REQUEST FOR SECRETARY'S ENVIRONMETNAL ASSESSMENT REQUIREMENTS

PROPOSED BIORESOURCES FACILITY
UNIVERSITY DRIVE, CALLAGHAN

Lot 1 DP 1188100

Prepared on behalf of:
THE UNIVERSITY OF NEWCASTLE

Prepared for Submission to:
PLANNING & ENVIRONMENT

Prepared by:

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NOVEMBER 2017

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Prepared by:	Reviewed by:	Released by:
Name: Mark Maund **Position**: Principal Planner	**Name**: Fiona Wade **Position**: Senior Town Planner	**Name**: Mark Maund **Position**: Principal Planner **Signed**: **Date**: 28 November 2017

1. INTRODUCTION

1.1 Introduction

This Request for Secretary's Environmental Assessment Requirements (SEARs) has been prepared on behalf of the University of Newcastle (UON) to accompany a development application (DA) for a Bioresources Facility at University Drive, Callaghan (Lot 1 DP 1188100) (the site). The document is a request for the Department of Planning & Environment to issue SEARs for proposed State Significant Development. Location of the site is provided in Appendix 1 and 2.

The capital investment value for the proposed development is approximately $31.774 million and as such is identified as State significant development under Clause 15 of Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011 and Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2 Request for SEARs

In accordance with Clause 3 of Schedule 2 of the Environmental Planning and Assessment Regulation on behalf of the University of Newcastle we request Department of Planning & Environment issue SEARs for the proposed State Significant Development. The SEARs will be used to assist with the preparation an environmental impact statement (EIS) as required under Section 78A (8) of the EP&A Act.

1.3 Project Overview

This document provides and overview of the site and proposed development and establishes the statutory context for the application. The DA relates to construction of new buildings including:

- Environmental works including erosion sediment control
- Earthworks and drainage
- Two storey Bioresources Facility for research and education
- Associated works such as retaining walls, landscaping etc.

The request for SEARs outlines potential environmental impacts of the proposed development and how these will be considered and assessed. Construction is planned to be staged over two years.

1.4 Consultation

A consultation meeting will be held with Newcastle City Council during preparation of the Environmental Impact Statement (EIS). The UON has developed a strong working relationship with Council and will continue to maintain this relationship. Comments from Newcastle City Council will be considered during preparation of the building design and EIS.

2. PROPOSED DEVELOPMENT

2.1 Existing Development

The property contains four glass houses, one shade house and a general purpose building utilised by the UON for research and education. The buildings are currently being removed as part of another project considered under separate approval.

Photo 1 – Existing Glass Houses (looking southeast)

2.2 Project Need

The UON is a world leader in biomedical and biological research. It hosts internationally renowned research programs in reproductive biology, asthma and respiratory health, stroke, neurobiology and neuro-immunology. Areas of emerging research strength and capability include oncology and developmental biology, gastrointestinal and cardiovascular health, behavioural sciences and the neurophysiology of addiction. Fundamental to the success of these research areas is their reliance on sophisticated animal models which enable the discovery and investigation of the molecular mechanisms underlying human health and disease.

The Bioresources Facility will provide a versatile technology platform serving the interface of biological science and pre-clinical medicine and will form a key requirement to support the UON's current biomedical research capacity. The Bioresources Facility will provide technical and functional capability beyond that of existing facilities, in response to emerging trends in biomedical research and allow the University to provide spaces of the highest standard to support best practice husbandry, care and wellbeing for those animals involved in research.

By fostering collaboration and expansion into new technologies, the facility will deliver high-quality Higher Degree by Research and research outcomes in the biomedical STEMM disciplines, facilitate attraction and retention of research talent, provide commercialisation opportunities and support greater industry engagement. The design will feature a multi-purpose space and modular technologies that can respond rapidly to changing needs and new opportunities presented by emerging technologies.

2.3 Proposed Development

The proposed development is construction and operation of a Bioresrouces Facility. The building will have a floor area of approximately 3,500m^2 and will be approximately 9.5 metres high. The building has been designed with consideration to site topography and the location within the University.

The site survey in Appendix 4 identifies buildings on the site to be removed as part of a separate project, further consideration of the design will determine the number of trees to be removed and potential impact on existing car parking.

The proposed facility will be a cross-faculty collaboration between Research & Innovation Division, Faculty of Science and Faculty of Health & Medicine and be a foundational piece of research infrastructure for the University. Located within the existing Life and Medical Sciences precinct, it will be designed to integrate within the new STEM+M precinct to align with the Universities NeW Future Strategic Plan 2016-2025 (NeW Futures).

It will substitute a portion of the existing animal facilities at the University's Callaghan Campus by providing technical and functional capabilities that address the limitations associated with existing facilities and the reliance on outsourced animal breeding. It is a key requirement to support the University of Newcastle (UON) current biomedical research activities and to cater for future capability in response to emerging trends in biomedical research.

The Facility will provide:

- access to new technologies
- support in the delivery of high-quality research in the biomedical STEM+M disciplines
- high quality research capability
- increased opportunities to collaborate with industry partners .
- an important interface for biological science and pre-clinical medicine

The Bioresources Facility will comprise of the following attributes:

1. PC2 Standard Animal Holding and Procedure Spaces.
2. Research & Breeding Animal Facilities to house up to 4400 rodent cages.
3. Entry, Administration, Circulation and Office Spaces.
4. Consumables and Waste Storage Areas and a Secure Loading Dock.
5. Plant Room & Building Services Areas.
6. Research Sample Freezer Farm.
7. Fixed & Loose Laboratory, AV and Office Equipment.

Concept plans are presented in Appendix 5. These plans are in early stages of development and will change, however provide an indication of the likely final form of the Bioresources Facility.

3. THE SITE AND SURROUNDING AREA

3.1 Location

The site (Lot 1 DP 1188100) is located within the grounds of the University of Newcastle.

3.2 Site Area

The campus is approximately 140 hectares in size. Site area will not change as a result of the development.

3.3 Physical Features

3.3.1 Topography

As shown in the survey plan in Appendix 4, the site slopes to the north and west toward the university Ring Road.

3.3.2 Geotechnical and Contamination

The university is mapped as containing acid sulfate soil. Parts of the university are also known to contain contaminated soil.

A Geotechnical and Contamination report will be prepared to accompany the DA.

3.3.3 Flooding

The university site is considered flood prone land (part); however the area of the proposed building is not considered flood prone land. A Stormwater Management Report will be prepared to accompany the DA.

3.3.4 Vegetation and Trees

The site is predominantly clear of vegetation in the area of proposed development. A number of scattered landscape trees are located near the proposed building. There are also a number of native trees that are likely to require removal.

An Ecological Impact Assessment will be prepared for the EIS.

Photo 1 – Existing Landscape Vegetation (looking northeast)

3.3.5 Traffic and Access

Access will be provided from the Ring Road within the university.

Photo 2 – Vehicular Access via Ring Road (looking south)

Consideration will be given to traffic and parking in the EIS.

3.3.6 Bushfire Prone Land

The site is considered bushfire prone land.

A Bushfire Threat Assessment will be prepared for the EIS.

3.3.7 Coastal Zone

The site is not located within the coastal zone.

3.3.8 Watercourses

Bowinbah Creek is located north of the proposed building site.

3.4 Aboriginal Heritage

A search of the Aboriginal Heritage Information System did not identify any Aboriginal sites or places (Appendix 6).

An Aboriginal Heritage Due Diligence Assessment will be prepared to accompany the DA.

3.5 Non-Aboriginal Heritage

The site is not located in a heritage precinct and does not contain a known heritage item.

3.6 Mine Subsidence

The site is not located within a Mine Subsidence District.

3.7 Surrounding Area

3.7.1 University Campus

A number of university buildings are located adjacent to the proposed building site. The Medical Sciences, Life Sciences, Biological Sciences buildings and Auchmuty Library are located to the north, east and south. As discussed previously, the proposed building will be located within the the current Life Sciences and Medical Sciences precinct and future STEMM precinct.

Photo 3 – Medical Sciences located north of the building site (looking southeast)

As shown in the Aerial plan in Appendix 1 and 2, the Newcastle Inner City Bypass is located west of the university campus and proposed building location.

