Abercrombie Precinct Redevelopment

Landscape Design Statement

Issue 19 July 2013

MCGREGOR COXALL

“establishing an environment that will foster the next generation of creative business thinkers in Australia”.

Revision	Status	Date	by	Checked
A	Draft	10 July 2012	MC	AM
B	Draft	12 July 2012	MC	AM
C	Final	13 July 2012	MC	AM
D	Amended	19 July 2013	MC	PC

277SL ABERCROMBIE REDEVELOPMENT
LANDSCAPE DESIGN STATEMENT
Prepared for University of Sydney by McGregor Coxall Urban Design and Landscape Architecture

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1.0 INTRODUCTION

1.1 Background

The Abercrombie site similar to many inner city sites has transformed from a bustling terraced community in the late 1800's to an isolated and disconnected collection of buildings that form the southern entry to Darlington Campus, the southern precinct to the University of Sydney campus.

Through the decline of the Eveleigh railway yards located to the south of the site and the resultant loss of workforce during the 1920's the local area drifted into gradual obsolescence. In the 1940's the State Government re-zoned part of the Darlington Area as 'special uses' or university extension area, enabling the University of Sydney to extend its campus across City Road into Darlington. Roads and lanes were progressively closed or removed and the population of Darlington decreased by about 2,000.

McGregor Coxall was commissioned by the University of Sydney in June 2012 to refine the Preferred Part 3a landscape concept and develop the landscape design intent for the proposed development of the University of Sydney Business School & Student Housing. In July 2013 McGregor Coxall were comission by John Holland to review this design and this statement describes the current landscape concept for the site and the framework for detailed design and documentation.

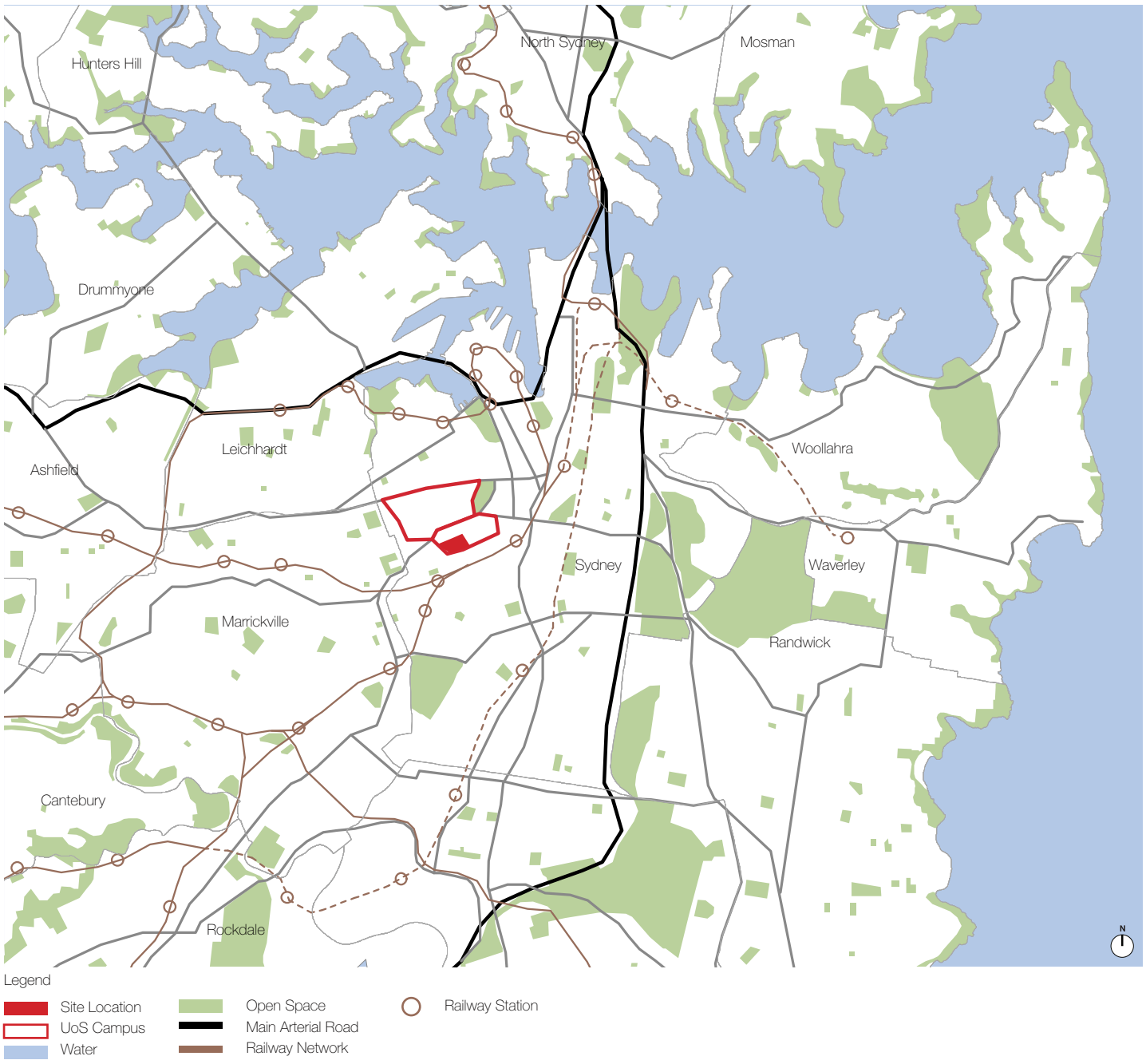
1.2 Site Location

The project is located within the University of Sydney's Darlington Campus, which forms the southern precinct to the Camperdown Campus. The site falls within the City of Sydney Local Government Area (LGA) which neighbours Leichhardt Municipal Council and Marrickville Council.

1.3 Structure of the Report

The report structure reflects the design process undertaken in preparing a robust landscape concept for the Abercrombie redevelopment site. The following chapters form the structure of this document;

- Chaper 2 establishes a contextual understanding of the sites relationship with its present and future context, ensuring the landscape design for the site reflects the vision for the University of Sydney campus and the City of Sydney;
- Chapter 3 builds on the work produced in the Campus 2020 Master Plan by Cox Architects in 2008 and the Cadigal Green Precinct - Phase 1 by ARUP in 2012. The chapter proposes a potential strategy for University of Sydney Campus area, which can act as the structural framework for the redevelopment of the Abercrombie precinct and its surrounding context;
- Chaper 4 sets out the wider ESD strategy for the campus area and how sustainable initiatives on a wider precinct can benefit the Abercrombie precinct and its surroundings;
- Chaper 5 details the landscape statement for the Abercrombie precinct, illustrating its future character, function and spatial qualities that complement the proposed architecture and integrate the site into its existing and future context;
- Chapter 6 detail the appendices, which include the BioCity Rating Tool as a reference and demonstration of how the Business School could fit within an overall campus sustainability model;



TOP. Figure 1.1 - The Site and its Location

2.0 CONTEXT AND ANALYSIS

2.1 Sydney 2030 Vision

2.1.1 Overview

The Sydney 2030 Vision identifies the area of land within and around the University of Sydney (UoS) as a future "'Liveable Green Network' of continuous green corridors integrated with liveable streets, providing dedicated pedestrian and cycle ways and new ways to explore the City and its Villages". As the UoS covers an approximate area of 65 ha, it is important that the campus reinforces the Sydney 2030 vision establishing a campus that is liveable and walkable for all types of users.

The site is located adjacent to the North Eveleigh and Central Station urban renewal corridor which if implemented in the future will encourage an increase in population to the south of the campus. The vision promotes the revitalisation of old industrial sites into mixed use developments that can accommodate a diverse mix of people. This predicted increase in population to the south of the site emphasises the University's importance in addressing its southern entry and access points of which the Abercrombie Precinct holds particular importance.

2.1.2 Future Activity Hubs

The UoS campus and the Abercrombie Precinct are located within a triangle of designated future activity hubs. These activity hubs proposed in the Sydney 2030 Vision are Glebe Point Road, King Street and Redfern Street. These three local centres are important inner city suburbs that will offer a range of business, healthcare, taking transport, shopping, meeting people and having cultural and learning experiences. Due to the UoS campus being located between these future activity hubs, it reinforces the important role the campus has in improving the pedestrian and cycle connections within the Sydney and the local area.

2.1.3 The Liveable Green Network

The 'Connected City' is an aspiration of the Sydney 2030 Vision, where a liveable green network is created by improving streets and lanes encouraging pedestrian priority within the Sydney area. "To be a truly "Connected City" people must be able to get around easily and meet face to face as well as have access to the vital road, air and rail transport systems that link them with other major centres and global cities. Separate cycle paths, shaded footpaths, streets lined with trees, reduced vehicle flows are all hallmarks of the green corridors that will invite people to walk and cycle" (Sydney 2030 Vision, City of Sydney 2008).

The University of Sydney campus is characterised and supported by a number of recreational spaces and parks, providing recreational amenity spaces for the campus and its surrounding population. Links between Victoria Park, Wentworth Park, Harold Park, Prince Alfred Park and Redfern Park are identified in the Sydney 2030 vision as important links that will help to establish this liveable network and so the UoS Campus and the Abercrombie Precinct should be designed with this in mind.

