unaffected.

Evidence from archaeological and ethnohistorical sources indicate that the plant foods gathered by women played an important role as reliable staples, when faunal resources were scarce or hunting unsuccessful. From the ethnohistorical accounts of the Sydney people it appears that faunal resources were exploited when the weather allowed, but that plant foods became important when bad weather prevented fishing. There does not appear to have been a clear correlation between the resources being exploited and the season. Accounts made in March, April and May all refer to fishing and the role of fish in the diet, though it may be that winter storms prevented access to this resource and that vegetable foods became correspondingly important at this time of year.

The Aborigines living around Port Jackson were reported to dig up roots in swamps and to broil vegetable foods to render them edible, many of them being poisonous without processing.[128] Other plant foods included berries, fern roots (probably bracken), figs and banksia flowers used to make a sweet drink. As well as the food plants "various medicinal herbs were known".[129]

6.2.4. Material Culture

In contrast to the evidence which survives archaeologically the historical accounts of the Guringai tool kit refer, with two exceptions, to organic items which would rarely survive in the archaeological record.

Just as fishing is emphasised in these accounts so too is the fishing kit. There was a sexual division of labour in fishing methods, with women using a handline from canoes while men speared fish, either from canoes or the shore. Fishhooks were made from bone[130] or shell and the women's handlines were made from bark fibre.[131] Women taught their daughters how to plait the fishing lines.[132] Fishing spears were described by Bellinghausen as being long and made from a 'gummy plant' stem (probably a Xanthorroea flower spike), with a tip like a fork to which small, sharply serrated ones were attached.[133] Shell and hardwood barbs have also been reported.

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[123] Tench 1793: 285
[124] Barratt, 1981: 25
[125] Rich, 1986: 39
[126] Tench, 1793: 286
[127] Bellinghausen in Barratt, 1981: 35
[128] Tench, 1793: 48
[129] Bellinghausen in Barratt, 1981: 40
[130] Tench, 1793: 47
[131] Ross, 1976: 51
[132] Novosil'sky in Barratt, 1981: 30
[133] Barratt, 1981: 36

Hunting spears were quite different to fishing spears being tipped with a single prong.[134] They were sometimes composites of two pieces of ordinary wood with an ironwood sharpened tip. Examples 4', 8' and 10' long were described by Rossiysky in 1814.[135]

The canoes used for fishing and transport were made from flattened sheets of bark, with stretchers near the ends which were tied with bark fibre.[136] They were about 12 feet long and nearly always contained a fire, laid on a bed of clay. Rossisky noted that they were propelled with "a little ti tree paddle".[137]

Guringai weapons, in addition to the spears described above, included hardwood shields, which were oval and convex in shape, and clubs of different sizes, also made of hardwood.[138] Spearthrowers were made of wood and were oval, with a stone or shell adze mounted at one end, this adze being the most frequently reported cutting implement.[139] Shells were used for a variety of tasks: Tench reported a spear being repaired by a man who converted an oyster to a tool using his teeth. Shell scrapers have also been found in archaeological sites. Containers were made from bark or tree boles, while bags and nets were made from plaited bark fibre. Symmetrical boomerangs were not reported for the Sydney area, although they are depicted in art and engraving sites.

Apart from stone adze flakes mounted on spearthrowers the only stone implements reported in the Sydney area were edge ground axes, hafted to a wooden handle, which were used as a chopping tool. Bellinghausen claimed that these were preferred over European metal axes.[140]

6.2.5. Personal Ornamentation

The Aborigines of Port Jackson adorned themselves with scars, pigments, teeth and bone and wooden ornaments. They sometimes cicatriced the body, with two longitudinal incisions made with a sharpened shell,[141] and pierced the nasal septum, in which a bone or stick was then worn.[142] Tench believed red body painting to be for everyday use, while white pigments were reserved for dancing.[143] Later observers described body painting as follows:

> *"painted their faces with white lines and other figures and their noses red .... women decorated their face and breast with red, yellow and white pigments"*[144]*,* and

the Aborigines stained their faces and bodies with "red earth" on which long white stripes were drawn. Chests, arms and backs were decorated with a fish scale or mussel design, and the body was then smeared with fish oil.[145]

As well as body painting the Aborigines were reported to adorn their heads with bird or fish bones, dog tails or kangaroo teeth, sometimes plaiting the hair and smearing it with a gummy sap,[146] so that it looked like dreadlocks. Cicatricing is not mentioned by any of the later Russian observers and it is possible that this tradition broke down soon after contact. People usually went naked or covered in the case of women by "something like a blanket".[147] The possum skin cloaks, which Aborigines of the mountains were often reported wearing, have not been reported for the Guringai.

6.2.6. Dwellings

Evidence from the archaeological record alone, would suggest that the Guringai lived in the rock shelters formed by weathering in Hawkesbury sandstone. The historical accounts suggest however, that occupation of shelters was on an intermittent basis only. At one extreme Lazarev wrote that the Guringai had neither

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[134] Ross, 1976: 5
[135] Barratt, 1981: 23
[136] Tench, 1793: 48 and Bellinghausen in Barratt, 1981: 38
[137] Barratt, 1981: 26
[138] Rossisky in Barratt, 1981: 23
[139] Rich, 1986: 41
[140] Barratt, 1981: 39
[141] Tench, 1793: 277
[142] Rossisky and Novosil'sky in Barratt, 1981: 25 & 29
[143] Tench 1793: 278
[144] Rossisky in Barratt, 1981: 25-6
[145] Novosil'sky in Barratt, 1981: 30
[146] Novosil'sky in Barratt, 1981: 29
[147] Vasilyev in Barratt, 1981: 27

huts nor dwellings, living by day on the sea shore and by night in the bush by an open fire.[148] Tench recorded that huts were made from pieces of bark laid together in the form of an oven, low and open at one end. The huts were long enough for people to lay down, but they purportedly depended more on the caverns in rocks.[149] Bellinghausen and Novosil' sky noted that people sheltered in caves in poor weather, or built a semicircular windbreak with a fire within.[150] Bellinghausen visited the camp of Boongaree (Bungaree) and described the windbreaks as being of bark up to 1. 5 m high with a fire protected within. It does not appear from any of these later reports that shelters were used as base camps.

6.2.7. Family/Social Life

Few of the First Fleet recorders made much mention of this aspect of Guringai life, whether through disinterest or because women and children avoided Europeans during the first years of contact. The most detailed accounts are those made by the Russian explorers who visited Port Jackson between 1814 and 1820, virtually a generation after the British settlement of Sydney (and after the 1789 small pox epidemic). The extent to which social traditions had broken down is hard to determine, but it cannot be assumed that these accounts necessarily reflect the situation at contact or in the recent prehistoric past.

The Aborigines of Port Jackson lived in groups of 30, 40, 50or more people. These groups probably comprised several families which made up a clan. They were reported to be:

> *"ruled by their own elders, nowadays selected by the English government who give them a copper plate"*[151]

When the family groups travelled the men went ahead with the women and children walking behind. If Europeans were encountered the women and children moved aside. Babies of one month or more were carried on their mother's shoulders, sometimes lashed there with grass fibres. After six weeks of age the children were named for a- bird, fish or object.[152] Bellinghausen wrote that men usually chose their wives from another community (clan) and that women were treated "like slaves ... having to sit all day in little craft and fish while their menfolk wander about or sleep".[153] Women also collected firewood, prepared the fires and collected banksia flowers from which they prepared a drink.

6.2.8. Ceremonial/Religious Life

Again little is known of the ceremonial or religious life of the Guringai, apart from the initiation ceremony of tooth evulsion and the removal of the digits from the little finger of the left hand of girls. There are a few references to dances[154] but little other information about ceremonial or religious gatherings. Burial practises were one aspect of their religious life which interested Europeans.

Phillip had a burial mound disturbed and found evidence for the cremation of bodies:

> *"from the ashes had no doubt that they burn their dead. From the appearance of the ashes the body must be laid at length only a few inches below the surface and is, with the wood ashes made by the burning of the body covered lightly over with mould, fern and a few stones"*[155]

Bellinghausen, writing thirty years later, reported that the custom of burning corpses had been almost eradicated. In that year, Simonov wrote that Bungaree's people used to burn their dead.[156] Collins had previously reported that young people were buried, but that those past middle age were burned.[157]

6.2.9. Contact History of Lane Cove

None of the foregoing observations were made within the local area, although they do refer to the same tribe, and at least one of the clans who lived in the local area. There are a few observations that were made

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[148] Barratt, 1981: 28
[149] Tench 1793: 48
[150] Barratt, 1981: 30
[151] Novosil'sky in Barratt, 1981: 29
[152] Novosil'sky in Barratt, 1981: 33
[153] Barratt, 1981: 42
[154] Tench, 1793: 278, Novosil'sky in Barratt, 1981: 30
[155] Rich, 1986: 42
[156] Barratt, 1981: 40 & 51
[157] Collins 1798: 601

in the local or study area. Lt. Bradley named Lane Cove a week after the arrival of the First Fleet,[158] when he saw a number of canoes on the river. As the settlement on the south side of the Harbour grew, so did the need for building resources and the north shore was rich in such materials. Phillip was mindful of his instructions to establish good relations with the Aborigines and, with a view to the exploitation of its resources, he sent Lt. Ralph Clark to Lane Cove to make contact with the Aboriginal residents.

In February 1790 Clark made a number of journeys up the Lane Cove River. He met Dourrawan and Terriwan who gave him two spears in exchange for a hatchet. He visited their camp the following day, where he found them eating mussels roasted on a fire, and shared their meal.[159] Clark requested their children to be brought to him and Dourrawan's son was brought from where he had been hiding, near the camp. Clark was told that the boy's mother had died from small pox and that Terriwan's son also had the disease.[160] A few days later Clark saw a man on the shore with two spears and a throwing stick in his hand. He pulled ashore but the man disappeared at his approach.

While this early contact seemed amicable enough the Aborigines in the area actively resisted Europeans, once it became apparent that they intended to take their lands. The north shore provided important resources for the colony and:

> *"a regular shuttle service of timber from the dense bushland and lime shells from the beaches were sent across the Harbour in boats"*[161]

The exploitation of these resources in the early 1790's coincided with the period of harassment and resistance by the Aborigines, which continued for about a decade. Two incidents were recorded in detail.

In May 1797 Collins wrote that the Aborigines had become exceedingly troublesome to the settlers in Lane Cove, burning a house and killing some hogs.[162] The settlers banded together and set out with a few soldiers to 'teach them a lesson':

> *"being directed by their fires to the place where they lay, discovered a large body of natives, collected no doubt, for the purpose of attacking and plundering the settlers. Being unwilling to take any of their lives a volley of musketry was fired over their heads, which so alarmed and terrified them, that they instantly fled"*[163]

A few years later, in 1804, the Aborigines were again being 'troublesome'. A group went to the farm of James Wilshire where:

> *"after making one of the farm labourers prepare a feast for them, they bound them all and spent several hours of mirth and jocularity"*[164]

Wilshire heard of this in Sydney and returned to his farm that afternoon, where he was met by shouts of defiance and spear brandishing by 200 Aborigines. They reportedly resisted all intimidation until shots were fired over their heads, then they fled taking stolen bedding and other items.[165]

This is an extremely interesting report because of the large number of people gathered together, if 200 Aborigines was not an exaggeration. It suggests an alliance of different clans, if not different tribes, to resist Europeans. Assuming that the group were all adult males, that Aborigines lived in groups of related families numbering 30 or so people (a quarter of whom were men), then the raiding party comprised all the men from 25 different hordes, or some of the men from an even larger number of hordes. Resistance to loss of territory must have been both more widespread and better organised than has been generally assumed, though futile in view of the technological advantage of guns. "Native raiders" were mentioned again in 1809 but no more recent references to Aborigines living in the area have been found, though more research may be fruitful.

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[158] Lenehan, 1987: 12
[159] Russell, 1970: 14
[160] Thompson et al, 1988: 3
[161] Lenehan, 1987: 11
[162] Russell, 1970: 23
[163] Collins in Russell, 1970: 23
[164] Lenehan, 1987: 14
[165] Lenehan, 1987: 14

6.3. ABORIGINAL ARCHAEOLOGICAL CONTEXT

The purpose of reviewing the relevant heritage information is to assist in identifying whether Aboriginal objects or places are present within the Study Area. An understanding and review of the relevant archaeological context is critical in formulating predictive models and assessing the archaeological potential of an area.

6.3.1. Aboriginal Heritage Information Management System (AHIMS)

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 3 November 2017. This search was updated on 17 August 2018. The search was conducted for Lot 2 DP 1151638, with a buffer of 1000 metres, which comprises the entirety of the Study Area. The results of this AHIMS search showed that no Aboriginal sites have been recorded in or within 50 metres of the Study Area. Copies of these searches are attached at Appendix B.

It also revealed that a total of 16 Aboriginal archaeological sites have previously been recorded within the wider search area. Registered sites include potential archaeological deposits (PADs), art (pigment or engraved) sites, and shelter sites containing both shell midden and stone artefact deposits. The relative frequency of these site types is shown in the below table.

As the table demonstrates, shelter sites are the most common site type, collectively accounting for over 40% (43.75%) of site types in the search area. The results of the AHIMS search undertaken are shown in Figure 340, overleaf.

Table 20 – Frequency of site types registered in the wider search area

Site Type	Number	Frequency (%)
Potential Archaeological Deposit	4	25
Shelter with Artefact Deposit (Unspecified)	3	18.75
Shell Midden with Artefact(s) (Unspecified)	3	18.75
Art (Pigment or Engraved)	2	12.5
Shelter with Art (Pigment or Engraved)	2	12.5
Shelter with Shell Midden	2	12.5
Total	**16**	**100%**

The closest registered site to the Study Area is AHIMS #45-6-2210, which is registered as a rock shelter site containing a shell midden deposit. Though the co-ordinates provided in the AHIMS search place this site within 10 metres of the current Study Area, further assessment and rectification of the originally recorded location undertaken by the Aboriginal Heritage Office and Ku-ring-gai Council have shown that the shelter is actually located over 60 metres to the south of the Study Area's southern boundary, and in proximity to Blue Gum Creek. The site card has been attached at **Appendix B** for reference, and the actual location of the site is shown in Figure 340.

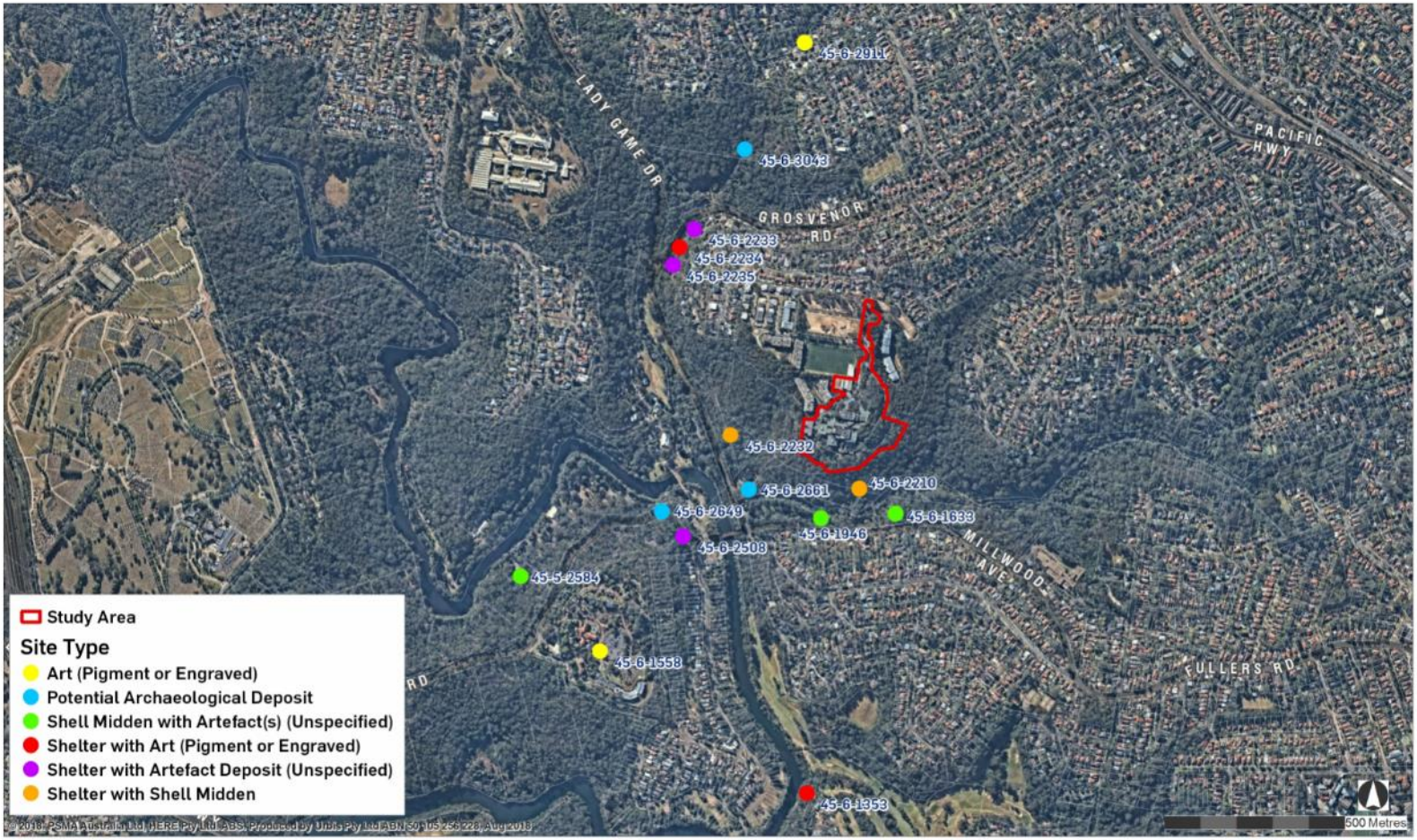
The site card for AHIMS #45-6-2210 describes it as:

> *"Large overhang formed by cavernous weathering in a five metre high cliff line. The shelter is c. 30m (l) by 4m (deep) by 4m (high). The floor is uneven with a lot of roof fall and depressions caused by animals, humans, and water scour. Deposit is sandy and grey with a recent thin red layer of granular disintegration. The surface evidence is sparse and midden material only evident in disturbed locations.*
>
> *Shell and bone present by no art or stone artefacts. Shelter walls are uneven and not really suitable for art, though it was very dark when the site was recorded. Deposit is 10cm deep in places. Rock oyster is c. 90% of the shell, the remainder being comprised of Anadara and giant whelk. The bone was no identified – it consisted of 2 small long bones and 1 jaw*

fragment, possibly from a small marsupial – this cannot be confirmed as being of Aboriginal origin; it may have been brought in by a predator.

An updated description of the site provided in 2012 and appended to the original site card described it as:

Relocated site and completed section! No signs of human visitation (not easily accessible). Collapsed stone blocks near centre. Shell material located against back wall on Western side of collapsed rock material near alcove. Thick lantana in surrounding area. Relatively dry except for a few small drip lines. Wall of dirt roughly 1.5 m tall between shelter and creek. Large nail protruding from back wall on Western end of shelter.



URBIS

SH801 – SECONDARY SCHOOLS RENEWAL – ETON ROAD, LINDFIELD

AHIMS SEARCH RESULTS

Figure 340 – Results of the AHIMS search

Source: Google Earth

6.3.2. Synthesis of Aboriginal Cultural Heritage Context

Previous archaeological work in the general area suggests that the broader landscape was utilised by Aboriginal communities in the past. This is in part due to the relatively navigable terrain of the surrounding landscape, as well as the ready availability of food, water and other resources, the availability of water being a crucial factor in the frequency of occupation as rivers and creeks are markers of community identity, traditional meeting places and the chosen location of campsites.[166]

In line with this, the majority of recorded sites located elsewhere within the surrounding landscape were identified in association with watercourses and/or in relatively undisturbed land; for example, a relatively large number of sites have previously been recorded in association with the Lane Cove River, as well within the associated National Park, which has been maintained as relatively undisturbed land. Sites identified in association with such landscape features include middens (in association with watercourses) and rock shelter sites where suitable rock overhangs etc are present.

In contrast, the Study Area has generally been subject to relatively severe disturbance (including the partial or potentially complete removal of topsoil, deposition of fill, development, and substantial vegetation clearance in large areas). As has been demonstrated, previous studies have established that urbanised and/or developed areas like the Study Area have low potential to contain Aboriginal archaeological sites or cultural material due to disturbance and/or the absence of sensitive landscape features within the proposed impact areas.

In addition, topsoil layers in this landscape context are typically shallow and, particularly on sloping land, overlie sandstone bedrock that is exposed in many areas; such sandstone presents as outcrops and/or overhangs. The potential for sub-surface Aboriginal archaeological deposits within this kind of landscape is therefore limited, with more likely site types being PADs within rock shelters, rock art, or grinding groove sites in proximity to water courses.

As noted at **Section 6.1.3**, the closest water courses are located around 100 metres downslope of the Study Area, below relatively steep and heavily vegetated terrain. Additionally, the less disturbed areas of the Study Area where such sites have greater potential to be present (i.e. within less disturbed bushland along southern boundary of the Study Area) are steep and relatively unstable due to shallow soils and loose rock, meaning that they are less likely to have been suitable as habitation loci.

Based on a review of the archaeological context of the Study Area, as well as the known extent to which the Study Area has been disturbed, it is considered unlikely that any Aboriginal sites or objects will have been retained within or in the immediate vicinity of the Study Area, either above or below the ground. This has been confirmed by the visual inspection of the Study Area.

Therefore, the potential for as yet unidentified Archaeological sites or objects to be present within the Study Area and particularly within the proposed impact areas is assessed as low. It is acknowledged that artefacts have been recovered from disturbed soil profiles in the local area previously, though the likelihood of this occurring is generally relatively low, particularly given the known extent of previous disturbance.

The AHIMS search conducted shows that no Aboriginal archaeological sites or places are recorded in or within 50 metres of the Study Area. The closest registered site is located outside of the Study Area, approximately 60 metres to the south of the southern boundary of the Study Area and well outside of any of the proposed impact areas. This site, being AHIMS #45-6-2210, is registered as a rock shelter site containing a shell midden deposit. As the proposed works are relatively minor in terms of their sub-surface impact, they do not have any identified potential to result in any incidental or inadvertent impacts to this site.

6.4. CULTURAL HERITAGE VALUES AND STATEMENT OF ARCHAEOLOGICAL AND CULTURAL SIGNIFICANCE

Cultural significance is a concept that assists appraisal of the value of places. The places that are likely to be of significance are those that help us understand the past, enrich the present, and may be of value to future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects (Australia ICOMOS, 1999).

[166] Attenbrow 2003: 50

6.4.1. Cultural Heritage Significance and Values

The cultural heritage significance and values of an area and of any Aboriginal archaeological sites within that area can be assessed using the four criteria outlined in the Burra Charter; aesthetic, historic, scientific and social/ spiritual. These criteria are described below.

Social/Spiritual Value

Social/spiritual value concerns the spiritual, traditional, historical or contemporary associations and attachments which the place or area has for the present-day Aboriginal community. Places of social significance have associations with contemporary community identity. These aspects of heritage significance can only be determined through consultative processes with one or more Aboriginal communities. ·As such, they are archaeologically invisible and can only be identified with the aid of Aboriginal interpretation. If such sites are known, they hold particular cultural significance to contemporary Aboriginal people. Furthermore, sites of significance are not restricted to the period prior to contact with Europeans. Often events related to the contact period, and at times to the period since European settlement, may be important to the local Aboriginal communities.

Historical Value

Historic value refers to the associations of a place with a person, event, phase or activity of importance to the history of an Aboriginal community. Historic places may or may not have physical evidence of their historical importance, however the significance will be generally greater where evidence of the association or event survives in situ, or where the settings are substantially intact. Some events or associations may be so important that the place retains significance regardless of subsequent treatment. In relation to Aboriginal cultural heritage, many post-contact places and sites have historic value.

Aesthetic Value

Aesthetic value refers to aspects of sensory and may include consideration of form, scale, colour, texture, and material of the fabric or landscape, as well as the smell and sounds associated with the place and its use. With regard to pre-contact Aboriginal cultural heritage sites, the placement within the landscape would be considered under this criterion. Individual artefacts, sites and site features may also have aesthetic significance.

Scientific (Archaeological) Value

Scientific (archaeological) value refers to the importance of a landscape, area, place or object because of its archaeological and/or other technical aspects. Assessment of scientific value is often based on the likely research potential of the area, place or object and will consider the importance of the data involved, its rarity, quality or representativeness, and the degree to which it may contribute further substantial information. Scientific or archaeological significance may be assessed by placing a site, feature or landscape in a broader regional context and by assessing its individual merits in the context of current archaeological discourse.

6.4.1.1. Assessment of Cultural Heritage Significance and Values

An assessment of cultural heritage significance and values incorporates a range of values which may vary for different individual groups and may relate to both the natural and cultural characteristics of places or sites. Cultural significance and Aboriginal cultural views can only be determined by the Aboriginal community using their own knowledge of the area and any sites present, and their own value system. All Aboriginal heritage evidence tends to have some contemporary significance to Aboriginal people, because it represents an important tangible link to their past and to the landscape.

Consultation with members of the local Aboriginal community (being the Metropolitan LALC) was undertaken to identify the level of spiritual/cultural significance of the Study Area and its components. In acknowledgment that the Aboriginal community themselves are in the best position to identify levels of cultural significance, the Metropolitan LALC were invited to provide comment in the process of undertaking the ACHAR and to the assessment of cultural heritage significance and values presented therein.

Selina Timothy, the Culture and Heritage Officer of the Metropolitan LALC, has confirmed that the local area generally is of cultural significance. The surrounding landscape, which contains a number of Aboriginal archaeological sites that provide evidence of past occupation and a connection to Aboriginal communities that used and inhabited the area in the past, is identified by the LALC as being culturally significant, in a general sense.

The Study Area specifically, however, was acknowledged to be disturbed, and to be highly unlikely to contain any intact archaeological material or deposits. Through consultation with the LALC, it was determined that the Study Area specifically, owing to the extent of disturbance that has occurred, was not considered to be of any particular cultural or spiritual significance to the community.

In addition to the above, the LALC have provided the below comments with regard to cultural heritage:

- Metropolitan LALC (MLALC) is the legislated authority for protection and preservation of Aboriginal Culture & Heritage for the area of this proposed development and greatly appreciates being engaged for this proposal. MLALC representative for this project is Selina Timothy MLALC Culture Heritage Officer

- •MLALC acknowledges Gameragal aka Cameragal of the Eora Nation as traditional owners of Lindfield being the site of the proposed development.

- MLALC affirms that Guringai is actually the 1st Nations of the Barrington Tops area. And notes that Guringai has been misappropriated by Non 1st Nations people as Traditional owners of the North Shore & Northern area of Sydney as it is known today. MLALC acknowledges Penal colony records attesting that Newcastle and Port Stephens 1st Nations people and or Aboriginal people were in Sydney's Domain and or Government house area in 1828 and more than likely is the cause of the misapprehension and wrongful application of the Guringai being Traditional owners of the Northern Sydney Metropolitan area. Attached is paper Filling the Void, by Aboriginal Heritage Office, to assist informing the misuse of Guringai as Traditional owners in Sydney

- Dharug is a creation of Non Aboriginal R H Mathews in 1905 as a untrained anthropologist whom created the word Dharug without any reference of Aboriginal & or 1st Nations informants or sources. MLALC notes this is promoted by Macquarie University academics without any consolation and or authority of Metropolitan LALC as the legislated authority for protection & preservation of Aboriginal Culture & Heritage for the area of this proposed development.

- MLALC notes that the Colony records attest that the Gameragal people resisted Colonisation of subject area for approximately 20 years until being forced by military and militias out of the area

Following their review of this ACHAR, the Metropolitan LALC has also provided the following recommendations:

- The Metropolitan LALC are to be engaged by the proponent to monitor/supervise any site works that involve sub-surface disturbance (including excavation or the installation of piles, footings, etc) at depths greater than one metre. This is to ensure that the LALC are appropriately involved and consulted in the event that the proposed works interact with/disturb any soil profiles with the potential to be artefact bearing.

- The Metropolitan LALC are to be immediately informed and advised of any cultural heritage material recovered during the development.

A copy of the correspondence received from the Metropolitan LALC has been included at Appendix C. The Metropolitan LALC did not dispute any of the findings or conclusions of this ACHAR as they relate to Aboriginal archaeological potential, and did not indicate that any other groups or Aboriginal parties were required to be consulted as part of this ACHAR.

6.5. HISTORICAL ARCHAEOLOGICAL ASSESSMENT

The historical overview for the Lindfield Learning Village has been presented at Section 3 of this CMP. Based on this overview, there is no information in the historical record to suggest that the site was substantially developed prior to the construction of the Teacher's College in 1946.

Prior to this time, the subject site formed part of early land grants established in the late 1800s. By their nature, such grants are unlikely to have resulted in any substantial development or building works, with likely associated structures being limited to cottages, sheds, or other rural infrastructure such as fencing. It is noted, however, that there is little to no information in the historical record to suggest that these grants were

developed or occupied by any owners.[167] Any such buildings and/or structures, if previously present, are unlikely to have been particularly substantial or robust.

From 1915 the Commonwealth Government commenced a gradual process of resumptions which were gazetted in 1915 and 1917. It is known from a review of the historical record that, following these resumptions, part of these earlier land grants was used as a rifle range from c. 1919 onward. The exact location of the former rifle range is not known, though army records indicate that in 1926 it was used by the Roseville, Chatswood and North Sydney Rifle Clubs, and each built a small shed on the land.[168] The land was also used by the army during World War II, with an army base having been located on the former CSIRO Site on Delhi Road, approximately 1.4 kilometres to the southwest of the current subject site.

A review of aerial imagery from 1943, and prior to the development of the Teacher's College or university campus, shows that former elements that may have been associated with these 'defence' uses is likely to have been limited to defined tracks, target mounds, beam walls, concrete structures and dugouts, with no evidence of more substantial development visible. The three sheds believed to have been built by the respective rifle clubs are similarly unlikely to have been robust or substantial.



Figure 341 - Aerial imagery from 1943, showing the absence of development within the subject site

Source: SIX Maps 2018

It is therefore concluded that although the subject site does have a history of known former ownership and uses, these uses (being part of early land grants and part of a wider 'defence site') are by their nature unlikely to have resulted in any substantial development. The structures and elements associated with these uses are likely to have been limited in size and robustness (e.g. cottages, sheds, fencing, etc), with many of

[167] Perumal Murphy Alessi, *Heritage Assessment: Screen Australia, No. 101 Eton Road, Lindfield* (2013) p. 7.
[168] Ibid, p.8.

the elements associated with the rifle range likely to have been minor landscape modifications rather than actual structures or buildings.

Within the context of the subject site, which is known to have been severely disturbed during the construction of the existing university campus buildings, it is highly unlikely for any archaeological material or evidence associated with these former uses to have been retained on site. If any evidence of these former uses is present, it is highly unlikely to be intact, or to be recovered *in situ*.

Overall, and due to both the extent of disturbance that has occurred and the nature of the past uses of the site, the historical archaeological potential of the subject site is assessed as low to nil. It would be difficult to understand the context of any fragmentary remains exposed within the proposed isolated areas of excavation, in the unlikely event that this were to occur. Any remains, if present, are likely to be of little to no research potential as a result of their isolation and probable disturbed and fragmentary nature.

6.6. HISTORICAL ARCHAEOLOGICAL SIGNIFICANCE

As noted previously in Section 6.4, the historical archaeological potential of the site is assessed to be low to nil. Any remains, if present, are likely to be of little to no research potential as a result of their isolation and probable disturbed and fragmentary nature.

7. STATUTORY & NON-STATUTORY OBLIGATIONS

7.1. HERITAGE LISTINGS

Table 21 – Heritage Listings

Type of Listing	Name of Item	Assessed Level of Significance
STATUTORY LISTINGS		
World Heritage List under the World Heritage Convention (places of outstanding universal value)	N/A	
National Heritage List under the Environment Protection and Biodiversity Conservation Act 1999 (natural and cultural places of outstanding heritage value to the nation)	N/A	
Indigenous Heritage under the Aboriginal Cultural Heritage Act 2003 (places that hold great meaning and significance to Indigenous people)	N/A	
Commonwealth Heritage List under the Environment Protection and Biodiversity Conservation Act 1999 (natural, Indigenous and historic heritage places on Commonwealth lands and waters or under Australian Government control)	N/A	
State Heritage Register under the Heritage Act 1977 (items of state significance)	N/A It should be noted that at the time of writing this document the place was under assessment for inclusion on the State Heritage Register.	
State Government Agency Section 170 Heritage and Conservation Register under the Heritage Act 1977 (items of local or state significance)	N/A	
Ku-ring-gai Local Environmental Plan 2015 Schedule 5 – Items of Environmental Heritage (items of local significance)	Item I422	Local

Movable Cultural Heritage under the Protection of Movable Cultural Heritage Act 1986 (objects that people create/collect that forms an important part of Australia's nation's identity)	No	
Register of the National Estate (not operational) under the Environment Protection and Biodiversity Conservation Act 1999 (items of local, state or national significance)	**University of Technology Ku-ring-gai Campus** Place ID 2854 Place File No. 1/13/020/0009	Historic
NON-STATUTORY LISTINGS		
National Trust of Australia (items of local, state or national significance)	N/A	
Institute of Architects Nationally Significant Architecture Register of Significant Building in NSW	UTS Ku-ring-gai Campus University of Technology Ku-ring-gai Campus former William Balmain Teachers College or CAE (Number. 4702234)	National State
Institution of Engineers Australia (no official register but informal list of buildings that have heritage value)	N/A	

7.2. CURTILAGE

The Heritage Division of the NSW Office of Environment and Heritage define heritage curtilage as the area of land surrounding an item or area of significance which is essential for retaining and interpreting its heritage significance. Heritage curtilage is classified into four types:

- Lot Boundary Heritage Curtilage: for places where the heritage curtilage is defined by the legal boundary of the allotment. The allotment should contain all significant related features, for example outbuildings and gardens, within its boundaries.
- Reduced Heritage Curtilage: for places where the heritage curtilage is defined as an area less than the total allotment. This classification is applicable when not all parts of a property are associated with its significance, for example contemporary additions.
- Expanded Heritage Curtilage: for places where the heritage curtilage is defined as larger than the allotment. This classification is particularly relevant where views to and/or from a place are of significance
- Composite Heritage Curtilage: for larger areas that include a number of separate related places, such as heritage conservation areas based on a block, precinct or whole area.

The listed curtilage for the subject site under the Ku-ring-Gai LEP 2015 listing is defined by the footprint of the building complex, including all Stage 1, 2, 3, 4 and 5 building. It does not include the landscape of the site being the remainder of Lot 2 of Deposited Plan 1151638.

The identified curtilage of the site as identified in this report as is expanded heritage curtilage, which encompasses the legal boundary of Lot 2 of Deposited Plan 1151638, due to the significance of the landscape of the site.



Figure 342 – Extract of heritage map with the subject site outlined

Source: Ku-ring-gai LEP 2015, Heritage Map

7.3. STATUTORY OBLIGATIONS

Works to the Lindfield Learning Village may require particular approvals depending on the nature of proposed works. Key commonwealth, state and local legislation, plans, policies and programs and committees affecting the management of the place are described below. This Section should be referred to in addition to other management plans for the site.

7.3.1. Commonwealth Government Legislation & Policies

Environmental Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is the Australian Government's environment and heritage legislation. This act is triggered by developments or actions that will have a significant impact on matters of National environmental significance, including world heritage areas, Commonwealth marine areas, nationally threatened species and communities and migratory birds. The EPBC Act includes a process for assessment of proposed actions that have, or are likely to have, a significant impact on matters of national environmental significance. These actions require approval from the Commonwealth Minister, Environment and Heritage.

A new national heritage system was established in January 2004 under the EPBC Act. This led to the introduction of the National Heritage List, which recognises and protects places of outstanding heritage to the Nation, and the Commonwealth Heritage List, which includes Commonwealth owned or leased places of significant heritage value.

The Lindfield Learning village is not listed on the National and/or Commonwealth Heritage Lists.

National Construction Code / Building Code of Australia

The National Construction Code (NCC), incorporating the Building Code of Australia (BCA) is a national set of building regulations with some state-specific variations. The performance requirements of the BCA are mandatory, although the introductory sections of the Code make clear that not all requirements will apply to a given case. The Code also includes 'deemed-to-satisfy' requirements which are accepted as meeting the performance requirements. The Code also makes provision for alternative solutions to meet the performance requirements, subject to satisfactory verification.

Under the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation), all new building work must be carried out in accordance with the BCA. In the case of an existing building, there is generally no requirement to comply with the BCA unless works are being carried out. However, where works (in particular alterations or additions) are proposed to the place, the building will need to comply on completion with the relevant [performance] requirements of the Building Code of Australia (EP&A Act Regulation Clause 145). In addition, where an existing building has a change of use, the structural capacity and fire safety of the building must be appropriate for the new use. For a building which undergoes alterations without a change of use, the structural capacity and fire safety of the building must not be reduced by the work (EP&A Act Regulation Clause 143).

In certain circumstances, exemption can be obtained from the requirements of the BCA under Clause 187 of the EP&A Regulation. Because in most cases there will be an acceptable alternative solution to satisfy the performance requirements of the BCA, it is rare to seek applications for exemption. If such an application is contemplated, it should be sought at development application stage. The Technical Commitee of the Heritage Council of NSW may be able to assist in resolving conflicts between heritage and regulatory requirements.

Australian Standard AS1428 (Universal Access)

The objective of this Standard is to provide building designers and users (architects, property owners, regulators, and the like) with the minimum design requirements for new building work to enable access for people with disabilities.

Because of the variety of situations that may need to be addressed when designing buildings and facilities, it was seen as necessary for the Standards to provide a range of data so that the requirements for access can be met and to also allow for flexibility in design where limitations are imposed by other building conditions. The intention was to make the Standard a practical reference document for designers, particularly with regard to problem areas such as doorways and sanitary facilities. To minimise adverse interventions and to assist in maximising the exposure of significant heritage fabric, alternate solutions to the deemed to satisfy provisions of the BCA should be derived from performance based assessments particularly in relation to structural provisions, fire resistance and stability, fire separation, provisions for access and egress, sound transmission and isolation, and energy efficiency.

7.3.2. State Government Legislation & Policies

Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EPA Act) governs strategic planning and development assessment processes undertaken by State and Local Government in NSW. Development approval for works may be required under Part 3A, Part 4 or Part 5 of the Act.

It is necessary in most cases to submit a development application to the relevant local Council for permission to erect, alter, demolish or change the use of an existing building. This does not apply to a building proposal defined as an 'Exempt Development'. Six categories of development are defined by the new legislation: Exempt Development, Complying Development, Local Development, Integrated Development, Designated Development or State Significant Development.

Approval is required under this Act for alterations and additions to the Lindfield Learning Village. A Review of Environmental Factors (REF) is prepared in most instances to address relevant approvals and consultation requirements under the EP&A Act.

Independent heritage advice or assessment may be required if works are likely to impact on the overall heritage significance of the place or elements identified in this report as being of exceptional or high

significance. A heritage impact statement is generally required to accompany development applications for works to a heritage item, to assess the likely impact of the works on the heritage significance of the item.

Planning for Bushfire Protection 2006

Land use planning within bushfire prone areas is guided by legislation, directives and guidelines. In September 2011, Part 3A of the *Environmental Planning and Assessment Act, 1979* (EPA Act) was repealed, leading to the creation of two new major project development categories: state significant infrastructure (SSI) and state significant development (SSD). Because of their size, complexity, importance and/or potential impact, the DPE is predominantly responsible for assessing development applications relating to these project types. The Minister for Planning is the consent authority for SSI and SSD applications.

As vulnerable communities, Special Fire Protection Purpose (SFPP) developments are afforded the highest level of protection from bushfires by PBP 2006. The underlying intent is to reduce the risk significantly. While the "measures in combination" continues as a principle within PBP, there is more reliance on space around buildings, access, emergency management arrangements and less reliance on construction standards. The minimum requirements for SFPP development (that are not infill development) are that 10kWm of radiant heat is not experienced at any point on a building housing SFPP communities (PBP 2006 p. 33).

The site is identified as 'bushfire prone land' (See Figure 3) for the purposes of Section 10.3 of the EPA Act and the legislative requirements for developing bushfire prone lands are applicable.

Bushfire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bushfire prone land (BFPL) is land which can support a bushfire or is likely to be subject to bushfire attack (radiant heat, embers or flame). Bushfire prone land maps are prepared by local council and certified by the Commissioner of the NSW Rural Fire Service (RFS). An assessment of the Bushfire prone land is necessary to determine the application of bushfire protection measures such as Asset Protection Zone (APZ) locations, risk and Bushfire Attack Levels (BAL).

The bushfire hazard affecting the investigation area was assessed during site inspections and using recent aerial photographs for at least a distance of 140m from the perimeters of the investigation area (in line with PBP 2006). This assessment identifies the potential bushfire threat from both within and outside of the investigation area and provides an indication of required asset protection zones for risk and future development within the site.

The site assessment identifies the potential bushfire threat from outside of the site area and provides an indication of required asset protection zones to meet the deemed to satisfy distances of PBP.

The APZ requirements from PBP 2006 are shown in Figure *343* and PBP 2017 in **Error! Reference source not found.** As a SFPP development, full APZ compliance of 100m would be required from unmanaged bushland areas to support the school.

Table A2.6 Minimum Specifications for Asset Protection Zones (m) for Special Fire Protection Purposes in bush fire prone areas (≤10kW/m²)

	Effective Slopes				
Vegetation Formation	**Upslope/Flat**	**>0°-5°**	**>5°-10°**	**>10°-15°**	**>15°-18°**
Rainforests	30	40	50	60	65
Forests	60	70	85	100	100
Woodland (Grassy)	40	50	60	70	75
Plantations (Pine)	50	60	70	85	95
Tall Heath (Scrub)	45	50	55	60	65
Short Heath (Open Scrub)	35	35	40	45	45
Freshwater Wetlands	35	35	40	45	45
Forested Wetlands	50	60	75	90	95
Semi-Arid (Woodland)	30	35	40	45	50
Arid Shrubland	30	35	40	45	45
Alpine Resorts	(see page 31 and Table A3.5 on page 66)				

Figure 343 – SFPP APZ Requirements PBP 2006 (p.58)

Source: Bushfire Hazard Assessment Report, Blackash Bushfire Consulting 2018

KEITH VEGETATION FORMATION	KEITH VEGETATION CLASSIFICATION	EFFECTIVE SLOPES				
		Upslope and flat	> 0-5	> 5-10	> 10-15	> 15-20
		Distance (m) asset to predominant vegetation class				
Rainforest	All	38	47	57	69	81
Wet Sclerophyll Forests	Shrubby and Grassy	73	86	100	100	100
Dry Sclerophyll Forests	Western Slopes DSF and Yetman DSF	51	61	73	87	100
	Pilliga Outwash DSF	30	37	45	55	66
	Shrubby and Shrub Grass	67	79	93	100	100
Pine Plantations	Radiata Pine	64	76	90	100	100
Forested Wetlands	Forested wetlands - Coastal swamp forest	67	79	94	100	100
	Forested wetlands and Riverine forest	34	42	51	62	73
Grassy Woodlands	Grassy Woodlands	42	50	60	72	85
	Sub alpine Woodlands	58	69	82	97	100
Semi-arid woodlands	Grassy	26	32	40	49	59
	Semi-arid woodlands (shrubby) - Mallee	47	56	68	81	96
Heathlands	Tall Heath	53	58	64	70	75
Heathlands, Freshwater Wetlands and Alpine Complex	Short Heath	35	39	43	48	52
Arid shrublands	Acacia	24	27	30	34	37
	Chenopod	18	21	24	27	29
Grassland	Determined at GFDI 110	20	23	26	30	34

Figure 344 – SFPP APZ Requirements PBP 2017 (p.112)

Source: Bushfire Hazard Assessment Report, Blackash Bushfire Consulting 2018

NSW Heritage Act 1977

The NSW Heritage Act 1977 (Heritage Act) is administered by the NSW Office of Environment and Heritage. The purpose of the Heritage Act is to ensure cultural heritage in NSW is adequately identified and conserved. Items of significance to the State of NSW are listed on the NSW State Heritage Register (SHR) under the Act.

The Lindfield Learning Village is not listed as an item of State significance on the SHR.

Historical Archaeology

Historical relics are also protected under the Heritage Act throughout all areas of NSW. If historic relics are discovered on the site during any maintenance or construction works, the Office of Environment and Heritage of the NSW Department of Planning must be notified under Section 139 of the Act.

In New South Wales, historical archaeological sites are protected under the Heritage Act. The purpose of the NSW Heritage Act 1977 (as amended) is to conserve the environmental heritage of the State. Environmental heritage is broadly defined under Section 4 of the Heritage Act as consisting of the following items: 'those places, buildings, works, relics, moveable objects, and precincts, of State or local heritage significance.'

Amendments to the Heritage Act made in 2009 have changed the definition of an archaeological 'relic' under the Act. A relic is now an archaeological deposit, resource or feature that has heritage significance at a local or State level. The definition is no longer based on age. This significance-based approach to identifying 'relics' is consistent with the way other heritage items such as buildings, works, precincts or landscapes are identified and managed in NSW.

The Heritage Act requires that historical archaeological sites and 'relics' are managed in accordance with permits issued by the Heritage Council of NSW. The consent of the Heritage Council is required before any archaeological 'relics' are disturbed. An archaeological site is an area which contains one or more archaeological 'relics'.

Historical archaeological potential and significance is set out in section 6.5 and 6.6. No specific archaeological potential has been identified.

National Parks and Wildlife Act 1974

The National Parks and Wildlife Act 1974 (NSW) (the 'NPW Act') is the primary piece of legislation for the protection of Aboriginal cultural heritage in New South Wales. The Office of Environment and Heritage (OEH) administers the NPW Act. The NPW Act provides statutory protection for Aboriginal objects by making it illegal to harm Aboriginal objects and Aboriginal places, and by providing two tiers of offence against which individuals or corporations who harm Aboriginal objects or Aboriginal places can be prosecuted. The NPW Act defines Aboriginal objects and Aboriginal places:

Aboriginal object means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.

Aboriginal place means any place declared to be an Aboriginal place under section 84. The highest tier offences are reserved for knowledgeable harm of Aboriginal objects or knowledgeable desecration of Aboriginal places. Second tier offences are strict liability offences—that is, offences regardless of whether or not the offender knows they are harming an Aboriginal object or desecrating an Aboriginal place—against which defences may be established under the National Parks and Wildlife Regulation 2009 (NSW) (the 'NPW Regulation').

Section 87 of the NPW Act establishes defences against prosecution under s86 (1), (2) or (4). The defences are as follows:

- An Aboriginal Heritage Impact Permit (AHIP) authorising the harm (s87(1))
- Exercising due diligence to establish Aboriginal objects will not be harmed (s87(2))

Due diligence may be achieved by compliance with requirements set out in the National Parks and Wildlife Regulation 2009 (the NPW Regulation) or a code of practice adopted or prescribed by the NPW Regulation (s87(3)).

Indigenous Archaeological potential and significance has been set out in section 6.3 and 6.4. An extensive search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 3 November 2017. This search was updated on 17 August 2018. The search was conducted for Lot 2 DP 1151638, with a buffer of 1000 metres, which comprises the entirety of the Study Area. The results of this AHIMS search showed that no Aboriginal sites have been recorded in or within 50 metres of the Study Area. Copies of these searches are attached at Appendix B.

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

The State Environmental Planning Policy (SEPP) (Educational Establishments and Child Care Facilities) 2017 has provisions that will make it easier for child-care providers, schools, TAFEs and universities to build new facilities and improve existing ones by streamlining approval processes to save time and money and deliver greater consistency across NSW. The SEPP balances the need to deliver additional educational infrastructure with a focus on good design.

The key aims of the SEPP are to:

- streamline the planning system for education and child care facilities including changes to exempt and complying development
- make NSW the first State to bring National Laws regulating early childhood education and care into a state planning system
- bring the Department of Education into the planning process and give child care providers and developers upfront information about, all national and state requirements for new child care services
- streamline the delivery of new schools and upgrading existing facilities, with a focus on good design and

- assist TAFEs and universities to expand and adapt their specialist facilities in response to the growing need, and to maintain our reputation for providing world class tertiary education, while allowing for more flexibility in the use of their facilities.

Under the SEPP, development which is carried out by or on behalf of a public authority, which relates to a heritage item must comply with Part 2 Division 1 Clause 11 as follows:

11 Consultation with councils—development with impacts on local heritage

(1) This clause applies to development carried out by or on behalf of a public authority if the development:

(a) is likely to affect the heritage significance of a local heritage item, or of a heritage conservation area, that is not also a State heritage item in a way that is more than minimal, and

(b) is development that this Policy provides may be carried out without development consent.

(2) A public authority, or a person acting on behalf of a public authority, must not carry out development to which this clause applies unless the authority or the person has:

(a) had an assessment of the impact prepared, and

(b) given written notice of the intention to carry out the development, with a copy of the assessment and a scope of works, to the council for the area in which the local heritage item or heritage conservation area (or the relevant part of such an area) is located, and

(c) taken into consideration any response to the notice that is received from the council within 21 days after the notice is given.

7.3.3. Local Government Legislation & Policies

Ku-ring-gai Local Environmental Plan 2015

A Local Environmental Plan (LEP) is the principal legal document for controlling development and guiding planning decisions made by Council. The Ku-ring-gai Local Environmental Plan 2015 (Ku-ring-gai LEP 2015) commenced on 2 April 2015, and is the current local environmental plan. Schedule 5 Environmental Heritage of the planning instrument lists heritage items and heritage conservation areas within the local government area.

The Lindfield Learning Village is listed as a heritage item under Part 1 of Schedule 5 of the Ku-ring-gai LEP 2015.

The LEP requires consent for certain types of development (including development affecting heritage items) and the consent authority, in considering any proposed development, must have regard to the relevant aims, strategies and principles contained in this plan. Heritage provisions for the Ku-ring-gai local government area are incorporated under Part 5 Miscellaneous Provisions, Clause 5.10 Heritage Conservation of the instrument. Sub-clause (2) details consent required for certain development as outlined below:

Development consent is required for any of the following:

(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):

(i) a heritage item,

(ii) an Aboriginal object,

(iii) a building, work, relic or tree within a heritage conservation area,

(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

(d) disturbing or excavating an Aboriginal place of heritage significance,

(e) erecting a building on land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,

(f) subdividing land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

It is noted that controls included herein reflect the controls at the time the report was written (November 2018). Where required, reference should therefore be made to the instrument and clauses herein should not be relied upon.

Ku-ring-gai Development Control Plan 2016

A Development Control Plan (DCP) is a non-statutory document that supports the LEP with more detailed planning and design guidelines.

The purpose of the Development Control Plan (DCP) is to supplement the Ku-ring-gai Local Environmental Plan (LEP) 2015 and provide more detailed provisions to guide development. The DCP has been made in accordance with Section 74C of the Environmental Planning & Assessment Act 1979 and must be read in conjunction with the provisions of Ku-ring-gai LEP 2015.

The Ku-ring-gai Development Control Plan 2016 provides objectives and provisions for the development of buildings with heritage significance, either individually or as part of their street or area. The objectives in relation to heritage are contained in Section B, Part 19 and are to:

i) retain, conserve and enhance the Heritage Items, HCAs and their associated settings;

ii) ensure the heritage significance, streetscape and landscape character of HCAs are maintained;

iii) ensure alterations and additions to Heritage Items and within HCAs respect those buildings and do not compromise the significance and character of the individual Heritage Items or the HCAs;

iv) ensure new development in the vicinity of Heritage Items and HCAs respects the heritage context and is sympathetic in terms of form, scale, character, bulk, orientation, setback, colours and textures and does not mimic or adversely affect the significance of Heritage Items or HCAs and their settings.

The intention of the DCP is to ensure that decisions about change are made with due regard to heritage significance, and that opportunities to improve the understanding and appreciation of this significance are taken. The DCP should be considered in relation to future development proposals affecting the site, where relevant.

It is noted that controls included herein reflect the controls at the time the report was written (November 2018). Where required, reference should therefore be made to the instrument and clauses herein should not be relied upon.

7.4. PREVIOUS DEVELOPMENT APPROVALS

In 2007, a Concept Plan for the rezoning of the former UTS Ku-ring-gai site was submitted (application number 06_0130). The Concept Plan which sought approval for the rezoning for the development of approximately 382 dwellings, demolition of the Stage 3 building and link building and adaptive reuse of the main campus building was approved by Frank Sartor MP, Minister of Planning on 11 June 2008. The

approval was granted for the carrying out of development solely within the Concept Plan area as described in the document titled 'Preferring Project Report and Statement of Commitments UTS Ku-ring-gai Campus Lindfield, SEPP Major Projects and Concept Plan Volumes 1 and 2' date February 2008 prepared by JBA Planning Consultants and DEM Architects.

As part of this approval, a number of commitments, contained within the Statement of Commitments, relate directly to heritage matters, as follows.

- *A copy of UTS Ku-ring-Gai, Rezoning Application Indigenous Heritage Issues Report prepared by Jo McDonald Cultural Heritage Management Pty Ltd will be made available to Metropolitan Local Aboriginal Land Council and three copies to Cultural Heritage Division of the Sydney Zone of the Department of Environment and Climate Change.*

- *The Metropolitan Local Aboriginal Land Council will be requested to monitor surface works during initial construction phase and promoted*

- *The adaptive reuse of the main building is to respect the architectural integrity and quality and not adversely effect the significance of the building including retention of external materials*

- *Any future use of the building is to be in accordance with the Heritage Impact Assessment, as well as the Conservation Strategy for the site, prepared by Graham Brooks and Associates, heritage consultants.*

- *Original light fittings will be retained and upgraded*

- *Planter boxes on roof terraces will be recovered and maintained, where possible*

- *Interim heritage listing of the Site to be progressed.*

- *Further recognise the architectural and heritage values of main campus of UTS complex on the National Trust Register.*

- *Any archaeological findings will be referred to Heritage Office.*

The above commitments are understood to be enforceable given the weight of the 2008 approval of the Concept Plan.

This CMP has been developed with direct reference to the Heritage Impact Assessment and Conservation Strategy prepared by Graham Brooks and Associates. For all intents and purposes it is considered that this CMP supersedes these former reports, however these previous heritage reports remain as enforceable documents given weight by the 2008 rezoning approval. The following key strategies were developed as part of the Conservation Strategy by Graham Brooks and Associates:

Conservation and Development of the Overall Site

1. *New development on the site should be largely contained within the areas that have already been developed for either buildings, roads and parking areas or recreation facilities.*

2. *The strongly defined bushland character of the site should be retained and the close integration of major buildings with the bushland, primarily by way of sharply defined edges and interfaces, be regarded as a core principle for future development.*

3. *The bushland edges of the site should be regarded as a community asset and be available for as many members of the on-site population as possible. Close visual connections within the surrounding bushland are preferred to direct physical access, if the natural qualities of the bushland are to be protected.*

4. *The existing buildings should be largely retained, with uses that support its on-going conservation and relevance to the wider community. Re-use of the main building complex should respect its architectural character and integrity.*

5. *The existing roads and parking areas, combined with pedestrian pathways and stairways, particularly within the eastern and southern portions of the site should be retained and re-used where possible.*

6. *The introduction of new roads within the area identified for development should be reduced to the minimum necessary for residential and emergency vehicle access.*

7. *The introduction of new roads or landscaped road reservations into the bushland should be restricted to those required for emergency and fire fighting vehicles.*

8. *The embankment below the existing Oval, that delineates the change in levels in that part of the site should be retained as a significant site feature, although some limited modification is permissible.*

9. *Any new semi formal common open space should be located near the entry road to retain the contrast with the retained bushland character around the edges of the site.*

10. *New buildings or extensions to the existing building complex should not be erected to the east, south or south west of the complex. In these locations new building elements would obscure the original architectural imagery, alter its profile on the skyline or reduce its immediate relationship with the surrounding bushland.*

11. *New development is acceptable, in principle, within the zone extending to the north west of the main building complex, including on the Oval, Tennis Courts and north western car park. The zone to the north east, associated with the existing car parks, roads and adjacent existing residential development, is also considered appropriate for development.*

12. *New development should be arranged on site in a manner that respects the philosophy of a strong interface with the edge of the surrounding bushland, with the main pedestrian and vehicle access routes being located away from the bushland edges. New parking should be underground to minimise additional impacts on the site character. Building footprints and circulation routes should be compact to reflect the scale and compactness of the original college layout and maximise opportunities for new or retained natural landscape. New development should respond to the existing topography of the site.*

13. *New development to the north west of the main building complex should include a network of pedestrian ways that connect to the original pedestrian street and link the new development into the public functions or new uses of the existing complex. These pathways might be partially enclosed and partially open within the circulation networks of the site.*

14. *New development on the boundary north-western car park should be scaled to respond to the surrounding residential areas. Major trees should be retained if possible. New roadways should respond to the location of major trees.*

15. *New development on the site, with the possible exception of single houses on the north-western and integrated houses in the north-eastern extremities, should achieve a unity in design and external materials that reflect the unity of the retained college buildings. This is not to say that the architectural style or external materials should be replicated, but that the sense of a unified development character and imagery should be achieved.*

16. *Future construction management activities should be modelled on those utilised during the initial development stages, to minimise the extent of any damage to existing bushland and maximise the potential for regeneration. Limited clearing of the bushland edge interface to new or existing buildings in order to reduce fire damage, should respond to the techniques used to the south of Stage One, with limited areas of grass and stone retaining walls.*

17. *Careful management of the bushfire asset protection zones will be required to retain as much of the bushland character as possible, within constraints for controlling fuel loads under the tree canopies. New fire fighting vehicle access routes across the bushland frontage of any new or existing development should be limited to fire trails in preference to public roadways.*

18. *There is no requirement to retain the existing child care centre or outbuildings located to the north west of the Oval, although this facility may be relocated on site.*

19. *There is no requirement for the retention of the Oval and Tennis Courts on site, given the most likely future change in or departure from an educational focus.*

20. *If the Gymnasium building is removed or extensively adapted, the facilities could be relocated on site.*

21. *Any future use or redevelopment of the site should include a reliable and enduring procedure, appropriately resourced, for the management and maintenance of the site's landscape qualities.*

Conservation and Adaptive Re-Use of the Buildings

22. *The external architectural integrity, composition and massing of the main building complex, and the existing primary external materials should be retained and conserved as part of an on-going use or future re-use programme.*

23. *The internal architectural integrity, composition and massing of the main public areas within the building complex, and the existing materials, shall be retained and conserved, to the extent that they are compatible with appropriate alternate uses.*

24. *Alteration or adaption of the spaces that are accessed directly from the main circulation spine, shall utilise the existing patterns of black anodised glazing.*

25. *Adaption and alteration of the enclosed "working" spaces within the building shall be permissible, including removal of internal dividing walls.*

26. *Installation of new services and code compliance requirements shall continue to be undertaken in a manner that respects the architectural character and integrity of the building complex and its materials.*

27. *Original light fittings should be retained and upgraded in the public areas, where possible.*

28. The original landscape planting to the planter boxes on the roof terraces should be recovered and then maintained, where possible.

Due to the nature of the previous approval relating to the subdivision of the wider site and the then proposed use of the site for conversion into residential apartments buildings, not all of the strategies listed above are appropriate nor relevant to the current proposal for the conversion of the site into a K to 12 School. All relevant strategies listed above have been adapted into the conservation policies for the site in Section 9.

7.5. NON-STATUTORY OBLIGATIONS

7.5.1. Educational Facilities Standards and Guidelines

The Educational Facilities Standards and Guidelines (EFSG) are intended to assist those responsible for the management, planning, design, construction and maintenance of new and refurbished school facilities.

The EFSG is a suite of information to aid in the planning, design and use of NSW Department of Education school facilities. The information includes:

- NSW Department of Education school types with content on educational principles, accommodation recommendations, design intent on rooms and spaces, relationships between accommodation components and associated technical data.
- Technical Design Guide
- Technical Specification Guide
- Links to relevant industry design and specification information

The EFSG provides information to assist those responsible for or with an interest in, the management, planning, design, construction and maintenance of school facilities. Particular areas of the site are written with the most likely user in mind ie. the Design Guide and Specification Guide refer to and are written in a Nat Spec format, being the Industry Standard for specification in construction. The Design Intent for Rooms and Spaces, however are very much focused on Educators and School Management. The documents are designed to assist:

- NSW Department of Education staff and in particular those involved in school planning and design.
- School staff and in particular those interested in the rationale of school design, the design intent and pedagogical implications of the various spaces.
- The school design team including project managers, architects, engineers and other specialist consultants involved in school planning and design.
- Construction and maintenance contractors
- The wider community with an interest in school planning and design.

While the EFSG documents provide matters for consideration and minimum standards for the elements of a building project, the materials and building practices detailed are not exhaustive. These documents are not intended to limit facilities planners and designers, in consultation with project stakeholders, from exercising creativity in providing alternative solutions within the available project budget.

To ensure that the EFSG remains current into the future the Department has implemented a continuous improvement process to regularly update the documents so as to reflect change and promote the latest best practice. Users are encouraged to regularly check this website for updates.

Further information on the EFSG is available at https://efsg.det.nsw.edu.au/ .

It should be noted that the EFSG is not developed to be a minimum standard or an indication of entitlement. It should therefore not be used as a benchmark by which current schools or existing buildings are assessed and future development proposals will need to have regard to heritage significance and seek compromise where strict compliance would have an adverse heritage impacts.

7.6. MANAGEMENT PLANS & GUIDELINES

This Conservation Management Plan revises and builds on two previous reports, as noted below:

- City Plan Heritage, *Heritage Assessment, UTS Ku-ring-gai Campus* (August 2004)
- Graham Brooks and Associates, *Heritage Assessment & Conservation Strategy, UTS Campus Ku-ring-gai* (July 2004)

8. OPPORTUNITIES & CONSTRAINTS

8.1. INTRODUCTION

The conservation planning process established by the *Burra Charter* of Australia ICOMOS guidelines (refer Article 6 which defines the Burra Charter Process) requires that relevant constraints be identified as part of the process for developing conservation policies for places of significance. These constraints include:

- Obligations arising from the cultural significance of the place;
- Physical constraints of the place, including environmental factors and the physical condition of the fabric;
- Relevant statutory and non-statutory controls;
- Owners' needs, resources and other external constraints; and
- Obligations involved in undertaking research, maintaining records and communicating the heritage values of the place.

The following specific constraints and opportunities inform the policies for the Lindfield Learning Village.

8.2. OBLIGATIONS ARISING FROM STATUTORY & NON-STATUTORY REQUIREMENTS

The Lindfield Learning Village is subject to statutory listings as set out in section 7.1. Accordingly, approvals for works to the site may be required under the EP&A Act and/or the National Parks and Wildlife (NP&W) Act as outlined in Section 6.2. This section should be referred to prior to undertaking any works.

Where new works are proposed, compliance with the Building Code of Australia / National Construction Code, Australian Standard AS1428 (Universal Access) and EFSG may also be required as outlined in Section 6.2. Any strategies or solutions to ensure that components of the subject building complies with the BCA/ NCC, AS1428 or EFSG requirements should be driven by the cultural significance of the place. Where necessary, alternative solutions and performance-based outcomes should be pursued to ensure the intent of the codes are met without adversely impacting on significant fabric.

To minimise adverse interventions and to assist in maximising the exposure of significant heritage fabric, alternate solutions to the deemed to satisfy provisions of the BCA should be derived from performance-based assessments particularly in relation to structural provisions, fire resistance and stability, fire separation, provisions for access and egress, sound transmission and isolation, and energy efficiency.

Professional advice should always be obtained. Should conflicts arise between compliance and cultural significance, the Heritage Council of NSW is able to provide advice and assistance in seeking appropriate compliance solutions through its Technical Committee.

8.3. THE BURRA CHARTER

The ICOMOS Burra Charter 2013 adopted by Australia ICOMOS, establishes the nationally accepted principles for the conservation of places of cultural significance. Although the Burra Charter is not cited formally in an Act, it is nationally recognised as a document that shapes the policies of the Heritage Council of NSW. The document provides the underlying methodology by works to heritage items of all levels of significance are undertaken and provides the guidelines for the management of heritage items. The Lindfield Learning Village is of demonstrated cultural significance, and therefore, procedures for managing changes and activities at the site should be in accordance with the recognised conservation methodology of The Burra Charter.

A copy of the Burra Charter is attached at Appendix G, or is available via the following link:
http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf

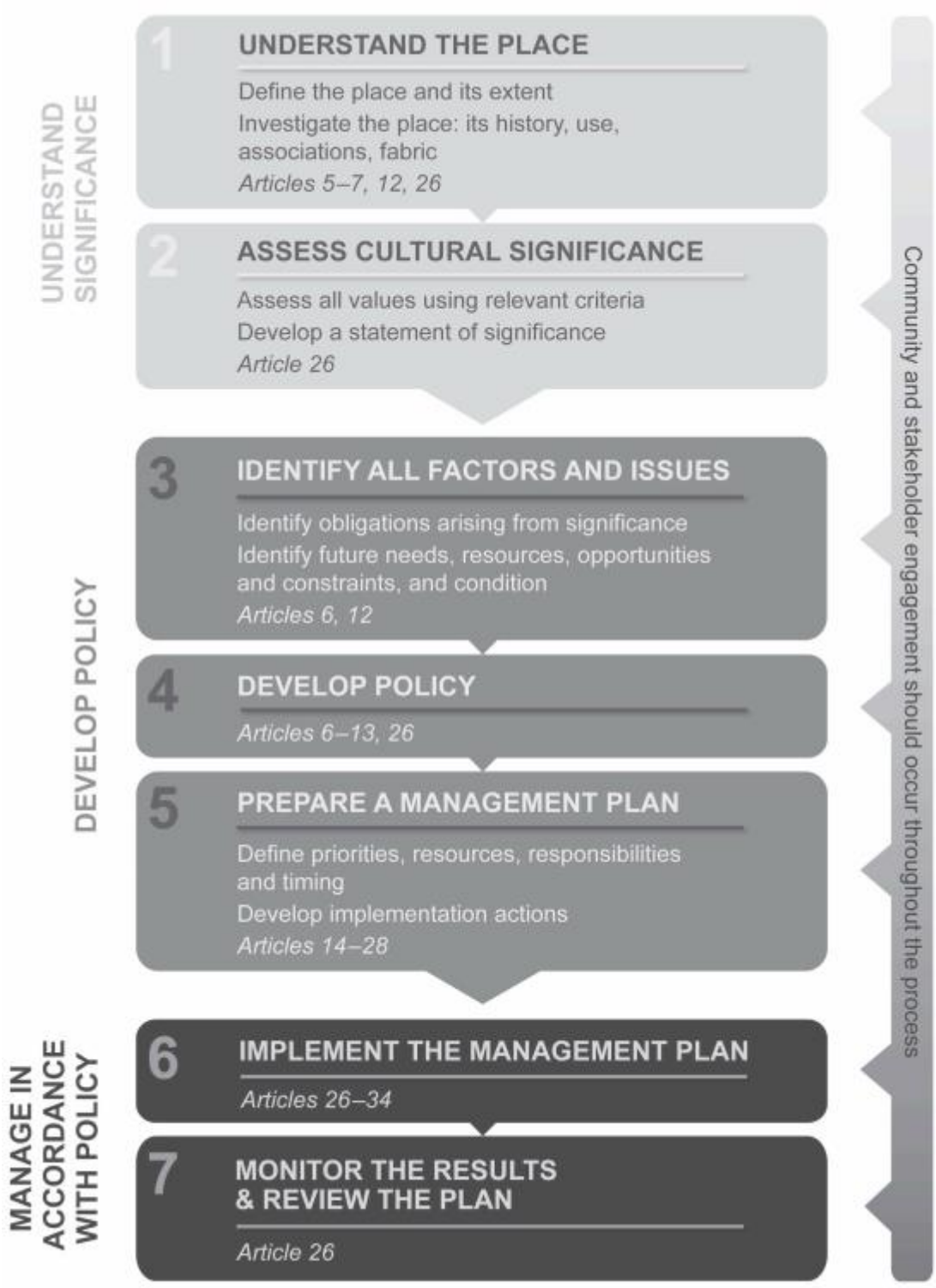


Figure 345 - The Burra Charter Process (flow chart showing the steps in planning for and managing a place of cultural significance, with Key articles relevant to each step shown in the boxes)

Source: The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013.

8.4. OBLIGATIONS ARISING FROM HERITAGE SIGNIFICANCE

This CMP provides an analysis of the significance of the Lindfield Learning Village in its present form. It has been determined that the Lindfield Learning Village is of state heritage significance for its historical, associative, aesthetic, rarity and representative values. This places an obligation for owners, occupiers and users of the building and any other stakeholders, responsible for or involved in the maintenance and management of the buildings to conserve this identified significance. This includes internal and external fabric, individual spaces, elements and structures of the site as identified in Section 5.5 and 5.6.

Any future proposed changes to the Lindfield Learning Village must be undertaken in accordance with the Ku-ring-gai LEP and DCP 2015, the Burra Charter and with reference to the policy recommendations of this CMP. The significance of the site is summarised above in Section 5.2.

General constraints in relation to the elements, fabric and spaces of heritage significance and setting include:

Conservation and management

- Refer to Section 9 for all policies regarding management of the identified heritage significance of the Lindfield Learning Village;
- Fabric and spaces of moderate, high or exceptional significance should be retained and conserved. Significance is defined in Section 5.2 of this CMP with the Schedule of Significant Elements provided at Section 5.5;
- Retain original configuration and fabric of the buildings which reflect historically significant uses of the buildings and elements (with reference to significance schedules provided herein);
- Any repair, conservation or reconstruction works to significant elements should be undertaken with appropriate supervision by a suitably qualified heritage consultant/architect and/or relevant materials specialist/s or conservator;
- Elements intrusive to the significance of the building and its interiors should be removed concurrent with any major conservation works programme, proposed major alterations and/ or additions, adaptive reuse or transfer of floor space from the site;

The Cultural Landscape and Views

- The site retains a defined landscaped setting at the top of a hill overlooking the Lane Cove River valley. The property has significant views and vistas which should be conserved, regardless of future development proposals (refer to section 0)
- The original design intent of Bruce Mackenzie’s landscape design should be retained.

The Archaeological Resource

- The archaeological resource should be managed in accordance with the relevant opportunities and constraints at Section 8.5 and 8.6, and relevant policies at Section 9.8.

New Work

- New works should be in accordance with the relevant conservation policies at Sections 9.5 and 9.6

8.5. HISTORICAL ARCHAEOLOGY

It is concluded that although the subject site does have a history of known former ownership and uses, these uses (being part of early land grants and part of a wider 'defence site') are by their nature unlikely to have resulted in any substantial development. The structures and elements associated with these uses are likely to have been limited in size and robustness (e.g. cottages, sheds, fencing, etc), with many of the elements associated with the rifle range likely to have been minor landscape modifications rather than actual structures or buildings.

Within the context of the subject site, which is known to have been severely disturbed during the construction of the existing university campus buildings, it is highly unlikely for any archaeological material or evidence

associated with these former uses to have been retained on site. If any evidence of these former uses is present, it is highly unlikely to be intact, or to be recovered in situ.

Overall, and due to both the extent of disturbance that has occurred, and the nature of the past uses of the site, the historical archaeological potential of the subject site is assessed as low to nil. It would be difficult to understand the context of any fragmentary remains exposed within the proposed isolated areas of excavation, in the unlikely event that this were to occur. Any remains, if present, are likely to be of little to no research potential as a result of their isolation and probable disturbed and fragmentary nature.

Based on the above, there are no identified historical archaeological constraints associated with the site.

8.6. ABORIGINAL CULTURAL HERITAGE & ARCHAEOLOGY

An Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared for the site and informs this CMP. A summary of the findings of the ACHAR is provided below.

- The historical and environmental context of the Study Area was researched. This research found that the Study Area would have had the potential to contain Aboriginal sites/objects prior to disturbance. However, this research also found that the Study Area has been subject to severe and extensive disturbance.
- The AHIMS search conducted shows that no Aboriginal archaeological sites or places are recorded in or within 50 metres of the Study Area. The closest registered site is located outside of the Study Area, approximately 60 metres to the south of the southern boundary of the Study Area and well outside of any of the proposed impact areas. This site, being AHIMS #45-6-2210, is registered as a rock shelter site containing a shell midden deposit.
- A desktop assessment, including a review of previous archaeological and heritage studies in the vicinity of the Study Area, was undertaken. This review suggested that rock shelter and artefact sites were the most commonly encountered site types in the area, though the results of previous investigations as well as the extent to which the Study Area has been disturbed (and the absence of suitable rock shelters, rock outcrops and rock platforms within the Study Area and proposed impact areas specifically) indicates that the potential for such sites to be encountered within the Study Area is low;
- A visual inspection of the Study Area was undertaken and no Aboriginal objects were identified. The visual inspection confirmed that the Study Area had been severely disturbed, and that the archaeological potential of the Study Area is low.

Overall, the archaeological potential and sensitivity of the Study Area has been assessed as low. No Aboriginal sites or objects were identified within the Study Area as part of the ACHAR, and no previously recorded sites, as registered on AHIMS, are located in Study Area or in proximity to proposed impact areas. Based on the above, there is limited to no identified risk of harm to any Aboriginal sites or objects associated with the proposed works. It has therefore been determined that no further Aboriginal archaeological investigation is required for the currently proposed works, provided that the below recommendations are followed.

It should be noted that the ACHAR did not address the central courtyard section in detail in reference to the Metropolitan Aboriginal Land Council. If works are proposed in this area further consultation with the group would be required.

8.7. OWNERS REQUIREMENTS

The site subject site was subdivided from a larger site in 2011 as per the 2008 rezoning approval (refer to Section 7.4) with UTS maintaining ownership of the main campus building and the immediate natural surrounds (current subject site). UTS accommodated faculties including teaching and nursing at the Ku-ring-gai campus. However, the university vacated the site entirely in 2015 following the completion of a number of new buildings at its centrally located Broadway campus on the fringes of the Sydney CBD.

While this report acknowledges the significance of the site and the necessity of finding a future use to ensure its maintenance and conservation, a feasible future use for the site is constrained by a number of factors, principally; the substantial scale of the place; the inherent design principles applied in the design of Brutalist Building which result in selective areas of natural light; the location of the place (approximately 20 minutes north of the Sydney Central Business District) and the suburban nature of its surroundings.

The CMP is submitted in parallel with the approval of a Statement Significant Development application for the conversion of the place by the NSW Department of Education to into a K – 12 School (described below). It has been determined that an ongoing use for the place as a tertiary education institution is not feasible at this time, with no other known proposals for the reuse of the place for its original purpose. The K – 12 School has attracted a considerable amount of interest with 1500 students already on the waiting list. The proposal has provided the place with a new purpose and an opportunity to be adaptively reused and therefore conserved.

The planned future use of the place as a K – 12 School is determined to the be most appropriate use for the place outside of its original use as a tertiary education institution. Residential/hotel uses would require substantial additional alterations. Office uses are appropriate in some areas of the building; however, the education use allows for the retention and reuse of key, open areas many of which for their original purpose.

Notwithstanding, the planned primary/secondary education use triggers requirements for general refurbishment as well as requirements for upgrades to the building in line with the legislation set out in Section 7.0. This document is therefore required to guide the adaptation of the place in the context of the highly significant heritage fabric and the requirements associated with the adaptive reuse as a K – 12 school. Requirements include those associated with NCC, RFS and EFSG. The relevant legislation is set out in Section 7, principles for the response to these constraints are set out in section 8.8.2 below and policies to guide future change are set out in Section 9.5.

8.8. THE LINDFIELD LEARNING VILLAGE

8.8.1. The Proposal

A State Significant Development Application (SSDA) was submitted to the Department of Planning and the Environment in September 2018 and approved on 24 October 2018. The SSDA sought approval for the following:

- Internal reconfiguration and refurbishment of the former UTS Ku-ring-gai Campus to create:
- New learning spaces for the Lindfield Learning Village, accommodating approximately 2,100 students across Kindergarten to Year 12;
- A 92-space child care centre; and
- Administration facilities for Aurora College (distance education).
- Construction of lightweight pavilions at Level 7 to accommodate new internal spaces for the child care centre;
- Minor external alterations to revitalise the existing building elevations and accommodate new access and fire stairs;
- Upgrades to the existing facilities and car parking to address the Building Code of Australia (BCA) and access requirements;
- Minor earthworks are proposed for the construction of footpaths, shade structures and fencing; and
- Landscaping and open space throughout the site.
- A fire wall is proposed to separate Phase 1 from the section within the APZ.

As set out in detail in Section 8.8.2 below, the site is severely constrained by its location in a bushfire prone area. The proposed design of the new school which utilised the entire existing building did not respond to the relevant RFS requirements. An interim solution was developed on the basis of the implementation of a

Partial School to the north section of the campus. The location of the Partial School allows for the retention of a 100m Asset Protection Zone which separates the school from the surrounding bushland. Due to the location of the Partial School the tree removal for the Asset Protection Zone is able to be confined within the site boundaries. Consultation with RFS is continuing to determine the appropriate fire solutions for the remainder of the school which does not require further tree removal outside the boundaries of the site.

The reconfiguration and refurbishment of the site has been divided into three phases of development, which will achieve the following milestones:

- Phase 1: Operation of a school of 350 students from Kindergarten to Year 12 (to be delivered by Term 1, 2019);
- Phase 2: Operation of a school of 1,000 students from Kindergarten to Year 12 (to be delivered by mid-2021); and
- Phase 3: Operation of a school of 2,100 students from Kindergarten to Year 12 (timeline to be determined dependant on construction and operational dates pending enrolments).

The location of each of these phases are displayed in Figure 3.

8.8.2. Design Development and Response to Constraints

Design Development

At this stage, the design of the Partial School is complete. Design development to inform the application outlined above was prepared in conjunction with Urbis Heritage. The resultant design includes:

- Facilitation of a continued education use for the Partial School and insurance of its ongoing maintenance.
- Retention of the most significant fabric on the site, including off board concrete, the primary elevations, the spatial arrangement of the key internal spaces including the central circulation spine, the auditoriums and the cafeteria.
- The retention of key spaces for their original use including the auditoriums and the cafeteria.
- Retention of the Italian Hill Village design philosophy through the retention of the main circulation spine.
- A development which continues to respond to the topography of the land. Rooftop additions are modest in scale such that the building's response to the topography is retained.
- Reinterpretation of the key design philosophy of bringing the outside in using green carpet. The replacement existing carpet in the key circulation spaces and stairwells would feature green, interspersed with grey which would respond to the off board concrete. Green would be focussed around key spaces including the main entrance and the Greenhalgh auditorium.
- Selective areas of colour in accordance with the original approach shown in the pink handrails and orange spherical lights. Different coloured carpet would be applied to different home bases (and away from the main circulation spine). The outward planes of the rooftop additions are proposed to be silver/grey zincalume. The coloured panels would be concentrated to the inside faces.

The design was constrained by the legislative constraints outlined in Section 7. Key constraints resultant of the planned use of the building are based around NCC, RFS and EFSG requirements. The approach to the treatment of the historic fabric in the Partial School in response to these requirements have been set out below.

RFS

The site is identified as 'bushfire prone land' for the purposes of Section 10.3 of the EPA Act and the legislative requirements for developing bushfire prone lands are applicable. Bushfire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bushfire prone land (BFPL) is land which can support a bushfire or is likely to be subject to bushfire attack (radiant heat, embers or flame). Bushfire prone land maps are prepared by local council and certified by the Commissioner of the RFS.

The bushfire hazard affecting the investigation area was assessed during site inspections for the Stage 1 school and using recent aerial photographs for at least a distance of 140m from the perimeters of the investigation area (in line with PBP 2006).

The site assessment identified the potential bushfire threat from outside of the site area and provides an indication of required asset protection zones to meet the deemed to satisfy distances of PBP.

The APZ requirements from PBP 2006 and PBP 2017 are shown in Section 7.3.2. As a SFPP development, full APZ compliance of 100m is required from unmanaged bushland areas to support the school.

An APZ is a buffer zone between a bushfire hazard and buildings, which is managed progressively to minimise fuel loads and reduce potential radiant heat levels, flame, ember and smoke attack. The appropriate APZ is based on vegetation type, slope and levels of construction (and for SFPPs the nature of development). The APZ can include managed areas, perimeter roads, existing roads, other buildings or managed properties can be considered as part of the APZ.

The site is currently partially cleared but does not extend to the required APZs. The SSD Application submitted in 2018 will remove all the bushfire hazard vegetation on the site and improve the quality of the APZ to meet inner protection area standards and outer protection area standards to facilitate a Partial School.

In order to establish an appropriate fire buffer around the building the area to the north east of the building is designated as IPA Parkland. This requires that the ground be covered with grass to ensure that fire does not spread through an understorey of vegetation.

In order to establish a 100m APZ around the perimeter of the Partial School, partial tree removal is required as part of the Partial School across portions of the site. The significance of the site is however directly vested in the relationship between the building and the landscape. The design for the campus included the retention of existing flora and that areas of bushland in close proximity to the building including the courtyard between Stages 2 and 4 were protected during construction. Chris Betteridge of Musecape has previously assessed the landscape elements on the site (for input into the City Plan Heritage Assessment from 2004). Chris identified a number of landscape elements of exceptional significance for their integration with the bushland setting.

A substantial number of trees are to be removed to facilitate the Partial School however a strategy has not been development for the protection of the future stages. Planning for future stages must not rely on the removal of any more trees, this would denude the site entirely of its immediate bushland setting. Planning may be required to rely on sympathetic alterations to the building as also proposed for the Partial School (discussed below).

During RFS consultation regarding the Partial School it was concluded that the place was to meet BAL 140 requirements. The existing aluminium windows do not meet the requisite standards for fire protection at present. In order to comply and in addition to the required tree removal to BAL Flame Zone requirements, each opening must be covered with either a fire shutter or the aluminium window frames must be replaced with steel. In some instances, fire shutters are able to be installed to the inside of the windows rather than outside.

Individual solutions have been developed with detailed input from Urbis for each window, door or opening in the Partial School which comprise either approach, or a combination of both and having regard to the heritage significance, design intent and specific circumstances of the component elements. Fire protection measures for the remaining balance of the school have not as yet been developed, however are expected to be developed in the future stages of the project.

The following practicalities were taken into consideration when determining strategies for each window and door in the Partial School:

- Installation of the shutters to the inside of the building are not as effective from an asset protection stance as installing the shutters on the outside. The application of shutters to the inside face have been specified where they would require substantial removal of concrete otherwise.
- The higher cost of reconstructing large numbers of windows in steel (and the flow on impact of the wholesale removal of original fabric)
- Glazing size to match the existing is not able to be facilitated with a steel frame.

- Fire rated glass with a curved edge is not able to be sourced.
- Doors relied upon for fire egress are ideally not be covered with shutters and therefore must be reconstructed in steel.
- Shutters rely on a steel support and runners at each end of the box. Corners of the building where two glazed sections of window come together with no mullion at the corner are therefore impacted.
- Shutters are only available in limited horizontal runs. New steel supports are therefore required at intervals with long horizontal spans of windows.
- Shutters are only available in limited vertical runs. Boxes are therefore required at intervals where the windows are double height.