4. STATUTORY PLANNING CONTROLS

4.1 Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulations 2000

Development of the Bioresources Facility will be considered under Part 4 of the EP&A Act and requires an application to the Department of Planning & Environment. Under Section 89D the Minister for Planning is the consent authority for State significant development. Section 78(8A) requires preparation of an EIS. This document requests SEARs to assist with preparation of the EIS.

4.2 State Environmental Planning Policies

4.2.1 State Environmental Planning Policy No.14 – Coastal Wetlands

The boundaries of designated wetlands covered by State Environmental Planning Policy No.14 – Coastal Wetlands (SEPP 14) are mapped under the policy. The site does not contain a SEPP 14 wetland, however SEPP 14 wetlands 850, 850a and 851 are located north of the site. No additional approvals are required under SEPP 14.

4.2.2 State Environmental Planning Policy No.44 – Koala Habitat Protection

State Environmental Planning Policy No.44 – Koala Habitat Protection (SEPP 44) aims to encourage the conservation and management of natural vegetation areas that provide habitat for koalas to ensure permanent free-living populations will be maintained over their present range and to reverse the current trend of koala-population decline. SEPP 44 applies to the Newcastle local government area.

An ecological assessment report will be prepared to determine potential impact on Koala habitat through removal of vegetation.

4.2.3 State Environmental Planning Policy No.55 – Remediation of Land

State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55) aims to promote remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.

Information on site contamination will be provided in the EIS.

4.2.4 State Environmental Planning Policy (State and Regional Development) 2011

SEPP (State and Regional Development) identifies development that is considered State significant and requires an EIS and approval from the Department of Planning & Environment. The development application for the Bioresources Facility is considered State significant development due to the capital investment value of approximately $31.774 million.

Schedule 1 of SEPP (State and Regional Development) states:

> 15 Educational establishments
>
> (1) Development for the purpose of a new school (regardless of the capital investment value).
>
> (2) Development that has a capital investment value of more than $20 million for the purpose of alterations or additions to an existing school.
>
> **(3) Development for the purpose of a tertiary institution (within the meaning of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017), including associated research facilities, that has a capital investment value of more than $30 million.**

4.2.5 State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

Clause 45 states that development for the purpose of a university may be carried out by any person with development consent on land in a prescribed zone. The site is zoned SP2 Infrastructure and as such the proposed development will occur in a prescribed zone and is permitted with consent.

Clause 57 requires consultation with Roads and Maritime Service (RMS) for traffic generating development before determining a development application. Consultation may occur during with RMS preparation of the EIS; however, the proposed building will be utilised by existing university staff and students for research and education.

4.3 Newcastle LEP 2012

The site is zoned SP2 Educational Establishment pursuant to the Newcastle Local Environmental Plan 2012 (LEP 2012) and any development that is ordinarily incidental or ancillary to development for that purpose is permitted in the zone.

> **educational establishment** means a building or place used for education (including teaching), being:
>
> (a) a school, or
>
> (b) a tertiary institution, including a university or a TAFE establishment, that provides formal education and is constituted by or under an Act.

The Bioresources Facility is associated with education activities at the university and as such is permitted with consent.

Relevant Clauses in the LEP and aspects of Council's Development Control Plan will be addressed in the EIS. Concept plans are presented in Appendix 5.

5. POTENTIAL ENVIRONMENTAL IMPACTS

5.1 Land Use

5.1.1 Existing Environment

Land use in the study area includes university buildings and infrastructure to the north, east and south of the proposed building. Land to the north of the university campus is used for recreation (golf course) and future aged care. Residential areas are located south and west of the university campus across the Newcastle Inner City Bypass and University Drive.

5.1.2 Potential Impacts

The proposal is for a Bioresources Facility relating to research and education and is associated with existing university activities. The main impact on land use is erection of a new purpose built education facility that will enhance research and education opportunities.

5.1.3 Proposed Environmental Assessment

Consideration will be given to adjacent land uses and potential impact such as hours of operation, traffic and access, noise, visual impact and site management. As the proposed development will principally operate during business hours and is located within the existing university campus, potential impact on land use is likely to be low.

5.2 Traffic and Access

5.2.1 Existing Environment

The site has existing access from the Ring Road (Photo 3). Additional vehicle access is not required.

5.2.2 Potential Impacts

There will be an increase in traffic during construction. Construction vehicles will range from light weight to large trucks and equipment such as rigid trucks for deliveries and a crane for lifting construction materials and equipment into position.

Traffic is unlikely to increase as a result of ongoing use of the Bioresources Facility as the building will provide new facilities for existing staff and students.

5.2.3 Proposed Environmental Assessment

Consideration will be given to traffic and parking; however, there is unlikely to be an increase in vehicle movements during operation of the facility.

5.3 Noise and Vibration Impacts

5.3.1 Existing Environment

The property current contains seven glass houses and associated infrastructure within an existing university campus. Some cooling and air handling equipment generates noise at the existing site.

5.3.2 Potential Impacts

Construction noise and operational noise will be considered. Construction noise has potential to impact on neighbouring premises; however, as the building will be located within the existing university campus and adjacent to the Newcastle Inner City Bypass, there is low likelihood of significant noise impact.

5.3.3 Proposed Environmental Assessment

Noise will be considered in the EIS by considering the guidelines such as the Industrial Noise Policy (INP) and Interim Construction Noise Guideline (ICNG).

A Noise Assessment will be presented in the EIS to determine potential noise impact.

5.4 Soils, Geology and Contamination

5.4.1 Existing Environment

A geotechnical and contamination report will be prepared to accompany the DA. The site is mapped as containing acid sulfate soils.

5.4.2 Potential Impacts

Construction has potential to result in erosion and subsequent loss of topsoil. Excess soil from construction will need to be managed on site or disposed off-site. Excess soil will need to be managed to ensure it is not lost into previously undisturbed areas or into adjacent land. A designated stockpile location will be required at the construction compound. There is potential excavated material will be reused within the site.

5.4.3 Proposed Environmental Assessment

A Geotechnical and Contamination Report will be prepared for the EIS.

5.5 Air Quality including Odour

5.5.1 Existing Environment

The site has been used for research and education for many years and currently contains glass houses.

5.5.2 Potential Impacts

Construction of the proposal has potential to generate wind borne dust from exposed soil. Exhaust from heavy machinery and other vehicles may also impact on local air quality.

Potential odour impacts may result from the facility and management measures may be required.

5.5.3 Proposed Environmental Assessment

Future environmental assessment will consider existing climatic conditions of the site. Potential air quality impacts such as odour from the facility and vehicle and dust emissions will be identified with appropriate mitigation measures proposed. Potential to generate odour and associated management will be considered in the EIS.

5.6 Water Quality and Hydrology

5.6.1 Existing Environment

Council's mapping indicates that the site is flood prone; however the proposed building site is not considered flood prone. Existing stormwater on the site generally drains to the Ring Road. The proposed works are located more than 40 metres from a watercourse (Bowinbah Creek is located north of the proposed building site). Depth to groundwater is currently unknown.

5.6.2 Potential Impacts

Changes to extent of building and paved areas may impact on surface flows. Additional or changed stormwater flows have potential to impact on drainage regimes and downstream properties. If stormwater is not adequately managed it may cause drainage issues on site. Additional flow of stormwater has potential to erode soil or divert water to new areas through additional volume or localised energy. Poor stormwater management has potential to impact water quality.

5.6.3 Proposed Environmental Assessment

A Stormwater Management Plan will be prepared for the EIS to appropriately limit post development flows and manage downstream water quality.

5.7 Flora, Fauna and Bushfire

5.7.1 Existing Environment

The site contains landscape and native vegetation as shrubs and trees. There is limited understorey in the area of the proposed building (refer to Photo 2).

The site is considered bushfire prone land; however, the proposed development is not considered a Special Fire Protection Purpose under Section 100B of the *Rural Fires Act 1997*.

5.7.2 Potential Impacts

Based on the proposed development footprint a number of trees will require removal. Removal of trees has limited potential to impact on threatened flora and fauna and their habitats.

Bushfire has potential to be a risk to the safety of occupants of the buildings.