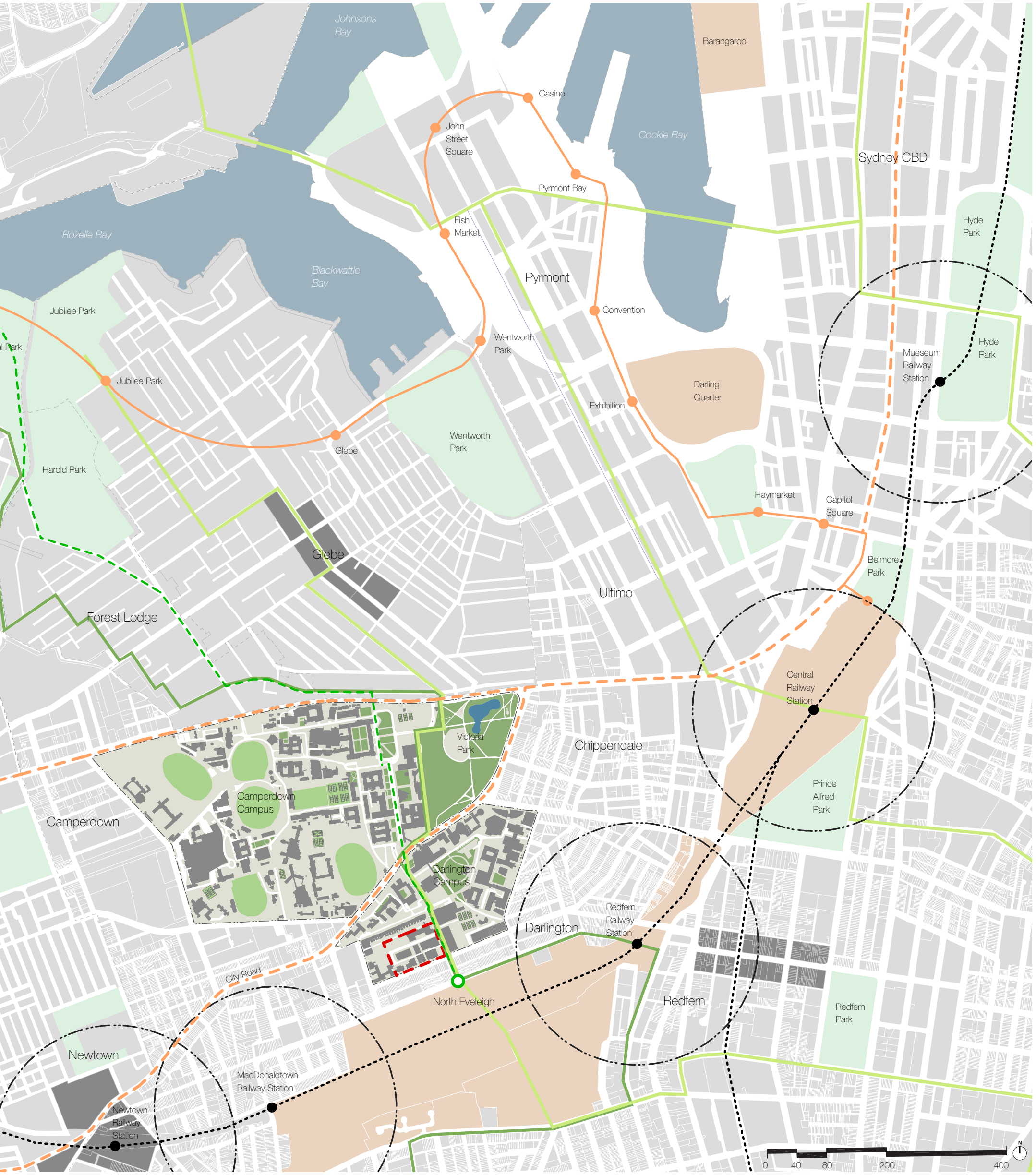
2.1.4 Transport

The Campus is strategically positioned alongside Parramata Road and City Road, two of the Sydney's most significant transport routes. These roads are highlighted in the Sydney 2030 Vision as offering improved public transport corridors for light rail, metro rail and bus travel. These transport opportunities open up the possibility for identifying a cycle network of routes that offer alternative methods of transport.

The University of Sydney campus being a destination for large number of people has the potential to embrace a unified cycle network within Sydney and cater for cyclists and pedestrians. These links can promote better connections between surrounding university sites such as Callan Park encouraging more sustainable methods of travel for the campus population.

Additionally the campus is well serviced by a number of railway stations such as Redfern Station, MacDonaldtown Station and Newtown Railway Station, all of which connect to the wider Sydney region. These stations are within 800m distance from the campus and so provide the site with a high level of access.

TOP. Figure 2.1 - City Context


Johnsons Bay
Barangaroo
Casino
John Street Square
Cockle Bay
Sydney CBD
Pyrmont Bay
Fish Market
Rozelle Bay
Blackwattle Bay
Pyrmont
Hyde Park
Jubilee Park
Convention
Wentworth Park
Mueseum Railway Station
Hyde Park
Darling Quarter
Exhibition
Jubilee Park
Harold Park
Glebe
Wentworth Park
Haymarket
Capitol Square
Belmore Park
Glebe
Forest Lodge
Ultimo
Central Railway Station
Victoria Park
Chippendale
Prince Alfred Park
Camperdown Campus
Camperdown
Darlington Campus
Redfern Railway Station
Darlington
City Road
North Eveleigh
Redfern
Redfern Park
Newtown
MacDonaldtown Railway Station
Newtown Railway Station
0
40
80
200
400
N
Legend
Campus Site Boundary
Site Boundary
Railway Line
Railway Station
400m Walking Distance
Light Rail Station
Improved Public Transport Corridor
Proposed Cycle Route
Main Green Corridors
Harbour to the Bay
Future Activity Hub
Campus Open Space/ Park
Campus Recreational Space
Surrounding Park
Urban Renewal Corridor

2.2 Campus Context

2.2.1 Urban Grain and Permeability

The urban grain of the surrounding context forms the historical finger print of the surrounding area and allows us to compare the function and form of the different blocks that are located adjacent to the University of Sydney campus and Abercrombie Precinct.

- Block 1- This block offers a traditional gridded network of routes encouraging multiple paths of travel;
- Block 2 - Long linear terraced blocks offer multiple east to west routes that connect to a key north to south road;
- Block 3 - Small compact blocks allow easy access to north, south, east and west routes;
- Block 4 - Small square perimter blocks form an irregular grid that create a series of inter-connected paths of travel;
- Block 5 - Large irregular blocks allow a range of directions for travel;

The Abercrombie Precinct block offers limited north to south links creating a closed block form. Permeability is poor and future development should look to breakdown the physical limitations encouraging better through site links;

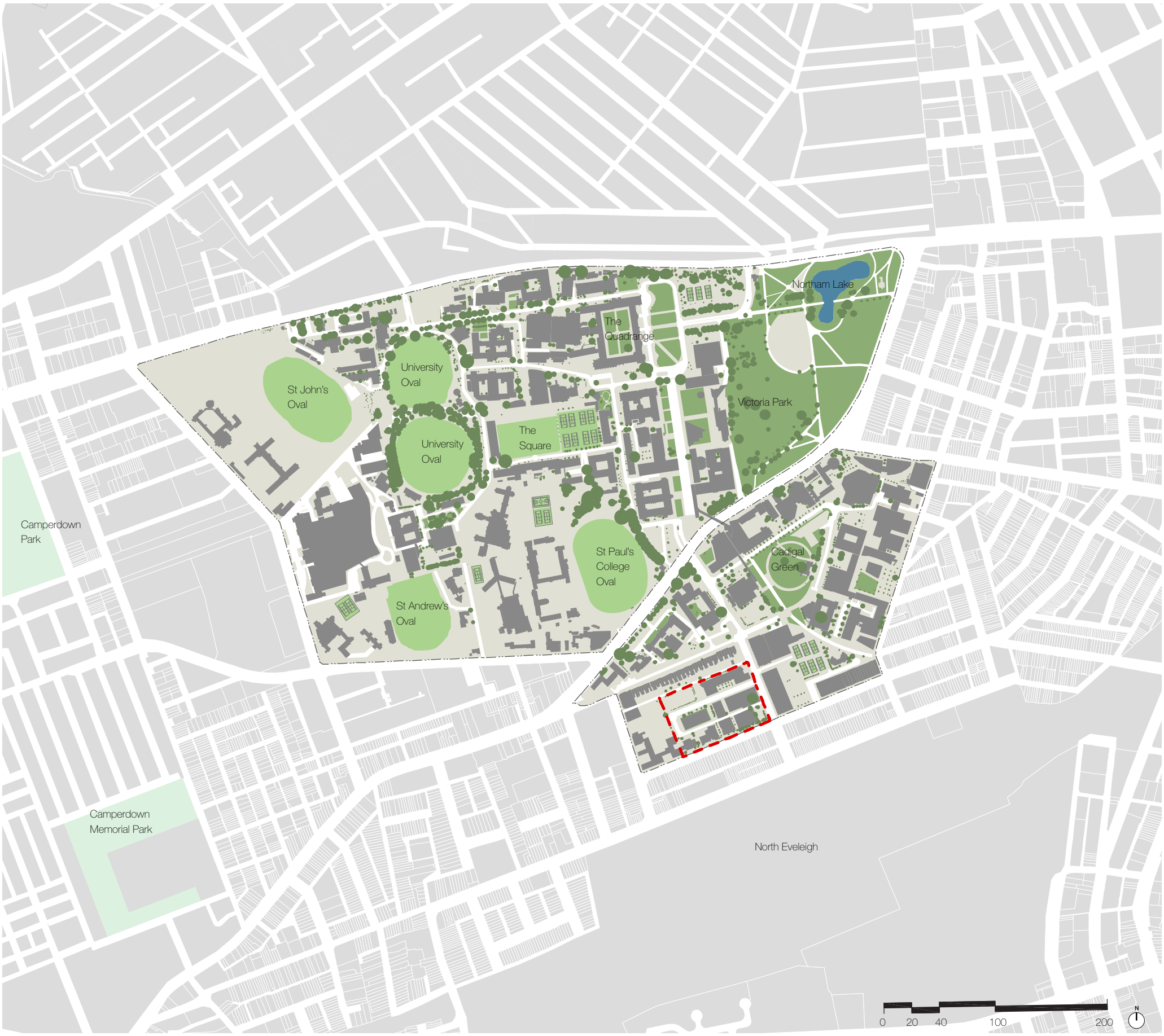
BOTTOM. Figure 2.2.1 - Urban Grain and Permeability

2.2.2 Open Space Network

The campus site is characterised by a large network of open spaces that offer a range of recreational amenity spaces for the surrounding population. The key open spaces that are located close to the Abercrombie Precinct are as follows;

- Victoria Park- Located along Parramatta Road and City Road, Victoria Park contains a public swimming pool and Lake Northam.
- The Quadrangle - This spacious quadrange forms the historical core of the campus offering a simple balance of lawn and traditional architecture;
- Cadigal Green - This open space forms the core of the Darlington Campus offering users a pleasant and relaxed urban park setting;
- Sports facilities - The university caters for a range of recreational amenities though sport ovals and tennis courts;

The Abercrombie Precinct is located to the south western edge of the campus close to the North Eveleigh Carriageworks site and a variety of terraced residential streets. The industrial and residential character surrounding the site relate to the site's historical relationship with the railway and industry, and so should be reflected in the Abercrombie Precinct Design for both the building and landscape.