The following principles have been applied with consideration of the above constraints and feasibilities. These principles are also to be applied to the design of protection measures for the remainder of the building, which are yet to be determined:

- The application of fire shutters is preferred to windows which have concrete sun hoods which are able to mostly obscure the shutters.
- The rails which are required down either side of the windows to guide the shutters should be painted black/dark grey to match the window and would be set immediately next to the window opening. This would allow the shutters to be read as part of the window arrangement rather than an addition which would be caused by setting the rails off from the openings and having brick visible in between.
- The preference is to install shutters to the inside of the building where the accommodation of the box for the fire shutters requires more room than available between the window frame and any concrete blades. The exceptionally significant internal courtyard does not have externally mounted shutters for this reason.
- Where long runs of window require additional steel members to support the shutter boxes, these members are to align with existing mullions.
- There is an opportunity to install a horizontal shutter across the roof of the fishpond, in preference to the application of individual shutters to each window.
- Reconstruction of windows with a steel frame have been applied only where this does not have a significant impact on the continuity between the original aluminium window mullion and the pre-cast concrete blades in front or the geometry of the waffle slab.

Refer to the policies in Section 9.5.4 which have been set down to guide the installation of any future shutters/steel window reconstructions required to later stage of the new school/any new development to the southern section of the building.

National Construction Code

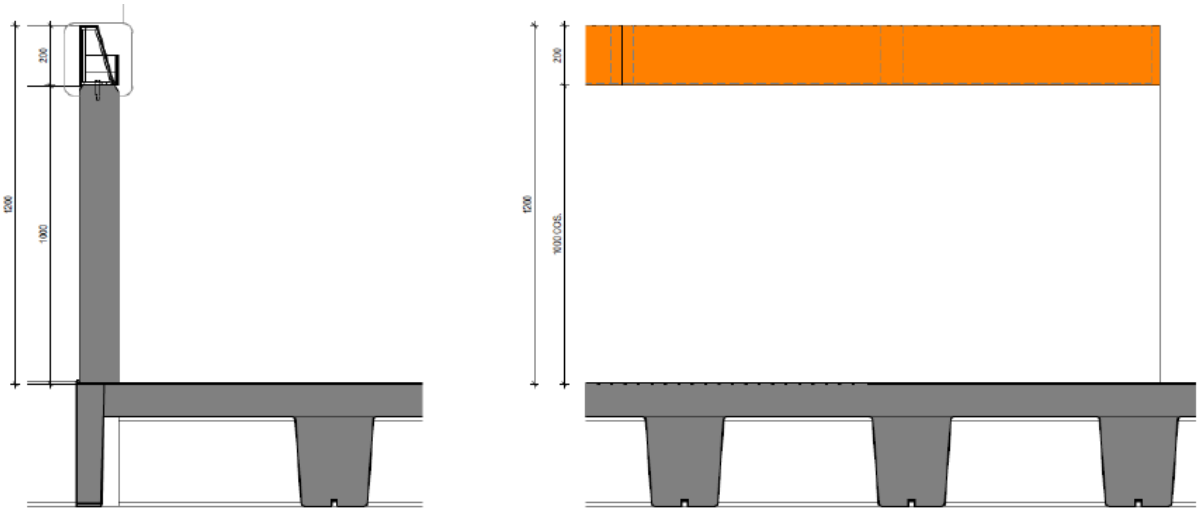
The strategies below are the responses to a sample of the constraints resultant of the NCC. Note that requirements for schools (or other uses) under the NCC are more than those addressed below. All works required for NCC compliance which impact original/significant fabric (including reinterpreted balustrades/handrails) must be considered on a case by case basis and designed in consultation with the heritage consultant.

Balustrades

The original balustrades throughout the building are only 1m high. Current NCC requirements specify that they must be 1.2m in height. However, the original balustrades throughout the significant spaces in the building are generally off board concrete. They are typically highly visible and contribute to the character of spaces including the main circulation spine. The approach was to retain the balustrades and ensure the concrete remains the dominant feature.

In consultation with Lacoste Stevenson, Urbis determined the appropriate balustrade addition would be that which constitutes an orange coloured aluminium panel directly above the existing concrete (not obscuring the vertical face of the concrete). The penetrations will be made into the top of the concrete rather than a vertical plane. As such, the new balustrade will not impact on the legibility of the off-form concrete pattern.

Figure 346 – Balustrade typology for Stage 1.



Source: Designinc 2018

The below design principles must be considered in the context of any future alterations to the balustrades (Refer also policy Section 9.5.3):

- Entirely new balustrades should not be introduced but the existing balustrades sympathetically adapted to provide for the required extension.
- The design of new balustrades must have consideration for the original palette of materials throughout the building. Note that glass is not a featured material, however metal is. Consider the use of metal additions that have the robust character established by the concrete rather than glass.
- Fixings for new balustrades must be minimal and should be into the top of the original concrete balustrades rather than the face such that patching is not obvious if the balustrade extension are removed in the future.

Handrails

Pink handrails throughout are identified to be of high heritage significance. The original handrails did not meet pertinent BCA and Department of Education requirements. Handrails are required to be set at both a higher and lower height to service both adults and children, they are also required to be continuous at the ends. It was concluded that the existing handrails could be replaced with new provided that they have exactly the same round profile as the existing and would be painted in a matching pink tone which is consistent with the original character of the building.

The planned handrails represent a reinterpretation of the original design intent i.e. off form concrete juxtaposed with the striking feature elements such as the pink handrails and the orange stairwell lights. The handrails are to utilise existing fixing points.

The below design principles must be considered in the context of any future alterations to the handrails:

- Handrails are to match the profile and colour of the original exactly.
- Handrails must utilise existing fixings points wherever possible.

Doors Widths

It is understood that doors under 850mm are deemed non-compliant in schools. In order to facilitate the continued education use and given the doors are generally unremarkable outside the contribution they make to the overall palette of materials, it is agreed that the doors are able to be removed. New doors in the building are to be of a material, finish (veneer) and stain to match the existing.

However, there are opportunities for the non-compliant doors to be adapted to double doors or for reuse as service cupboards. For this purpose, Urbis has identified all doors on site noting them for storage. Opportunities are being sought for their potential future reinstatement in future stages (southern part of the building).

Gaps in Concrete

There are a number of concrete balustrades within the building which have been designed to be offset from the wall to which they would otherwise connect i.e. there is a designed gap between the side of the balustrade and the wall. Where this is present there is to be no infill of the concrete itself, but a recessive black metal balustrade set inside the gap or an infill designed to be in keeping with the overall strategy for the balustrade extensions (as discussed above).

EFSG

The Educational Facilities Standards and Guidelines (EFSG) are intended to assist those responsible for the management, planning, design, construction and maintenance of new and refurbished school facilities.

The EFSG is a suite of information to aid in the planning, design and use of NSW Department of Education school facilities. The information includes:

- NSW Department of Education school types with content on educational principles, accommodation recommendations, design intent on rooms and spaces, relationships between accommodation components and associated technical data.
- Technical Design Guide
- Technical Specification Guide

The EFSG sets down particular requirements related to items such as (but not limited to) the following:

- Minimum areas for outdoor play.
- Slip resistance for surfaces.
- Fences around the school.
- Depth of internal doors.

EFSG requirements must be dealt with on a case by case basis with consideration for the fact that its application is to an existing building and one which has high heritage significance.

8.8.3. Implementation and Future Steps

Implementation of Partial School

Construction on the Partial School will begin shortly after the finalisation of this CMP. The Partial School will incorporate the recommendations of two ancillary documents to this CMP, the Interpretation Strategy and the Schedule of Conservation Works.

The SSD approval requires that a Schedule of Conservation Works is undertaken for the building. Apex Diagnostics in consultation with Trevor Waters of Waterstone Concrete have developed appropriate methodologies for the conservation of the fabric. This schedule will be implemented as part of the construction programme for the Partial School.

An Interpretation Strategy has been prepared as part of the 2018 SSD process. The document considers whole of site interpretation and identifies interpretation themes and devices.

Future Stages

The Partial School allows for the reuse of the northern section as discussed above. While a plan for the entire school was submitted with the SSD application the plans for the balance of site (i.e. not the Partial School) are subject to finalisation. The heritage consultant will have an ongoing role in the resolution of the balance of site works and this document has been prepared to guide those works are works in the future.

To assist in the demolition works and the identification of contributory fabric Urbis has prepared a joinery schedule (Appendix B) which identifies fabric to be retained in situ or salvaged and reinstated. The Partial School allows for the retention of all built in bench seating. The future stages are to utilise the joinery schedule prepared by Urbis in 2018 to find opportunities for the reinstatement of original joinery throughout the school. This includes non-compliant doors and timber cabinets.

The future stages including the relevant fire protection measures will be subject to future approvals and conditions. It is understood that OEH will not endorse any tree removal in the National Parks area. The future stages must therefore rely on protection measures applied within the site boundaries. Fire protection measures must be consistent with the principles outlined in the sub section above (Section 8.8.2) and the policies set out in Section 9.5.4. The heritage consultant will retain a primary role in determining the appropriate treatment of the fabric in the context of the fire protection methodologies.

9. CONSERVATION POLICIES

9.1. WHAT IS A CONSERVATION POLICY?

A conservation policy explains the principles to be followed to retain, conserve, restore or reveal the heritage significance of a place, and how that significance can be enhanced and maintained. This relies on a full understanding of the significance of the place, and a review of the constraints and opportunities arising from that significance.

9.2. ADOPTION, IMPLEMENTATION & REVIEW

9.2.1. Adoption of Conservation Management Plan

Background

Any works to the property must comply with appropriate legislation, policies and guidelines, as amended from time to time, including but not limited to the *Heritage Act 1977*, the Building Code of Australia (including the National Construction Code), the Australia ICOMOS Burra Charter (revised 2013) and relevant environmental planning documentation as set out in Section 7 of this document.

Approval for the subdivision of the larger site was granted on 11 June 2008. A condition of that approval includes the requirement that any future development is to have regard to the Conservation Strategy prepared by Graham Brooks and Associates in 2007 (re-issue of 2004 version). Policies in this document have been developed with direct reference to those in this Conservation Strategy. For all intents and purposes, it is considered that this document supersedes the former, however the previous Conservation Strategy remains an enforceable document given weight by the 2011 subdivision approval. This CMP is therefore to be read in conjunction with the Conservation Strategy 2007.

Guidelines

- Management of the site under legislation should be guided by the site's significance, this CMP and the policies in this section.
- This CMP should be adopted by present and future owners and used as a guide for the management, conservation and maintenance of the place. All persons responsible for the management and maintenance of the site should be familiar with the significance of the place and the conservation policies in this report.
    - Reference should be made to the CMP when considering proposed changes to the building.
- Any works to the place should be carried out in accordance with the principles set out in the Australia ICOMOS Burra Charter.
- Conservation works undertaken in accordance with the CMP should involve experienced heritage and conservation professionals.
- All persons responsible for the management and maintenance of the site should be familiar with the significance.

Policy

Policy 1. This conservation management plan should be adopted by present and future owners and occupants of the place, and used as a guide for management and conservation, and in conjunction with any proposals for future development or adaptive re-use of the place.

Policy 2. A copy of this Conservation Management Plan should be provided with the sale of the place and retained on-site at all times, for the use by those responsible for the management and conservation of the place.

Policy 3. A copy of the CMP should be submitted to Ku-Ring-Gai Council and to the NSW Office of Environment and Heritage (OEH) Heritage Division for reference purposes.

Policy 4. This CMP should be submitted to Ku-Ring-Gai Council as part of any application for new development or adaptive re-use proposals. Where appropriate or requested, it should be accompanied by a Heritage Impact Statement that assesses the specific impacts of the proposal against relevant legislation and policies in this CMP.

Policy 5. The policies in this CMP are not to be read in isolation but rather in conjunction and as part of a guide to the conservation management of the building.

Policy 6. The policies in this document are to be read in conjunction with the strategies set out in the UTS Ku-Ring-Gai Conservation Strategy prepared by Graham Brooks and Associates as a requirement of the conditions of consent for the 2008 subdivision.

9.2.2. Review and Update of Conservation Management Plan

Background

The CMP should be subject to periodic review to ensure that the document remains relevant to ongoing change and use of the place, and statutory compliance and to incorporate updated information.

This CMP has been prepared in the context of an SSD approval for the reuse of the northern part of the building as a Partial School prior to the development of suitable fire protection strategies in consultation with RFS for the implementation of the remainder of the school (refer discussion at Section 8.8.2).

This CMP should have two update phases to ensure the document reflects the final state of the building at the completion of the adaptive reuse works and to ensure the document is current following completion of the staged development. The document should be updated upon the completion of the Partial School and again at the completion of the balance of site works. The updates should include revised significance mapping shown on existing plans accurate at that time and updated site photos. The updates should also include a description of the new layer of additions in the site description. This document has however been prepared with the intention of guiding all future works and remains a valid basis for ongoing heritage management until the reviews are completed.

Guidelines

- This CMP should be reviewed and updated following the completion of the works currently being undertaken at the site for its conversion to a K-12 School and at the completion of the balance of site works.
- Thereafter, this CMP should be reviewed and updated every 5-10 years, to remain relevant to ongoing change and use of the place, and statutory compliance. Prior to the review, if substantial change in the management or use of the place is proposed that is not covered by policies in this CMP, then the policy section should be reviewed through a CMP addenda or more comprehensive review dependant on the nature of the changes.
- Irrespective of the requirement to review the document every 5 -10 years, the CMP should remain as a valid basis for on-going heritage management until such reviews are completed. Reviews of the CMP should be based on The Burra Charter and other guidelines by the NSW Heritage Branch. Reviews should also take into account any other relevant legislation, planning frameworks and widely recognised conservation practices and procedures.
- Reviews should be undertaken by experienced conservation practitioners in conjunction with relevant ownership and management representatives.

Policy

Policy 7. This CMP should be reviewed and updated following the completion of works currently being undertaken at the site for its conversion to a K-12 School and at the completion of any works for the balance of the site.

Policy 8. This CMP should be reviewed and updated every 5-10 years, to remain relevant to ongoing change and use of the place, and statutory compliance. Irrespective of the requirement to review the document every 5-10 years, the CMP should continue to be used for on-going heritage management until such reviews are completed.

Policy 9. The current NSW State Heritage inventory form for the site should be updated to reflect the Historical Overview (Section 3) and the updated Statement of Significance provided in Section 5.2 in this CMP.

9.3. MANAGEMENT OF HERITAGE SIGNIFICANCE

9.3.1. Statement of Cultural Significance

Background

All future decisions and works to the property must be guided by the statement of cultural significance and the identified significant spaces, fabric, views, landscape and built elements identified in this CMP, together with any additional detailed research and assessment. The Statement of Significance included at Section 5.2 sets out the core heritage values of the Lindfield Learning Village. Significant elements are identified in the schedule at section 5.6. Reference should be made to these sections.

Guidelines

- Owners, occupiers and stakeholders responsible for and involved in the maintenance and management of the place should be aware of the identified significance and aim to conserve and enhance this significance as well as identified significant internal and external fabric and spaces.
- The existing buildings should be largely retained, with uses that support its on-going conservation and relevance to the wider community. Re-use of the building complex should respect its architectural character and integrity.

Policy

Policy 10. The proposed Statement of Significance set out in this CMP is to be accepted as the basis for future conservation of the fabric and values of the Lindfield Learning Village (Section 5.2). All future works to the place should be cognisant of the significant built elements, fabric, spaces, views, landscape and archaeological resource identified in this CMP, together with any additional detailed research and assessment.

Policy 11. Elements of **exceptional** significance are rare or outstanding elements that directly contribute to the place's overall heritage significance; they retain a high degree of integrity and intactness in fabric or use; any change is to be minimal and retain significant values or fabric

Elements of **high** significance have a high degree of original fabric; they demonstrate a key aspect of the place's overall heritage significance and must be retained and conserved; retention should be considered in-situ; minor change is allowed so long as significant values and fabric are retained and conserved.

Elements of **moderate** significance have been altered or modified or do not demonstrate a key aspect of the significance of the place; they contribute to the place's overall heritage significance however change is allowed so long as it does not adversely affect values and fabric of exceptional or high significance.

Elements of **little** significance do not substantially add to the significance of the place in a positive way, though neither do they detract from its overall significance. Elements of little significance may also reflect fabric that is reproduction or may have been substantially altered or modified or may reflect non-significant phases of development. Changes are allowed so long as it does not adversely affect values and fabric of exceptional or high significance.

Elements identified as **neutral** do not contribute or detract from significance. The attribution of 'neutral' typically applies to introduced new or utilitarian fabric that does not relate to a significant historical period or use. Changes are allowed so long as they do not impact on associated fabric of higher significance.

Intrusive elements are damaging to the place's overall heritage significance; they should be considered for removal or alteration.

Policy 12. All repair, conservation and reconstruction works to significant elements must be undertaken with appropriate supervision by a suitably qualified heritage specialist or relevant materials

specialist or conservator, with reference to historical documentation, and in accordance with any relevant legislative or statutory constraints.

Policy 13. Unless otherwise stated in these policies, surviving original and early elements and fabric identified as exceptional or high significance should be retained intact, and conserved. If changes to elements or spaces of exceptional or high significance are unavoidable, they should be carefully considered and the approach should be reversible or one of minimal intervention; as much as necessary, as little as possible.

Policy 14. Elements of exceptional or high significance should not be obstructed by new works, structures or services where possible, and they must be clearly visible and interpreted as part of any new works.

Policy 15. Intervention for purposes other than conservation of the fabric is to occur in areas of lower rather than higher significance.

Policy 16. Where elements of exceptional or high significance have been damaged, they are to be repaired with sympathetic materials in preference to replacement. Where highly significant concrete requires repair, refer to detailed methodology for appropriate repair methods in the Inspection and Test Plan for External Works (31 August 2018) prepared by Trevor Waters.

Policy 17. Significant elements should be repaired in-situ wherever possible.

Policy 18. Any elements of moderate or higher significance proposed for demolition, removal or alteration, should be subject to archival photographic recording, copies of which should be retained on site and provided to the relevant consent authorities (the local Council and the NSW OEH Heritage Division). This should include photography and / or measured drawings as deemed necessary. Archival recordings should be undertaken in accordance with the NSW OEH Heritage Division's Guidelines for '*Photographic Recording of Heritage Items Using Film or Digital Capture*'.

9.3.2. Best Practice Heritage Management (The Burra Charter)

Background

Article 3 of *The Burra Charter* (revised 2013) indicates that conservation is based on a respect for the existing fabric of a place and should therefore involve the least possible physical intervention to prevent distortion of the evidence provided by the fabric. One of the key objectives therefore, of contemporary conservation practice is to retain as much of the significant original fabric as possible, in order to preserve the essential integrity of the heritage resource.

Guidelines

- Management of the place should generally follow the principles and conservation methodology of the ICOMOS Burra Charter (revised 2013). The document provides the methodology under which works to significant places should be undertaken, and provides the guidelines for the management of heritage significance.
- Any works to the place should be carried out in accordance with the relevant Local Environmental Plan, Development Control Plan and the NSW OEH Heritage Division requirements, and be cognisant of the *Heritage Act 1977* and the *Environmental Planning and Assessment Act 1979*. A heritage impact statement or archaeological assessment may be required to assess future works to the place.
- Any works to the place for Building Code of Australia (BCA) / National Construction Code (NCC) compliance purposes may require a heritage impact statement in accordance with the NSW OEH Heritage Division guidelines, and deemed-to-comply solutions may be appropriate. Works should be cognisant of the significance of the place.
- All personnel engaged in works with the potential to have an impact on the heritage values of the place should generally have proven experience and qualifications in the relevant field of heritage conservation. This includes both professionals and tradespeople.
- Fabric of exceptional and high significance must be retained, conserved and maintained in accordance with the Burra Charter.

Policy

Policy 19. The future conservation and management of the place should be carried out in accordance with the principles of the Burra Charter. The Burra Charter advocates a cautious approach to change: *do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained*.

Policy 20. All contractors, consultants and project managers engaged to work on the place should have appropriate conservation skills, experience and techniques appropriate to the trade, fabric or services, and should work within the guidelines of this CMP.

Policy 21. A heritage impact statement and / or archaeological assessment should be prepared for all proposals for new development and/ or alterations and additions to the property.

9.4. USE

Background

The ongoing use of a heritage place is vital to the retention of its heritage significance and maintenance. The Lindfield Learning Village was originally constructed in the early 1970s as the William Balmain Teachers College. The complex later became the Ku-ring-gai College of Advanced Education and in 1989 was amalgamated into the UTS Ku-ring-gai Campus. Since the end of 2015 the complex has remained vacant, with construction for the new Lindfield Learning Village beginning from mid-2018.

The necessity of finding a feasible future use for the site, to ensure its maintenance and conservation, has been considered and outlined in Section 8. As determined, the options for the continued use of the site as a tertiary educational institution is not feasible at this time and other appropriate adaptive reuse solutions for the site are limited.

The planned future use of the place as a K – 12 School is determined to the be most appropriate use for the place outside of its original use as a tertiary education institution. Office uses are appropriate in some areas of the building (where these are ancillary to the education function); however, the education use allows for the retention and reuse of key, open areas; many for their original purpose.

Notwithstanding, the planned K – 12 School use triggers requirements for general refurbishment as well as requirements for upgrades to the building line with the legislation set out in Section 7 and 8. This document is therefore required to guide the adaptation of the place in the context of the highly significant heritage fabric and the requirements associated with the adaptive reuse as a K – 12 School. Requirements include those associated with NCC, RFS and EFSG. The relevant legislation is set out in Section 7 and principles for the response to these constraints are set out in Section 8.8.2.

Guidelines

- The building should maintain its use as an educational facility given the opportunity to meaningfully use spaces for their original purpose e.g. auditorium, cafeteria, gym and music rooms.
- The building is also appropriate for at least partial use as offices. Any proposal for future commercial use of the building must consider the use of the spaces outlined in the point above.
- The conversion of the site from a tertiary education facility to a primary/secondary school is permissible provided that it does not negatively affect the sites identified heritage significance.
- EFSG is not developed to be a minimum standard or an indication of entitlement. It should therefore not be used as a benchmark by which current schools or existing buildings are required to be assessed and future development proposals will need to have regard to heritage significance and seek compromise where strict compliance would have an adverse heritage impacts.
- Where change is required to be consistent with the requirements of the BCA, NCC and RFS, works should be reversible where possible, and designed in conjunction with heritage advice to minimise heritage impacts.

Policy

Policy 22. The site should preferably retain its use as an educational facility (tertiary, secondary or primary).

Policy 23. If the site is adapted for commercial use in the future the proposal must address how the key spaces are to be reused and investigate opportunities for retention of original uses.

Policy 24. Any proposed use of the complex must include a whole of site approach. It is not acceptable for only part of the site to be adapted for future use.

Policy 25. New uses should enhance the appreciation of the site's values and significance, ensure the conservation of the identified significant building elements, fabric and spaces and context; and accommodate the activities, services and fittings which are essential to the new use without damaging significant spaces, elements or fabric.

9.5. MANAGING CHANGE: ALTERATIONS, ADAPTATION & NEW WORK

It is acknowledged that alterations and addition to the buildings, structures and landscape will be required to facilitates the site's ongoing and future use. The following policies relate specifically to the management of future physical changes to significant elements throughout the Lindfield Learning Village including potential new development, alterations and additions to buildings and structures. Management of changes to the landscaped are addressed in Section 9.6.

9.5.1. Basis for Approach

Background

Sections 5.5 and 5.4 of this CMP set out the levels of significance of external and internal elements that should form the basis of approach for all works.

The change in use approved under the 2018 SSD application, although allowing the place to remain as an educational institution, will require change to the place to suit contemporary education practices and to meet statutory requirements, as defined in Sections 7 and 8. Additions and alterations are acceptable to the building complex of the Lindfield Learning Village; however, any proposed changes must be sympathetic to the heritage values, elements and spaces.

The need to conserve and adapt significant fabric is to be facilitated in any future upgrade, with any proposed modifications to the heritage item taking into consideration the identified significance and having regard for the total resource. New works should not only ensure that significance is not eroded but consider opportunities to interpret its character.

Guidelines

- New development, work proposals and/or adaptive re-use proposals should be consistent with this CMP.
- Professional conservation advice and appropriate professional heritage assessment should be sought in relation to proposals for works, new development and/or proposed alterations and additions to the Lindfield Learning Village.
- It is acknowledged that alterations and additions will be required to facilitate the ongoing use of the Lindfield Learning Village as an educational facility. Proposed alterations and additions should not dominate the heritage character of the place. Alterations and additions should be respectful of the buildings heritage character, principal spaces and identified elements of heritage significance identified in Section 5.
- Removal of intrusive fabric (as identified in this CMP) is encouraged.
- New works should comply with the BCA/ NCC and Australian Standards unless the heritage significance determines that the matter will be professionally determined under performance standards. Where necessary, alternative solutions and performance-based outcomes should be pursued to ensure the intent of the code is met without adversely impacting on significant fabric. Professional advice should always be obtained. Due to the complex nature of heritage buildings, 'deemed to comply' design solutions approved by BCA or access consultants may be used to satisfy the intent of the Standard.

- Changes to achieve fire safety to highly significant elements may be acceptable provided that all alternatives are demonstrably investigated, and the proposed solution does not have a detrimental impact on the presentation of the highly significant elements.

Policy

Policy 26. Professional conservation advice from appropriately qualified and experienced heritage consultants/architects should be sought in relation to the ongoing conservation of the site and for proposals for new development and/or proposed alterations and additions to the Lindfield Learning Village.

Policy 27. New works impacting highly significant fabric should be designed to be reversible in the future. This includes the ability to reinstate elements in the future which have been removed.

Policy 28. Any future alteration and adaptation of the exterior and interiors should be sympathetic to the heritage significance of the building and site. New works should aim to maximise exposure of original fabric and finishes.

Policy 29. New works must not diminish the interpretation of the significant form, scale general configuration and principal elevations of the place.

Policy 30. The close integration of the building with the bushland, primarily by way of sharply defined edges and interfaces, should be regarded as a core principle for future development.

9.5.2. External Alterations and Additions

The building was constructed over 5 stages and a period of 16 years, however was designed by the original architect, David Turner, and with a consistent overarching hand. There is an elegance in the simplicity of the palette of materials; off board concrete, brick, timber and aluminium. The form and massing of the building has been acknowledged as being of exceptional or high significance. Any alterations and additions must be highly considered and must seek to retain and enhance the significant form, facades, modulation and materiality of the heritage item.

General

Policy 31. The external architectural integrity, composition and massing of the building complex, and the existing primary external materials (off board concrete and brick) must be retained and conserved, to the highest extent feasible, as part of an on-going use or future re-use programme.

Policy 32. Further additions to the footprint of the building are not preferred, as these have the potential to obscure elevations and sever the relationship between the original building fabric and surrounding bushland.

Policy 33. Where required, modest additions may be located on the rooftop areas. Any rooftop additions should be carefully considered and developed in conjunction with heritage advice to minimise and mitigate impacts to scale, massing and views. Consideration should be given to views, form, materiality, scale etc with a strong justification for the necessity of the additions. Reference should also be made to the requirements of Policy 41.

Policy 34. Minor external additions to the footprint i.e. for plant/circulation may be appropriate. Where possible, any such minor additions should be to less prominent elevations (such as the west elevation of Stage 1). Minor new additions should be constructed in sympathetic materials.

Policy 35. All pre-cast concrete sun hoods are of high significance and must be retained. Additions are not to require the removal or substantial alteration to concrete sun hoods.

Policy 36. Any vertical additions are not to impact on the existing response of the built form to the topography i.e. retaining the stepped and modulated response characteristic of the Sydney Style, and the lower levels to the southern side of the building.

Windows

Windows are generally of black aluminium framing, with a variety of single and banded configurations. The windows are assessed as being of moderate heritage significance, and along with the overall pattern of the fenestration, contribute to the principal facades and character of the building.

Policy 37. Alterations to the existing fenestration of highly significant stages must be minimal and designed carefully with regard for the pattern of fenestration on the respective elevation. Additions are not to disrupt the significant rhythm of the fenestration of the primary elevations, particularly the southern elevation of Stage 1. Alterations should be limited to those required by condition or compliance, and where the latter is required, designed in conjunction with heritage advice.

Policy 38. Any new openings should be made into brick only, not off board concrete.

Policy 39. The design of any replacement steel windows (appropriate only where required to satisfy fire protection requirements) is to consider the breakup of the existing mullions and their relationship to any adjacent sunhoods/waffle slabs. Replacement of significant patterns not to match existing is only acceptable where there is demonstrably no other sympathetic solution for fire protection. (refer also policies in Section 9.5.4).

Roofing

The flat roof forms (some behind concrete parapets) contribute to the overall prismatic presentation of the building. The roof tops of the stage 1 and 2 buildings also provide outdoor space, integrated with rooftop gardens and courtyards.

Policy 40. Roof membranes may be replaced as required. The impact on the rooftop planter beds must be considered in the construction methodology for any replacement of membranes.

Policy 41. The flat roof forms (some behind concrete parapets) contribute to the overall prismatic presentation of the building. Roof forms to the existing structures must remain flat. This does not preclude some reinterpretation of the robust brutalist form in the construction of roofs to sympathetic new additions.

Courtyards/Lights wells

The various courtyards and light wells are assessed as being of high and exceptional significance. They not only provide an amenity to the building but as a critical aspect of the architectural composition of the building, make a significant contribution to the interior circulation spaces.

Policy 42. Existing courtyards should be retained as accessible spaces and conserved.

Policy 43. As a critical aspect of the composition and architectural integrity of the building, the enclosure of any of the courtyards or light wells is not supported.

Policy 44. The planter beds should be retained and conserved.

NOTE: Refer also Policy 111 to Policy 131 in Section 9.6.1 for Managing Landscape and Setting.

External Concrete

The building is dominated by off board concrete. The use of the natural material for the formwork and the resultant textured pattern on the concrete offsets it's otherwise monolithic character. The off-board texture is integral to the predominant design philosophy of maintaining a connection to the natural landscape where possible.

The concrete forms are highly intact and in fair condition. However, the weathering of the grey concrete has created a mottled effect which allows the building to blend in with the surrounding bush.

Policy 45. Retain and conserve all off-board concrete and pre-cast concrete. Minor penetrations for services or access must be designed in consultation with the heritage consultant and subject to the appropriate approvals.

Policy 46. Appropriate cleaning and sealing methodologies must be utilised for the concrete such that the off board impression and the varied textured appearance of the concrete, which contributes to the significance, is conserved. The patina and variance of the concrete colour and texture should similarly be retained.

External Waffle Slab Ceilings

The waffle slab is expressed externally in key parts of the building's external spaces including the main entrance, the link bridge to the gym and the Stage 1 courtyard to the north of the library. The slab has a

honeycomb pattern established by coffers separated by seams which extend across the bottom coffers in a grid. The slab is painted white.

The waffle slab visibly continues from the outside to the inside spaces, separated by only glazed external walls. This continuity between the spaces is consistent with the predominant design philosophy of the building.

Policy 47. Retain and conserve waffle slab ceilings throughout the Stage 1 to 5 buildings, including the link bridge, under awnings and in pre-cast concrete sunshades. This does not preclude small areas of removal where appropriate and where designed in consultation with the heritage consultant.

Policy 48. The waffle slab ceiling should remain white. The ceiling may be repainted to match as required.

External Finishes

External finishes should be managed in accordance with the original design intent and principles.

Policy 49. Finishes never intended for painting such as the off-board concrete and brick must remain unpainted.

Policy 50. Replaced aluminium windows/doors and new windows/doors into significant elevations must have the same black/dark grey finish to match the original.

Policy 51. Materials for new additions should be identifiably new but of a robust nature in response to the brutalist character of the building. Design of future additions should also consider the material applied to the previous additions to avoid an ad hoc approach.

External Services

New services should be designed and located to minimise impacts to significant fabric and facades.

Policy 52. New services should be sympathetically located to mitigate heritage impacts.

Policy 53. Where possible, services (including air conditioning units) should not be fixed to and should not significantly impact the principal elevations. This does not preclude minor modifications where designed in consultation with the heritage consultant.

Policy 54. Any required roof plant should be located to minimise visual impacts. Any works should not adversely impact on the elevations and should enhance the strength and integrity of views to the building both from the public domain and from other areas within the building.

9.5.3. Internal Alterations and Additions

Section 5 assesses significance and provides a schedule of significant interior elements and fabric that should form the basis of approach for all works.

Internally a number of highly significant spaces exist including main circulation corridor, Greenhalgh auditorium, ancillary auditoriums, original library, cafeteria, gymnasium basketball court and light wells. Significant fabric includes all off-board concrete (walls, slabs, ceilings and columns), waffle slab ceilings, timber elements (walls, flooring, window details and shutters), brick walls, stairs and handrail, select built-in furniture and spherical light fittings. All significant internal space and fabric are identified in Section 0 and 5.6.4.

Any development proposal should provide for the sympathetic adaptation and use of the building. The spatial qualities of the most significant spaces should be retained and conserved e.g. the Italian Hill Village design with the central circulation corridor.

Modifications to the building may be subject to approvals under the relevant planning instruments and may be subject to undertaking a formal Heritage Impact Statement in accordance with Office of Environment and Heritage Guidelines.

General

Policy 55. The internal architectural integrity, composition, spatial arrangement and massing of the main public areas and circulation spaces within the building complex, and the existing materials, shall be retained and conserved, to the extent that they are compatible with appropriate adaptive reuse.

Policy 56. The Italian Hill Village design philosophy is to remain easily legible i.e. the circulation spine at Levels 4, 5 and 6 is to be retained (refer to area graded as exceptional and high in the significance mapping at Section 5.5). Alteration or adaption of the spaces that are accessed directly from the main circulation spine, shall utilise the original patterns of black anodised glazing where necessary to evoke the original design philosophy.

Policy 57. It is acknowledged that the original layout of small working spaces is not able to be retained in the context of the changing educational model which favours open working spaces. Adaption and alteration of the enclosed "working" spaces within the building shall be permissible, including removal of internal dividing walls. This is appropriate with consideration for the secondary nature of the spaces.

Policy 58. Key spaces should be retained as open spaces including the circulation spine, auditoriums and cafeteria, and should be utilise for their original use.

Policy 59. The library space is able to be adaptively reused however the significant open plan space should be retained and conserved, along with significant fabric such as the timber batten ceiling.

Internal Concrete

As identified above, the building is dominated by off board concrete. The use of the natural material for the formwork and the resultant textured pattern on the concrete offsets it's otherwise monolithic character. The off-board texture is integral to the predominant design philosophy. The concrete forms are highly intact and in reasonable condition.

Policy 60. Retain and conserve all off-board concrete and pre-cast concrete. Minor penetrations for services or access must be designed in consultation with the heritage consultant and subject to the appropriate approvals.

Policy 61. Concrete surfaces never intended for painting must remain unpainted.

Policy 62. As per Policy 46, appropriate cleaning and sealing methodologies must be utilised for the concrete such that the off board impression and the varied textured appearance of the concrete, which contributes to the significance, is conserved. The patina and variance of the concrete colour and texture should similarly be retained.

Policy 63. Future fitout must seek not to obscure large extends of highly characteristic concrete.

Internal Brick

Brick walls define some highly significant areas and in some areas the brick constitutes infill between a frame of off board concrete. The brickwork breaks up the form of the concrete with a contrasting material which has earth tones but also a tonal relationship to the concrete.

Policy 64. Brickwork identified as exceptional and high significance should be retained and conserved. This does not preclude minor sympathetic new openings where required for services/access and where designed in consultation with the heritage consultant.

Policy 65. Brickwork identified as moderate significance should be retained and conserved to the extent that it is compatible with appropriate new uses.

Policy 66. Where brick repairs are required, repair rather than replace where possible. Any new brick must be the same size, shape and colour.

Policy 67. Brick should remain a prominent material in the main circulation spine, particularly where it infills and off board concrete frame i.e. above the double height space at Level 6.

Policy 68. Rick surfaces never intended for painting must remain unpainted.

Internal Waffle Slab Ceilings

The waffle slab is expressed internally in key parts of the building's internal spaces including the main circulation spine. The slab has a honeycomb pattern established by coffers separated by seams which extend across the bottom coffers in a grid. The slab is painted white.

Policy 69. Retain and conserve waffle slab ceilings throughout the Stage 1 to 5 buildings. This does not preclude small areas of removal where appropriate and where designed in consultation with the

heritage consultant. This may include removal of some small areas to allow access to natural light.

Policy 70. As per Policy 48, the waffle slab ceiling should remain white. The ceiling may be repainted to match as required.

Policy 71. Any planned reconfiguration of internal walls must allow for the make good of the waffle slab ceilings above the removed walls.

Stairs

Policy 72. All concrete stairs identified as being of exceptional or high significance must be retained and conserved.

Policy 73. Any significant stairs which do not meet the BCA requirements, and which cannot be sympathetically adapted for such are not to be removed. Deemed to comply solutions are to be explored and if there is no sympathetic solution the stair should be locked and retained in situ for potential future reuse.

Policy 74. Handrails may be replaced to meet BCA requirements. Replacement handrails must match the profile and colour of the original and seek to utilise existing penetrations for original handrails wherever possible.

Joinery

The timber joinery includes doors, window details and sills, window shutters, battened ceilings, wall cladding and built in furnishings (fixed seating, display cases, cupboards etc). The joinery contributes to the palette of materiality throughout the building.

Policy 75. The design for new works should seek to salvage and reinstate significant original joinery where possible (refer to the Joinery Schedule in Appendix D).

Policy 76. Retain and conserve in situ (where possible) all significant built in bench seating. Where these are required to be reupholstered (by condition), these should be refinished to match the original.

Policy 77. There is an opportunity to reinstate bench seating in areas in the main circulation spine, where it has been previously removed (as evidenced by the removed fixings). Where new works are proposed, reinstatement of such elements should be considered. New seating should match the original in size, profiles, timber species, finish etc, however should be date stamped in an inconspicuous area to ensure it is apparent as a new insertion.

Policy 78. Original timber window shutters should be retained and conserved. Where these are required to be removed for compliance or conservation works, these should be salvaged and reinstated.

Policy 79. Retain and conserve in situ the timber batten ceilings in:

- Former Library space, Levels 4 and 5 in Stage 1 building; and
- Cafeteria, Level 5 of Stage 2 building.

Policy 80. If the timber batten ceilings must be removed for the installation of services, a methodology should be prepared for the removal and salvage of the ceiling and its reinstatement after the installation of services. If services are proposed to be installed through the ceiling a methodology should be prepared to ensure minimal removal and impact on fabric.

Policy 81. Retain and conserve in situ timber wall joinery in:

- Mezzanine in Cafeteria in Level 5 of the Stage 2 building; and
- Basketball Courts at Level 4 and 5 of the Stage 3 building.
- The auditorium and associated spaces.

Flooring

Flooring is generally concrete, with tiled and carpeted finishes throughout. Carpets are original (or replaced to match) and are a distinct green colour, designed to connect the interiors to the outdoors and bring the outside in. The stage 2 level 5 cafeteria features distinctive parquetry flooring and there are timber floors in the gymnasium and former studio areas (stage 3).

Policy 82. The original timber parquetry flooring in the Cafeteria in Stage 2 building should be retained and conserved. Parquetry which is required to be removed to allow for any required fire solution is to be stored on site and reinstated as soon as is practicable. Removal of parquetry must be the minimum required to facilitate the chosen fire solution. Any new parquetry must match the original in size, species, finish etc.

Policy 83. The original timber floorboards in the Stage 3 building in the Basketball Courts and former dance studio on Level 5 should be retained and conserved. Local repair should be undertaken rather than wholesale replacement where required. Repairs (where required) should utilise materials to match the original.

Policy 84. The main circulation spine of the Stage 1 and 2 buildings at Levels 4, 5 and 6 graded as high - exceptional significance should feature predominantly green carpet to ensure the original design intent of connecting the interiors to the outdoors is maintained.

Policy 85. Spaces located away from the main circulation spine at Levels 4, 5 and 6 may utilise different coloured floor finishes. The chosen colour may be bold (eg. orange, pink, yellow, red) to provide a high contrast with the concrete and brick elements.

Compliance

Alterations and upgrades are required for compliance, including for BCA and ESFG. RFS requirements are separately addressed in section 9.5.4.

- New works should comply with the BCA/ NCC and Australian Standards unless the heritage significance determines that the matter will be professionally determined under performance standards. Where necessary, alternative solutions and performance-based outcomes should be pursued to ensure the intent of the code is met without adversely impacting on significant fabric. Professional advice should always be obtained. Due to the complex nature of heritage buildings, ‘deemed to comply’ design solutions approved by BCA or access consultants may be used to satisfy the intent of the Standard.

Policy 86. Adaptations to balustrades (where required for compliance) should be consistent with the original design intent and should reinstate the original and distinctive pink and mauve colour schemes, as well as matching the original profile and size. Any replacement should also utilise existing penetrations.

Policy 87. Where alterations are required to extend the height of the concrete balustrades, the design of any new balustrades must have consideration for the original palette of materials throughout the building. Note that glass is not a featured material, however metal is. Consider the use of metal additions that have the robust character established by the concrete rather than glass.

Policy 88. Fixings for new balustrades must be minimal and should be into the top of the original concrete balustrades rather than the face such that patching is not obvious if the balustrade extensions are removed in the future and to as not to impact on the off-board concrete.

Policy 89. All solutions to meet ESFG and BCA requirements are to be sympathetic to the heritage character and design principles of the place, and should be designed in consultation with the Heritage Consultant.

Lighting

Original orange and silver spherical lights are located throughout the stage 1, 2 and 4 buildings and have been identified as being of high heritage significance. Throughout Stages 1 and 2 in the stair halls there are inset low height wall lights; these have been assessed as being of moderate significance.

Policy 90. Retain and conserve the orange spherical lights located throughout the Stage 1 and 2 buildings and the silver spherical lights located in Greenhalgh Auditorium. These should continue to be used where possible, and where they are not able to be used for compliance, should be retained and new lighting provided in consultation with the heritage consultant.

Policy 91. Inset lighting is located variously throughout the stage 1 and 2 buildings within the stairwells. Where upgrades are required for compliance, the inset concrete form should be retained, and the light fitting itself, adapted or replaced in a manner that is consistent with the original design intent.

Internal Services

Upgrades may be required to rationalize building services, particularly in conjunction with any major redevelopment. It is anticipated that some services may not able to be sustained in the future redevelopment of the place. Services should be sympathetic to the heritage significance of the building.

- New works should comply with the BCA/ NCC and Australian Standards unless the heritage significance determines that the matter will be professionally determined under performance standards. Where necessary, alternative solutions and performance-based outcomes should be pursued to ensure the intent of the code is met without adversely impacting on significant fabric. Professional advice should always be obtained. Due to the complex nature of heritage buildings, 'deemed to comply' design solutions approved by BCA or access consultants may be used to satisfy the intent of the Standard.
- Where practicable works for fire safety should not detract from significant elevations, finishes or elements. Should conflicts arise between compliance and cultural significance the Heritage Council of NSW is able to provide advice and assistance in seeking appropriate compliance solutions through its Fire and Services Advisory Panel.
- Any modification to significant fabric or spaces in the building for BCA/ NCC compliance purposes may be subject to undertaking a formal Heritage Impact Statement in accordance with the Office of Environment and Heritage Guidelines.
- New works should aim to reduce the environmental impact of new construction and building fit-outs.

Policy

Policy 92. Installation of new services and code compliance requirements shall continue to be undertaken in a manner that respects the architectural character and integrity of the building complex and its materials.

Policy 93. Internally, new services and plant should reuse existing service areas where possible, or be located in areas of lesser significance (e.g. away from the main circulation spine).

Policy 94. Where cable trays are required under waffle ceilings, the trays should be fixed to the lower point of the coffer rather than within the coffer.

Policy 95. This CMP does not identify the lift cars to be of any significance. They may be upgraded as required (subject to assessment of any impacts to any associated concrete structure and off-board finishes).

Policy 96. Original services within the building appear to have been largely surface mounted. Surface mounting new services rather than impacting the waffle slab or chasing into concrete or brick walls is acceptable subject to heritage consultant input.

Policy 97. Where new services are proposed to be placed on waffle slab ceilings, the path of the services must generally follow the grid pattern of the ceiling to retain the geometry of the ceilings.

Policy 98. The upgrading of services within the building is to comply with the following approach:

- Be reversible where possible.
- Minimise impact on significant fabric, by maximising the exposure of heritage fabric and minimising penetrations and fixings through heritage fabric. Utilise existing penetrations where feasible.
- New services should not conflict with window or door openings.

- Be complementary to the interiors.
- New lifts and stairs should be sympathetic to significant heritage fabric and spaces and the original design intent.

9.5.4. Compliance with Fire Legislation

Background

As discussed in Section 8.8.2 the site is defined as 'bushfire prone land'. The bushfire hazard affecting the site were assessed and an indication of required asset protection zones (APZ) to meet the deemed to satisfy distances of PBP, established. Due to the site being a SEPP development, fully APZ compliance of 100m is required from unmanaged bushland areas to support the creation of the K-12 School at the site.

In order to accommodate these requirements, all bushfire hazard vegetation on the site must be removed, and the quality of the inner protection areas and outer protection area must be improved to facilitate the new school. This also includes tree removal across portions of the site. The significance of the site is however directly vested in the relationship between the building and the landscape. The design for the campus included the retention of existing flora and that areas of bushland in close proximity to the building including the courtyard between Stages 2 and 4 were protected during construction. In addition to the clearing of trees, modifications to the building are also required, namely the provision of fire shutters and some modifications to existing entries for new complaint fire egress. To facilitate this, individual solutions for the building exterior opening have been developed, as discussed in Section 8.8.2

Despite the need to remove a substantial number of trees on the site, these requirements only meet the needs for the development of the Partial School and does not facilitate fire protection to the remainder of the future stages to convert the remaining portions of the building to a K – 12 School. A strategy for the remaining portions of the school is yet to be developed.

Policy

Policy 99. Fire shutters are generally acceptable to windows which have pre-cast concrete hoods which would largely obscure them from view. Where shutters are required to physically impact these hoods this must be designed in close consultation with the heritage consultation and alternate methods may be appropriate.

Policy 100. Where fire shutters would have a substantial and irreversible impact on the pre-cast sun hoods or significant concrete elements, the fire shutters should be installed to the inside face of the window to mitigate impacts.

Policy 101. Rails which are required down either side of the windows to guide the shutters are to be painted black/dark grey to match the window frames and are to be set immediately next to the window opening to allow the shutters to be read as part of the window arrangement.

Policy 102. Where long horizontal runs of window require additional steel members to support the shutter boxes, these members are to align with existing mullions wherever possible.

Policy 103. Opportunities for horizontal shutters should be explored in courtyard/atrium spaces where the box on the roof would not be highly visible.

Policy 104. Reconstruction of windows and doors with a steel frame (required in lieu of shutters) is only to be applied where this does not have a significant impact on the continuity between the original aluminium window mullions and the pre-cast concrete blades in front, or the geometry of the waffle slab.

Policy 105. Steel windows must be painted the same black/dark grey to match existing. If possible, new steel windows are to have an additional aluminium frame to achieve the same mullion profile as the original.

NOTE: Refer also to Sections 9.6.2 for management of the landscape in the context of fire protection.

9.5.5. New Buildings and Structures

Background

This section guides new development outside the footprint of the existing building which is not considered an addition to the existing i.e. new freestanding structures.

Policy

Policy 106. New development on the site should be largely contained within the areas that have already been developed for either buildings, roads and parking areas or recreation facilities.

Policy 107. New buildings should not be erected to the east, south or south west. In these locations new building elements would obscure the original architectural integrity, alter its profile on the skyline or reduce its immediate relationship with the surrounding bushland.

Policy 108. New development should be arranged on site in a manner that respects the topography of the site and the design philosophy of a strong interface with the edge of the surrounding bushland, with the main pedestrian and vehicle access routes being located away from the bushland edges.

Policy 109. Building footprints and circulation routes should be compact to reflect the scale and compactness of the original college layout and maximise opportunities for new or retained natural landscape. New development should respond to the existing topography of the site.

Policy 110. Materiality and form of any new development should be cognisant of the traditional palette and architectural language of the building, while remaining apparent as a contemporary insertion. Any new development should not compete with or dominate the heritage item.

9.6. MANAGING CHANGE: THE CULTURAL LANDSCAPE

9.6.1. Managing the Landscape and Setting

Background

The Lindfield Leaning Village comprises of 3.6 hectares of land, with the building complex occupying approximately a third of the site. The remaining balance of the site primarily consist of landscaped areas predominated by the undulating topography, rock outcrops, trees and native vegetation. As detailed above, the landscape site and relationship to the built form is integral to the original design.

Changes to the landscape should be guided by identified significant landscape elements, settings, views and vistas as described in Section 0.

Guidelines

- Future development should be cognisant of and seek to retain the native bushland landscaping and setting of the site to the greatest extent feasible (noting the constraints of fire legislation as set out above).
- New development should not detract from the ability to appreciate the Lindfield Learning Village as a seminal example of an educational institution designed in a blend of the Neo-Brutalist and Sydney School styles, within its own defined bushland setting.
- The aim of new work to the landscape should be to retain the design intent of Bruce Mackenzie's landscape design
- Future designs for, and work to the landscape should take into account available documentary, physical and/or archaeological evidence of the layout, character and detailing of Bruce Mackenzie's landscape design and to interpret these as part of the conservation, adaptation and upgrading of these areas.

Policy

Policy 111. Changes or new elements to the landscape of the Lindfield Learning Village should be designed in a manner that embodies the original design intent of Bruce Mackenzie's landscape design, i.e. retaining a natural bushland character, lightly placed and responding to the typography, and site, with a palette of native plantings.

Policy 112. Identified significant landscape elements that typify the landscape setting should be retained and conserved, as identified in Section 5.6.5.

Policy 113. Replacement of significant plantings and new plantings as part of any new development should be managed in accordance with the SSD Landscape Management Plan.

Policy 114. New plantings in the landscaped portions of the site (excluding planter boxes) should be consistent with a native plant selection and palette limited to the Lindfield area. Hybrid plant selection may also be considered.

Policy 115. New plantings to planter boxes in courtyards and roof top gardens should be planted with ground cover (predominantly native species).

Policy 116. The bushland courtyard located between the Stage 2 and 4 buildings is of exceptional significance and should be retained in its natural state. Noting the requirements for tree removal elsewhere on site due to fire constraints, the retention of the courtyard is of even more critical importance. There should be no further tree removal or alterations to the courtyard (except where required by condition and subject to arborist assessment). If access across the courtyard is required to be improved, the existing stair and path which extends along the western side should be utilised and upgraded.

Policy 117. The fishpond to the atrium in Stage 2 is of exceptional significance and must be retained and conserved. Replacement plantings may be appropriate. Where replacement of fabric is required (due to condition only), like for like materials and finishes must be utilised.

Policy 118. Future construction management activities should be modelled on those utilised during the initial development stages, to minimise the extent of any damage to existing bushland and maximise the potential for regeneration.

Policy 119. The original landscape planting to the planter boxes on the roof terraces should be recovered and then maintained, where possible.

Policy 120. Any new semi-formal common open space should be located near the entry road to retain the contrast with the retained bushland character around the edges of the site.

Policy 121. The bushland edges of the site should be regarded as a community asset and be available for as many members of the on-site population as possible. Close visual connections within the surrounding bushland are preferred to direct physical access, if the natural qualities of the bushland are to be protected.

Policy 122. Rock Cutting and infills should be retained and conserved

Policy 123. Retaining walls should be retained and conserved

Roadways and Footpaths

Policy 124. The introduction of new roads within the area identified for development should be reduced to the minimum necessary for the school use, fire compliance and emergency vehicle access.

Policy 125. The existing roads and parking areas, combined with pedestrian pathways and stairways, particularly within the eastern and southern portions of the site should be retained and re-used where possible (although particular significance has not been ascribed to these features, other than the car parks). Any replacement of pathways and stairs should follow the aesthetic of the existing, i.e. meandering and lightly touching the landscape.

Policy 126. The introduction of new roads or landscaped road reservations into the bushland should be restricted to those required for emergency and fire fighting vehicles.

Policy 127. New parking should be underground to minimise additional impacts on the site character.

Policy 128. The configuration of the main entry roundabout should be maintained and conserved.

Policy 129. Footpaths should be retained and conserved however may be widened to meet code compliance (subject to heritage, arboricultural and potential archaeological assessment).

Fences

Policy 130. Construction of any proposed fences throughout the site must consider both the built heritage, landscape and cultural heritage values of the site, as well as the bushland character. The placement of fences should seek not to require tree clearance.

Policy 131. Fences should be painted in a recessive colour so the relationship between the building and landscape is not impacted.

9.6.2. Managing the Landscape for Fire Protection

Background

As discussed in Sections 8.8.2 and 9.5.4, substantial changes to the landscape of the site are required in order to meet fire protection requirements.

Policy

Policy 132. Careful management of the bushfire asset protection zones is required to retain as much of the bushland character as possible, within constraints for controlling fuel loads under the tree canopies. New fire fighting vehicle access routes across the bushland frontage of any new or existing development should be limited to fire trails in preference to public roadways.

Policy 133. Clearing of the bushland edge interface to new or existing buildings in order to reduce fire damage, should respond to the techniques used to the south of the Stage 1 building, with limited areas of grass and stone retaining walls, subject to compliance as detailed above.

Policy 134. Where an opportunity exists in the future for the implementation of alternate fire protection measures, a layer of native plantings should be reinstated around the site.

9.6.3. Managing Views

Background

Significant views and vistas, and the significant landscape of the place have been identified in Section 0. Significant views including prominent views to the Lindfield Learning Village from the surrounding setting, primarily from the south, and views from within the building complex out to the surrounding landscaped setting.

Guidelines

- The prominence of the Lindfield Learning Village atop the defined bushland hill top should be retained and conserved. New development should be designed and located in such a way as to be sympathetic of the views to and topography of the site.
- New development should not detract from the ability to appreciate the Lindfield Learning Village as a seminal example of Neo-Brutalist architecture moderated by the Sydney School of architecture and the landscape design philosophies of Bruce Mackenzie.

Policy

Policy 135. Significant views to, from and within the Lindfield Learning Village site should be conserved and enhanced where possible. This includes views and glimpses to bushland from within the building and the following views, and as summarised in Figure 348:

- Views to the site:
    1. Views from Fullers Road, Chatswood West
    2. Views from Millwood Avenue, Chatswood West
- Views from the site:
    1. Views to the south and east
    2. View to the west
    3. View from courtyards, terraces and interiors

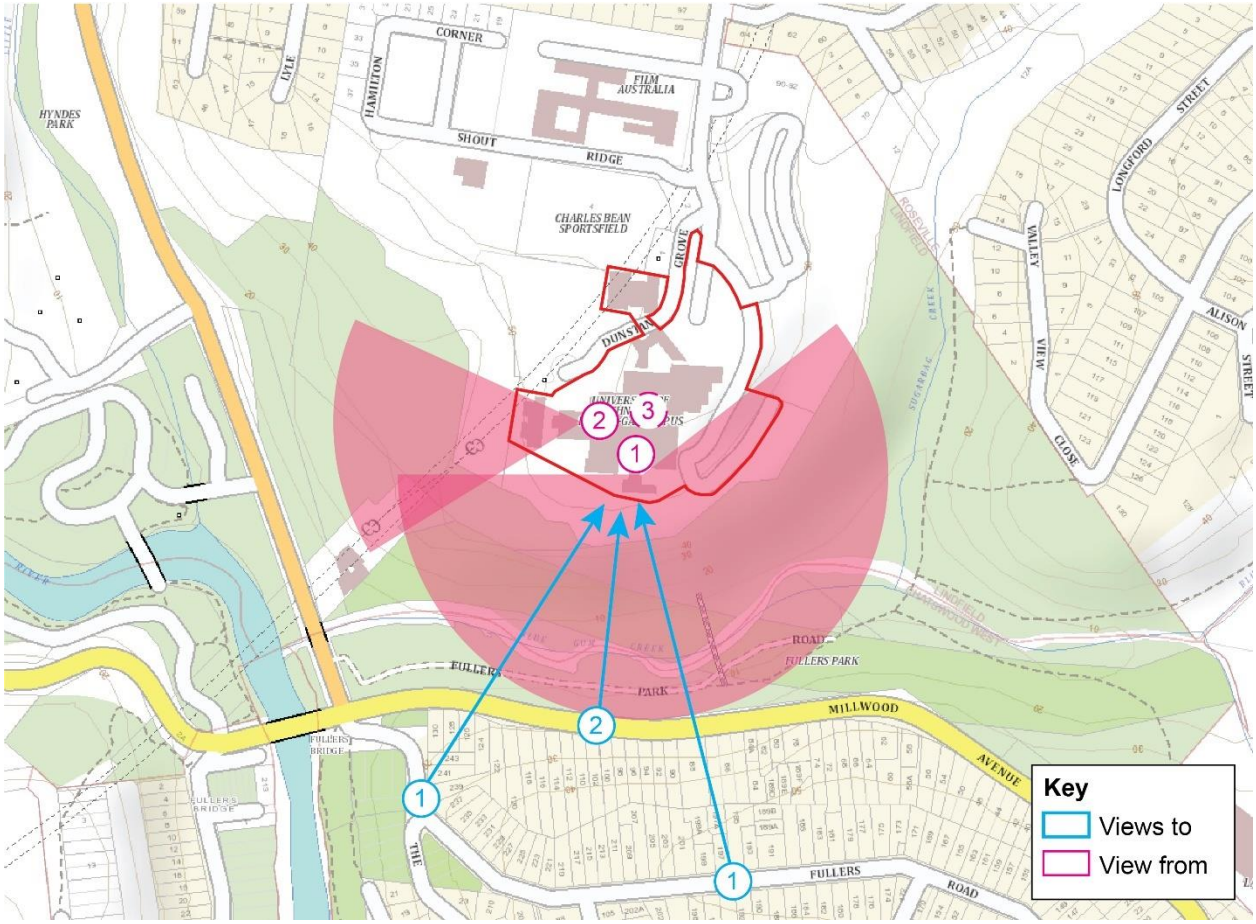


Figure 347 – Significant views to and from the site.

Source: SIX Maps 2018

Policy 136. Development and/or landscaping works in the vicinity of Lindfield Learning Village and significant structure should have regard to the heritage significance of the place, identified views and vistas, and should enhance the setting of the place.

Policy 137. The placement, selection and management of tree plantings should be carefully planned to avoid further obscuring views and vistas to and from the south of the site, should retain the bushland setting of the site and should contribute to the setting of the place. New planting should have regard to the original landscape design philosophy and specific landscape policies contained in Section 9.6.1. There is an opportunity in managing the landscape to enhance significant views and vistas.

9.6.4. Managing Heritage Curtilage

Background

The site retains a generally bushland setting, however the original extent of the site has been substantially reduced since 2011 following the acquisition of 13.8 hectares of land by Defence Housing Australia for the development of 'Crimson Hill' and the transferral of ownership of the oval, Charles Been Sportsfield, to Ku-ring-gai Council. The existing site retains the main building complex consisting of the Stage 1, 2, 3, 4 and 5 buildings and the immediate areas of landscaping around the complex, including two carparks.

However, the heritage curtilage of the site, as defined under the Ku-ring-gai LEP 2015, only consists of the footprint of the building and does not include the landscape of the site. Having consideration for the identified significance of the site and its landscape, the following policies provide guidance for the potential revision of the existing local heritage listing curtilage as defined by the Ku-ring-gai LEP 2015 to include the site as defined by its lot boundaries.

Guidelines

- The prominence of the Lindfield Learning Village atop the defined bushland hill top should be retained and conserved. New development should be designed and located in such a way as to be sympathetic of the views to and topography of the site.
- Extension of the curtilage should take into consideration the importance of the bushland setting and identified significant landscape elements.

Policy

Policy 138. The heritage curtilage of the site as defined by the Ku-ring-gai LEP 2015 should be expanded to include the whole of Lot 2 of Deposited Plan 1151638 to recognise the heritage values of the site landscape, as depicted in Figure 348.

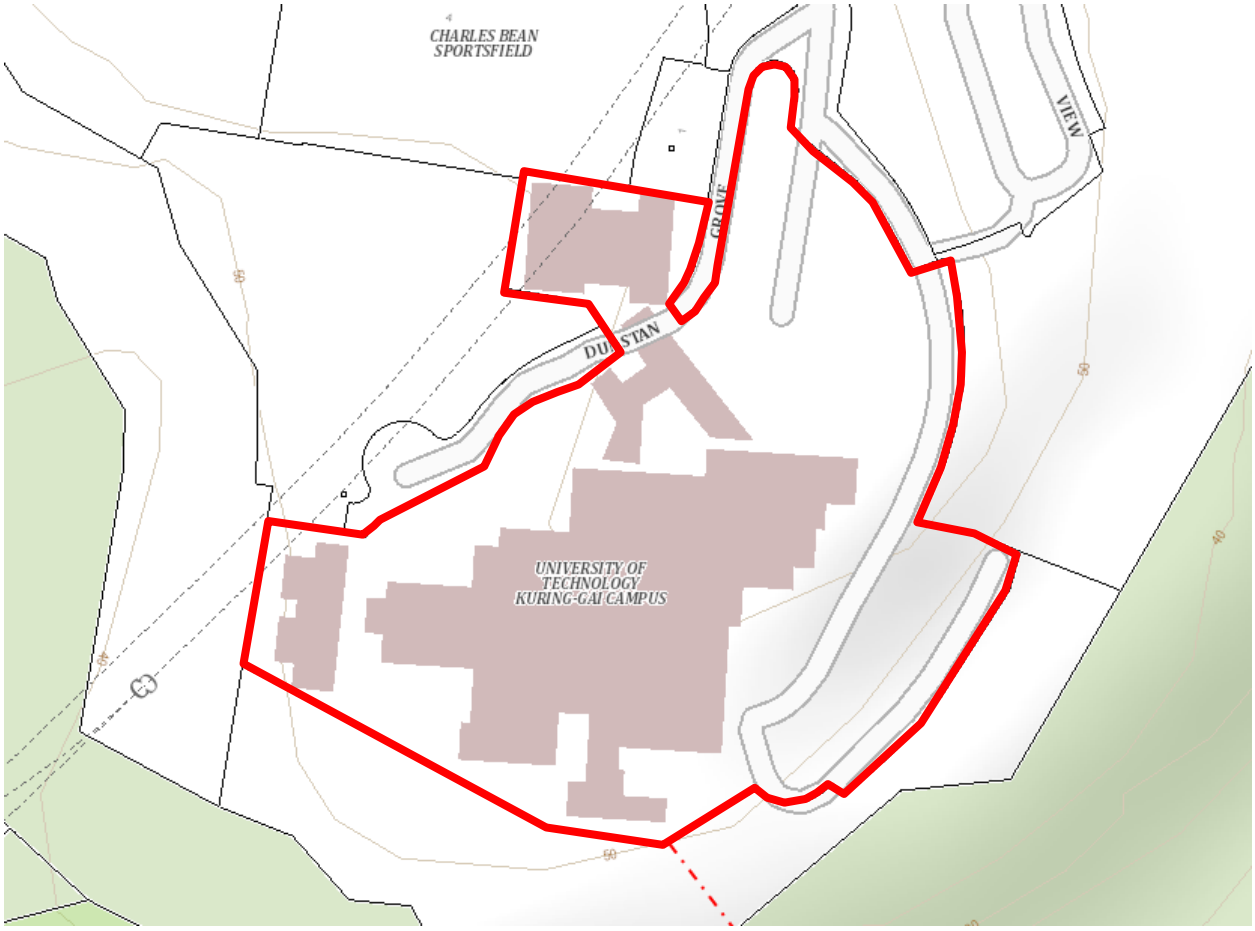


Figure 348 – Recommended heritage curtilage of Lindfield Learning Village, outlined in red

Source: SIX Maps 2018

9.7. MAINTENANCE

9.7.1. Building and Structures

Background

Regular maintenance and scheduled conservation works are required to be implemented to conserve heritage significance and identified significant fabric of the place. Conservation and maintenance is to aim to conserve and enhance the identified heritage values of the place wherever possible. The below policies consider the building complex consisting of Stages 1 to 5 of the Lindfield Learning Village.

As part of the SSD approval, a Schedule of Conservation Works is required to be prepared. This is being undertaken by Apex Diagnostics in consultation with Trevor Waters of Waterstone Concrete. A Schedule of Cyclical Maintenance is provided in section 10.

Guidelines

Policy 139. Fabric identified as of exceptional and high significance is to have priority works undertaken when required. Impact on significant fabric is to be considered and the appropriate approvals sought.

Policy 140. Maintenance work should be prioritised according to the heritage significance and vulnerability to deterioration of individual elements and fabric.

Policy 141. Management and maintenance of the place should aim to conserve its heritage significance to the greatest extent feasible. Works are to be sympathetic to exceptionally and highly significant fabric and repairs are to be undertaken instead of replacement, where possible.

Policy 142. The minimum standards of maintenance and repair under Section 118 of the *Heritage Act 1977* and as specified in the Heritage Regulations 2012, are recommended to be applied to the place to ensure its long-term conservation. The minimum standards refer to weatherproofing, fire protection, security and essential maintenance, to ensure that the significance of the place is retained.

Policy 143. The Schedule of Conservation Works prepared by Apex Diagnostics in consultation with Trevor Waters (of Waterstone Concrete) should be implemented as a priority action and as part of the long-term management and maintenance of the buildings

Policy 144. Maintenance works to the buildings should be undertaken on a regular basis to avoid the need for substantive conservation works. The significant fabric of the Lindfield Learning Village is to be maintained by the implementation of the Cyclical Maintenance Plan included in this CMP (refer to section 10) as part of the ongoing management and maintenance of the place. As a necessary minimum, the ongoing maintenance should include works that will ensure that each element retains its current level of significance and not allow the loss of significance due to the deterioration of fabric.

Policy 145. Any reconstruction or restoration works (eg. reinstatement of the original layout of Level 3 of the former library) should be based on historical documentation rather than speculation.

Policy 146. Missing or damaged fabric will generally be replaced observing the ‘like for like’ principle i.e. replace with similar fabric (eg. concrete with concrete). Where materials are not able to matched for compliance, materials can be replaced with different fabric of a similar visual appearance, matching profile and dimensions (whilst remaining apparent as new work). Note that replacement concrete/patch repaired concrete must have the same off board finish as the original.

Policy 147. Professional and trade skills with heritage experience appropriate to the site or building’s fabric and significance is to be employed to carry out maintenance and works. This is essential to ensure protection of heritage fabric and values as well as optimal use of funding to carry out works.

9.7.2. Maintenance of the Landscape

Background

Significant landscape elements have been identified in Section 5.6.5. The significant landscape elements of the Lindfield Learning Village are intrinsic in the overall significance of the site. Conservation and maintenance of the landscape is to aim to conserve and enhance the identified heritage values of the place wherever possible. Reference must be made to policies in relation to fire protection in Section 9.5.4 and 9.6.2.

Policy

Policy 148. The identified significant landscape values of the Lindfield Learning Village and its surrounds should be retained and conserved. Future management and use of the landscape should maintain and enhance the significant landscape character of the place.

Policy 149. The landscape of the Lindfield Learning Village should be managed in accordance with the Landscape Management Plan which sets out best practice maintenance requirements.

9.8. ABORIGINAL CULTURAL HERITAGE

Background

The historical and environmental context of the Study Area was researched (Figure 339). This research found that the Study Area would have had the potential to contain Aboriginal sites/objects prior to disturbance. However, this research also found that the Study Area has been subject to severe and extensive disturbance.

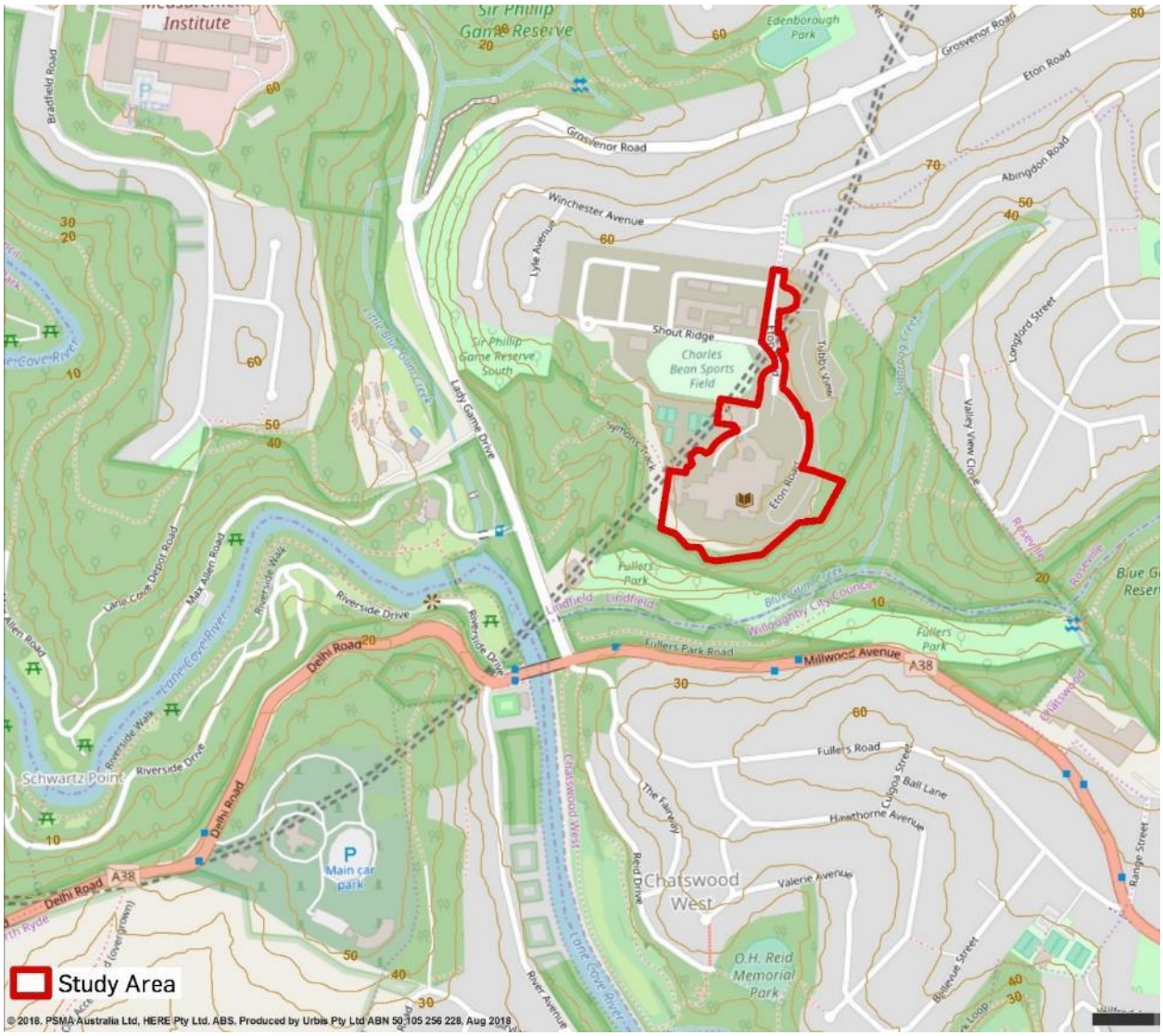


Figure 349 - Topographical map of the Study Area showing watercourses and relative land heights

Source: SIX Maps 2018

The AHIMS search conducted shows that no Aboriginal archaeological sites or places are recorded in or within 50 metres of the Study Area. The closest registered site is located outside of the Study Area, approximately 60 metres to the south of the southern boundary of the Study Area and well outside of any of

the proposed impact areas. This site, being AHIMS #45-6-2210, is registered as a rock shelter site containing a shell midden deposit.

A desktop assessment, including a review of previous archaeological and heritage studies in the vicinity of the Study Area, was undertaken. This review suggested that rock shelter and artefact sites were the most commonly encountered site types in the area, though the results of previous investigations as well as the extent to which the Study Area has been disturbed (and the absence of suitable rock shelters, rock outcrops and rock platforms within the Study Area and proposed impact areas specifically) indicates that the potential for such sites to be encountered within the Study Area is low;

A visual inspection of the Study Area was undertaken, and no Aboriginal objects were identified. The visual inspection confirmed that the Study Area had been severely disturbed, and that the archaeological potential of the Study Area is low.

The investigations undertaken did not include assessment of the internal courtyard between Stage 2 and 4 buildings. Further investigation and liaison with the Metropolitan Aboriginal Land Council will be required if future works are proposed in this area.

Overall, and due to both the extent of disturbance that has occurred, and the nature of the past uses of the site, the historical archaeological potential of the subject site is assessed as low to nil. It would be difficult to understand the context of any fragmentary remains exposed within the proposed isolated areas of excavation, in the unlikely event that this were to occur. Any remains, if present, are likely to be of little to no research potential as a result of their isolation and probable disturbed and fragmentary nature.

Based on the above, there are no identified historical archaeological constraints associated with the current proposal.

Guidelines

There are no known archaeological remains on the subject site; however, the following recommendations are made;

- If any Aboriginal remains are discovered during works, works should immediately cease and the National Park and Wildlife Service of the Office of Environment and Heritage should be contacted for further advice, as required under Section 91 of the National Parks and Wildlife Act 1974.
- In the event that unexpected archaeological materials is encountered during works, it would be necessary to stop all work in the immediate vicinity of the identified deposits. The NSW Heritage Council would be notified, and a qualified archaeologist would be engaged to assess the significance of the materials and recommend whether further investigation and/or permit application(s) are required.

Policy

Policy 150. The Metropolitan LALC are to be engaged by the proponent to monitor/supervise any site works that involve sub-surface disturbance (including excavation or the installation of piles, footings, etc) at depths greater than one metre. This is to ensure that the LALC are appropriately involved and consulted in the event that the proposed works interact with/disturb any soil profiles with the potential to be artefact bearing.

Policy 151. The Metropolitan LALC are to be immediately informed and advised of any cultural heritage material recovered during the development.

Policy 152. All on-site staff and contractors should be made aware of their statutory obligations for heritage under NSW National Parks and Wildlife Act 1974 and the NSW Heritage Act 1977, as well as the registered location of AHIMS #45-6-2210.

Policy 153. A copy of the ACHAR should be kept by the property owner and also retained on site so that it can be referred to and presented, if needed.

Policy 154. If any Aboriginal remains are discovered during works, works should immediately cease, and the National Parks and Wildlife Service of the Office of Environment and Heritage should be contacted for further advice, as required under Section 91 of the National Parks and Wildlife Act 1974.

Policy 155. If objects are found and suspected to be Aboriginal archaeological material, works in the vicinity of the find should cease, and OEH to be notified of the find, in accordance with s87A of the NPW Act. A suitably qualified archaeologist may be required to assess and record the find.

Policy 156. In the unlikely event that human remains are identified in any future works, all site works must cease, NSW Police and OEH notified. Works must not recommence until directed by the Police.

9.9. HISTORICAL ARCHAEOLOGY

Although the subject site does have a history of known former ownership and uses, these uses (being part of early land grants and part of a wider 'defence site') are by their nature unlikely to have resulted in any substantial development. The structures and elements associated with these uses are likely to have been limited in size and robustness (e.g. cottages, sheds, fencing, etc), with many of the elements associated with the rifle range likely to have been minor landscape modifications rather than actual structures or buildings.

Within the context of the subject site, which is known to have been severely disturbed during the construction of the existing university campus buildings, it is highly unlikely for any archaeological material or evidence associated with these former uses to have been retained on site. If any evidence of these former uses is present, it is highly unlikely to be intact, or to be recovered in situ.

Overall, and due to both the extent of disturbance that has occurred, and the nature of the past uses of the site, the historical archaeological potential of the subject site is assessed as low to nil. It would be difficult to understand the context of any fragmentary remains exposed within the proposed isolated areas of excavation, in the unlikely event that this were to occur. Any remains, if present, are likely to be of little to no research potential as a result of their isolation and probable disturbed and fragmentary nature.

Based on the above, no historical archaeological constraints have been identified, however the unexpected find provisions remain applicable under the NPW Act.

Policy

Policy 157. In the event that unexpected archaeological material was encountered during works, it would be necessary to stop all work in the immediate vicinity of the identified deposits. The NSW Heritage Council should be notified, and a qualified archaeologist should be engaged to assess the significance of the material and recommend whether further investigation and/or permit application(s) are required.

9.10. HERITAGE INTERPRETATION AND FURTHER INVESTIGATION

Background

Interpretation is an essential part of the conservation process. Methods of interpretation may include conserving original features and fabric, reconstructing missing or damaged elements based on documentary and/or archaeological evidence, introducing interpretative devices (such as discrete labelling), the use of historic photographs, preserving evidence of original finishes and fabric, facilitating access for specialist study and/or presentation in publications and websites and public art.

An Interpretation Strategy (Urbis 2018) has been prepared for the building as part of the SSD application. The document nominates the following key interpretation devices:

- Conservation and restoration of the significant built form;
- Provision of signage outlining the development of the site and its use;
- Public art;
- Landscape and built form interpretation;
- Website and digital media; and
- Providing temporary access to the public and interest groups through events and programs.

Guidelines

- The historical overview provided in Section 3, the identified historical themes in Section 3.5 and the heritage significance in Section 5 should be used as the basis for future interpretation.
- Interpretation should be consistent with the NSW Heritage Manual, the NSW Heritage Division (former Heritage Office) Interpreting Heritage Places and Items: Guidelines (August 2005) and the NSW Heritage Council (former Heritage Office) Heritage Interpretation Policy (endorsed by the Heritage Council August 2005)
- Utilise the schedule prepared by Urbis in 2018, Appendix B, to find opportunities for the reinstatement of significant fabric and finishes throughout the school.

Policy

Policy 158. The Interpretation Strategy prepared by Urbis for the site (October 2018) should be implemented in conjunction with the construction programme for the Partial School and should inform the future staging of the balance of the school site.

Policy 159. The highest form of interpretation is the retention and conservation of significant fabric, spaces and relationships and accordingly significant elements should be retained, exposed and interpreted.

Policy 160. Preservation, restoration and reconstruction of key significant elements, areas and fabric are the preferred method of meaningfully interpreting important attributes and associations of the place. Where adaptation is part of the conservation work, measures should be incorporated to show the location, character and/or role of removed or altered elements, where appropriate.

Policy 161. Any archaeological remains (if found and noting the low potential as set out in sections 9.8 and 9.9) should be retained in situ where possible, to assist in interpreting the chronology of the site and the significant values. Any display or storage of archaeological material should be subject to further advice or in conjunction with future archaeological assessment and consultation with the relevant Indigenous stakeholders.

Policy 162. Any elements of moderate or significance proposed for demolition, removal or alteration, should be subject to archival photographic recording, copies of which should be retained on site and provided to the relevant consent authorities (the local Council). This should include photography and / or measured drawings as deemed necessary. Archival recordings should be undertaken in accordance with the NSW OEH Heritage Division's Guidelines for '*Photographic Recording of Heritage Items Using Film or Digital Capture*'.

Policy 163. Development is staged and the CMP is required to be updated with the subsequent phases of development. Any significant fabric uncovered during new works and any new information should be documented in the successive CMP updates.

9.11. IMPLEMENTATION STRATEGIES

The following table, overleaf, lists strategies for implementing the conservation policies for the place. The strategies have been cross-referenced to conservation policies above and prioritised as follows:

- high priority works should be undertaken within the next one to four years;
- medium priority works should be undertaken within the next four to six years, and
- low priority works should be undertaken within the next six years.

Table 22 – Implementation strategies for conservation policies

Strategy	Conservation Policy	Priority
Adopt CMP to guide management and conservation	Policy 1	Following finalisation of draft
Provide copies of the CMP to council, tenants and relevant stakeholders	Policy 2 and Policy 3	Following finalisation of draft
Undertake CMP review	Policy 7	Following completion of Partial School construction programme
Undertake CMP review	Policy 8	Following completion of balance of site construction programme (future stages of school)
Undertake CMP review (ongoing)	Policy 8	As directed in guidelines
Obtain heritage advice from appropriately qualified and experienced heritage architects/consultants for decisions affecting the significant fabric of the site.	Policy 26	Ongoing
Implement Schedule of Conservation Works	Policy 143	In conjunction with construction program for Partial School
Implement Cyclical Maintenance Plan	Policy 144	Following completion of balance of site construction programme
Implement Interpretation Strategy	Policy 158	In conjunction with construction programme for Partial School

10. CYCLICAL MAINTENANCE PLAN

10.1. MAINTENANCE SCHEDULE BRIEF

This Cyclical Maintenance Plan was prepared to provide guidance for the ongoing maintenance and management of heritage fabric at the property. It is a requirement that a regular and effective maintenance regime be established to prevent excessive deterioration to the heritage building under the Conservation Management Plan.

The following schedule of maintenance works should be incorporated into maintenance actions as part of property management. Frequency of inspection may need to be adjusted if the rate of decay is accelerated due to adverse weather conditions.

10.2. EMERGENCY MAINTENANCE AND REPAIRS

Emergency maintenance and repairs due to accidental, unforeseen or storm damage should be repaired as soon as possible to prevent further damage or degradation to the item. Any short-term emergency, temporary or short term repairs should be reversible and not damage or remove significant fabric.

Table 23 – Emergency Maintenance and Repairs

Item	Frequency
Blocked or broken stormwater or sewer lines	Repair as they occur as soon as possible
Clearing of blocked gutters or downpipes	Repair as they occur as soon as possible
Broken water supply lines	Repair as they occur as soon as possible
Damaged or defective light fittings	Repair as they occur as soon as possible
Vandalism that allows access to the building Repair immediately with temporary measure E.G. screw fixed ply sheeting to broken window. Repair to match existing as soon as possible	Repair as they occur as soon as possible
Storm damage to external fabric	Repair as they occur as soon as possible
Breaking of defective security including locks latches and alarms	Repair as they occur as soon as possible

10.3. MAINTENANCE GUIDELINES

Avoid the following

Roofing

- Walking on brittle roof cladding
- Combing dissimilar metals (eg. Copper surfaces draining onto galvanised roof sheeting, gutters or downpipes)
- Replacing original roof coverings, unless approved by Heritage Architect
- Cement mortar repairs
- Hosing leaves into downpipes
- Placing ladders or leaning objects onto soft copper or stainless steel gutters or ridges.

- Replacing roofing in part with roofing of alternate material, design or colour
- If replacing 100% of roof, advice must be sought from heritage consultant on suitable replacement, as existing may be detracting.

Masonry (brickwork and stone)

- Covering wall vents and damp proof courses with garden beds, soil or structure
- Building up garden beds adjoining masonry
- Applying anti-graffiti or protective coatings to stonework unless specifically tested and approved for stone and approved by a heritage architect or consultant
- Inappropriate cleaning including, water jets or pressure washers, wire brushes or chemical detergents that may damage masonry or mortar.