5.7.3 Proposed Environmental Assessment

An Ecological Impact Assessment will be provided to present existing ecological conditions. The ecological assessment will consider potential effect on threatened species, populations or ecological communities, or their habitats.

A Bushfire Threat Assessment will be prepared as part of the EIS.

5.8 Heritage – Aboriginal

5.8.1 Existing Environment

A search of the Aboriginal Heritage Information System did not identify any Aboriginal sites or places (Appendix 6).

5.8.2 Potential Impacts

Aboriginal heritage is protected under the *National Parks and Wildlife Act 1974*.

5.8.3 Proposed Environmental Assessment

An Aboriginal Heritage Due Diligence Assessment will be prepared for the EIS.

5.9 Heritage – non-Aboriginal

5.9.1 Existing Environment

The site does not contain a known item of non-Aboriginal heritage.

5.9.2 Potential Impacts

There are no State and Local heritage items located on the site or in close proximity.

5.9.3 Proposed Environmental Assessment

The environmental assessment will present potential impact on non-Aboriginal heritage and likely include an environmental management measure relating to unexpected finds.

5.10 Visual impacts

5.10.1 Existing environment

The university campus involves a typical low density university environment with a mix of research, education, child care, student accommodation, recreation and commercial land uses. The site of the proposed buildings will be vacant as existing glass houses will be removed under separate approval.

5.10.2 Potential impacts

The proposed development will alter the current visual environment. Consideration will be given to building design, function, colour and materials to provide a high quality architectural building suitable to the site and surrounds.

Concept plans are presented in Appendix 5. These plans are in early stages of development and will change, however provide an indication of the likely final form of the Bioresources Facility.

5.10.3 Proposed Environmental Assessment

Design considerations and materials will be discussed in the EIS for consideration of visual impact.

5.11 Social and Economic

5.11.1 Existing Environment

According to the Australian Bureau of Statistics (ABS, accessed 2 November 2017) the population of Callaghan is 1,326 people with a median age of 20 years. The population data reflects the university campus of people likely to be studying at the university.

5.11.2 Potential Impact

There is ongoing need for quality education in Newcastle the Hunter generally. Creation of new purpose built research and education facilities will provide long term facilities for the community.

Economic impact of the development is likely to be positive. Up to 30 construction jobs may be generated by the proposed development. The Bioresources Facility will become an integral part of the university community and allow for ongoing research and education for staff and students.

5.11.3 Proposed Environmental Assessment

The EIS will present existing social and economic conditions and potential impacts of the proposed development. Assessment of social and economic impacts of the proposed development may be informed by consultation with stakeholders including teaching and research staff.

5.12 Waste

5.12.1 Existing Environment

Existing waste facilities from the glass houses on the site of the proposed building relate to disposal of PC2 and other waste. Future provision of waste facilities including small bins and central collection will be provided to the proposed development.

5.12.2 Potential Impacts

Construction waste is likely to include building material, soil, concrete, asphalt, steel, piping and similar. Waste generated during operation of the Bioresources Facility may be a mix of specialist bioresource research material and general waste.

5.12.3 Proposed Environmental Assessment

The EIS will include an overview of waste streams including construction waste and waste generated during operation of the facility. The assessment of waste will include likely volumes and disposal or management of waste generated.

5.13 Cumulative issues

Cumulative impact of the proposal will be considered. Consideration of cumulative impact will include synergistic from several environmental issues or as a result of other developments occurring at the same time as that proposed.

6. CONCLUSION

The proposal is for development of a Bioresources Facility at the University of Newcastle. The proposal involves construction of a new building including research, laboratory and other education spaces.

The request for SEARs outlines potential environmental impacts of the proposed development and how these have been or will be considered and assessed. The statutory framework and associated approvals required is also outlined. This document is a request for SEARs to address in preparation of the EIS. It is likely the following specialist reports will be required:

- Architectural
- Archaeological
- Bushfire threat assessment
- Consideration of traffic and parking
- Ecological impact assessment
- Geotechnical and contamination
- Noise assessment

Risks to the environment from the project based on information available at this time are presented and discussed. Future environmental assessment will consider matters that affect or may affect the environment in relation to the proposed development.

APPENDICES

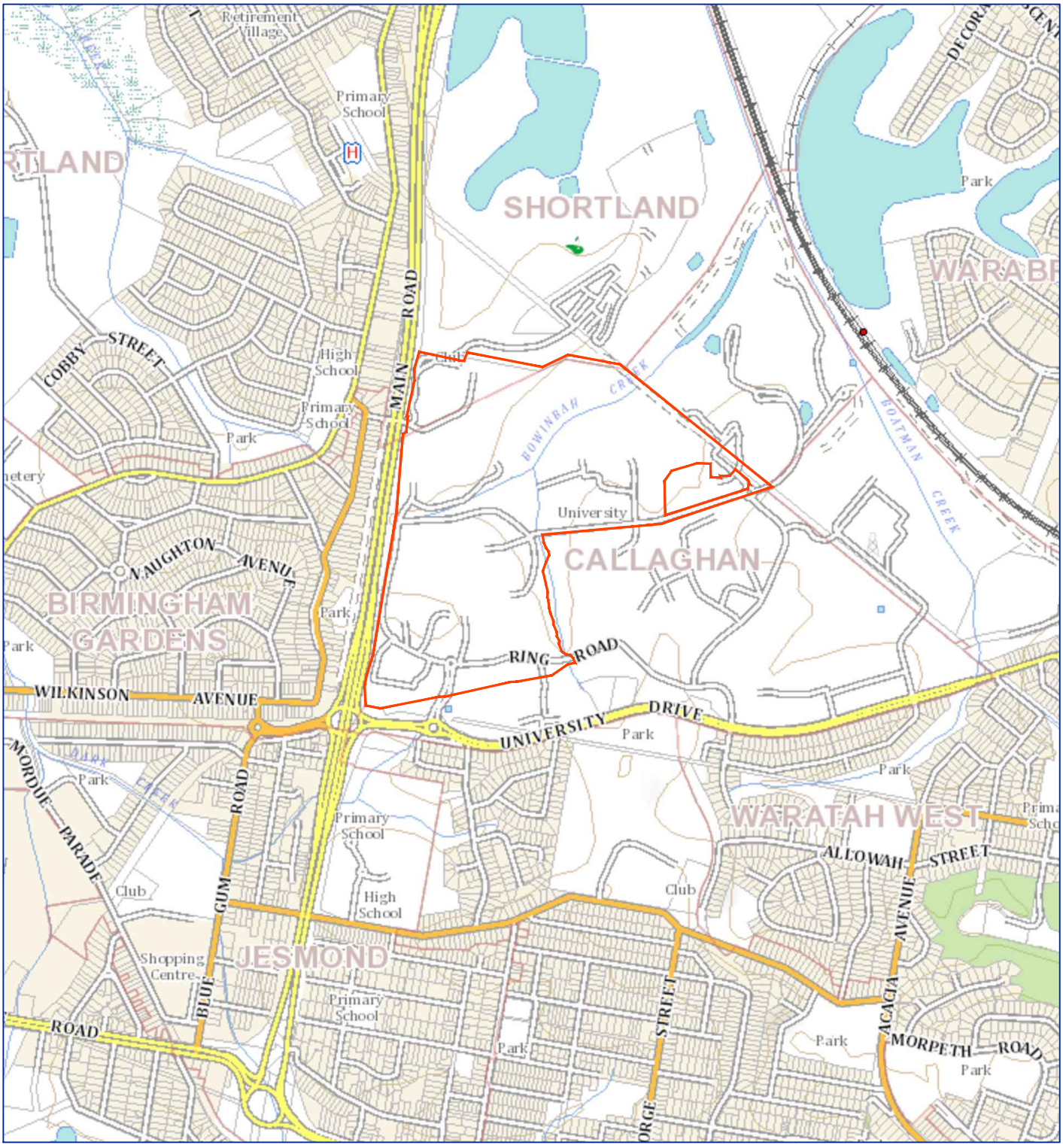
APPENDIX 1

Location Map

NORTH

PROPERTY REFERENCE :