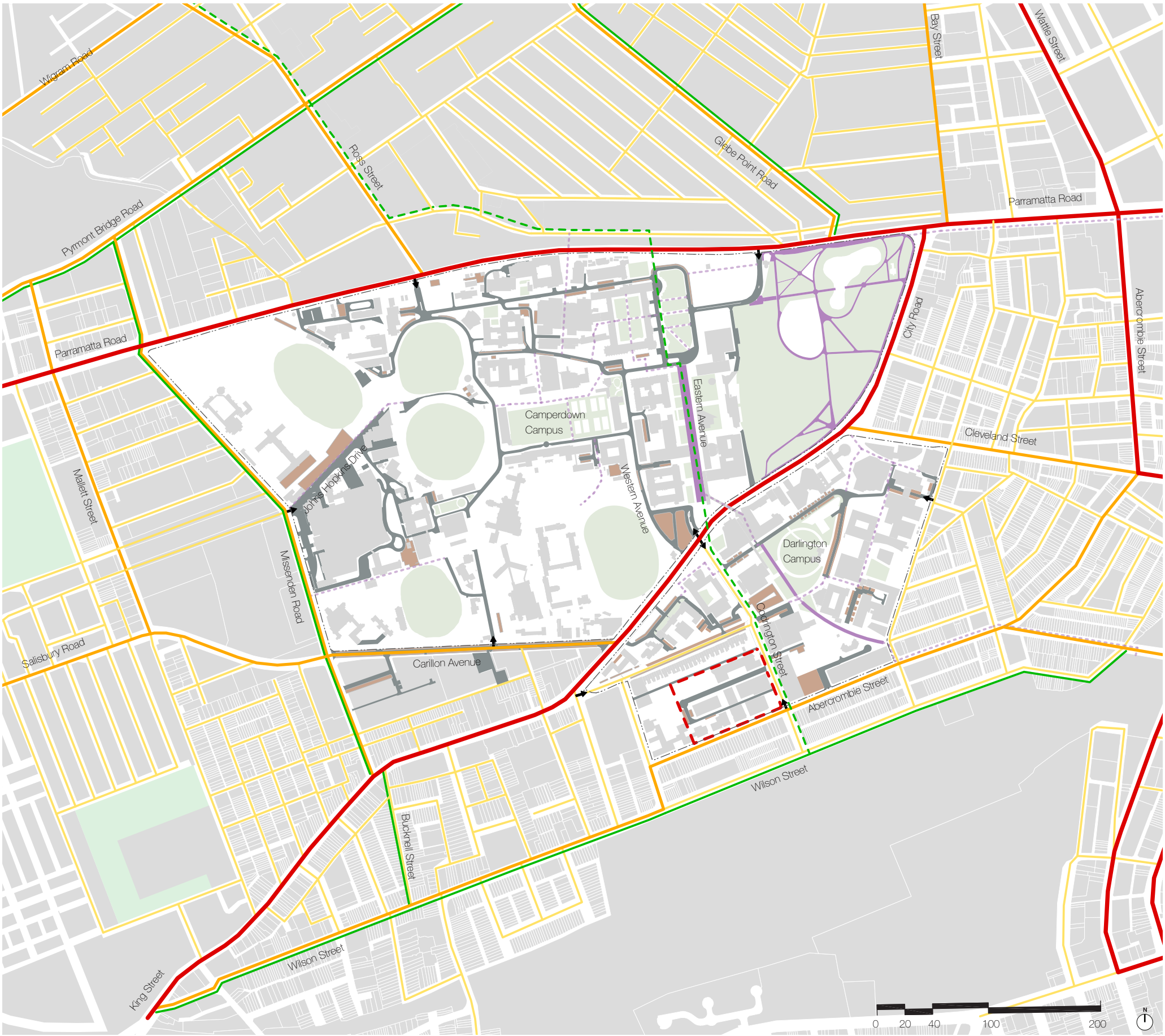


BOTTOM. Figure 2.2.2- Open Space Network

2.2.3 Access and Movement

The University of Sydney campus and Abercrombie Precinct are supported by a number of roads that allow easy access to and from the surrounding context.

- External Road Network - To the north of the campus is Parramatta Road with City Road dividing the campus into Camperdown Campus and Darlington Campus. Significant roads link to these two primary roads including but not limited to Cleveland Street, Salisbury Road and Abercrombie Street. Abercrombie Street holds significance to the Abercrombie Precinct as it forms a direct connection between Redfern Station and the Darlington Campus.
- Internal Road Network and Car Parking - The campus is dominated by an internal road network that fragments the campus into a series of pockets that limit a seamless flow of pedestrian movement. This dominance of the vehicle on the campus is emphasised through an extensive network of surface car parks that degrade the visual character of the campus. The distribution of parking areas, combined with the lack of clearly defined pedestrian paths at times results in conflicts between cars and pedestrians.
- Cycle Network and Pedestrian Network - The University of Sydney Campus is closely located to a wide network of cycle routes from the south along Wilson Street. The pedestrian core of the campus is focussed along Eastern Avenue through Cadigal Green towards Redfern Railway Station. The pedestrian heart is primarily to the east of the campus limiting pedestrian access to the west of the site.

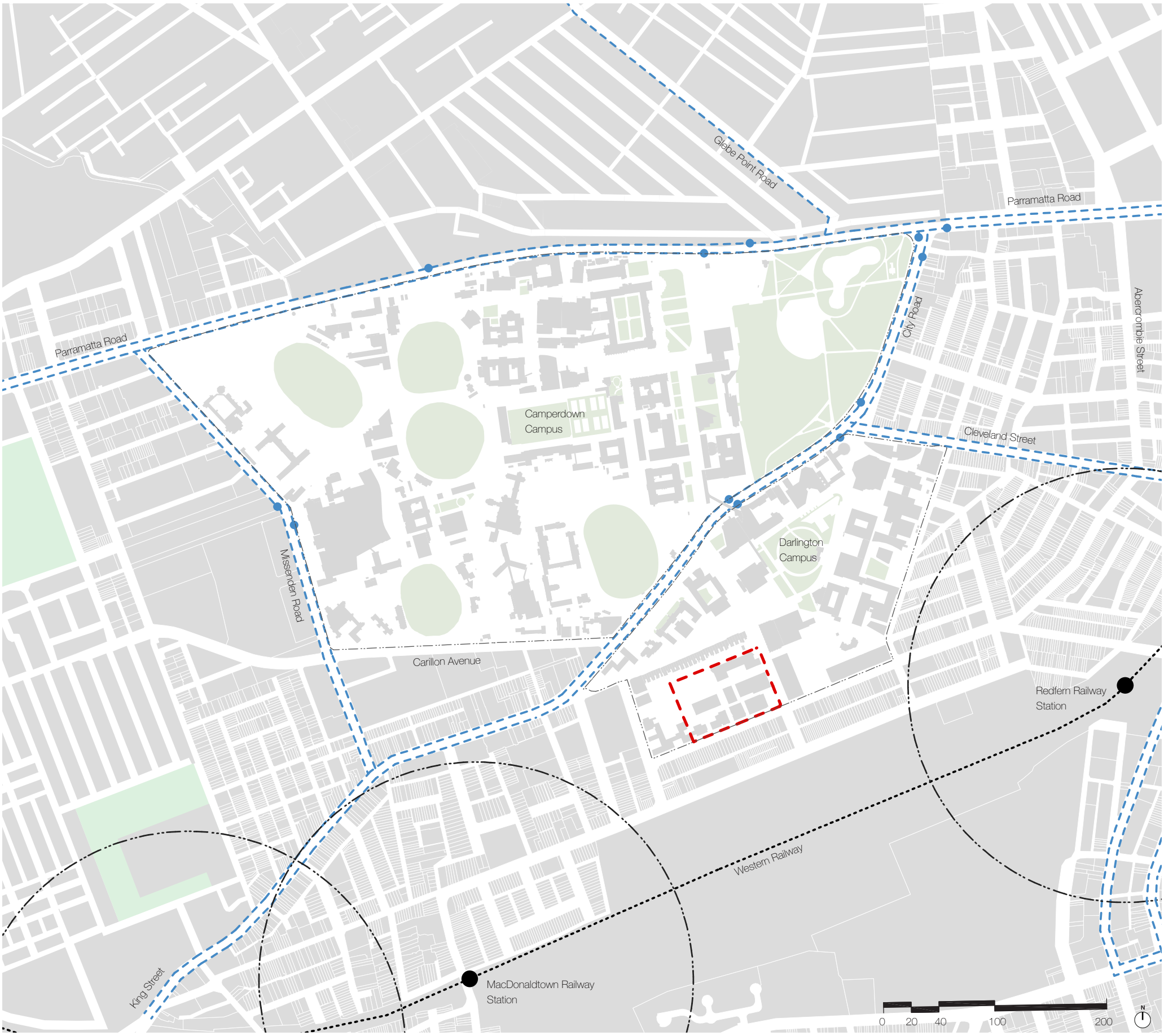


BOTTOM. Figure 2.2.3 - Access and Movement

2.2.4 Public Transport

The University of Sydney campus and Abercrombie Precinct are supported by a variety of public transport methods of transport that allow easy access to and from the surrounding context.