Concrete

- Using inappropriate cleaning methodologies that would impact on the impression of off-board concrete

Joinery

- Replacing original hardware unless absolutely necessary and preferably approved by heritage architect or consultant
- Removing original hardware, keep in place and install new adjacent
- Installing or replacing hardware with new not in keeping with the building.
- Installing one way or different coloured glass when replacing glazing.
- Replacing original joinery, patch repair where required
- Using difference timber species to repair joinery where possible

Paint

- Painting surfaces not previously painted such as face brick, concrete and stonework
- Using inappropriate colours.
- Stripping painted surfaces back to substrate without heritage advice. (evidence of existing colour schemes must be retained)

Table 24 – Cyclical Maintenance Plan

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
External					
General Cleaning		Clean external painted masonry surfaces (including painted surfaces). Clean down with water to remove built up dust and pollutants. Do not use acid or abrasive blasting. Use only low-medium pressure water (maximum 100psi) and weak surfactants. Clean other surfaces (e.g. painted timber): Blowvac, vacuum, brush down only or use low pressure water only.			
Generally Pest Control		Termite inspection and report by suitably qualified pest inspector. Complete any recommendations in report.			

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Paint Generally **External**	Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; flaking or chalking that may indicate damp. Repairs as required in report.		Previously painted surfaces. Prepare and paint in approved colours.	Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Timber joinery **External** Window details, timber boarding, doors etc.	Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; rotting, damage, loose or damaged mouldings, parting beads and stop beads, binding sashes, weather tight door fit, cracked or broken glass, weathered sills, decay, broken sash cords, hardware and locks are in working order. Repairs as required in report.		Previously painted surfaces. Prepare and paint in approved colours	Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Masonry **(brickwork and stone)** Walls, sills, parapets, footings	Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; vegetation growth, cracking, delamination, crumbling, missing or flaking pointing, evidence of surface salt, damp proof courses and water egress and shedding. Repairs as required in report.		If previously painted: Prepare and paint in approved colours	Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Concrete (structure)		Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; vegetation growth, cracking, delamination, spalling, carbonation/corrosion of reinforcement, aggregate exposure, evidence of surface salt, and water egress and shedding. Repairs as required in report.	Previously painted surfaces: Prepare and paint in approved colours	Detailed inspection by Heritage Structural Engineer with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Rainwater goods Gutters, rainwater heads, downpipes, support bracket etc.	Inspection, condition & repair/maintenance report by appropriate personnel. Gutter and downpipes: Inspect gutters and downpipes clear any debris and ensure they are free flowing. Check brackets are all secure, and are draining effectively. Repairs as required in report.	Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; damage, weathering, deterioration, corrosion, blockages, water ingress, fall of gutters, brackets downpipes, sumps and rainwater heads.	If previously painted: Prepare and paint in approved colours	Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Roofing **Corrugated iron and metal,** Roof sheeting, ridge capping, roof lanterns, vents, fixings etc.		Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; Damage, weathering, rust stains around fixings, deterioration, corrosion, dissimilar metals, capping Repairs as required in report.		Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Roofing **Membrane**		Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; Damage, weathering, rust stains around fixings, deterioration, corrosion, dissimilar metals, capping Repairs as required in report.		Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Roofing **Flashings and cappings**. Over, & under flashings,			Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; Loose, raised, lifted, slipped deteriorated lifting and missing flashings. Also check bedding is secure/ Check for dissimilar metals. Repairs as required in report.	Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Eaves		Inspection, condition & repair/maintenance report by appropriate personnel. Inspect for holes from old service pipes where birds can nest, and for surface stains to fascia and soffit that indicate roof or valley and gutter failure. Check for ventilation holes. Identify any wasp or hornet nests for removal. Repairs as required in report.		Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Security	Inspect walls, roof and other building elements, doors, windows and other closures, glazing, locking and latching mechanisms. Inspect electronic surveillance and alarm systems and any other security components Repair and secure as required.				
Internal					

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Paint Generally		Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; flaking or chalking that may indicate damp. Repairs as required in report.		Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Previously painted surfaces. Prepare and paint in approved colours	
Walls		Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; checking for cracks indicating structural movement (if substantial structural engineer to inspect) Repair to match existing as required.	Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including ; plaster and tiled surfaces and finishes for cracking, drummy and failing plaster, evidence of rising or falling damp Repair to match existing as required.	Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report. Previously painted surfaces. Prepare and paint in approved colours	

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Timber joinery **Internal** Windows, doors,, balustrades, handrails, wall and ceiling cladding etc.		Inspection, condition & repair/maintenance report by appropriate personnel. Repairs as required in report. Inspection including; rotting, damage, loose or damaged mouldings, parting beads and stop beads, binding sashes, weather tight door fit, cracked or broken glass, weathered sills, decay, broken sash cords, hardware and locks are in working order.	Inspect condition of surface finish for defective or failing finish. If repainting or refinishing is required within the next five years schedule.	Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report. If previously painted, prepare and paint in approved colours. Alternate finishes: Inspect for condition and refinish if required.	
Ceilings		Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; checking for cracks indicating structural roof movement, sagging ceilings and water damage (if substantial structural engineer to inspect) Repair to match existing as required.		Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report. Prepare and paint in approved colours	

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Timber Structure			Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; Sub-floor, walls and roof structure for termites, dry rot, wet rot, ant caps, unapproved penetrations, sagging and subsidence. Termite & Pest Inspection and Report by Specialist	Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Ventilation					
Sub Floor		Check sub floor ventilation is clear of obstructions and debris and functioning correctly. Check sub floor for signs of damp and sub floor walls for signs of rising damp.		Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Walls Internal and external		Check wall vents are functioning free from obstructions paint build up and operating correctly if mechanical.		Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Roof space and eaves		Check vents are functioning free from obstructions paint build up and operating correctly if mechanical.		Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Services					

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Services Fire services	Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; fire services and fixtures including sprinkler and hydrant line, exits signs, smoke detectors and controls, fire control room, fire doors etc. in accordance with Australian Standards and regulations. Repair or upgrade as required in report.			Detailed inspection by Heritage Consultant / Architect with appropriate personnel and fire consultant and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Services Stormwater, water and sewage	Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; dish drains and sumps for blockages, internal and external taps for leaks and drips. Repairs as required in report.			Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	

Item	Frequency				
	12 Months	2 Years	5 Years	10 Years	Further Comments
Services Electricity	Inspection, condition & repair/maintenance report by appropriate personnel. Inspection including; all electrical appliances and systems are in safe working order approved by a qualified electrician. Repairs as required in report.			Detailed inspection by Heritage Consultant / Architect with appropriate personnel and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	
Services Air Con	Inspection, condition & repair/maintenance report by appropriate personnel and air conditioning contractor. Repairs as required in report			Detailed inspection by Heritage Consultant / Architect with appropriate personnel and air conditioning specialist and prepare repair and maintenance report. Complete unscheduled maintenance and conservation repairs as required in report.	

10.4. GENERAL REQUIREMENTS

10.4.1. Intent

The aim of the conservation is not for an “as new” appearance. Heritage fabric should be repaired by doing “as much as is necessary but as little as possible” (Australia ICOMOS Burra Charter 2013) where practicable.

The work is to be done with the objective of leaving intact as much as practically possible of the existing building fabric of heritage value. Where items are to be replaced they are to match original or early items (unless approved by the Site Architect (SA)) in size, profile and material. Should any doubt exist over specific items regarding this approach, the SA should be contacted.

10.4.2. Techniques & Experienced Tradespeople

During conservation (including maintenance) works, first preference should be given to use of techniques previously used on the component concerned. Second preference is to use techniques used elsewhere on the site, and third preference is to use techniques recognised as current practice of the time. Alternative modern techniques should only be used where the original methods used are shown to be ineffective and where such techniques will not change the character of the component. Specific direction should be sought from a conservation professional where non-traditional techniques are the only method of preventing unacceptable loss of original fabric.

Work which involves conservation or fixing to the heritage fabric will be carried out by tradespeople with the appropriate traditional trade qualification and proven experience in similar heritage works.

10.4.3. Mandatory Induction

Principal Contractor is to ensure that all workers carrying out work under this Contract have attended mandatory inductions as follows:

- Concerning the heritage listing and conservation approach for the project as outlined in this Schedule of Conservation Works.

Relationship to other Documents

Where there are discrepancies between this document and contract documents inform the CM.

10.4.4. Relationship to Existing Work

Verify the dimensions of the existing work before proceeding and notify the CM of any discrepancies.

10.4.5. Dismantled Materials

Materials obtained from demolition or dismantling, if suitable and approved by the SA, may be reused in such positions as directed.

10.4.6. Joining Up

Carry out the joining of new work to existing work, and any consequent cutting away, in a manner approved by the SA, and make good to match existing adjacent work in all respects.

10.4.7. Samples, Inspections & Site Meetings/Inspections

Submit any samples as required by the Schedule of Conservation Works.

Give notice so that the SA can inspect the samples. Also give notice so that any issues in relation to the heritage conservation works can be discussed at a site meeting attended by the SA for the project.

10.4.8. Pest Inspections

Pest inspection are to include the subfloor and roof spaces. Thoroughly inspect for termite and other insect infestations. This work is to be carried out by an experienced pest control company. Provide a written report detailing the locations and types of infestations (if any) and the proposed method of treatment. Termite barrier treatments shall be in accordance with relevant Australian Standards.

10.4.9. Access, Scaffolding, Hoarding & Protection

Requirement: Provide all such access as is necessary to carry out the works including works to roofs, eaves and gutters, wall faces and windows. The access provided shall be adequate for the type of work including levels of each lift and size. Provide for the support of materials needed for each type of work. If scaffolding is used for access it must be used in accordance with general requirements contained in this clause.

Protection: All work shall be performed without causing any damage to the existing fabric. Make good any such damage to match existing at no cost to the client. Provide all necessary protection of building surfaces from damage resulting from the provision, use and removal of all scaffolding and hoists etc.

Protect significant elements during the works. Ensure that the existing heritage structure and elements are maintained in a waterproof but well-ventilated condition during the carrying out of the works.

When removing fabric, care shall be taken not to dislodge adjacent fabric.

Scaffolding and Hoarding: Isolate points of contact or potential contact with the elevation. Tubes shall be wrapped in carpet or spaced with non-staining plastic-coated timber blocks.

Do not attach scaffold directly to stonework or brickwork. Use ties through semi-open windows breaking no glass and seal the openings against dust and weather. Tie in using well-padded tube kept clear of any joinery, architraves etc. bearing against timber pads onto the plaster. Fit temporary plywood weather protection panels over the open window area. Cut neat holes in panel to take scaffold tube and provide an approved weather seal.

Provide sole plates to scaffolding legs to ensure no damage to the paving or flooring.

Materials: Scaffolding and hoarding components shall be free of rust and cleaned free of mortar, concrete and debris from other jobs.

Provide shade cloth to prevent rapid drying out during masonry conservation.

Propping: Provide and fix props as required. Props are to be of an approved adjustable type packed with softwood packers top and bottom so as not to cause damage to original concrete surfaces. All loads are to be transferred to the ground without causing distress to fabric or structure.

Before removal of scaffold give sufficient notice so that all conservation works can be inspected and approved by the SA.

10.4.10. Reuse

The first priority when undertaking any repairs should be to re-use as much of the existing fabric as possible. Preservation of the authentic fabric should take precedence over cosmetic considerations. This principle recognises that some of the original fabric will appear different from that expected and available today. It also recognises that the age of the original fabric should remain obvious and that it is not the intent to return the fabric to ‘as new’ appearance. For example, it is preferable to re-use loose existing windows and frames rather than replacing with a modern equivalent.

10.4.11. Like for Like

As a general principle, maintenance works should be carried out on the basis that any material items from a significant building period that need to be replaced should be done so based on replacing like for like. If an item is so degraded that it must be replaced, the new item should preferably match that which it replaces in material, style, pattern, finish, colour etc. In some instances, it may be appropriate to use an item salvaged from this or another site similar site. Where a matching item is not available either new or salvaged, then a reasonable facsimile in current production may be acceptable. A new part should be discernible from close inspection as such and no attempt made to artificially age it.

For example, where new window panes are to be installed they should replicate the frame and casing that was there originally and match the adjoining panes. Or, where external mortar repair or replacement is required, it should match the original in texture, colour and function where practicable.

10.4.12. Avoid Needless Loss

Where only one part of a component is broken, consideration should be given to repairing that part rather than replacing the whole component. If possible, the part should be left in place and repairs should carried out without removal or damage to the unbroken part. This principle may result in only partial dismantling of

components during repairs. Sound parts should not be broken to remove them unnecessarily from components.

For example, removing all paint remnants from walls could cause damage to the fabric and adversely affect appearance.

10.4.13. Not Perfect

Repairs should recognise that the place may not have been perfect in either its original, most significant or recent state. Worn fabric should be allowed to show the patina of time. Repairs should not attempt to put the fabric into a condition that it was never in or present it in ‘as new’ condition. A part not built ‘straight’ originally should not be made ‘straight’ to meet current expectations.

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APPENDIX A SCHEDULE OF CONSERVATION WORKS

DesignInc Sydney Pty Ltd

LINDFIELD LEARNING VILLAGE, STAGE 1
MILESTONE 1

Schedule of Required Conservation Works to Heritage Facade Fabric

158/001

Draft 1 | 13 July 2018

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number **158/001**

Document Verification

Job title		Lindfield Learning Village, Stage 1 Milestone 1		**Job number**
Document title		Schedule of Required Conservation Works to Heritage Facade Fabric		158/001
Document ref		158/001		
Revision	**Date**	**Filename**	Schedule of Required Conservation Works to Heritage Facade Fabric D1 2018_07_13 .docx	
Draft 1	**13/07/18**	**Description**	First draft	
			Prepared by	Checked by	Approved by
		Name	IM & JSMcC	JSMcC	TCW
		Signature			
		File name			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		File name			
		Description			
			Prepared by	Checked by	Approved by
		Name			
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			Prepared by	Checked by	Approved by
		Name			
		Signature			

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1. Introduction

1.1. General

We understand that the former UTS Kuring-Gai Campus is undergoing adaptive reuse, becoming the Lindfield Learning Village, a K-12 school. Taylors Construction have been engaged on a construct-only basis to convert the building to the school. The project has accelerated, with the need to have all Stage 1/Milestone1 work complete and ready for the opening on the first day of school term, 2019.

Apex Diagnostics Pty Ltd was engaged by DesignInc Sydney Pty Ltd to assist with the development of a schedule of required heritage conservation work to the building facades, both internally and externally. Comprehensive restoration works have been requested.

The purpose of the investigation is therefore to carry out a visual condition assessment of the building's heritage-listed brick and concrete fabric internally and externally (limited to the Stage 1/Milestone 1 areas as shown on the demolition plans issued to us), and to produce a conservation works schedule identifying any required works.

All windows are being removed and replaced as part of the conversion works, hence they have been excluded from the scope of this report.

Roof membranes are similarly excluded as we understand that their replacement is already included within the contractor's scope of work.

1.2. Building Description

Originally built as the Kuring-gai College of Advanced Education, the building is a substantial in size and scale, and a fine example of the Brutalist style. The project, which was built in stages, won the 1978 Sulman Medal.

Four primary materials are used in the façade: board-marked in-situ concrete, clay brick, black painted metal window and door frames, and glazing. Windows feature massive (presumably precast) board-marked concrete sunshades. Board-marked concrete is also used for slab edges (typically expressed), parapets, and some walls including the walls that enclose stairs. Brick is used to form in-fill walls. These four materials, along with green carpet and timber joinery, also dominate the interior of the building.

Stage 1/Milestone 1 as shown on the Demolition Plans generally consists of 7 Zones, Zone A through to G. The complex is hill-set, with the main (ground level) entrance on level 5 and the main roof at level 7. Within Stage 1/Milestone 1 there are two external link bridges, one on Level 6 and one on 7, that connect Zone A to Zone B and the rest of the complex.

1.3. Report Structure

This report sets out the particulars of our inspection, provides a summary of our findings, and includes outline, high-level work statements for the conservations works required. These are not a full specification for works. The report concludes with recommended next steps.

The full schedule of required repair works to the heritage façade fabric is appended to this report (appendix A). Drawings showing locations of defects are included in appendix B and photographs of the defects are in appendix C.

2. Inspections

2.1. Inspection

Apex Diagnostics were first approached regarding this project on 3 July 2018, and were engaged on 4 July 2018. We were requested to have completed all site work by the end of 6 July 2018 and have completed this report (in draft form) by 13 July 2018. Jonathan McCray (Senior Engineer, Apex Diagnostics) and Ian Mui (Undergraduate Engineer, Apex Diagnostics) carried out the site inspections over three days from 4 to the 6 July 2018.

The inspections were visual in nature and were carried out internally, from ground level externally and at safe vantage points on the roof. This provided coverage to nearly the entire building façade of Stage 1/Milestone 1. Due to the lack of safety systems available on the roof, a complete inspection of the roof was not possible. Some external surfaces could not be inspected where they cannot be seen from available vantage points, e.g. slab edges hidden behind some sunshades; top, back and return faces of some sunshades; and areas where the vegetation prevents a clear view of the building. These areas can only be inspected with the use of a mixture of different types of access equipment including scaffolding, MEWPs and rope access. This level of access was not possible in the short time frame required to complete the assessment. This means that some surfaces (i.e. such as the rear face of some sunshades etc) were not visible. As a result, further required repairs may be discovered once fixed façade access is put in place for the scheduled work.

Within some rooms, view of heritage items (i.e. concrete and brick) was obstructed by the internal fit out (e.g. plasterboard). These areas should be assessed following demolition of the fit-out. Similarly, condition of the façade elements hidden behind asbestos cement cladding could not be assessed.

No original drawings of the building were available to review.

2.2. Limitations

The Services are limited to those described above. In particular, the Services have been carried out for the purpose stated in section 1.1 and we offer no warranty regarding their suitability for any other purpose.

This report has been prepared for DesignInc Sydney Pty Ltd for the benefit of the Department of Education, and should not be relied upon by any other third party. No responsibility is undertaken to any other third party in the use of this report.

No detailed calculations or quantitative assessments of the adequacy or compliance of the building to current design codes or the National Construction Code (NCC) were carried out as part of this survey, nor was any physical materials testing carried out or enquiries made of statutory authorities in connection with the building. No statistical analysis was undertaken in the determination of trends noted.

Whilst this report is based on a reasonably detailed visual inspection of the areas of the property shown to us and described in the report, we do not purport to have discovered or seen every hidden defect or structural condition in existence. The inspection has been made without the removal of any parts of the structure (unless noted) and has been limited to areas where reasonable and safe access is available..

Our Services do not extend to advising on asbestos and Apex Diagnostics shall have no liability for any claims arising out of or in connection with asbestos.

3. Summary of Findings

3.1. Concrete

The concrete is typically showing signs of deterioration which can be attributed to the building's age:

- Concrete surfaces are generally dirty.
- Concrete is spalling leaving reinforcing bars exposed. Generally, spalling appears to occur at locations where bars were placed with low concrete cover to reinforcement ('**cover**'). A cover meter was used on the balustrades at the northern balcony of Zone A, which indicated typical concrete cover is about 40mm. The spalled areas seem to be restricted to areas where cover is lower than this. Some ferrules and other embedded steel items are also corroding causing concrete spalls.
- Form ties, embedded in the concrete, are corroding. This is causing the grout plugs installed over the ties to spall and fall out. Approximately one third to half of all form ties are currently affected to some extent.
- There are isolated instances of failed grout chamfers at the junctions between the stairs and adjacent wall. This occurs particularly in the stairwells of Zone A.
- There is evidence of previous concrete repairs that may not have been conducted in accordance with good practice (e.g. edges of repairs appear to have been feathered rather than saw cut). Where these repairs appear to be failing now, they have been included in the schedule. There is a risk that more of these exiting repairs will fail in the future.

To better understand the future prognosis for the concrete, some chemical testing should be undertaken to measure depth of carbonation and chloride ion concentration in the concrete. This should be coupled with limited cover meter surveys in representative selected areas to understand the range of cover depths as-built in the various elements.

Concrete durability into the future would be improved by the application of a penetrating silane sealer. The concrete would need to be cleaned before silane could be applied. Consideration should be given to silane application to all concrete elements of the façade.

Some sunshades have areas on the top surface where water can pond. Consideration should be given to retro-fitting drainage, or to applying waterproofing to these areas. Both approaches would improve the durability of the sunshades. Drainage also has the advantage of removing a potential breeding area for mosquitos.

3.2. Brick Masonry and Tiles

The brickwork is generally in good condition. This is partially due to good-practice detailing during original construction including regularly spaced movement joints and movement joints at interfaces with concrete. However, the joint materials (generally being cork compressible fillers and applied sealants) are in a deteriorated state consistent with their age. They are now in a condition where wholesale replacement of sealants and compressible fillers should be considered.

Other defects include:

- Deteriorated brick pointing in limited areas.
- Isolated instances of cracked bricks (which appear to be caused by building movement or corrosion of steel embedded in the brick walls).
- An unsupported leaf of brickwork adjacent to the gymnasium.

- Cracked, missing or displaced tiles at window sills.
- Individual bricks that have been removed to permit inspection into the cavities.
- Evidence of salt crystallisation in some areas. Note that this does not appear to have damaged the bricks themselves but rather is sitting on the surface.
- Generally, brick surfaces are dirty and would benefit from cleaning.

While the mortar and pointing is in reasonably good condition, any replacement materials should be compatible with the existing material. We do not know the constituent materials, and recommend that mortar samples be analysed to confirm the mortar mix (it may be a typical sand/Portland cement mix, or may also include a proportion of lime). Following such analysis, the final mortar mix can be specified.

3.3. Waterproofing

We observed multiple active water leaks that appear to originate from roofs or junctions of roofs and walls, and areas of ponding water on some roofs and tops of sunshades. We understand that the existing roof is to be remediated (as shown on the demolition plans) with new membranes to be installed. We assume that the currently specified roof repair works will address all waterproofing deficiencies with the roof and ensure water-tightness of the roofs, parapets and all junction and perimeter details. We have not provided any further commentary on roof waterproofing.

3.4. Miscellaneous

There are a number of other miscellaneous defects identified in the schedule. These include:

- Original concrete balustrades have gaps at their ends that may be considered unsafe and appear not to comply with current National Construction Code requirements (because the gaps are greater than 125mm in width – up to approximately 150mm in some locations). We assume the architects are aware of these and have designed appropriate in-fills for these gaps.
- There are isolated areas of possible structural distress (identified in the schedule). We recommend these areas are reviewed by the project's structural engineers.
- A large number of redundant anchors and fixings exist in the brick and concrete. These items should be removed. We have included some of these redundant fixings in the schedule where they either are corroding and are damaging the concrete, or they have significant negative visual impact. The architect and heritage consultant should consider the exact scope of redundant fixing removal (whether this be comprehensive, be limited to corroding fixings only, or some compromise). Consideration should also be given to safety risks to children (and others) from protruding redundant fixings.
- Evidence of vermin infestation in some areas. Evidence includes animal faeces, old signage from when UTS still occupied the building, and inconsistently retro-fitted or dilapidated insect and vermin mesh to some parts of the façade. We have not made any further comment on vermin but suggest a pest control specialist be engaged to review the situation.

3.5. Other Considerations

We have not reviewed the Hazardous Materials Register for the building (if one exists). This should be reviewed prior to any work being carried out to ensure that all materials (including sealants to brickwork, concrete and around windows, and compressible fillers etc) can be safely removed.

If any materials that are subject to work are not included on the Hazardous Materials Register, they should be assessed by a suitably qualified and experienced environmental hygienist.

4. High-level work statements for required repairs

4.1. Sealants to brickwork

Scope: All existing flexible sealants and compressible fillers (typically located at brickwork heads or at junctions with concrete) to retained brickwork.

Materials:

- Sealant: Sikaflex Pro polyurethane.
- Primer: Sika Primer #3N.

Methodology:

- Rake out existing failed sealants and any loose/protruding compressible fillers.
- Clean and prepare joints to receive new sealants.
- Protect adjacent surfaces.
- Prime surfaces as per sealant manufacturer's instructions.
- Apply new flexible polyurethane sealants at profiles as recommended by the manufacturer.
- Use backing rods and bond breakers as required to ensure sealants are adhered on two sides only and follow good joint detailing practice.
- Tool off sealants neat and flush with adjacent surfaces.
- Sealant colour to be specified by architect.

4.2. Concrete Patch Repairs

Scope: All areas of concrete spalling identified in the repair schedule and all other similar areas of spalled concrete.

Materials:

- Concrete Repair Mortar: Sika Monotop 352 NFG.
- Primer: Sika Monotop 910N.
- Bonding Bridge: Sika Monotop 910N.
- Colouring agent: As approved by the manufacturer, to match surrounding (cleaned) concrete colour.

Methodology:

- Protect adjacent areas.
- Break out concrete, ensuring that the perimeter of each repair is cut as a series of straight lines at right angles. Where possible, coordinate cut lines with existing visible form board lines.
- Clean reinforcing steel (where exposed) by mechanical wire brush.
- Inspect exposed reinforcements to ensure no sectional loss.

- Use Helifix Dryfix 8mm helical stainless steel reinforcing pins where required (to be assessed on a case by case bases).
- Prime reinforcement as per primer manufacturer's instructions.
- Apply bonding bridge once primer has cured.
- Apply repair mortar (in multiple coats if required).
- Replicate existing surface texture with template to match existing.
- Surface finish & concrete colour to match existing to the satisfaction of the architect or heritage consultant (i.e. allow to form surface using rough-cut form boards as per the original finish).

4.3. Concrete Bar Tip/Corroding Ferrule Repairs

Scope: All areas of exposed ends of reinforcement bars and corroding ferrules identified in the repair schedule.

Materials: As Part 4.2.

Methodology: As Part 4.2 generally, but core out corroding ferrules to a depth of approximately 40mm minimum and cut back bar tips (where structurally acceptable).

4.4. Brick Masonry Repairs

Scope: All areas of cracked, displaced, damaged bricks identified in the repair schedule and all other similar areas of masonry damage.

Materials:

- Brick salvaged during deconstruction or new brick to match existing
- HeliBar bed-joint reinforcement to locations of corner cracking.
- Mortar – to be confirmed following analysis (see section 3.2)

Methodology:

- Prevent damage to all surrounding masonry, protect with suitable non-staining slats etc.
- Rake out joint to remove loose material, dirt and debris.
- Saw cut as required to produce straight, consistent edge to seal to.
- Replace cracked bricks as necessary
- Install HeliBars as recommended by the manufacturer where appropriate to reinforce areas of cracking (to be assessed on a case by case bases).
- Repoint the mortar bed as 4.5 and make good cracks.

4.5. Brick Re-Pointing

Scope: All areas of re-pointing identified in the repair schedule and all other similar areas.

Materials:

- Mortar – to be confirmed following analysis (see section 3.2).

Methodology:

- Protect adjacent areas to prevent contamination from overrun or other material contamination.
- Rake out existing pointing to a minimum depth of 20mm.
- Ensure joints are clean, dry and free of loose material.
- Apply mortar, matching the profile of adjoining pointing (recessed pointing profile).

4.6. Grout Plugs (Corroding Form Ties)

Scope: All areas of corroding form ties causing displacement of grout plugs as identified in the schedule and similar areas.

4.6.1. Option 1 – Make safe

Methodology:

- Make safe all grout plugs by removing all loose plugs.
- Blow any loose, friable corrosion material and deteriorated mortar from holes.

4.6.2. Option 2 – Restore

Materials:

- Concrete Repair Mortar as 4.2.
- Backing Rod

Methodology:

- Remove all grout plugs.
- Clean loose corrosion within socket.
- Insert a backing rod or similar to form shallow compressible zone in front of ferrule.
- Apply concrete repair mortar in accordance with 4.2 into hole, and leave recessed by 5mm.

4.6.3. Option 3 – Remove

Materials:

- Concrete Repair Mortar

Methodology:

- Remove all grout plugs
- Core out all form ties
- Fill hole with conventional concrete repair as per 4.2 and leave recessed by 5mm.

4.7. Cleaning

4.7.1. Option 1 – Do not clean

Do not undertake any cleaning to the facades of the building.

4.7.2. Option 2 – Clean & Protective Coating

Pressure wash masonry and concrete, apply protective coating (e.g. silane such as Drytreat 100N) to concrete only.

Any cleaning process must be subject to trials for applied pressure and any detergent additives, with review and approval of trial areas/control samples by the Architect and/or heritage consultant.

In internal areas or where excess water pressure or water runoff may cause damage, alternative techniques (e.g. façade gommage) could be trialled. Note that pressure washing systems are available with water recovery, however they do not capture 100% of the wash water.

4.7.3. Option 3 – Adopt Taylor Construction Trial Cleaning

We are aware that Taylor Construction have undertaken trial cleaning to an external stairway at the rear of the complex. We do not know what cleaning techniques were applied or if any protective coatings were used, if the architect or heritage consultant is satisfied with the aesthetic result, and subject to a technical review, this cleaning methodology could be applied to the remaining concrete.

We are not aware of any trial cleaning undertaken to the masonry by Taylor Construction.

5. Next Steps

5.1. Heritage Consultant & Architect Review

Both the Heritage Consultant and Architect should review the schedule of required repairs to understand what we have proposed with consideration of the heritage conservation requirements. The heritage consultant and architect should provide their input on the scope and repair methodologies proposed. In particular, we are not aware of any details of the cost plan for the construction works and the schedule has been prepared without consideration of the project budget.

5.2. Specification

Once scope and general methodologies for repairs have been agreed, a full technical specification for the conservation works, including general standards for quality and materials with heritage conservation in mind, must be prepared. This would expand on the methodologies in section 4.

5.3. Trial Works

As for any heritage conservation works, it would be prudent to conduct trial works to ensure that the works as specified will achieve required standards. The trial should be subject to technical review and approval by the Heritage Consultant and Architect before proceeding further.

5.4. Construction Works

Once the trial works are approved, the main package of works can be released. We would typically recommend adopting a schedule of rates contract for construction works of this type, especially where the number and size of required repairs cannot be established until full access is in place, and in the case of concrete repair until concrete is broken out.

Appendix A – Conservation Schedule

External Elevations and Internal Courtyard

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
1	AR-T-320D (Elevation 458)	7	3950 (Return Face)	Concrete Spalls.	5 - Undertake conventional Concrete Repair.	4670, 4671, (459 General)
2	AR-T-320D	5	3980	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	456
3	AR-T-320D	6-7	3980	Corroding form tie causing grout plug to spall.	10 - Remove loose grout plugs and repair.	4663, 4664
4	AR-T-320D	6	3995	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	455
5	AR-T-320D	7	3990	Unsupported brick wall.	2 - Requires assessment by structural engineer.	4660
6	AR-T-320D	7	3990	Displaced compressible filler in brickwork.	2 - Rake out compressible filler, replace with flexible joint sealant.	4660
7	AR-T-320D	7	3985	Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4665, 4666
8	AR-T-320D	7	3985	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	4665
9	AR-T-320D	7	3980	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4662
10	AR-T-320D	7	3970 (Return Face)	Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4668 (457 Overall)
11	AR-T-320D	7	3945	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4667
12	AR-T-321D (Elevation 460)	5	6300 (Sunshades)	Eroded / Mishapen Concrete	1 - Requires further assessment post cleaning.	454
13	AR-T-321D	5	6290 (Sunshades)	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	452, 453
14	AR-T-321D	5	6280 (Sunshades)	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	450, 451
15	AR-T-321D	5 & 6	6240	Salt staining and mould.	1 - Clean.	449

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
16	AR-T-321D	7	6240	Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	4653
17	AR-T-321D	6	6255 (Sunshades)	Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4654, 4655
18	AR-T-321D	7	6275	Concrete Spalls	2 - Undertake conventional Concrete Repair.	4656
19	AR-T-321D	6	6290 (Sunshades)	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4658
20	AR-T-321D	6	6290 (Sunshades)	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4657
21	AR-T-321D	7	6295	Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4659
22	AR-T-322B (Elevation 446 445)	6		Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	447
23	AR-T-322B	6		Concrete Spalls.	2 - Undertake conventional Concrete Repair.	444
24	AR-T-322B	5		Concrete Spalls.	2 - Undertake conventional Concrete Repair.	442, 443
25	AR-T-322B	5		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	441
26	AR-T-322B	5		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	440
27	AR-T-322B	7	(Return Face)	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4632, 4633
28	AR-T-322B	6	(Return Face)	Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4635
29	AR-T-322B	6	(Return Face)	Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant	4634
30	AR-T-322B	6		Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4636, 4637, 4638
31	AR-T-322B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4639
32	AR-T-322B	6		Exposed end of reinforcing bar.	1 - Undertake conventional Concrete Repair.	4640
33	AR-T-322B	6		Cracked and damaged brickwork and pointing.	2 - Repair brick reinforcing as required with helibars or similar and repoint.	4641

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
34	AR-T-322B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4642
35	AR-T-322B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4643
36	AR-T-322B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4644
37	AR-T-322B	6		Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	4646
38	AR-T-322B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4647
39	AR-T-322B	6		Exposed end of reinforcing bar.	1 - Undertake conventional Concrete Repair.	4647
40	AR-T-322B	6		Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4648
41	AR-T-322B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4649
42	AR-T-322B	6	(Return Face)	Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	448
43	AR-T-322B	7		Concrete Spalls	3 - Undertake conventional Concrete Repair.	4650
44	AR-T-322B	6		Exposed end of reinforcing bar.	1 - Undertake conventional Concrete Repair.	4652
45	AR-T-322B	6		Concrete Spalls	4 - Undertake conventional Concrete Repair.	4651
46	AR-T-322A (Elevation 431, 432, 433)	5		Exposed end of reinforcing bar.	1 - Undertake conventional Concrete Repair.	423
47	AR-T-322A	6	(Base of sunshades)	Exposed end of reinforcing bar.	8 - Undertake conventional Concrete Repair.	421
48	AR-T-322A	5	(Base of sunshades)	Exposed end of reinforcing bar.	2 - Undertake conventional Concrete Repair.	424
49	AR-T-322A	5	(Base of sunshades)	Exposed end of reinforcing bar.	5 - Undertake conventional Concrete Repair.	426
50	AR-T-322A	5	(Base of sunshades)	Exposed end of reinforcing bar.	1 - Undertake conventional Concrete Repair.	429
51	AR-T-322A	5	(Inside face of sunshade)	Redundant fixings.	2 - Remove redundant fixings and make good substrate.	428

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
52	AR-T-322A	6		Corroding form tie causing grout plug to spall.	4 - Remove loose grout plugs and repair.	430
53	AR-T-322A	5		Redundant fixings.	2 - Remove redundant fixings and make good substrate.	427
54	AR-T-322A	6		Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	4631
55	AR-T-322A	6		Corroding form tie causing grout plug to spall.	2 - Remove loose grout plugs and repair.	
56	AR-T-322A	6		Corroding form tie causing grout plug to spall.	3 - Remove loose grout plugs and repair.	422, 4628, 4629, 4630
57	AR-T-321A (Elevation 414, 415)	4	6085	Cracked and damaged brickwork and pointing.	3 - Repair brick reinforcing as required with helibars or similar and repoint.	420
58	AR-T-321A	4	6070	Cracked and damaged brickwork and pointing.	2 - Repair brick reinforcing as required with helibars or similar and repoint.	418, 419
59	AR-T-321A	5	6030	Unsafe gap in balustrade.	1 - Fill gap.	416
60	AR-T-321A	5	6030	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	417
61	AR-T-321A	3	5980	Cracked and damaged brickwork and pointing.	1 - Repair brick reinforcing as required with helibars or similar and repoint.	410
62	AR-T-321A	3	5980 (Retaining wall behind)	Boney concrete.	3 - Undertake conventional Concrete Repair.	411
63	AR-T-321A	3	5950	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	409
64	AR-T-321A	6	5945	Deteriorating pointing to brickwork.	1 - Repoint.	4624, 4625
65	AR-T-321A	5	6030	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4626, 4627
66	AR-T-320A	3	4240 (Perimeter retaining wall)	Concrete Spalls.	2 - Undertake conventional Concrete Repair.	408

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
67	AR-T-320A	3	4220	Salt staining.	1 - Clean.	407
68	AR-T-320A	3	4210	Active water leak (Wooden soffit).	1 - Repair consequential damage after addressing water leak.	406
69	AR-T-320A	4	4210	Corroded redundant fixings.	16 - Remove redundant fixings and make good substrate.	405
70	AR-T-320A	4	4180	Corroded redundant fixings.	20 - Remove redundant fixings and make good substrate.	4621, 4622
71	AR-T-320A	3	4140	Unsafe gap in balustrade.	1 - Fill gap.	403
72	AR-T-320A	3	4135	Corroding form tie causing grout plug to spall.	3 - Remove loose grout plugs and repair.	401, 402
73	AR-T-320A	4	4140	Corroding form tie causing grout plug to spall.	3 - Remove loose grout plugs and repair.	404
74	AR-T-320A	6	4185	Salt and mould staining.	1 - Clean.	4623
75	AR-T-323A (Elevation 413)	3	4980	Salt staining.	1 - Clean.	412
76	AR-T-323A	4	6020	Unsafe gap in balustrade.	1 - Fill gap.	399
77	AR-T-323A	4&5	6020	Failed waterproofing at junction between bridge and building.	1 - Repair waterproofing and clean concrete.	400
78	AR-T-324B (Elevation 463, 464)	5		Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	4675
79	AR-T-324B	5		Failed waterproofing on bridge deck above. Failed grout chamfer.	1 - Repair waterproofing and reinstate grout or reseal with flexible sealant.	4674
80	AR-T-324B	4		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4673
81	AR-T-324B	6		Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	4676
82	AR-T-324B	6		Concrete spalls and	1 - Undertake conventional Concrete Repair.	4676

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
				poorly compacted concrete.		
83	AR-T-324B	6		Exposed end of reinforcing bar.	2 - Undertake conventional Concrete Repair.	4672
84	AR-T-321B (Elevation 465, 466)	4	Face of sunshade	Concrete spalls and (Exposed rebars?).	Full length - Undertake conventional Concrete Repair.	4677, 4678, 4679
85	AR-T-321B	5	Side of sunshade	Exposed end of reinforcing bar.	1 - Undertake conventional Concrete Repair.	4683
86	AR-T-321B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4686
87	AR-T-321B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4696
88	AR-T-321B	6		Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	4696
89	AR-T-321B	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4698
90	AR-T-321B	6		Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	4698
91	AR-T-321B	7		Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	4685
92	AR-T-321B	7		Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	4684
93	AR-T-321B	5		Exposed end of reinforcing bar.	5 - Undertake conventional Concrete Repair.	4681
94	AR-T-321B	5		Exposed end of reinforcing bar.	5 - Undertake conventional Concrete Repair.	4680
95	AR-T-321B	5		Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4680
96	AR-T-320C (Elevation 467, 468, 471)	4	4035	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4687
97	AR-T-320C	3	4025	Deteriorating pointing to brickwork.	2 - Repoint.	469

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
98	AR-T-320C	4	4010	Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4691
99	AR-T-320C	5	4010	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4692
100	AR-T-320C	5	4020	Exposed end of reinforcing bar.	3 - Undertake conventional Concrete Repair.	4693
101	AR-T-320C	5	4025	Exposed end of reinforcing bar.	4 - Undertake conventional Concrete Repair.	4689, 4688
102	AR-T-320C	6	4030	Exposed end of reinforcing bar.	2 - Undertake conventional Concrete Repair.	4690
103	AR-T-320C	4	3985	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	4695
104	AR-T-320C	3	3940	Deteriorating pointing to brickwork.	1 - Repoint.	4703
105	AR-T-320C	5	3940	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4701
106	AR-T-320C	5	3925	Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4702
107	AR-T-320C	5	3915	Cracked or broken brick slip.	2 – Reinstate.	4705
108	AR-T-320C	6	3910	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4700
109	AR-T-320C	6	3910	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	4700
110	AR-T-320C	6	3895	Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4699
111	AR-T-320C	5	3880	Unsupported brick wall.	1 - Requires assessment by structural engineer.	4708, 4709
112	AR-T-320C	6	3940	Efflorescence and staining due to water ingress.	2 - Clean efflorescence after repairing waterproofing.	4706, 4707
113	AR-T-320C	6	3950	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	4704
114	AR-T-321E (Elevation 473, 475)	3	6015	Corroding form tie causing grout plug to spall.	3 - Remove loose grout plugs and repair.	470

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
115	AR-T-321E	3	5980	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4712
116	AR-T-321E	3	5960	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4711
117	AR-T-321E	2&3	5950	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4713
118	AR-T-321E	5	5935	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	4718
119	AR-T-321E	4	5950	Efflorescence and staining due to water ingress.	4 - Clean efflorescence after repairing waterproofing.	4719, 4720
120	AR-T-321E	4	5950	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4719
121	AR-T-321E	5	5950	Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4715
122	AR-T-321E	4	5975	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4710
123	AR-T-321E	5	5985	Efflorescence and staining due to water ingress.	3 - Clean efflorescence after repairing waterproofing.	4216
124	AR-T-321E	5	5995	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	4717
125	AR-T-320E (Elevation 475)	4	3880	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4726
126	AR-T-320E	4	3825	Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4721
127	AR-T-320E	5	3825	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4722
128	AR-T-320E	5	3835	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	4723
129	AR-T-320E	5	3835	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4723
130	AR-T-320E	5	3855	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	4725
131	AR-T-320E	5	3875	Efflorescence and staining due to water ingress.	2 - Clean efflorescence after repairing waterproofing.	4724

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
132	AR-T-325C (Elevation 492) Courtyard	4		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	499
133	AR-T-325C	5		Concrete Spalls.	18 - Undertake conventional Concrete Repair.	494,495,496,497,4742,4741
134	AR-T-325C	5		Exposed end of reinforcing bar.	6 - Undertake conventional Concrete Repair.	494,495,496,497
135	AR-T-325C	5-7		Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	489
136	AR-T-325C	5		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	490
137	AR-T-325C	6		Mould staining.	1 – Clean.	491
138	AR-T-325C	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4740
139	AR-T-325C	5		Concrete Spalls.	4 - Undertake conventional Concrete Repair.	498
140	AR-T-324C (Elevation 510, 511)	5-roof	6135	Failed sealant.	1 - Replace sealant with new.	509
141	AR-T-324C	5	6135	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	508
142	AR-T-324C	5-roof	6130	Failed sealant.	1 - Replace sealant with new.	4765
143	AR-T-324C	6	6095	Failed sealant.	1 - Replace sealant with new.	4764
144	AR-T-323C (Elevation 487, 488) Courtyard	5		Cracked tile.	1 - Reinstate	486
145	AR-T-323C	6		Cracked tile.	1 - Reinstate	513
146	AR-T-323C	5-7		Corroding form tie causing grout plug to spall.	18 - Remove loose grout plugs and repair. (Check whole wall)	485
147	AR-T-323C	4		Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	482
148	AR-T-323C	4	Column behind.	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	484
149	AR-T-323C	5		Concrete Spalls.	3 - Undertake conventional Concrete Repair.	481

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
150	AR-T-323C	5		Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	481
151	AR-T-323C	4	Reverse side.	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	483
152	AR-T-323C	5	Behind light return face.	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	504
153	AR-T-323C	6		Efflorescence and staining due to water ingress.	2 - Clean efflorescence after repairing waterproofing.	4733
154	AR-T-323C	6		Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4732
155	AR-T-323C	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4735
156	AR-T-323C	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4734
157	AR-T-323C	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4736
158	AR-T-323C	6		Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4737
159	AR-T-323C	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4738
160	AR-T-323C	6		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4739
161	AR-T-321C (Elevation 503, 502) Courtyard	5	3962	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4760
162	AR-T-321C	5	3965	Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4757
163	AR-T-321C	5	3970	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4758
164	AR-T-321C	5	3970	Exposed end of reinforcing bar.	1 - Undertake conventional Concrete Repair.	4758
165	AR-T-321C	5	3970	Exposed end of reinforcing bar.	2 - Undertake conventional Concrete Repair.	4761
166	AR-T-321C	5	3975	Salt staining.	1 - Clean.	505
167	AR-T-321C	6	3975	Mould staining.	1 - Clean.	4762
168	AR-T-321C	5	3990	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4752

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
169	AR-T-321C	5	3990	Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4750
170	AR-T-321C	4	3985 (Return face sealant)	Failed sealant.	1 - Replace sealant with new.	4763
171	AR-T-321C	4	3990 (Sunshade below)	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4753
172	AR-T-321C	4	3995	Exposed end of reinforcing bar.	2 - Undertake conventional Concrete Repair.	4754
173	AR-T-321C	5	4005	Exposed end of reinforcing bar.	3 - Undertake conventional Concrete Repair.	4751
174	AR-T-321C	6	3995	Exposed end of reinforcing bar.	6 - Undertake conventional Concrete Repair.	4749
175	AR-T-321C	6	3990	Concrete Spalls.	4 - Undertake conventional Concrete Repair.	4748
176	AR-T-321C	6	4025	Failed sealant.	1 - Replace sealant with new.	4743
177	AR-T-321C	5	4025	Failed sealant.	1 - Replace sealant with new.	4744, 501
178	AR-T-321C	4	4025	Failed sealant.	1 - Replace sealant with new.	4746, 500
179	AR-T-321C	4	4025	Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4747
180	AR-T-324B (Elevation 516, 517) Courtyard	4		Exposed end of reinforcing bar.	2 - Undertake conventional Concrete Repair.	514
181	AR-T-324B	4		Cracked tile.	2 - Reinstate.	4780
182	AR-T-324B	5		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4782
183	AR-T-324B	5		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4781
184	AR-T-324B	6		Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	4784
185	AR-T-324B	6		Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	4784
186	AR-T-324B	7		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4783
187	AR-T-324B	7		Active water leak.	1 - Repair consequential damage after addressing water leak.	4779

Item	Drawing	Level	Approx. Grid	Defect	# of Repairs / Required Repair	Photo #
188	AR-T-324B	7		Corroding form tie causing grout plug to spall.	3 - Remove loose grout plugs and repair.	4779
189	AR-T-324B	7		Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	4778
190	AR-T-324B	7		Active water leak with plant growth.	1 - Poison and remove plant, repair consequential damage after addressing water leak.	4777
191	AR-T-324B	7		Concrete Spalls.	3 - Undertake conventional Concrete Repair.	4775
192	AR-T-324B	7		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4774
193	AR-T-324B	7		Concrete Spalls.	1 - Undertake conventional Concrete Repair.	4773
194	AR-T-324B	5-7		Failed sealant.	1 - Replace sealant with new.	4773
195	AR-T-324B	6		Concrete Spalls.	2 - Undertake conventional Concrete Repair.	4776

Internal Zone A

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
196	AR-T-234A (Level 4)	4195	5950	Cracked and damaged brickwork and pointing.	2 - Repair bricks reinforcing as required with helibars or similar and repoint.	4618
197	AR-T-234A	4200	5950	Deteriorating pointing to brickwork.	1 - Repoint.	390
198	AR-T-234A	4205	5950 (Ceiling)	Active water leak to roof causing damage to ceiling and finishes below.	1 - Repair consequential damage after addressing water leak.	4619
199	AR-T-234A	4220	5950	Active water leak to roof causing damage to ceiling and finishes below.	1 - Repair consequential damage after addressing water leak.	4620
200	AR-T-234A	4230	5950	Deteriorating pointing to brickwork.	1 - Repoint.	391
201	AR-T-234A	4245	5955	Cracked and damaged brickwork and pointing.	1 - Repair bricks reinforcing as required with helibars or similar and repoint.	392
202	AR-T-234A	4245	5985	Redundant fixings.	10 - Remove redundant fixings and make good substrate.	393
203	AR-T-234A	4230	6030	Deteriorating pointing to brickwork.	Whole room - Repoint.	394
204	AR-T-234A	4210	6035	Deteriorating pointing to brickwork.	1 - Repoint.	395
205	AR-T-234A	4190	6035	Deteriorating pointing to brickwork.	1 - Repoint.	396
206	AR-T-234A	4180	6020	Redundant fixings.	6 - Remove redundant fixings and make good substrate.	397
207	AR-T-234A	4150	6040	Heritage fabric obscured by fit out.	Will require assessment at a later date.	398
208	AR-T-234A	4145	5995	Deteriorating pointing to brickwork.	1 - Repoint.	388
209	AR-T-234A	4145	5980	Deteriorating pointing to brickwork.	1 - Repoint.	389
210	AR-T-235A (Level 5)	4135	6010	Failed grout chamfer between stair and wall.	1 - Reinstate grout or reseal with flexible sealant.	367
211	AR-T-235A	4145	6020	No lintel.	1 - Install lintel.	382
212	AR-T-235A	4145	6030	Salt and mould staining.	1 - Clean.	383

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
213	AR-T-235A	4155	6025	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	385
214	AR-T-235A	4160	6020	Cracked and damaged brickwork and pointing.	1 - Repair bricks reinforcing as required with helibars or similar and repoint.	384
215	AR-T-235A	4190	6030	Deteriorating pointing to brickwork.	1 - Repoint.	381
216	AR-T-235A	4190	6030	Deteriorating pointing to brickwork.	1 - Repoint.	380
217	AR-T-235A	4235	6030	Heritage fabric obscured by fit out.	Will require assessment at a later date.	371
218	AR-T-235A	4240	6025	Deteriorating pointing to brickwork.	1 - Repoint.	370
219	AR-T-235A	4245	6020	Deteriorating pointing to brickwork.	2 - Repoint.	369
220	AR-T-235A	4250	6005	Failed grout chamfer between stair and wall.	1 - Reinstate grout or reseal with flexible sealant.	368
221	AR-T-235A	4155	6070	Corroded redundant fixings.	1 - Remove redundant fixings and make good substrate.	377
222	AR-T-235A	4145	6080	Redundant fixings.	7 - Remove redundant fixings and make good substrate.	376
223	AR-T-235A	4190	6095	Deteriorating pointing to brickwork.	1 - Repoint.	375
224	AR-T-235A	4195	6085	Redundant fixings.	10 - Remove redundant fixings and make good substrate.	374
225	AR-T-235A	4215	6095	Redundant fixings.	9 - Remove redundant fixings and make good substrate.	372
226	AR-T-236A (Level 6)	4140	5995	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	348
227	AR-T-236A	4150	6010	Efflorescence and staining due to water ingress.	2 - Clean efflorescence after repairing waterproofing.	347
228	AR-T-236A	4160	6010	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	346

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
229	AR-T-236A	4155	6020	Failed sealant.	1 - Replace sealant with new.	352
230	AR-T-236A	4155	6020	Redundant fixings.	1 - Remove redundant fixings and make good substrate.	353
231	AR-T-236A	4160	6020	Salt staining.	1 - Clean.	351
232	AR-T-236A	4145	6040	Concrete spalls. (Top face)	1 - Undertake conventional concrete repair.	357
233	AR-T-236A	4145	6040	Staining.	1 - Clean.	354
234	AR-T-236A	4145	6060	Unsafe gap in balustrade.	1 - Fill gap.	355
235	AR-T-236A	4145	6060	Cracked and damaged brickwork and pointing.	1 - Repair bricks reinforcing as required with helibars or similar and repoint.	356
236	AR-T-236A	4165	6020	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	350
237	AR-T-236A	4175	6020	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	349
238	AR-T-236A	4165	6060	Heritage fabric obscured by fit out.	Will require assessment at a later date.	358
239	AR-T-236A	4185	6020	Salt staining.	1 – Clean.	345
240	AR-T-236A	4205	6050	Heritage fabric obscured by fit out.	Will require assessment at a later date.	359
241	AR-T-236A	4200	6010	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	344
242	AR-T-236A	4210	6010	Active water leak.	1 - Repair consequential damage after addressing water leak.	343
243	AR-T-236A	4215	6020	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	342
244	AR-T-236A	4220	6060	Heritage fabric obscured by fit out.	Will require assessment at a later date.	360
245	AR-T-236A	4235	6015 (Ceiling)	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	337

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
246	AR-T-236A	4235	6020 (Return face)	Salt staining.	1 – Clean.	341
247	AR-T-236A	4235	6010	Efflorescence and staining due to water ingress.	5 - Clean efflorescence after repairing waterproofing.	338
248	AR-T-236A	4235	6020	Failed sealant.	1 - Replace sealant with new.	366
249	AR-T-236A	4235	6060	Failed sealant.	1 - Replace sealant with new.	364
250	AR-T-236A	4235	6060	Deteriorated pointing to brickwork.	3 - Repoint.	361
251	AR-T-236A	4245	6060	Cracked and damaged brickwork and pointing.	Repair bricks reinforcing as required with helibars or similar and repoint.	362
252	AR-T-236A	4245	6060	Unsafe gap in balustrade.	1 - Fill gap.	363
253	AR-T-236A	4245	6020	Unsafe gap in balustrade.	1 - Fill gap.	365
254	AR-T-236A	4240	6020	Efflorescence and staining due to water ingress.	3 - Clean efflorescence after repairing waterproofing.	336
255	AR-T-236A	4245	6020	Unsupported brick wall.	1 - Requires assessment by structural engineer.	339
256	AR-T-236A	4255	6020	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	335
257	AR-T-236A	4250	6005	Efflorescence and staining due to water ingress.	8 - Clean efflorescence after repairing waterproofing.	340

Internal Zone B

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
258	AR-T-234B (Level 4)	4020	6070 (Ceiling)	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	519
259	AR-T-234B	4020	6085	Failed compressible filler in concrete column.	1 - Rake out compressible filler, replace with flexible joint sealant.	518
260	AR-T-235B (Level 5)	4135	6055	Corroded redundant fixings.	Multiple - Remove redundant fixings and make good substrate.	560
261	AR-T-235B	4140	6060 Above	Concrete spalls.	1 - Undertake conventional concrete repair.	561
262	AR-T-235B	4140	6060 Below	Corroding form tie causing grout plug to spall.	6 - Remove loose grout plugs and repair.	562
263	AR-T-236B (Level 6)	4070	6115	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	626
264	AR-T-236B	4075	6105	Redundant fixings.	6 - Remove redundant fixings and make good substrate.	558
265	AR-T-236B	4085	6115	Redundant fixings.	10 - Remove redundant fixings and make good substrate.	559
266	AR-T-236B	4100	6080	Redundant fixings.	Multiple along wall - Remove redundant fixings and make good substrate.	549, 551, 553
267	AR-T-236B	4120	6090	Redundant fixings.	Multiple along wall - Remove redundant fixings and make good substrate.	557, 555, 554, 552
268	AR-T-236B	4130	6065	Corroded redundant fixings.	3 - Remove redundant fixings and make good substrate.	546
269	AR-T-236B	4135	6075	Exposed end of reinforcing bar.	1 - Undertake conventional concrete repair.	533
270	AR-T-236B	4115	6055	Concrete spalls.	1 - Undertake conventional concrete repair.	532
271	AR-T-236B	4130	6060	Concrete spalls surrounding light fixture.	1 - Undertake conventional concrete repair.	548

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
272	AR-T-236B	4135	6055	Corroded redundant fixings.	2 - Remove redundant fixings and make good substrate.	547
273	AR-T-236B	4140	6050	Concrete spalls.	1 - Undertake conventional concrete repair.	544
274	AR-T-236B	4145	6055	Concrete spalls.	1 - Undertake conventional concrete repair.	545
275	AR-T-236B	4145	6050	Concrete spalls.	1 - Undertake conventional concrete repair.	536
276	AR-T-236B	4145	6050	Exposed end of reinforcing bar.	4 - Undertake conventional concrete repair.	
277	AR-T-236B	4140	6025	Concrete spalls.	1 - Undertake conventional concrete repair.	542
278	AR-T-236B	4145	6030	Concrete spalls.	Multiple along base - Undertake conventional concrete repair.	539, 540
279	AR-T-236B	4145	6020	Cracked tiles.	3 - Reinstate	538
280	AR-T-236B	4145	6020	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	538

Internal Zone C & Roof

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
281	AR-T-234C (Level 4)	3975	6070	Corroded redundant fixings.	3 - Remove redundant fixings and make good substrate.	524
282	AR-T-234C	4015	6065	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	520
283	AR-T-234C	3985	6060	Salt staining.	1 – Clean.	521, 522, 523
284	AR-T-235C (Level 5)	4020	6070	Failed compressible filler in ceiling.	1 - Rake out compressible filler, replace with flexible joint sealant.	531
285	AR-T-235C	4020	6085	Failed compressible filler in concrete column.	1 - Rake out compressible filler, replace with flexible joint sealant.	530
286	AR-T-235C	3940	6195	Concrete spalls, due to steel embedment.	1 - Determine if steel is redundant, remove or corrosion protect steel, repair and replace tiles.	644
287	AR-T-235C	3970	6195	Concrete spalls (Base of column)	1 - Undertake conventional concrete repair.	645
288	AR-T-235C	3970	6195	Concrete spalls, due to steel embedment.	1 - Determine if steel is redundant, remove or corrosion protect steel, repair and replace tiles.	645
289	AR-T-235C	3970	6210	Concrete spalls, due to steel embedment.	4 - Determine if steel is redundant, remove or corrosion protect steel, repair and replace tiles.	646, 647
290	AR-T-236C (Level 6)	4010	6060	Failed sealant.	1 - Replace sealant with new.	631
291	AR-T-236C	4020	6075	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	627
292	AR-T-236C	4020	6075	Failed compressible filler in ceiling.	1 - Rake out compressible filler, replace with flexible joint sealant.	627
293	AR-T-236C	4025	6080	Failed sealant.	1 - Replace sealant with new.	630
294	AR-T-236C	3975	6075	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	525
295	AR-T-236C	3980	6060	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	526

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
296	AR-T-236C	3980	6060	Corroded redundant fixings.	2 - Remove redundant fixings and make good substrate.	527
297	AR-T-236C	3040	6180	Differential movement in structure.	1 - Requires assessment by structural engineer.	635, 643
298	AR-T-236C	4005	6190	Failed compressible filler in ceiling.	1 - Rake out compressible filler, replace with flexible joint sealant.	633
299	AR-T-237C (Level 7 – Roof)	3955	6045	Cracked and damaged brickwork and pointing.	Repair bricks reinforcing as required with helibars or similar and repoint.	597
300	AR-T-237C	3955	6045	Failed sealant.	1 - Replace sealant with new.	597
301	AR-T-237C	3950	6040	Concrete spalls.	1 - Undertake conventional concrete repair.	598
302	AR-T-237C	3975	6070	Corroding ferrel causing concrete spall.	1 - Treat corrosion or remove ferrel and undertake concrete repair.	596
303	AR-T-237C	3975	6085	Corroding ferrel causing concrete spall.	2 - Treat corrosion or remove ferrel and undertake concrete repair.	595
304	AR-T-237C	3975	6080	Deteriorating pointing to brickwork.	1 - Repoint.	571
305	AR-T-237C	3975	6080	Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	571
306	AR-T-237C	3970	6085	Failed compressible filler in ceiling.	1 - Rake out compressible filler, replace with flexible joint sealant.	573
307	AR-T-237C	3955	6085	Failed compressible filler in ceiling.	1 - Rake out compressible filler, replace with flexible joint sealant.	574, 575
308	AR-T-237C	3045	6165	Corroded redundant fixings.	13 - Remove redundant fixings and make good substrate.	594
309	AR-T-237C	3955	6170	Concrete spalls.	1 - Undertake conventional concrete repair.	592

Internal Zone D & Roof

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
310	AR-T-236D (Level 6)	4010	6195	Cracked concrete.	1 - Requires assessment by structural engineer.	632
311	AR-T-236D	3970	6310	Broken skylight boarded over.	1 - Reinstate skylight to match existing.	634
312	AR-T-237D (Elevation 579, 577, 578) (Level 7 - Roof)	3930	6205	Concrete spalls.	1 - Undertake conventional concrete repair	588
313	AR-T-237D	3950	6205	Concrete spalls.	Extensive - Undertake conventional concrete repair.	563, 564, 565, 566, 569, 570
314	AR-T-237D	3920	6225	Corroding form tie causing grout plug to spall.	14 - Remove loose grout plugs and repair.	587
315	AR-T-237D	3920	6225	Concrete spalls.	1 - Undertake conventional concrete repair	586
316	AR-T-237D	3920	6250	Concrete spalls, no cover.	Extensive - Undertake conventional concrete repair	582, 583, 584
317	AR-T-237D	3920	6250	Corroding form tie causing grout plug to spall.	8 - Remove loose grout plugs and repair.	585
318	AR-T-237D	3930	6250	Concrete spalls.	1 - Undertake conventional concrete repair	581

Internal Zone E

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
319	AR-T-234E (Level 4)	3850	5995	Active water leak.	1 - Repair consequential damage after addressing water leak.	650
320	AR-T-234E	3850	6035	Deteriorating pointing to brickwork.	1 - Repoint.	648
321	AR-T-234E	3850	6035	Staining.	1 - Clean.	648
322	AR-T-234E	3855	6045	Active water leak.	1 - Repair consequential damage after addressing water leak.	649
323	AR-T-234E	3915	6020	Hole in façade.	1 - Remediate hole.	651, 652
324	AR-T-234E	3945	6035	Damage to waffle slab.	1 - Undertake conventional concrete repair.	653

Internal Zone F

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
325	AR-T-235F (Level 5)	3885	6075	Missing brick & deteriorating pointing to brickwork.	1 - Reinstate and repoint.	641
326	AR-T-235F	3890	6195	Concrete spalls.	1 - Undertake conventional concrete repair	642
327	AR-T-236F (Level 6)	3885	6140	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	640
328	AR-T-236F	3880	6145	Redundant fixings.	5 - Remove redundant fixings and make good substrate.	638
329	AR-T-236F	3885	6150	Salt and mould staining.	1 - Clean.	637
330	AR-T-236F	3895	6165	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant	636
331	AR-T-236F	3895	6165	Crack	1 - Requires assessment by structural engineer.	636
332	AR-T-237F (Level 7 - Roof)	3880	6080	Cracked and damaged brickwork and pointing.	Wall generally - Repair bricks reinforcing as required with helibars or similar and repoint.	616, 618
333	AR-T-237F	3880	6080	Salt and mould staining.	Wall generally - Clean.	616, 618
334	AR-T-237F	3880	6110	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	615
335	AR-T-237F	3870	6110	Corroding form tie causing grout plug to spall.	2 - Remove loose grout plugs and repair.	614
336	AR-T-237F	3870	6110	Concrete spalls.	1 - Undertake conventional concrete repair	614
337	AR-T-237F	3855	6110	Concrete spalls.	1 - Undertake conventional concrete repair	613
338	AR-T-237F	3855	6110	Efflorescence and staining due to water ingress.	3 - Clean efflorescence after repairing waterproofing.	613
339	AR-T-237F	3885	6115	Corroding ferrel causing concrete spall.	2 - Treat corrosion or remove ferrel and undertake concrete repair.	599
340	AR-T-237F	3830	6105	Concrete spalls.	3 - Undertake conventional concrete repair	607, 608
341	AR-T-237F	3830	6105	Corrosion of embedded steel.	Further investigate, possibly locally deconstruct brick to understand purpose of	603, 604, 605, 606, 609

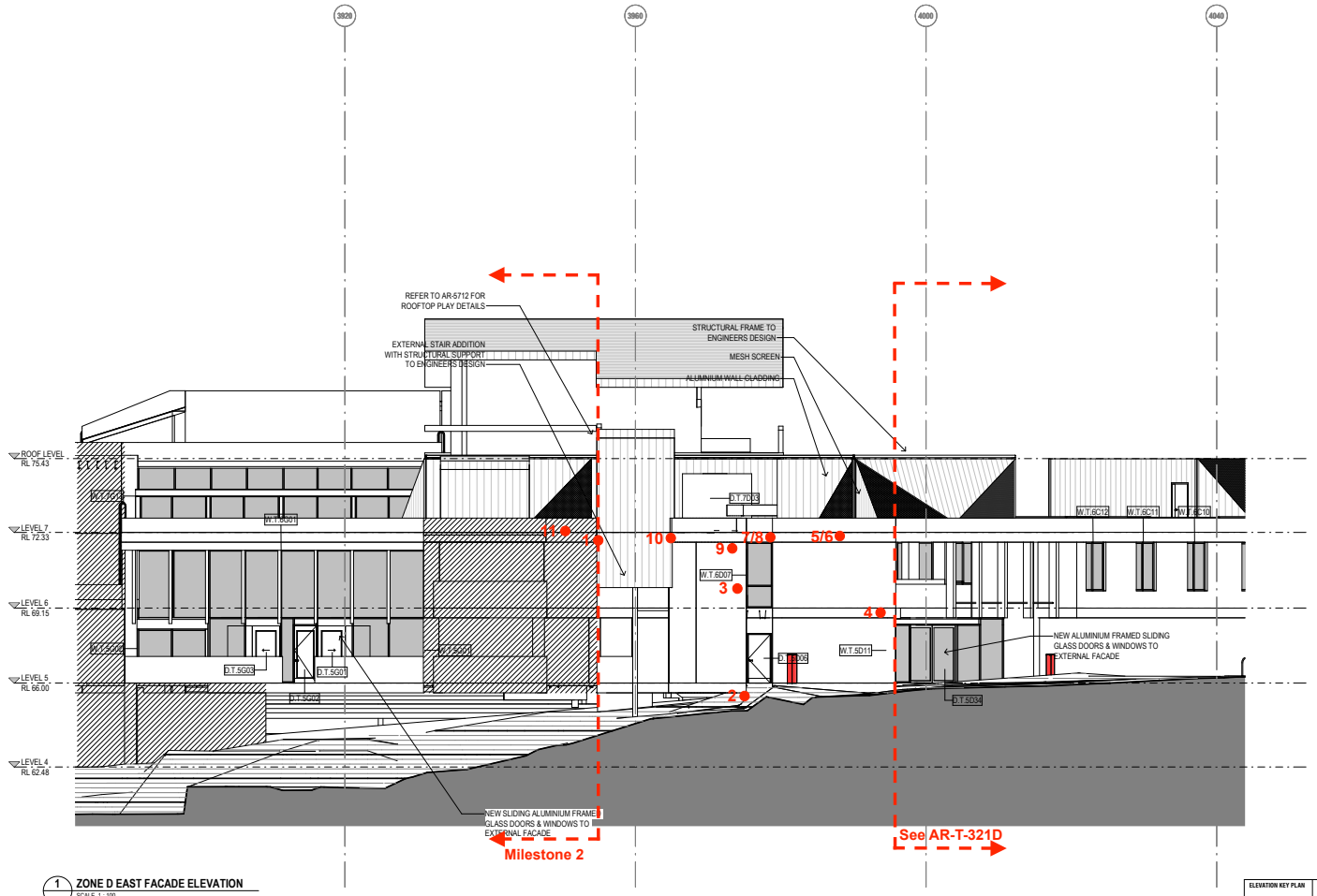
Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
					embedded steel plates. Develop appropriate repair.	
342	AR-T-237F	3830	6120	Displaced compressible filler in brickwork.	Rake out compressible filler, replace with flexible joint sealant.	610
343	AR-T-237F	3885	6150	Cracked and damaged brickwork and pointing.	1 - Repair bricks reinforcing as required with helibars or similar and repoint.	601, 602
344	AR-T-237F	3875	6175	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	619, 620
345	AR-T-237F	3890	6175	Corroding form tie causing grout plug to spall.	14 - Remove loose grout plugs and repair.	600
346	AR-T-237F	3935	6170	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	590
347	AR-T-237F	3935	6185	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	591

Zone G Roof

Item	Drawing	Approx. Grid Horizo.	Approx. Grid Vertical.	Defect	# of Repairs / Required Repair	Photo #
348	AR-T-237G	3890	6195	Deteriorating pointing to brickwork.	1 - Repoint.	589
349	AR-T-237G	3890	6210	Concrete spalls.	1 - Undertake conventional concrete repair	623, 624
350	AR-T-237G	3890	6210	Concrete spalls.	1 - Undertake conventional concrete repair	624
351	AR-T-237G	3890	6230	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant	621, 622

Appendix B – Marked Up Elevations/Plans

External and Internal Courtyard



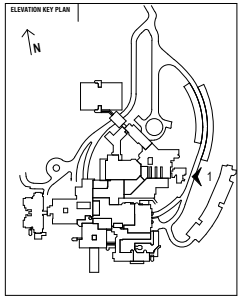
1 ZONE D EAST FACADE ELEVATION
SCALE 1 : 100

AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

ELEVATION KEY PLAN



SCALE BAR - 1:100

Apex Markup 13/07/18

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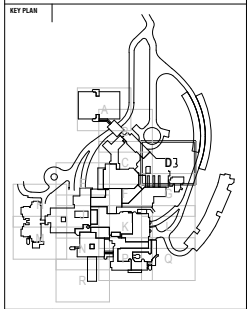
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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QUANTITY SURVEYOR	WILDE AND WOOLLARD Ph: (02) 9411 2777
PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE D EAST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-320D

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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No	DATE	REVISIONS	BY
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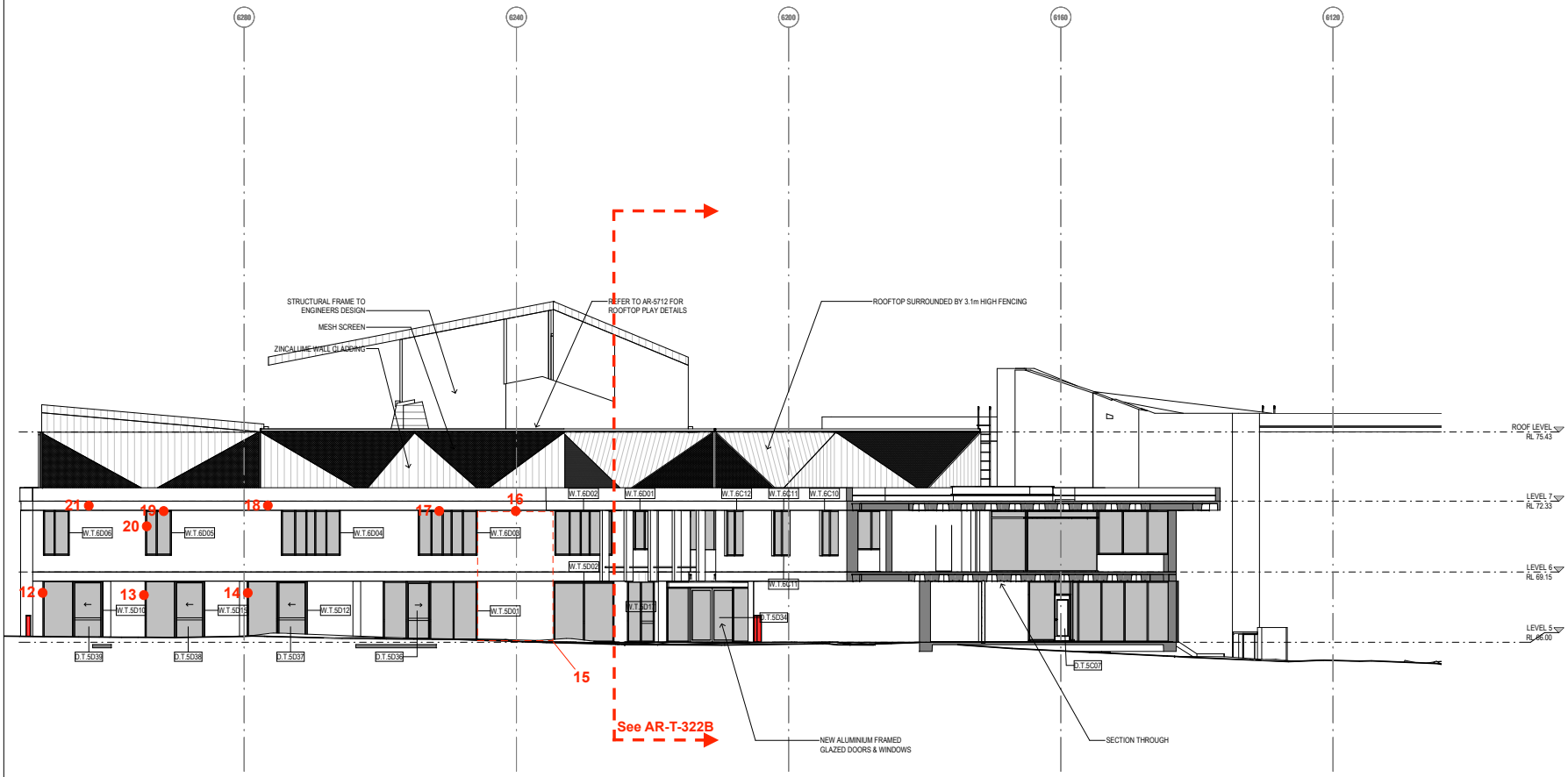
2	29/06/2018	ISSUED FOR TENDER	HC



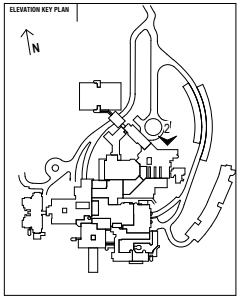
1 ZONE D NORTH FACADE ELEVATION
SCALE 1 : 100

AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:
- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup 13/07/18

ELEVATION KEY PLAN



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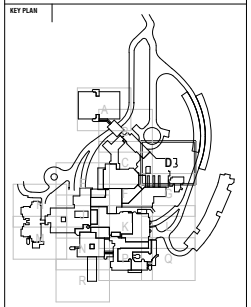
KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE D NORTH

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION 2
DRAWING Nº.	AR-T-321D	

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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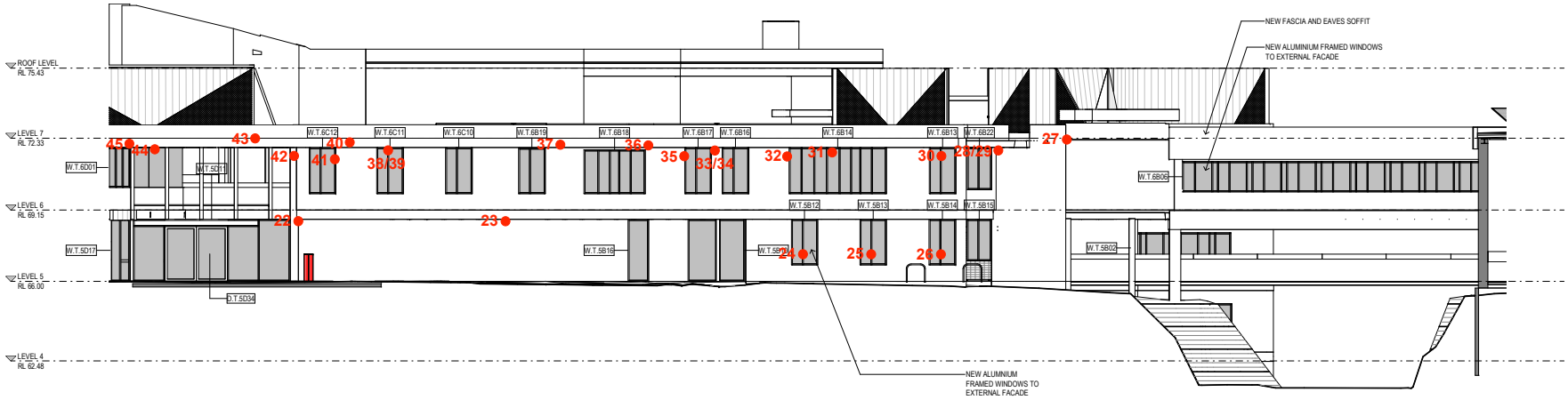
2	29/06/2018	ISSUED FOR TENDER	HC



1 **ZONE B NORTHEAST FACADE ELEVATION**
SCALE 1 : 100

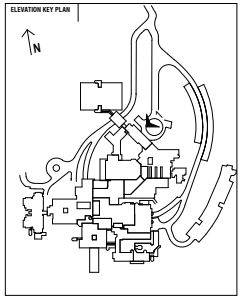
AR - KEYNOTE LEGEND BY...