LOT 1 D.P.1188100



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ABN 23 104 067 405

TITLE:	LOCATION PLAN
JOB ADDRESS:	UNIVERSITY OF NEWCASTLE, CALLAGHAN
CLIENT:	UNIVERSITY OF NEWCASTLE
SCALE:	N/A
PLAN DATE:	07.09.17
CAD REF:	N/A
DRAWN	CJ
CHECKED	MM
DESIGNED	N/A
APPROVED	MM
DWG REF:	6520-FIGURES-07.09.17
JOB REF:	7782
DRAWING No.	1

APPENDIX 2

Aerial Photo of Locality

NORTH

PROPERTY REFERENCE :

LOT 1 D.P.1188100

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TITLE:	AERIAL PHOTO
JOB ADDRESS:	UNIVERSITY OF NEWCASTLE, CALLAGHAN
CLIENT:	UNIVERSITY OF NEWCASTLE
SCALE:	N/A
PLAN DATE:	23.05.16
CAD REF:	N/A
DRAWN	CJ
CHECKED	MM
DESIGNED	N/A
APPROVED	MM
DWG REF:	6520-FIGURES-07.09.17
JOB REF:	7782
DRAWING No.	1

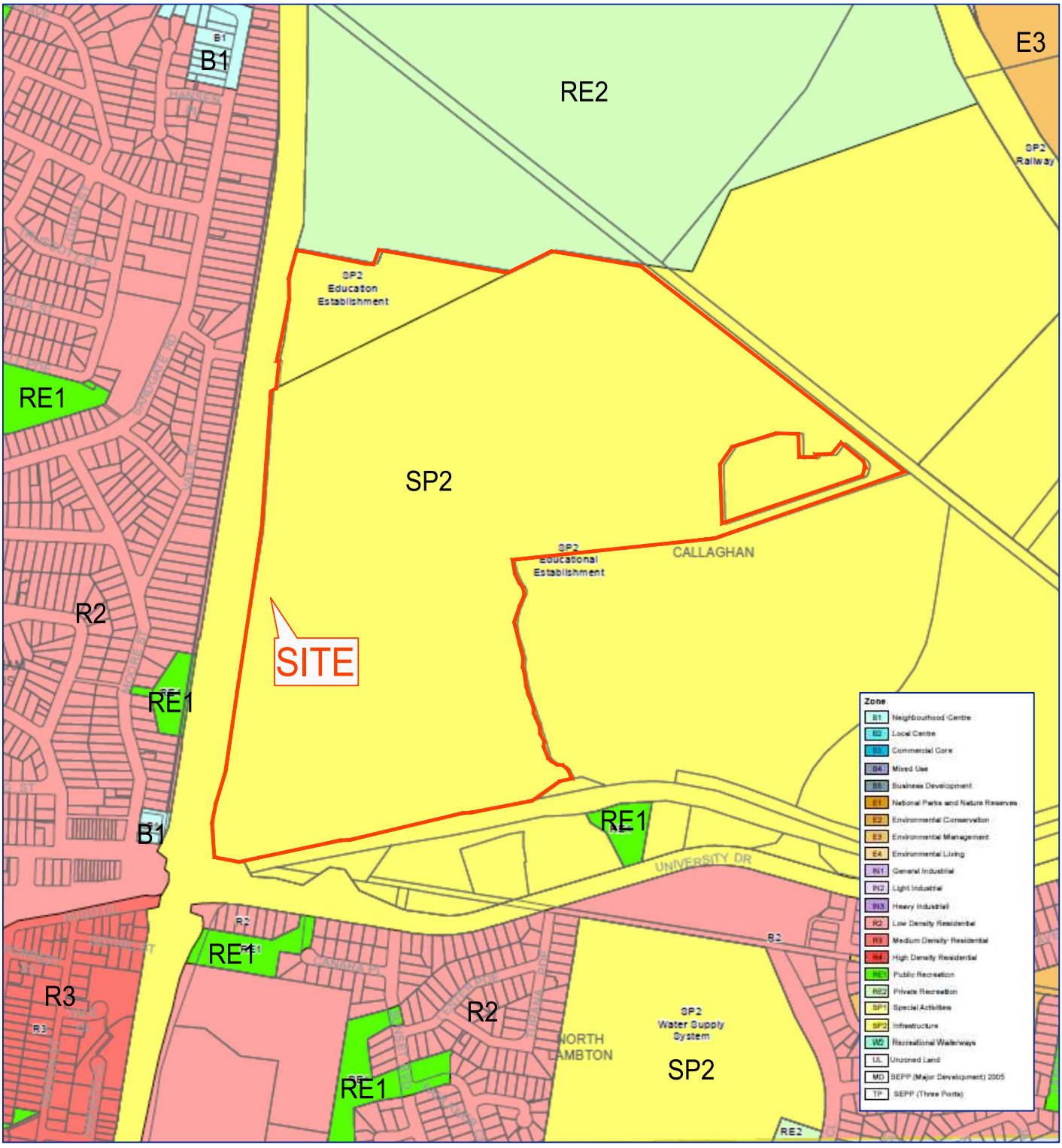
APPENDIX 3

Zoning

NORTH

PROPERTY REFERENCE :

LOT 1 D.P.1188100



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TITLE:	ZONING PLAN
JOB ADDRESS:	UNIVERSITY OF NEWCASTLE, CALLAGHAN
CLIENT:	UNIVERSITY OF NEWCASTLE
SCALE:	N/A
PLAN DATE:	07.09.17
CAD REF:	N/A
DRAWN	CJ
CHECKED	MM
DESIGNED	N/A
APPROVED	MM
DWG REF:	6520-FIGURES-07.09.17
JOB REF:	7782
DRAWING No.	1

APPENDIX 4

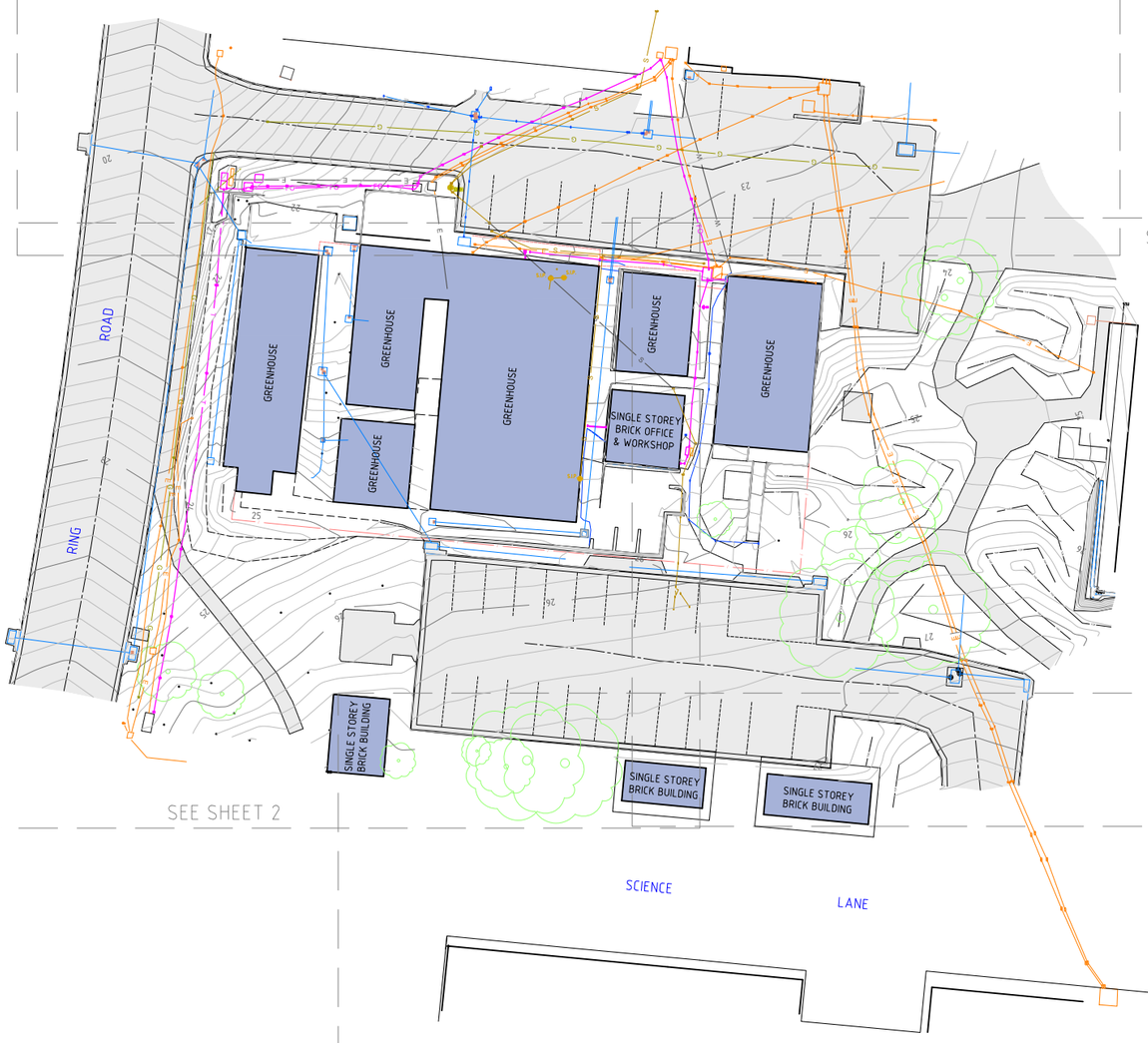
Survey Plan prepared by de Witt Consulting