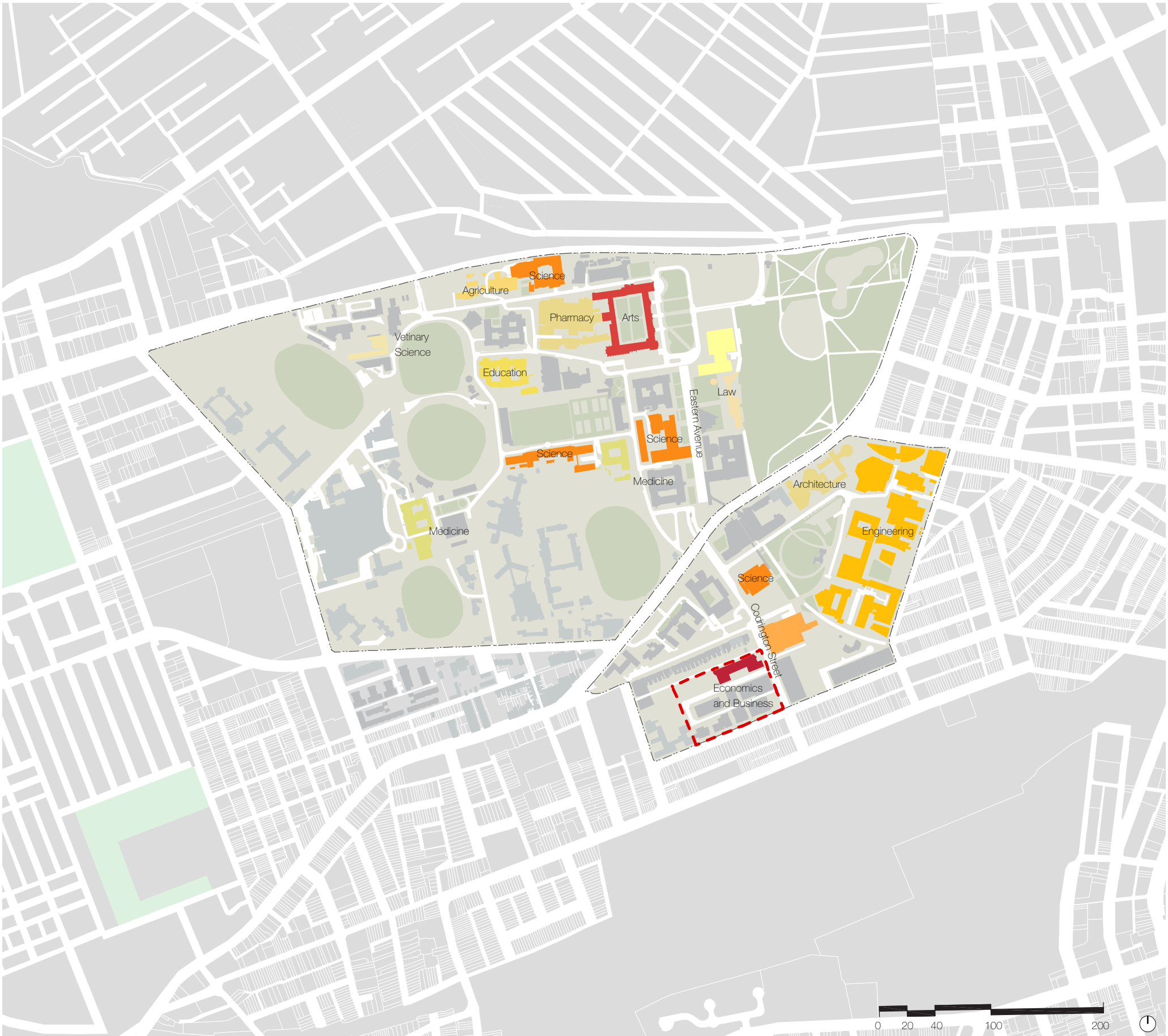
- Railway Network - The campus and the Abercrombie Precinct are closely located to MacDonaldtown and Redfern Railway Station. The site is approximately 700 metres from Redfern railway station, which provides the area with frequent rail links to the surrounding region. Redfern railway station is the ninth busiest railway station in the Sydney area.
- Bus Network - The local bus network provides multiple routes and stops along City Road, Parramatta Road and Missenden Road. The majority of the buses in the Darlington area operate along City Road. Bus stops on City Road are approximately 250 metres away from the proposed development site.



BOTTOM. Figure 2.2.4- Public Transport

2.2.5 Intensity of Uses

The campus contains a variety of educational land uses that support a varied number of students. This results in various hotspots within the campus where high volumes of students visit and use specific campus facilities. The largest faculty enrolments include the Economics and Business department located within the Abercrombie Precinct, the Arts Faculty located within the Quadrangle and the Science faculty which is distributed across the campus. This highlights that the north to south axis of Eastern Avenue, continuing to Butlin Avenue and Codrington Street is the location of the greatest student numbers.



BOTTOM. Figure 2.2.5 - Intensity of Uses

2.2.6 Active Spaces and the Existing Campus Spine

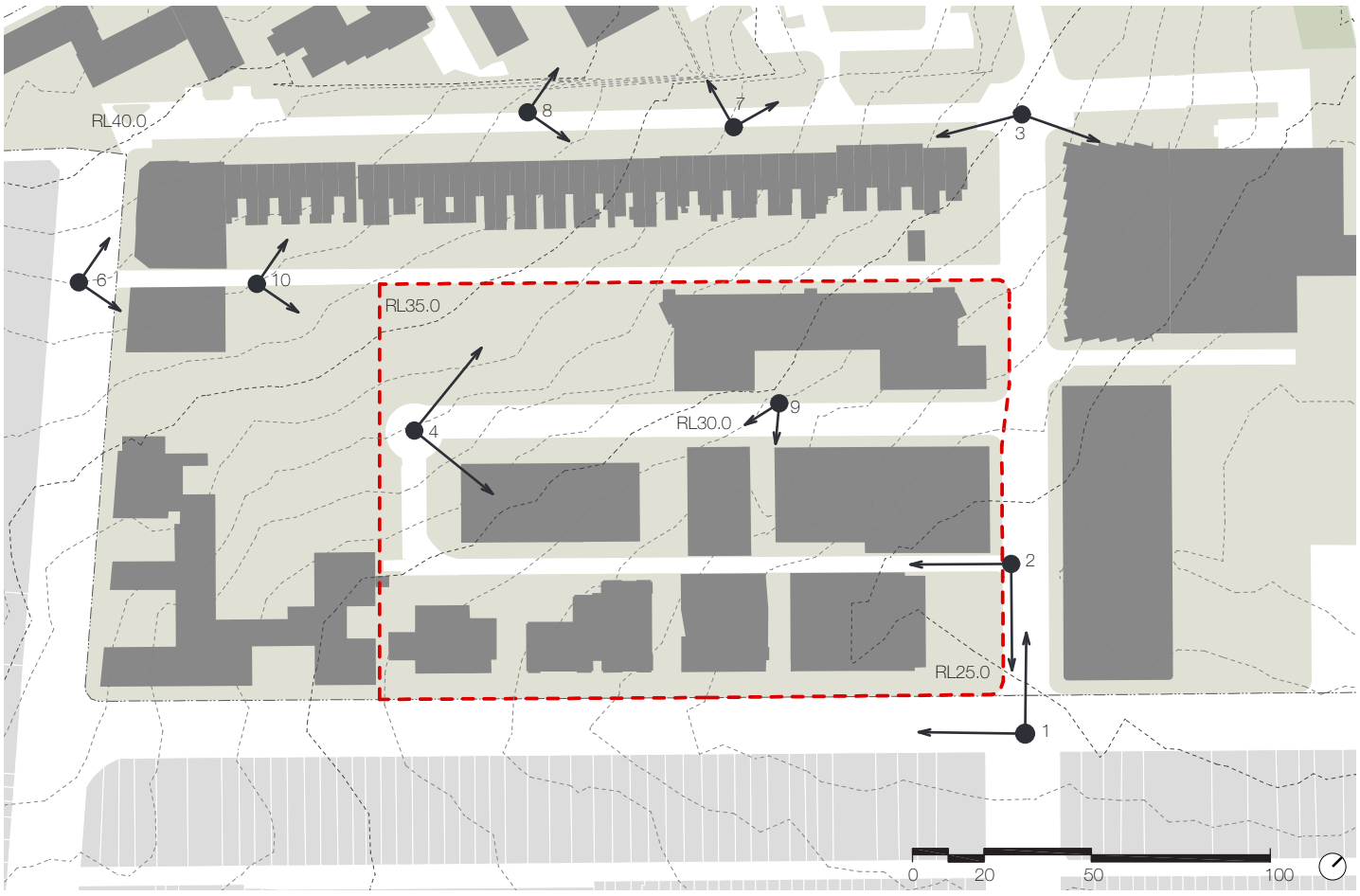
The University at present is characterised by a range of activity zones which are informed by the buildings and uses that bound them. At present the Campus spine runs along Eastern Avenue towards Cadigal Green and through to Redfern Railway Station. This direction of movement conflicts with the intensity of uses diagram on the previous page and reinforces Abercrombie Precincts separation from the heart of the University Campus. Building orientation and vast swathes of space create a loose collection of buildings that lack any continuity with each other, emphasising the fragmented and isolated experience within certain areas of the campus.