Key Value	Keynote Text

LEGEND:
- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup 13/07/18

ELEVATION KEY PLAN



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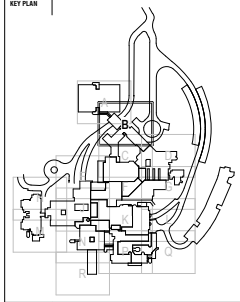
KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE B NORTHEAST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-322B	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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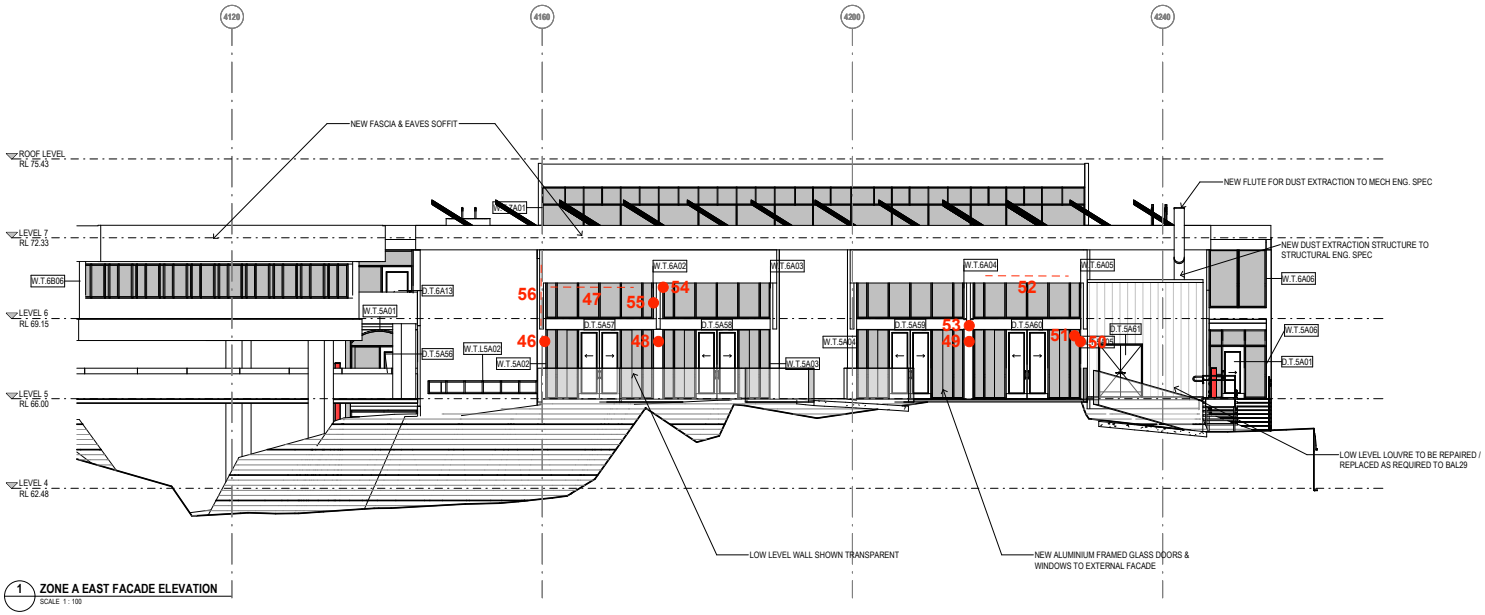
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC



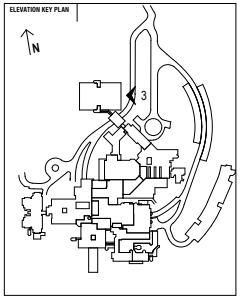
1 ZONE A EAST FACADE ELEVATION
SCALE 1 : 100

AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:
- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup 13/07/18

ELEVATION KEY PLAN



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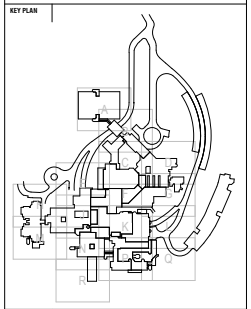
KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE A EAST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-322A

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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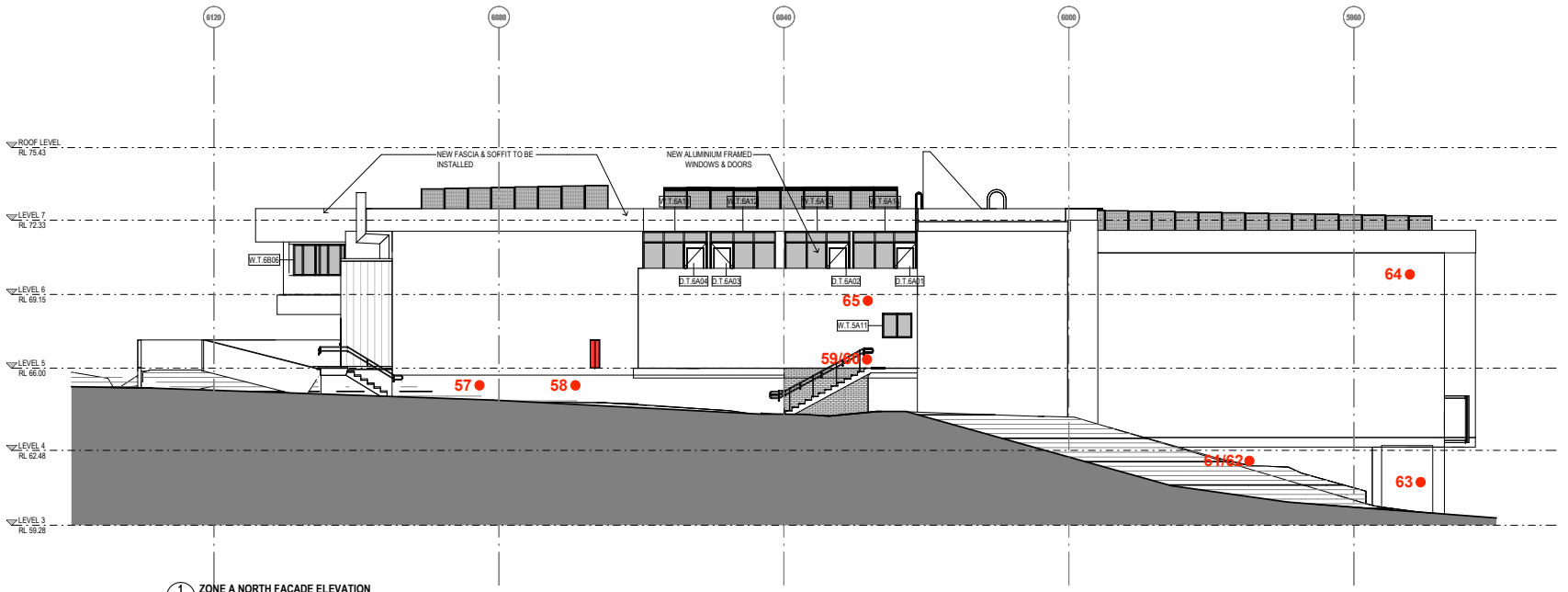


1 ZONE A NORTH FACADE ELEVATION
SCALE 1 : 100

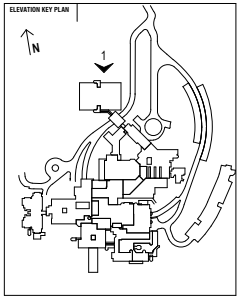
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup
13/07/18

ELEVATION KEY PLAN



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SCALE BAR - 1:100

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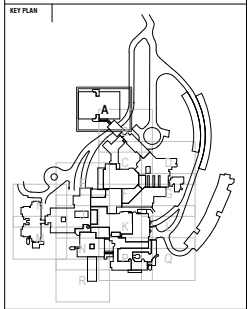

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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE A NORTH

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-321A	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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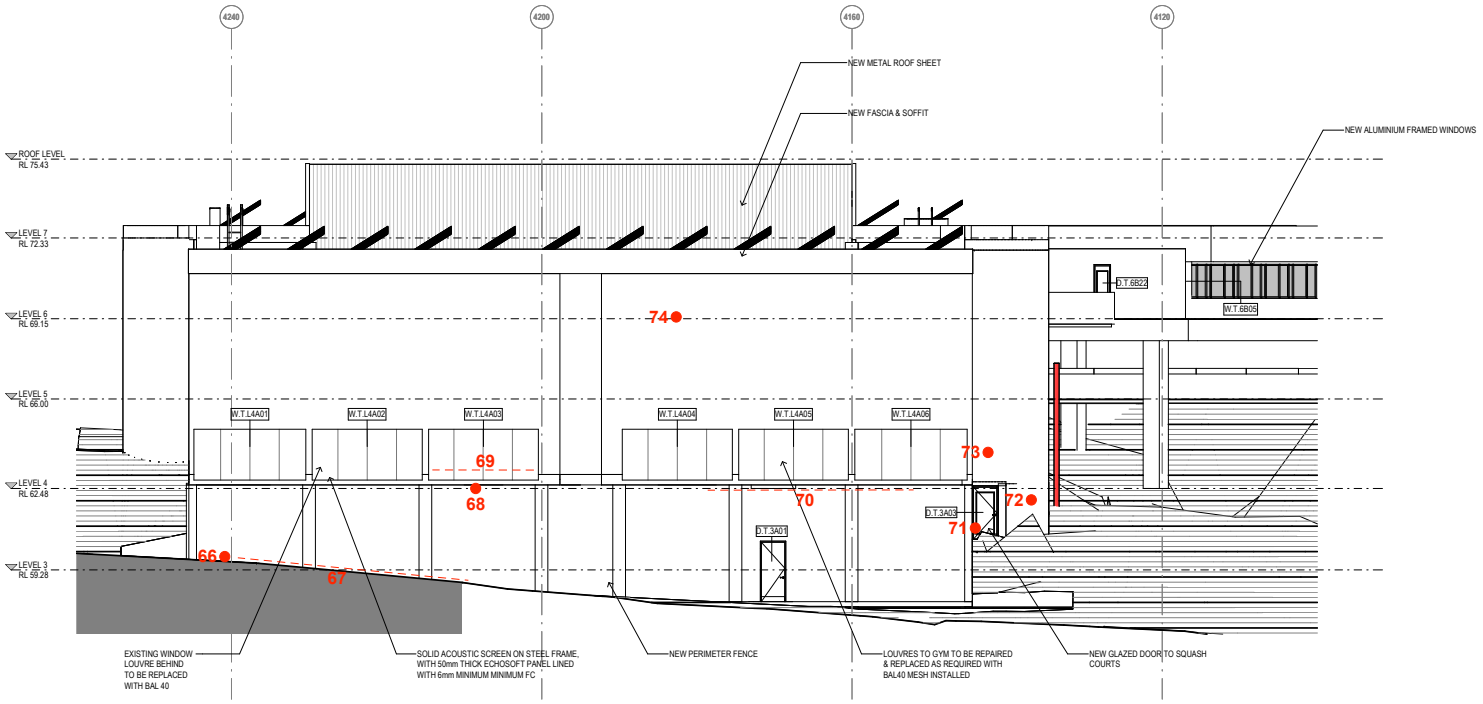


1 **ZONE A WEST FACADE ELEVATION**
SCALE 1 : 100

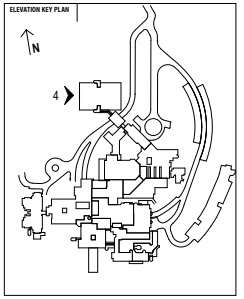
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup 13/07/18

ELEVATION KEY PLAN



SCALE BAR - 1:100

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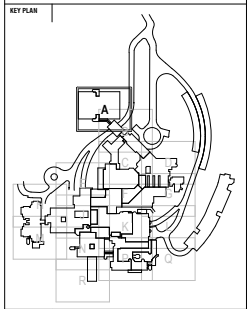

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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE A WEST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION 2
DRAWING Nº.	AR-T-320A	

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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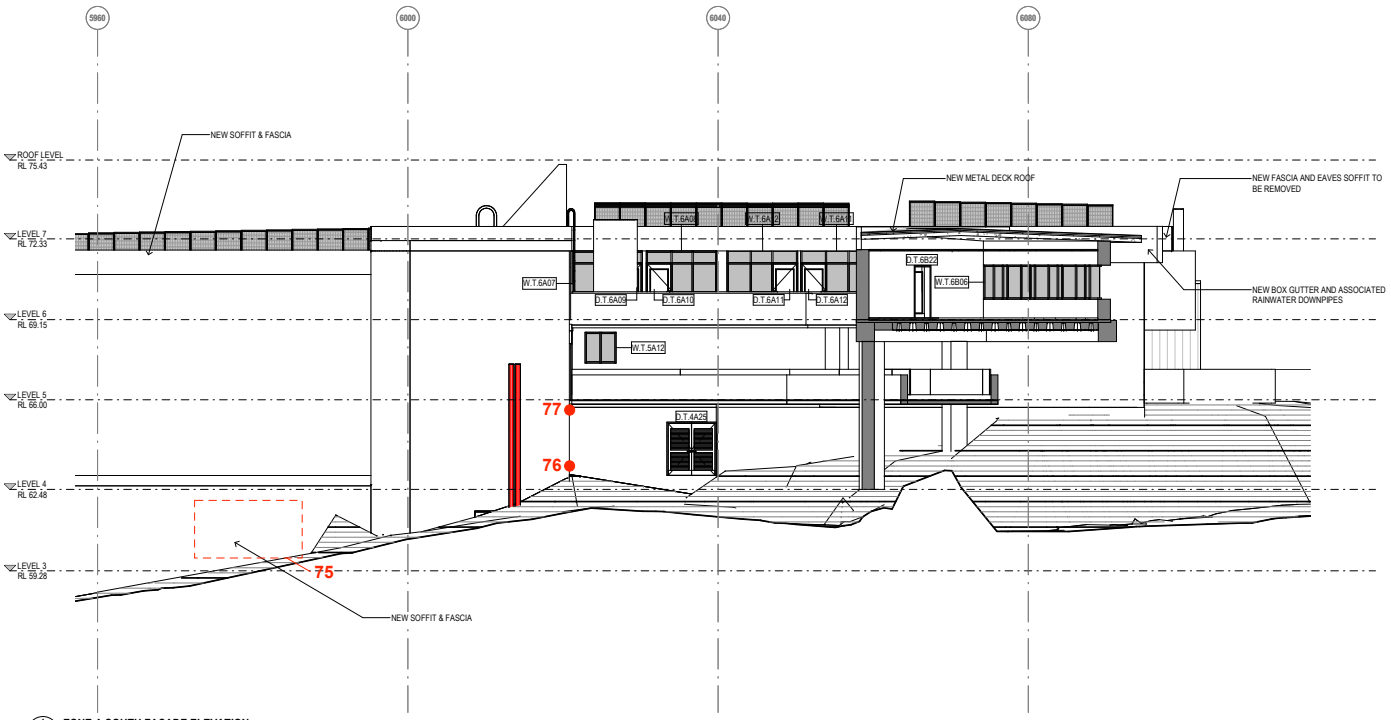


1 ZONE A SOUTH FACADE ELEVATION
AR-T-213A SCALE 1 : 100

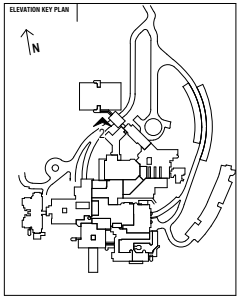
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup
13/07/18

ELEVATION KEY PLAN



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SCALE BAR - 1:100

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Nominated Architects

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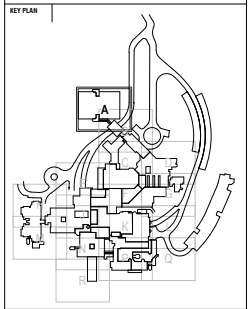
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

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Architecture Urban Design Interiors

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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE A SOUTH

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-323A	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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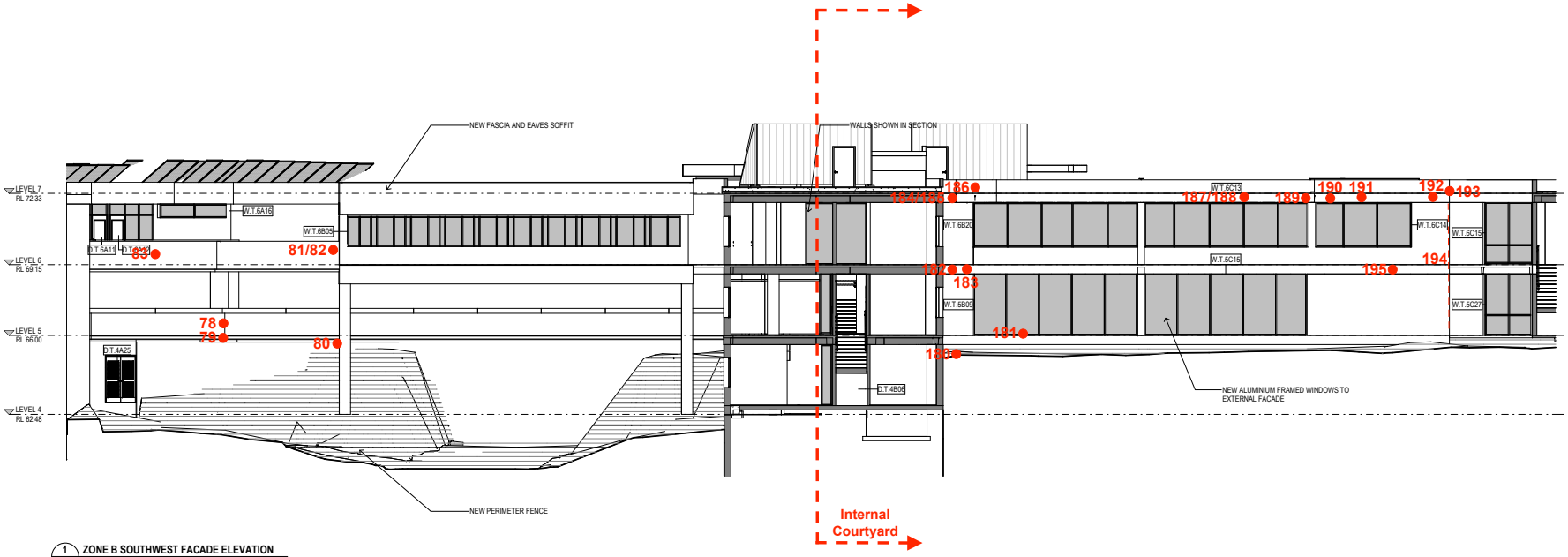


1 **ZONE B SOUTHWEST FACADE ELEVATION**
SCALE 1 : 100

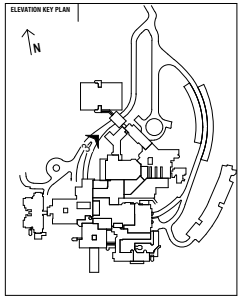
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup 13/07/18

ELEVATION KEY PLAN



SCALE BAR - 1:100

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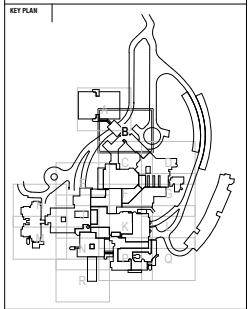
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE B SOUTHWEST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-324B

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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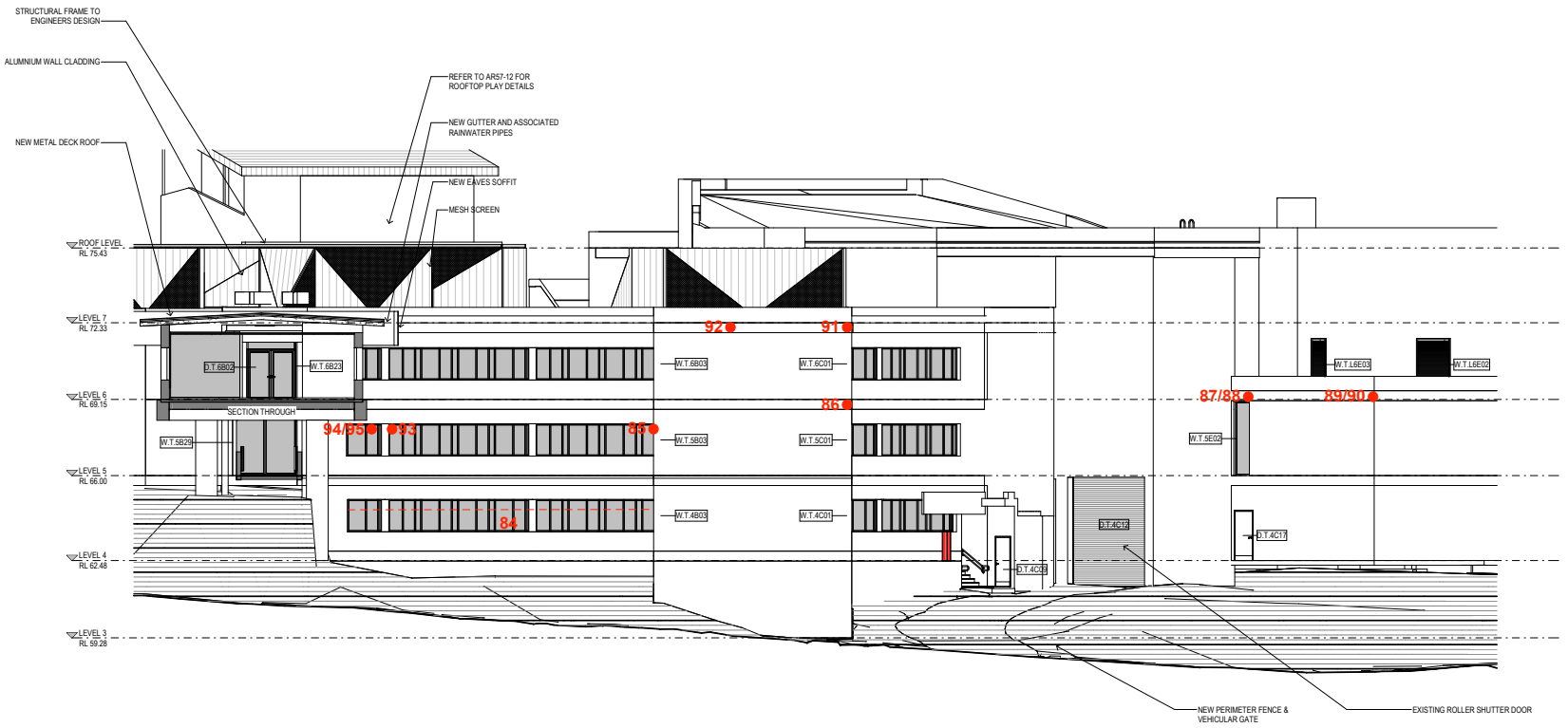


1 **ZONE B NORTHWEST FACADE ELEVATION**
SCALE 1 : 100

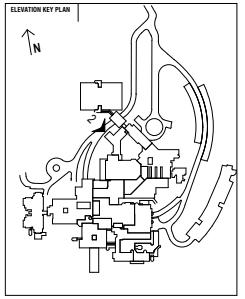
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup 13/07/18

ELEVATION KEY PLAN



0 1000 2000 3000 4000 5000 mm
SCALE BAR - 1:100

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No	DATE	REVISIONS	BY
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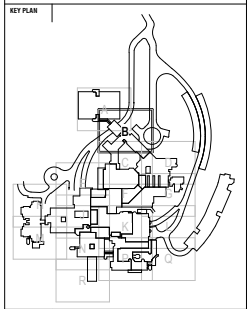
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE B NORTHWEST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-321B	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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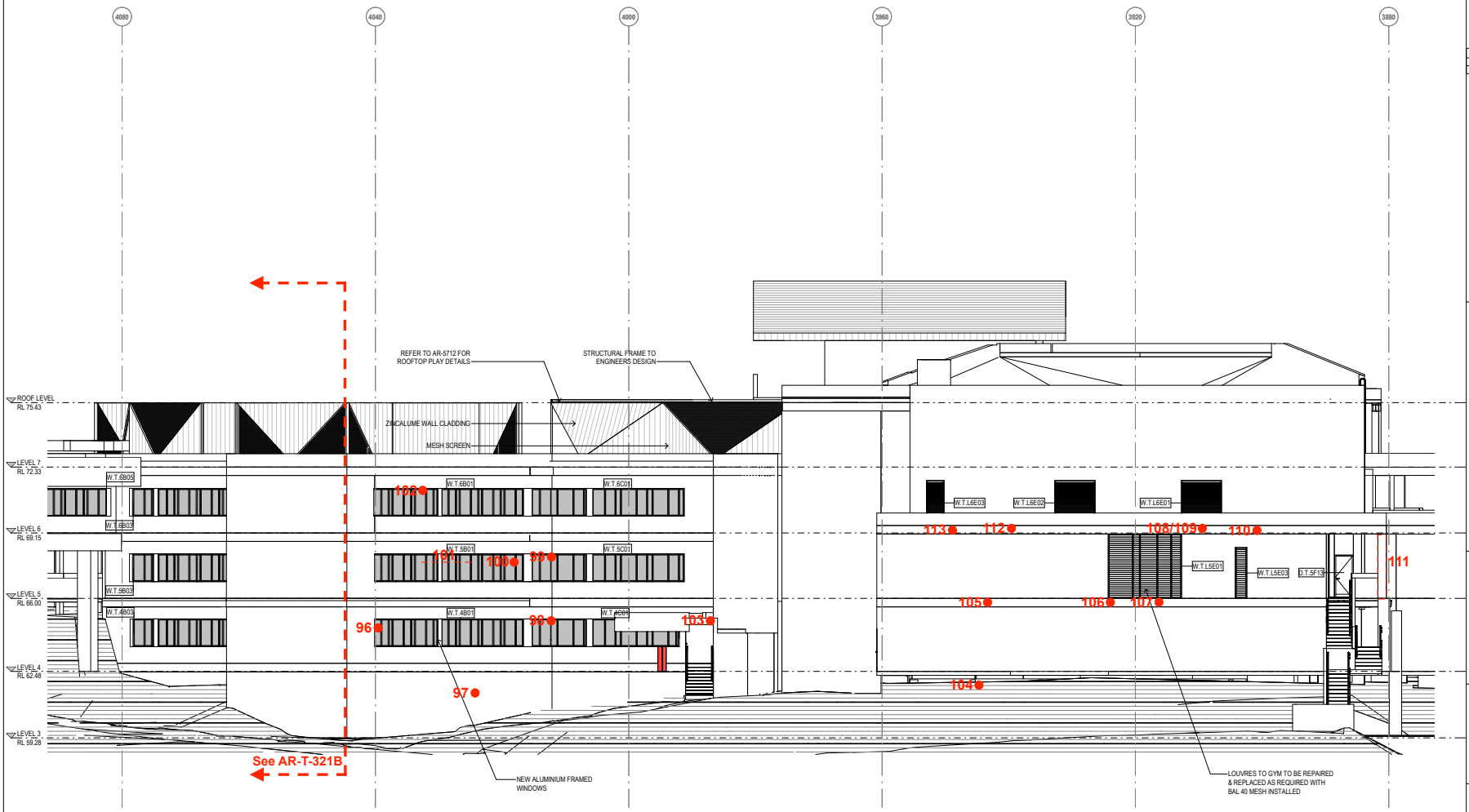
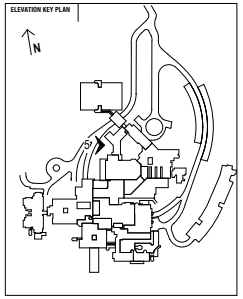


1 **ZONE C WEST FACDE ELEVATION**
SCALE 1 : 100

AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:
- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

ELEVATION KEY PLAN



SCALE BAR - 1:100

Apex Markup 13/07/18

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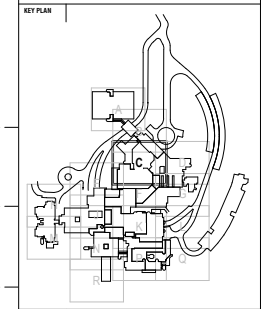
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE C WEST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-320C	2

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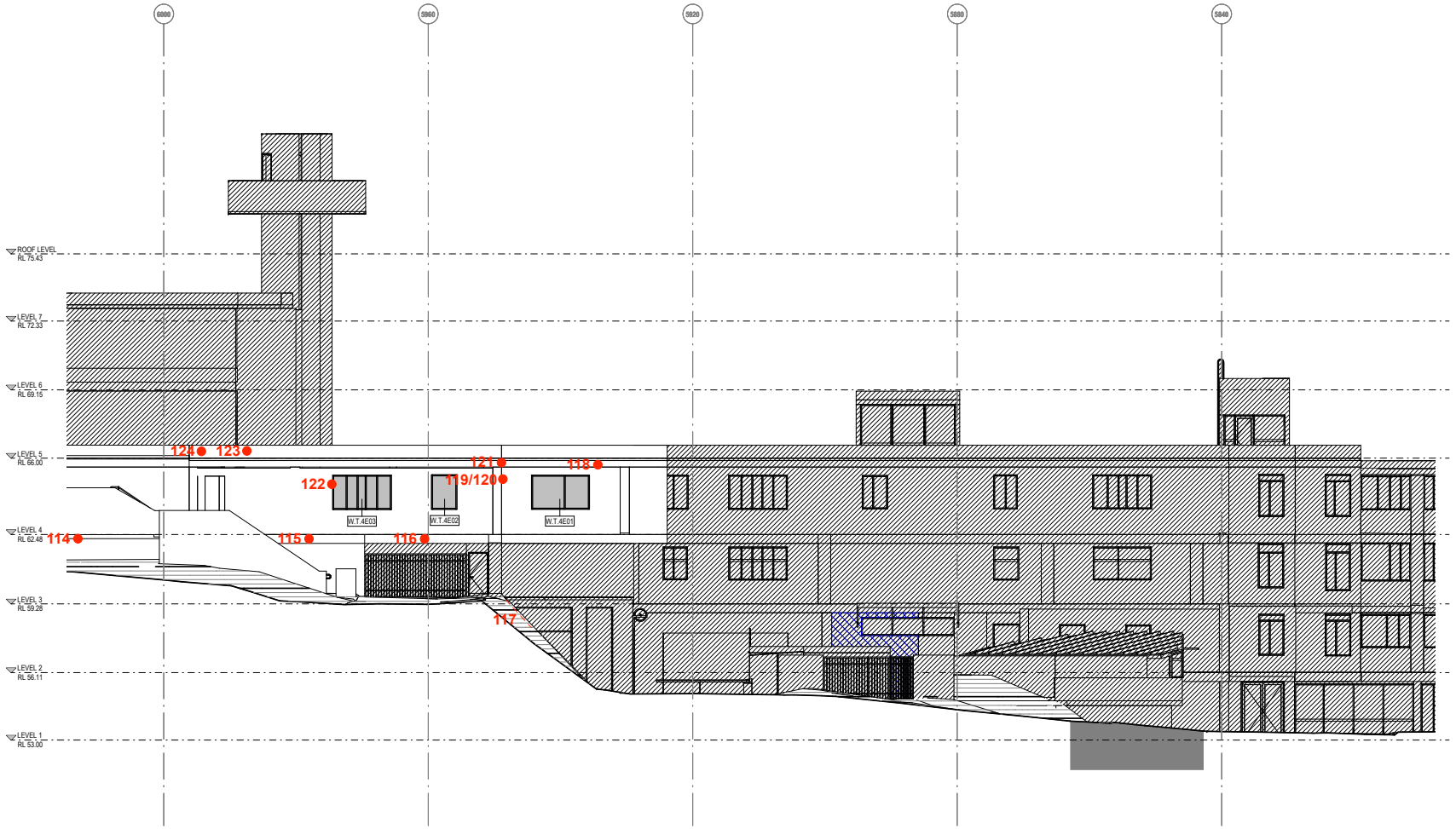


1 ZONE E NORTH FACADE ELEVATION
SCALE 1 : 100

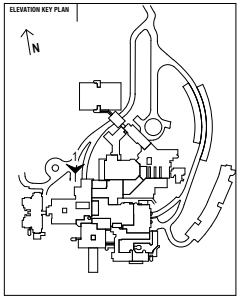
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup
13/07/18

ELEVATION KEY PLAN



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No	DATE	REVISIONS	BY
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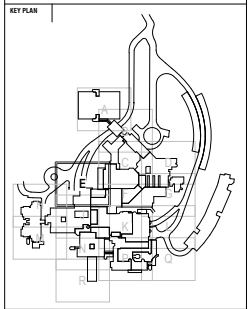
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE E NORTH

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-321E	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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No	DATE	REVISIONS	BY
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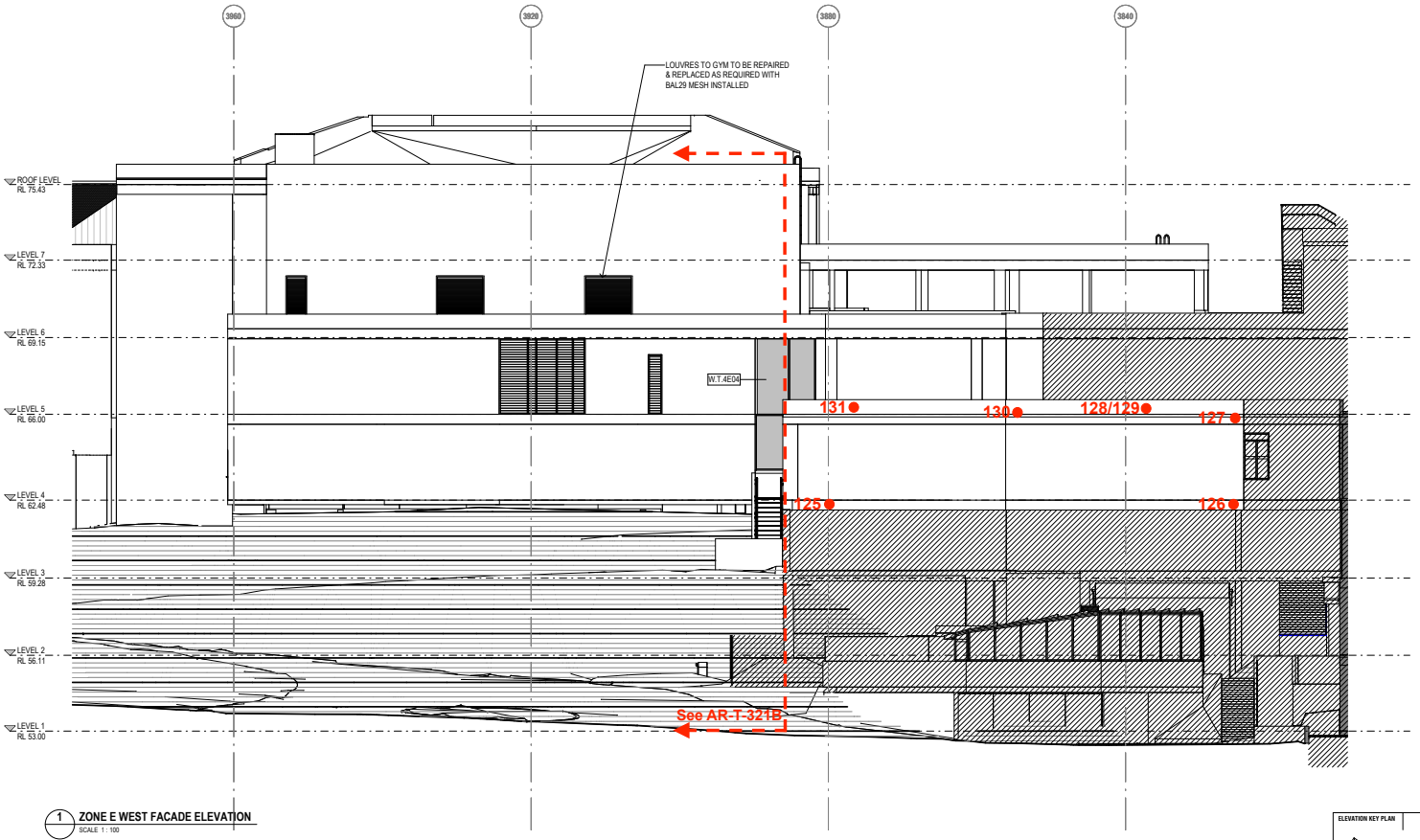
2	29/06/2018	ISSUED FOR TENDER	HC



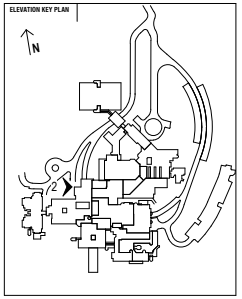
1 ZONE E WEST FACADE ELEVATION
SCALE 1 : 100

AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:
- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup 13/07/18

ELEVATION KEY PLAN



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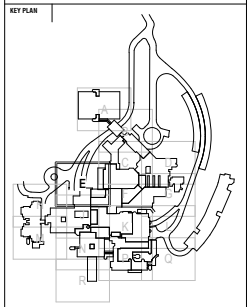
KEY PLAN



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Architecture Urban Design Interiors

CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE E WEST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-320E	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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TENDER

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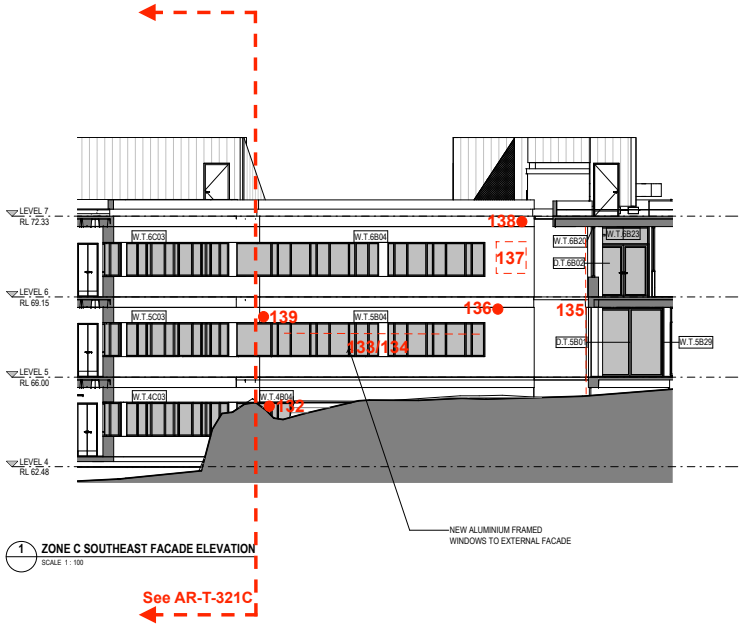
Nominated Architects

Anthony Quan 5421 | Sandeep Amin 7337 | Ian Armstrong 2360 | Richard Doos 8136

No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC



1 ZONE C SOUTHEAST FACADE ELEVATION
SCALE 1 : 100

See AR-T-321C

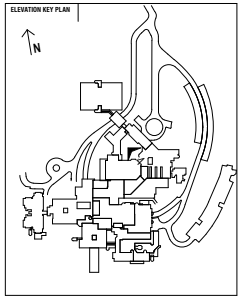
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup
13/07/18

ELEVATION KEY PLAN



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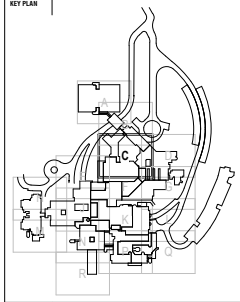
KEY PLAN



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PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

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Architecture Urban Design Interiors

CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE C SOUTHEAST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-325C	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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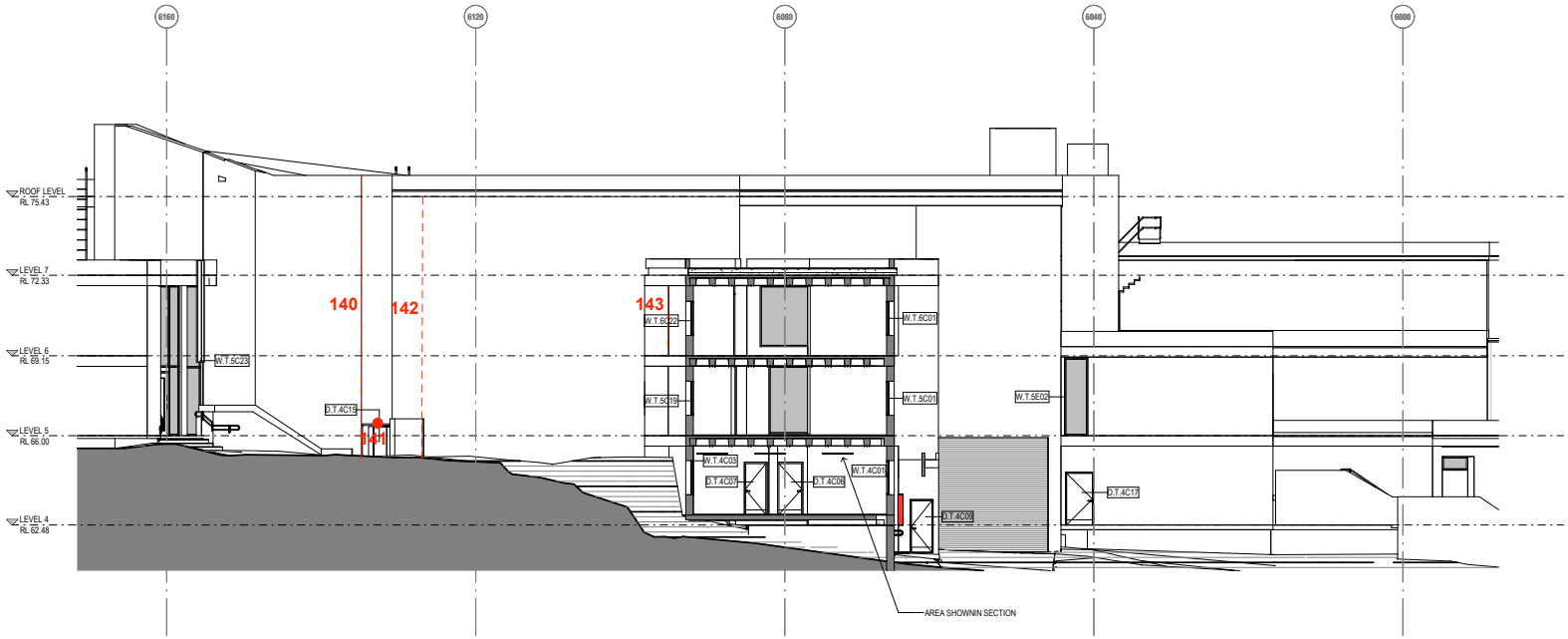


1 ZONE C NORTH FACADE ELEVATION
SCALE 1 : 100

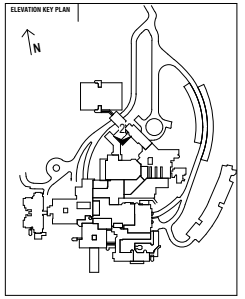
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup
13/07/18

ELEVATION KEY PLAN



0 1000 2000 3000 4000 5000 mm
SCALE BAR - 1:100

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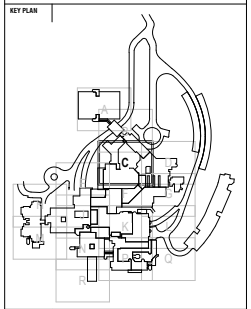
Nominated Architects
Anthony Quin 5421 | Sandeep Amin 7337 | Ian Armstrong 2360 | Richard Doos 8136

No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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Architecture Urban Design Interiors

CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE C NORTH

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-324C	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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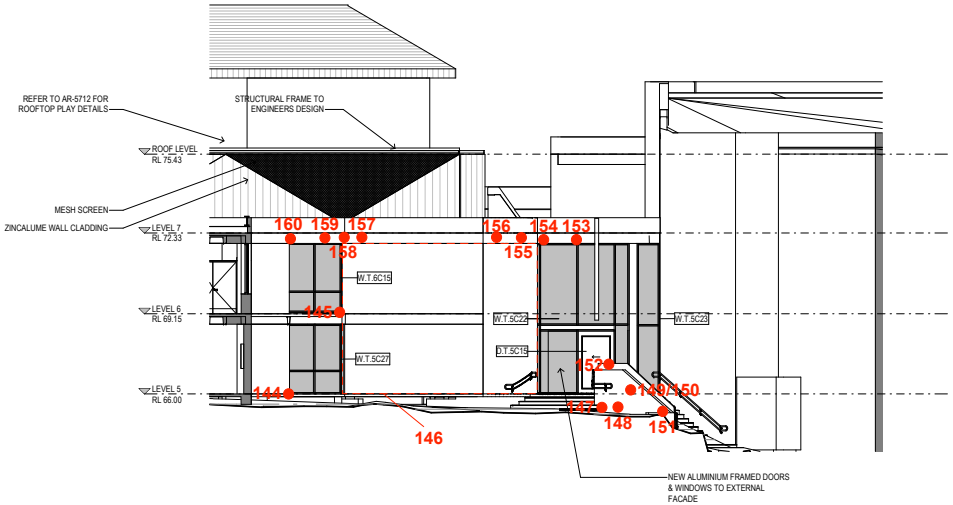
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC



1 **ZONE C NORTHWEST FACADE ELEVATION**
SCALE 1 : 100

AR - KEYNOTE LEGEND BY...

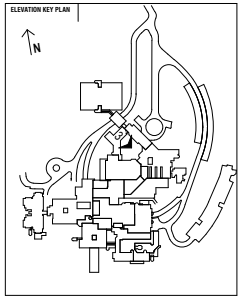
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

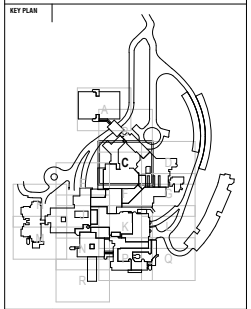
Apex Markup 13/07/18

ELEVATION KEY PLAN



SCALE BAR - 1:100

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE C NORTHWEST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-323C

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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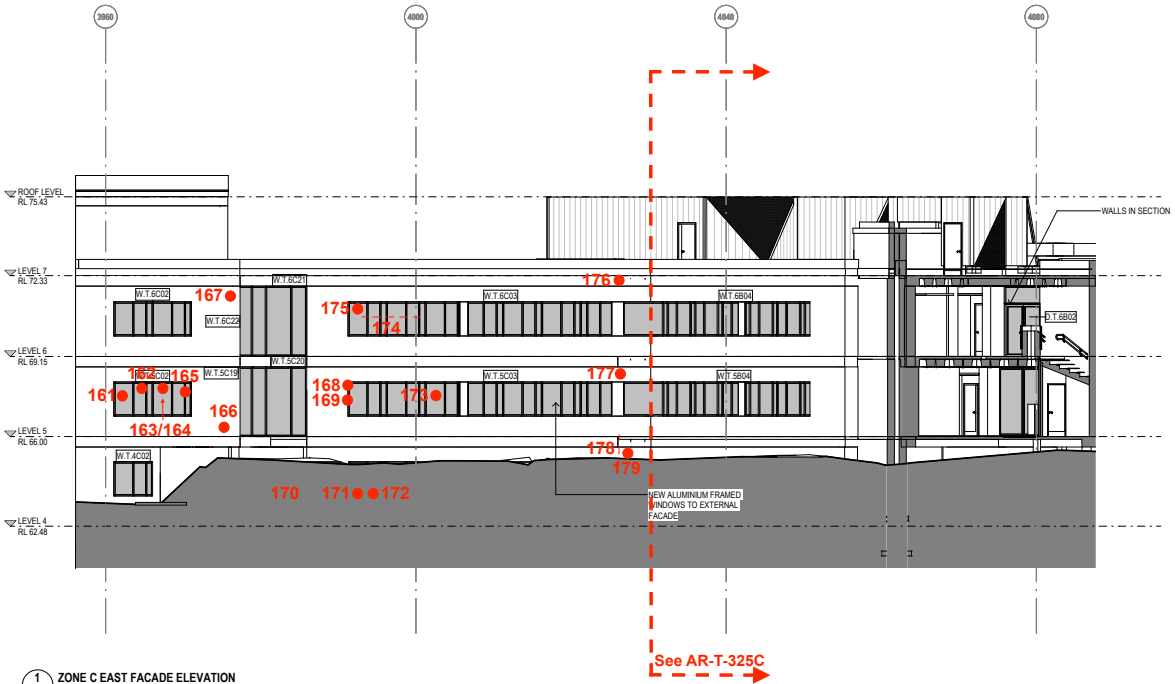


1 ZONE C EAST FACADE ELEVATION
SCALE 1 : 100

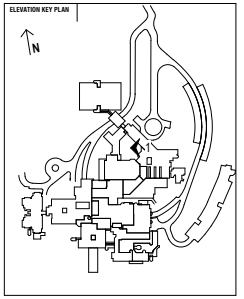
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

Apex Markup
13/07/18

ELEVATION KEY PLAN



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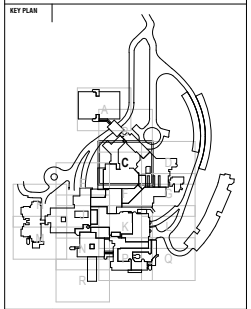
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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Architecture Urban Design Interiors

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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE C EAST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-321C	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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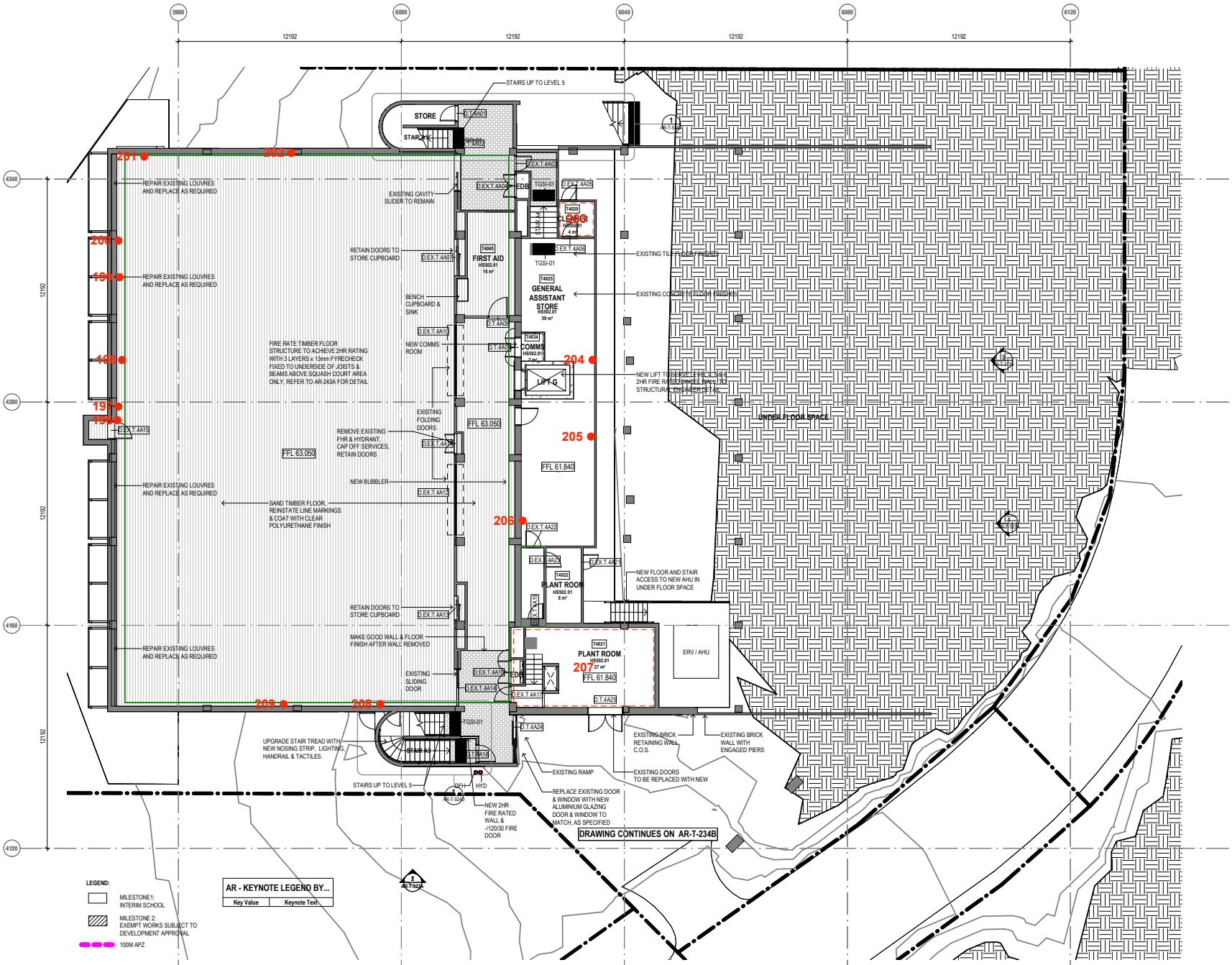
Internal Zone A



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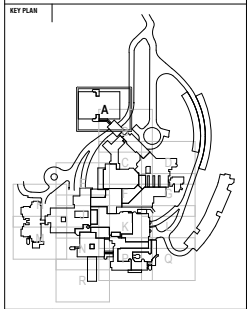
No	DATE	REVISIONS	BY
A	08/06/2018	UPDATED COMMS CABINETS	HC
1	18/06/2018	ISSUED FOR TENDER	RK
B	27/06/2018	ACCESS TO NEW AHU ADDED	HC
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

LEVEL 4 GA PLAN - ZONE A

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-234A

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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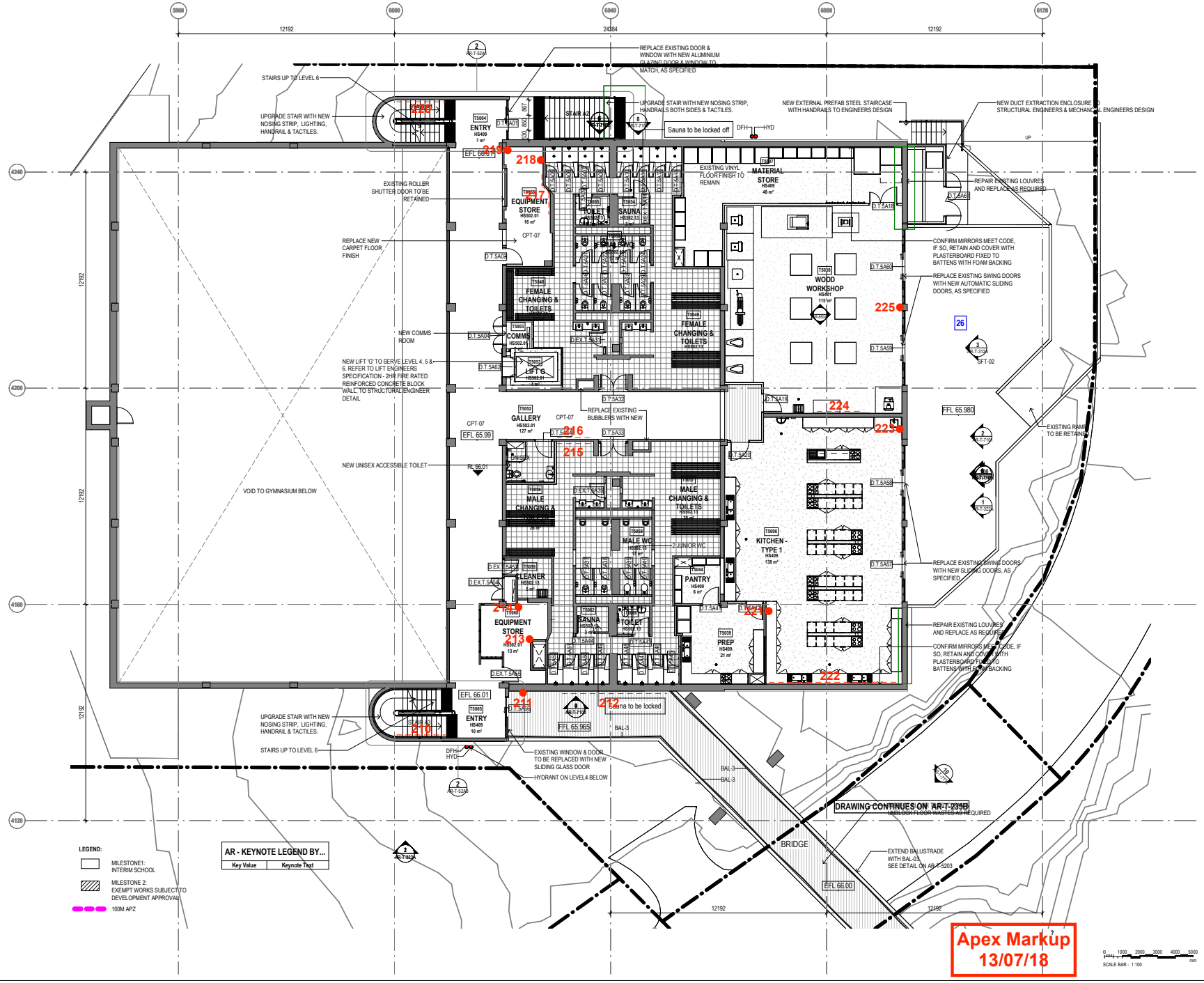

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Nominated Architects
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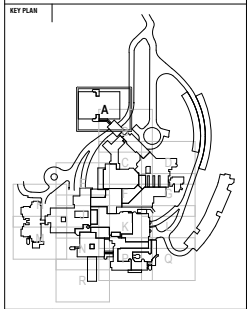
No	DATE	REVISIONS	BY
A	08/06/2018	UPDATED COMMS CABINETS	HC
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



CONSULTANTS

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Architecture Urban Design Interiors

CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
LEVEL 5 GA PLAN - ZONE A

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-235A

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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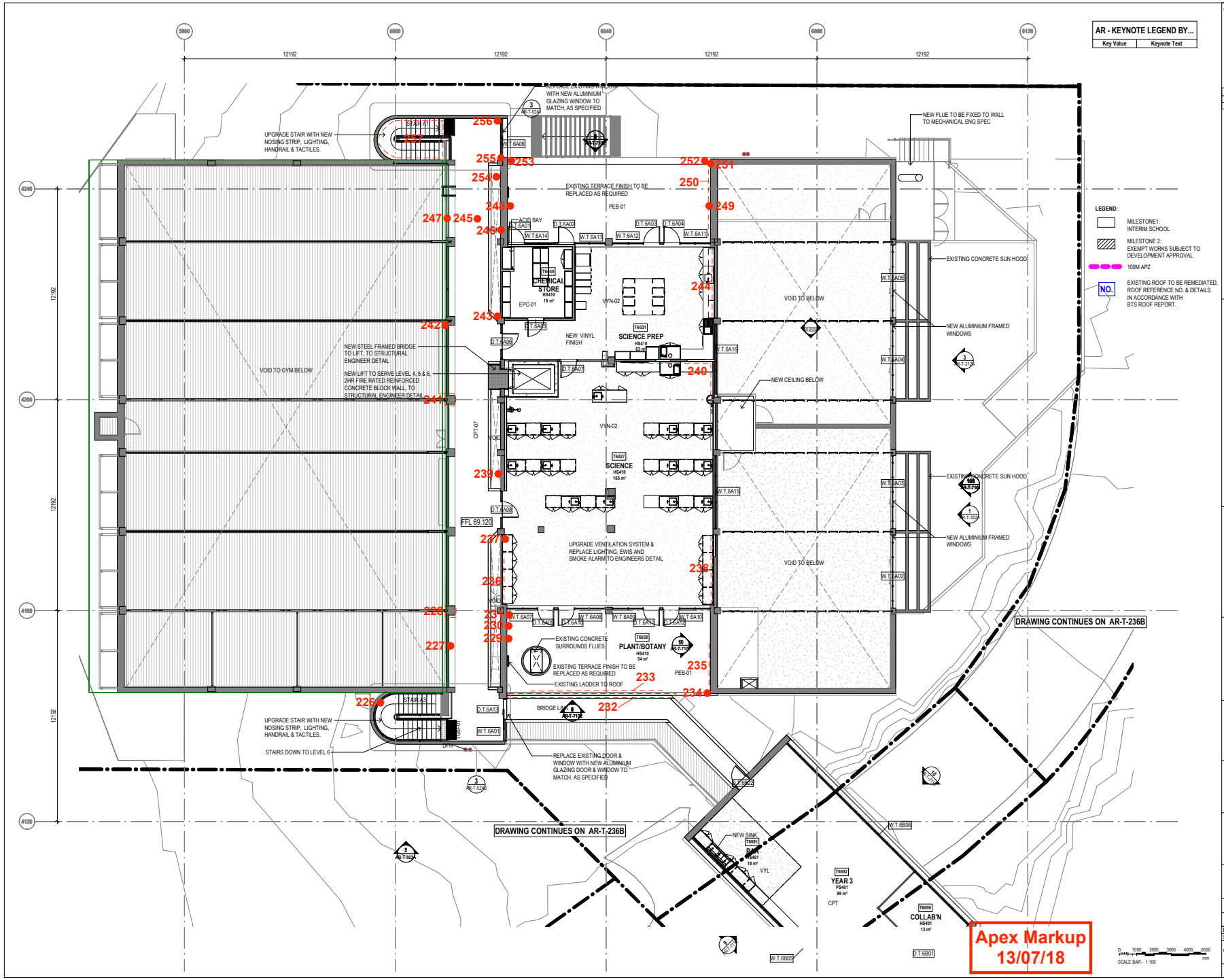

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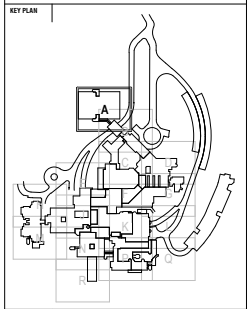
Nominated Architects
Anthony Quan 5421 | Sandeep Amin 7337 | Ian Armstrong 2760 | Richard Doos 8136

No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

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Architecture Urban Design Interiors

CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

LEVEL 6 GA PLAN - ZONE A

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-236A

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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TENDER

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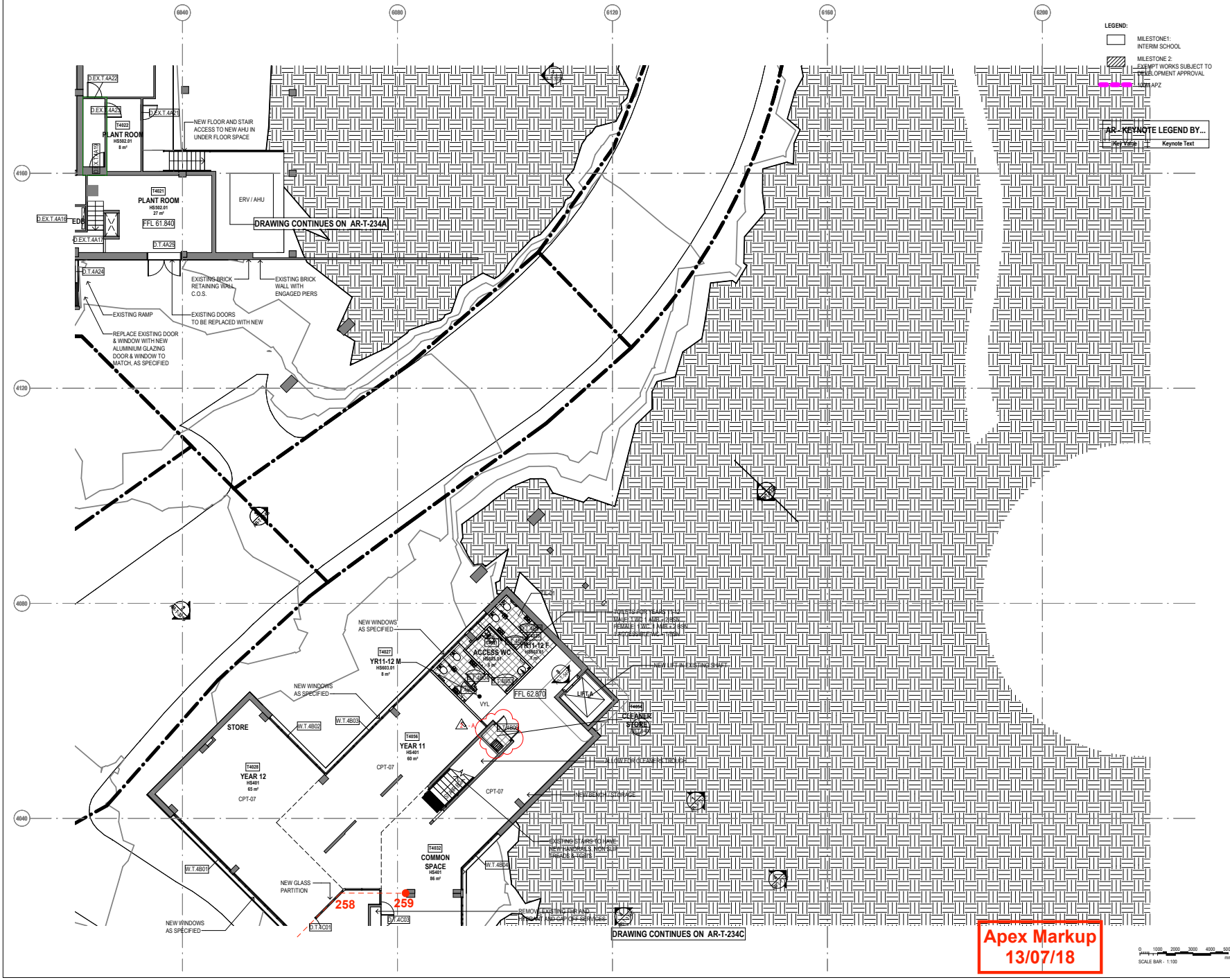
Internal Zone B



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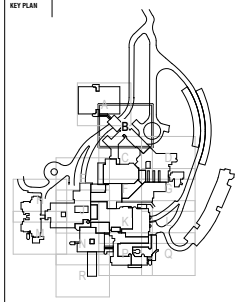
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

2 - A NEW CLEANER'S STORE ROOM

KEY PLAN



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CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
LEVEL 4 GA PLAN - ZONE B

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-234B

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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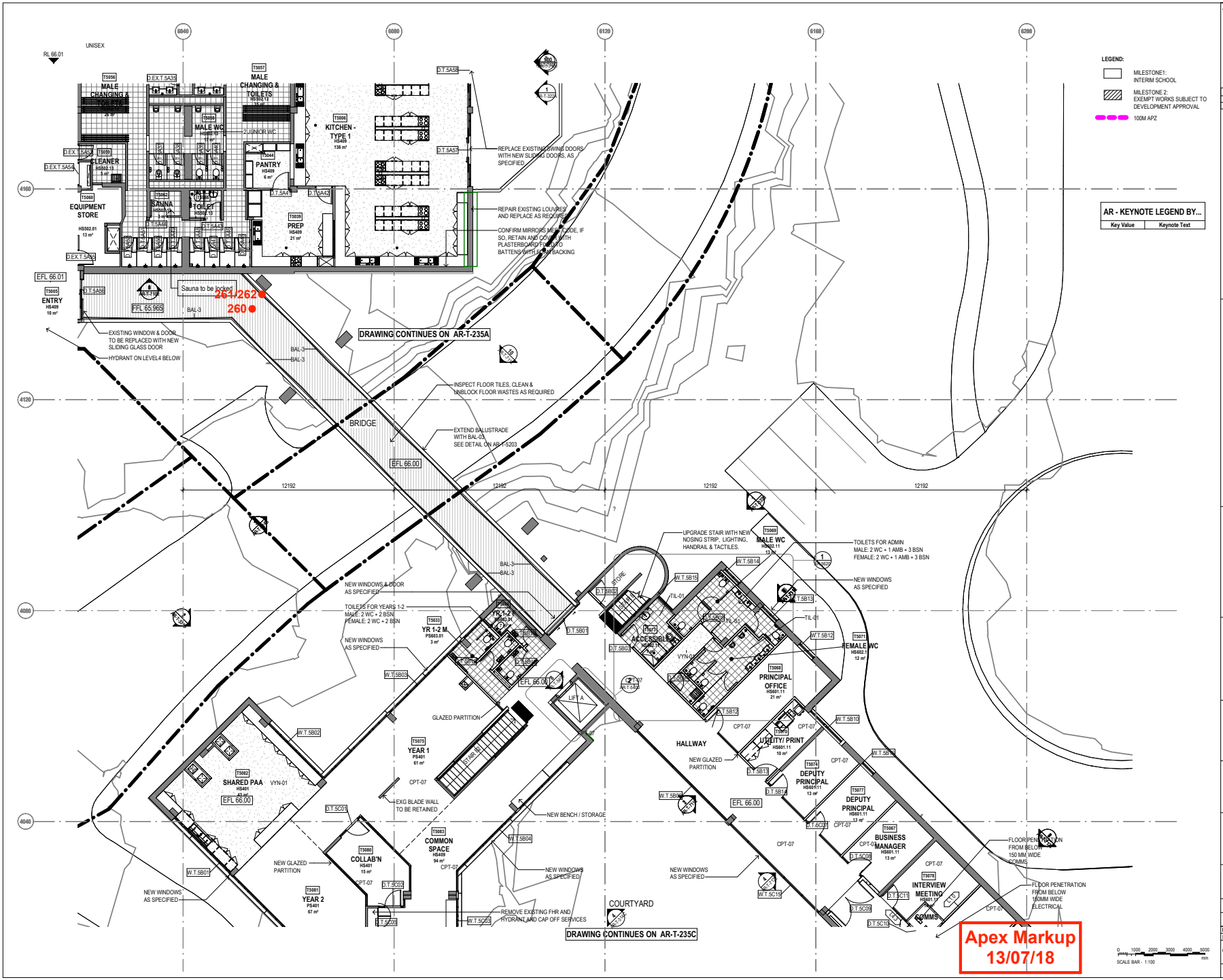

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No	DATE	REVISIONS	BY
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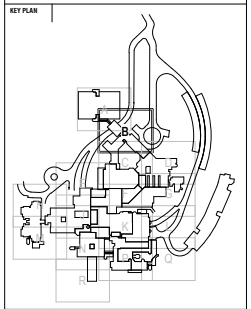
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
LEVEL 5 GA PLAN - ZONE B

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-235B

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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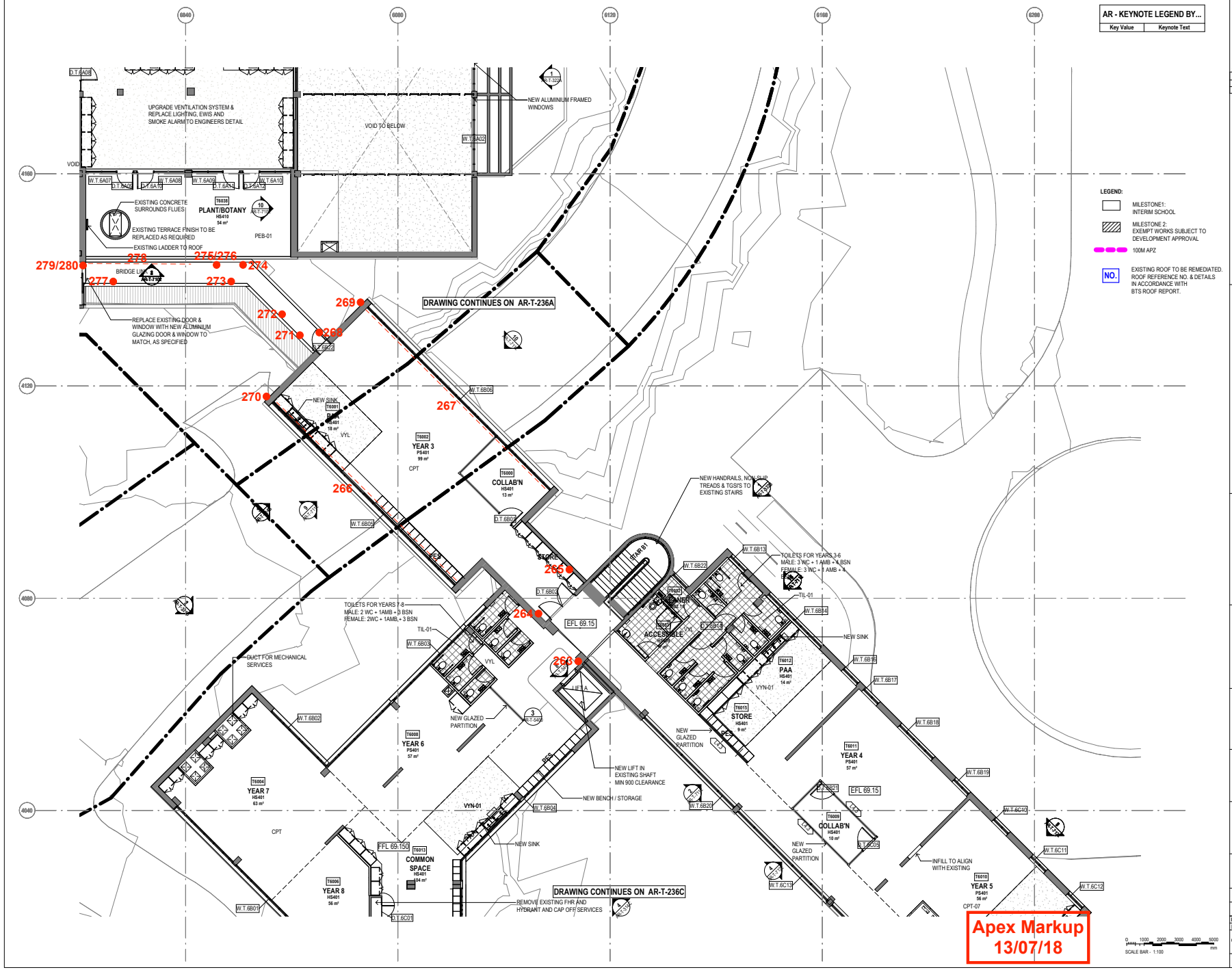

AR - KEYNOTE LEGEND BY...

Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ
- NO. EXISTING ROOF TO BE REMEDIATED. ROOF REFERENCE NO. & DETAILS IN ACCORDANCE WITH BTS ROOF REPORT.

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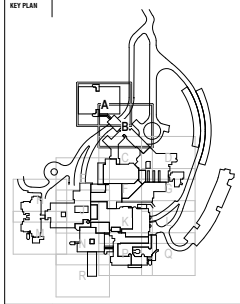
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

LEVEL 6 GA PLAN - ZONE B

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
DRAWING Nº.	AR-T-236B
REVISION	2
DRAWING STATUS	FOR TENDER
REVIEWED BY	RG
SIGNATURE	
DATE	

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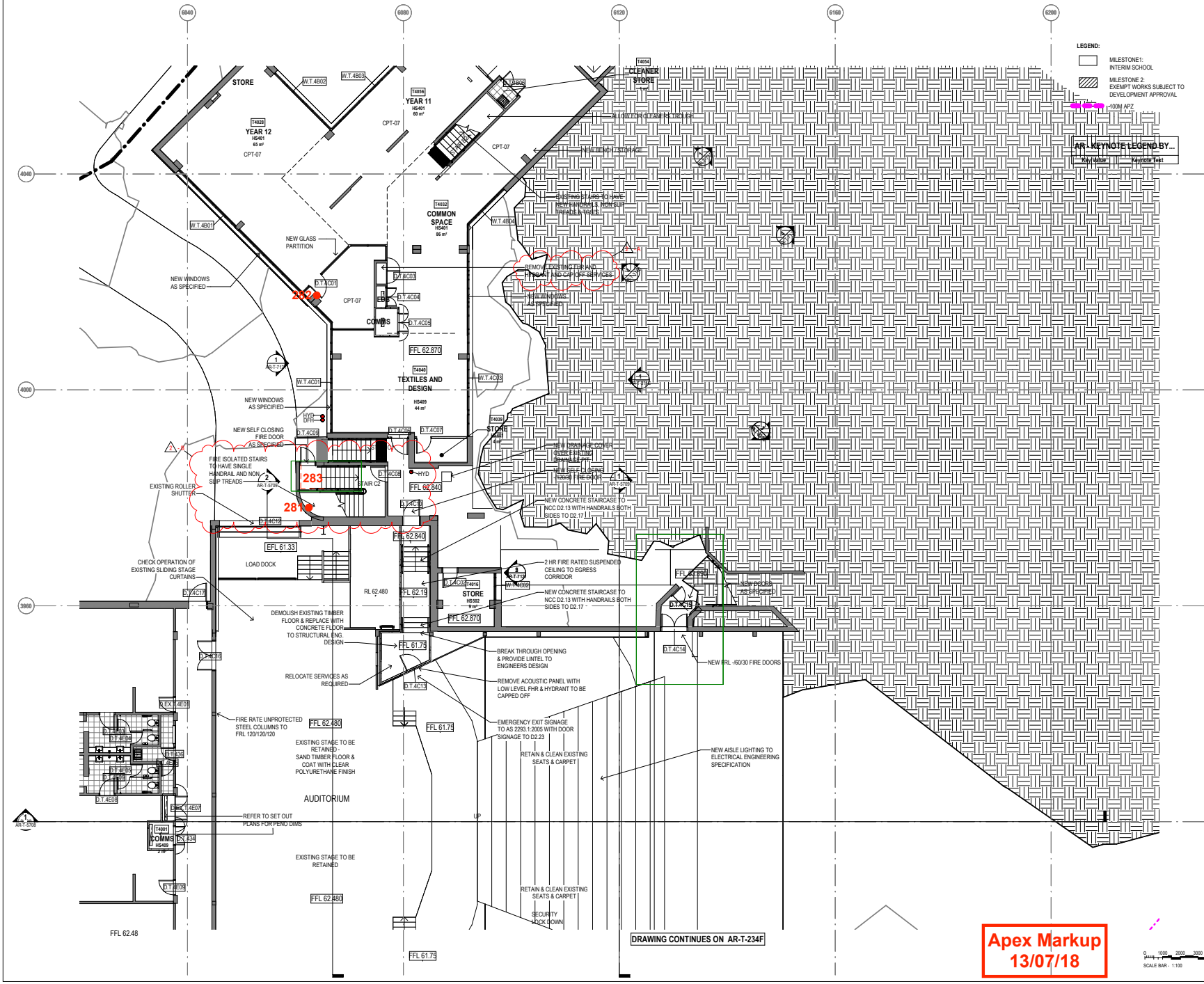
Internal Zone C & Roof



LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100m APZ

AR - KEYNOTE LEGEND BY...

Key Value	Keynote Text

- 1 - A NOTE ADDED
- 2 - B NOMINATED FIRE STAIR

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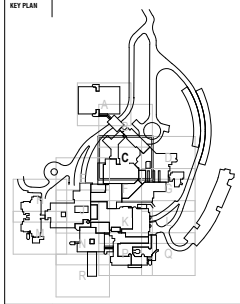
No	DATE	REVISIONS	BY
A	08/06/2018	UPDATED COMMS CABINETS	HC
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
LEVEL 4 GA PLAN - ZONE C

DRAWN BY	TG, RK, HC, CS, LO, DL	
SCALES	1 : 100 @ A1	
PLOT DATE	29/06/2018	
PROJECT Nº.	P18-023	REVISION 2
DRAWING Nº.	AR-T-234C	

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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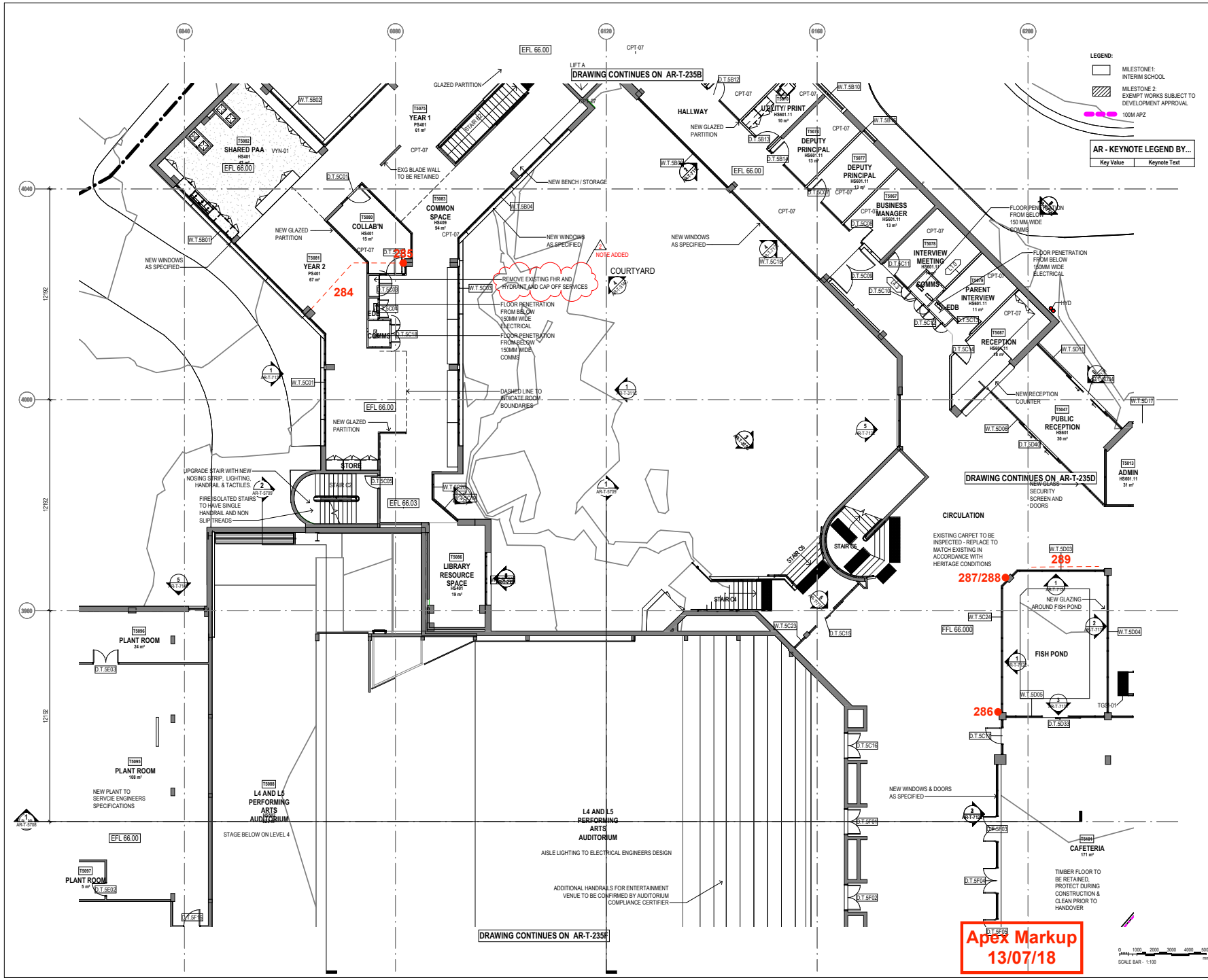

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No	DATE	REVISIONS	BY
A	08/06/2018	UPDATED COMMS CABINETS	HC
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

1 - A NOTE ADDED

KEY PLAN

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CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
LEVEL 5 GA PLAN - ZONE C

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-235C

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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SCALE BAR - 1:100 (0, 1000, 2000, 3000, 4000, 5000 mm)

TENDER

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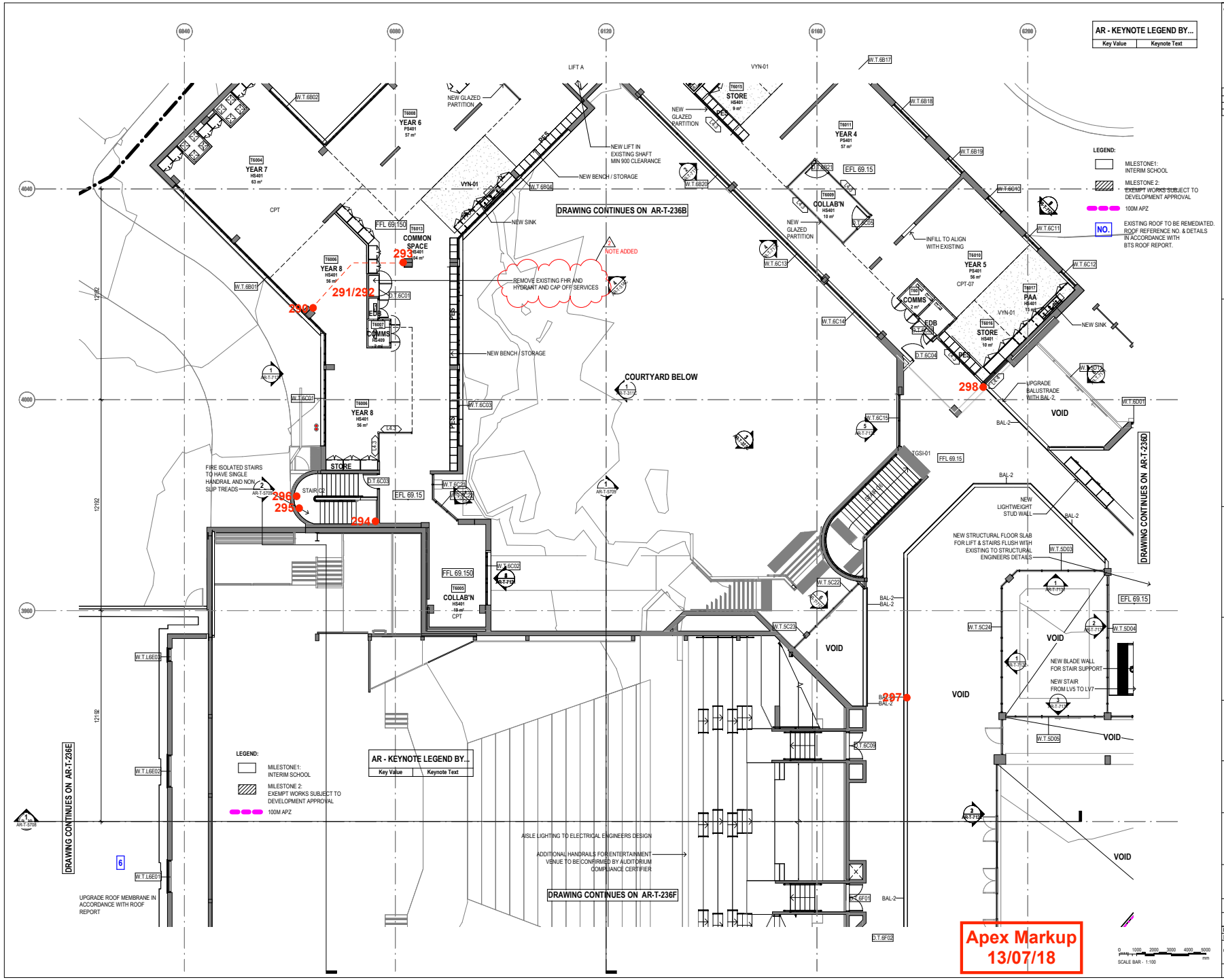

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No	DATE	REVISIONS	BY
A	08/06/2018	UPDATED COMMS CABINETS	HC
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

1 - A NOTE ADDED

KEY PLAN

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CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
LEVEL 6 GA PLAN - ZONE C

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-236C

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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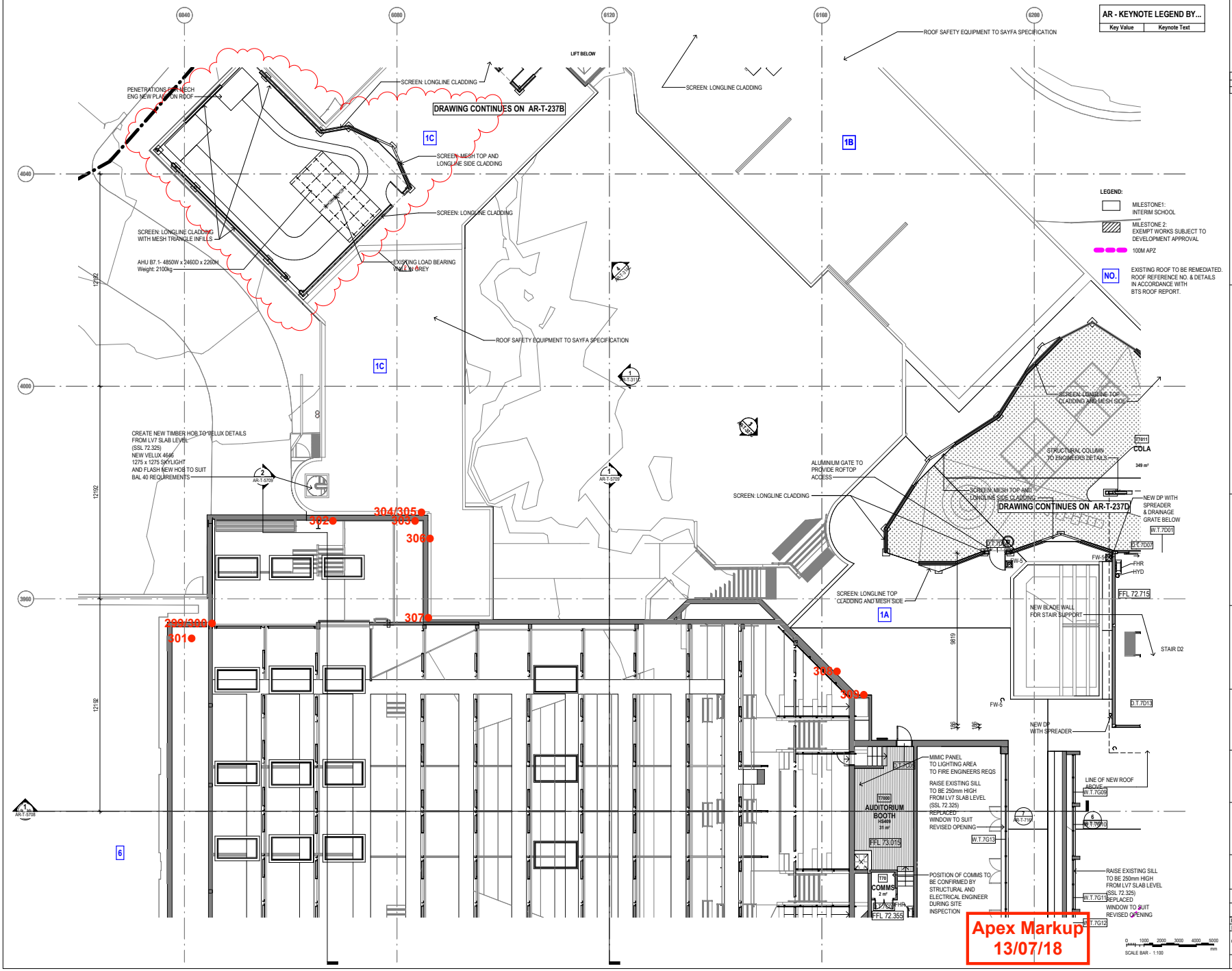

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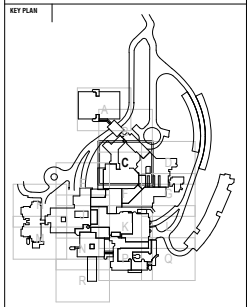
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