SEE SHEET 3

SEE SHEET 2

SEE SHEET 4

SEE SHEET 5



MGA

SITE DIAGRAM
SCALE 1:10000 (A1) 1:20000 (A3)

LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- UNDERGROUND ELECTRICITY AND DEPTH (cm) (UNKNOWN VOLTAGE)
- UNDERGROUND COMMUNICATIONS AND DEPTH (cm)
- UNDERGROUND OPTIC FIBRE AND DEPTH (cm)
- UNDERGROUND WATER SERVICES AND DEPTH (cm)
- UNDERGROUND SEWER SERVICES AND DEPTH (cm)
- UNDERGROUND GAS AND DEPTH (cm)
- UNDERGROUND DRAINAGE PIPE
- UNDERGROUND ELECTRICITY (UNKNOWN VOLTAGE) (ASSUMED LOCATION)
- UNDERGROUND WATER SERVICES (ASSUMED LOCATION)
- UNDERGROUND SEWER SERVICES (ASSUMED LOCATION)
- FENCE LINE
- TOE OF BANK
- TOP OF BANK
- SMH SEWER MAN HOLE
- S.I.P. SEWER INSPECTION PIT
- POWER POLE
- WATER METER
- DENOTES TREE
  S4/0.6/10 spread radius/trunk diameter/approx height

NOTES:

1. FEATURES SHOWN TO SCALE ACCURACY.
2. THIS PLAN IS SUITABLE FOR DETAILED PLANNING AND DESIGN AT THE SCALE/S STATED. THE PLAN MAY NOT BE SUITABLE FOR ANY OTHER PURPOSE OR FOR USE AT ANY OTHER SCALE/S.
3. SERVICES LOCATED ONLY WHERE VISIBLE.
4. THE LOCATION OF ALL UNDERGROUND SERVICES WHETHER SHOWN ON THE PLAN OR NOT, SHOULD BE PRECISELY DETERMINED BY POTHOLING BEFORE ANY DESIGN OR CONSTRUCTION WORK COMMENCES AND MEASURES TAKEN TO PROTECT THESE SERVICES FROM DAMAGE.
5. CONTOUR INTERVAL - 0.2m
6. DURING THE COURSE OF THIS SURVEY NO INVESTIGATION HAS BEEN UNDERTAKEN TO DETERMINE THE EXISTENCE OF ANY POSSIBLE SUBTERRANEAN ENCROACHMENTS.
7. SERVICE LOCATIONS BY ADVANCED GROUND LOCATIONS. ALL SERVICES HAVE BEEN LOCATED BY ELECTRONIC DETECTION.
8. LEVELS & POSITION TO UNIVERSITY SPECIFICATION ACCURACY.

Survey Control Table

Mark	Easting	Northing	RL
821	365113.200	1358961.994	28.629
824	365118.834	1359008.276	23.948
825	365091.098	1358976.121	26.351
DWC1000	365070.963	1358978.492	25.900
DWC2000	365050.401	1358984.987	23.615
DWC3000	365044.211	1359018.386	19.626
DWC4000	365066.100	1359018.092	21.211
DWC5000	365087.631	1359018.123	22.581

0m 1 2 3 4 5 10 15 20 25
Bar Scale 1: 250 (A1) 1: 500 (A3)

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TITLE

DETAIL SURVEY

OVER GLASSHOUSES AT NEWCASTLE UNIVERSITY

Ed.	Date	Amendment
H		
G		
F		
E		
D		
C		
B	03.10.2017	
A	22.09.2017	PRELIMINARY ISSUE

JOB ADDRESS: NEWCASTLE UNIVERSITY, CALLAGHAN
CLIENT: UNIVERSITY of NEWCASTLE
PLAN No 001
JOB REF: 7782
SCALE: 1:250 (A1) 1:500 (A3)
SURVEY DATE: AUGUST 2017
PLAN DATE: 03.10.2017
DATUM: AHD
CAD REF:
ORIGIN OF LEVELS .....
DRAWN JG
SURVEYOR NB / CP
CHECKED CP
APPROVED CP
SHEET No 1/5
DRAWING REF: 7782-DET-03.10.2017

M.G.A.

LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
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- 40 T — UNDERGROUND COMMUNICATIONS AND DEPTH (cm)
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- UNDERGROUND DRAINAGE PIPE
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- TOE — TOE OF BANK
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- S.I.P. — SEWER INSPECTION PIT
- POWER POLE
- WATER METER
- DENOTES TREE
  - S4/0.6/10 — spread radius/trunk diameter/approx height

NOTES:

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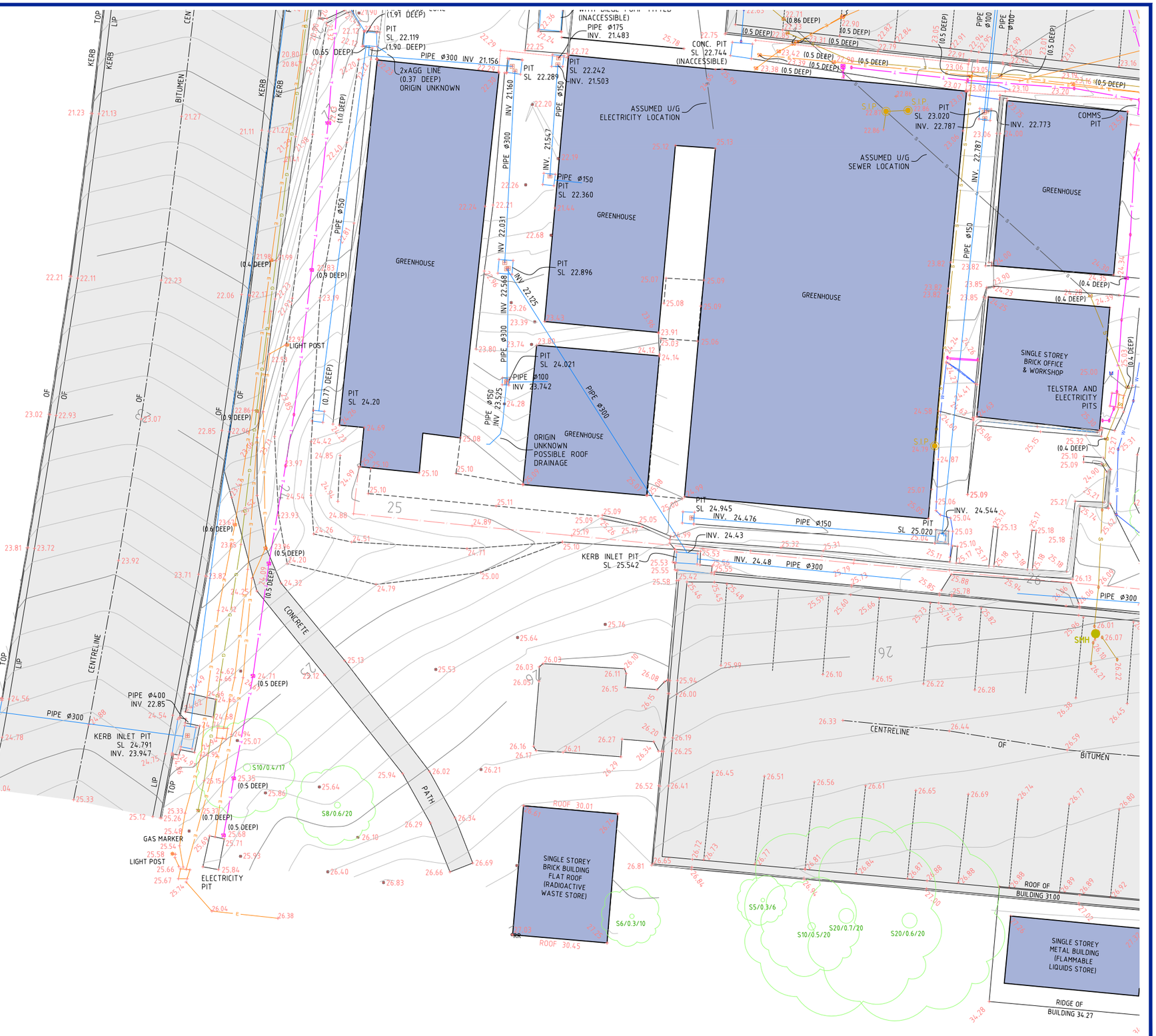