BOTTOM. Figure 2.2.6- Active Spaces and the Existing Campus Spine

2.3 The Site

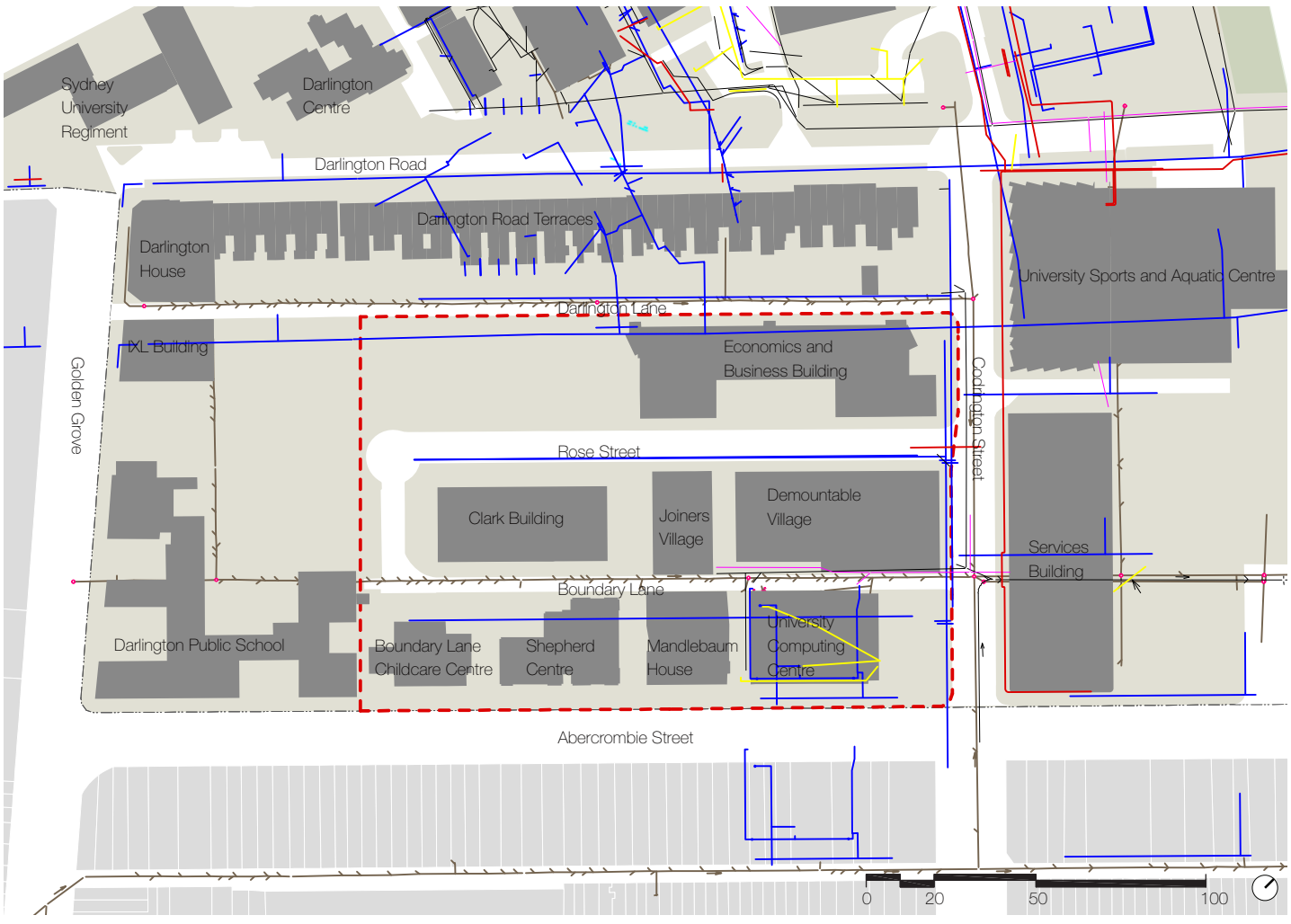
2.3.1 Topography and Views

The site is rectangular in shape with an average width of approximately 175 metres and is approximately 150 metres in width. The Abercrombie Precinct experiences a significant change in level from RL 36.0 in the north west corner to RL 25.0 in the south east corner. The site contains views along Darlington Lane, Boundary Lane, Rose Street and Codrington Street.



2.3.2 Services and Infrastructure

The Abercrombie Precinct has a number of services such as gas, electrical, telecommunications, sewerage and stormwater located within and around the site. For a more detailed assessment please refer to the Infrastructure and Services Assessment by GHD.



TOP. Figure 2.3.1 - Topography and Views
BOTTOM. Figure 2.3.2 - Services and Infrastructure

2.4 Existing Site Character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VIEW 1	Figure 2.4.1- Codrington Street/ Abercrombie Street Junction
VIEW 2	Figure 2.4.2- Boundary Lane
VIEW 3	Figure 2.4.3- Codrington Street/ Darlington Rad Junction
VIEW4	Figure 2.4.4- Rose Street
VIEW 5	Figure 2.4.5- Boundary Lane Joiners Shop
VIEW 6	Figure 2.4.6- IXL building
VIEW 7	Figure 2.4.7- Darlington Road heritage wall door
VIEW 8	Figure 2.4.8- Darlington Road heritage wall
VIEW 9	Figure 2.4.9 - Rose Street Joiners Shop
VIEW 10	Figure 2.4.10 - Back of Darlington Road Terraces

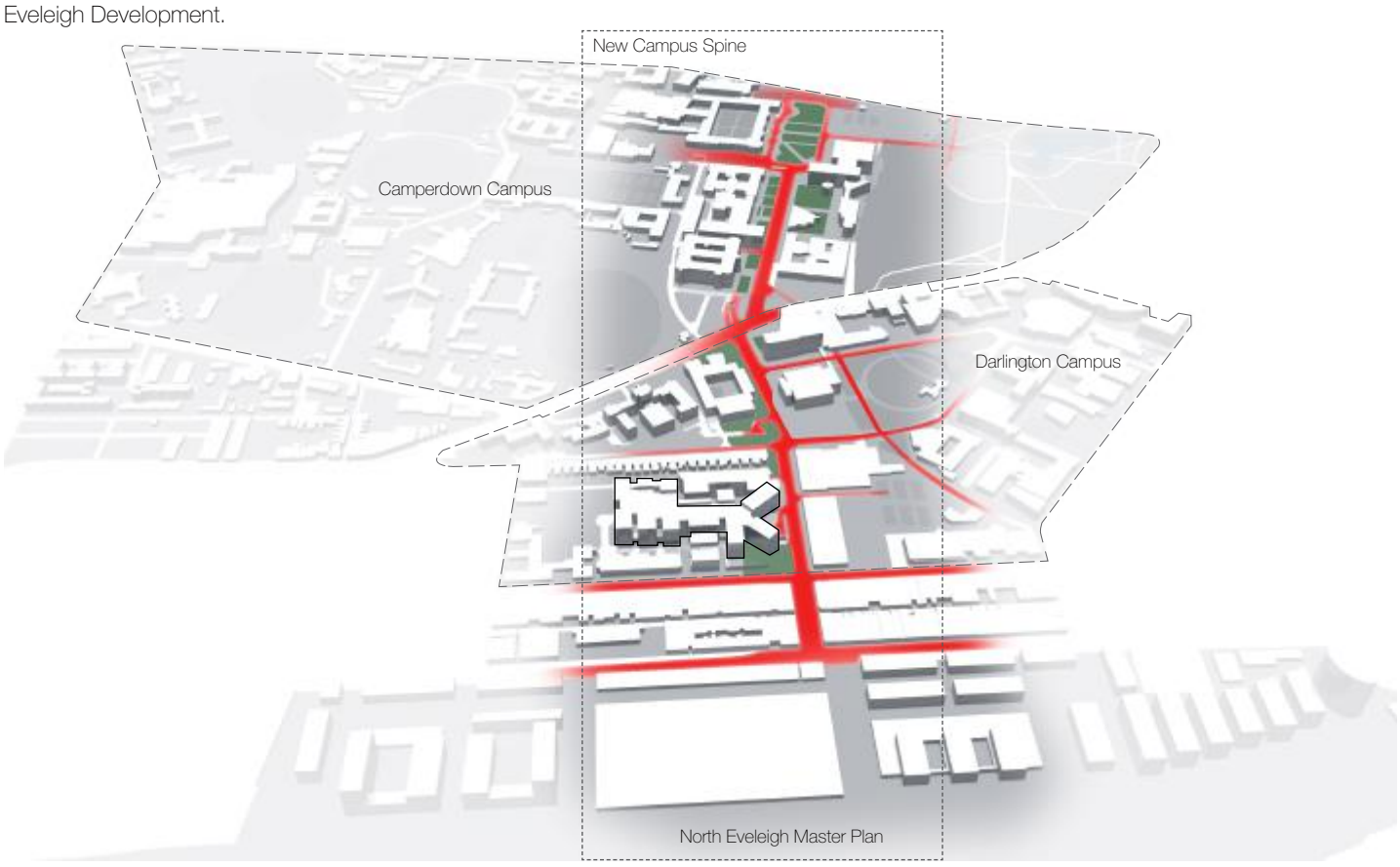
3.0 POTENTIAL STRATEGY DEVELOPMENT

3.1 Campus Strategy

This strategy builds on the work produced in the Campus 2020 Master Plan by Cox Architects in 2008 and the Cadigal Green Precinct - Phase 1 by ARUP in 2012. The chapter proposes a potential strategy for University of Sydney Campus area, which can act as the structural framework for the redevelopment of the Abercrombie Precinct.