2 - A AHU UNITS AND SCREENS ADDED

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE
LEVEL 7 GA PLAN - ZONE C

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-237C

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SCALE BAR - 1:100 (0, 1000, 2000, 3000, 4000, 5000 mm)

TENDER

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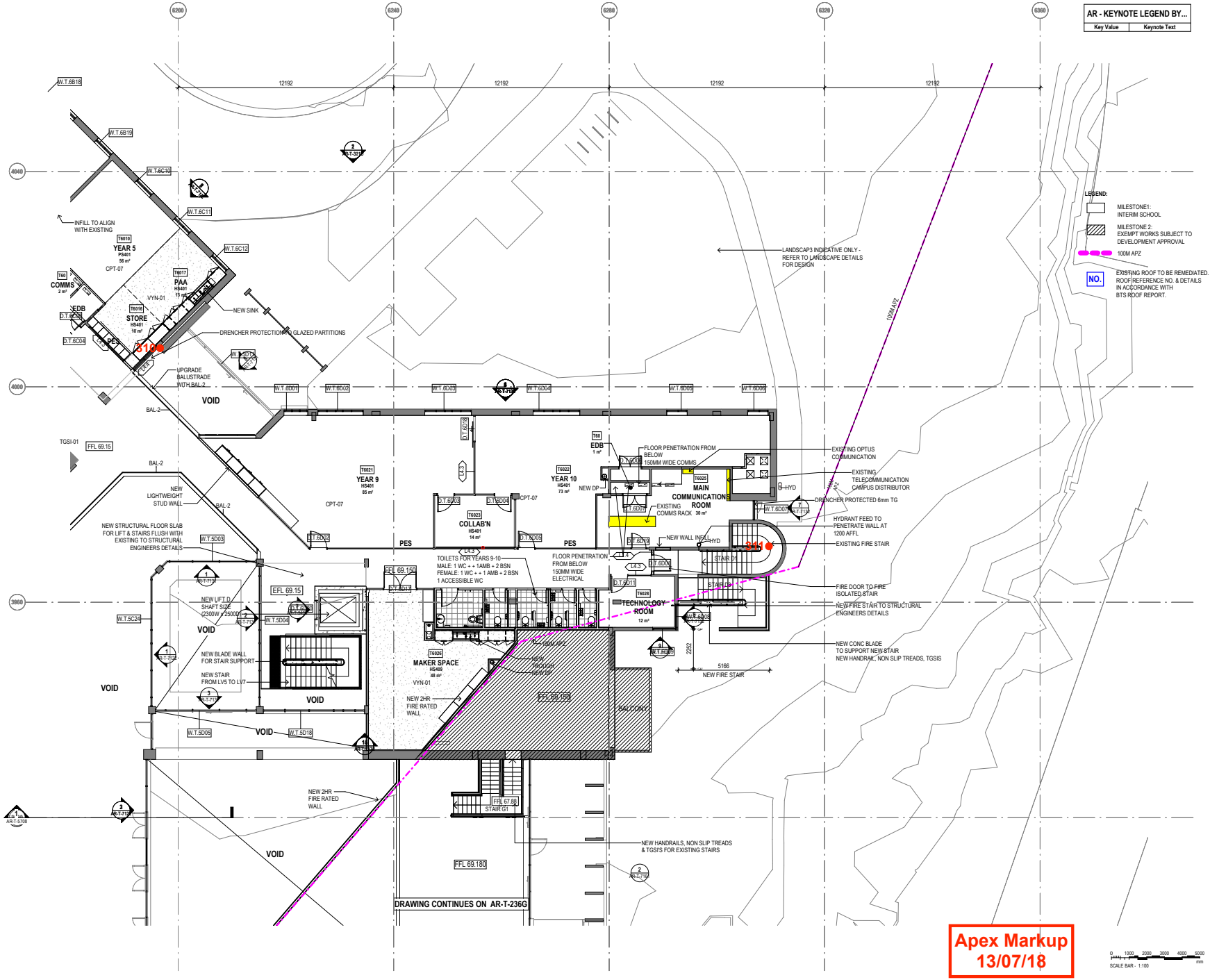
Internal Zone D & Roof



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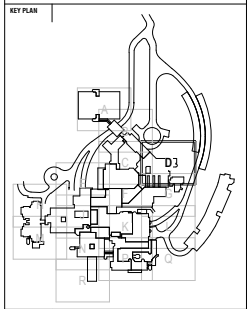
No	DATE	REVISIONS	BY
A	08/06/2018	UPDATED COMMS CABINETS	HC
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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PROJECT
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Eton Road,
Lindfield NSW 2070

TITLE
LEVEL 6 GA PLAN - ZONE D

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-236D

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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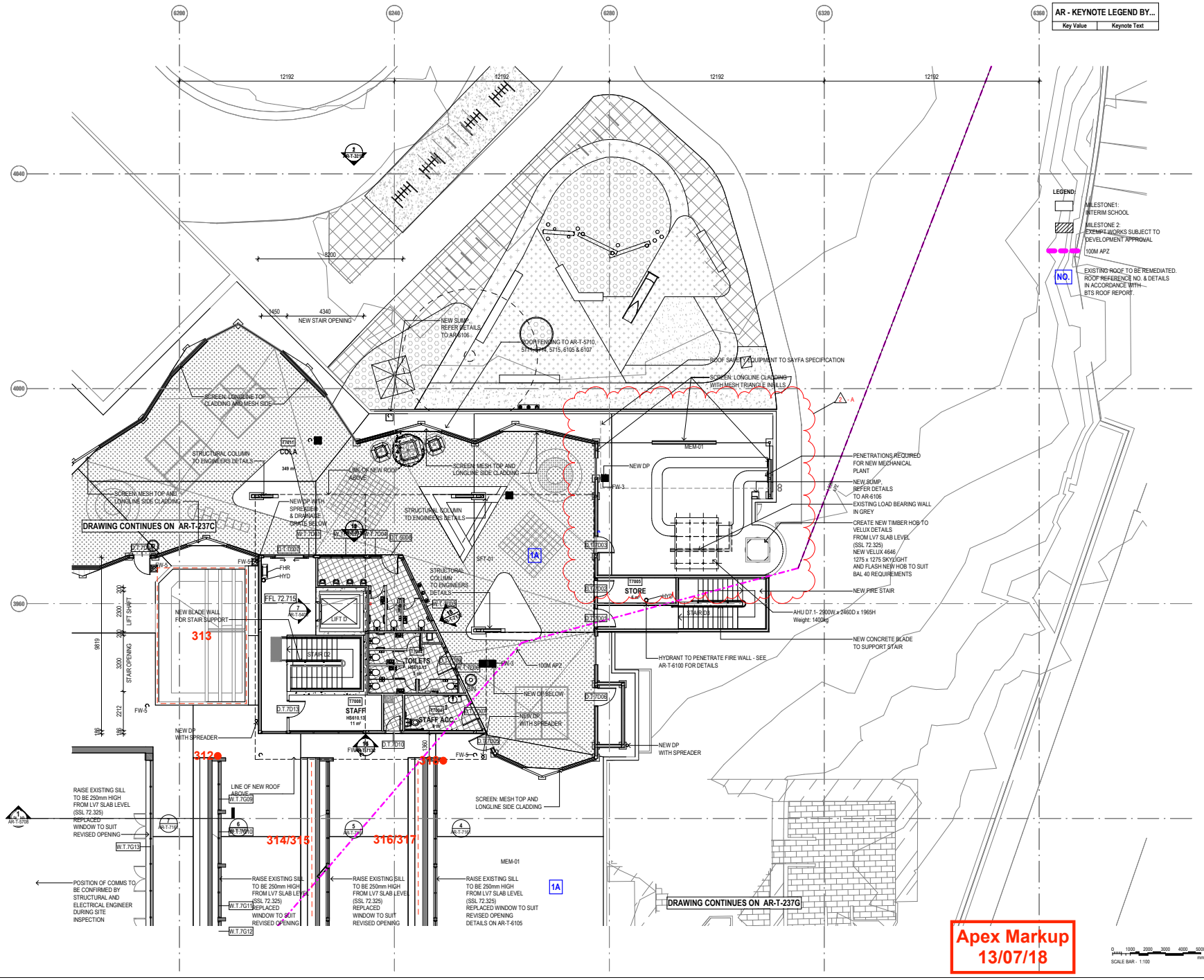

Apex Markup 13/07/18

SCALE BAR - 1:100

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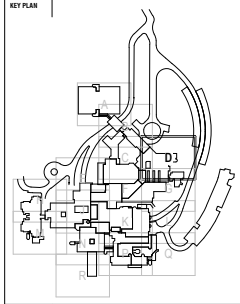
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

2 - A AHU UNITS AND SCREENS ADDED

KEY PLAN



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Lindfield NSW 2070

TITLE
LEVEL 7 GA PLAN - ZONE D

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-237D

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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TENDER

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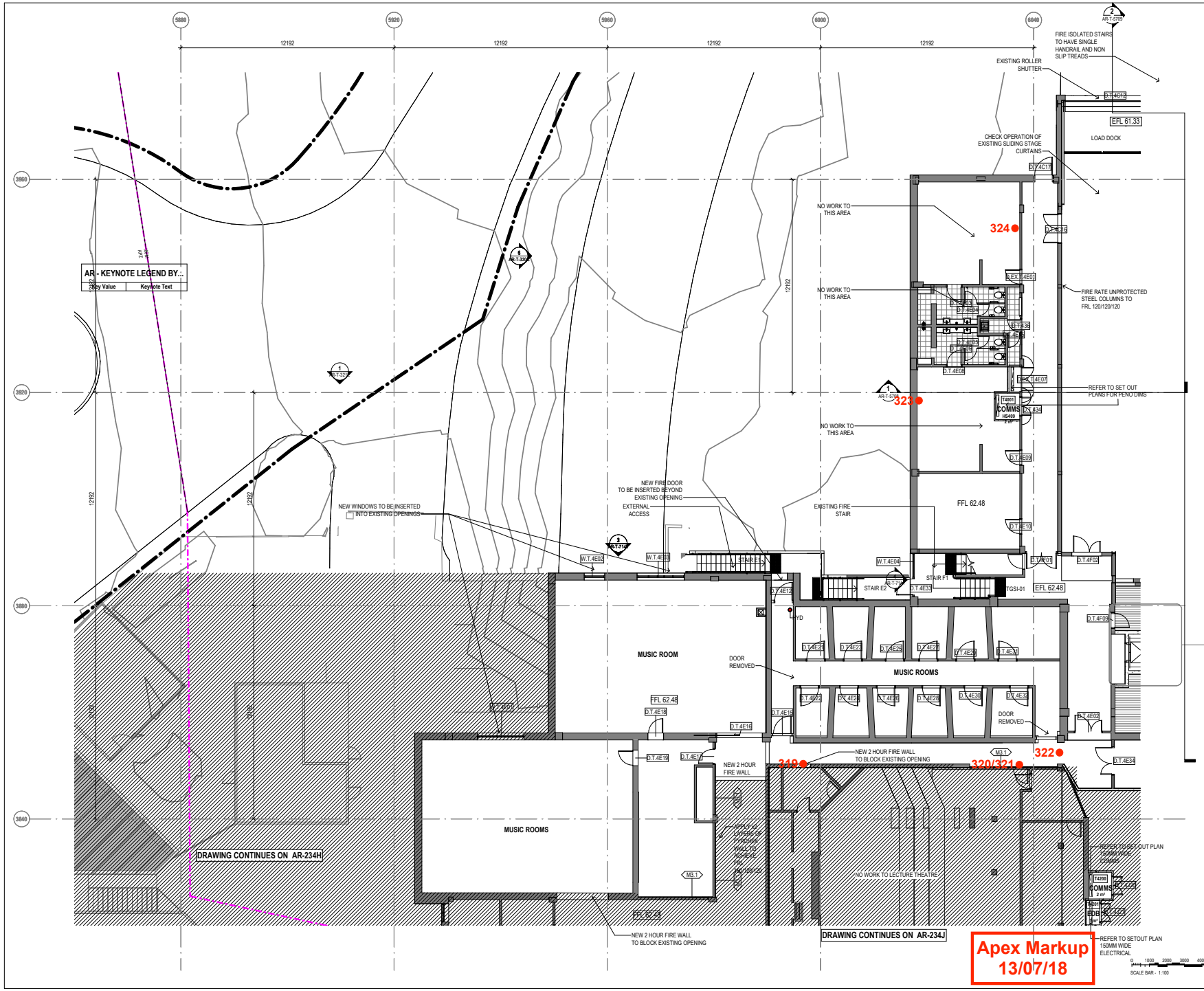
Internal Zone E



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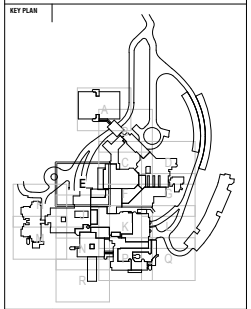
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR COORDINATION	HC
3	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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PROJECT

Lindfield Learning Village - Partial School
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Lindfield NSW 2070

TITLE

LEVEL 4 GA PLAN - ZONE E

DRAWN BY	TG, RK, HC, CS, LO, DL	
SCALES	1 : 100 @ A1	
PLOT DATE	29/06/2018	
PROJECT Nº.	P18-023	REVISION 3
DRAWING Nº.	AR-T-234E	
DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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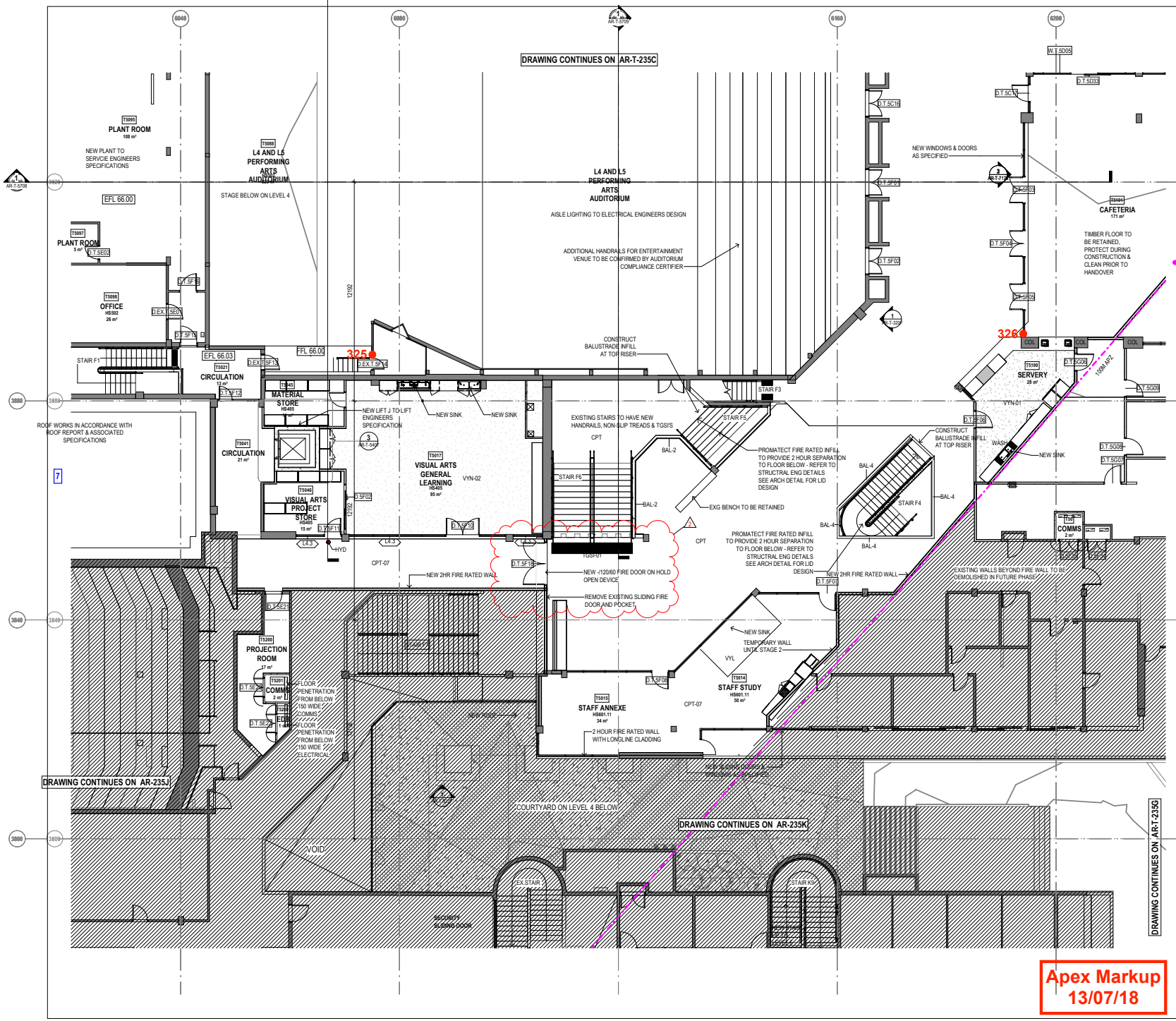
Internal Zone F & Roof



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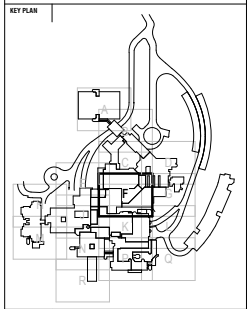
No	DATE	REVISIONS	BY
A	08/06/2018	UPDATED COMMS CABINETS	HC
B	12/06/2018	UPDATED COMMS AND EDB	HC
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

-1 EX. SLIDING DOOR REPLACED WITH DOUBLE LEAF FIRE DOOR

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT
Lindfield Learning Village - Partial School
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Lindfield NSW 2070

TITLE
LEVEL 5 GA PLAN - ZONE F

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SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-235F

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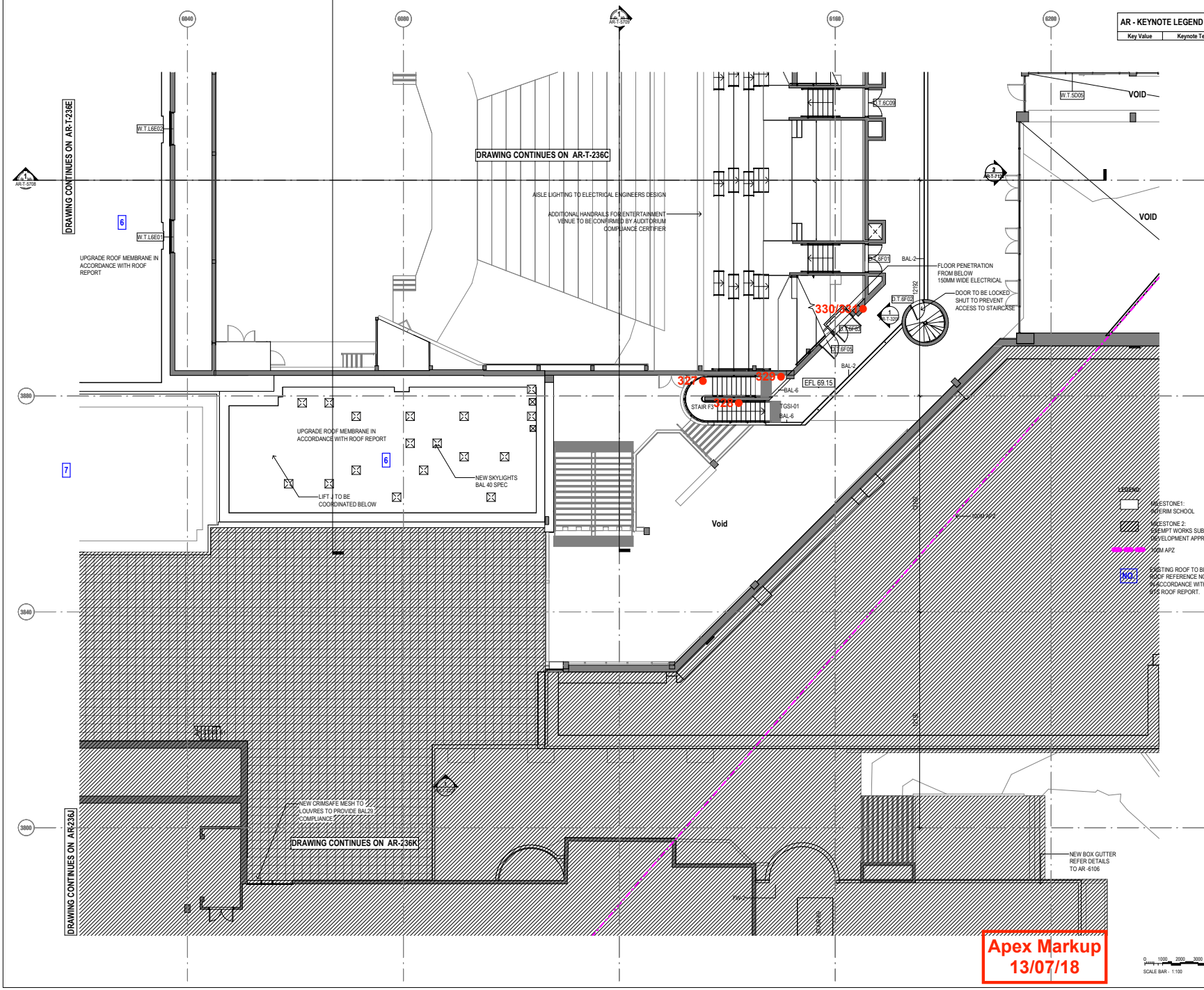

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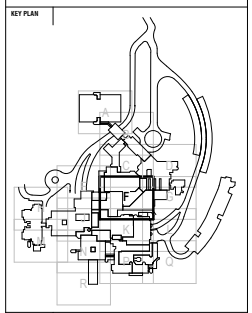
A	08/06/2018	UPDATED COMMS CABINETS	HC
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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PROJECT

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Lindfield NSW 2070

TITLE

LEVEL 6 GA PLAN - ZONE F

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
DRAWING Nº.	AR-T-236F
REVISION	2
DRAWING STATUS	FOR TENDER
REVIEWED BY	RG
SIGNATURE	
DATE	

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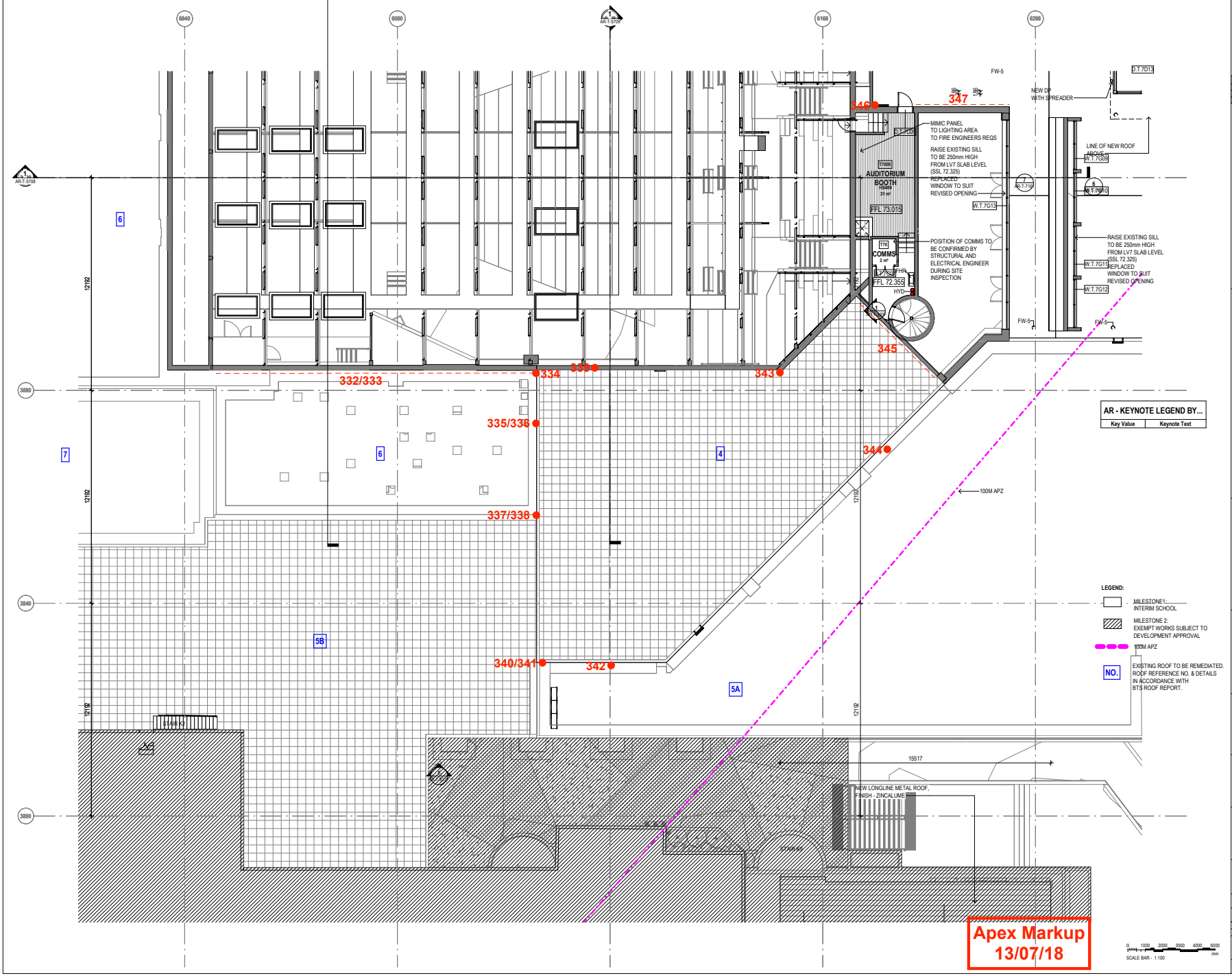

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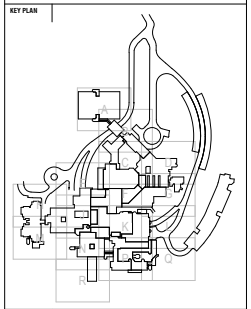
No	DATE	REVISIONS	BY
A	08/06/2018	UPDATED COMMS CABINETS	HC
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

LEVEL 7 GA PLAN - ZONE F

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-237F

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

QUALITY CERTIFIED ISO 9001

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TENDER

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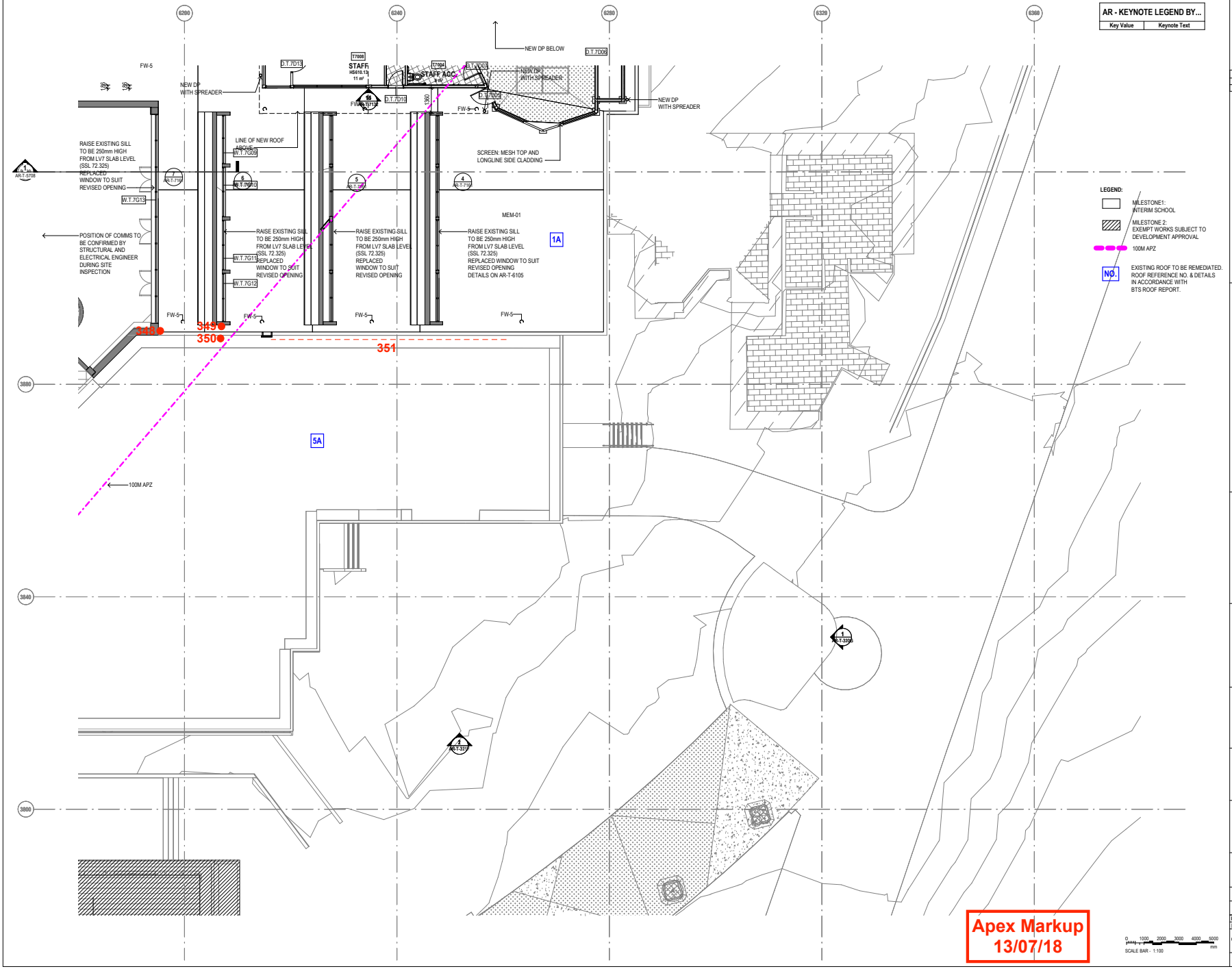
Zone G Roof



AR - KEYNOTE LEGEND BY...

Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ
- NØ. EXISTING ROOF TO BE REMEDIATED. ROOF REFERENCE NO. & DETAILS IN ACCORDANCE WITH BTS ROOF REPORT.

Apex Markup 13/07/18

SCALE BAR - 1:100

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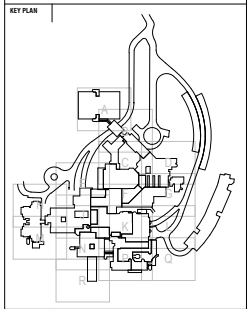
Figured dimensions take preference to scale readings. Verify all dimensions on site. Report any discrepancies to the Architect for decision before proceeding with the work.
Nominated Architects
Anthony Quan 5421 | Sandeep Amin 7337 | Ian Armstrong 2760 | Richard Doos 8136

No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

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Architecture Urban Design Interiors

CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

LEVEL 7 GA PLAN - ZONE G

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-237G

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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TENDER

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Appendix C - Photographs



Photograph 335.jpg
Date taken: 4/7/18



Photograph 336.jpg
Date taken: 4/7/18



Photograph 337.jpg
Date taken: 4/7/18



Photograph 338.jpg
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Photograph 339.jpg
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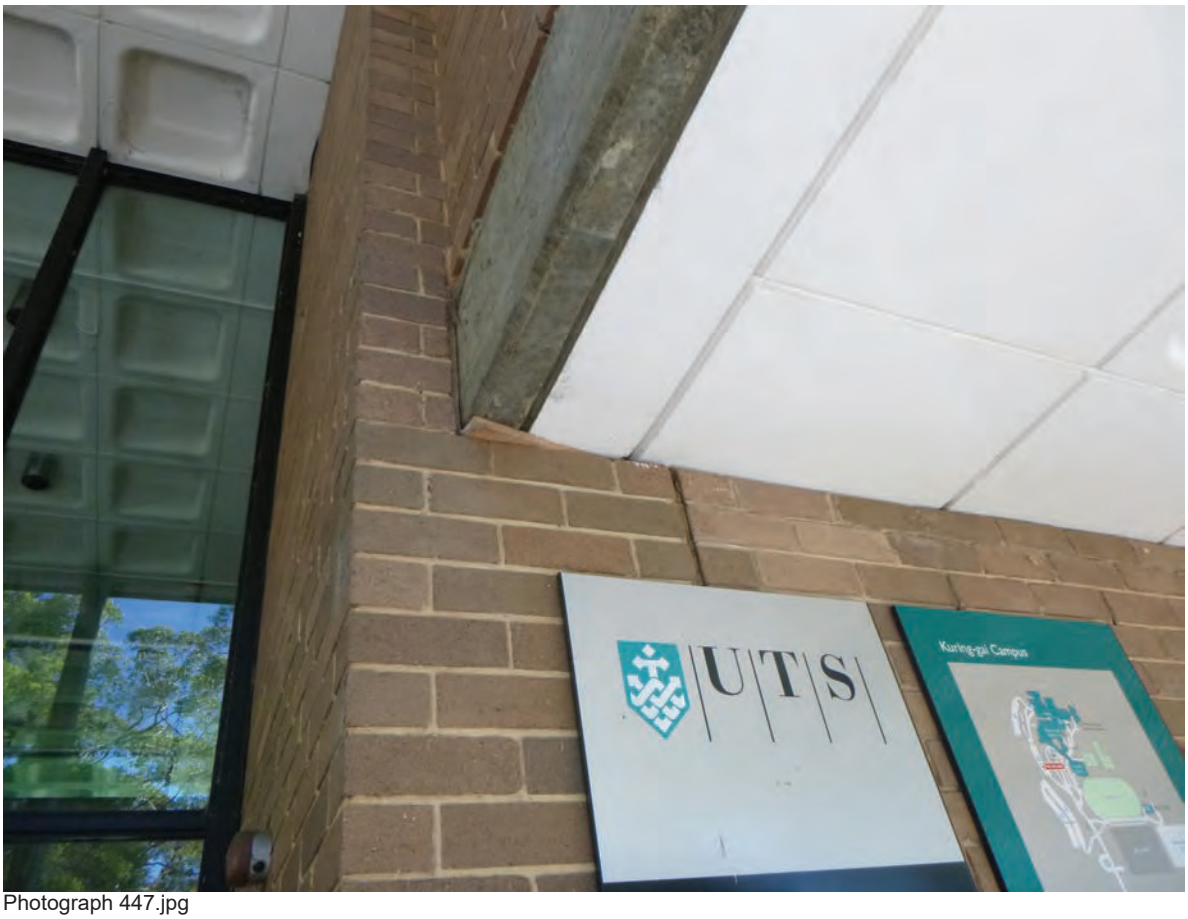

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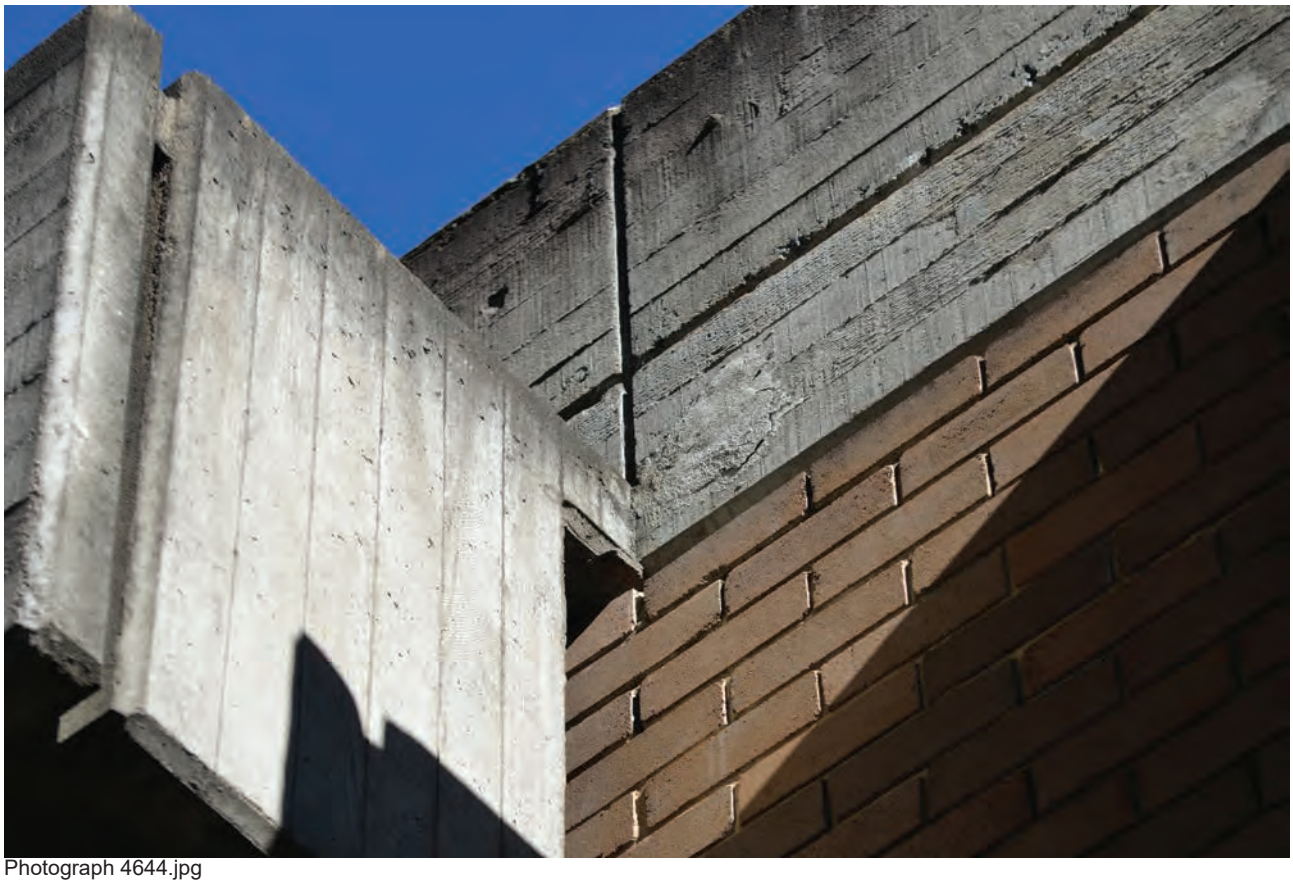

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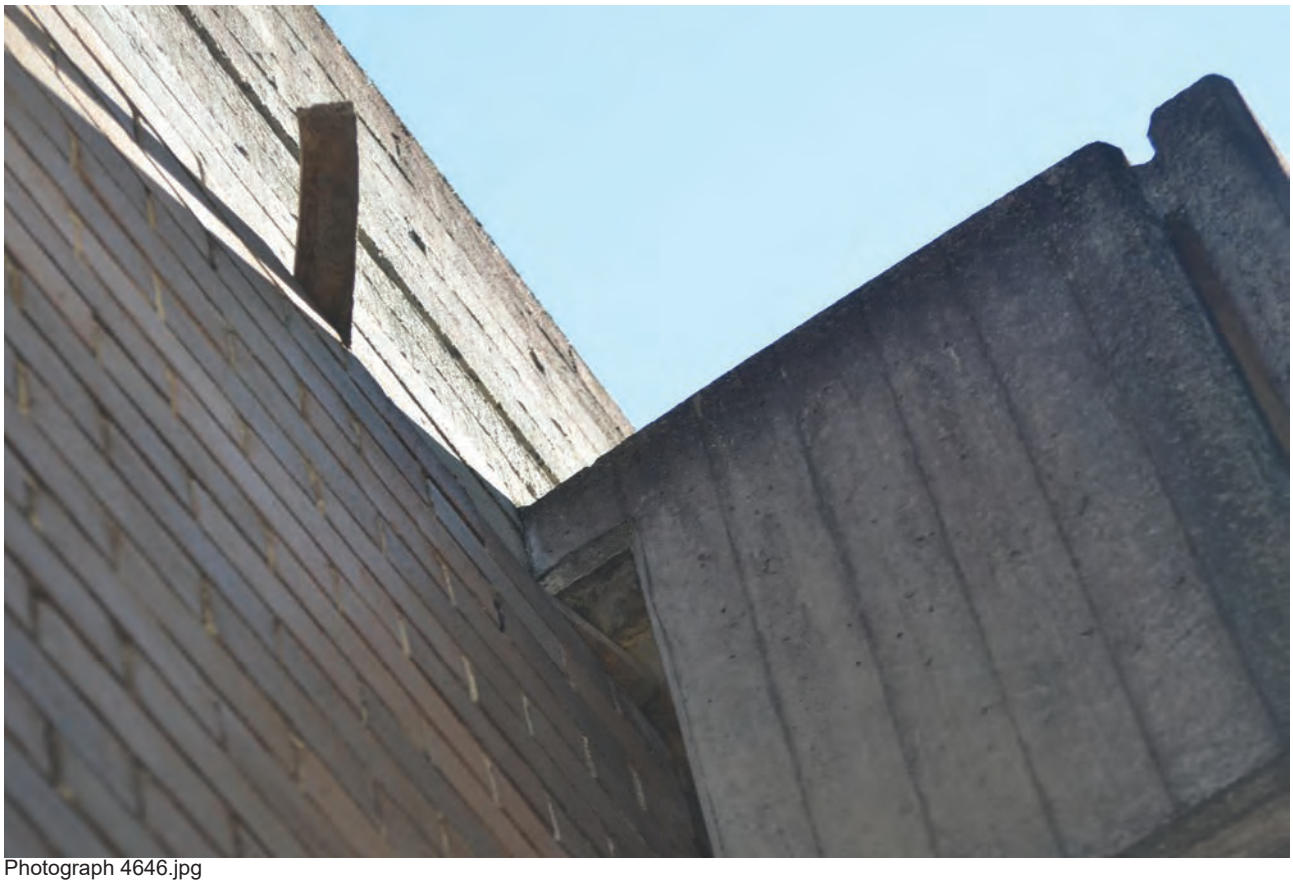

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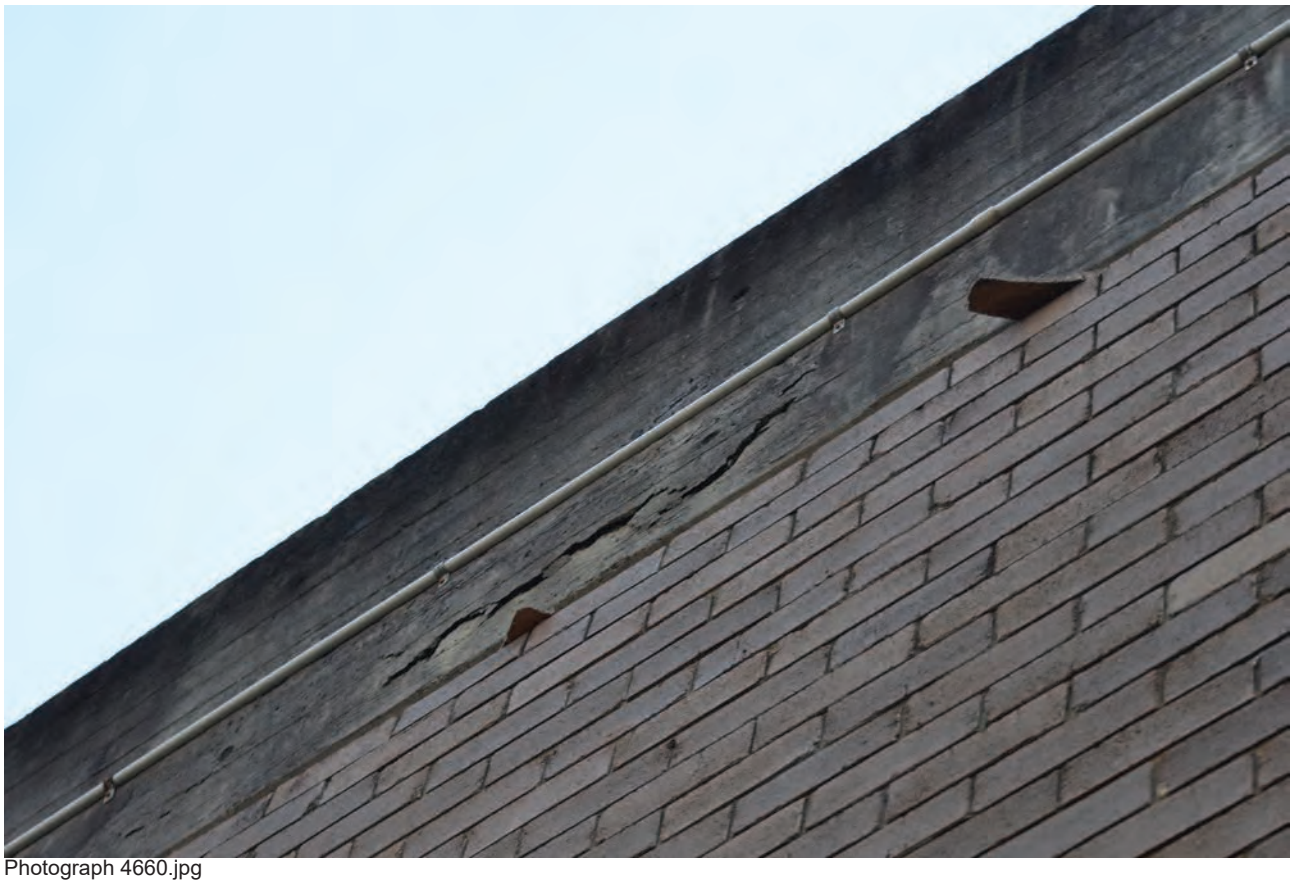

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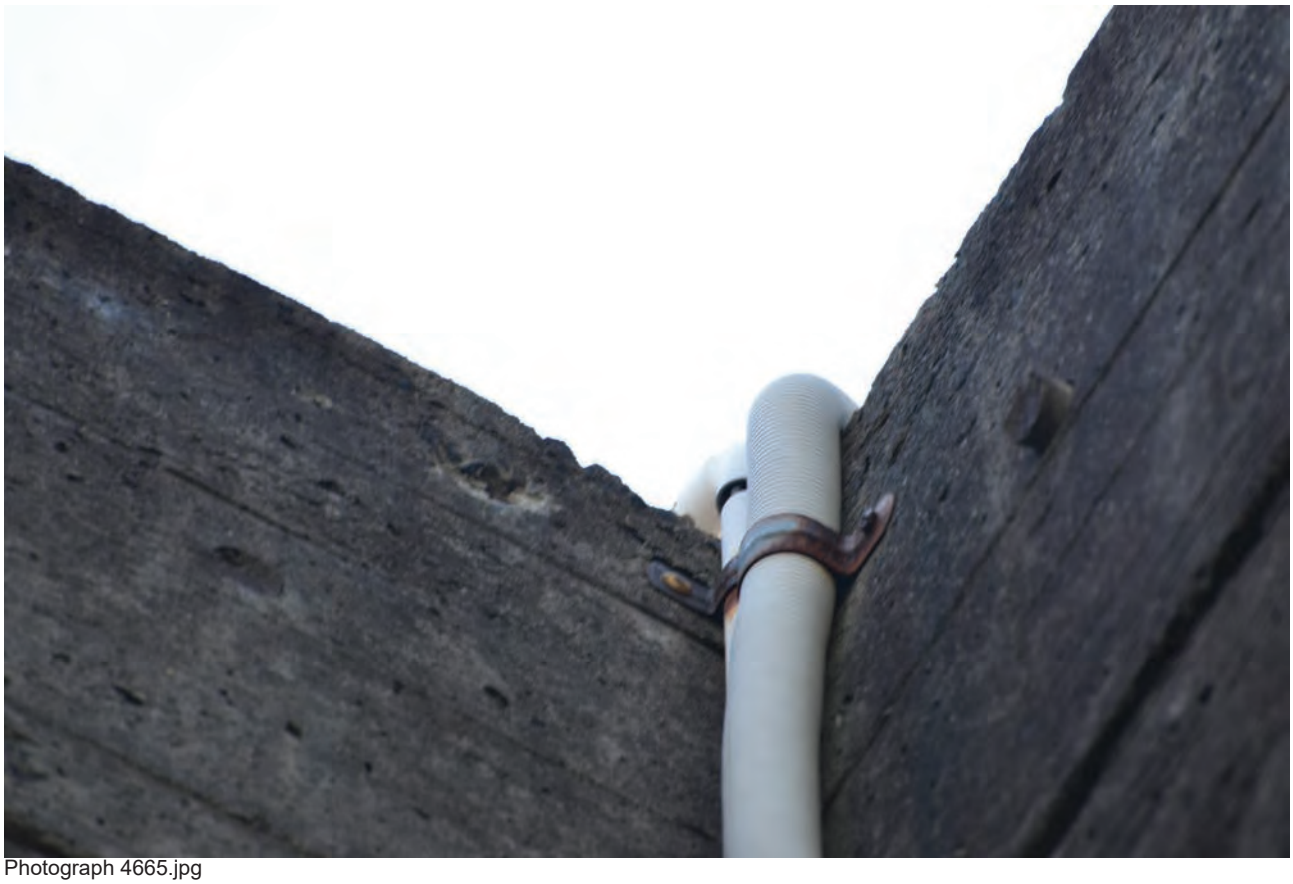

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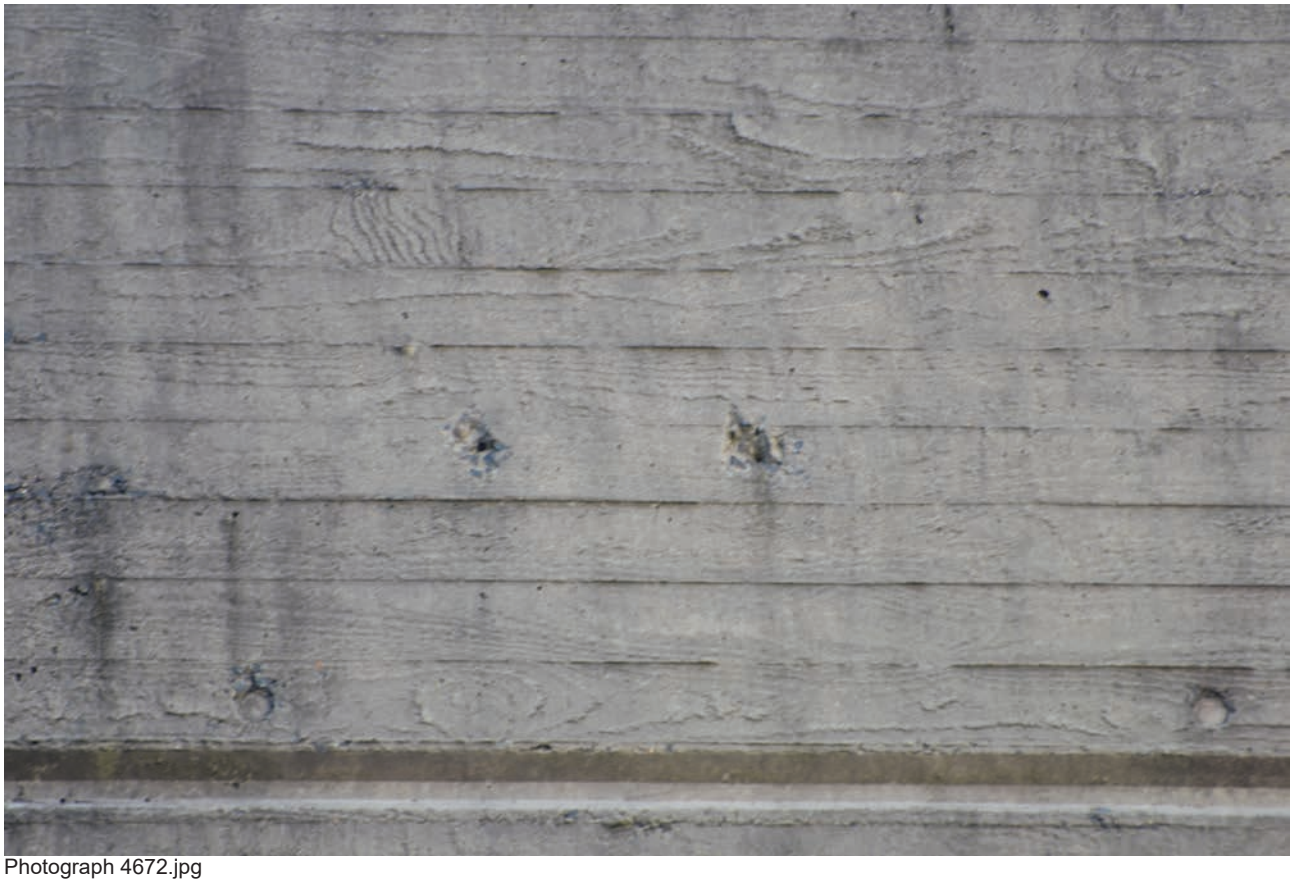

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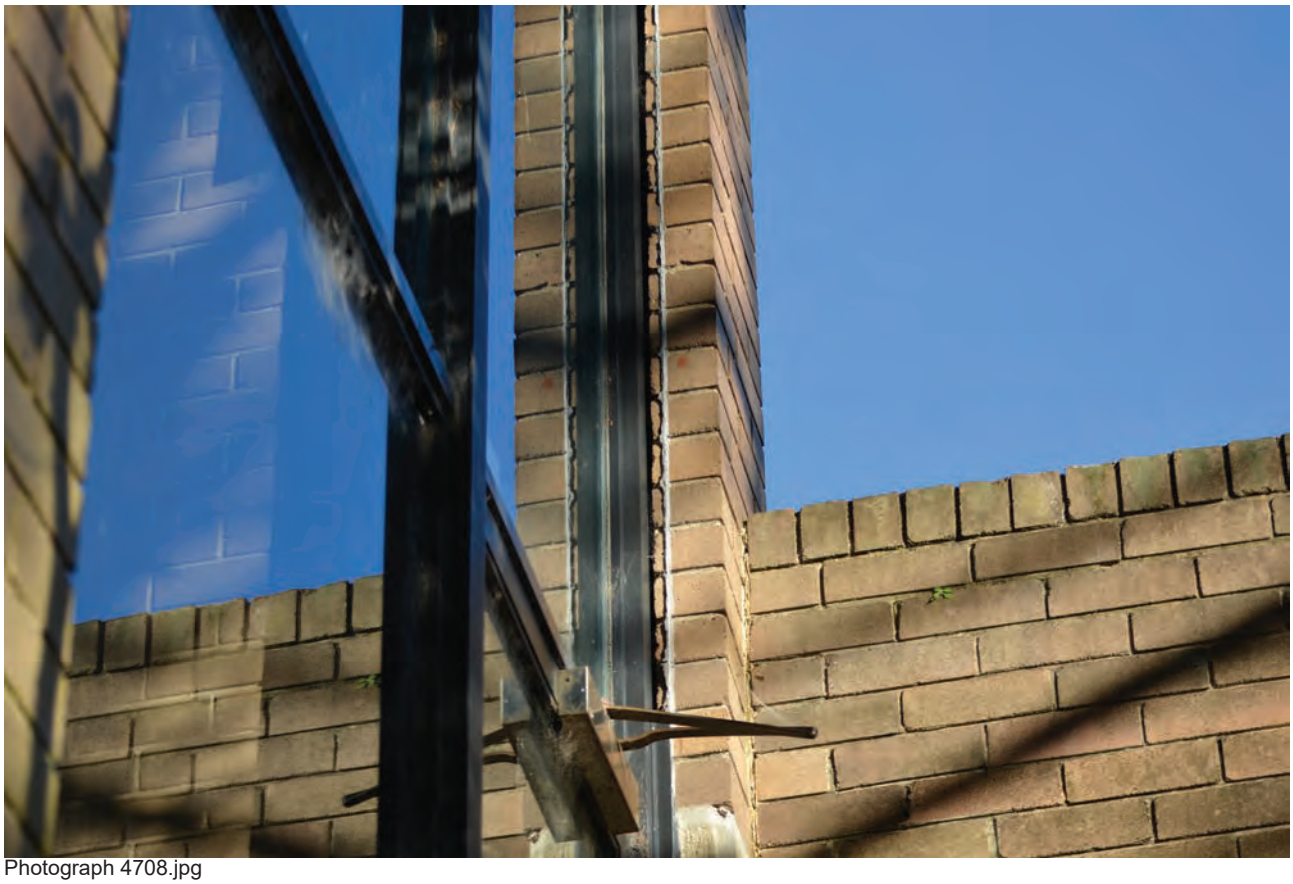

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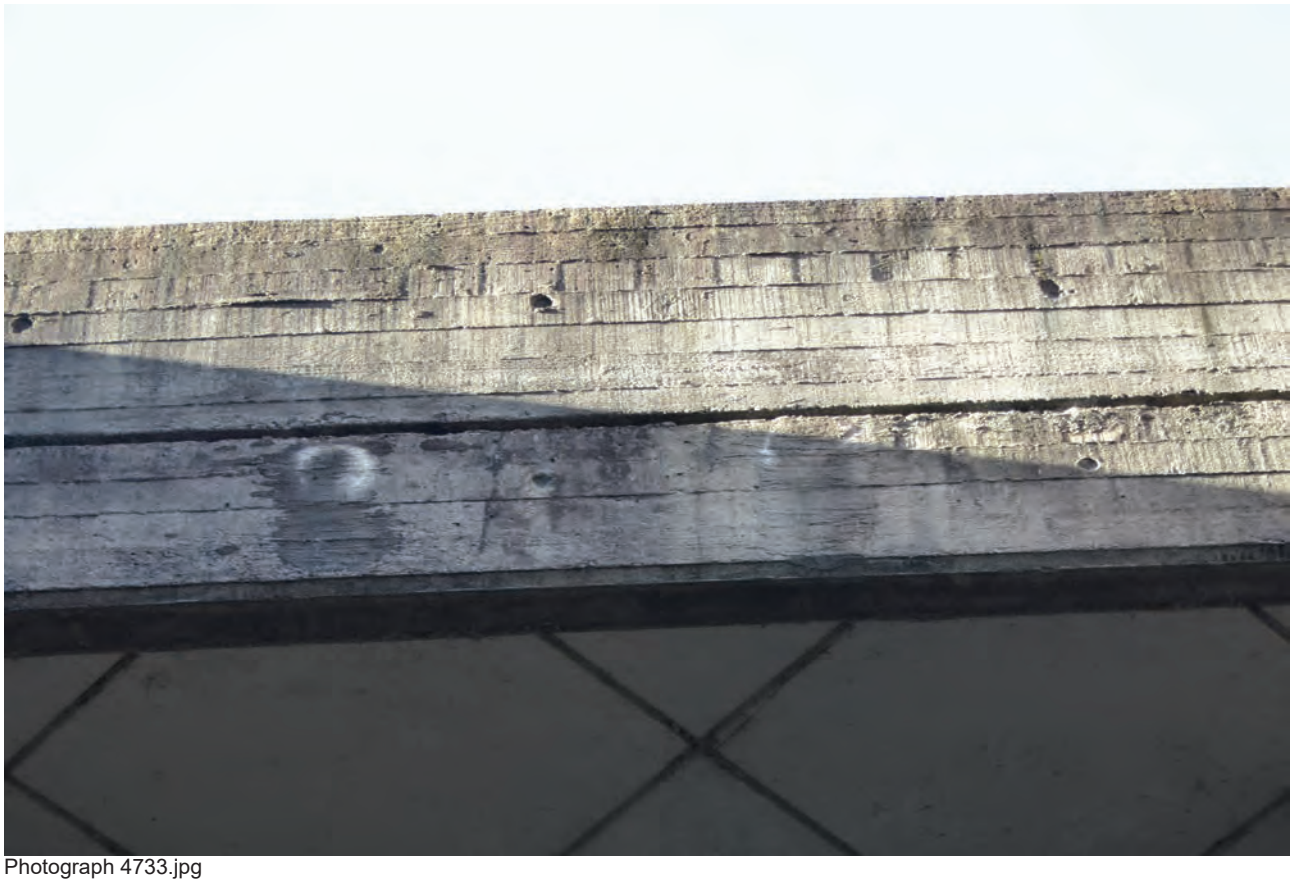

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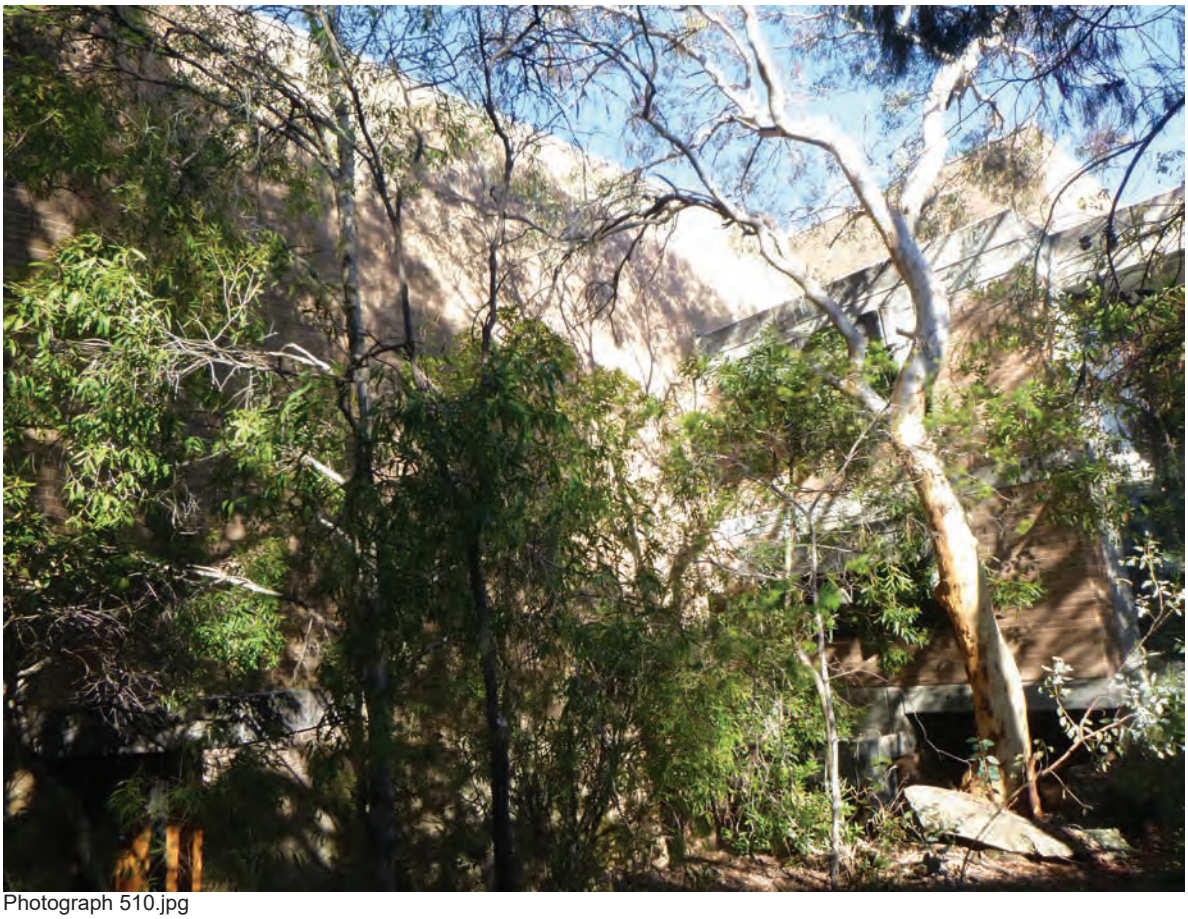

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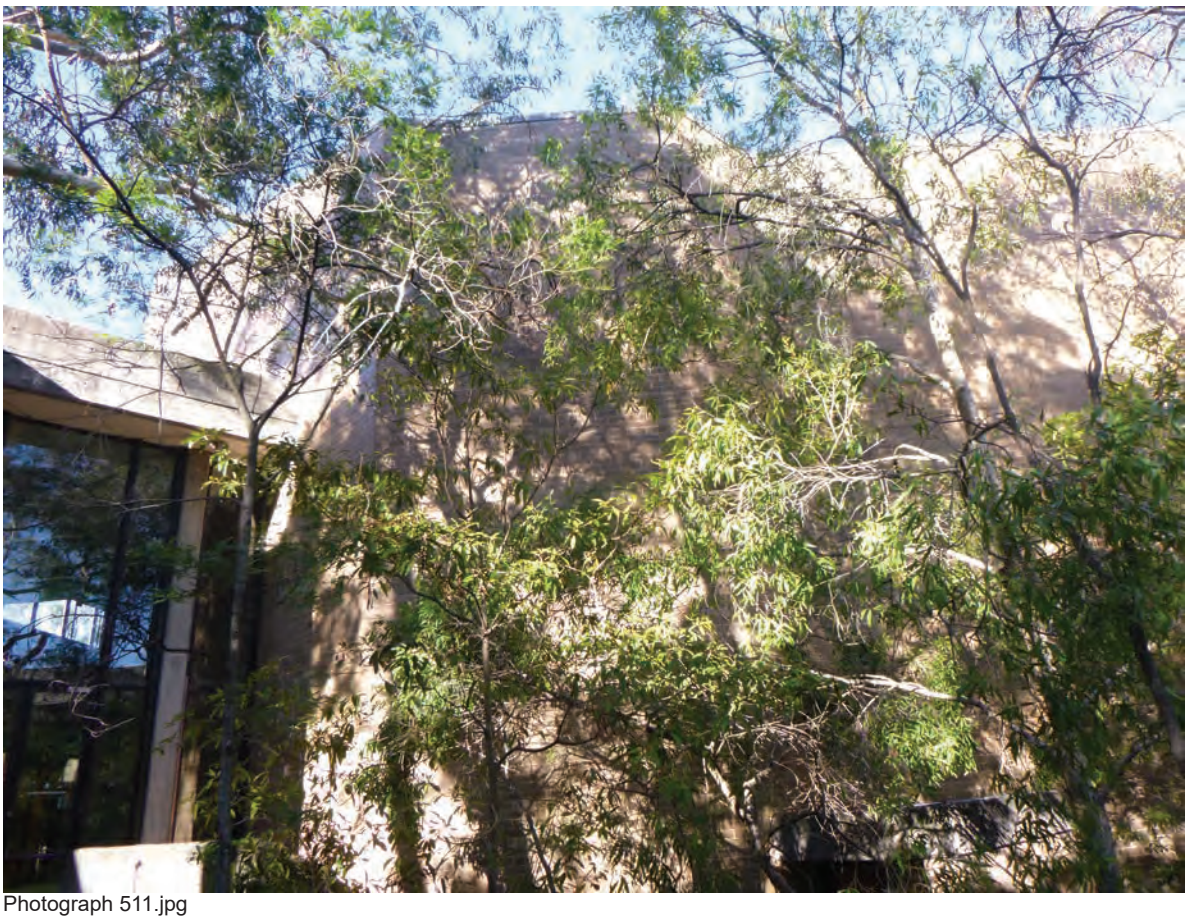

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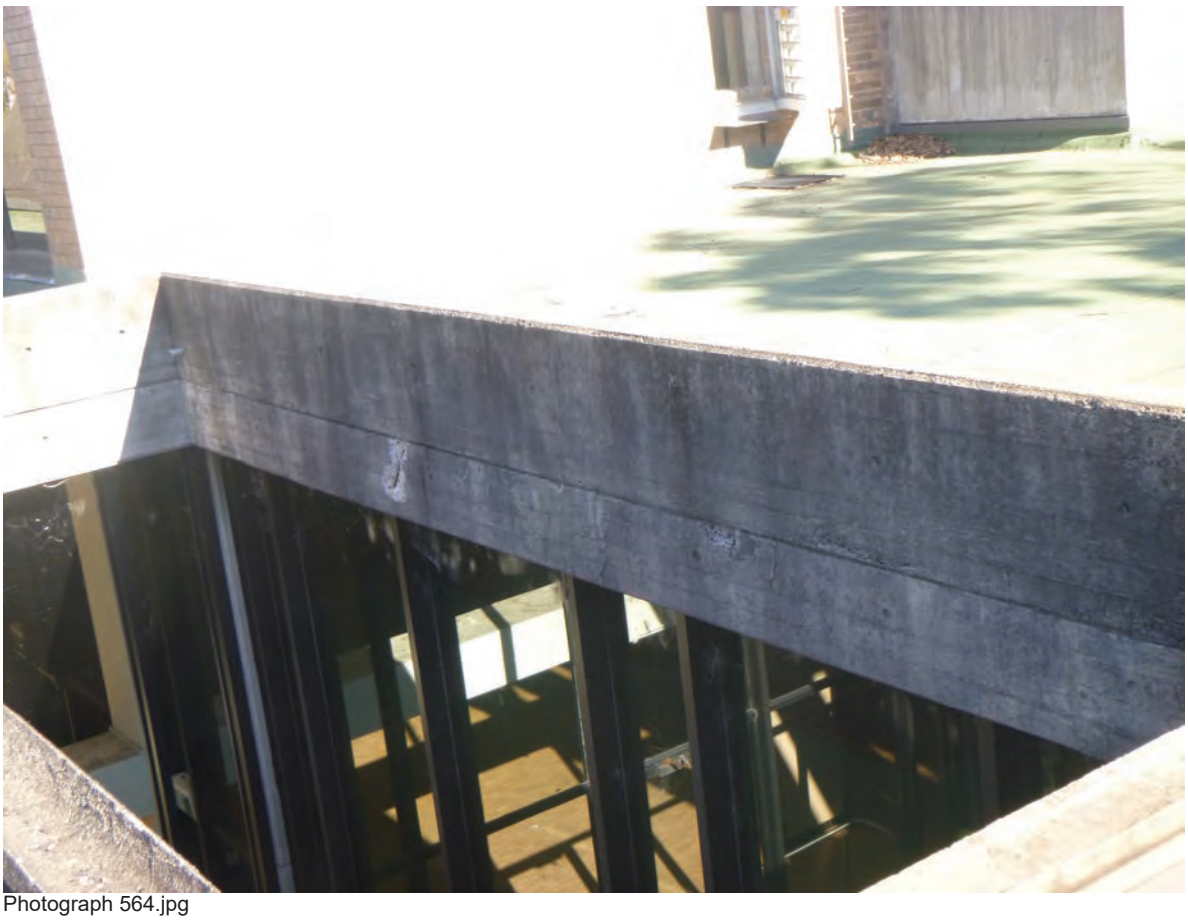

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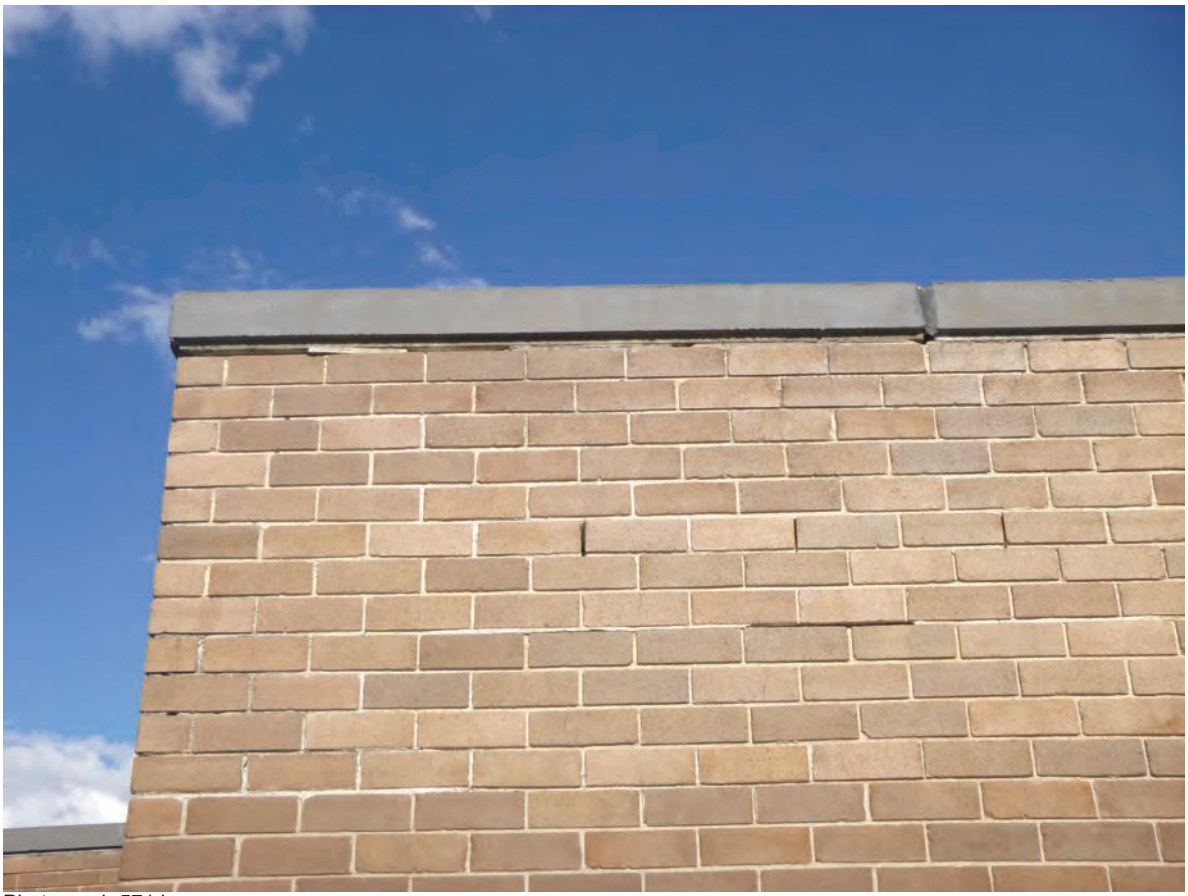

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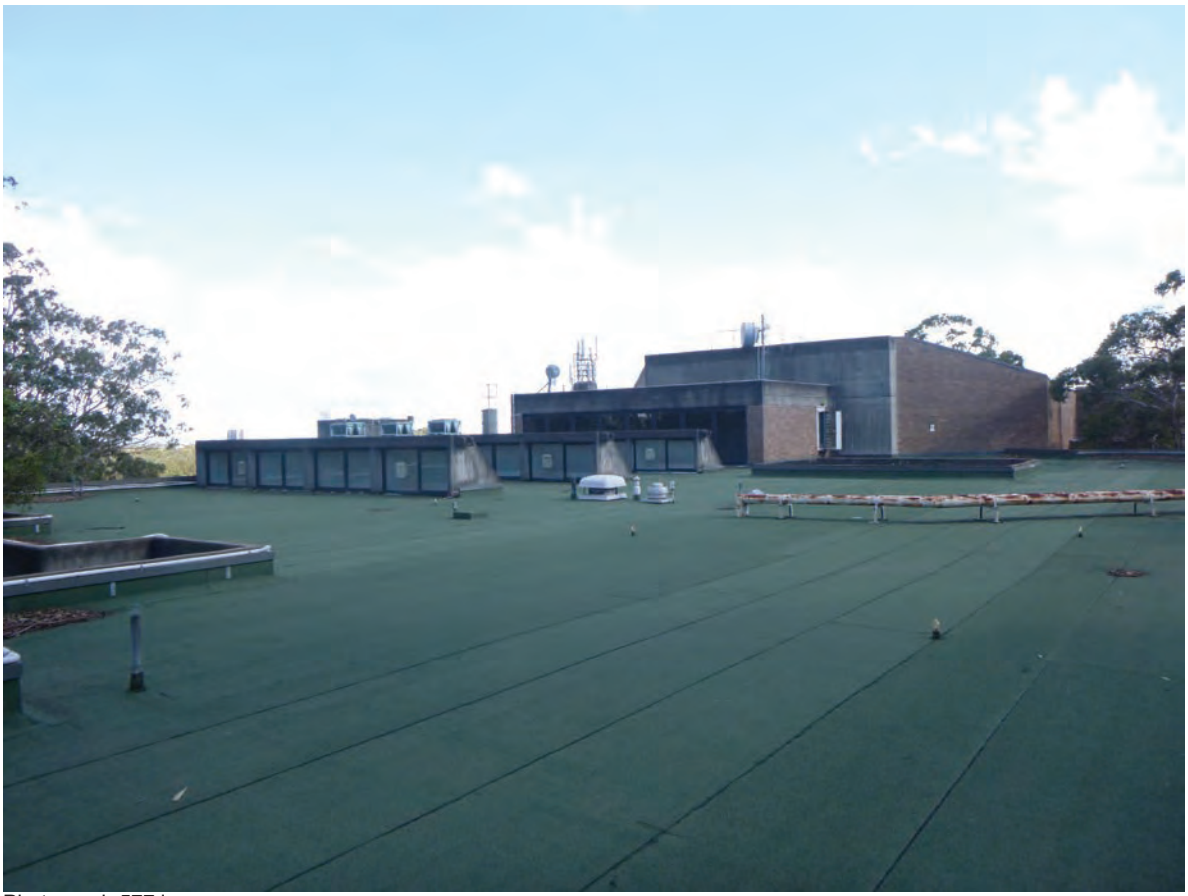

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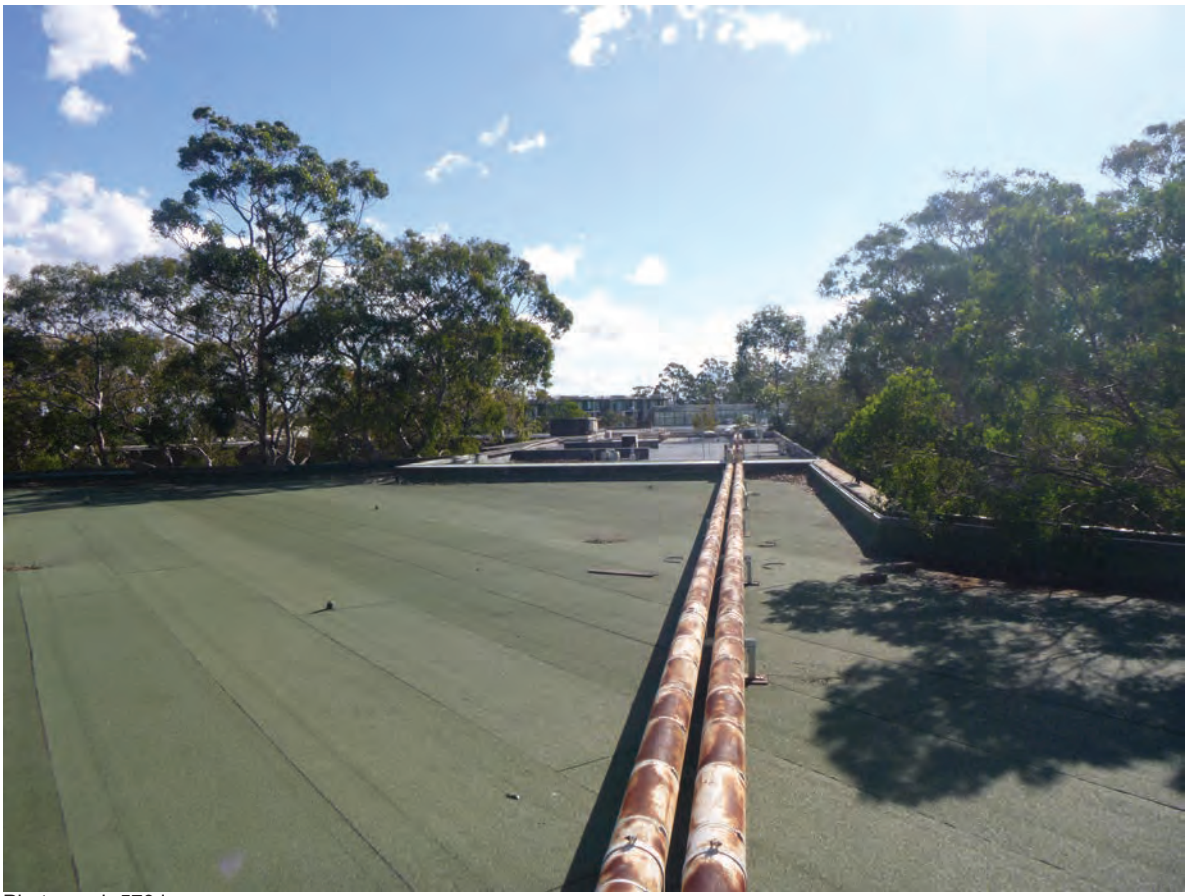

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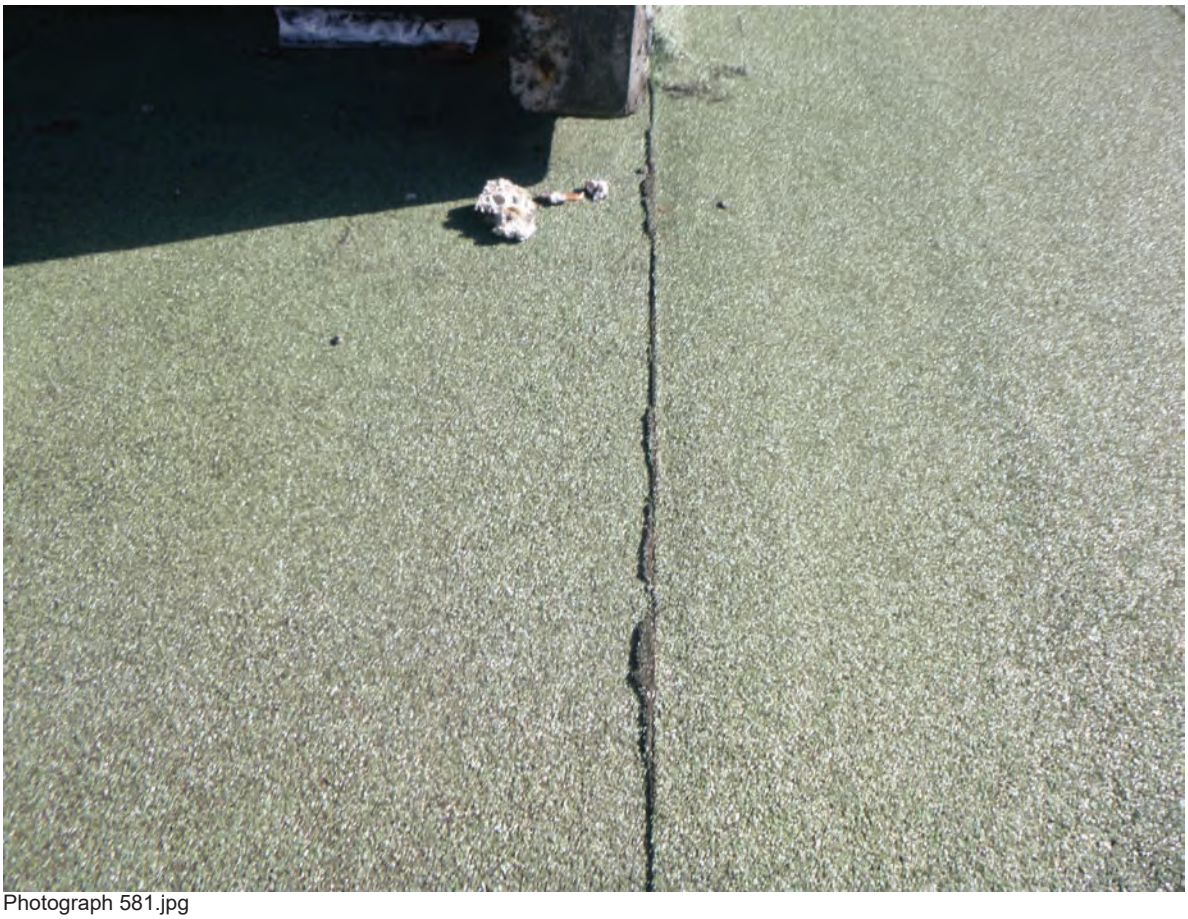

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Taylor Constructions

LINDFIELD LEARNING VILLAGE, MILESTONE 2

Schedule of Required Conservation Works to Heritage Facade Fabric, Milestone 2

125/004

Issue 1 | 24 October 2018

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 125/004

Document Verification

Job title		Lindfield Learning Village, Milestone 2			**Job number**
Document title		Schedule of Required Conservation Works to Heritage Facade Fabric, Milestone 2			125/004
Document ref		125/004			
Revision	**Date**	**Filename**	Schedule of Required Conservation Works to Heritage Facade Fabric Milestone 2 2018_10_24.docx		
Issue 1	**24/10/18**	**Description**	Issue version		
			Prepared by	Checked by	Approved by
		Name	IM & JSMcC	JSMcC	TCW
		Signature			
		File name			
		Description			
			Prepared by	Checked by	Approved by
		Name			
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		File name			
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1. Introduction

1.1. General

We understand that the former UTS Kuring-Gai Campus is undergoing adaptive reuse, becoming the Lindfield Learning Village, a K-12 school. Taylors Construction have been engaged on a construct-only basis to convert the building to the school.