Bar Scale 1: 100 (A1) 1: 200 (A3)

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TITLE

DETAIL SURVEY

OVER GLASSHOUSES AT NEWCASTLE UNIVERSITY

Ed.	Date	Amendment
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G		
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D		
C		
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A	22.09.2017	PRELIMINARY ISSUE

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CLIENT: UNIVERSITY of NEWCASTLE

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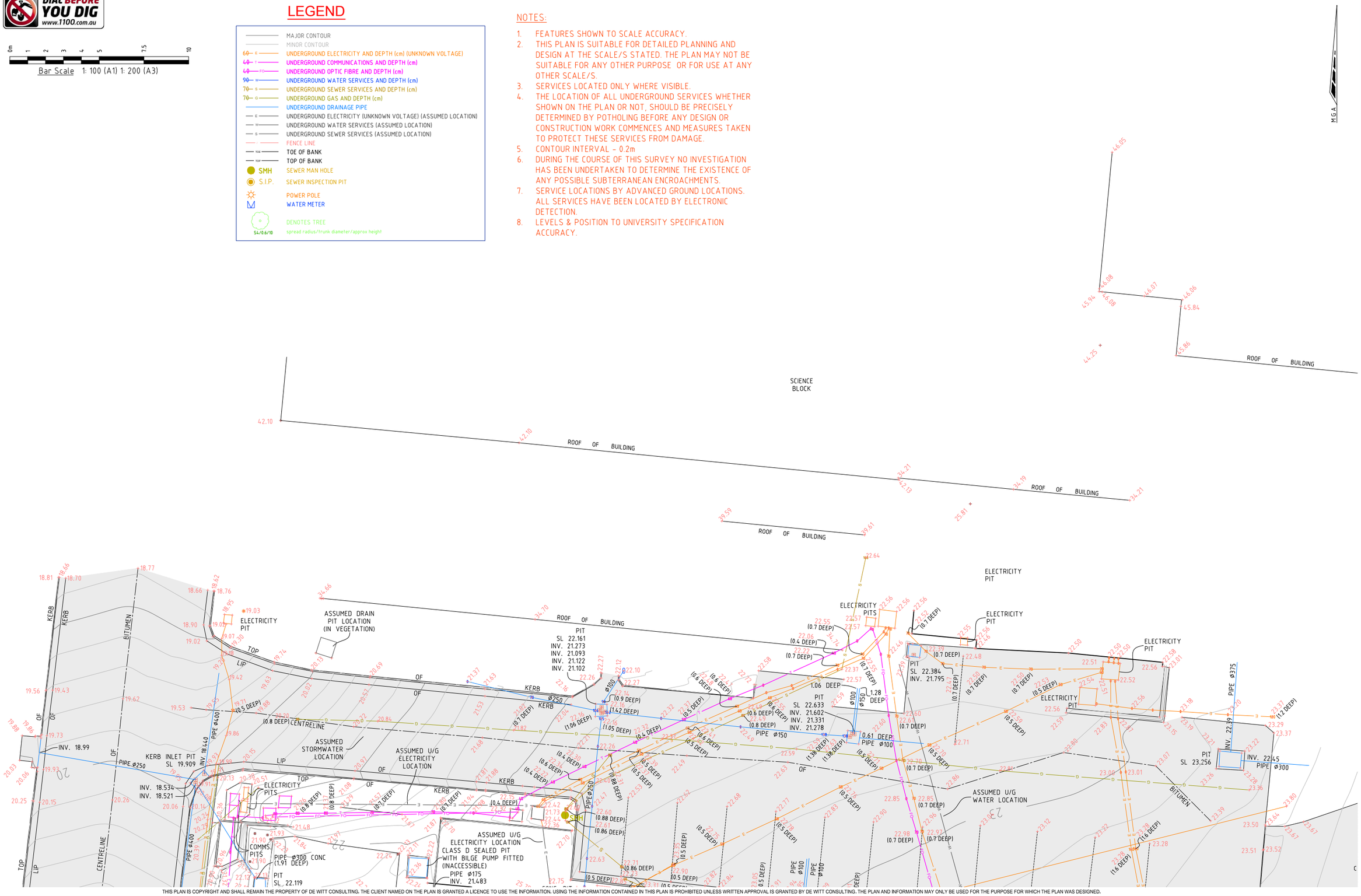

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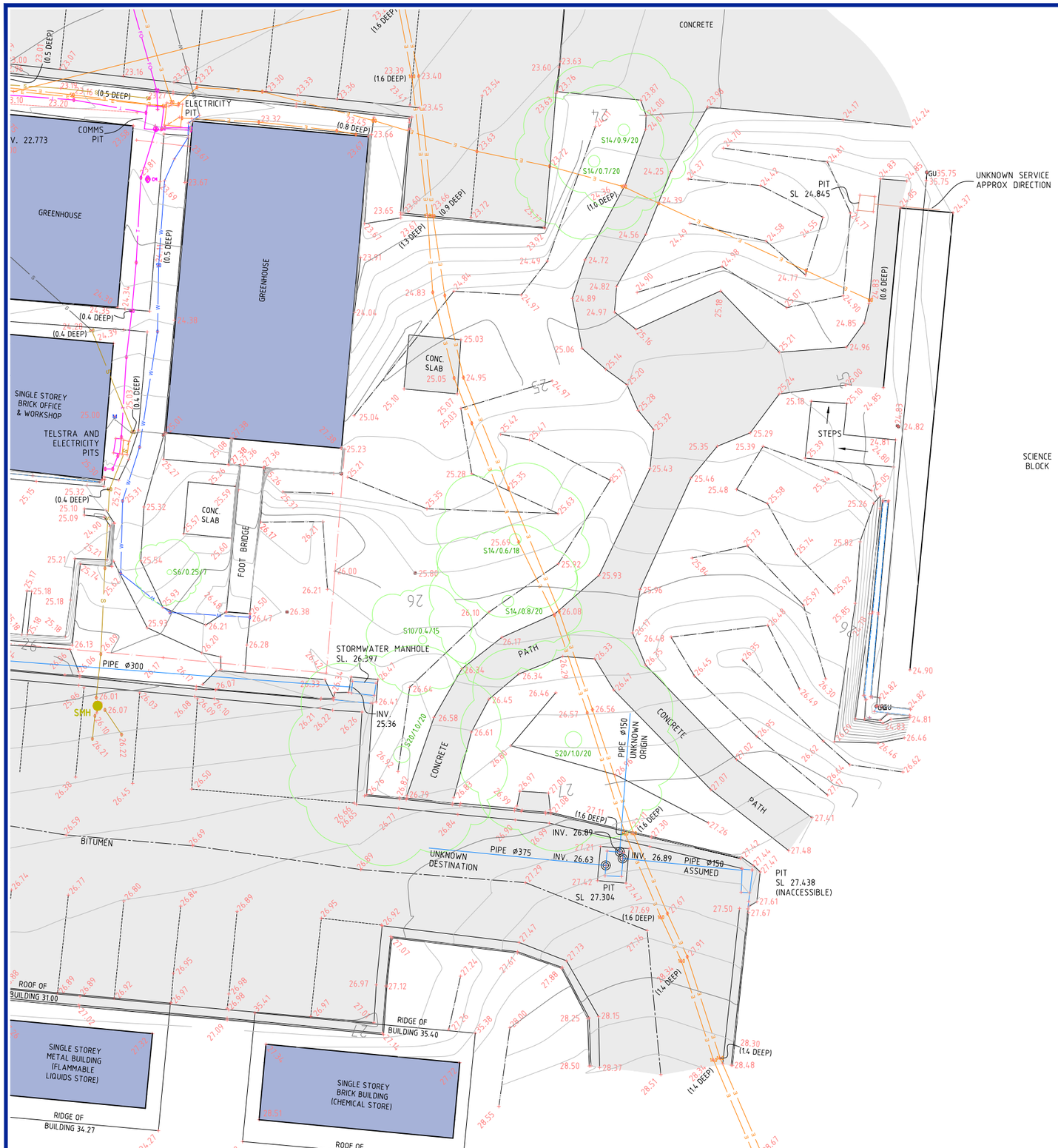