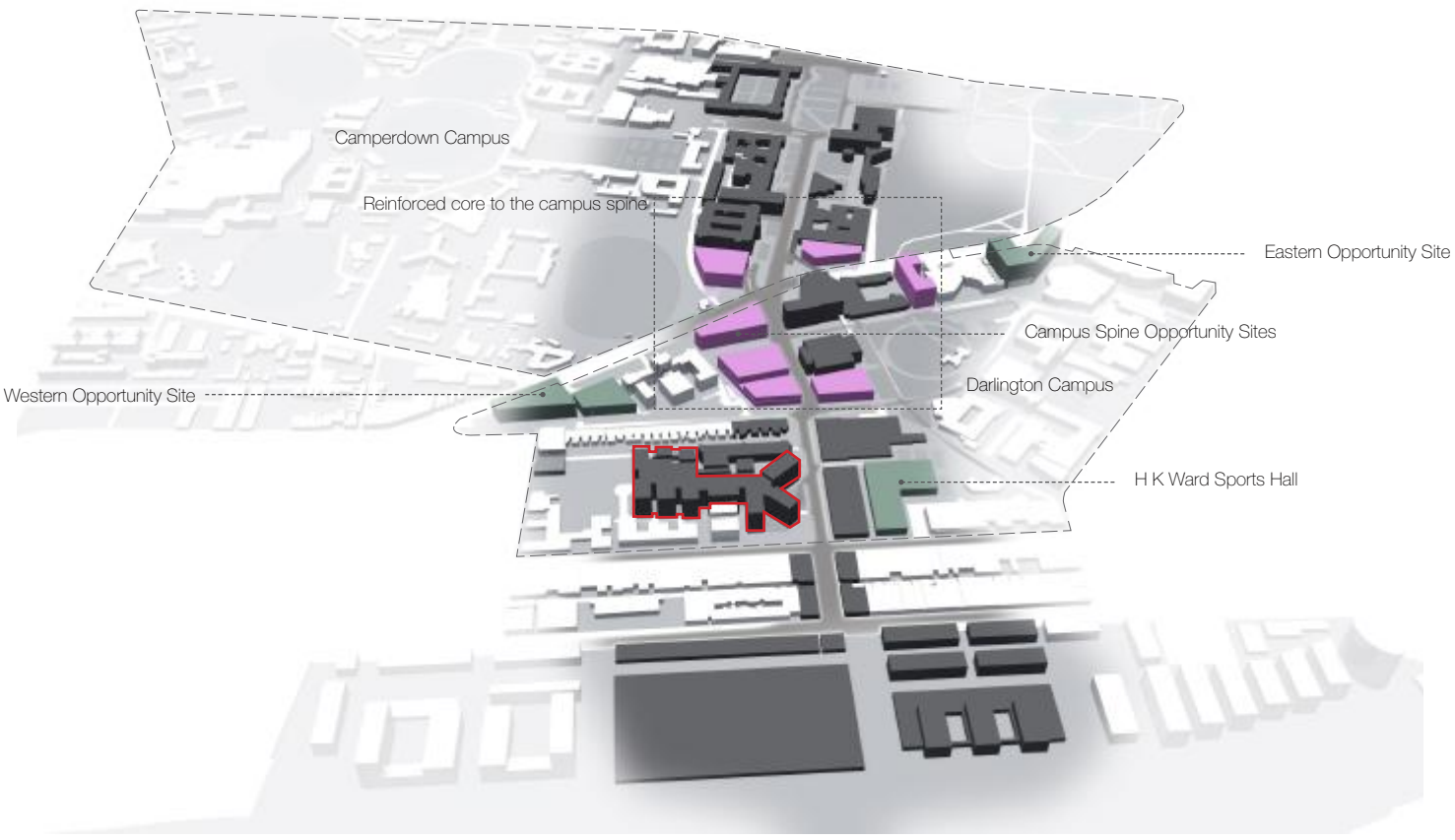
3.1.1 Creating a New Campus Spine

The campus is reorientated along Butlin Avenue and Codrington Street connecting the two busiest faculties (economics and Business and Arts Faculty) together along with the newly proposed North Eveleigh Development.



3.1.2 Reinforcing the Campus Spine

The areas of land located around the City Road/ Eastern Avenue/ Butlin Avenue intersection provide the perfect opportunity for future development sites. These site opportunities will reinforce the campus spine and improve building definition along the future streetscape.