Apex Diagnostics Pty Ltd were engaged by DesignInc Sydney Pty Ltd to assist with the development of a schedule of required heritage conservation work to the building façades, both internally and externally. Comprehensive restoration works have been requested. The schedule was limited to areas shown as 'Milestone 1' (orange shading) on the tender version of drawings AR-T-2014, AR-T-2024, AR-T-2034, AR-T-2044, AR-T-2054, AR-T-2064 and AR-T-2074. That schedule (Lindfield Learning Village, Stage 1 Milestone 1 - Schedule of Required Conservation Works to Heritage Facade Fabric) was issued as draft 1, for comments by the project control group, on 13 July 2018.

Subsequently, Apex Diagnostics was engaged by Taylor Constructions to prepare a similar schedule for the areas shown as 'Milestone 2' (grey hatching) on the above listed drawings. This document is that schedule.

The purpose of the investigation is therefore to carry out a visual condition assessment of the building's heritage-listed brick and concrete fabric internally and externally (limited to the Milestone 2 areas as shown on the above listed drawings), and to produce a conservation works schedule identifying any required works.

Windows and roof membranes have been excluded from this schedule, as they were from the first schedule. We have briefly discussed some gross defects with these items where they were readily apparent without detailed investigation.

1.2. Building Description

Originally built as the Kuring-gai College of Advanced Education, the building is a substantial in size and scale, and a fine example of the Brutalist style. The project, which was built in stages, won the 1978 Sulman Medal.

Four primary materials are used in the façade: board-marked in-situ concrete, clay brick, black painted metal window and door frames, and glazing. Windows feature massive (presumably precast) board-marked concrete sunshades. Board-marked concrete is also used for slab edges (typically expressed), parapets, and some walls including the walls that enclose stairs. Brick is used to form in-fill walls. These four materials, along with green carpet and timber joinery, also dominate the interior of the building.

Milestone 2 areas include outdoor and rooftop terraces located towards the south eastern part of the site, two bridges in the southern outdoor terrace, and a tower fitted with communications antennae. The westernmost wing's sunhoods feature large drains to allow water to escape from their top surfaces. Drains are absent from other sunhoods. The type of formwork tie used also changes between different parts of the building.

1.3. Report Structure

This report sets out the particulars of our inspection, provides a summary of our findings where they differ from the first schedule.

The full schedule of required repair works to the heritage façade fabric in Milestone 2 is appended to this report (appendix A). Drawings showing locations of defects are included in appendix B and photographs of the defects are in appendix C.

2. Inspections

2.1. Inspection

Apex Diagnostics provided our fee proposal for this part of the project on 15 August 2018 to DesignInc Sydney and Savills, and were subsequently engaged by Taylor Constructions on 27 September 2018. Jonathan McCray (Senior Engineer, Apex Diagnostics), Tom Hatton (Senior Engineer, Apex Diagnostics) and Ian Mui (Undergraduate Engineer, Apex Diagnostics) carried out the site inspections over four days from 5 October 2018 to 22 October 2018.

The inspections were visual in nature and were carried out internally, from ground level externally and at safe vantage points on the roof. This provided coverage to nearly the entire building façade of Milestone 2. Due to the lack of safety systems available on the roof, a complete inspection of the roof was not possible. The metal roof immediately south of the library was not accessible. Some external surfaces could not be inspected where they cannot be seen from available vantage points, e.g. slab edges hidden behind some sunshades; top, back and return faces of some sunshades; and areas where the vegetation prevents a clear view of the building. These areas can only be inspected with the use of a mixture of different types of access equipment including scaffolding, MEWPs and rope access. This level of access was not possible in the short time frame required to complete the assessment. This means that some further required repairs may be discovered once fixed façade access is put in place for the scheduled work.

Within some rooms, view of heritage items (i.e. concrete and brick) was obstructed by the internal fit out (e.g. plasterboard). These areas should be assessed following demolition of the fit-out. Similarly, condition of the façade elements hidden behind asbestos cement cladding could not be assessed.

No original drawings of the building were available to review as part of this commission.

2.2. Limitations

The Services are limited to those described above. In particular, the Services have been carried out for the purpose stated in section 1.1 and we offer no warranty regarding their suitability for any other purpose.

This report has been prepared for Taylor Constructions, and should not be relied upon by any other third party. No responsibility is undertaken to any other third party in the use of this report.

No detailed calculations or quantitative assessments of the adequacy or compliance of the building to current design codes or the National Construction Code (NCC) were carried out as part of this survey, nor was any physical materials testing carried out or enquiries made of statutory authorities in connection with the building. No statistical analysis was undertaken in the determination of trends noted.

Whilst this report is based on a reasonably detailed visual inspection of the areas of the property shown to us and described in the report, we do not purport to have discovered or seen every hidden defect or structural condition in existence. The inspection has been made without the removal of any parts of the structure (unless noted) and has been limited to areas where reasonable and safe access is available.

Our Services do not extend to advising on asbestos and Apex Diagnostics shall have no liability for any claims arising out of or in connection with asbestos.

3. Summary of Findings

See also the findings in the first schedule.

3.1. Concrete

New comments for Milestone 2 areas:

In the course of conducting the inspections that underlie this schedule, we identified three areas where the board-marked finish appears to have been applied as a veneer and is delaminating:

- the sunhood fin which has been removed from the building (near the southeast corner of the complex, on the south elevation)
- on the rear surface of roof lights above the refectory (this was brought to our attention by Taylor)
- on some internal balustrades

The delaminating veneer could only be identified visually in these locations because it had already partially detached. Visual inspection cannot detect areas of veneer that have delaminated from the substrate concrete, but not started to detach. These areas can only be identified by tapping with a sounding hammer. Delaminated veneers make a characteristic 'drummy' hollow sound and if left untreated are at risk of falling from the building.

It is unusual for a board-marked finish to be applied as a veneer. The usual technique used to achieve a board marked finish is for the boards to be attached inside the formwork when the concrete is poured. In this way the board-marking is integral with the concrete. Opening up of a single sunhood fin has been completed by subcontractor Waterstone at the time of writing, located at the north east of the complex (to the east of the main building entrance). There is no evidence of veneer construction on this fin. It appears to have been constructed in the conventional 'monolithic' manner.

Therefore, we believe a mixture of conventional and veneer board marking has been used in different parts of the complex, but cannot be certain where the two techniques have been used. We recommend all concrete surfaces be tap-tested to identify areas of dummy veneer while access is in place for the concrete repair project. We would expect that any experienced specialist concrete repair contractor is competent to complete this task. Alternatively, it could be undertaken by an experienced specialist remedial engineer.

Comments carried over from Milestone 1:

The concrete is typically showing signs of deterioration which can be attributed to the building's age:

- Concrete surfaces are generally dirty.
- Concrete is spalling leaving reinforcing bars exposed. Generally, spalling appears to occur at locations where bars were placed with low concrete cover to reinforcement ('**cover**'). A cover meter was used on the balustrades at the northern balcony of Zone A, which indicated typical concrete cover is about 40mm. The spalled areas seem to be restricted to areas where cover is lower than this. Some ferrules and other embedded steel items are also corroding causing concrete spalls.
- Form ties, embedded in the concrete, are corroding. This is causing the grout plugs installed over the ties to spall and fall out. Approximately one third to half of all form ties are currently affected to some extent.
- There are isolated instances of failed grout chamfers at the junctions between the stairs and adjacent wall. This occurs particularly in the stairwells of Zone A.

- There is evidence of previous concrete repairs that may not have been conducted in accordance with good practice (e.g. edges of repairs appear to have been feathered rather than saw cut). Where these repairs appear to be failing now, they have been included in the schedule. There is a risk that more of these exiting repairs will fail in the future.

To better understand the future prognosis for the concrete, some chemical testing should be undertaken to measure depth of carbonation and chloride ion concentration in the concrete. This should be coupled with limited cover meter surveys in representative selected areas to understand the range of cover depths as-built in the various elements.

Concrete durability into the future would be improved by the application of a penetrating silane sealer. The concrete would need to be cleaned before silane could be applied. Consideration should be given to silane application to all concrete elements of the façade.

Some sunshades have areas on the top surface where water can pond. Consideration should be given to retro-fitting drainage, or to applying waterproofing to these areas. Both approaches would improve the durability of the sunshades. Drainage also has the advantage of removing a potential breeding area for mosquitos.

3.2. Brick Masonry and Tiles

New comments for Milestone 2 areas:

Detailing of the brickwork is, in general, slightly worse in the milestone 2 area than the milestone 1 area. For example, the inclusion and locations of movement joints is not as consistent in the milestone 2 areas compared to milestone 1. This is reflected in a greater proportion of brick walls that are displaced relative to the surrounding concrete. We found some brick walls that had rotated, and others that appeared to be lacking restraint at the head and would rock back and forth when pushed. These walls have been identified in the schedule. We recommend the project's structural engineer review all of the retained brick walls to confirm whether or not they are sound. If walls need a head tie in order to perform structurally, then we recommend that all walls are checked for the presence and integrity of the required ties.

Comments carried over from Milestone 1:

The brickwork is generally in good condition. This is partially due to good-practice detailing during original construction including regularly spaced movement joints and movement joints at interfaces with concrete. However, the joint materials (generally being cork compressible fillers and applied sealants) are in a deteriorated state consistent with their age. They are now in a condition where wholesale replacement of sealants and compressible fillers should be considered.

Other defects include:

- Deteriorated brick pointing in limited areas.
- Isolated instances of cracked bricks (which appear to be caused by building movement or corrosion of steel embedded in the brick walls).
- An unsupported leaf of brickwork adjacent to the gymnasium.
- Cracked, missing or displaced tiles at window sills.
- Individual bricks that have been removed to permit inspection into the cavities.
- Evidence of salt crystallisation in some areas. Note that this does not appear to have damaged the bricks themselves but rather is sitting on the surface.

- Generally, brick surfaces are dirty and would benefit from cleaning.

While the mortar and pointing is in reasonably good condition, any replacement materials should be compatible with the existing material. We do not know the constituent materials, and recommend that mortar samples be analysed to confirm the mortar mix (it may be a typical sand/Portland cement mix, or may also include a proportion of lime). Following such analysis, the final mortar mix can be specified.

3.3. Waterproofing

Comments carried over from Milestone 1:

We observed multiple active water leaks that appear to originate from roofs or junctions of roofs and walls, and areas of ponding water on some roofs and tops of sunshades. We understand that the existing roof is to be remediated (as shown on the demolition plans) with new membranes to be installed. We assume that the currently specified roof repair works will address all waterproofing deficiencies with the roof and ensure water-tightness of the roofs, parapets and all junction and perimeter details. We have not provided any further commentary on roof waterproofing.

3.4. Miscellaneous

Comments carried over from Milestone 1:

There are a number of other miscellaneous defects identified in the schedule. These include:

- Original concrete balustrades have gaps at their ends that may be considered unsafe and appear not to comply with current National Construction Code requirements (because the gaps are greater than 125mm in width – up to approximately 150mm in some locations). We assume the architects are aware of these and have designed appropriate in-fills for these gaps.
- There are isolated areas of possible structural distress (identified in the schedule). We recommend these areas are reviewed by the project's structural engineers.
- A large number of redundant anchors and fixings exist in the brick and concrete. These items should be removed. We have included some of these redundant fixings in the schedule where they either are corroding and are damaging the concrete, or they have significant negative visual impact. The architect and heritage consultant should consider the exact scope of redundant fixing removal (whether this be comprehensive, be limited to corroding fixings only, or some compromise). Consideration should also be given to safety risks to children (and others) from protruding redundant fixings.
- Evidence of vermin infestation in some areas. Evidence includes animal faeces, old signage from when UTS still occupied the building, and inconsistently retro-fitted or dilapidated insect and vermin mesh to some parts of the façade. We have not made any further comment on vermin but suggest a pest control specialist be engaged to review the situation.

3.5. Other Considerations

We have not reviewed the Hazardous Materials Register for the building (if one exists). This should be reviewed prior to any work being carried out to ensure that all materials (including but not limited to sealants to brickwork, concrete and around windows) can be safely removed.

If any materials that are subject to work are not included on the Hazardous Materials Register, they should be assessed by a suitably qualified and experienced industrial hygienist.

4. High-level work statements for required repairs

The following methodologies are duplicated from our Milestone 1 Schedule dated 13 July 2018:

4.1. Sealants to brickwork

Scope: All existing flexible sealants and compressible fillers (typically located at brickwork heads or at junctions with concrete) to retained brickwork.

Materials:

- Sealant: Sikaflex Pro polyurethane.
- Primer: Sika Primer #3N.

Methodology:

- Rake out existing failed sealants and any loose/protruding compressible fillers.
- Clean and prepare joints to receive new sealants.
- Protect adjacent surfaces.
- Prime surfaces as per sealant manufacturer's instructions.
- Apply new flexible polyurethane sealants at profiles as recommended by the manufacturer.
- Use backing rods and bond breakers as required to ensure sealants are adhered on two sides only and follow good joint detailing practice.
- Tool off sealants neat and flush with adjacent surfaces.
- Sealant colour to be specified by architect.

4.2. Concrete Patch Repairs

Scope: All areas of concrete spalling identified in the repair schedule and all other similar areas of spalled concrete.

Materials:

- Concrete Repair Mortar: Sika Monotop 352 NFG.
- Primer: Sika Monotop 910N.
- Bonding Bridge: Sika Monotop 910N.
- Colouring agent: As approved by the manufacturer, to match surrounding (cleaned) concrete colour.

Methodology:

- Protect adjacent areas.
- Break out concrete, ensuring that the perimeter of each repair is cut as a series of straight lines at right angles. Where possible, coordinate cut lines with existing visible form board lines.
- Clean reinforcing steel (where exposed) by mechanical wire brush.
- Inspect exposed reinforcements to ensure no sectional loss.

- Use Helifix Dryfix 8mm helical stainless steel reinforcing pins where required (to be assessed on a case by case bases).
- Prime reinforcement as per primer manufacturer's instructions.
- Apply bonding bridge once primer has cured.
- Apply repair mortar (in multiple coats if required).
- Replicate existing surface texture with template to match existing.
- Surface finish & concrete colour to match existing to the satisfaction of the architect or heritage consultant (i.e. allow to form surface using rough-cut form boards as per the original finish).

4.3. Concrete Bar Tip/Corroding Ferrule Repairs

Scope: All areas of exposed ends of reinforcement bars and corroding ferrules identified in the repair schedule.

Materials: As Part 4.2.

Methodology: As Part 4.2 generally, but core out corroding ferrules to a depth of approximately 40mm minimum and cut back bar tips (where structurally acceptable).

4.4. Brick Masonry Repairs

Scope: All areas of cracked, displaced, damaged bricks identified in the repair schedule and all other similar areas of masonry damage.

Materials:

- Brick salvaged during deconstruction or new brick to match existing
- HeliBar bed-joint reinforcement to locations of corner cracking.
- Mortar – to be confirmed following analysis (see section 3.2)

Methodology:

- Prevent damage to all surrounding masonry, protect with suitable non-staining slats etc.
- Rake out joint to remove loose material, dirt and debris.
- Saw cut as required to produce straight, consistent edge to seal to.
- Replace cracked bricks as necessary
- Install HeliBars as recommended by the manufacturer where appropriate to reinforce areas of cracking (to be assessed on a case by case bases).
- Repoint the mortar bed as 4.5 and make good cracks.

4.5. Brick Re-Pointing

Scope: All areas of re-pointing identified in the repair schedule and all other similar areas.

Materials:

- Mortar – to be confirmed following analysis (see section 3.2).

Methodology:

- Protect adjacent areas to prevent contamination from overrun or other material contamination.
- Rake out existing pointing to a minimum depth of 20mm.
- Ensure joints are clean, dry and free of loose material.
- Apply mortar, matching the profile of adjoining pointing (recessed pointing profile).

4.6. Grout Plugs (Corroding Form Ties)

Scope: All areas of corroding form ties causing displacement of grout plugs as identified in the schedule and similar areas.

4.6.1. Option 1 – Make safe

Methodology:

- Make safe all grout plugs by removing all loose plugs.
- Blow any loose, friable corrosion material and deteriorated mortar from holes.

4.6.2. Option 2 – Restore

Materials:

- Concrete Repair Mortar as 4.2.
- Backing Rod

Methodology:

- Remove all grout plugs.
- Clean loose corrosion within socket.
- Insert a backing rod or similar to form shallow compressible zone in front of ferrule.
- Apply concrete repair mortar in accordance with 4.2 into hole, and leave recessed by 5mm.

4.6.3. Option 3 – Remove

Materials:

- Concrete Repair Mortar

Methodology:

- Remove all grout plugs
- Core out all form ties
- Fill hole with conventional concrete repair as per 4.2 and leave recessed by 5mm.

4.7. Cleaning

4.7.1. Option 1 – Do not clean

Do not undertake any cleaning to the facades of the building.

4.7.2. Option 2 – Clean & Protective Coating

Pressure wash masonry and concrete, apply protective coating (e.g. silane such as Drytreat 100N) to concrete only.

Any cleaning process must be subject to trials for applied pressure and any detergent additives, with review and approval of trial areas/control samples by the Architect and/or heritage consultant.

In internal areas or where excess water pressure or water runoff may cause damage, alternative techniques (e.g. façade gommage) could be trialled. Note that pressure washing systems are available with water recovery, however they do not capture 100% of the wash water.

4.7.3. Option 3 – Adopt Taylor Construction Trial Cleaning

We are aware that Taylor Construction have undertaken trial cleaning to an external stairway at the rear of the complex. We do not know what cleaning techniques were applied or if any protective coatings were used, if the architect or heritage consultant is satisfied with the aesthetic result, and subject to a technical review, this cleaning methodology could be applied to the remaining concrete.

We are not aware of any trial cleaning undertaken to the masonry by Taylor Construction.

5. Next Steps

5.1. Heritage Consultant & Architect Review

Both the Heritage Consultant and Architect should review the schedule of required repairs to understand what we have proposed with consideration of the heritage conservation requirements. The heritage consultant and architect should provide their input on the scope and repair methodologies proposed. In particular, we are not aware of any details of the cost plan for the construction works and the schedule has been prepared without consideration of the project budget.

5.2. Specification

We understand that repair works from the first schedule have been procured without a specification. It remains our recommendation that a full technical specification, including general standards for quality and materials with heritage conservation in mind, should be prepared. This would expand on the methodologies in section 4. Without a detailed specification, there is a risk that the work will not achieve the required material and quality standards, or that variations will be incurred after tender prices are received.

5.3. Make-safe

We do not have details of when conservation works to milestone 2 areas are planned. If works are to be delayed, the building's owner (i.e. the Department of Education) should consider undertaking 'make-safe' works in the interim. At present there are a large number of areas of loose and spalled concrete. These areas are at risk of falling from the building, and may pose a hazard to any people below.

Many building owners choose to manage this safety risk by regularly and proactively removing loose concrete from the building while waiting to undertake actual repair works. We recommend the owner consider how to manage the safety risk posed by loose concrete.

Appendix A – Conservation Schedule

Items referenced to elevation drawings:

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
352	AR-T-320G	5	Spalling concrete	1 - Undertake conventional concrete repair.	5081
353	AR-T-320G	6	Spalling concrete	4 - Undertake conventional concrete repair.	5079, 5080
354	AR-T-320G	6	Spalling concrete	1 - Undertake conventional concrete repair.	5078
355	AR-T-320G	4	Cracked or broken brick slip.	1 - Reinstate	5076
356	AR-T-320G	5	Spalling concrete	1 - Undertake conventional concrete repair.	5077
357	AR-T-320G	6	Spalling concrete	1 - Undertake conventional concrete repair.	5082
358	AR-T-320G	5	Redundant Fixings	2 - Remove redundant fixings and make good substrate.	5085
359	AR-T-320G	5	Redundant Fixings	2 - Remove redundant fixings and make good substrate.	5086
360	AR-T-320G	6	Spalling concrete	1 - Undertake conventional concrete repair.	5083
361	AR-T-320G	6	Spalling concrete	1 - Undertake conventional concrete repair.	5084
362	AR-T-320G	6 (Return Face)	Spalling concrete	1 - Undertake conventional concrete repair.	5087
363	AR-T-320G	6	Spalling concrete	1 - Undertake conventional concrete repair.	5116
364	AR-T-320G	6	Tie Wire	1 – Remove corroding wire and repair concrete	5117
365	AR-T-320G	6	Spalling concrete	1 - Undertake conventional concrete repair.	5088
366	AR-T-320G	6 (Balustrade Return Face)	Spalling concrete	1 - Undertake conventional concrete repair.	319
367	AR-T-320G	5 (Right balustrade)	Spalling concrete	1 - Undertake conventional concrete repair.	297
368	AR-T-320G	5 (Left balustrade)	Spalling concrete	1 - Undertake conventional concrete repair.	298
369	AR-T-320G	5	Spalling concrete	1 - Undertake conventional concrete repair.	288

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
370	AR-T-320G	5	Spalling concrete	1 - Undertake conventional concrete repair.	289
371	AR-T-320G	5	Spalling concrete	2 - Undertake conventional concrete repair.	290
372	AR-T-320G	6	Spalling concrete	1 - Undertake conventional concrete repair.	5118
373	AR-T-320G	6	Corroding form tie causing grout plug to spall.	4 - Remove loose grout plugs and repair.	286, 287
374	AR-T-320G	6	Exposed end of reinforcing bar.	12 - Undertake conventional concrete repair.	5018
375	AR-T-320G	6	Corroding form tie causing grout plug to spall.	4 - Remove loose grout plugs and repair.	5019
376	AR-T-320G	7	Corroding form tie causing grout plug to spall.	2 - Remove loose grout plugs and repair.	5020
377	AR-T-320G	7	Spalling concrete	1 - Undertake conventional concrete repair.	5017
378	AR-T-320G	7	Spalling concrete	1 - Undertake conventional concrete repair.	5016
379	AR-T-321F (Elevation 806 to 809)	5	Cracked or broken brick slip.	1 - Reinstate	5042
380	AR-T-321F	7	Spalling concrete	1 - Undertake conventional concrete repair.	5041
381	AR-T-321F	5	Cracked or broken brick slip.	1 - Reinstate	5043
382	AR-T-321F	6	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	5040
383	AR-T-321F	5	Spalling concrete	1 - Undertake conventional concrete repair.	5037
384	AR-T-321F	5	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	5037
385	AR-T-321F	7	Efflorescence and staining due to water ingress.	3 - Clean efflorescence after repairing waterproofing.	5039
386	AR-T-321F	7	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	5038
387	AR-T-321F	7	Plant growth through waterproof membrane.	1 - Remove plant and repair waterproofing.	5036
388	AR-T-321F	5	Spalling concrete	1 - Undertake conventional concrete repair.	5035

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
389	AR-T-321F	5	Spalling concrete	1 - Undertake conventional concrete repair.	5032
390	AR-T-321F	5	Spalling concrete	3 - Undertake conventional concrete repair.	5031
391	AR-T-321F	7	Spalling concrete	2 - Undertake conventional concrete repair.	5034
392	AR-T-321F	7	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	5033
393	AR-T-321F	7 (Soffit and slab)	Spalling concrete	3 - Undertake conventional concrete repair.	5028
394	AR-T-321F	6	Spalling concrete	1 - Undertake conventional concrete repair.	5026
395	AR-T-321F	6	Spalling concrete	1 - Undertake conventional concrete repair.	5027
396	AR-T-321F	6	Spalling concrete	11 - Undertake conventional concrete repair.	5023, 5024, 5025
397	AR-T-321F	5	Spalling concrete	1 - Undertake conventional concrete repair.	5029
398	AR-T-321F	6	Spalling concrete	1 - Undertake conventional concrete repair.	5021, 5022
399	AR-T-321F	6	Mould	1 - Clean.	5075
400	AR-T-321F	6	Deteriorating pointing to brickwork.	1 - Repoint.	5074
401	AR-T-321F	5	Spalling concrete	3 - Undertake conventional concrete repair.	5069
402	AR-T-321F	5	Deteriorating pointing to brickwork.	All - Repoint.	295, 296
403	AR-T-321F	4	Spalling concrete	1 - Undertake conventional concrete repair.	291
404	AR-T-321F	7	Efflorescence and staining due to water ingress.	3 - Clean efflorescence after repairing waterproofing.	5070
405	AR-T-321F	7	Spalling concrete	1 - Undertake conventional concrete repair.	5072
406	AR-T-321F	5	Spalling concrete	3 - Undertake conventional concrete repair.	5071
407	AR-T-321F	5	Spalling concrete	1 - Undertake conventional concrete repair.	5073
408	AR-322K (Elevation 771 to 774)	6	Active water leak.	1 - Repair consequential damage after addressing water leak)	5067
409	AR-322K	5	Spalling concrete	1 - Undertake conventional concrete repair.	5068

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
410	AR-322K	5	Ironstone / ferrous inclusion staining	1 - Extract corroding aggregate / inclusion, clean and make good concrete.	5066
411	AR-322K	5	Ironstone / ferrous inclusion staining	1 - Extract corroding aggregate / inclusion, clean and make good concrete.	5065
412	AR-322K	7	Efflorescence and staining due to water ingress.	7 - Clean efflorescence after repairing waterproofing.	5064
413	AR-322K	7	Spalling concrete	1 - Undertake conventional concrete repair.	5063
414	AR-322K	4	Spalling concrete	1 - Undertake conventional concrete repair.	294
415	AR-322K	4	Spalling concrete	1 - Undertake conventional concrete repair.	293
416	AR-322K	5	Spalling concrete	1 - Undertake conventional concrete repair.	292
417	AR-322K	7	Ironstone staining	1 - Extract corroding aggregate, clean and make good concrete.	5062
418	AR-322K	6	Ironstone staining	1 - Extract corroding aggregate, clean and make good concrete.	5061
419	AR-322K	7	Spalling concrete	1 - Undertake conventional concrete repair.	5060
420	AR-322K	7	Ironstone staining	1 - Extract corroding aggregate, clean and make good concrete.	5059
421	AR-322K	7	Spalling concrete	1 - Undertake conventional concrete repair.	5057
422	AR-322K	6	Spalling concrete	1 - Undertake conventional concrete repair.	5056
423	AR-322K	Roof	Efflorescence and staining due to water ingress.	4 - Clean efflorescence after repairing waterproofing.	5058
424	AR-322K	6	Ironstone staining	1 - Extract corroding aggregate, clean and make good concrete.	5054
425	AR-322K	7	Spalling concrete	1 - Undertake conventional concrete repair.	5055
426	AR-322K	7	Ironstone staining	1 - Extract corroding aggregate, clean and make good concrete.	5053
427	AR-322K	Roof	Spalling concrete	1 - Undertake conventional concrete repair.	5050
428	AR-322K	Roof	Efflorescence and staining due to water ingress.	2 - Clean efflorescence after repairing waterproofing.	5050
429	AR-322K	Roof	Efflorescence and staining due to water ingress.	2 - Clean efflorescence after repairing waterproofing.	5051
430	AR-322K	Roof	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5052

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
431	AR-T-321F (Elevation 770)	7 (Return wall soffits)	Exposed end of reinforcing bar.	30 - Undertake conventional concrete repair.	5044, 5045, 5046, 5047, 5048
432	AR-T-321F	7 (Return wall soffits)	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5049
433	AR-T-321F	4	Corroding form tie causing grout plug to spall.	1 - Remove loose grout plugs and repair.	5030
434	AR-320K (Elevation 775 to 778)	3	Cracked or broken brick slip.	1 - Reinstate.	5109
435	AR-320K	4	Active water leak.	1 - Repair consequential damage after addressing water leak	5110
436	AR-320K	3	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5108
437	AR-320K	2	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5107
438	AR-320K	2	Cracked and damaged brickwork and pointing.	3 - Repair bricks (reinforcing as required with helibars or similar) and repoint.	318
439	AR-320K	2	Corroding steel in brickwork / concrete.	1 - Extract corroding steel and repair brick/concrete.	315
440	AR-320K	2	Cracked and damaged brickwork and pointing.	1 - Repair bricks (reinforcing as required with helibars or similar) and repoint.	316, 317
441	AR-320K	2	Efflorescence and staining due to water ingress.	3 - Clean efflorescence after repairing waterproofing.	5106
442	AR-320K	2-3	Spalling concrete	To entire staircase - Undertake conventional concrete repair.	310, 311
443	AR-320K (Adjacent staircase)	3	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	312
444	AR-320K (Adjacent staircase)	3	Spalling concrete	1 - Undertake conventional concrete repair.	312
445	AR-320K (Adjacent staircase)	3	Rotating and unstable brick wall. (Proud of adjacent brick wall)	1 - Requires assessment by structural engineer.	313, 314

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
446	AR-320K (Adjacent staircase)	3	Deteriorating pointing to brick work.	1 - Repoint	314
447	AR-320K	4	Efflorescence and staining due to water ingress.	4 - Clean efflorescence after repairing waterproofing.	309
448	AR-320K	3	Spalling concrete	1 - Undertake conventional concrete repair.	5104
449	AR-320K	2	Spalling concrete	1 - Undertake conventional concrete repair.	5105
450	AR-320K	2	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5105
451	AR-320K	3	Spalling concrete	1 - Undertake conventional concrete repair.	5103
452	AR-320K	7	Efflorescence and staining due to water ingress.	5 - Clean efflorescence after repairing waterproofing.	5102
453	AR-320K	4	Spalling concrete	1 - Undertake conventional concrete repair.	5101
454	AR-320K	7	Efflorescence and staining due to water ingress.	14 - Clean efflorescence after repairing waterproofing.	5092, 5093
455	AR-320K	5	Spalling concrete	3 - Undertake conventional concrete repair.	5099
456	AR-320K	5	Spalling concrete	1 - Undertake conventional concrete repair.	5098
457	AR-320K	4	Unsafe balustrade height.	1 – Modify balustrade	307
458	AR-320K	5	Spalling concrete	1 - Undertake conventional concrete repair.	5097
459	AR-320K	4	Unsafe gap in balustrade.	1 - Fill gap.	308
460	AR-320K	6	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5094
461	AR-320K	5	Spalling concrete	1 - Undertake conventional concrete repair.	5096
462	AR-320K	5	Spalling concrete	1 - Undertake conventional concrete repair.	5095
463	AR-320K	3	Spalling concrete	1 - Undertake conventional concrete repair.	299
464	AR-320K	2	Cracked tiles	All - Reinstate.	300
465	AR-320K	3	Spalling concrete	1 - Undertake conventional concrete repair.	302
466	AR-320K	3	Spalling concrete	1 - Undertake conventional concrete repair.	306
467	AR-320K	3	Spalling concrete	2 - Undertake conventional concrete repair.	301

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
468	AR-320K	3	Spalling concrete	1 - Undertake conventional concrete repair.	303
469	AR-320K	3	Spalling concrete	1 - Undertake conventional concrete repair.	304
470	AR-320K	3	Spalling concrete	1 - Undertake conventional concrete repair.	305
471	AR-320K	3	Cracked or broken brick slip.	1 - Reinstate	5100
472	AR-320K	7	Efflorescence and staining due to water ingress.	4 - Clean efflorescence after repairing waterproofing.	5091
473	AR-320K	7	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5090
474	AR-320K	5	Spalling concrete	1 - Undertake conventional concrete repair.	5089
475	AR-324P (Elevation 780, 779)	4	Spalling concrete	2 - Undertake conventional concrete repair.	323
476	AR-324P	3 & 4	Active water leak.	1 - Repair consequential damage after addressing water leak.	321, 322
477	AR-324P	3	Spalling concrete	1 - Undertake conventional concrete repair.	320
478	AR-324P	4	Efflorescence and staining due to water ingress.	3 - Clean efflorescence after repairing waterproofing.	5125
479	AR-324P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5124
480	AR-324P	4	Efflorescence and staining due to water ingress.	2 - Clean efflorescence after repairing waterproofing.	5123
481	AR-324P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5122
482	AR-324P	4	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5121
483	AR-324P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5120
484	AR-324P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5119
485	AR-324P	6	Spalling concrete	1 - Undertake conventional concrete repair.	5132
486	AR-324P	7	Efflorescence and staining due to water ingress.	7 - Clean efflorescence after repairing waterproofing.	5131
487	AR-324P (Opposite elevation 783, 784)	3	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	324

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
488	AR-324P (Opposite elevation)	4	Spalling concrete	1 - Undertake conventional concrete repair.	5127
489	AR-324P (Opposite elevation)	3	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	325
490	AR-324P (Opposite elevation)	3	Cracked and damaged brickwork and pointing.	1 - Repair brick reinforcing as reqruied with helibars or similar and repoint.	326
491	AR-324P (Opposite elevation)	4	Spalling concrete	3 - Undertake conventional concrete repair.	5128
492	AR-324P (Opposite elevation)	3	Drummy floor finish.	1 - Investigate drummy floor finish.	327
493	AR-324P (Opposite elevation)	4	Spalling concrete	3 - Undertake conventional concrete repair.	5129
494	AR-324P (Opposite elevation)	4	Active water leak.	1 - Repair consequential damage after addressing water leak.	5129
495	AR-324P (Opposite elevation)	4	Spalling concrete	1 - Undertake conventional concrete repair.	5130
496	AR-324P (Planter box)	3	Spalling concrete	5 - Undertake conventional concrete repair.	328, 329
497	AR-320P (Elevation 785, 786 & 787)	5	Spalling concrete	1 - Undertake conventional concrete repair.	5192
498	AR-320P	4	Spalling concrete	1 - Undertake conventional concrete repair.	5188
499	AR-320P	7	Corroded redundant fixings.	4 - Remove redundant fixings and make good substrate.	5190
500	AR-320P	7	Efflorescence and staining due to water ingress.	2 - Clean efflorescence after repairing waterproofing.	5191
501	AR-320P (Return Face)	4	Spalling concrete	1 - Undertake conventional concrete repair.	5189
502	AR-320P	2 - 5	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	5153
503	AR-320P	2	Deteriorating pointing to brickwork.	1 - Repoint.	5151

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
504	AR-320P	2	Deteriorating pointing to brickwork.	1 - Repoint.	5152
505	AR-320P	2	Hood partially detached from building.	1 - Reinstate.	5149, 5150, 335 to 343.
506	AR-320P	1	Cracked and damaged brickwork and pointing.	1 - Repair bricks (reinforcing as required with helibars or similar) and repoint.	5155
507	AR-320P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5148
508	AR-320P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5147
509	AR-320P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5146
510	AR-320P	1	Cracked and damaged brickwork and pointing.	3 - Repair bricks (reinforcing as required with helibars or similar) and repoint.	5156
511	AR-320P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5145
512	AR-320P	1 - 5	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	333
513	AR-320P	5	Efflorescence and staining due to water ingress.	5 - Clean efflorescence after repairing waterproofing.	5154
514	AR-320P	1	Active water leak.	1 - Repair consequential damage after addressing water leak.	332
515	AR-320P	1	Spalling concrete	1 - Undertake conventional concrete repair.	331
516	AR-320P	1	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	330
517	AR-320P	1	Active water leak.	1 - Repair consequential damage after addressing water leak.	5142
518	AR-320P	1	Spalling concrete	1 - Undertake conventional concrete repair.	5138
519	AR-320P	1	Active water leak.	1 - Repair consequential damage after addressing water leak.	5136
520	AR-320P	1	Spalling concrete	2 - Undertake conventional concrete repair.	5137
521	AR-320P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5134
522	AR-320P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5133

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
523	AR-320P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5144
524	AR-320P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5143
525	AR-320P	3	Exposed end of reinforcing bar.	3 - Undertake conventional concrete repair.	5141
526	AR-320P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5139
527	AR-320P	3	Exposed end of reinforcing bar.	2 - Undertake conventional concrete repair.	5140
528	AR-320P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5135
529	AR-320P (Return face)	2	Spalling concrete	1 - Undertake conventional concrete repair.	344
530	AR-321P (Elevation 788, 789, 790)	4	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5187
531	AR-321P	4	Spalling concrete	2 - Undertake conventional concrete repair.	5186
532	AR-321P	3	Cracked or broken brick slip.	All - Reinstate.	5185, 345
533	AR-321P	3	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	5183
534	AR-321P	4	Active water leak.	1 - Repair consequential damage after addressing water leak.	5184
535	AR-321P	4	Active water leak.	1 - Repair consequential damage after addressing water leak.	5177
536	AR-321P	3	Spalling concrete	1 - Undertake conventional concrete repair.	5178
537	AR-321P	5	Efflorescence and staining due to water ingress.	6 - Clean efflorescence after repairing waterproofing.	5171
538	AR-321P	4	Mould	1 - Clean.	5170
539	AR-321P	4	Spalling concrete	1 - Undertake conventional concrete repair.	5169
540	AR-321P	4	Active water leak.	1 - Repair consequential damage after addressing water leak.	5174
541	AR-321P (Return Face Hood)	4	Spalling concrete	1 - Undertake conventional concrete repair.	5172
542	AR-321P (Return Face Hood)	3	Spalling concrete	1 - Undertake conventional concrete repair.	5173
543	AR-321P	4	Spalling concrete	2 - Undertake conventional concrete repair.	5160

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
544	AR-321P	3	Spalling concrete	2 - Undertake conventional concrete repair.	5163
545	AR-321P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5164
546	AR-321P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5165
547	AR-321P	4	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5161
548	AR-321P	4	Deteriorating pointing to brickwork.	1 - Repoint.	5162
549	AR-321P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5166
550	AR-321P	2	Spalling concrete	1 - Undertake conventional concrete repair.	5167
551	AR-321P	2	Spalling concrete	2 - Undertake conventional concrete repair.	5168
552	AR-321P	4	Spalling concrete	1 - Undertake conventional concrete repair.	5158
553	AR-321P (Return Hood)	3	Spalling concrete	1 - Undertake conventional concrete repair.	5159
554	AR-322N (Elevation 792, 793)	3	Spalling concrete	1 - Undertake conventional concrete repair.	5200
555	AR-322N	3	Spalling concrete	1 - Undertake conventional concrete repair.	5199
556	AR-322N	3	Spalling concrete	1 - Undertake conventional concrete repair.	347
557	AR-322N	5	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5198
558	AR-322N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5197
559	AR-322N	3	Spalling concrete	3 - Undertake conventional concrete repair.	5195
560	AR-322N	3	Failed waterproofing.	1 - Replace membrane.	346
561	AR-322N	5	Exposed end of reinforcing bar.	1 - Undertake conventional concrete repair.	5198
562	AR-322N	5	Efflorescence and staining due to water ingress.	6 - Clean efflorescence after repairing waterproofing.	5194
563	AR-322N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5193
564	AR-320N (Elevations 794, 795)	5	Spalling concrete	1 - Undertake conventional concrete repair.	5238, 5239

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
565	AR-320N	4	Spalling concrete	2 - Undertake conventional concrete repair.	5237
566	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5240
567	AR-320N	4	Active water leak.	1 - Repair consequential damage after addressing water leak.	5235
568	AR-320N	4	Spalling concrete	2 - Undertake conventional concrete repair.	5235
569	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5233
570	AR-320N	4	Efflorescence and staining due to water ingress.	3 - Clean efflorescence after repairing waterproofing.	5234
571	AR-320N	3	Spalling concrete	4 - Undertake conventional concrete repair.	5236
572	AR-320N	3	Spalling concrete	2 - Undertake conventional concrete repair.	5232
573	AR-320N	3	Cracked or broken brick slip.	1 - Reinstate	5231
574	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5229
575	AR-320N	4	Spalling concrete	2 - Undertake conventional concrete repair.	5227
576	AR-320N	3	Cracked or broken brick slip.	1 - Reinstate	5230
577	AR-320N	2	Cracked and damaged brickwork and pointing.	1 - Repair bricks (reinforcing as required with helibars or similar) and repoint.	352, 353, 354
578	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5224
579	AR-320N	5	Spalling concrete	1 - Undertake conventional concrete repair.	5222
580	AR-320N	5	Spalling concrete	1 - Undertake conventional concrete repair.	5223
581	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5220
582	AR-320N	5	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5221
583	AR-320N	5	Spalling concrete	1 - Undertake conventional concrete repair.	5215
584	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5218
585	AR-320N	4	Exposed end of reinforcing bar.	3 - Undertake conventional concrete repair.	5216, 5217, 5219
586	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5214

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
587	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5213
588	AR-320N	3	Spalling concrete	1 - Undertake conventional concrete repair.	5211
589	AR-320N	2	Cracked and damaged brickwork and pointing.	1 - Repair bricks (reinforcing as required with helibars or similar) and repoint.	350
590	AR-320N	2	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	351
591	AR-320N	5	Mould	1 - Clean.	349
592	AR-320N	6	Efflorescence and staining due to water ingress.	6 - Clean efflorescence after repairing waterproofing.	5212
593	AR-320N	3	Spalling concrete	1 - Undertake conventional concrete repair.	5210
594	AR-320N (Behind Stairs)	2	Spalling concrete	1 - Undertake conventional concrete repair.	5209
595	AR-320N (3rd Stair from bottom)	2	Spalling concrete	1 - Undertake conventional concrete repair.	348
596	AR-320N	4	Spalling concrete	3 - Undertake conventional concrete repair.	5204
597	AR-320N	2	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5207
598	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5205
599	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5206
600	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5203
601	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5202
602	AR-320N	4	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5201
603	AR-320N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5201
604	AR-320N	2	Spalling concrete	1 - Undertake conventional concrete repair.	5208
605	AR-321N (Elevation 796)	5	Spalling concrete	1 - Undertake conventional concrete repair.	5244
606	AR-321N	3	Spalling concrete	2 - Undertake conventional concrete repair.	357

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
607	AR-321N	3	Spalling concrete	5 - Undertake conventional concrete repair.	355, 356
608	AR-321N	5	Spalling concrete	1 - Undertake conventional concrete repair.	5242
609	AR-321N	4	Spalling concrete	1 - Undertake conventional concrete repair.	5245
610	AR-321N	3	Concrete spalls and poorly compacted concrete.	1 - Undertake conventional concrete repair.	5243
611	AR-321N (Return Face)	5	Spalling concrete	4 - Undertake conventional concrete repair.	5241
612	AR-321N	5	Active water leak.	1 - Repair consequential damage after addressing water leak.	5248
613	AR-321N	5	Spalling concrete	1 - Undertake conventional concrete repair.	5247
614	AR-321N	5	Active water leak.	1 - Repair consequential damage after addressing water leak.	5249
615	AR-321N	3	Spalling concrete	1 - Undertake conventional concrete repair.	5246
616	AR-320M (Elevation 797, 798, 799, 801, 802)	3	Spalling concrete	1 - Undertake conventional concrete repair.	5271
617	AR-320M	3	Exposed end of reinforcing bar.	1 - Undertake conventional concrete repair.	5269
618	AR-320M	4	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5268
619	AR-320M (Return Face)	2	Spalling concrete	2 - Undertake conventional concrete repair.	5270
620	AR-320M (Return Face)	2	Spalling concrete	2 - Undertake conventional concrete repair.	5267
621	AR-320M	5	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5265
622	AR-320M	4	Spalling concrete	2 - Undertake conventional concrete repair.	5264
623	AR-320M	3	Spalling concrete	1 - Undertake conventional concrete repair.	5263
624	AR-320M	2	Spalling concrete	2 - Undertake conventional concrete repair.	5258
625	AR-320M	2	Spalling concrete	1 - Undertake conventional concrete repair.	5257
626	AR-320M	4	Spalling concrete	1 - Undertake conventional concrete repair.	5256

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
627	AR-320M	3	Spalling concrete	1 - Undertake conventional concrete repair.	5255
628	AR-320M	2	Spalling concrete	3 - Undertake conventional concrete repair.	5254
629	AR-320M	2	Spalling concrete	1 - Undertake conventional concrete repair.	5253
630	AR-320M	3	Spalling concrete	1 - Undertake conventional concrete repair.	5252
631	AR-320M	5	Mould	1 - Clean.	358
632	AR-320M	5	Spalling concrete	5 - Undertake conventional concrete repair.	5251
633	AR-320M	5	Spalling concrete	5 - Undertake conventional concrete repair.	5250
634	AR-320M (Elevation left 811, right 799)	6	Spalling concrete	2 - Undertake conventional concrete repair.	378
635	AR-320M	5	Spalling concrete	1 - Undertake conventional concrete repair.	5288
636	AR-320M	4	Mould	1 - Clean.	362
637	AR-320M	3	Mould	1 - Clean.	363
638	AR-320M	5	Spalling concrete	1 - Undertake conventional concrete repair.	5287
639	AR-320M	5	Spalling concrete	5 - Undertake conventional concrete repair.	5286, 081
640	AR-320M	2	Spalling concrete	1 - Undertake conventional concrete repair.	5285
641	AR-320M	4	Spalling concrete	9 - Undertake conventional concrete repair.	5262
642	AR-320M	3	Spalling concrete	1 - Undertake conventional concrete repair.	5261
643	AR-320M	3	Spalling concrete	1 - Undertake conventional concrete repair.	5260
644	AR-320M	2	Spalling concrete	6 - Undertake conventional concrete repair.	5259
645	AR-321M (Elevation 803)	5 (Retur n face)	Salt Staining	9 - Clean.	5273, 361
646	AR-321M	4	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	5272
647	AR-321M	1	Spalling concrete	1 - Undertake conventional concrete repair.	360
648	AR-321H (Elevation 805)	4	Displaced compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	5281
649	AR-321H	2	Displaced compressible	1 - Rake out compressible filler, replace with flexible joint sealant.	5276

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
			filler in brickwork.		
650	AR-322H (Elevations 816, 810, 814, 815)	4	Spalling concrete	1 - Undertake conventional concrete repair.	377
651	AR-322H	5	Spalling concrete	2 - Undertake conventional concrete repair.	376
652	AR-322H	5	Spalling concrete	1 - Undertake conventional concrete repair.	375
653	AR-322H	3	Spalling concrete	1 - Undertake conventional concrete repair.	374
654	AR-322H	2	Corroded redundant fixings.	3 - Remove redundant fixings and make good substrate.	379, 380
655	AR-322H	3	Spalling concrete	1 - Undertake conventional concrete repair.	369
656	AR-322H (Return face)	3	Spalling concrete	1 - Undertake conventional concrete repair.	373
657	AR-322H (Return Face)	2	Spalling concrete	10 - Undertake conventional concrete repair.	370, 371, 372
658	AR-322H	3	Spalling concrete	1 - Undertake conventional concrete repair.	368
659	AR-322H	4	Spalling concrete	1 - Undertake conventional concrete repair.	367
660	AR-322H	4	Spalling concrete	1 - Undertake conventional concrete repair.	5300
661	AR-322H	4	Spalling concrete	1 - Undertake conventional concrete repair.	5301
662	AR-322H	3	Spalling concrete	1 - Undertake conventional concrete repair.	5298
663	AR-322H	3	Spalling concrete	1 - Undertake conventional concrete repair.	5299
664	AR-322H	5	Spalling concrete	1 - Undertake conventional concrete repair.	366
665	AR-322H	5	Spalling concrete	1 - Undertake conventional concrete repair.	5295
666	AR-322H	4	Spalling concrete	1 - Undertake conventional concrete repair.	5297
667	AR-322H	3	Spalling concrete	1 - Undertake conventional concrete repair.	5295
668	AR-322H	4	Spalling concrete	3 - Undertake conventional concrete repair.	5294
669	AR-322H	5	Spalling concrete	1 - Undertake conventional concrete repair.	5291
670	AR-322H	3	Spalling concrete	1 - Undertake conventional concrete repair.	5292

Item	Drawing	Level	Defect	# of Repairs / Required Repair	Photo #
671	AR-322H	5	Spalling concrete	2 - Undertake conventional concrete repair.	5293
672	AR-322H	3-5	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	5290, 264
673	AR-322H	3	Active water leak.	1 - Repair consequential damage after addressing water leak.	5284
674	AR-322H (Return Face)	2	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	5289
675	AR-322H	4	Corrosion staining.	Requires further investigation.	5283
676	AR-322H	4	Spalling concrete	1 - Undertake conventional concrete repair.	5282

Items referenced to plan drawings:

Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
677	AR-2011 (Level 1)	Spalling concrete	1 - Undertake conventional concrete repair.	168
678	AR-2011	Corroding form tie causing grout plug to spall.	2 - Remove loose grout plugs and repair.	169
679	AR-2011	Corroding tie wire	2 - Remove corroding wire and make good concrete.	170
680	AR-2011 (Staircase)	Active water leak.	1 - Repair consequential damage after addressing water leak.	204, 205
681	AR-2011 (Staircase)	Active water leak.	1 - Repair consequential damage after addressing water leak.	206
682	AR-2011 (Staircase)	Active water leak.	1 - Repair consequential damage after addressing water leak.	206
683	AR-2011	Corroded redundant fixings.	3 - Remove redundant fixings and make good substrate.	171
684	AR-2011	Active water leak.	1 - Repair consequential damage after addressing water leak.	192
685	AR-2011	Active water leak to roof causing damage to ceiling and finishes below.	1 - Repair consequential damage after addressing water leak.	174
686	AR-2011	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	173
687	AR-2011	Active water leak to roof causing damage to ceiling and finishes below.	1 - Repair consequential damage after addressing water leak.	175

Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
688	AR-2011	Redundant fixings.	6 - Remove redundant fixings and make good substrate.	176
689	AR-2011	Active water leak.	1 - Repair consequential damage after addressing water leak.	191
690	AR-2011	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	180
691	AR-2011	Active water leak.	1 - Repair consequential damage after addressing water leak.	179
692	AR-2011	Blocked drain.	1 - Clear.	177
693	AR-2021 (Level 2)	Active water leak.	1 - Repair consequential damage after addressing water leak.	193, 194
694	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	195
695	AR-2021	Active water leak.	2 - Repair consequential damage after addressing water leak.	196, 197
696	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	198
697	AR-2021	Corroded redundant fixings.	1 - Remove redundant fixings and make good substrate.	201, 202
698	AR-2021	Corroded redundant fixings.	1 - Remove redundant fixings and make good substrate.	203
699	AR-2021	Hole in brick	1 - fill hole with mortar/grout.	199, 200
700	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	208
701	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	209
702	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	211
703	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	219
704	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	220
705	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	222
706	AR-2021	Broken sliding door.	1 - Repair.	224, 225, 226
707	AR-2021	Active water leak.	1 - Repair consequential damage after addressing water leak.	181
708	AR-2021	Spalling concrete	1 - Undertake conventional concrete repair.	182
709	AR-2031 (Level 3)	Active water leak.	1 - Repair consequential damage after addressing water leak.	228
710	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	227
711	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	229
712	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	212

Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
713	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	213
714	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	214
715	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	215
716	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	230
717	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	235, 236
718	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	232, 233
719	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	234
720	AR-2031	Redundant fixings.	4 - Remove redundant fixings and make good substrate.	239
721	AR-2031	Spalling concrete	1 - Undertake conventional concrete repair.	237
722	AR-2031	Failed drip tray (constructed with electrical conduit in lieu of piping).	1 - Repair underlying water leak.	243, 244
723	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	251
724	AR-2031	Spalling concrete	2 - Undertake conventional concrete repair.	246
725	AR-2031	Redundant fixings.	2 - Remove redundant fixings and make good substrate.	241
726	AR-2031	Unsafe gap in balustrade.	1 - Fill gap.	223
727	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	247
728	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	248
729	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	250
730	AR-2031	Active water leak.	1 - Repair consequential damage after addressing water leak.	249
731	AR-2031	Unsafe gap in balustrade.	1 - Fill gap.	190
732	AR-2031	Cracked and leaking concrete.	All - epoxy inject leaking cracks. Remove injection nipples and make good once cracks have been shown to be watertight.	185 to 189
733	AR-2031	Failed waterproofing.	1 - Repair waterproofing.	183, 184, 242
734	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	260
735	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	263
736	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	261

Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
737	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	264, 265
738	AR-2041	Corroded redundant fixings.	2 - Remove redundant fixings and make good substrate.	266, 267
739	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	216
740	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	217
741	AR-2041	Corroded redundant fixings.	1 - Remove redundant fixings and make good substrate.	268
742	AR-2041	Redundant fixings.	5 - Remove redundant fixings and make good substrate.	269, 270, 271
743	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	272
744	AR-2041	Failed waterproofing.	1 - Repair waterproofing.	273
745	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	274, 275
746	AR-2041	Cracked concrete.	1 - Confirm this crack coincides with	750
747	AR-2041	Failed drip tray.	1 - Repair	276, 277
748	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	278, 279, 280
749	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	749
750	AR-2041	Cracked and damaged brickwork and pointing.	1 - Repair bricks (reinforcing as required with helibars or similar) and repoint.	727
751	AR-2041	Deteriorating pointing to brickwork.	1 - Repoint.	728
752	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	748
753	AR-2041	Redundant fixings.	10 - Remove redundant fixings and make good substrate.	751
754	AR-2041	Redundant fixings.	4 - Remove redundant fixings and make good substrate.	752
755	AR-2041	Active water leak.	1 - Repair consequential damage after addressing water leak.	731
756	AR-2041	Redundant fixings.	3 - Remove redundant fixings and make good substrate.	732
757	AR-2041	Redundant fixings.	6 - Remove redundant fixings and make good substrate.	733
758	AR-2041	Corrosion staining.	1 – Clean concrete	734
759	AR-2041	Cracked and damaged concrete.	1 - Clean only	735
760	AR-2041	Redundant fixings.	32 - Remove redundant fixings and make good substrate.	736
761	AR-2041	Poorly compacted concrete.	1 - Undertake conventional concrete repair.	730
762	AR-2041	Spalling concrete	2 - Undertake conventional concrete repair.	747

Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
763	AR-2041	Spalling concrete	1 - Undertake conventional concrete repair.	746
764		Not used		
765	AR-2041	Redundant fixings.	3 - Remove redundant fixings and make good substrate.	743
766	AR-2041	Spalling concrete	1 - Undertake conventional concrete repair.	245
767	AR-2041	Spalling concrete	1 - Undertake conventional concrete repair.	741
768	AR-2041	Corroding steel in concrete	1 - Remove steel and undertake conventional concrete repair.	738
769	AR-2041	Redundant fixings	7 - Remove redundant fixings and make good substrate.	739
770	AR-2041	Spalling concrete	2 - Undertake conventional concrete repair.	740
771		Not used		
772	AR-2051	Active water leak	1 - Repair consequential damage after addressing water leak.	218
773	AR-2051	Active water leak	1 - Repair consequential damage after addressing water leak.	258
774	AR-2051	Active water leak	1 - Repair consequential damage after addressing water leak.	221
775	AR-2051	Spalling concrete	1 - Undertake conventional concrete repair.	729
776	AR-2051	Staining due to water ingress.	1 - Clean after repairing waterproofing.	755
777	AR-2051	Exposed end of reinforcing bar	1 - Undertake conventional concrete repair.	754
778	AR-2051	Active water leak.	1 - Repair consequential damage after addressing water leak.	753
779	AR-2051	Active water leak.	1 - Repair consequential damage after addressing water leak.	765
780	AR-2051	Redundant fixings.	4 - Remove redundant fixings and make good substrate.	766
781	AR-2051	Damaged fairing coat to concrete.	1 - Reinstate fairing coat.	764
782	AR-2051	Damaged fairing coat to concrete.	1 - Reinstate fairing coat.	763
783	AR-2051	Redundant fixings.	9 - Remove redundant fixings and make good substrate.	756
784	AR-2051	Electrical conduit visible embedded in concrete.	1 - Investigate whether or not conduit is live, and if it is install a new compliant cover plate	757
785	AR-2051	Severe staining of concrete.	1 - Clean.	758
786	AR-2051	Electrical conduit visible embedded in concrete.	1 - Investigate whether or not conduit is live, and if it is install a new compliant cover plate	762
787	AR-2051	Active water leak.	1 - Repair consequential damage after addressing water leak.	768
788	AR-2051	Active water leak.	1 - Repair consequential damage after addressing water leak.	761

Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
789	AR-2051	Severe staining of concrete.	1 - Clean.	760
790	AR-2061	Severe water leaks that appear to be associated with penetrations.	1 - Coordinate with the telecommunications infrastructure owner to waterproof the tower.	252 to 257, 259
791	AR-2061	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	769
792	AR-2071	Corroding embedded steel	1 - Remove corroding steel and make good substrate	038
793	AR-2071	Spalling concrete	1 - Undertake conventional concrete repair.	039
794	AR-2071	Corroding embedded steel	4 - Remove and make good substrate	040 & 041
795	AR-2071	Corroding embedded steel	12 - Remove and make good substrate	042 & 043
796	AR-2071	Corroding embedded steel	8 - Remove and make good substrate	044
797	AR-2071	Spalling concrete and exposed ends of reinforcing bars	1 - Undertake conventional concrete repair. 56 - Undertake conventional concrete repair	045 & 046
798	AR-2071	Efflorescence and staining due to water ingress. Corroding embedded steel.	1 - Clean efflorescence after repairing waterproofing. 1 - Remove corroding steel and make good substrate	049 & 050
799	AR-2071	Displaced brick	1 - Reinstate and repoint brick	096
800	AR-2061	Brick wall is displaced at head	1 - Structural engineer to check stability of wall and propose a repair methodology	051
801	AR-2061	Efflorescence and staining due to water ingress	1 - Clean efflorescence after repairing waterproofing.	052
802	AR-2061	Spalling concrete	1 - Undertake conventional concrete repair.	053
803	AR-2061	Brick wall is displaced at head and not sealed	1 - Structural engineer to check stability of wall and propose a repair methodology. 1 - Rake out existing filler at head, replace with flexible joint sealant.	054
804	AR-2061	Spalling concrete	3 - Undertake conventional concrete repair.	055
805	AR-2061	Spalling concrete	2 - Undertake conventional concrete repair.	056
806	AR-2061	Loose window head	1 - Re-fix or remove loose extrusions. Asses implications for weathertightness of the window system and remediate as appropriate	057 & 058
807	AR-2061	Loose window head	1 - Re-fix or remove loose extrusions. Asses implications for weathertightness of the window system and remediate as appropriate	059 & 060
808	AR-2061	Broken glass	2 - Make safe in the short term and then re-glaze	061 & 062
809	AR-2061	Spalling concrete	1 - Undertake conventional concrete repair.	063
810	AR-2061	Corroding embedded steel	1 - Remove and make good substrate	064

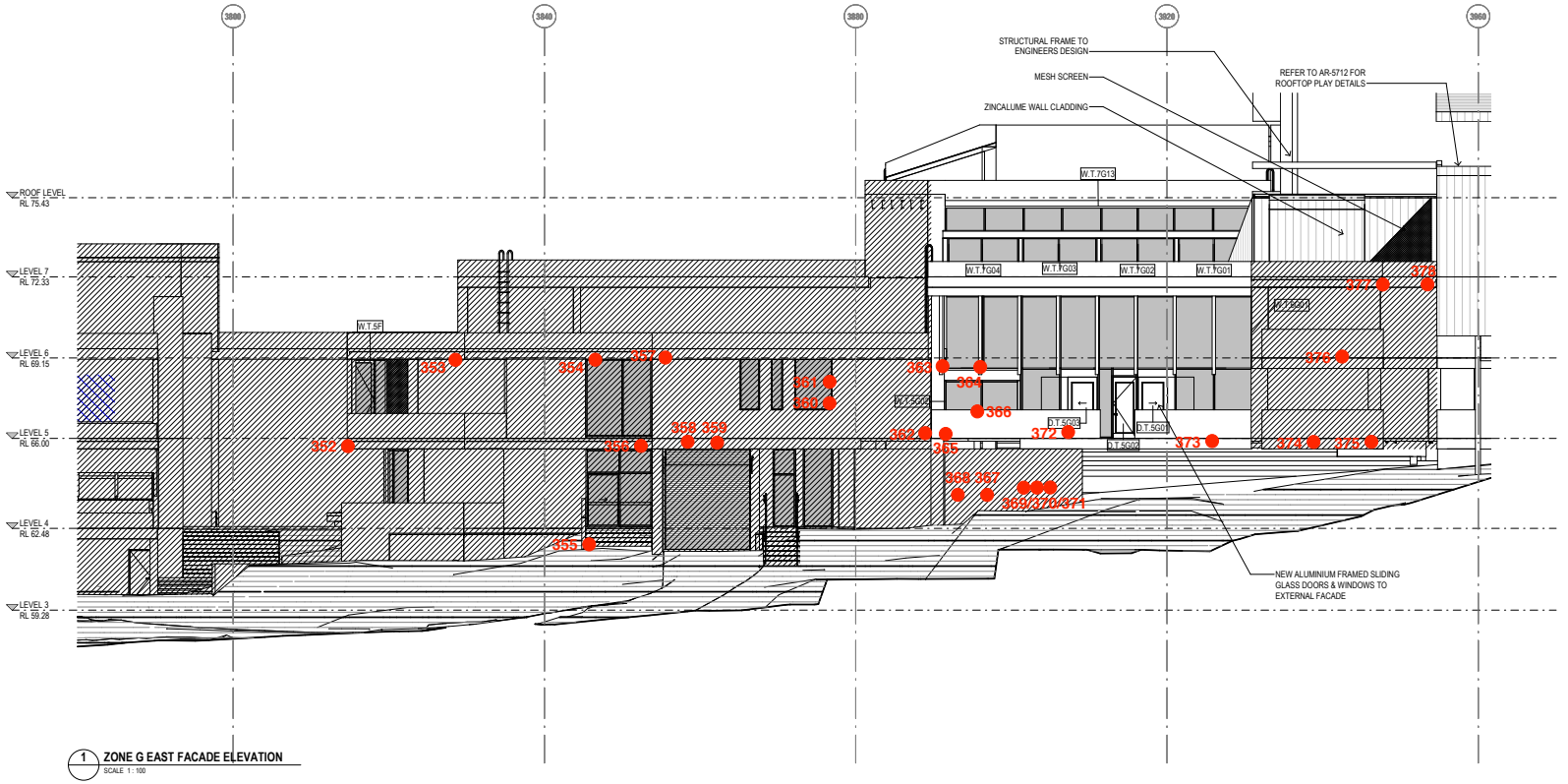
Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
811	AR-2061	Efflorescence and staining due to water ingress	15 - Clean efflorescence after repairing waterproofing.	065
812	AR-2061	Brick wall has an ineffective head restraint and appears to be unstable. It is not sealed at the head	1 - Structural engineer to check stability of wall and propose a repair methodology. 1 - Rake out existing filler at head, replace with flexible joint sealant.	068, 071 to 073
813	AR-2061	Area of poor concrete compaction requiring repair	1 - Undertake conventional concrete repair.	066 & 067
814	AR-2061	Spalling concrete	2 - Undertake conventional concrete repair.	069 & 070
815	AR-2061	Spalling concrete and efflorescence	2 - Undertake conventional concrete repair. Clean efflorescence after repairing waterproofing	074 & 075
816	AR-2061	Brick wall has displaced at the head. It is not sealed at the head	1 - Structural engineer to check stability of wall and propose a repair methodology. 1 - Rake out existing filler at head, replace with flexible joint sealant.	076 & 077
817	AR-2061	Corroding form tie causing grout plug to spall.	5 - Remove loose grout plugs and repair.	079 & 080
818	AR-2061	Corroding form tie causing grout plug to spall.	6 - Remove loose grout plugs and repair.	082
819	AR-2061	Failed compressible filler in brickwork.	1 - Rake out compressible filler, replace with flexible joint sealant.	083
820	AR-2061	Parapet is wrapped in a failing waterproofing membrane, which prevents assessment of the parapet		078
821	AR-2061	Concrete spalls visible on the top surfaces of hoods below	3 - Undertake conventional concrete repair.	084 to 086
822	AR-2061	Spalling concrete	2 - Undertake conventional concrete repair.	089 & 090
823	AR-2061	Cracked and displaced brick parapet	1 - Reinstate and repoint bricks, reinforcing with helibars or similar if required. Consult structural engineer.	091
824	AR-2061	Spalling concrete	3 - Undertake conventional concrete repair.	092
825	AR-2061	Spalling concrete	2 - Undertake conventional concrete repair.	093
826	AR-2061	Rotating and potentially unstable brick wall	1 - Structural engineer to check stability of wall and propose a repair methodology.	094
827	AR-2061	Displaced and cracked bricks	1 - Reinstate and repoint bricks, reinforcing with helibars or similar if required.	095
828	AR-2061	Ironstone corrosion causing staining of concrete	1 - remove deleterious aggregate, clean and make good.	098
829	AR-2061	Ironstone corrosion causing staining of concrete	1 - remove deleterious aggregate, clean and make good.	100
830	AR-2061	Spalling concrete	1 - Undertake conventional concrete repair.	101

Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
831	AR-2061	Spalling concrete	2 - Undertake conventional concrete repair.	137
832	AR-2051	Spalling concrete	1 - Undertake conventional concrete repair.	102
833	AR-2051	Poorly compacted concrete.	1 - Undertake conventional concrete repair.	103
834	AR-2051	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	104
835	AR-2051	Spalling concrete	2 - Undertake conventional concrete repair.	105
836	AR-2051	Corroding bar chairs	3 - remove bar chair, clean concrete and make good.	106
837	AR-2051	Corroding bar chairs	2 - remove bar chair, clean concrete and make good.	106
838	AR-2051	Efflorescence and staining due to water ingress.	8 - Clean efflorescence after repairing waterproofing.	107
839	AR-2051	Efflorescence and staining due to water ingress.	10 - Clean efflorescence after repairing waterproofing.	107
840	AR-2051	Spalling concrete	1 - Undertake conventional concrete repair.	139 & 140
841	AR-2051	Spalling concrete	2 - Undertake conventional concrete repair.	143
842	AR-2041	Spalling concrete on stair treads	10 - Undertake conventional concrete repair.	131 & 132
843	AR-2041	Spalling concrete on stair wall internally	1 - Undertake conventional concrete repair.	133
844	AR-2041	Redundant fixings.	4 - Remove redundant fixings and make good substrate.	134
845	AR-2041	Spalling concrete	2 - Undertake conventional concrete repair.	141
846	AR-2041	Cracked and loose brick slip.	1 - Reinstate	142
847	AR-2041	Spalling concrete	1 - Undertake conventional concrete repair.	097
848	AR-2031	Stainless steel anchors and plates have been installed above sunhoods	Inspect more closely when access is available	109 & 110
849	AR-2031	Cracked and displaced bricks with embedded corroding steel	1 - Reinstate and repoint bricks, reinforcing with helibars or similar if required.	111 to 114
850	AR-2031	Corroding bar chairs	3 - Remove bar chair, clean concrete and make good.	116
851	AR-2031	Spalling concrete	1 - Undertake conventional concrete repair.	115
852	AR-2031	Spalling concrete	12 - Undertake conventional concrete repair.	117
853	AR-2031	Exposed bar tips where fins have been cut off the sunhoods	6 - Treat corrosion and make good concrete	118 to 120
854	AR-2031	Efflorescence and staining due to water ingress.	1 - Clean efflorescence after repairing waterproofing.	121

Item	Drawing	Defect	# of Repairs / Required Repair	Photo #
855	AR-2031	Spalling concrete and corroding bar chairs	3 - Undertake conventional concrete repair. 17 - Remove bar chair, clean concrete and make good.	122 to 126
856	AR-2031	Spalling concrete	1 - Undertake conventional concrete repair.	127
857	AR-2031	Spalling concrete and corroding bar chairs. Area partially obscured by metal flashing	1 - Undertake conventional concrete repair. 3 - Remove bar chair, clean concrete and make good.	128 to 130
858	AR-2021	Spalling concrete	1 - Undertake conventional concrete repair.	144

Appendix B – Marked Up Elevations/Plans

Elevation drawings



1 ZONE G EAST FACADE ELEVATION
SCALE : 1 : 100

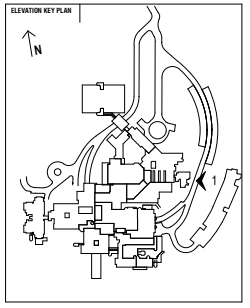
AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

- MILESTONE1: INTERIM SCHOOL
- MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL
- 100M APZ

APEX MARKUP 16/10/18

ELEVATION KEY PLAN



SCALE BAR - 1:100

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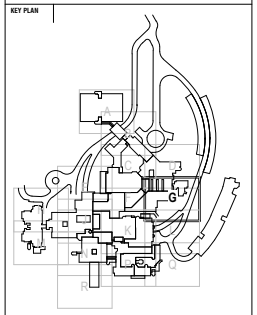
No	DATE	REVISIONS	BY
1	18/06/2018	ISSUED FOR TENDER	RK
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE G EAST

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018

PROJECT Nº.	P18-023	REVISION
DRAWING Nº.	AR-T-320G	2

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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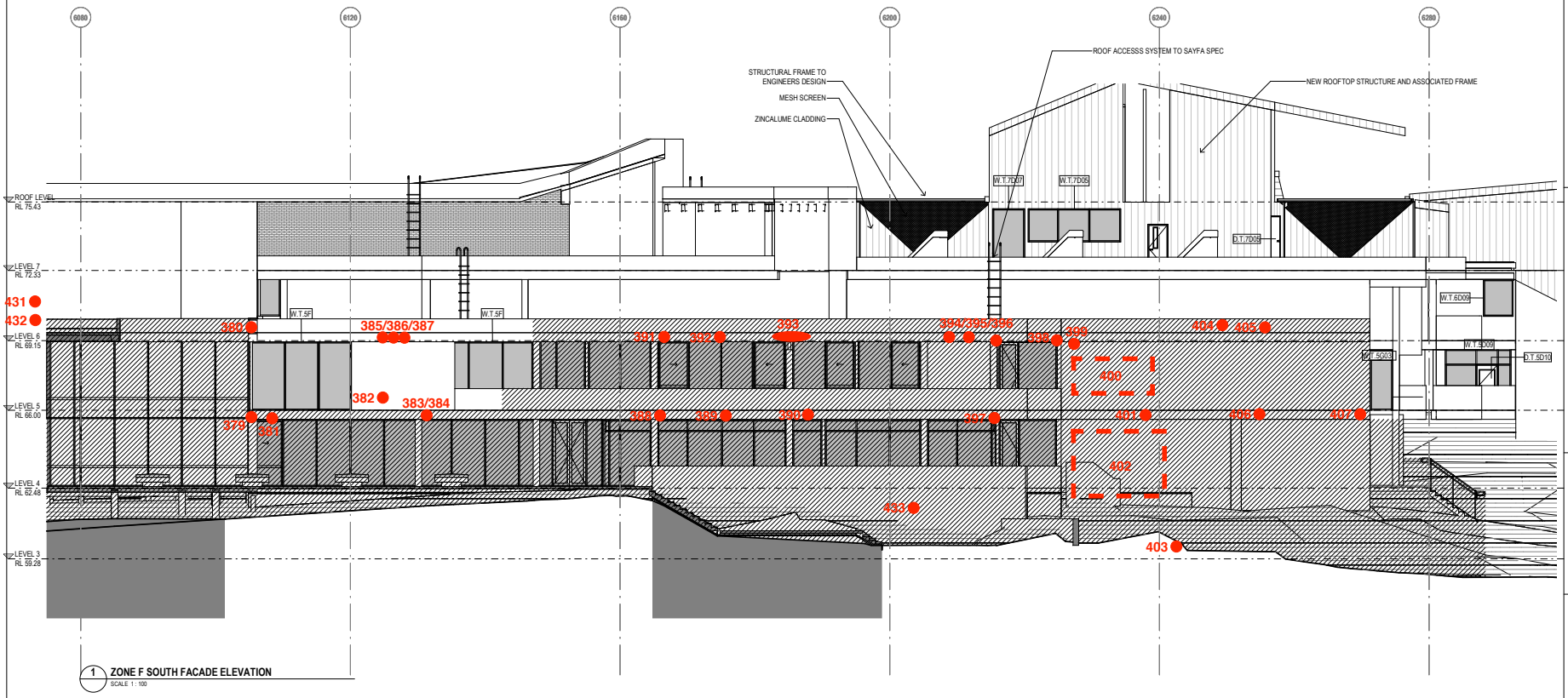


1 ZONE F SOUTH FACADE ELEVATION
SCALE 1 : 100

AR - KEYNOTE LEGEND BY...	
Key Value	Keynote Text

LEGEND:

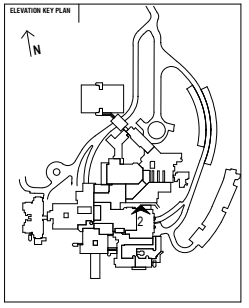
MILESTONE1: INTERIM SCHOOL

MILESTONE 2: EXEMPT WORKS SUBJECT TO DEVELOPMENT APPROVAL

100M APZ

APEX MARKUP 16/10/18

ELEVATION KEY PLAN



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No	DATE	REVISIONS	BY
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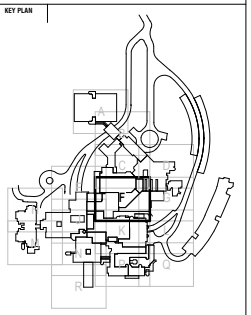
2	29/06/2018	ISSUED FOR TENDER	HC

KEY PLAN



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SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE F SOUTH

DRAWN BY	TG, RK, HC, CS, LO, DL
SCALES	1 : 100 @ A1
PLOT DATE	29/06/2018
PROJECT Nº.	P18-023
REVISION	2
DRAWING Nº.	AR-T-321F

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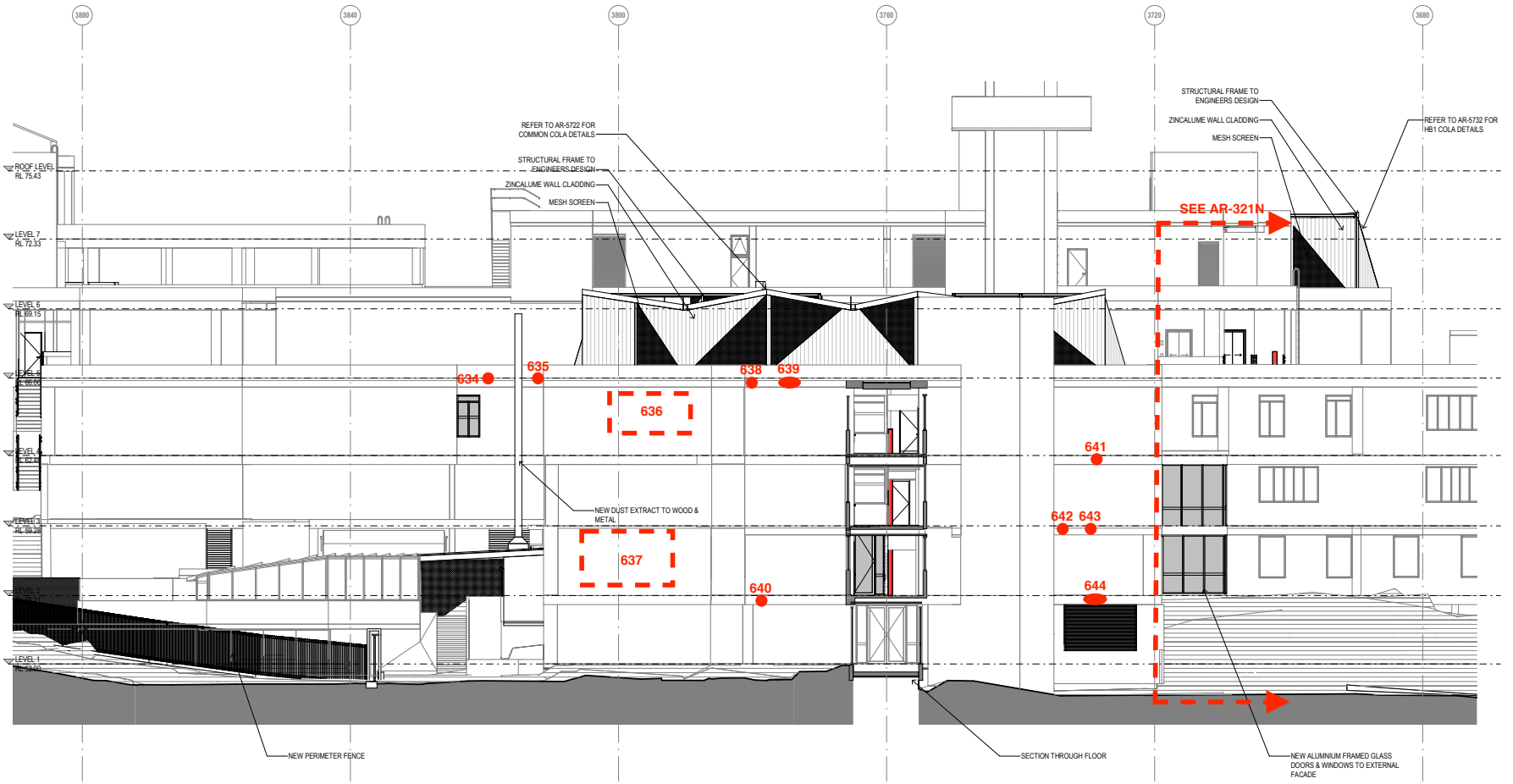
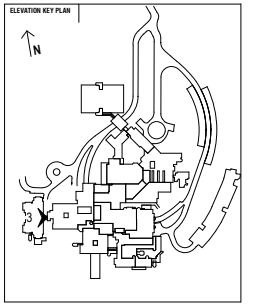


3 ZONE J FACADE WEST ELEVATION
SCALE 1 : 100

ELEVATION KEY PLAN



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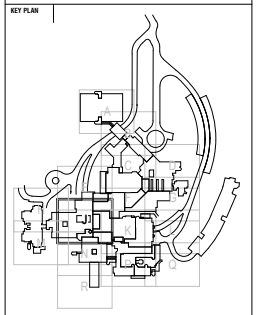
2	20/07/2017	ISSED FOR COORDINATION	TG
3	27/07/2017	ISSUED FOR COORDINATION	HC
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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Lindfield NSW 2070

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FAÇADE ELEVATIONS - ZONE J

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SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441	REVISION 6
DRAWING Nº.	AR-320J	

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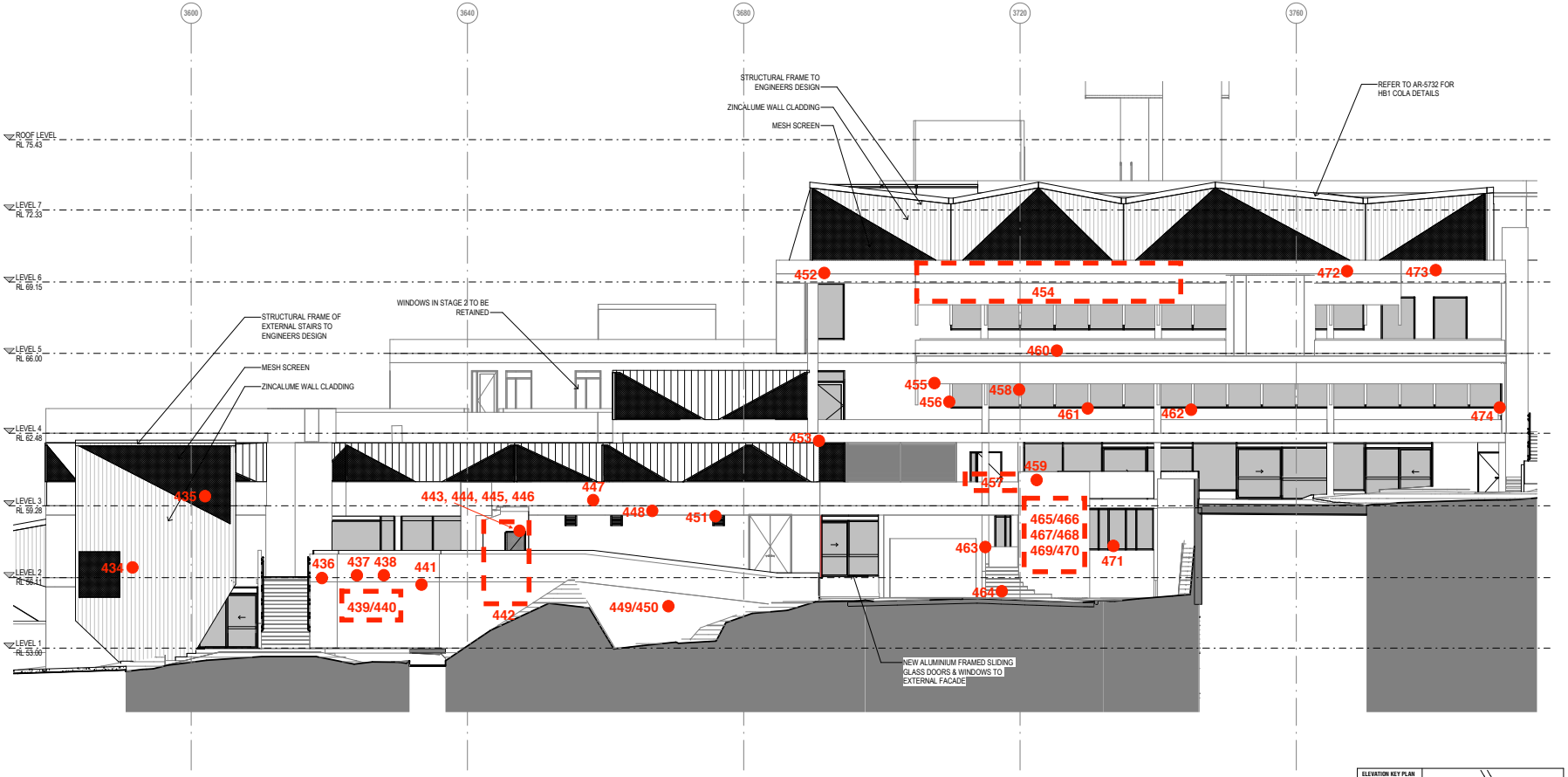
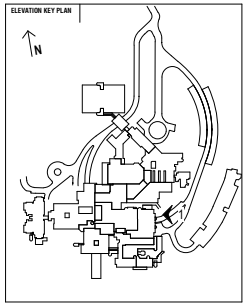