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0m 1 2 3 4 5 7.5 10

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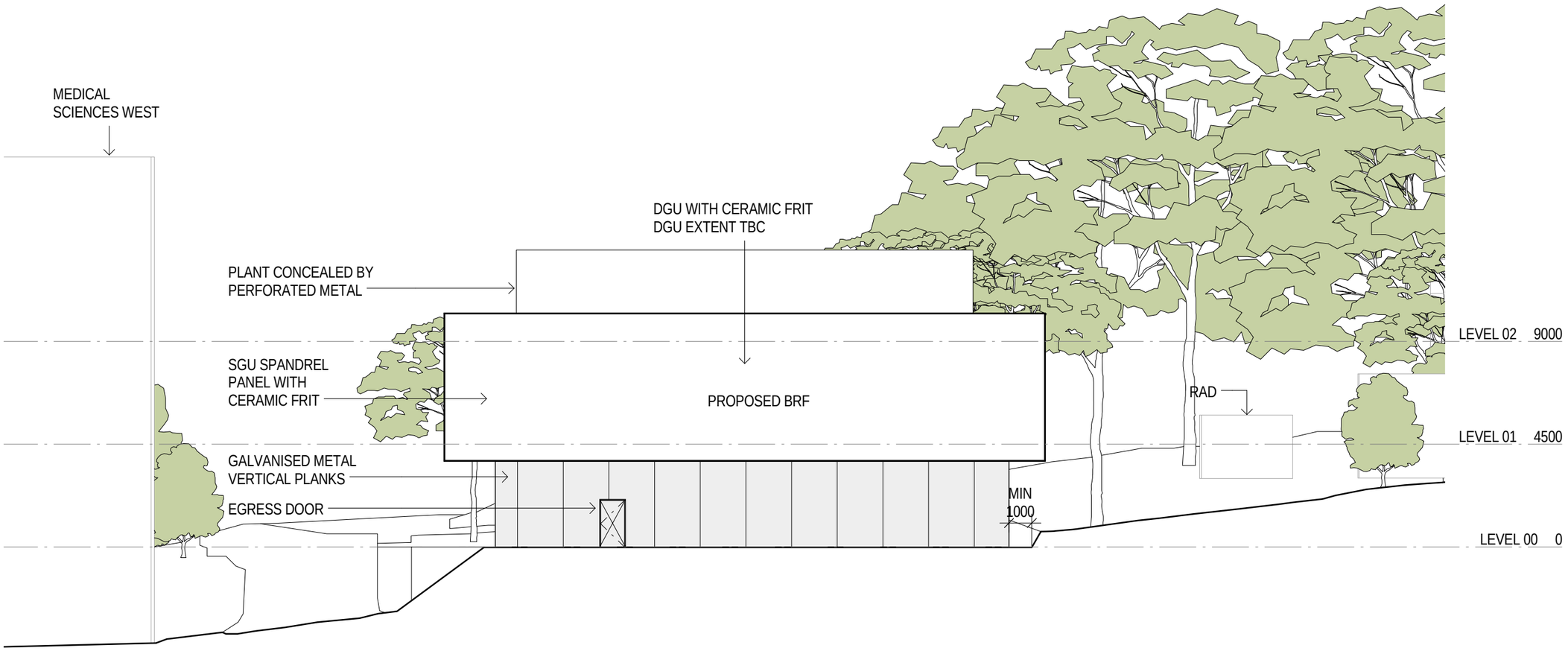
APPENDIX 5

Concept Plans prepared by Denton Corker Marshall



1
SK-103

D01_EL_WW_OPTION 3

SCALE 1 : 200

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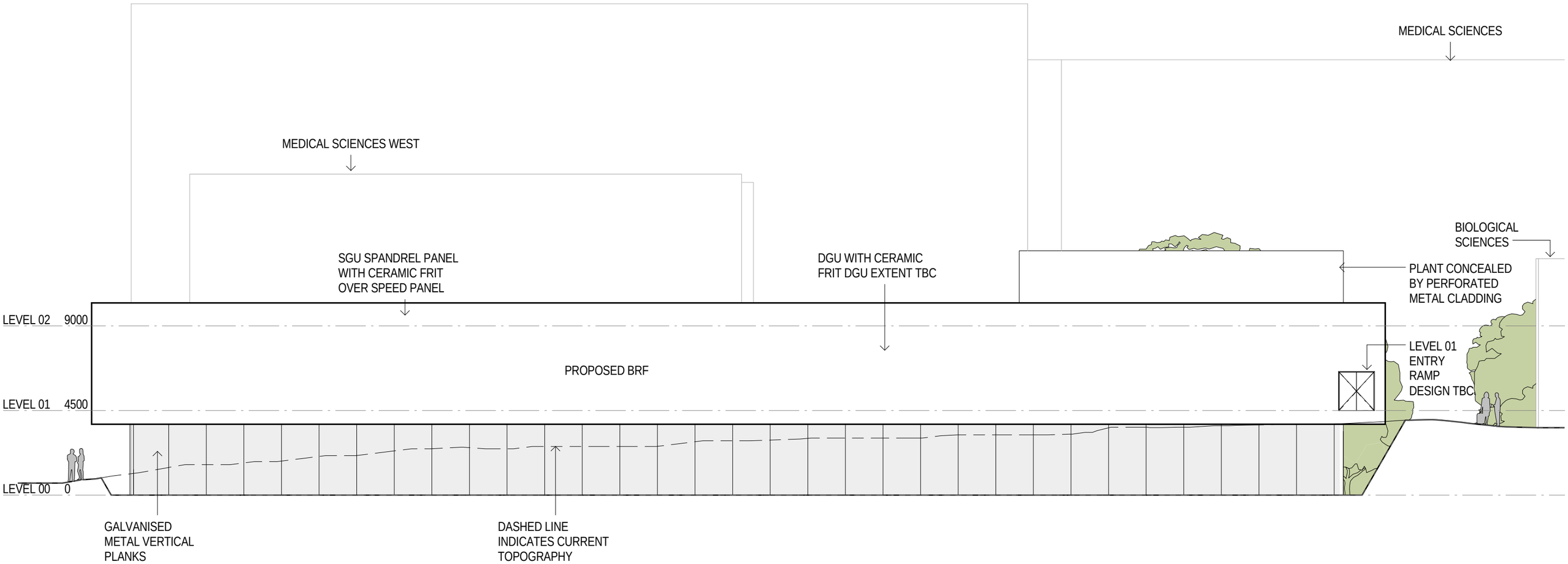
1:200 @ A3 0 2 4 6M					