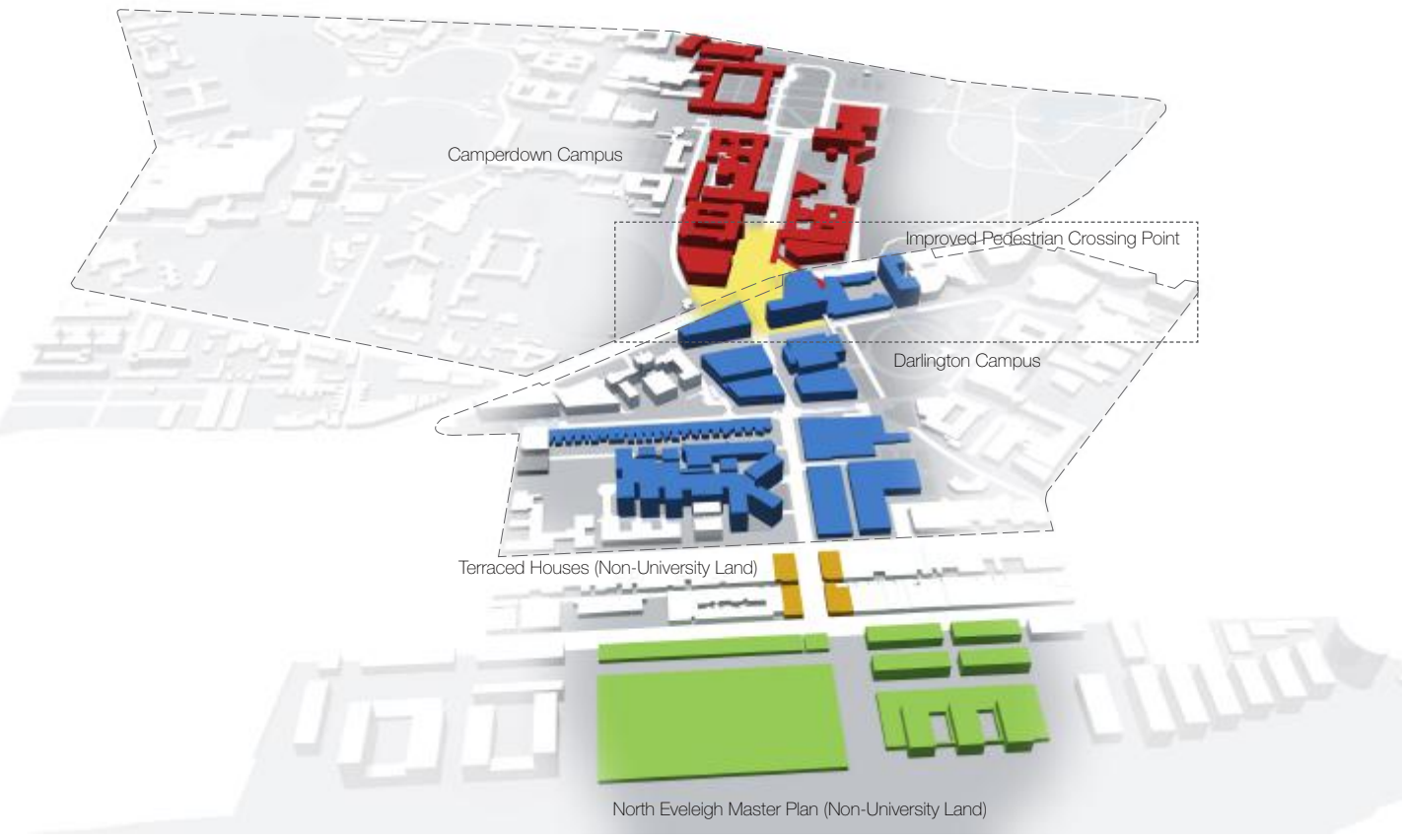


TOP. Figure 3.1.1 - Creating a New Campus Spine

BOTTOM. Figure 3.1.2 - Reinforcing the Campus Spine

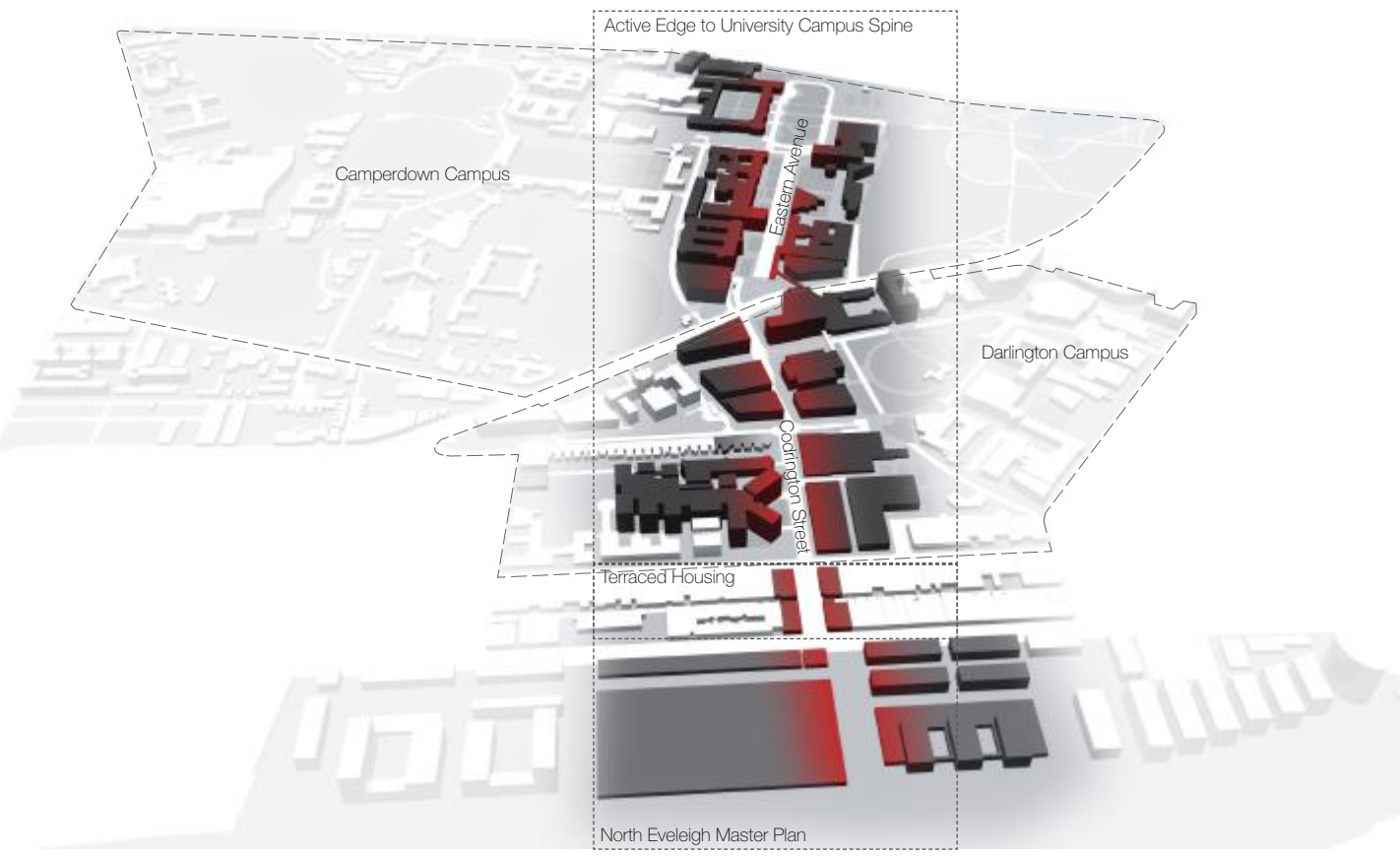
3.1.3 Connecting the Campus Spine

Essential to introducing a new campus spine is establishing a seamless link between Eastern Avenue and Butlin Avenue. By establishing a new ground level crossing across City Road, people within the Campus can easily navigate through the campus enhancing the connection between Camperdown Campus and Darlington Campus.



3.1.4 Activating the Campus Spine

By locating active uses, entrances and frontages along the spine movement can be encouraged along Eastern Avenue, Butlin Avenue and Codrington Street. The emphasis should be on variety, mix and quality of uses and activities and how they contain the streetscape of the campus spine. The aspiration is to transcend the boundary between the University of Sydney Campus and connect to the future mixed use district of North Eveleigh.



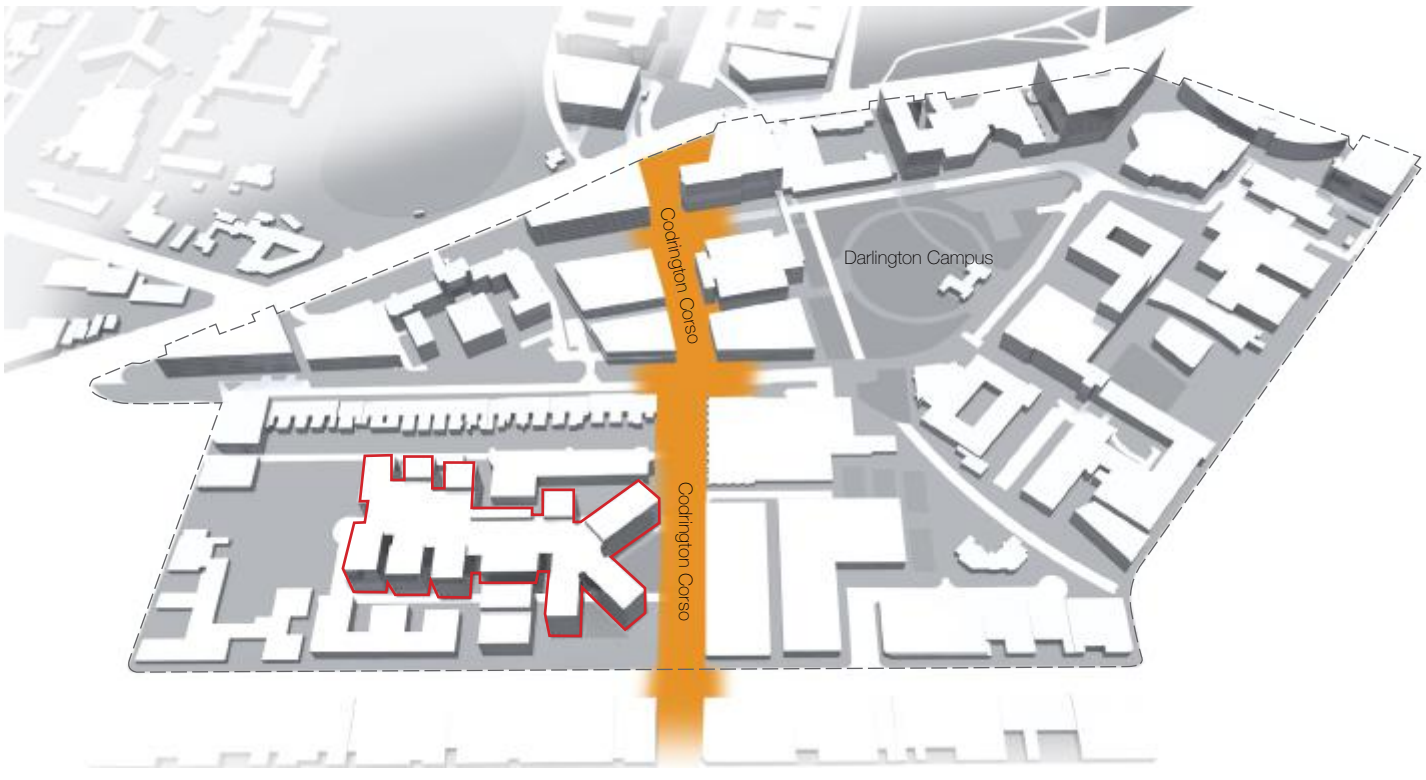
TOP. Figure 3.1.3 - Connecting to the Campus Spine

BOTTOM. Figure 3.1.4 - Activating the Campus Spine

3.2 Darlington Campus Strategy

3.2 1 Codrington Corso

Codrington Street and Butlin Avenue offer the perfect opportunity to change the nature and character of the existing streetscape into a pedestrian friendly environment that responds to the future function of the Darlington Campus. By building off the Campus 2020 Master Plan principle of prioritising the pedestrian along these key strategic streets, the Business School provides a key opportunity to set a precedent of how future developments along the Campus Spine can respond to the neighbouring streetscape and initiate a pedestrian focussed network of routes.



3.2.2 Approaching Darlington Campus

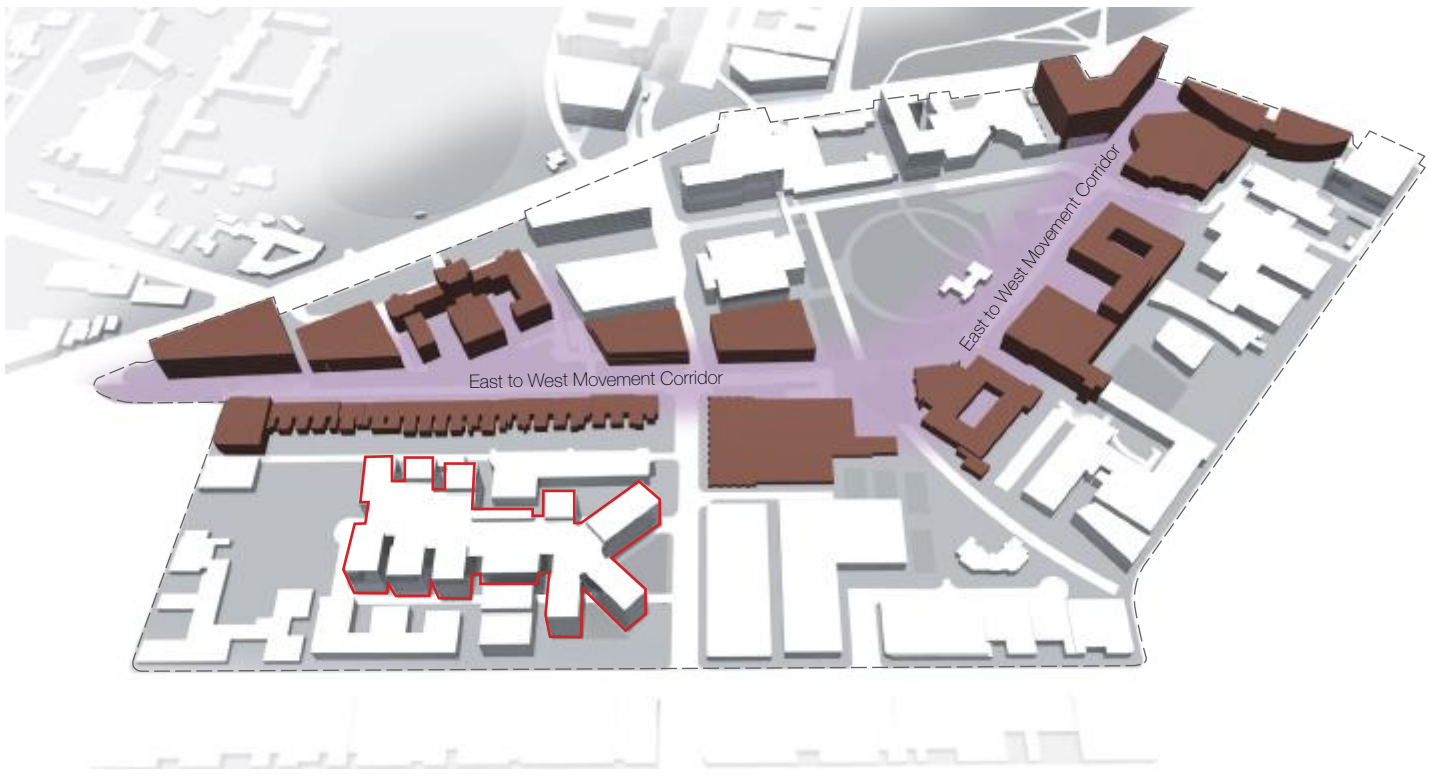
Although it is important to create a strong connection between Camperdown Campus and Darlington Campus, it is equally important to mark the site's presence amongst it surroundings. By strategically positioning a series of landmark buildings, Darlington Campus has the potential to be an entry to all the major route-ways strengthening the campus's identity and marking it on the mind map of people travelling to and from the city and the surrounding suburbs.