1 ZONE K FACADE EAST ELEVATION
SCALE 1 : 100

APEX MARKUP
16/10/18



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SCALE BAR - 1:100

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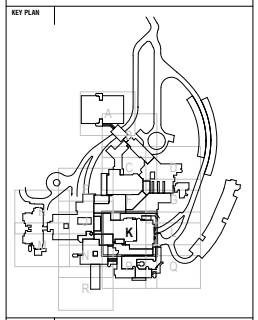
2	20/07/2017	ISSED FOR COORDINATION	TG
3	27/07/2017	ISSUED FOR COORDINATION	HC
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE K

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441		REVISION
DRAWING Nº.	AR-320K		6
DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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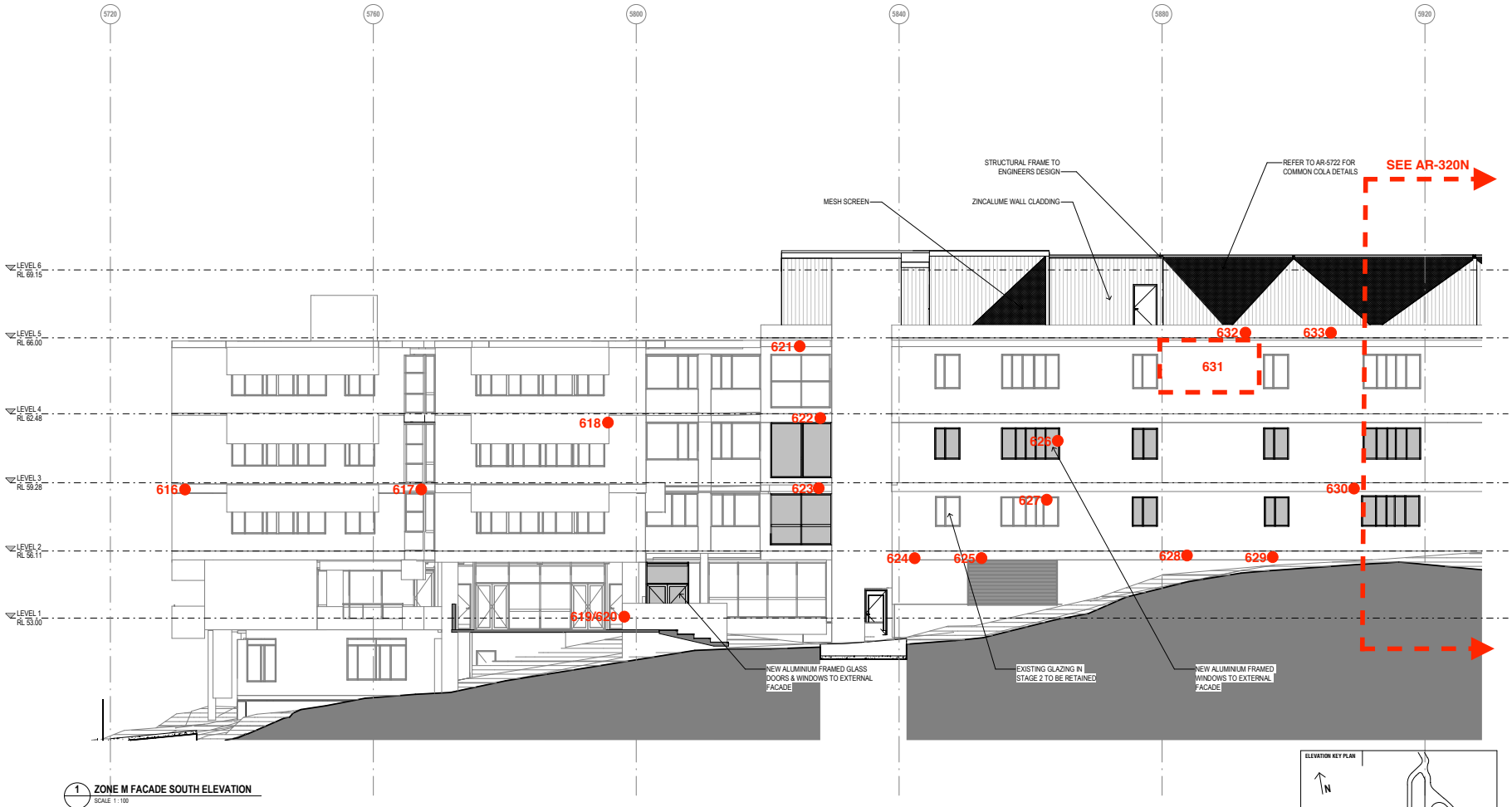
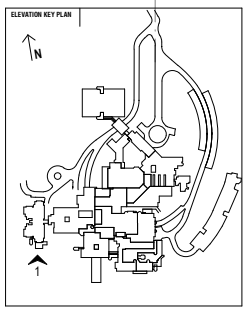


1 ZONE M FACADE SOUTH ELEVATION
SCALE 1 : 100



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SCALE BAR - 1:100

APEX MARKUP
16/10/18

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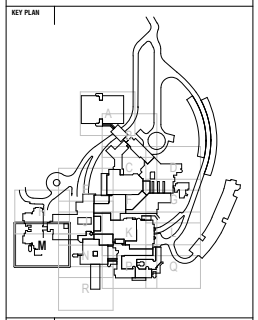
2	20/07/2017	ISSED FOR COORDINATION	TG
3	27/07/2017	ISSUED FOR COORDINATION	HC
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE M

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441		REVISION
DRAWING Nº.	AR-320M		6
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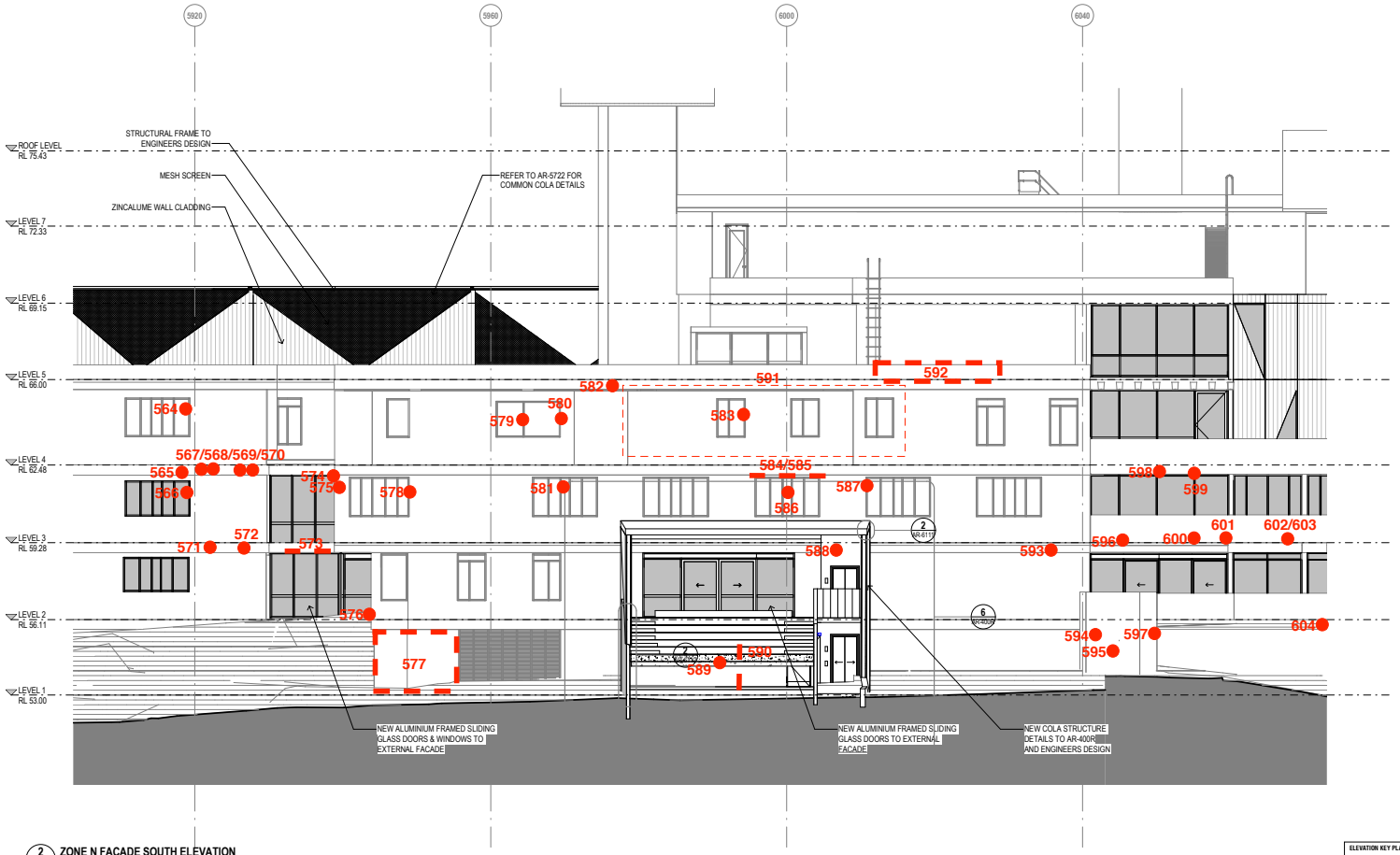
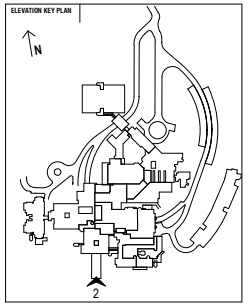


2 ZONE N FACADE SOUTH ELEVATION
SCALE 1 : 100

APEX MARKUP
16/10/18



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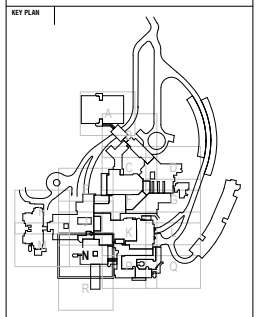
2	20/07/2017	ISSED FOR COORDINATION	TG
3	27/07/2017	ISSUED FOR COORDINATION	HC
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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TITLE

FAÇADE ELEVATIONS - ZONE N

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441		REVISION
DRAWING Nº.	AR-320N		6
DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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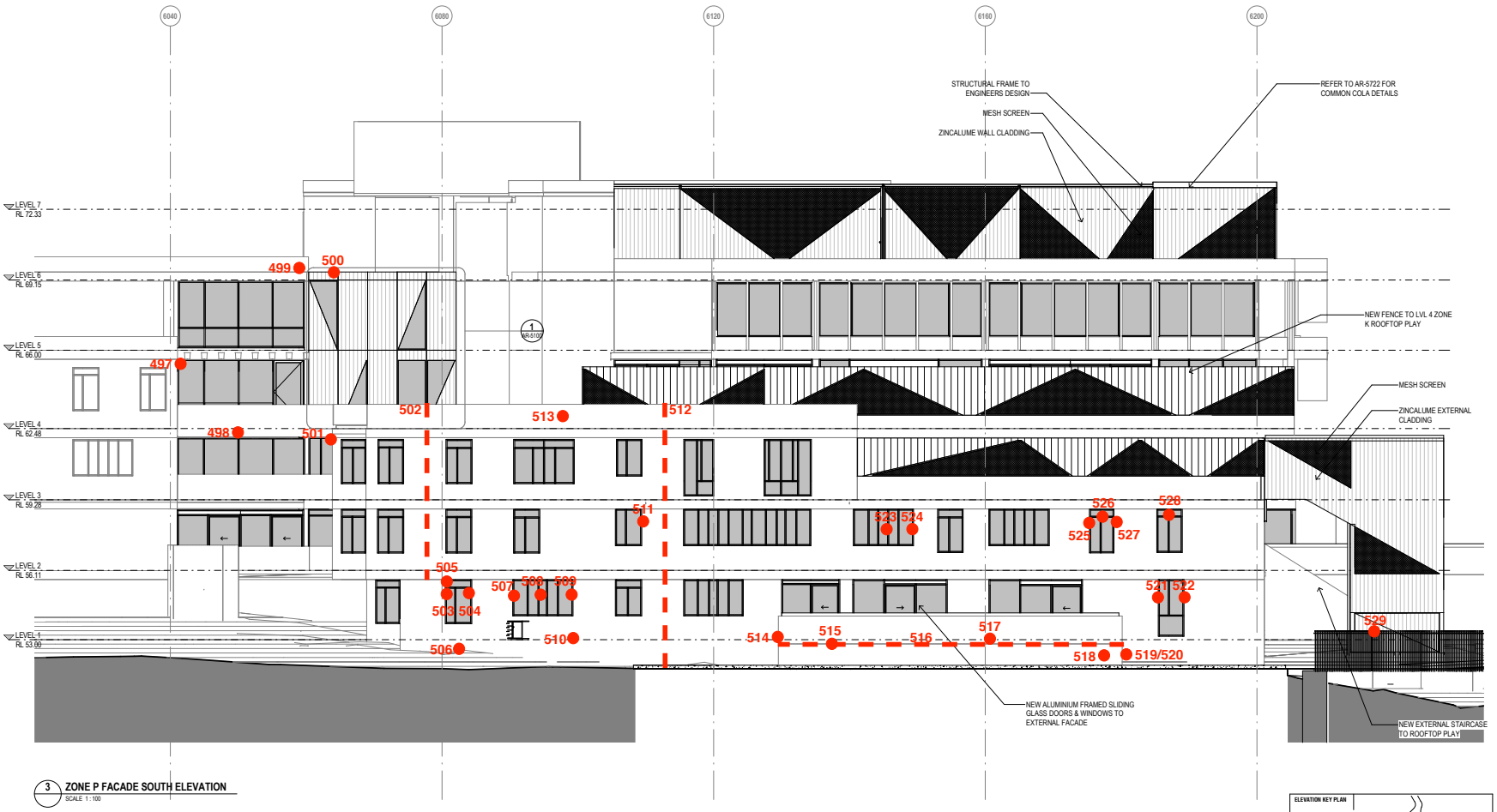
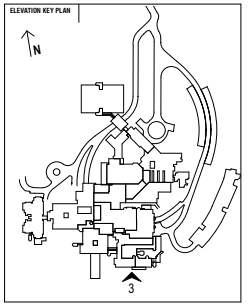


3 ZONE P FACADE SOUTH ELEVATION
SCALE 1 : 100

ELEVATION KEY PLAN



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16/10/18

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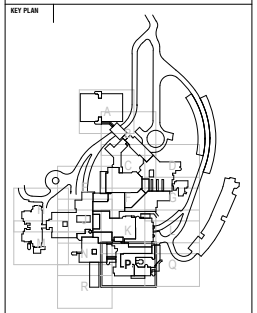
3	27/07/2017	ISSUED FOR COORDINATION	HC
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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TITLE
FAÇADE ELEVATIONS - ZONE P

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441		REVISION 6
DRAWING Nº.	AR-320P		
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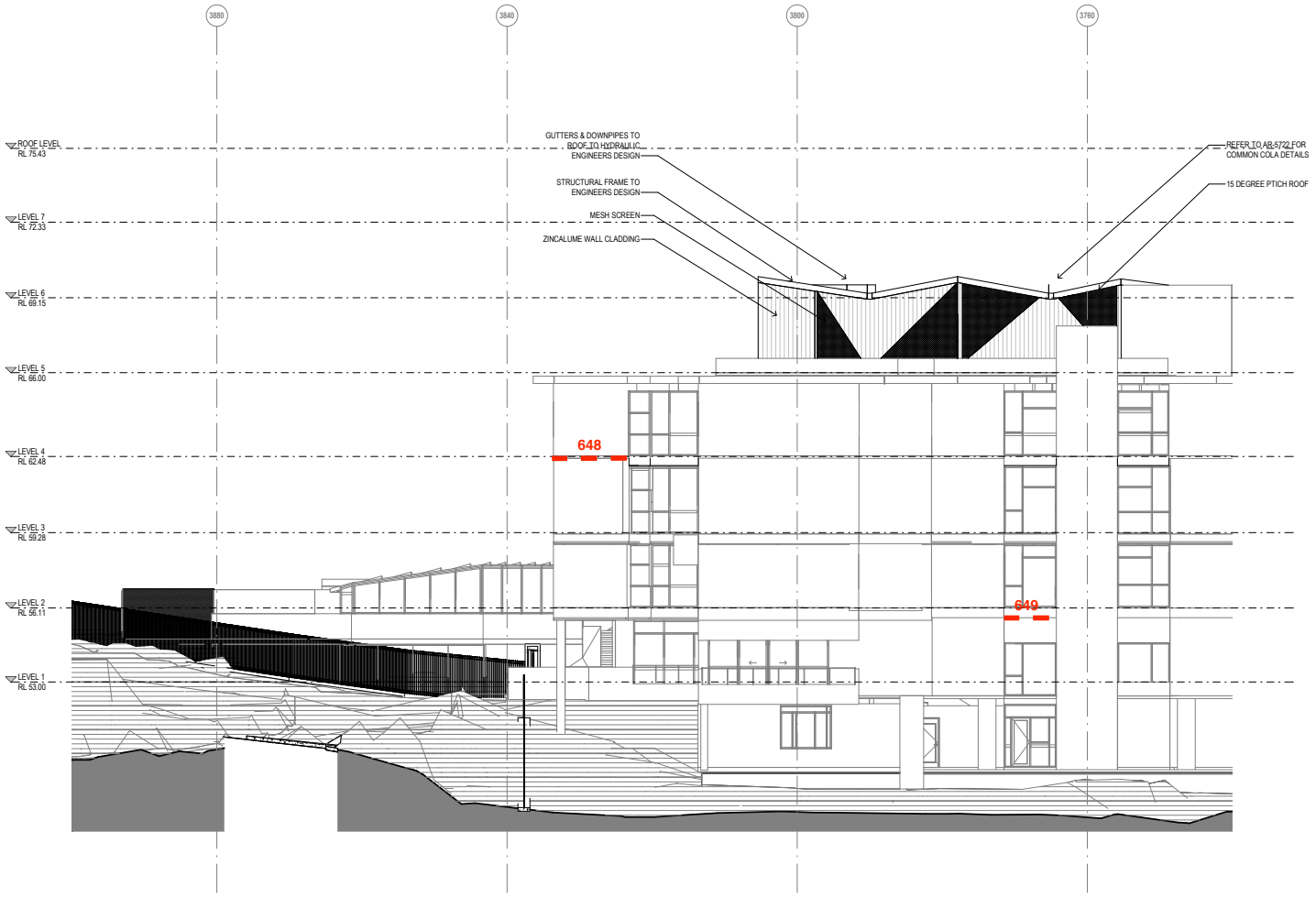
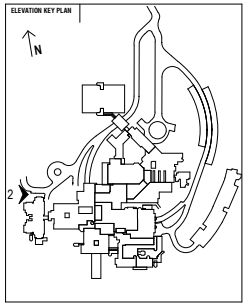


2 **ZONE H FACADE WEST ELEVATION**
SCALE 1 : 100

ELEVATION KEY PLAN



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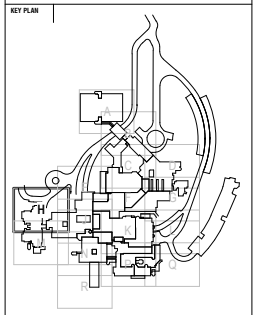
KEY PLAN



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TITLE
FAÇADE ELEVATIONS -
ZONE H

DRAWN BY	RK, NT, CS, YY, TG, FA, SG, HC, RM, JL
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441	REVISION
DRAWING Nº.	AR-321H	6

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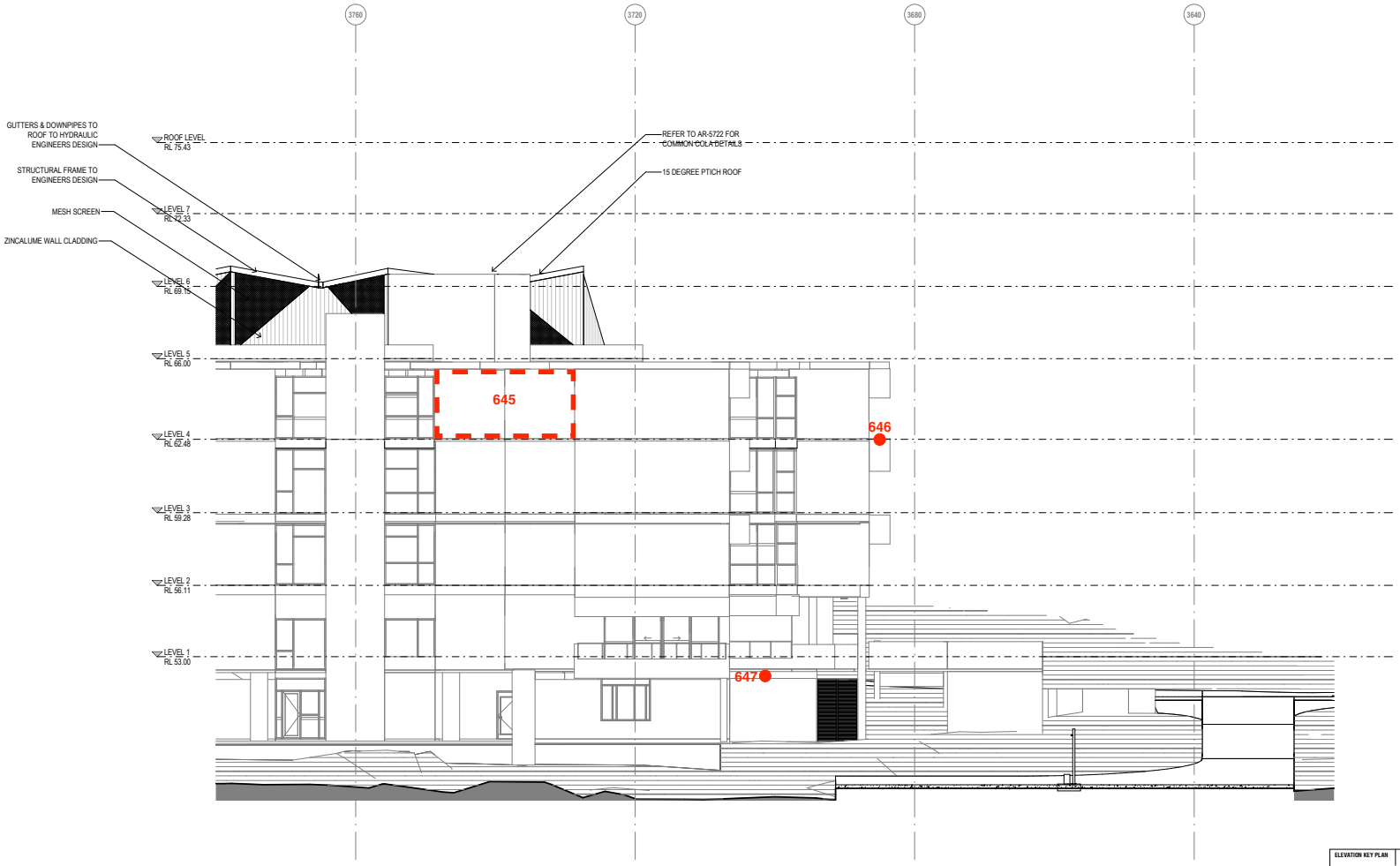
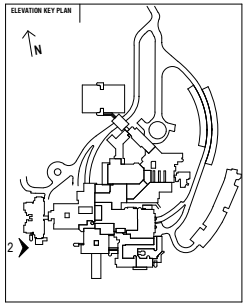


2 ZONE M FACADE WEST ELEVATION
SCALE 1 : 100

ELEVATION KEY PLAN



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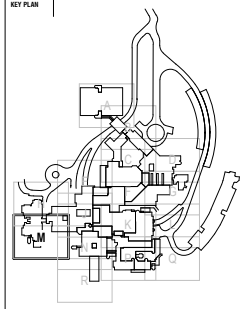
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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TITLE
FAÇADE ELEVATIONS - ZONE M

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PLOT DATE	3/05/2017
PROJECT Nº.	S151441
REVISION	6
DRAWING Nº.	AR-321M

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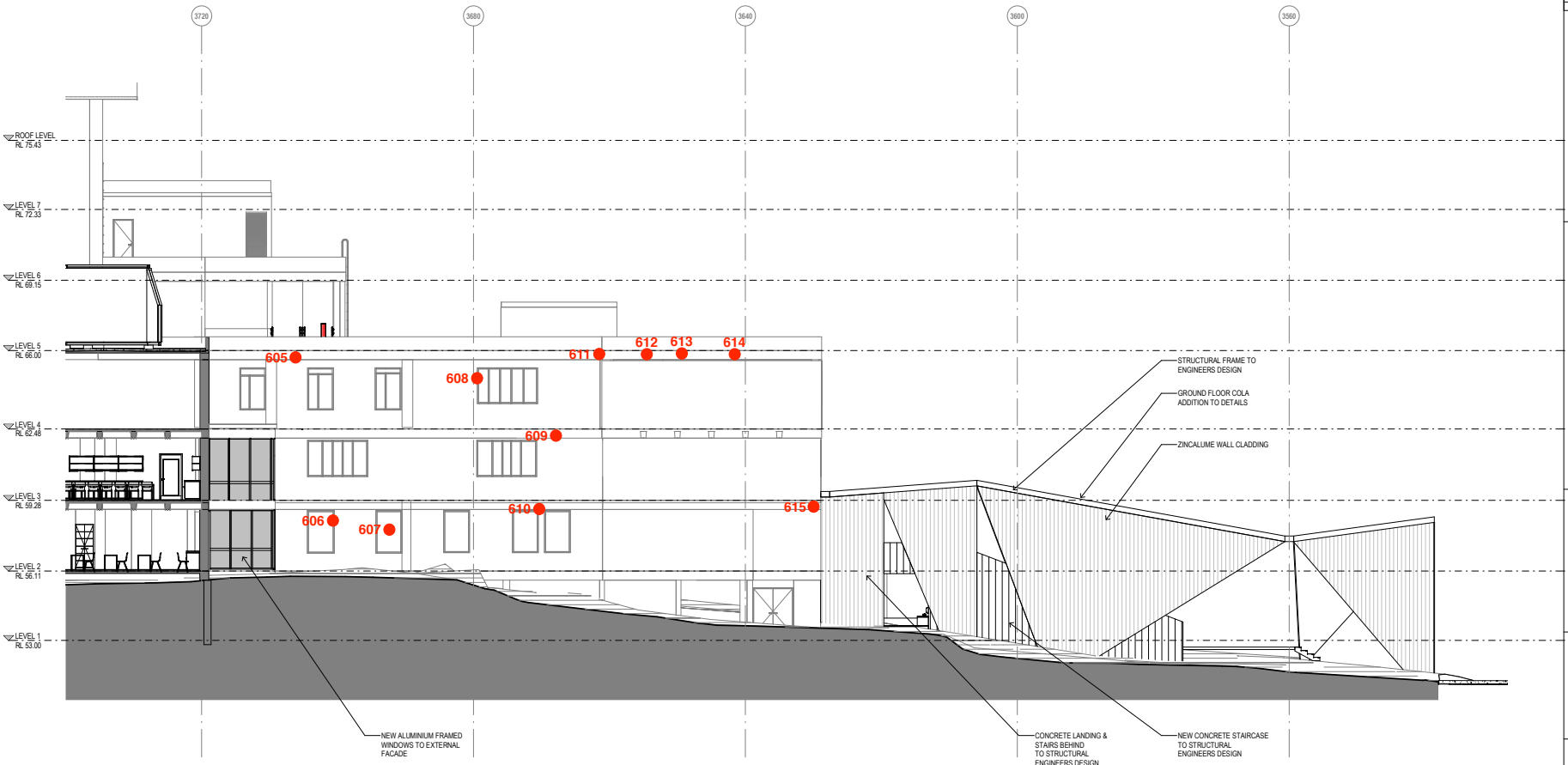
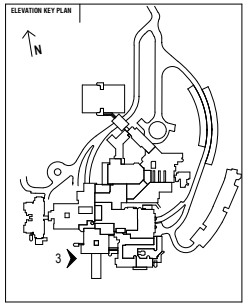


3 ZONE N FACADE WEST ELEVATION
SCALE 1 : 100

APEX MARKUP
16/10/18

ELEVATION KEY PLAN



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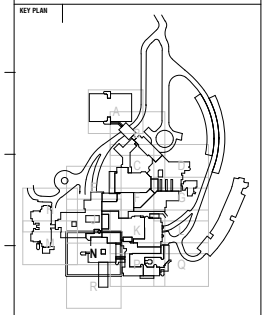
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE N

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PLOT DATE	3/05/2017

PROJECT Nº.	S151441	REVISION 6
DRAWING Nº.	AR-321N	

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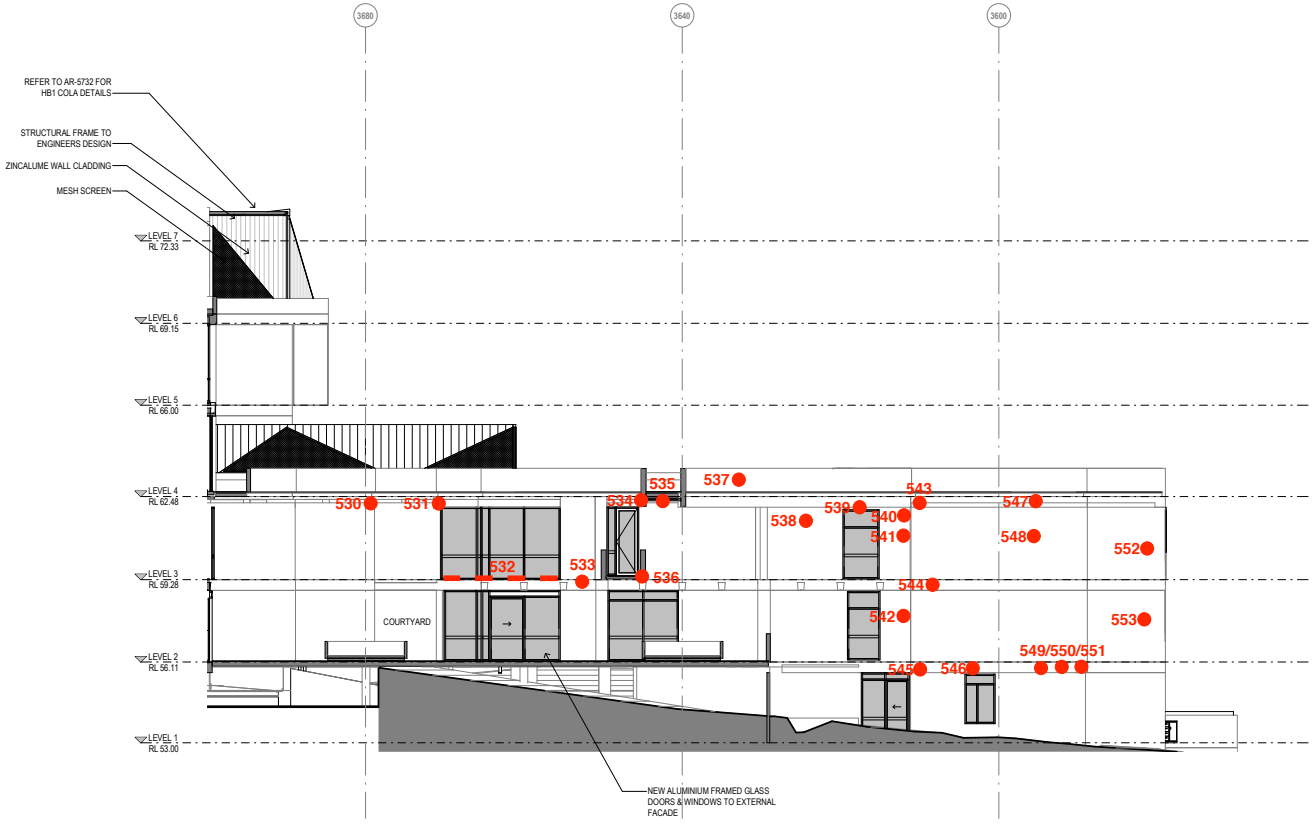
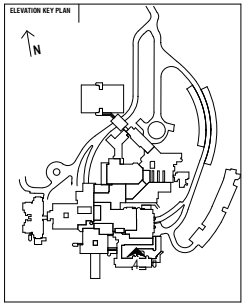


4 **ZONE P FACADE WEST ELEVATION**
SCALE 1 : 100

ELEVATION KEY PLAN



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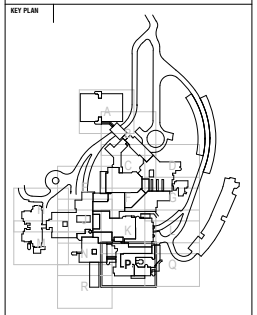

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PROJECT
LINDFIELD LEARNING VILLAGE
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE P

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441			REVISION 6
DRAWING Nº.	AR-321P			
DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE	
FOR TENDER	RG			

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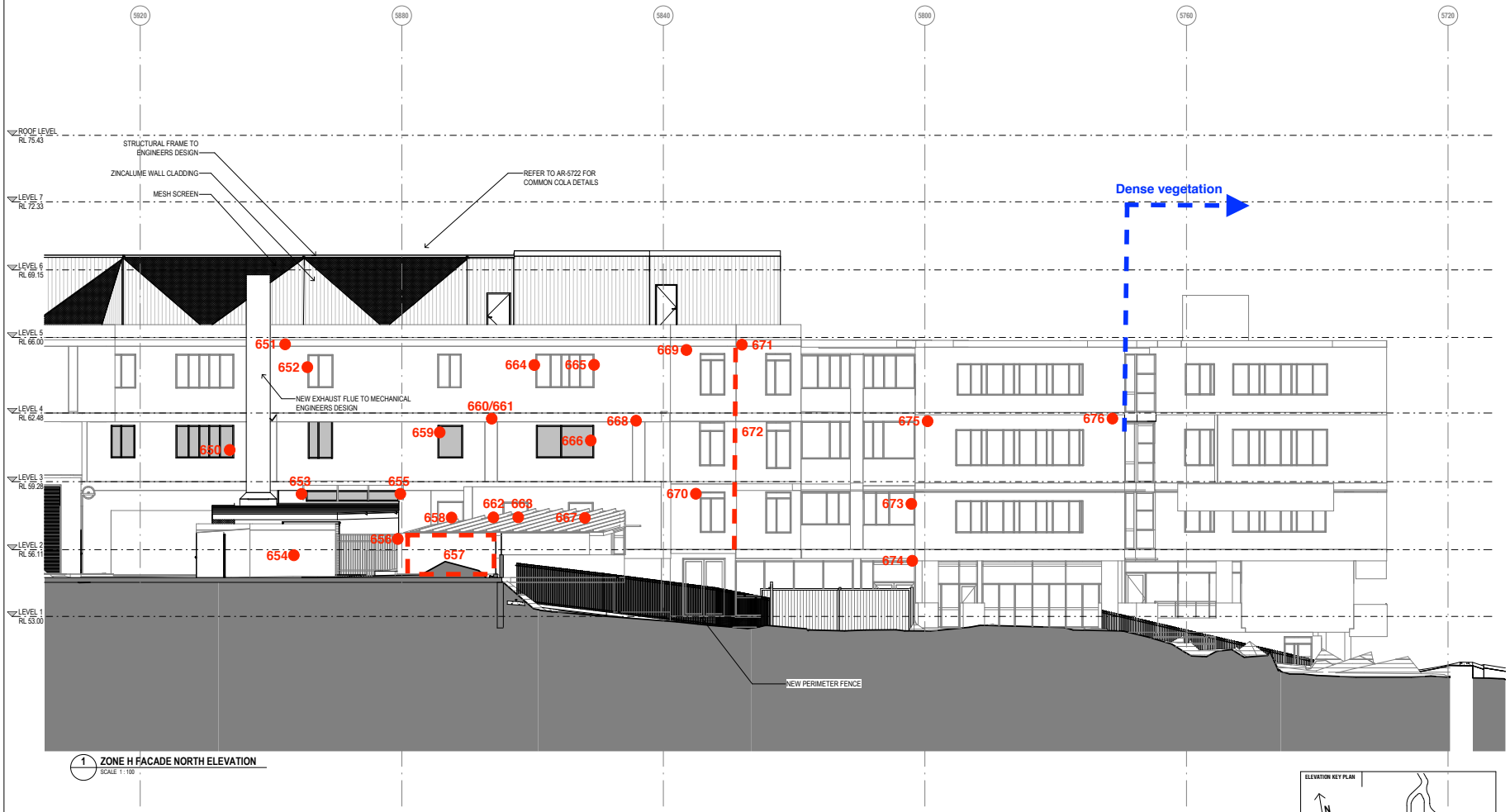
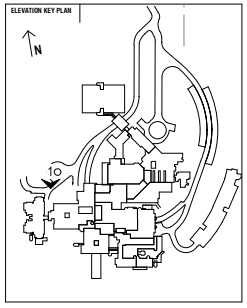


1 ZONE H FACADE NORTH ELEVATION
SCALE 1 : 100



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SCALE BAR - 1:100

APEX MARKUP
16/10/18

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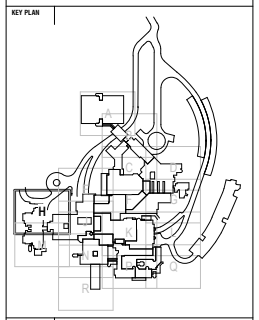
Nominated Architects

Anthony Quan 5421 | Sandeep Amin 7337 | Ian Armstrong 7260 | Richard Doos 8126

No	DATE	REVISIONS	BY
1	18/07/2017	ISSUED FOR COORDINATION	TG
2	20/07/2017	ISSED FOR COORDINATION	TG
3	27/07/2017	ISSUED FOR COORDINATION	HC
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

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NSW GOVERNMENT | Education

PROJECT

LINDFIELD LEARNING VILLAGE
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE H

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441		REVISION
DRAWING Nº.	AR-322H		6
DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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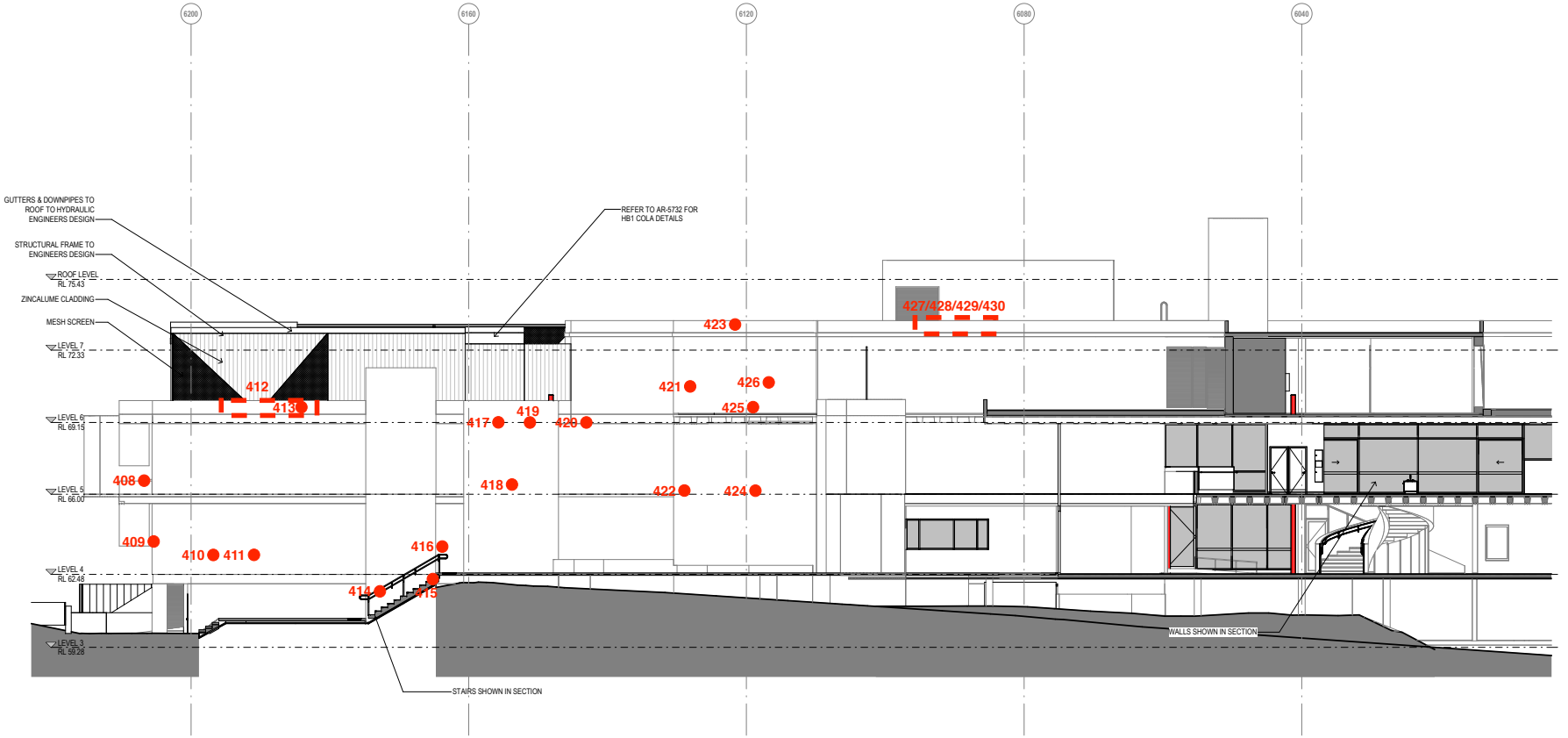
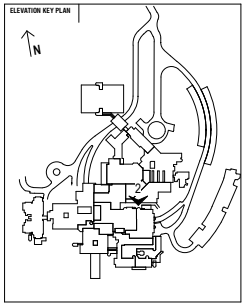


1 ZONE K FACADE NORTH ELEVATION
SCALE 1 : 100



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SCALE BAR - 1:100

APEX MARKUP
16/10/18

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Nominated Architects

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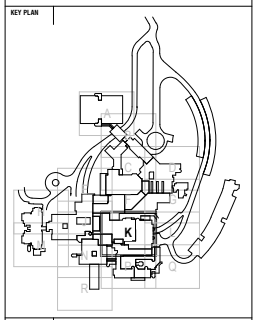
2	20/07/2017	ISSUED FOR COORDINATION	TG
3	27/07/2017	ISSUED FOR COORDINATION	HC
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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PROJECT

LINDFIELD LEARNING VILLAGE
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE K

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441		REVISION
DRAWING Nº.	AR-322K		6
DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

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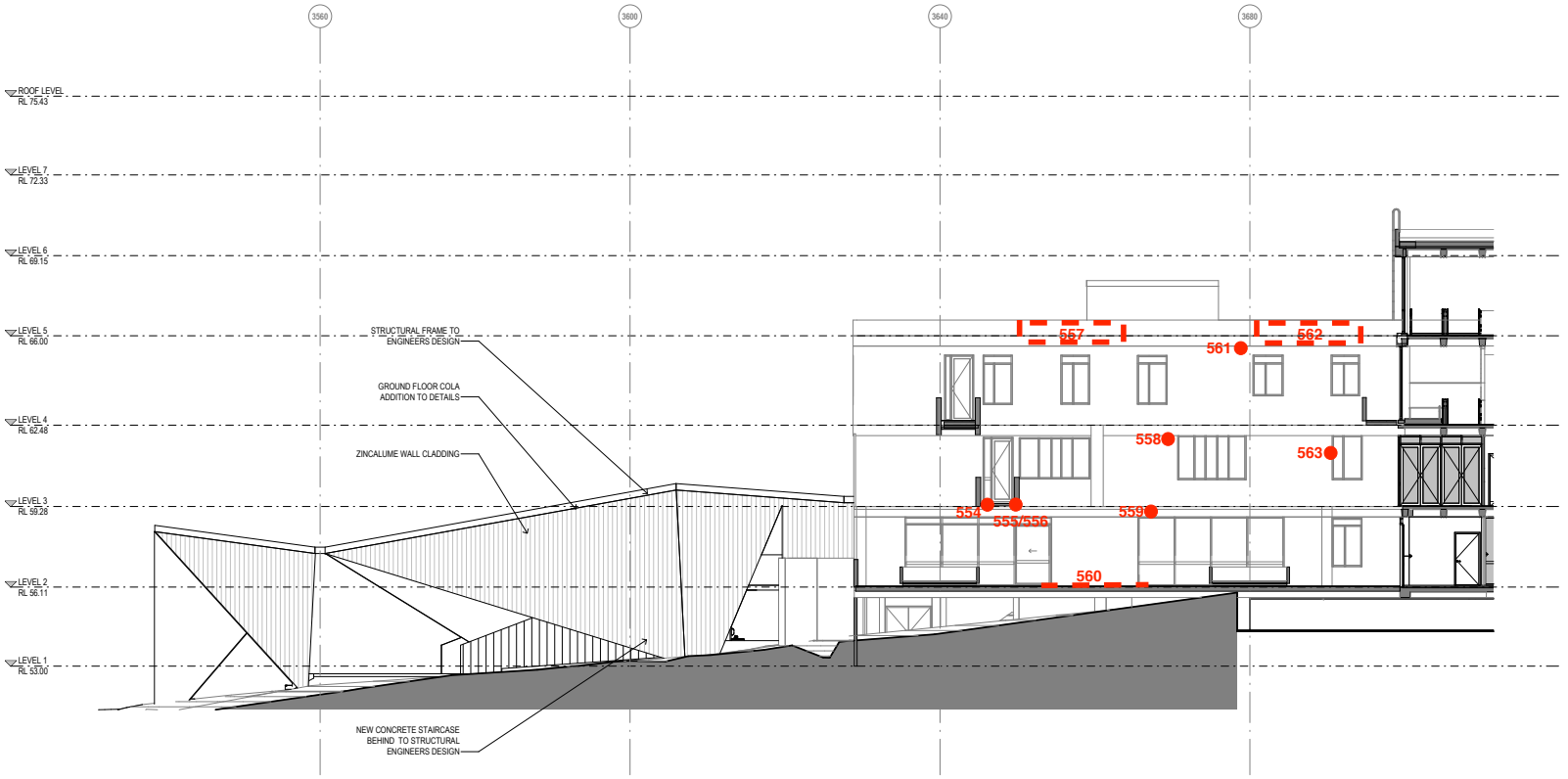
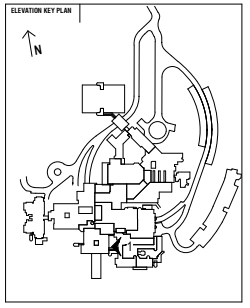


1 **ZONE N FACADE EAST ELEVATION**
SCALE 1 : 100

ELEVATION KEY PLAN



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SCALE BAR - 1:100

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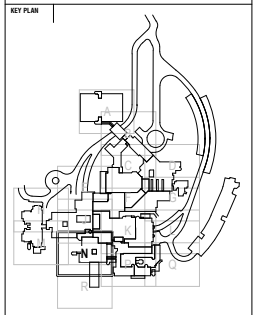
4	03/08/2017	ISSUE FOR COORDINATION	TG
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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PROJECT
LINDFIELD LEARNING VILLAGE
Eton Road,
Lindfield NSW 2070

TITLE
FAÇADE ELEVATIONS - ZONE N

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441	REVISION 6
DRAWING Nº.	AR-322N	

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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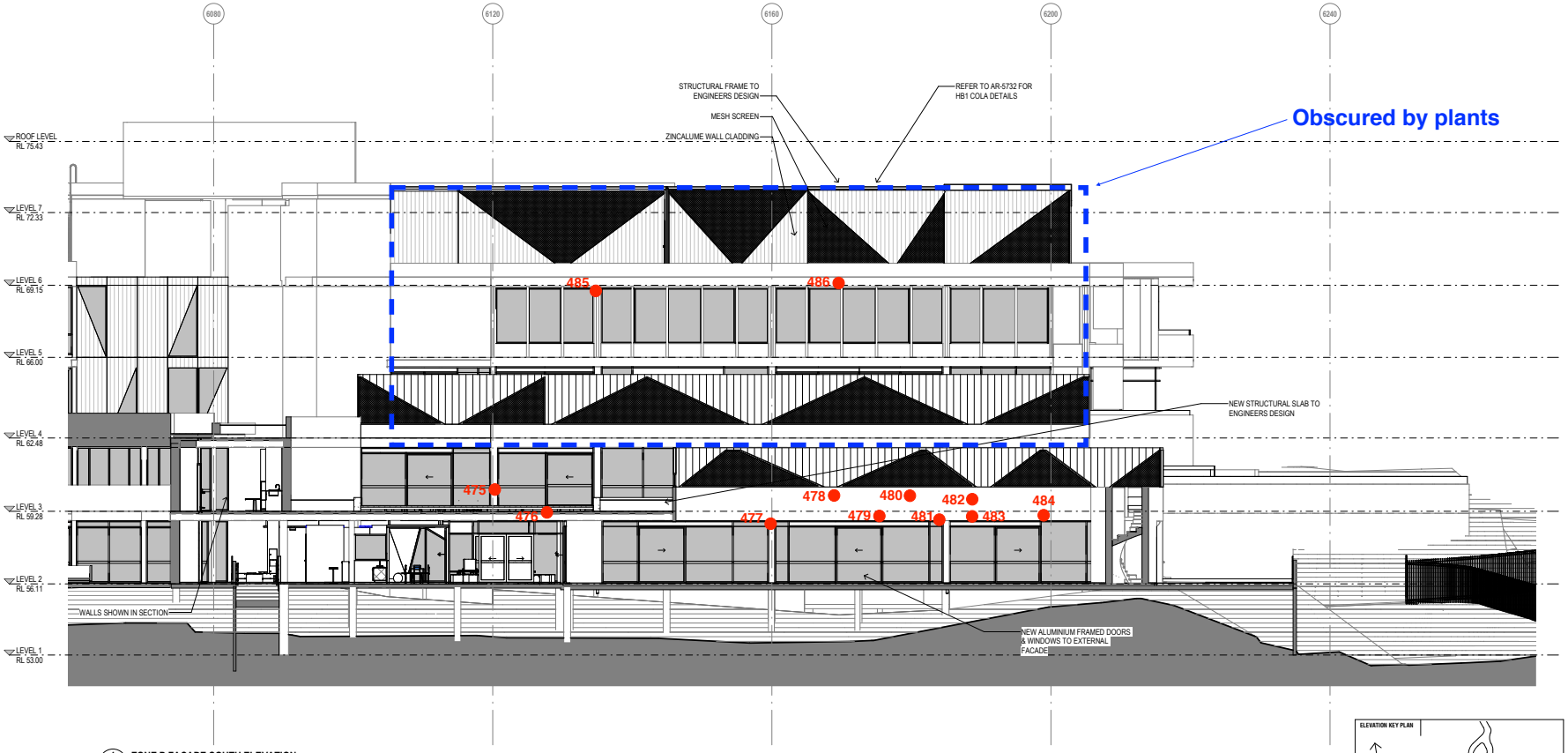
Opposite elevation

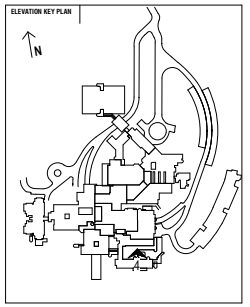
487, 488, 489, 490, 491, 492, 493, 494, 495

Planter Box

496



1 ZONE P FACADE SOUTH ELEVATION
SCALE 1 : 100



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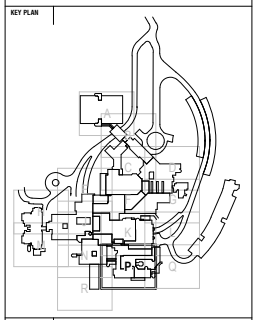
5	08/08/2017	TENDER ISSUE	TG
6	01/09/2017	TENDER ISSUE	HC

KEY PLAN



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PROJECT

LINDFIELD LEARNING VILLAGE
Eton Road,
Lindfield NSW 2070

TITLE

FAÇADE ELEVATIONS - ZONE P

DRAWN BY	TG
SCALES	1 : 100 @ A1
PLOT DATE	3/05/2017

PROJECT Nº.	S151441		REVISION
DRAWING Nº.	AR-324P		6
DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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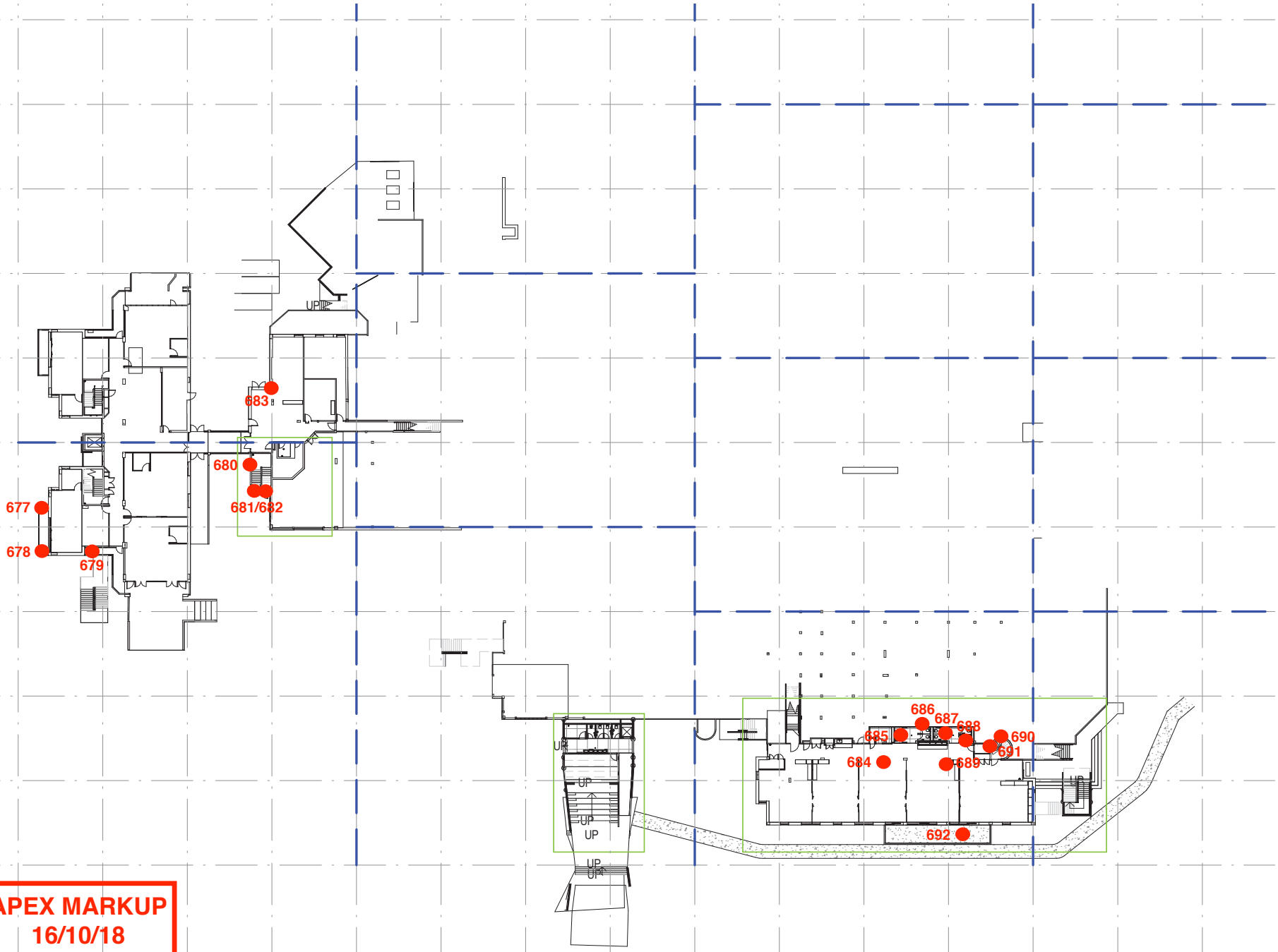
Plan drawings



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CLIENT	NSW GOVERNMENT Education
PROJECT	LINDFIELD LEARNING VILLAGE Eton Road, Lindfield NSW 2070
TITLE	LEVEL 1 PROPOSED OVERALL PLAN
DRAWN BY	HC, NT, TG
SCALES	As indicated @ A1
PLOT DATE	24/04/2017
PROJECT Nº.	S151441
REVISION	10
DRAWING Nº.	AR-2011
DRAWING STATUS	FOR TENDER
REVIEWED BY	RG
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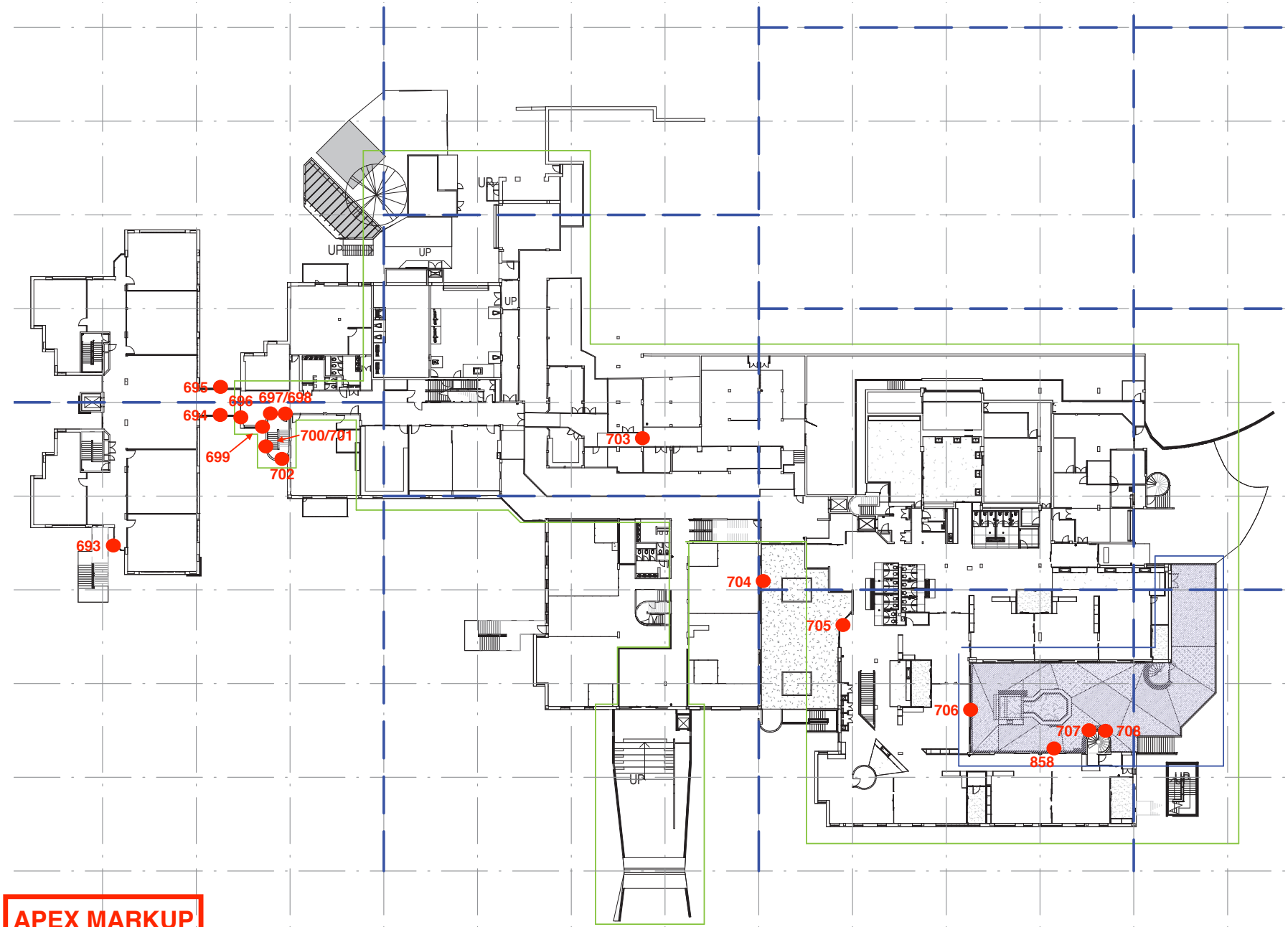

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CLIENT

NSW GOVERNMENT Education

PROJECT

LINDFIELD LEARNING VILLAGE
Elon Road,
Lindfield NSW 2070

TITLE

LEVEL 2 PROPOSED
OVERALL PLAN

DRAWN BY	HC, NT, TG
SCALES	As indicated @ A1
PLOT DATE	24/04/2017
PROJECT Nº.	S151441
REVISION	10
DRAWING Nº.	AR-2021

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
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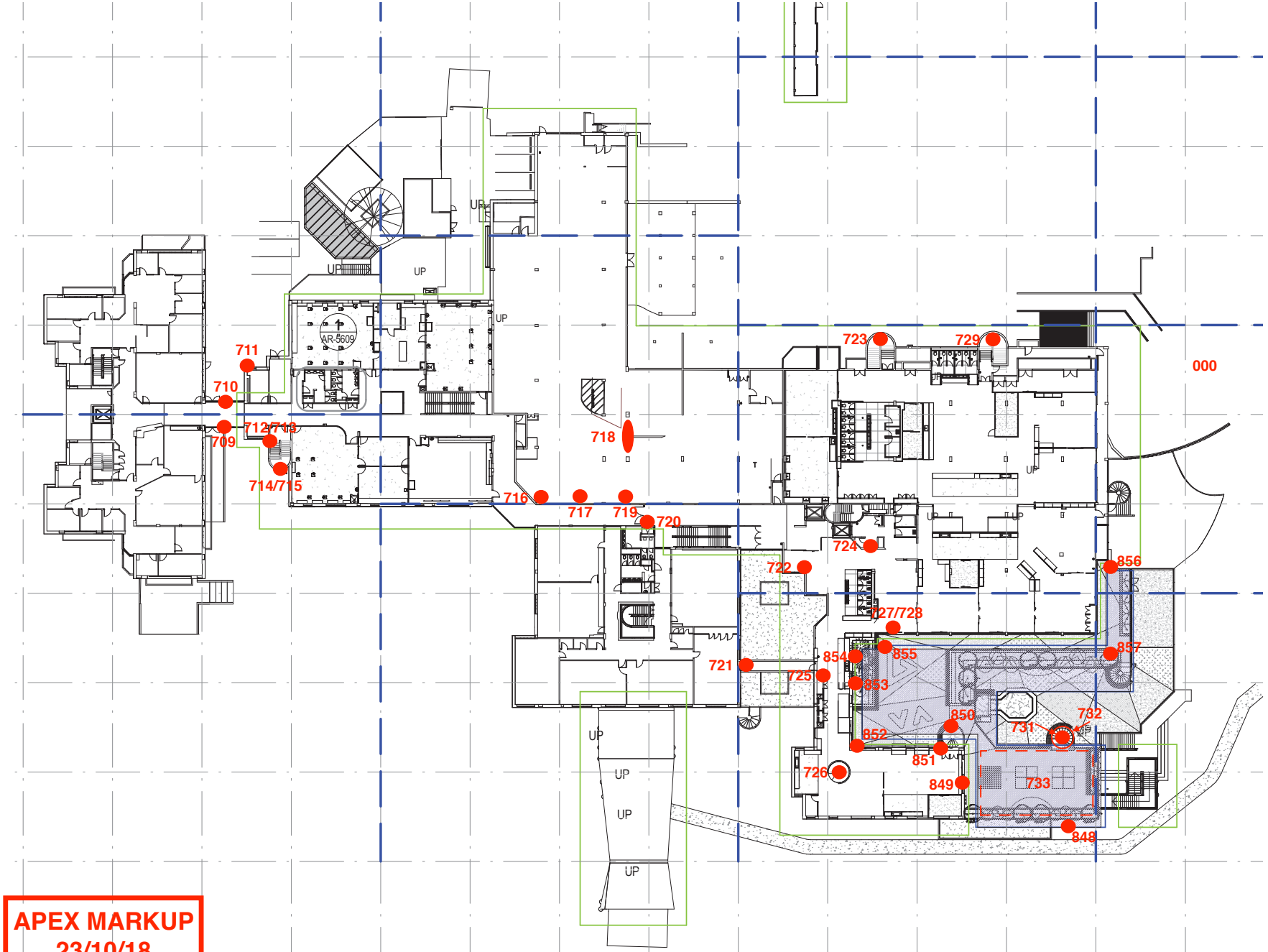

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CLIENT	NSW GOVERNMENT Education
PROJECT	LINDFIELD LEARNING VILLAGE Eton Road, Lindfield NSW 2070
TITLE	LEVEL 3 PROPOSED OVERALL PLAN
DRAWN BY	HC, NT, TG
SCALES	As indicated @ A1
PLOT DATE	24/04/2017
PROJECT Nº.	S151441
REVISION	10
DRAWING Nº.	AR-2031
DRAWING STATUS	FOR TENDER
REVIEWED BY	RG
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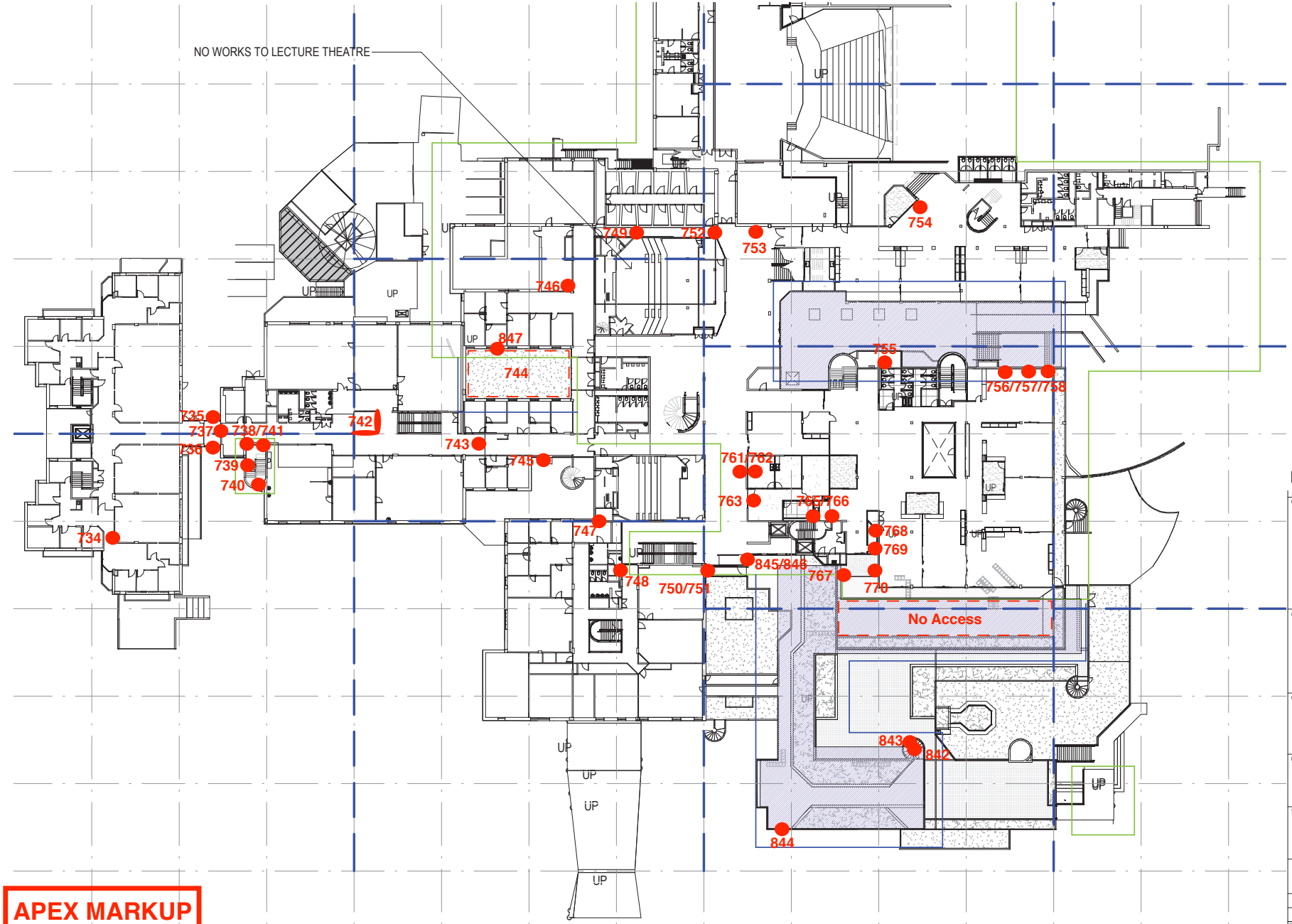

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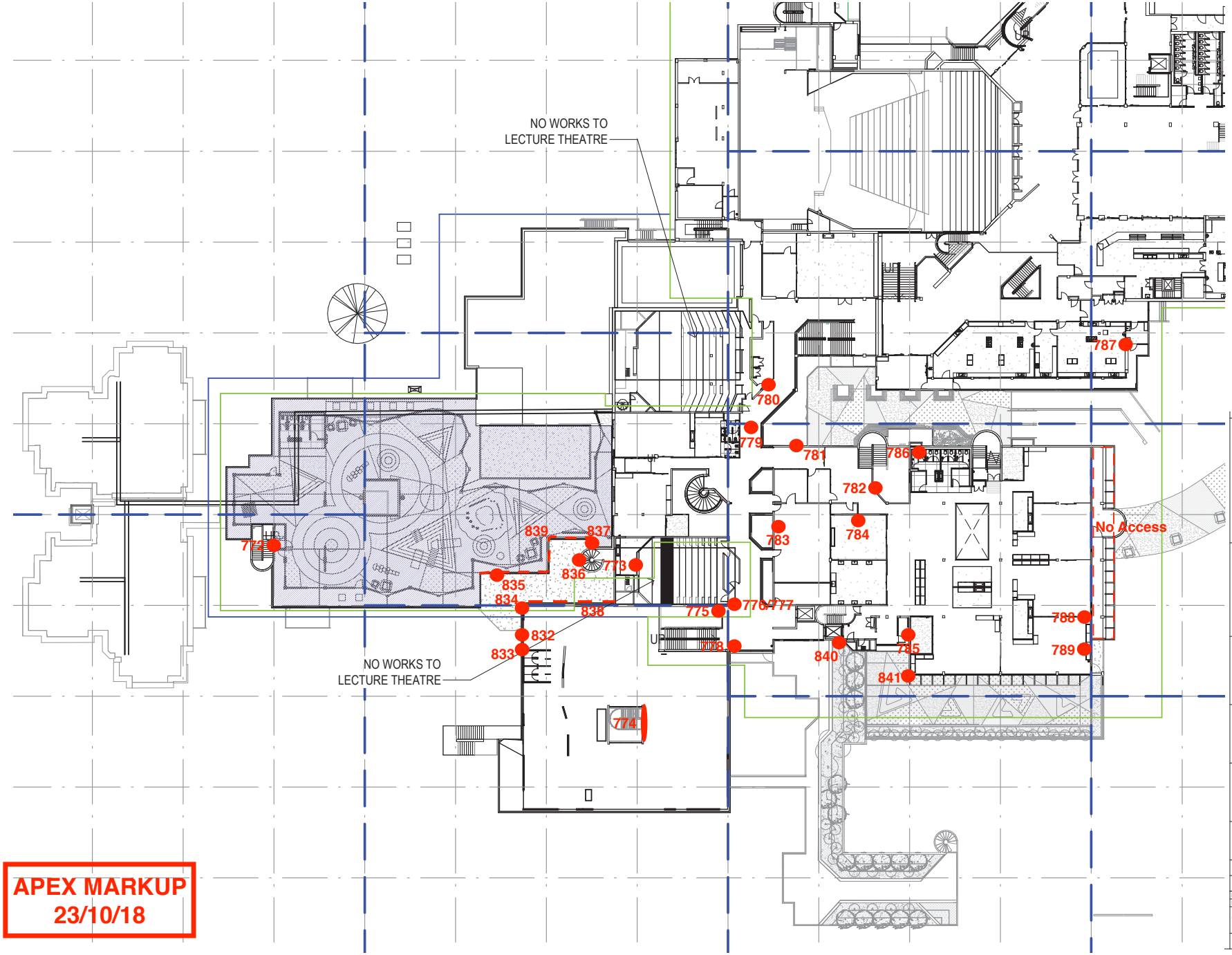
BCA CONSULTANT	BCA LOGIC Ph: (02) 9411 5360
QUANTITY SURVEYOR	WILDE AND WOOLLARD Ph: (02) 9411 2777
PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888
ARCHITECT	DesignInc | Lacoste + Stevenson | bmc2 architects in association
	Designinc Sydney PTY LIMITED ACN 003068820 L12 / 77 PACIFIC HWY NORTH SYDNEY NSW 2060 AUSTRALIA PO BOX 651 NORTH SYDNEY NSW 2059 AUSTRALIA T +612 8905 7100 F +612 8905 7199 www.designinc.com.au E sydney@sydney.designinc.com.au Architecture Urban Design Interiors
CLIENT	NSW GOVERNMENT Education
PROJECT	LINDFIELD LEARNING VILLAGE Eton Road, Lindfield NSW 2070
TITLE	LEVEL 4 PROPOSED OVERALL PLAN
DRAWN BY	HC, NT, TG
SCALES	As indicated @ A1
PLOT DATE	24/04/2017
PROJECT Nº.	S151441
REVISION	10
DRAWING Nº.	AR-2041
DRAWING STATUS	FOR TENDER
REVIEWED BY	RG
SIGNATURE	
DATE	
QUALITY CERTIFIED ISO 9001	Completion of the Drawing Status is evidence the design has been verified as conforming to the requirements of the Project M.S. Plan. Initialling the 'Drawn By' box confirms that this drawing has been prepared in conformity with Designinc Sydney M.S. procedures.
	TENDER



APEX MARKUP
23/10/18

Extract from:

CONSULTANTS

TRAFFIC ENGINEER	ARUP Ph: (02) 9320 9320
SERVICES ENGINEER	ERBAS AND ASSOCIATES Ph: (02) 9437 1022
FIRE ENGINEER	AFFINITY FIRE ENGINEERING Ph: (02) 9194 0590
CIVIL AND STRUCTURAL ENGINEER	BIRZULIS ASSOCIATES Ph: (02) 9555 7230
BCA CONSULTANT	BCA LOGIC Ph: (02) 9411 5360
QUANTITY SURVEYOR	WILDE AND WOOLLARD Ph: (02) 9411 2777
PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888

ARCHITECT

DesignInc | Lacoste + Stevenson | bmc2
architects in association

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Architecture Urban Design Interiors

CLIENT

NSW GOVERNMENT Education

PROJECT

LINDFIELD LEARNING VILLAGE
Eton Road,
Lindfield NSW 2070

TITLE

LEVEL 5 PROPOSED
OVERALL PLAN

DRAWN BY	HC, NT, TG
SCALES	As indicated @ A1
PLOT DATE	24/04/2017

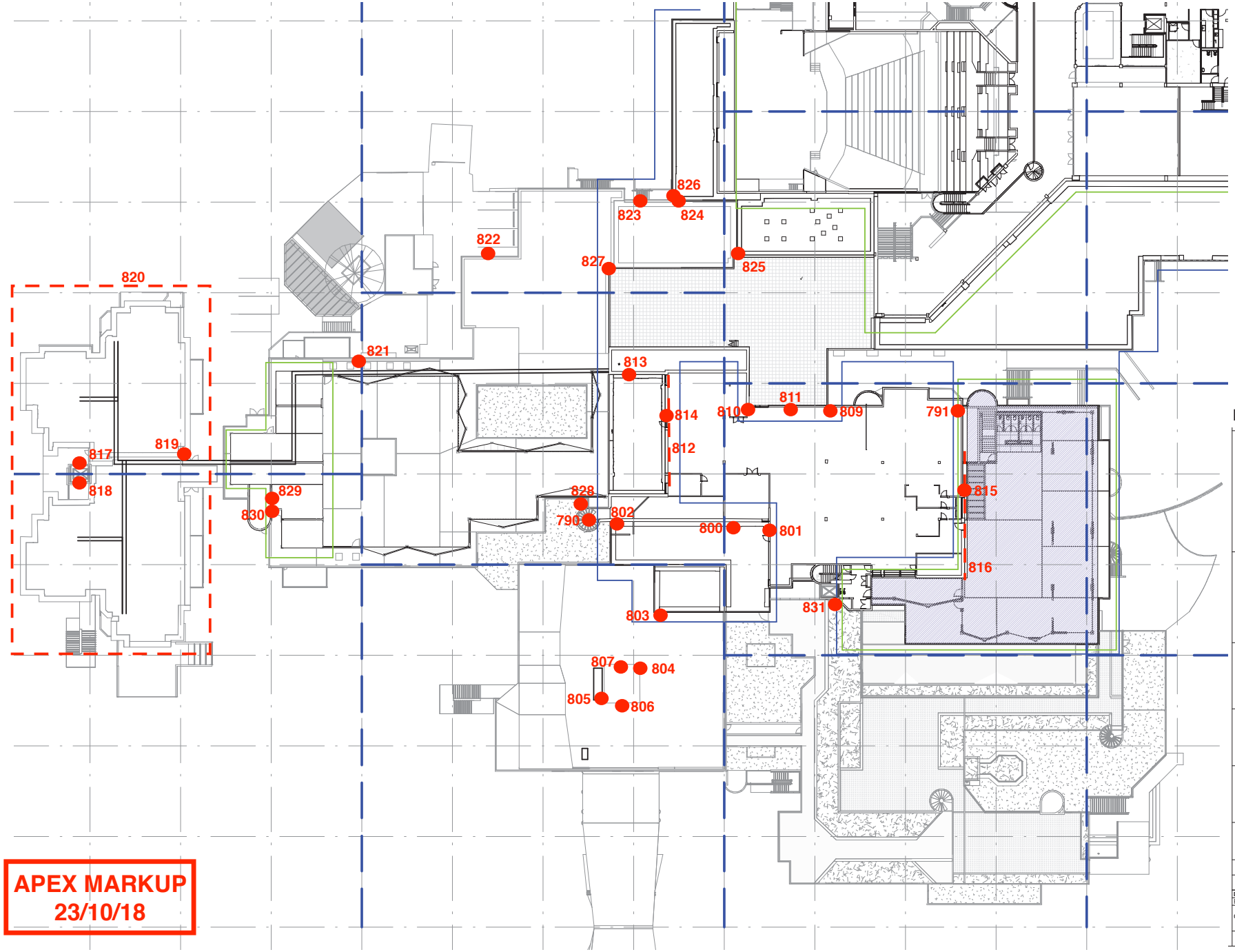
PROJECT Nº.	S151441	REVISION 10
DRAWING Nº.	AR-2051	

DRAWING STATUS	REVIEWED BY	SIGNATURE	DATE
FOR TENDER	RG		

QUALITY CERTIFIED ISO 9001

Completion of the Drawing Status is evidence the design has been verified as conforming to the requirements of the Project M.S. Plan. Initialling the "Drawn By" box confirms that this drawing has been prepared in conformity with DesignInc Sydney M.S. procedures.