1 / SK-103

D01_EL_SS_OPTION 3

SCALE 1 : 200

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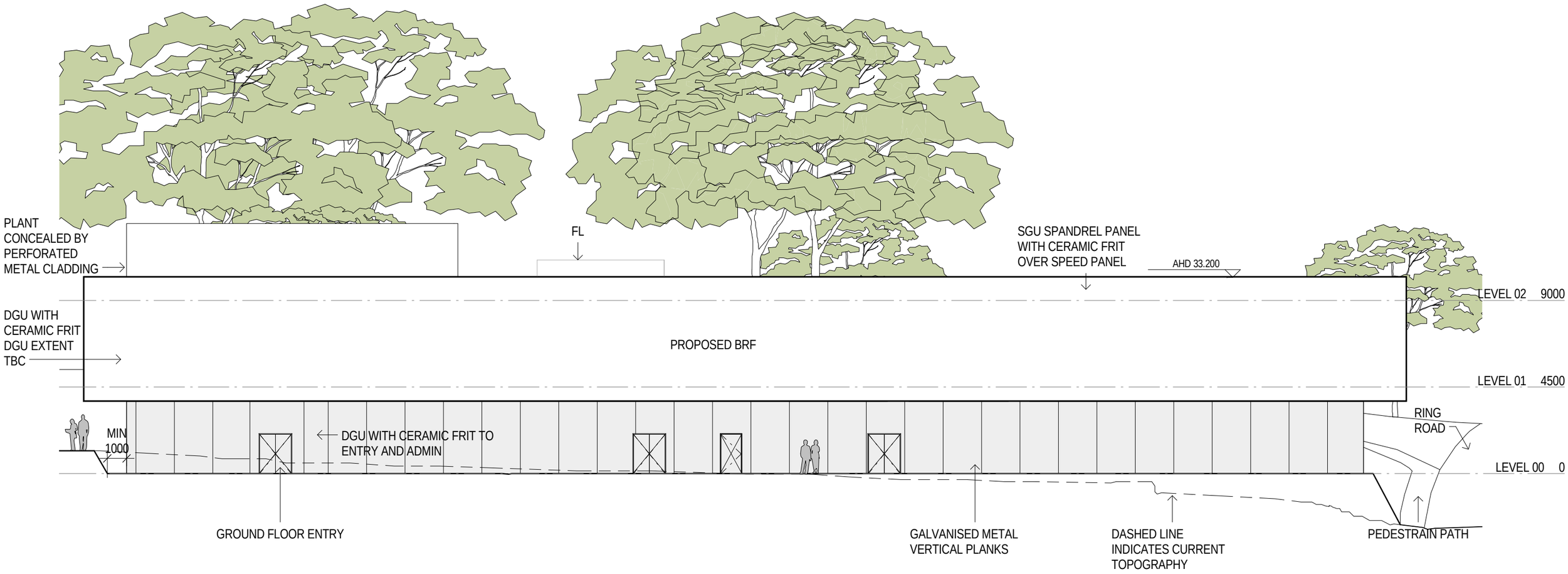
1:200 @ A3

0 2 4 6 M



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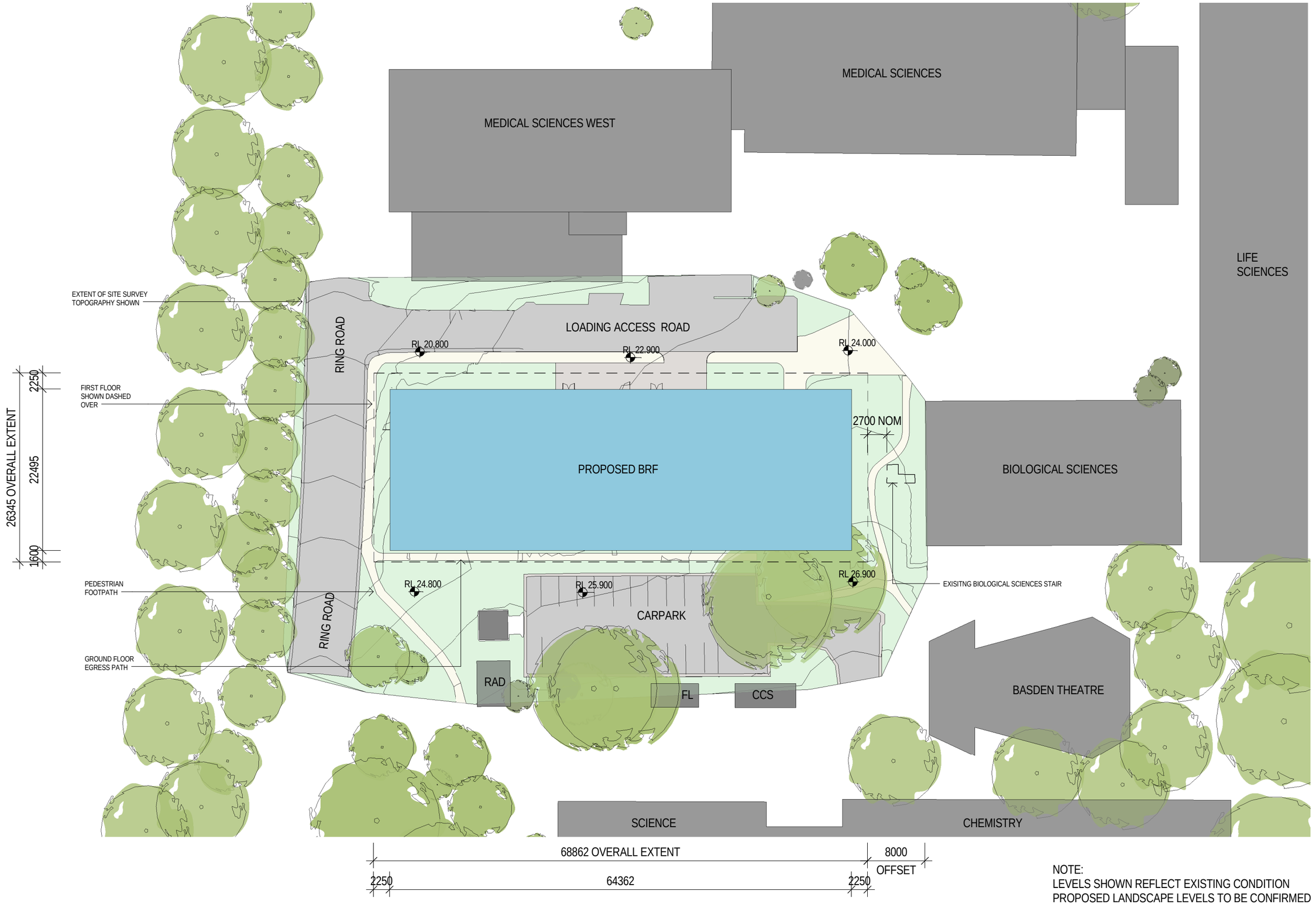
D01_EL_NN_OPTION 3

SCALE 1 : 200

0000 SK-220 REV 1:200 @ A3 0 2 4 6M	DENTON CORKER MARSHALL	D0136 - UON BIORESOURCES UNIVERSITY OF NEWCASTLE UNIVERSITY DRIVE	CONCEPT 20/11/2017 NORTH ELEVATION OPTION 3 FOR INFORMATION ONLY



NOTE:
LEVELS SHOWN REFLECT EXISTING CONDITION
PROPOSED LANDSCAPE LEVELS TO BE CONFIRMED

1 / SK-200

D02_PL_SI_OPTION 3

SCALE 1 : 500

0000	SK-003	REV 2 21.11.2017	DENTON CORKER MARSHALL	D0136 - UON BIORESOURCES UNIVERSITY OF NEWCASTLE UNIVERSITY DRIVE	CONCEPT 21/11/2017 SITE PLAN - OPTION 3 FOR INFORMATION ONLY
1:500 @ A3 0 5 10 15M					

APPENDIX 6

AHIMS search

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Uni greenhouse

Client Service ID : 299965

deWitt Consulting

PO Box 850
Charlestown New South Wales 2290

Attention: Mark Maund

Email: mark.maund@dewittconsulting.com.au

Date: 06 September 2017

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1, DP:DP1188100 with a Buffer of 50 meters, conducted by Mark Maund on 06 September 2017.

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:

0	**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