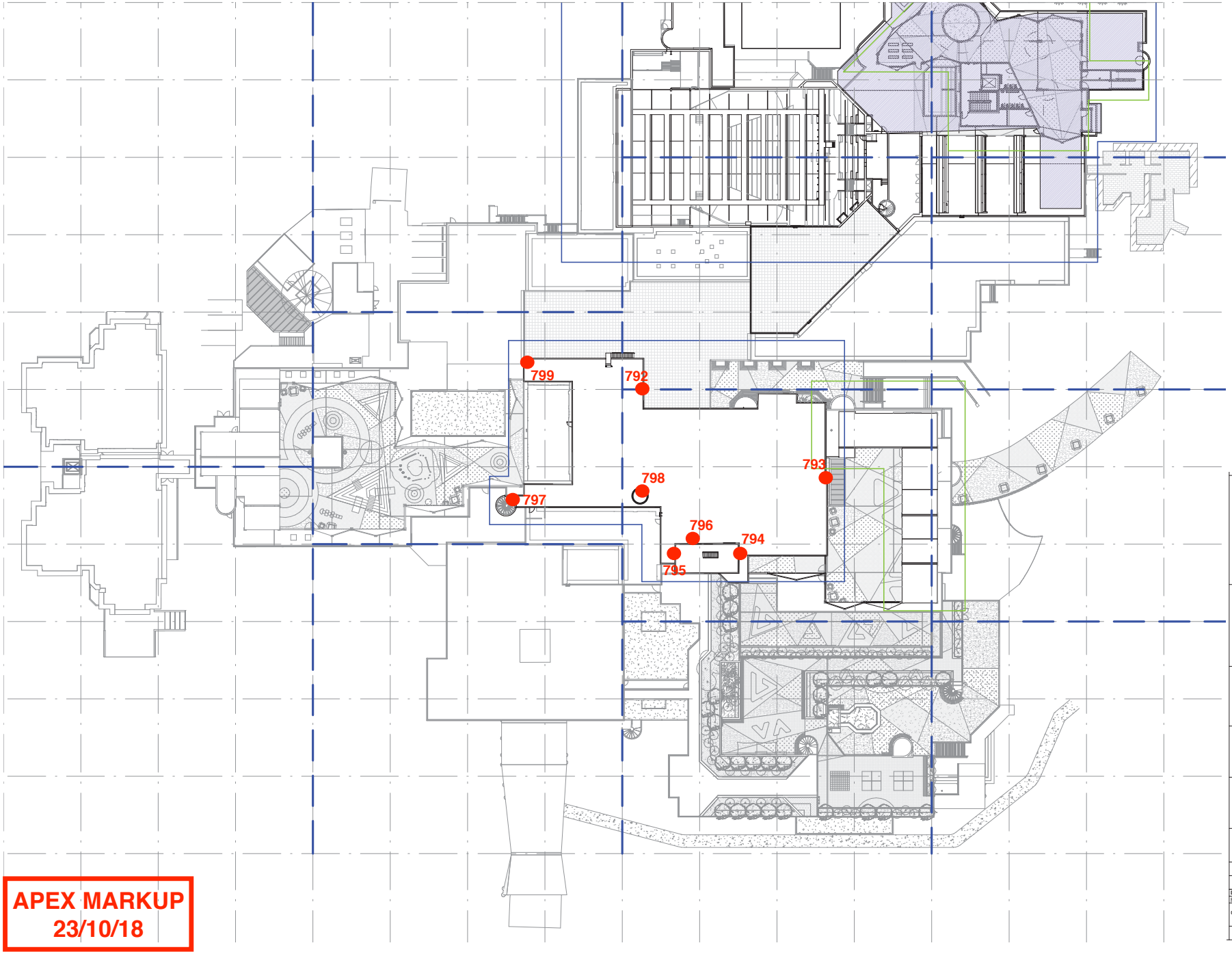
TENDER



APEX MARKUP
23/10/18

Extract from:

CONSULTANTS	TRAFFIC ENGINEER	ARUP Ph: (02) 9320 9320
	SERVICES ENGINEER	ERBAS AND ASSOCIATES Ph: (02) 9437 1022
	FIRE ENGINEER	AFFINITY FIRE ENGINEERING Ph: (02) 8194 0590
	CIVIL AND STRUCTURAL ENGINEER	BIRZULIS ASSOCIATES Ph: (02) 9555 7230
	BCA CONSULTANT	BCA LOGIC Ph: (02) 9411 5360
	QUANTITY SURVEYOR	WILDE AND WOOLLARD Ph: (02) 9411 2777
	PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888
ARCHITECT		DesignInc | Lacoste + Stevenson | bmc2 architects in association DesignInc Sydney PTY LIMITED ACN 003008820 L12 / 77 PACIFIC HWY NORTH SYDNEY NSW 2060 AUSTRALIA PO BOX 631 NORTH SYDNEY NSW 2059 AUSTRALIA T +612 8905 7100 F +612 8905 7199 www.designinc.com.au E sydney@sydney.designinc.com.au Architecture Urban Design Interiors
CLIENT		NSW GOVERNMENT Education
PROJECT		LINDFIELD LEARNING VILLAGE Eton Road, Lindfield NSW 2070
TITLE		LEVEL 6 PROPOSED OVERALL PLAN
	DRAWN BY	HC, NT, TG
	SCALES	As indicated @ A1
	PLOT DATE	24/04/2017
	PROJECT Nº.	S151441
	REVISION	10
	DRAWING Nº.	AR-2061
DRAWING STATUS	REVIEWED BY	SIGNATURE / DATE
FOR TENDER	RG	
QUALITY CERTIFIED ISO 9001	Completion of the Drawing Status is evidence the design has been verified as conforming to the requirements of the Project M.S. Plan. Initialling the 'Drawn By' box confirms that this drawing has been prepared in conformity with Designinc Sydney M.S. procedures.	
TENDER		



APEX MARKUP
23/10/18

Extract from:

CONSULTANTS	
TRAFFIC ENGINEER	ARUP Ph: (02) 9320 9320
SERVICES ENGINEER	ERBAS AND ASSOCIATES Ph: (02) 9437 1022
FIRE ENGINEER	AFFINITY FIRE ENGINEERING Ph: (02) 9194 0990
CIVIL AND STRUCTURAL ENGINEER	BIRZULIS ASSOCIATES Ph: (02) 9555 7200
BCA CONSULTANT	BCA LOGIC Ph: (02) 9411 5360
QUANTITY SURVEYOR	WILDE AND WOOLLARD Ph: (02) 9411 2777
PROJECT MANAGER	SAVILLS Ph: (02) 8215 8888
ARCHITECT	DesignInc | Lacoste + Stevenson | bmc2 architects in association DesignInc Sydney PTY LIMITED ACN 003008820 L12 / 77 PACIFIC HWY NORTH SYDNEY NSW 2060 AUSTRALIA PO BOX 651 NORTH SYDNEY NSW 2059 AUSTRALIA T +612 8905 7100 F +612 8905 7199 www.designinc.com.au E sydney@sydney.designinc.com.au Architecture Urban Design Interiors
CLIENT	NSW GOVERNMENT Education
PROJECT	LINDFIELD LEARNING VILLAGE Eton Road, Lindfield NSW 2070
TITLE	LEVEL 7 PROPOSED OVERALL PLAN
DRAWN BY	TG
SCALES	As indicated @ A1
PLOT DATE	24/04/2017
PROJECT Nº.	S151441
REVISION	10
DRAWING Nº.	AR-2071
DRAWING STATUS	FOR TENDER
REVIEWED BY	RG
SIGNATURE	
DATE	
QUALITY CERTIFIED ISO 9001	Completion of the Drawing Status is evidence the design has been verified as conforming to the requirements of the Project M.S. Plan. Initialling the "Drawn By" box confirms that this drawing has been prepared in conformity with DesignInc Sydney M.S. procedures.
TENDER	

APPENDIX B JOINERY SCHEDULE

URBIS

LINDFIELD LEARNING VILLAGE SCHEDULE OF SIGNIFICANT ELEMENTS

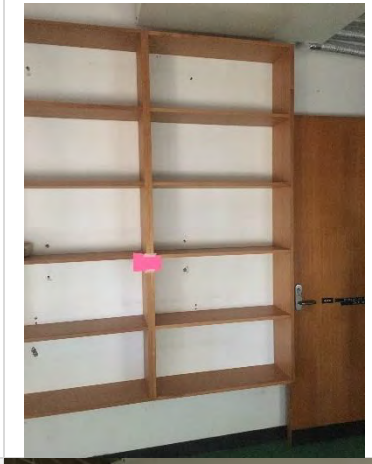
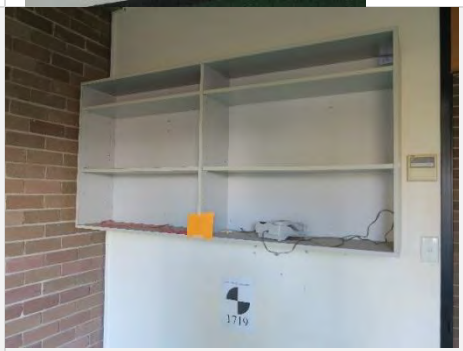
URBIS

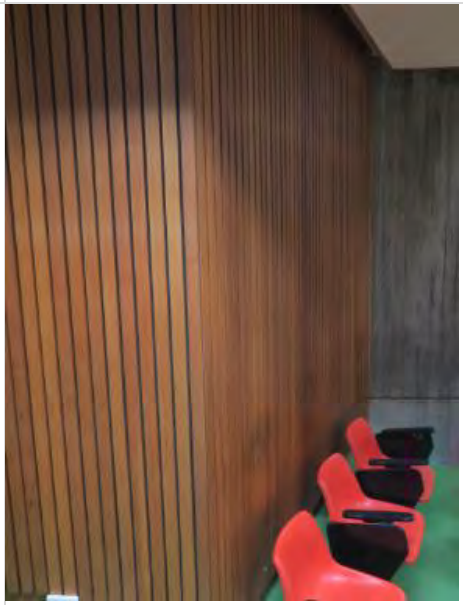
KEY

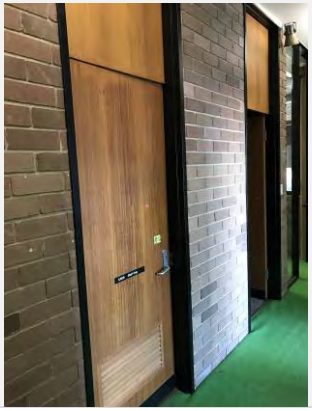
Key	Description	Treatment
TW	Timber window detailing	TW REMOVE AND STORE
SS	Shelves store	SS REMOVE AND STORE
SR	Shelves remove	SR REMOVE
DK	Door (‘keep’)	DK RETAIN IN SITU
D	Door	D REMOVE AND STORE
DR	Door Remove	DR REMOVE
SK	Service doors (‘keep’)	SK RETAIN IN SITU
SD	Service door remove & store	SD REMOVE AND STORE
BF	Built in furniture	BF RETAIN IN SITU
L1	Lights (style 1)	L1 REMOVE AND STORE (if required)
L2	Lights (style 2)	L2 REMOVE
JK	Joinery (‘keep’)	JK RETAIN IN SITU
JS	Joinery remove and store	JS REMOVE AND STORE
JR	Joinery Remove	JR REMOVE

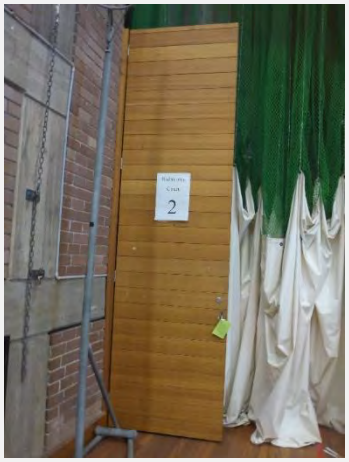
CK	Ceilings (‘keep’)	CK	RETAIN IN SITU
CS	Ceilings remove and store	CS	REMOVE AND STORE
C	Clocks	C	REMOVE AND STORE
B	Bins	B	REMOVE

Key	Item	Category	Example	Example Image
TW	Timber window detailing (variously including shutters and sills).	Remove and store (Pink) <u>However,</u> the preference is to retain in situ if possible with the replacement of the windows. Note locations of each set of detailing and label item when removed to allow reinstatement in same position.	• Timber window detailing • Timber sills (painted in some instances) • Timber shutters • Timber surrounds	 

Key	Item	Category	Example	Example Image
SS	Shelves Store	Remove and store (Pink)	• Shelves present throughout. Salvage approx. 50% for potential reuse. Urbis has tagged the shelves accordingly.	
SR	Shelves Remove	Remove (Orange)	• Later shelves • Approx 50% of earlier shelves not nominated for salvage.	

Key	Item	Category	Example	Example Image
DK	Door (‘keep’)	Retain in situ (Situ)	• Doors with timber batons to back of house areas in auditoriums	
D	Door	Remove and store (Pink) NOTE THAT NOT ALL DOORS IN THE PARTIAL SCHOOL ARE TAGGED – ASSUME PINK UNLESS MARKED OTHERWISE	• Non-compliant internal access doors less than 850mm clearance in open position. • Auditorium doors **Group doors in storage area and note the level and location from where they were salvaged.**	

Key	Item	Category	Example	Example Image
				  
DR	Door remove	Remove (Orange)	• Later doors • Doors with unusual proportions unlikely to be reused • Damaged doors i.e. retrofitted vents) • Glazed doors	

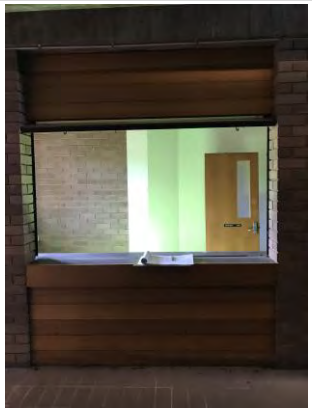
Key	Item	Category	Example	Example Image
SK	Service Door (‘Keep’)	Retain in situ (Situ)	• Cupboards under concrete stairs which do not require 850mm access. • Cupboards set into retained walls • Cupboard door to side of basketball court enclosing net	  

Key	Item	Category	Example	Example Image
BF	Built in Furniture	Retain in situ (Situ)	• Seats leather and timber • Some science desks on level 4	 

Key	Item	Category	Example	Example Image
L1	Lights (style 1)	Remove and store (Pink) THE PREFERENCE IS TO RETAIN IN SITU IF POSSIBLE DURING CONSTRUCTION. Lights may only be removed where required to protect the item during construction. Note locations of each light and label item when removed to allow reinstatement in same position.	• To be reinstated in existing locations if removed. • Note all similar lights in the building to be treated the same. • Including stairwell lights and lights in auditorium	 

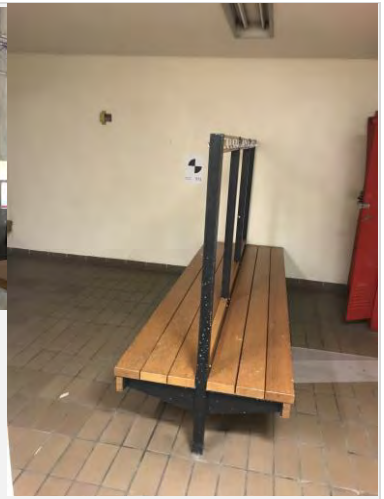
Key	Item	Category	Example	Example Image
L2	Lights (style 2)	Remove (Orange)	• Lights in back of house areas in auditoriums	
L3	Lights (style 3)	Retain in situ (Situ) DISCUSSIONS IN PROGRESS REGARDING TREATMENT OF THIS ELEMENT	• Horizontal lights set into concrete walls to stairwells. NOTE THESE ARE NOT MARKED ON PLANS	
JK	Joinery (‘keep’)	Retain in situ (Situ)	• Parquetry in floor • Solid timber risers, cupboard doors and fittings (this does not include the two fire cupboards to	

Key	Item	Category	Example	Example Image
			the gym which require removal due to climbing issues. • Reception desks set into walls to be retained (including in the gym) • Timber skirtings in gym (dance rooms) • Timber wall joinery around mezzanine of cafeteria. • Joinery to side of gymnasium including tilt up doors • Original bell at ceiling to Level 6 in main circulation spine. • Sulman Award plaque to Level 6 in main circulation spine	 

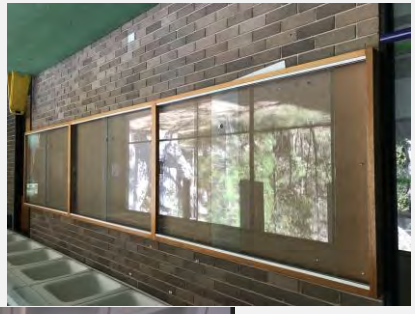
Key	Item	Category	Example	Example Image
				
JS	Joinery Remove and Store	Remove and store (Pink)	• Solid Timber Joinery with glass front • Solid timber joinery with backing • Seating in gym • Timber display cases • Bell in entrance area (ceiling of level 6)	

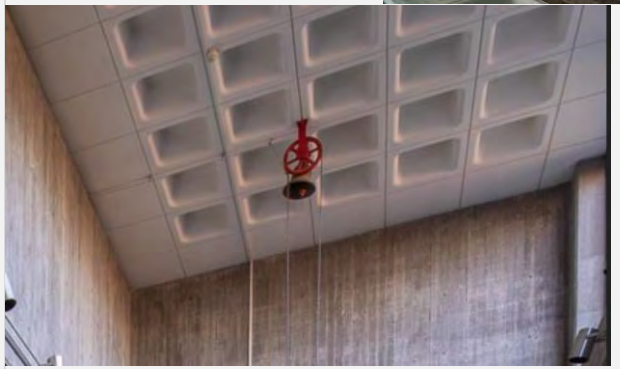
URBIS



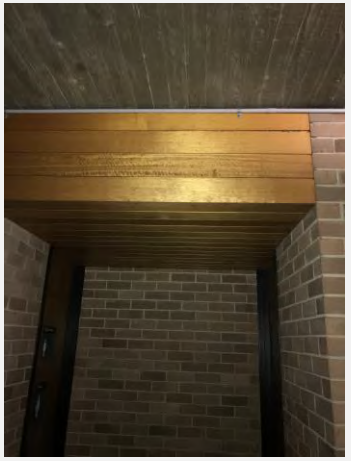
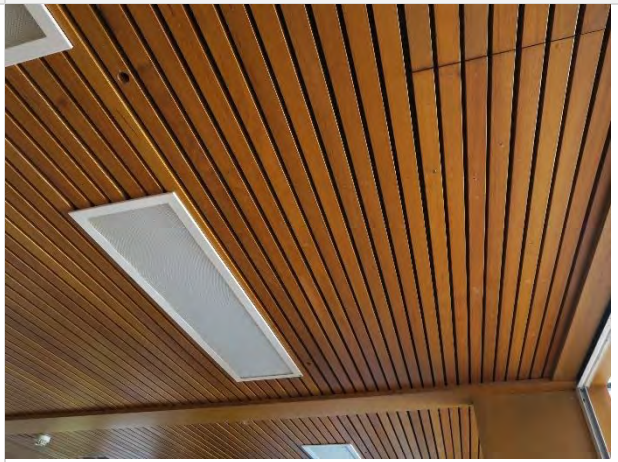


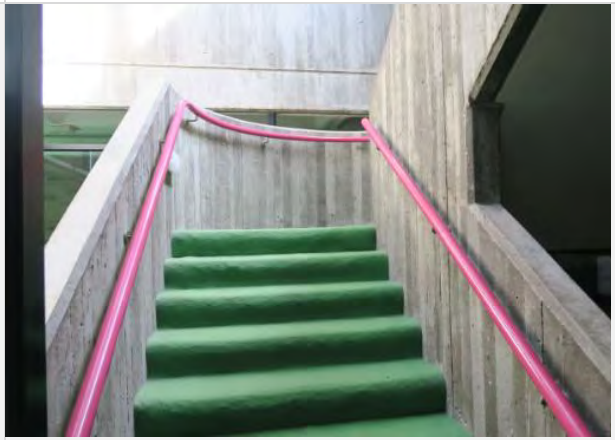






Key	Item	Category	Example	Example Image
JR	Joinery remove	Remove (Orange)	• Later joinery • Joinery with unusual proportions – unlikely to be reused • Damaged joinery • Later reception desks • FHR cupboards in the gym (due to climbing issues)	 

Key	Item	Category	Example	Example Image
CK	Ceilings (‘keep’)	Retain in situ (Situ)	• Small sections of ceiling in gym	
CS	Ceilings Remove and store	Remove and store (Pink) SALVGE AND REINSTATE AFTER REMOVING ASBESTSOS. Mark each removed panel with the location from which it was salvaged and store materials from	• Ceiling in kitchen • Ceiling in library	

Key	Item	Category	Example	Example Image
		the same area together.		
N/A Not shown on plans – retain pink handrails throughout	Pink Handrails	Remove CAREFULLY. Any impact on the surrounding concrete is not acceptable. The fixing points shall remain intact to be used for the replacement handrails. If before construction DesignInc confirms potential to reuse these handrails they will confirm and the treatment of this element will be amended.		

Key	Item	Category	Example	Example Image
C	Clocks	Remove and store (Pink)	• Throughout	
B	Bins	Remove (Orange)	• Throughout	

Key	Item	Category	Example	Example Image
N/A (Pinboards are not noted on the plans – located throughout)	Pinboard	Remove (Orange)		
	Mirror	Retain in situ (Situ) if compliant. Otherwise remove	• Mirrors in gym	

Key	Item	Category	Example	Example Image
	Basketball hoops, net curtain and mini soccer goals	Remove (Orange)		
	All outdoor furniture	Remove and store (Pink) THE PREFERENCE IS TO RETAIN ALL OUTDOOR FUNRITURE IN SITU UNLESS REQUIRED FOR CONSTRUCTION		

Key	Item	Category	Example	Example Image
	All external bike racks	Pink (Remove and Store)		

APPENDIX C AHIMS EXTENSIVE SEARCH RESULT & SITE CARD FOR AHIMS #45-6-2010

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : sadasd

Client Service ID : 310712

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-2584	LC NPM 1	AGD	56	328710	6259000	Open site	Valid	Shell : -, Artefact : -	Midden	
	Contact	**Recorders**	Bobbie Oakley					**Permits**		
45-6-2232	Depression Cave;	AGD	56	329290	6259390	Closed site	Valid	Shell : -, Artefact : -	Shelter with Midden	
	Contact	**Recorders**	Michael Guider					**Permits**		
45-6-2233	LBG Creek 1;	AGD	56	329190	6259960	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	Michael Guider					**Permits**		
45-6-2234	LBG Creek 2;	AGD	56	329150	6259910	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	**Recorders**	Michael Guider					**Permits**		
45-6-2235	LBG Creek 3;	AGD	56	329130	6259860	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	Michael Guider					**Permits**		
45-6-2508	Delhi Road; RYDE 008	GDA	56	329264	6259300	Closed site	Valid	Artefact : -	Shelter with Deposit	102489
	Contact	**Recorders**	W Walker,Mr.David Crew,Aboriginal Heritage Office					**Permits**		
45-6-1558	Delhi Road;North Ryde; RYDE 009	GDA	56	329034	6258982	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	102489
	Contact	**Recorders**	Warren Bluff,Aboriginal Heritage Office					**Permits**		
45-6-2210	Blue Gum creek	AGD	56	329754	6259430	Closed site	Valid	Shell : -, Artefact : -	Shelter with Midden	1899
	Contact	**Recorders**	Ms.Bronwyn Conyers					**Permits**		
45-6-1353	Swaines Creek;Red Arrow Cave;	AGD	56	329500	6258400	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2047
	Contact	**Recorders**	Michael Guider					**Permits**		
45-6-1946	Blue Gum Creek;	AGD	56	329540	6259160	Open site	Valid	Artefact : -, Shell : -	Midden,Open Camp Site	
	Contact	**Recorders**	Michael Guider					**Permits**		
45-6-1633	Fullers Park Lane Cove River SRA	AGD	56	329745	6259174	Open site	Valid	Shell : -, Artefact : -	Midden	1899
	Contact	**Recorders**	ASRSYS					**Permits**		
45-6-2649	Lane Cove River PAD 1	AGD	56	329100	6259180	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Mr.Neville Baker					**Permits**	1470	
45-6-2661	Lane Cove PAD 1	AGD	56	329340	6259240	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	ERM Australia Pty Ltd- Sydney CBD					**Permits**	1689	

Report generated by AHIMS Web Service on 03/11/2017 for Karyn Virgin for the following area at Lot : 2, DP:DP1151638 with a Buffer of 1000 meters. Additional Info : due dil. Number of Aboriginal sites and Aboriginal objects found is 16

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : sadasd

Client Service ID : 310712

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-6-2911	Cocupara Shelter 1	GDA	56	329599	6260665	Closed site	Valid	Art (Pigment or Engraved) : 1		
	Contact	**Recorders**	Mr.Phil Hunt,Aboriginal Heritage Office					**Permits**		
45-6-3043	Little Blue Gum Shelter PAD 1 KUR 082	GDA	56	329434	6260370	Closed site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Aboriginal Heritage Office					**Permits**		
45-6-3336	Little Blue Gum Shelter PAD 2	GDA	56	329430	6260240	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Phil Hunt					**Permits**		

Report generated by AHIMS Web Service on 03/11/2017 for Karyn Virgin for the following area at Lot : 2, DP:DP1151638 with a Buffer of 1000 meters. Additional Info : due dil. Number of Aboriginal sites and Aboriginal objects found is 16

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : sadasd

Client Service ID : 364865

Karyn Virgin

75 York Street
Teralba New South Wales 2284

Attention: Karyn Virgin

Email: kvirgin@umwelt.com.au

Date: 17 August 2018

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 2, DP:DP1151638 with a Buffer of 1000 meters, conducted by Karyn Virgin on 17 August 2018.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

16	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

[✓] New recording [ ] Additional Info

National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 585 6444

Standard Site Recording Form Revised 5/88

45-6-2210

1:250,000 map sheet: SYDNEY NPWS Code

AMG Grid reference (Full reference - please include leading digits): 250K 329450 mE (25K); 250K 6259120 mN (5/6, 25K)

Scale of map used for grid reference (Please use largest scale available): [✓] 25K, 50K (preferred) [ ] 100K [ ] 250K

1:25K, 50K, 100K map name: PARRAMATTA RIVER

HEAD OFFICE USE ONLY:

NPWS Site no: 45-6-2210

Site types: 4

Accessioned by: AJ Date: 12-10-90

Data entered by: CM Date: 22.10.90

Owner/Manager: NPWS

Address:

Site name: BLUE GUM CK Locality/property name: LCRSRA

NPWS District: NORTH MET. Region: CENTRAL

Reason for investigation: SITE MANAGEMENT PLAN FOR TRUST + NPWS.

Portion no:

Parish:

Photos taken? TOO DARK

How many attached?

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. (Draw diagram on separate sheet.): EITHER WALK ACROSS THE PIPELINE BRIDGE OVER THE CREEK AND HEAD DOWNSTREAM ON THE NORTHERN BANK OR WALK FROM JUNCTION OF BLUE GUM CREEK/LADY GAME DRIVE TO THE EAST, AT THE 30/40m CONTOUR. SITE IS c400m FROM L.G.DRIVE, 20m NORTH OF THE CREEK.

Other sites in locality? NO Site Types include:

Are sites in NPWS Register?

Have artefacts been removed from site? ? When?

By whom? Deposited where?

Is site important to local Aborigines? YES.

Give contact(s) name(s) + address(es): WAYNE CARR (SITE OFFICER) FOR METRO. LALC.

Contacted for this recording?

(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report).

NPWS Report Catalogue #: C-1899

Checklist: surface visibility, damage/disturbance/ threat to site

Condition of site: POOR - GRAFFITIED WALLS. DEPOSIT DISTURBED BY ANIMALS, HUMANS + WATER FLOW, OUTSIDE THE DRIPLINE.

Recommendations for management & protection (attach separate sheet if necessary): LEAVE AS IS.

Site recorded by: B. Conyers Date: JULY 1990

Address/institution: NPWS

SITE POSITION & ENVIRONMENT

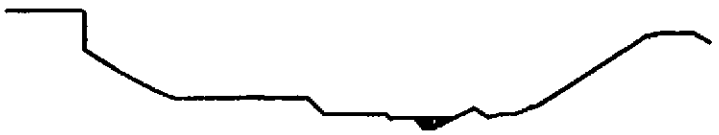
OFFICE USE ONLY: NPWS site no: 45-6-2210

1. Land form a. beach/hill slope/ridge top, etc:

b. site aspect: S

c. slope: 10° IN FRONT

d. mark on diagram provided *or* on your own sketch the position of the site:



e. Describe briefly:



f. Local rock type: Sandstone

g. Land use/effect: SRA - minor impact.

2. Distance from drinking water: ?

Source: Blue Gum Ck probably tidal/brackish

3. Resource Zone associated with site (estuarine, riverine, forest etc): Estuarine

4 Vegetation: NOWADAYS LANTANA WITH A BRACKEN UNDERSTORY

5. Edible plants noted: Bracken

6 Faunal resources (include shellfish).

7 Other exploitable resources (river pebbles, ochre, etc).

Site type:

Shelter Midden.

CHECKLIST TO HELP: length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.

DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.

ART: area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, patination.

BURIALS: number & condition of bone, position, age, sex, associated artefacts.

TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.

QUARRIES: rock type, debris, recognisable artefacts, percentage quarried.

OTHER SITES EG. structures (fish traps, stone arrangements, bora rings, mia mias), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

DESCRIPTION OF SITE & CONTENTS.

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.

Large overhang formed by caverous weathering in a 5 m. high cliffline. The shelter is c. 30m (l) x 4 m (deep) x 4 m (h). The floor is uneven with a lot of roof fall and depressions caused by animals, humans and water scour. Deposit is sandy and grey with a recent thin red layer of granular disintegration. The surface evidence is sparse and midden material only evident in the disturbed locations. Shell + bone present but no art or stone artifacts. Shelter walls are uneven and not really suitable for art, though it was very dark when the site was recorded. Deposit is 10cm deep in places. Rock oyster is c. 90% of the shell, the remainder being comprised of Anadara and giant whelk. The bone was not identified - it consisted of 2 small long bones and 1 jaw fragment, possibly from a small marsupial - this cannot be confirmed as being of Aboriginal origin: it may have been brought in by a predator.

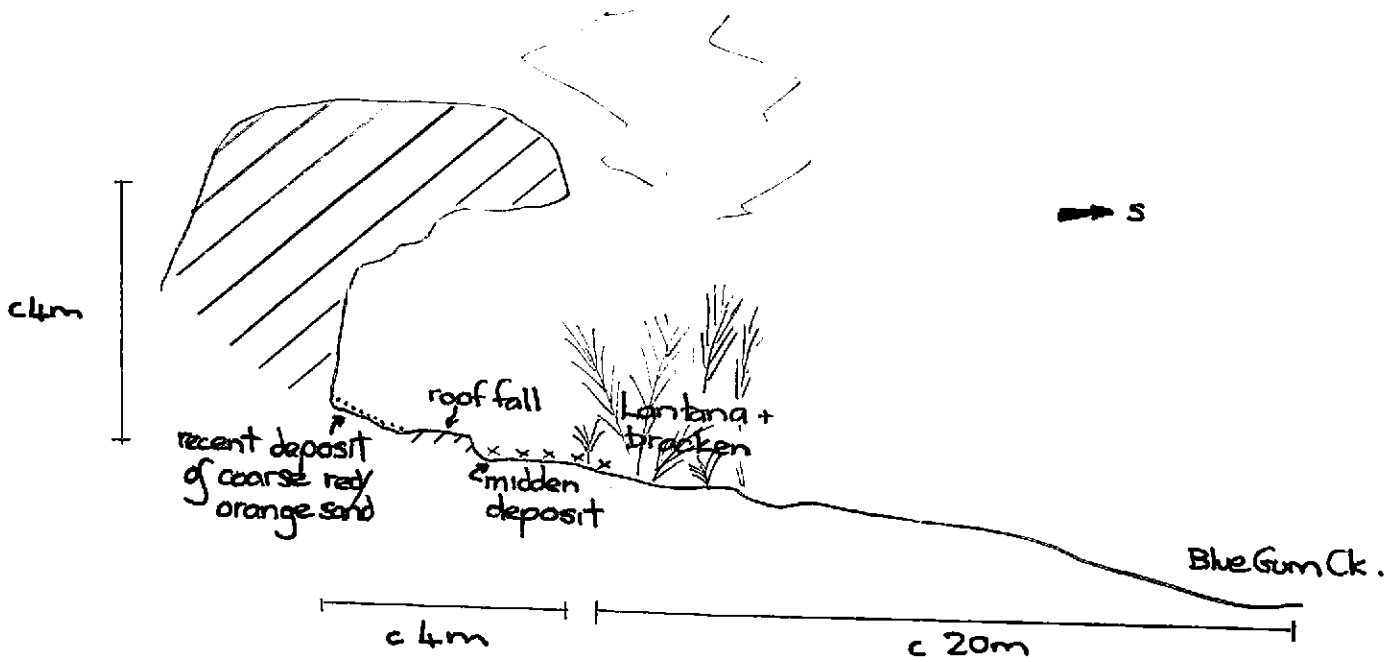
Attach sketches etc. eg. plan & section of shelter, show relation between site contents, indicate north, show scale.

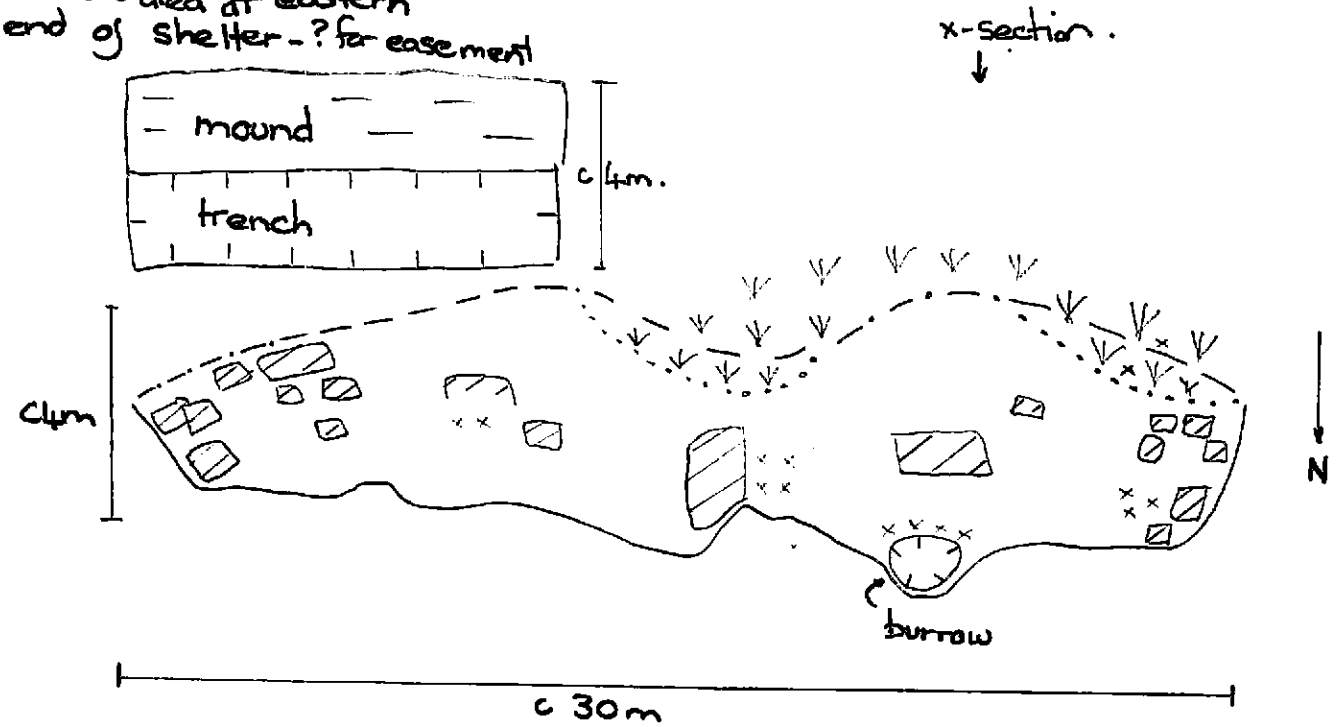
Attach annotated photos (stereo where useful) showing scale, particularly for art sites.

45-6-2210

Blue Gum Ck

x-section and plan (not to scale)





× ×× midden

— — max extent of overhang

· · · · dripline

——— junction of back wall and floor

▨ roof fall

Ψ bracken



AHO#	SITE_ID	Duplicate_T	SITE_NAME	ASRType1	discrepancy	GDAmE	GDAmN	Accuracy	Method
KUR-001	45-6-0342	45-6-0865	Asquith;	Engraving	590	325850	6269890	B1	GPS/GIS
KUR-002	45-6-0343		Grosvenor St;Wahr	Engraving	800	326400	6270080	C3	Estimate
KUR-005	45-6-0865	45-6-0342	Wahroonga;	Engraving	960	325850	6269900	B1	GPS/GIS
KUR-008	45-6-1487		Golf Links Track;HB	Grinding Gr	1800	325650	6271140	A3	Imperial
KUR-009	45-6-1488		HB-17;Cockle Ck;	Grinding Gr	600	325630	6268850	C3	Estimate
KUR-012	45-6-1888		CB.1.;	Shelter Art	270	327024	6269440	B1	GPS/GIS
KUR-027	45-6-0341		Pymble;Turramurra	Engraving	190	325839	6264120	B2	original card
KUR-028	45-6-0608		Lane Cove River;Tu	Grinding Gr	750	325351	6264430	B1	GPS/GIS
KUR-029	45-6-0928		Catalpa Crescent;T	Scarred Tree	380	326344	6265030	B2	GIS
KUR-030	45-6-2034		English house	Shelter Art	60	325480	6265070	B1	GPS/GIS
KUR-035	45-6-0980		Pennant Hills;Pymb	Shelter Art	430	326694	6264065	B1	GPS/GIS
KUR-043	45-6-1109		North Turramurra;S	Shelter Art	300	331504	6268375	B1	GPS/GIS
KUR-050	45-6-0978		Lane Cove River;	Grinding Gr	750	324504	6262690	D3	Estimate
KUR-051	45-6-1235		Epping	Engraving	1630	324644	6262720	B1	GPS/GIS
KUR-055	45-6-0611		Lane Cove River;W	Engraving	290	327715	6261925	B2	GIS
KUR-056	45-6-1053		Lane Cove River;	Engraving	500	326000	6262000	D3	Imperial
KUR-057	45-6-1054		Lane Cove;Man Go	Shelter Art	160	325690.5	6263590	B1	Survey
KUR-058	45-6-1893		KP.1.;	Shelter Dep	100	326239.4	6262975	B1	Survey
KUR-065	45-6-0882		Lane Cove River;Go	Not a Site	300	328134	6263010	B1	GPS/GIS
KUR-068	45-6-2213		DeBurghs Bridge;	Shelter Dep	100	327454	6261230	B1	GPS/GIS
KUR-081	45-6-2210		Blue Gum Ck	Shelter Mid	230	329754	6259430	B1	GPS/GIS
KUR-083	45-6-2911		Cocupara Shelter 1	Shelter Art	210	329599	6260665	A1	GIS
KUR-088	45-6-1078		Pymble;Tin Abrade	Shelter Art	1030	330834	6263930	B1	GPS/GIS
KUR-095	45-6-0883		Middle Harbour Cr	Shelter Mid	100	332726.8	6262834	B1	Survey
KUR-099	45-6-2115		MCW 6;East Lindfie	Engraving	90	332964	6262770	B1	GPS
KUR-100	45-6-2129		MCW 5;	Midden	260	333189	6262490	B1	GPS/GIS
KUR-104	45-6-0926		Echo Point Park;Ol	Shelter Art	640	333794	6261350	B1	GPS/GIS
KUR-106	45-6-1122		Biology Book Cave	Shelter Art	250	333265.4	6261835	B1	Survey
KUR-107	45-6-1123	45-6-2109	Lindfield;This Is The	Shelter Mid	600	333265	6261790	B1	GPS/GIS
KUR-108	45-6-1124		Lindfield	Shelter Mid	540	333554	6261750	B1	GPS/GIS
KUR-109	45-6-1125		Waterfall Cave; Lin	Shelter Mid	490	333450	6261670	B1	GPS/GIS
KUR-110	45-6-1126		Lindfield	Midden	880	333634	6261470	B1	GPS/GIS
KUR-111	45-6-1127		Lindfield;Collapsed	Shelter Art	760	333744	6261420	B1	GPS/GIS
KUR-113	45-6-2105		Paperbark cave;	Shelter Mid	120	333485	6261885	B1	GPS/GIS
KUR-114	45-6-2109	45-6-1123	Ormonde Rd cave;	Shelter Mid	200	333259.9	6261784	B1	Survey
KUR-115	45-6-2116		Babbage Rd. Cave;	Shelter Art	110	333484	6261350	B2	Estimate
KUR-116	45-6-2125		MHT 1;	Midden	60	333470	6261890	B1	GPS/GIS
KUR-117	45-6-2127		Gnat Orchid Cave;	Shelter Mid	140	333539	6261755	B1	GPS/GIS
KUR-118	45-6-2128		East Roseville;	Midden	140	333530	6261775	B1	GPS/GIS
KUR-120	45-6-2131		SSM 24418;	Midden	100	333259	6262035	B1	GPS/GIS
KUR-122	45-6-2133		MHT 3;	Shelter Mid	80	333274	6262020	B1	GPS/GIS
KUR-128	45-6-2410		east roseville;MHT	Midden	100	333385	6261995	B1	GPS/GIS
KUR-129	45-6-2502		Baths 2;	Shelter Mid	70	333854	6261320	B1	GPS/GIS
KUR-133	45-6-2150		Walled-up Midden;	Midden	4500	334000	6261080	B3	Estimate
KUR-135	45-6-2126		East Roseville	Midden	80	333564	6261740	B1	GPS/GIS

Aboriginal Heritage Office

Aboriginal Site Update

Date: 17 September 2015

AHO Site # KUR-081 **AHIMS Site #** 45-6-2210

UPDATE AHIMS Information in following:

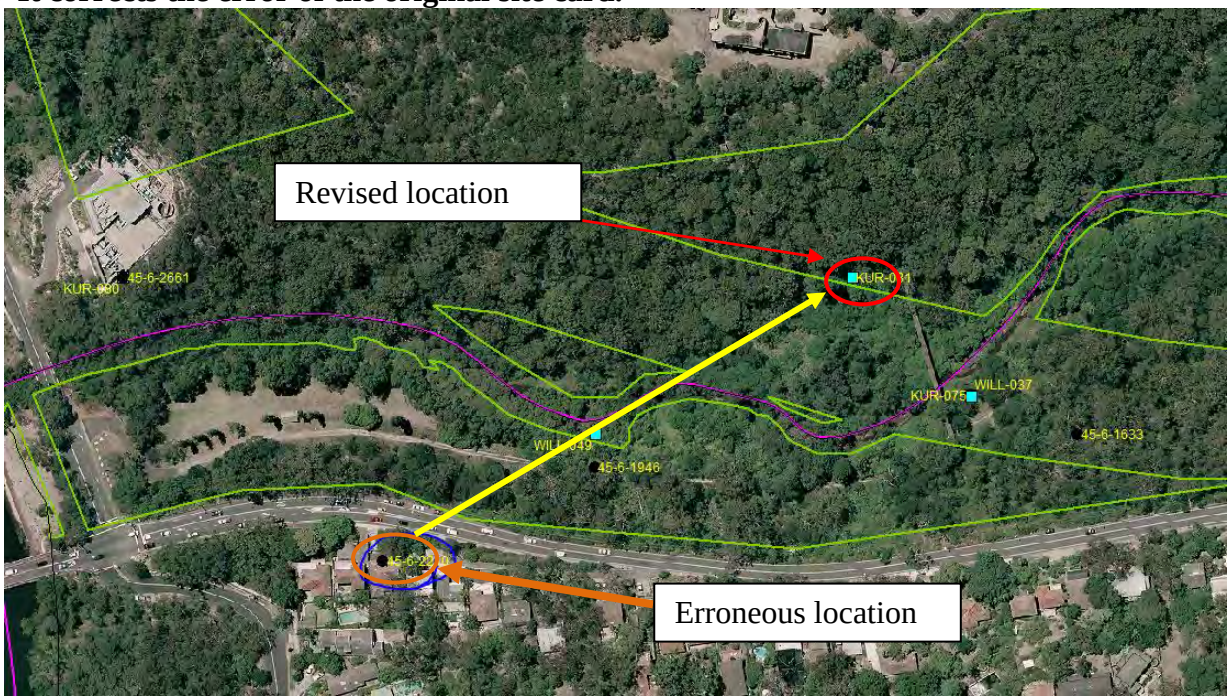
This site is incorrectly located. It should be

Location: Based on GPS and GIS check. Accuracy of new figures = 1 (good)

AMG 66								GDA 94							
							mE		3	**2**	**9**	7	5	4	mE
							mN		6	2	**5**	**9**	4	3	0 mN

Previous AMG: 329450 6259120. Accuracy of old figures is poor (230m error).

This location for the site has been revised using GPS & GIS checked coordinates to a more accurate location. It corrects the error of the original site card.



Area of site.

Phil Hunt

Aboriginal Heritage Office,
Ku-ring-gai, Lane Cove, Manly, North Sydney, Pittwater, Warringah, Willoughby and City of Ryde Councils
PO Box 12 North Sydney NSW 2059 Ph: 9936 8262 **aho@northsydney.nsw.gov.au**

Ku-ring-gai Council

ABORIGINAL HERITAGE SITE RE-RECORDING FORM
SITE: KUR 081

NPWS SITE NO: 45-6-2210 [National Park]
SITE NAME: Blue Gum Creek
SITE TYPE: Shelter Midden
DATE RE-RECORDED: **17/7/2012**

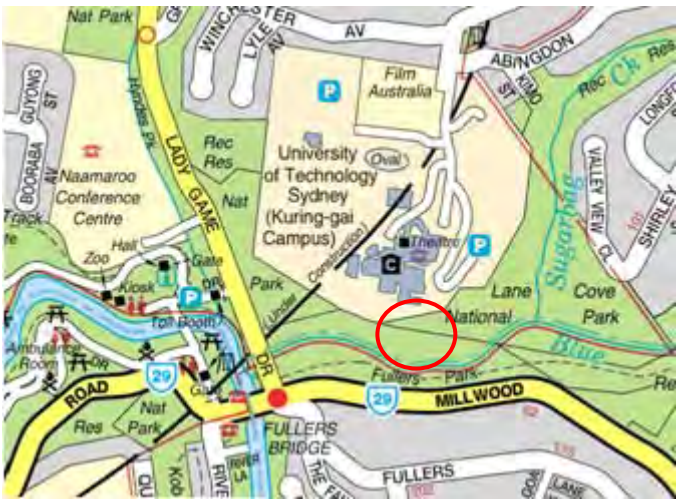
Grid Reference:
GDA recorded by GPS. GIS checked. Accuracy = 1 (good).
AHIMS AMG 329450 6259120. Incorrect.

AMG 66							
	3	**2**	**9**	6	5	0	mE
6	2	**5**	**9**	2	4	0	mN

GDA 94							
	3	**2**	**9**	7	5	4	mE
6	2	**5**	**9**	4	3	0	mN

LOCATION
Either walk across the pipeline bridge over the creek and head downstream on the northern bank [not possible] OR walk from the junction of Blue Gum Ck/Lady Game Drive to the east, at the 30-40m contour. Site is c400m [330m] from L.G.Drive, 20m [50m] north of the creek.

Map showing location of site.



DESCRIPTION:

Shelter 34m long, up to 5m deep and 4m high. Shelter faces south. The floor is uneven with lots of roof fall and depressions caused by humans, animals and water scour. Deposit sandy and grey 10cm deep with a recent thin red layer of granular disintegration. Little surface evidence except in disturbed areas. Midden 90% rock oyster, remainder Anadara and giant whelk. Bones seen – two long bones and jaw fragment – possibly from predator but no stone artefacts or art.



CONDITION

Aboriginal Heritage Office

Aboriginal Site Monitor

AHO Site # KUR-081 AHIMS Site # 45-6-2210

DATE	REASON	OFFICER/VOL	COMMENTS
	Eg track work, reg monitor etc	AHO officer, Council or volunteer	Brief comment, eg no change; new graffiti; etc
			National Park.
18/7/11	Review	Kiyomi Juillerat AHO	Adding scans from 1994 Margrit Koettig report.
29/6/2012	Monitor	Geoff Hunt, James Webb	Site possibly not in national park. Walked through the area but were unable to access site area from east due to lantana on scarp around pipeline crossing point. No track on north side of creek.

DATE	REASON	OFFICER/VOL	COMMENTS
17/7/2012	Monitor	Geoff Hunt, James Webb	
	Relocated site and completed section! No signs of human visitation (not easily accessible). Collapsed stone blocks near centre. Shell material located against back wall on Western side of collapsed rock material near alcove. Thick lantana in surrounding area. Relatively dry except for a few small drip lines. Wall of dirt roughly 1.5 m tall between shelter and creek. Large nail protruding from back wall on Western end of shelter. GDA: 329756mE, 6259430mN		
17/8/15	Review	Phil Hunt	Original NPWS card has incorrect
	coordinates by about 230m, which put the site on south side of creek and Millwood Ave. Use AHO GDA figures from 2012.		

MANAGEMENT ISSUES

PHOTOGRAPHS

2012: IMG_8744-8759



New clearance due to upgrade of sewer line above site area





8744 Views of eastern end of shelter 8751



8750 Western end of shelter



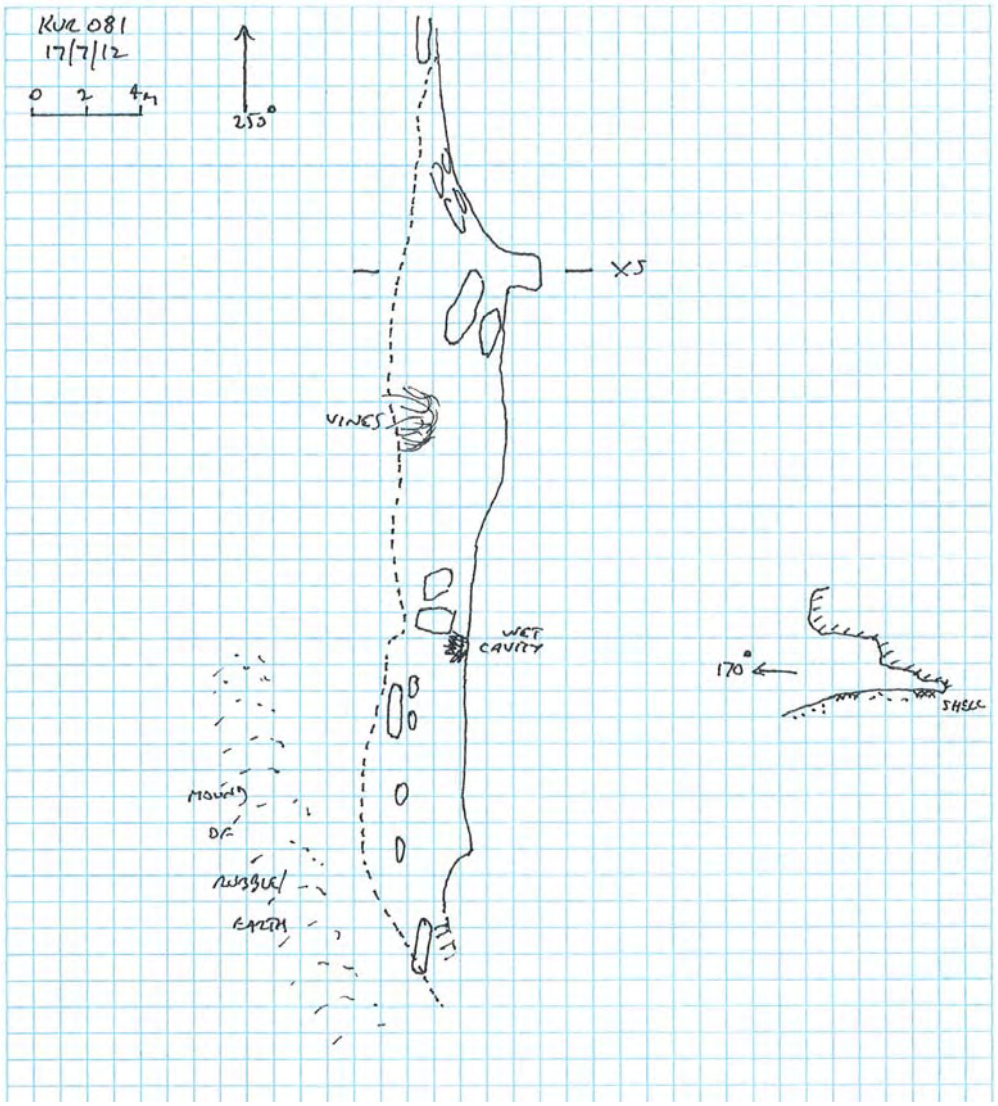
8745 Floor of shelter showing bird prints



8746 Floor of shelter



8757 Alcove in back wall with scattered shell



Plan and section of shelter

WILLBY #66.

[✓] New recording [ ] Additional Info

National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 585 6444

Standard Site Recording Form Revised 5/88

250,000 map sheet: SYDNEY NPWS Code

MG Grid reference (250K) 3 2 9 4 5 0 mE (25K) (250K) 6 2 5 9 1 2 0 mN (5/6) (25K)

ale of map used for grid reference [✓] 25K, 50K (preferred) [ ] 100K [ ] 250K

5K, 50K, 100K map name: PARRAMATTA RIVER

HEAD OFFICE USE ONLY:

NPWS Site no: 45-6-2210

Site types: 4

Accessioned by: AJ Date: 12-10-90

Data entered by: CM Date: 22.10.90

Owner/Manager: NPWS

Address:

name: BLUE GUM CK Locality/property name: LCRSRA

'S District: NORTH MET. Region: CENTRAL

on for investigation SITE MANAGEMENT PLAN FOR TRUST + NPWS.

on no:

n:

Photos taken? TOO DARK

How many attached?

o get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. diagram on separate sheet.) ACROSS THE PIPELINE BRIDGE OVER THE CREEK AND D DOWNSTREAM ON THE NORTHERN BANK OR WALK FROM JUNCTION OF E GUM CREEK/LADY GAME DRIVE TO THE EAST, AT THE 30/40m CONTOUR = IS c400m FROM L.G.DRIVE, 20m NORTH OF THE CREEK.

sites in locality? NO

es in NPWS Register? Site Types include:

artefacts been removed from site? ? When?

om? Deposited where?

important to local Aborigines? YES.

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ted for this recording?

additional information separately) If not, why not?

written reference sources (including full title of accompanying report). NPWS Report Catalogue #

C-1899

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Condition of site: POOR - GRAFFITIED WALLS. DEPOSIT DISTURBED BY ANIMALS, HUMANS + WATER FLOW, OUTSIDE THE DRIPLINE.

mendations for management & protection (attach separate sheet if necessary): LEAVE AS IS.

orded by: B. Conyers

/institution: NPWS

Date: JULY 1990

VIRONMENT

OFFICE USE ONLY: NPWS site no: 45-6-2210

beach / hill slope / ridge top, etc:

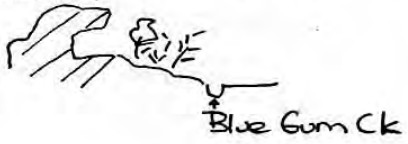
b. site aspect: S

c. slope: 10° IN FRONT

diagram provided *or* on your own sketch the position of the site:

e. Describe briefly:





Local rock type: Sandstone

g. Land use/effect: SRA - minor impact.

Distance from drinking water: ?

Source: Blue Gum Ck probably tidal/ brackish

Resource Zone associated with site (estuarine, riverine, forest etc): Estuarine

Vegetation: NOWADAYS LANTANA WITH A BRACKEN UNDERSTORY

Edible plants noted: Bracken

Faunal resources (include shellfish).

Other exploitable resources (river pebbles, ochre, etc).

e type

shelter
midden.

HECKLIST TO HELP
igth, width, depth,
ight of site, shelter,
posit, structure,
ment eg. tree scar,
oves in rock.

POSIT: colour,
cture, estimated
pth, stratigraphy,
ntents-shell, bone,
one, charcoal, density
distribution of these,
one types, artefact
pes.

T. area of surface
corated, motifs,
lours, wet, dry
gment, technique of
graving, no. of
ures, sizes,
tination.

JRIALS: number &
ndition of bone,
sition, age, sex,
sociated artefacts.

EES: number, alive,
ad, likely age, scar
ape, position, size,
tterns, axe marks,
growth.

JARRIES: rock type,
bris, recognisable
tefacts, percentage
arried.

THER SITES EG.
uctures (fish traps,

DESCRIPTION OF SITE & CONTENTS.

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.

Large overhang formed by caverous weathering in a 5 m. high cliffline. The shelter is c. 30m (l) x 4 m (deep) x 4 m (h). The floor is uneven with a lot of roof fall and depressions caused by animals, humans and water scour. Deposit is sandy and grey with a recent thin red layer of granular disintegration. The surface evidence is sparse and midden material only evident in the disturbed locations. Shell + bone present but no art or stone artifacts. Shelter walls are uneven and not really suitable for art, though it was very dark when the site was recorded. Deposit is 10cm deep in places. Rock oyster is c. 90% of the shell, the remainder being comprised of Anadara and giant whelk. The bone was not identified - it consisted of 2 small long bones and 1 jaw fragment, possibly from a small marsupial - this cannot be confirmed as being of Aboriginal origin: it may have been brought in by a predator.

KU-RING-GAI LGA:
ABORIGINAL SITES

NPWS NUMBER: 45-6-2210

SITE TYPE: Shelter/ Midden
SITE NAME: Blue Gum Creek

LOCALITY: West Lindfield

GRID REF: Parramatta River
1:25,000: 329450.6259120

LAND STATUS: National Park: Lane Cove
PROPERTY: LOT DP

DESCRIPTION: This large shelter is approximately 20m north of the creek. The apparently small midden has been disturbed by animals (possibly humans), erosion and construction of a water main. The site was recorded by Conyers in 1990 as part of a survey of the Lane Cove NP. She assessed the site as having limited research value because of the degree of disturbance.

CONDITION: Disturbed.

TYPE OF EUROPEAN IMPACT: Digging, camping?, graffiti.

CURRENT CONSERVATION MEASURES: None

RECOMMENDATIONS: Conyers recommended that no action was required at this time. If future development or increased access was proposed for the site then additional assessment would be required.

APPENDIX D CORRESPONDENCE RECEIVED FROM THE METROPOLITAN LALC

From: Karyn Virgin
Sent: Wednesday, 29 August 2018 3:13 PM
To: Karyn Virgin
Subject: FW: Lindfield Learning Village SSD 8114 - OEH comments on Aboriginal archaeology and cultural heritage

From: Nathan Moran [mailto:nmoran@metrolalc.org.au]
Sent: Wednesday, 29 August 2018 7:32 AM
To: aroff@urbis.com.au; Karyn Virgin
Cc: Cultural Heritage
Subject: Re: Lindfield Learning Village SSD 8114 - OEH comments on Aboriginal archaeology and cultural heritage

Hi Allan & Karyn,

My apologies for typo as meant to read:

- MLALC acknowledges Gameragal aka Cameragal of the Eora Naon as tr adional owners of Lindfield being the site of the proposed development.

Look forward to speaking soon.

Yours In Unity
Nathan Moran
Chief Execuv e Officer
Metropolitan Local Aboriginal Land Council (MLALC)
36-38 George St, Redfern NSW 2016 I PO Box 1103, Strawberry Hills NSW 2012
B:(02) 8394 9666 I F: (02)8394 9733 I W: www.metrolalc.org.au

---

From: Nathan Moran
Sent: Wednesday, 29 August 2018 7:30 AM
To: aroff@urbis.com.au; [redacted]
Cc: Cultural Heritage
Subject: Re: Lindfield Learning Village SSD 8114 - OEH comments on Aboriginal archaeology and cultural heritage

Hi Allan & Karyn,

On behalf of Metropolitan Local Aboriginal Land Council (MLALC) I provide the following comments on Aboriginal archaeology and cultural heritage regarding the proposed Lindfield Learning Village SSD 8114:

- Metropolitan LALC is the legislated authority for protecon & pr eservaon of Aboriginal Cultur e & Heritage for the area of this proposed development and greatly appreciates being engaged for this proposal. MLALC representav e for this project is Selina Timothy MLALC Culture Heritage Officer

- MLALC requests to be included for supervision of any site works disturbing soil below 1metre to ensure any when any original soils are disturbed that may contain Gameragal Culture Heritage is potenally dis turbed.

- MLALC request to be informed and advised of any Cultural Heritage material recovered and or unearthed during the development immediately.

- MLALC acknowledges Gameragal aka Cameral of the Eora Naon as tr adional owners of Lindfield being the site of the proposed development.

- MLALC affirms that Guringai is actually the 1st Naons of the Barring ton Tops area. And notes that Guringai has been misappropriated by Non 1st Naons people as Tradional o wners of the North Shore & Northern area of Sydney as it is known today. MLALC acknowledges Penal colony records a esng tha t Newcastle and Port Stephens 1st Naons people and or Aboriginal people w ere in Sydney's Domain and or Government house area in 1828 and more than likely is the cause of the misapprehension and wrongful applicaon of the Guring ai being Tradional o wners of the Northern Sydney Metropolitan area. A ached is paper Filling the Void, by Aboriginal Heritage Office, to assist informing the misuse of Guringai as Tradional o wners in Sydney

- Dharug is a creaon of Non Aboriginal R H Ma thews in 1905 as a untrained anthropologist whom created the word Dharug without any reference of Aboriginal & or 1st Naons in formants or sources. MLALC notes this is promoted by Macquarie University academics without any consolaon and or authority of Metropolitan LALC as the legislated authority for protecon & pr eservaon of Aboriginal Culture & Heritage for the area of this proposed development.

- MLALC notes that the Colony records a est that the Gameragal people resisted Colonisaon of subject area for approximately 20 years unl being f orced by military and milias out of the ar ea.

And should you need and or require any addional in formaon please advise.

Yours In Unity
Nathan Moran
Chief Execuv e Officer
Metropolitan Local Aboriginal Land Council (MLALC)
36-38 George St, Redfern NSW 2016 I PO Box 1103, Strawberry Hills NSW 2012
B:(02) 8394 9666 I F: (02)8394 9733 I W: www.metrolalc.org.au

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From: Cultural Heritage
Sent: Tuesday, 28 August 2018 4:04 PM
To: Nathan Moran
Subject: FW: Lindfield Learning Village SSD 8114 - OEH comments on Aboriginal archaeology and cultural heritage

Good a. ernoon Nathan I am needing assistance on this one a Due Diligence report has been requested could you please have a read over important highlighted bits and let me know what I need to do.
Thanks

Kind Regards

Selina Timothy
Culture and Heritage Officer
Metropolitan Local Aboriginal Land Council (MLALC)
36-38 George St, Redfern NSW 2016 I PO Box 1103, Strawberry Hills NSW 2012
B:(02) 8394 9666 I F: (02)8394 9733 I W: www.metrolalc.org.au

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From: Alaine Roff [mailto:aroff@urbis.com.au]
Sent: Friday, 24 August 2018 2:19 PM
To: culturalheritage@metrolalc.org.au

Cc: metrolalc@metrolalc.org.au; officeadmin@metrolalc.org.au; Karyn Virgin
Subject: FW: Lindfield Learning Village SSD 8114 - OEH comments on Aboriginal archaeology and cultural heritage

Dear Selina,

As per earlier correspondence, please see the attached revised ACHAR for the proposed Lindfield Learning Village (under SSD 8114) for the review and comment of the Metropolitan LALC. Your office advised that we should send a copy directly to your inbox.

The Department of Education are required to submit the assessment by COB today as part of their deliverables package. We absolutely acknowledge and appreciate that this is a very short turnaround for your review and comment; however we are hoping that you might be able to get back to us today with any written or verbal comments regarding the attached document.

Please don't hesitate to contact Karyn Virgin on 0402284070 to discuss the above, and we appreciate any assistance you can provide us with in closing this out today.

Regards

ALAINE ROFF
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APPENDIX E JOURNAL ARTICLES



The William Balmain Teachers College

Source: Constructional Review, November 1971, pp52-53



Approach to the Stage 1 main entrance is past a board marked insitu concrete wall devoid of openings and sculptured to express the functions of the library block it contains. The southern and eastern facades of this library have large areas of glass taking advantage of the views available from the high site. These glass walls have large pressed "burnished" panels suspended from the roof and intermediate floor slabs to protect the interiors and modulate the facade.

The library overlooks roof gardens and a courtyard opening onto the temporary cafeteria in the Arts and Crafts block.

55 Constructional Review November 1971

Constructional Review November 1971

The William Balmain Teachers College

Source: Constructional Review, November 1971, pp55-55

The William Balmain Teachers College

Source: Constructional Review, November 1971, pp56-57

58 Constructional Review November 1971

Unfortunately there is some evidence of insufficient control of concrete placement and lack of care in supervision of formwork. Whereas this is understandable in a building of this magnitude and complication it does mar the final impression.

The recent publication of the Formwork Code Australian Standard CA 73 Part 1 — 1971 should help designers and supervisors in future to overcome these problems.

Photos: Staff Photographers

58 Constructional Review November 1971

The William Balmain Teachers College

Source: Constructional Review, November 1971, pp58-59

NSW Awards 1978: Kuring-gai College of Advanced Education

NSW Awards 1978: Kuring-gai College of Advanced Education

Landmark Site Under Threat

Ku-ring-gai College of Advanced Education, Lindfield
David Turner, project architect for NSW Government Architect
JW Turner and Bruce Mackenzie, Landscape Architect

The authors and admirers of Ku-ring-gai College tell the story of the shaping of this campus and why it is significant.

Jacqueline Urford, Chair, NSW RAIA Heritage Committee

The campus of Ku-ring-gai College is well known and highly regarded for possessing a unified and holistic approach to the way buildings, connections and natural landscape can coexist. It is this winning example of an educational facility in the Sydney School idiom in New South Wales.

Ever since Abigail commended and bestowed the Sulman Award for Public Architecture in 1969 for the Ku-ring-gai College of Advanced Education in Eastwood, the Macquarie University in nearby North, Curtin University in WA and Griffith University in Queensland, it was recognised for its significant contribution as being given a Merit award by the Royal NSW Chapter for Commercial and Public Buildings in 1973 and the Sulman award in 1974.

The jury for the Sulman award wrote the following citation: "The building capitalises on its location with views, vistas, light shafts, and roof decks. It is here that the detailed consideration of landscape design makes most significant contribution to its success. Choice of materials and integration of services have been carried out with great care so that maintenance is minimised. Colour is introduced in modulated and limited detail by nature are minimised. The use of colours complementary and simplicities the quality of the beautifully executed and studied spaces within which..."

The Ku-ring-gai College of Advanced Education in Chat Room, Lindfield is on the RAIA's Register of 20th Century Buildings of Significance. It has been brought to the attention of the NSW RAIA Heritage Committee that the significant campus is under threat.





David Turner, project and design architect of the NSW Government Architect's Office under JW Thomson

As it was a magnificent area of natural bushland, the exercise was to consider the buildings and facilities as much as possible for preservation of the environment and continue the use of native plants throughout the buildings included courtyards and roof. Although some clearance for lighting purposes was made to the south, the concept was to insert the buildings into the native landscape and make it appear intact in a quarter, as it did in 1966. The landscape design was in the influence of Frank Lloyd Wright, and Ian Walter Burley Griffin and Marion Mahony Griffin, in the desire to preserve and enhance the existing landscape – and this was admirably achieved by Allan Cheney and Bruce Mackenzie. The other consultants were architect Hill Village with internal circulation, and a building that was energy efficient (only the library TV studios and assembly hall were air-conditioned) with external sun breakers and access to the surroundings.

The Sulman medal jury's citation commends "a visually strong and dramatic structure. The building is the first to come to grips successfully with the essence of a college as a close collection of buildings and students – a social entity..."

The design of the college started in 1967 and later that year documentation started with the involvement of architects Allan, Jack + Cotter with Taylor, Thomsen Whiting – structural engineers. The construction of Stage 1 started in 1968, was occupied in 1971 as William Edmund Teachers College while Stage 2 started, with completion in 1972. In 1974, it became Ku-ring-gai College of Advanced Education.

1 Plan, NSW Government Architect's Office
2 Photograph by Max Dupain
3 Interior circulation spine, photograph by Max Dupain
4 Entry, photograph by Max Dupain
5 Bush path, photograph by Bruce Mackenzie





was involved in the design and the commission until I left the Government Architect's Office in 1973, and in 1974 was given the task of completing the design and supervising Stage 3, the gymnasia and teaching pieces for the Government Architect's Office. In 1975, the college appointed me an architect to work in close co-operation with their own in-house architect, Owen Lees, and commissions followed. These included Stage 4 – further lecture rooms and offices in 1977, dining terraces, in 1984, Stage 5— more lecture rooms and offices; and in 1985, childcare facilities, as well as a number of internal alterations over the years.

In 1988, Ku-ring-gai was amalgamated with UTS, and after this I was given some design and documentation for alteration work carried out by their own architect's office, and they called out other minor works without my involvement.

Bruce Mackenzie, landscape architect, UTS Ku-ring-gai Campus

The design signalled a major victory for the values of Australian indigenous landscape principles. These principles were to grow in stature and impact during the years to follow. Very little in the way of plant materials was existing into the finished work in close proximity to the buildings and all the buildings, constructed in stages, appeared as though they had been gently lowered into place with the landscape of plants and rock intensively hand-dug into the very walls and windows of the construction.

Site surveys by my office clearly delineated the major elements of features of the site. This enabled us to produce a composite map of the proposed buildings and their surroundings demonstrating their impact and potential conservation opportunities. We were dealing with a significant example of remnant nature surviving intact on this land at East Lindfield overlooking the Lane Cove River valley.

Right from opening day the building and landscape were intimately integrated. This was achieved through a rigorous planning and construction program with access controls incorporated into the contract. Builders' access and storage areas were determined and fenced off, preventing trucking of bulkhead. Other areas were closed prior to tenderers arriving on site. This technique had been devised and implemented successfully some years earlier when I was responsible for the landscape of the Point Piper exhibition homes village, working with architects Anchor Mortlock Murray & Woolley.

Ian de Vulder, Deputy Mayor, Ku-ring-gai Council, extract from his recent address to Council

"My Mayor, I often, over many years, was from a distance through trees into or this building partied amongst them, but never bothered to drive to the bottom of Eton Rd to examine it more closely. It wasn't until the Royal Australian Institute of Architects instructed the magistrates property on their 'Register of 20th Century Buildings', that I made the effort and went on site. I warned to see what it was that made it so special as to receive the Sulman Award in 1974, and why so many architects, heritage and non-heritage, as well as historians consider it so special. I understand that the Society of Architectural Historians of Australia and New Zealand recently held a tour of the site as part of their conference.

You will notice that I always refer to "the site" rather than "the building" and there is good reason for that. It is the integration of the natural landscape and the building that makes it so unique. The era of English lawns and rose gardens was gone and being replaced by the native Australian bush setting. This was very much part of the Sydney School philosophy. Although generally used in domestic scale housing... it ...significance of it to be maintained for future generations, then it is necessary to maintain the integrity of what made it so special as to receive the Sulman Award, and that is the preservation of the site in its entirety... I believe that Ku-ring-gai is very fortunate to have such a fine example of award-winning architecture, where the principles of the Sydney School were extended into the public building sphere."

Council moved that the UTS Lindfield site be included as a heritage item in their Local Environment Plan and that a nomination for the NSW State Heritage Register be prepared.

Peter Mould, Deputy Government Architect

Ku-ring-gai College is one of the iconic buildings of the 1970s. The feeling of a campus was created by the combination of the internal street and the related series of courtyards. It is a remarkable building to walk through, but even more remarkable in its delicate use of a large civic building sitting so comfortably in its bush setting. The resolution of the massing successfully broken down the bulk of the building so that it reads on the ridge as an extension of the rocky outcrop on which it sits. This college set the agenda for a series of buildings that followed both in the organisational framework and the use of materials.

The Heritage Committee is currently working with the NSW Heritage Office in nominations for the State Heritage Register of Sydney Architecture Bulletin.

1970s

KUR-RING-GAI COLLEGE OF ADVANCED EDUCATION, LINDFIELD

David Turner, Project Architect for the NSW Government Architect
JW Turner, and Bruce Mackenzie, Landscape Architect





Graham Jahn – "A masterful bushland citadel transforming the brick based Sydney School ethic into sculptural off-form concrete over five cascading levels. The relationship to the bushland setting which surrounded it, the powerful circulation spine off which everything hung, and the sheer quality of design illustrated the NSW Government Architect's Office at its most potent."

James Weirick – "Kur-ring-gai College stands as the most positive commitment to the ideals of comprehensive public education in NSW. Conceived at the height of the modernisation of high school education, the complex was developed as the environment which would nurture and empower the future high school teachers of our state. The protection and enhancement of the bushland setting under the guidance of landscape architect Bruce Mackenzie creates a subtle aesthetic foil and ecological setting for the human scaled monumentality of this integrated complex."

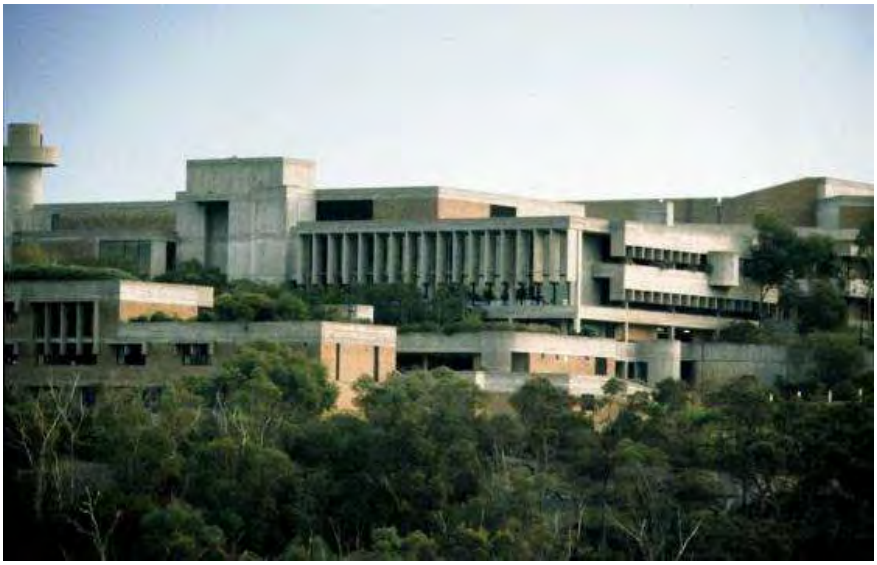
Bulletin Anniversary: 1970s; Kur-ring-gai College of Advanced Education, Lindfield

Source: Architecture Bulletin, Vol 6 No 4, p12

APPENDIX F HISTORIC PHOTOGRAPHS

F.1 UTS ARCHIVE PHOTOGRAPHS

Kuring-gai College, circa 1975.



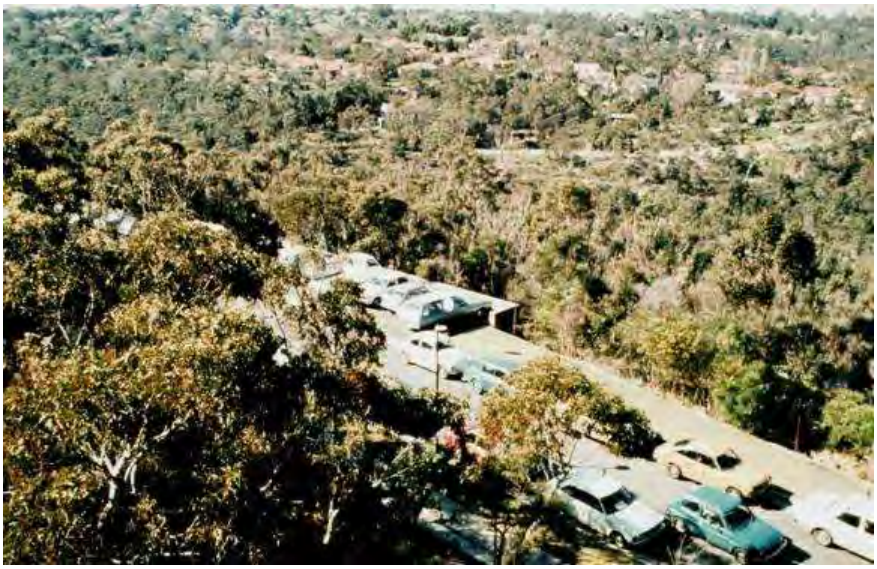
Entrance to internal carpark under construction, Stage 1.



North end of Stage 2 under construction looking from site of gymnasium, link bridge later joined to left of picture, c.1972.



Access road and parking, c.1975.



Main entrance to Stage 2 building, c.1975.



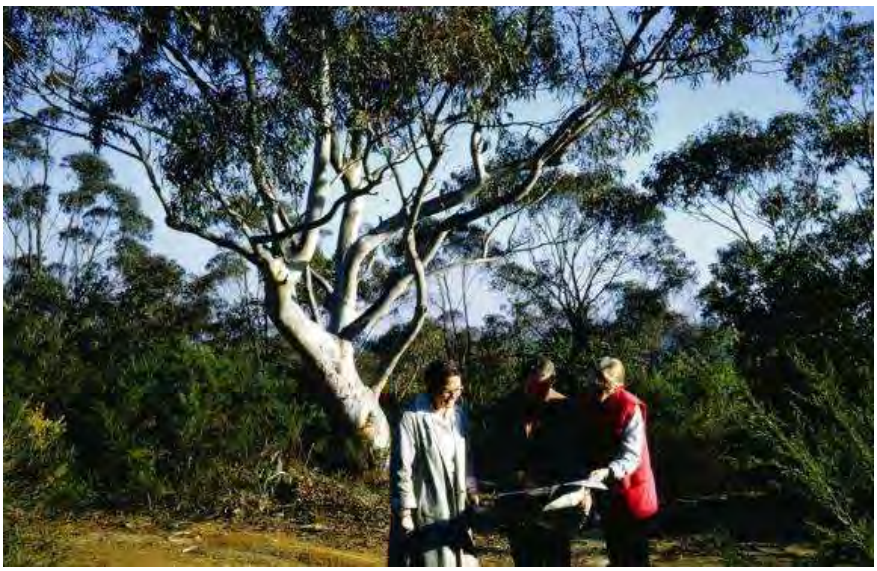
Excavation works for Access road, during Stage 1 construction.



Method of waffle-pan slab construction, Stage 1.



Inspection of site prior to construction, c.1968.



Aftermath of Bushfire before construction commenced in 1968.



Sulman Medal, 1978.



Unveiling of the Sulman Medal, 1978.



Greenhalgh Auditorium, c.1975.

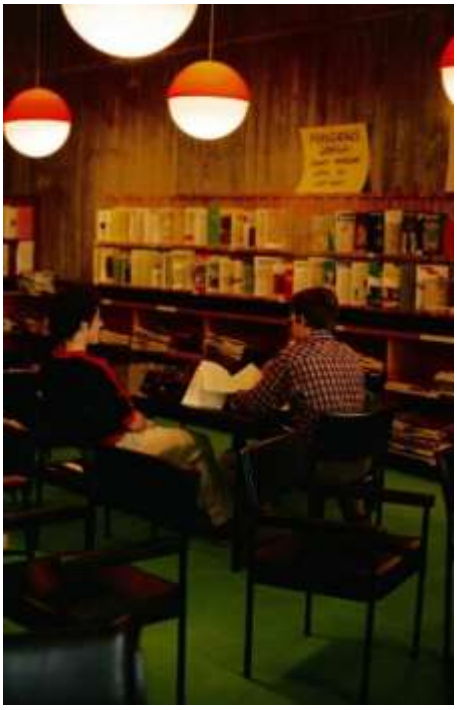


Astronomy tower, Stage 1, c.1971.



Astronomy Tower, Stage 1 (left); and Library, c.1970s (right)





Looking north from the top of Stage 2 building, c.1972.



Access road into Kuring-gai College of Advanced Education c.1970s.



Aerial View of Kuring-gai College of Advanced Education, c.1977.



Congestion at Kuring-gai College, c.1975.



View over escarpment at Lindfield Site, c. late 1970s.



Dignitaries at Kuring-gai College, c. late 1970s.



Internal and outdoor space intermingles at Kuring-gai College of Advanced Education, c. late 1970s.



The William Balmain Teachers College buildings have minimal encroachment on surrounding sandstone outcrops, c.1970s.



Dense native planting near entrance to Stage 2 building, c.1970s.



Construction of the William Balmain Teachers College Stage 1, and site preparation for Stage 2 illustrating retention of existing vegetation.



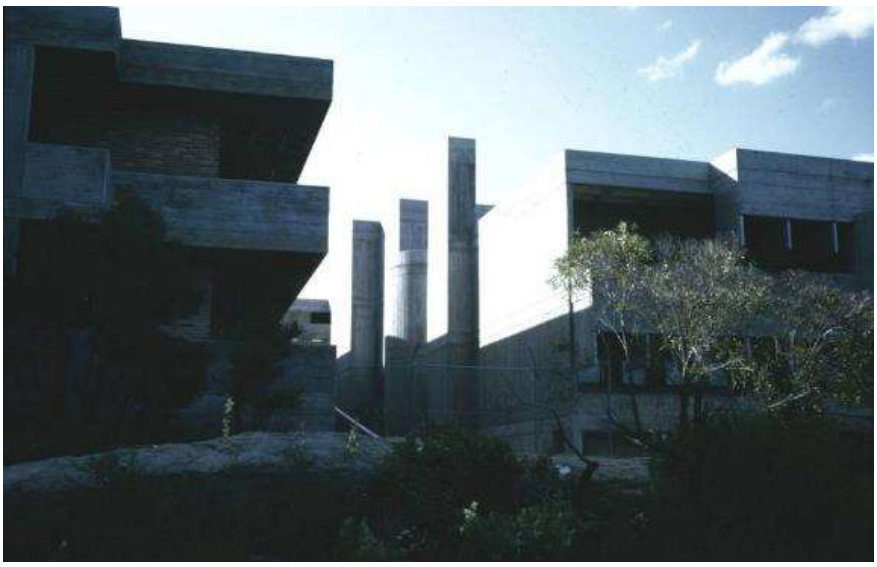
Excavation works for access road, c.early 1970s.



Entry to internal car parking area, early 1970s.



Library and Stage 2 building, east side, c.1975.



William Balmain Teachers College under construction in the background, c.1970s.



New car park, 1984.



Protestors, 1985.



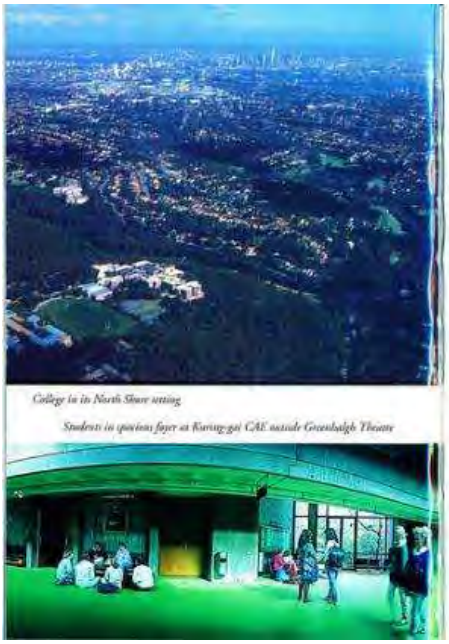
Protestors, 1985.



Gymnasium building, circa 1975.



Images from “To Enlighten Them Our Tasl” by Cliff Turney and Judy Taylor, 1996



College harmonises with bushland setting

Main entrance of Kuring-gai CAE after completion of Stage 2



Students relax in expansive grounds at Kuring-gai CAE



College in its North Shore setting

Students in spacious foyer at Kuring-gai CAE outside Greenhalgh Theatre

Images from “To Enlighten Them Our Tasl” by Cliff Turney and Judy Taylor, 1996



First busload of students arrives at William Balmain College, Lindfield

Imposing bulk of the new William Balmain College, Lindfield



Kuring-gai College surrounds, August 1987



Stage Five, pre-landscape, August 1987



Stage Five, pre-landscape, August 1987



Stage Five, pre-landscape, August 1987



Stage Five, pre-landscape, August 1987 (left) and Stage Five, pre-landscape, August 1987 (right)





View towards tennis courts, March 1986



Construction works, Stage Three, May 1986



Roof works, Stage Three, May 1986



Construction works Stage Three, 1986



Construction works, Stage Three, 1986



Construction works, Stage Three, 1986





Construction works, Stage Three, 1986





Construction works, Stage Three, 1986





Construction works, Stage Three, 1986



Construction works, Stage Three, 1986



Construction works, Stage Three, 1986



Construction works, Stage Three, 1986



Construction works, Stage Three, 1986





Construction works, Stage Three, 1986



F.2 MAX DUPAIN PHOTOGRAPHS

Main entry to Stage 2 building, undated.



Looking towards the library from south east corner of site, undated.



Detail of off-board concrete circular stair-well.



North elevation of library, Stage 1, undated.



East elevation of library.



Stage 2 building in close proximity to natural rock outcrops and vegetation.



Looking towards the College from the south east, undated.



South elevation of Stage 1 and detail of circular stairwell, undated.



Central circulation space, Stage 2 building, undated.



South elevation of Stage 1 building, undated.



Aerial photograph of completed Stages 1 to 3, undated.



Interior of Greenhalgh Auditorium, undated.



Internal circulation space, Stage 2, undated.



Aerial view of College during Stage 2 construction.



Interior of Kuring-gai College of Advanced Education, 18 June 1976.



F.3 STATE LIBRARY OF NEW SOUTH WALES PHOTOGRAPHS

Stage One, William Balmain Teachers College, April 1971	
Stage One, William Balmain Teachers College, April 1971	
Stage One, William Balmain Teachers College, April 1971	
Observatory Tower, Stage One, William Balmain Teachers College, April 1971	

Stage One, William Balmain Teachers College, April 1971	
Stage One, William Balmain Teachers College, April 1971	
Stage One, William Balmain Teachers College, April 1971	
Outdoor terrace, Stage One, William Balmain Teachers College, April 1971	

Stage One, William Balmain Teachers College, April 1971	
Stage One, William Balmain Teachers College, April 1971	
Kuring-gai College of Advanced Education, 26 November 1975 by Jack Hickson	
Office area, Kuring-gai College of Advanced Education, 26 November 1975 by jack Hickson	

Office area, Kuring-gai College of Advanced Education, 26 November 1975 by Jack Hickson	
Office area, Kuring-gai College of Advanced Education, 26 November 1975 by Jack Hickson	
[Vice-Chancellor's Office?], Kuring-gai College of Advanced Education, 26 November 1975 by Jack Hickson	
Inside Kuring-gai College of Advanced Education gymnasium, 18 June 1976	

Inside Kuring-gai College of Advanced Education gymnasium, 18 June 1976	
Kuring-gai College of Advanced Education gymnasium, 18 June 1976	
Kuring-gai College of Advanced Education gymnasium, 18 June 1976	