TOP. Figure 3.2.1 - Codrington Corso

BOTTOM. Figure 3.2.2 - Approaching Darlington Campus

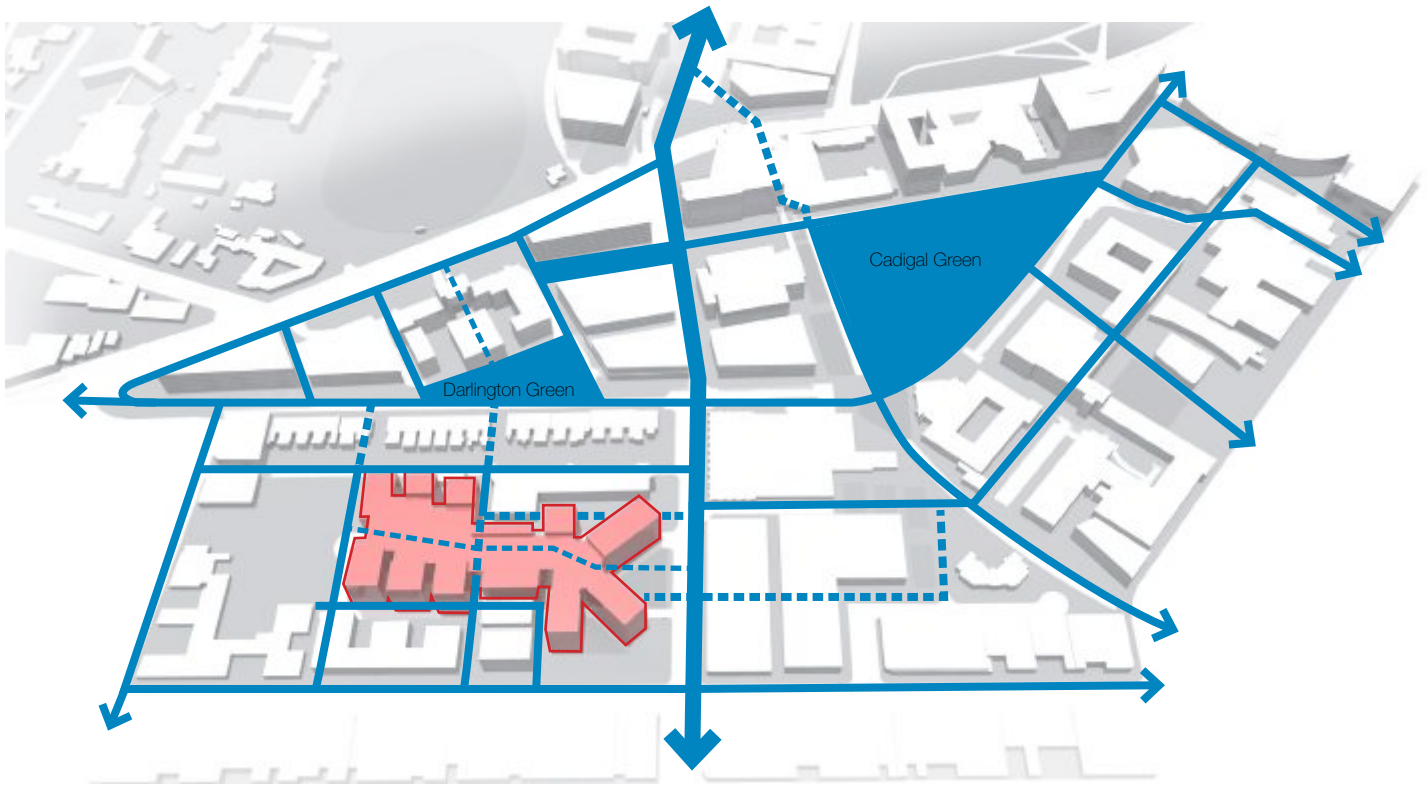
3.2.3 Connecting Darlington Campus

By establishing key buildings with a high amount of users along the eastern and western edge, an east to west corridor across Darlington Campus can be created. This encourages cross movement across the campus and initiates a more unified campus precinct.



3.2.4 Unlocking Darlington Campus

The Abercrombie Precinct offers the opportunity to act as a catalyst to the improvement of the Darlington Campus, creating a network of walkable routes that breakdown the block form into a series of interwoven lanes and spaces. Key north to south routes can penetrate the perimeter block linking Abercrombie Street, Darlington Road and City Road together, whilst the east to west routes ensure the site retains its relationship with Codrington Corso and Cadigal Green.



TOP. Figure 3.2.3- Encouraging East to West Movement

BOTTOM. Figure 3.2.4 - Unlocking Darlington Campus

4.0 ESD STRATEGY AND SUSTAINABILITY

The ESD Strategy builds on the work completed in the ESD Report by Cundall and project team. McGregor Coxall has focused on a site wide strategy for the delivery of the landscape design component of the project. This picks up not only on the theme of creating 'a sustainable building in the park', but also ensures that this approach relates well with the local context for both the campus and the surrounding areas.

4.1 Landscape Design Statement

Within the ESD Report by Cundall there are a range of key Green Star – Education credits that have been addressed by McGregor Coxall through the Landscape Design Statement. The table below outlines the key credits and points that have been taken into account as part of the strategy and design process by McGregor Coxall. For further information on the broader Sustainability Strategy for the Abercrombie Precinct and the University of Sydney refer to the draft BioCity Assessment Framework and Rating Tool in Appendix 1.

Category	Credit	Points	Impacts	Measures and Initiatives
Management				
Man-6	Environmental Management	2	Construction and demolition of buildings has a significant impact to the environment.	– McGregor Coxall will contribute to the tender documentation (as specified by Cundall) for the landscape to ensure that the selected landscape contractor is ISO14001 accredited and has an Environmental Management Plan.
Man-7	Waste Management	2	Up to 40% of waste going to landfill in Australia is generated from the construction of buildings.	– McGregor Coxall will contribute to the tender documentation (as specified by Cundall) for the landscape to ensure that the selected landscape contractor assists the project achieve 2 credits by reducing the waste to landfill by more than over 80%.
Man-10	Learning Resource	1	The behavioural pattern of occupants (both students and staff at UoS) costs very little, but can significantly reduce environmental impacts.	– As part of the broader Building User Guide and Strategy McGregor Coxall has contributed to both the design and installation of eLearning pods distributed in outdoor space (integrating power and WIFI), and outdoor classroom spaces for to assist facilitate alfresco lectures.
Man-11	Maintainability	1	The operation and maintenance of building accounts for over 75% of the overall environmental impacts such as energy and water consumption.	– McGregor Coxall is available to brief and work with the Facilities Management team at any stage throughout the design process.
Transport				
Tra-3	Cyclist Facilities	4	Cycling not only reduces carbon emissions but helps promote health and wellbeing.	– As part of the broader strategy and design for the site McGregor Coxall has incorporated key requirements with Tra-3 specifically around the provision of outdoor cyclist facilities.
Tra-4	Commuting Mass Transport	4	Transportation issues account for close to 20% of our ecological footprint.	– Within the broader site strategy McGregor Coxall can assist the project determine the location of key transport nodes that will be incorporated into the 'Transport Calculator'.
Tra-6	Transport Design and Planning	1	As above	– The work completed by McGregor Coxall on the design of the landscape and its urban context can be used to assist the transport engineers.

BOTTOM. Figure 4.1.1 - Education Credits Table

Category	Credit	Points	Impacts	Measures and Initiatives
Water				
Wat-3	Landscape Irrigation	3	Although seasonal, water consumption via irrigation accounts for close to 5% of total mains potable water consumption.	– McGregor Coxall has design the landscape to be very water efficient and respond to the local climatic conditions.

Category	Credit	Points	Impacts	Measures and Initiatives
Materials				
Mat-4	Concrete	2	Concrete is a significant contributor to traditional 'commercial' construction techniques.	– McGregor Coxall will contribute to the tender documentation (as specified by Cundall) for the landscapes to ensure that credit requirement to incorporate recycle aggregate and a cement alternative such as flyash is specified in the project.
Mat-5	PVC	2	During its manufacture PVC has a range of toxic by-products that have a significantly negative effect on human health.	– McGregor Coxall will contribute to the tender documentation (as specified by Cundall) for the landscapes to ensure that credit requirement to minimise the use of PVC where possible and to
Mat-7	Timber	1	Deforestation is a major international issue and something that has seen Australia loose over half of its native forests and woodlands.	– McGregor Coxall to ensure that the tender documentation (as outlined by Cundall) specifies that 95% of timber used for the landscape is from a sustainable timber source such as FSC.

Category	Credit	Points	Impacts	Measures and Initiatives
Land Use and Ecology				
Eco-1	Topsoil	1	Approximately 20% of waste to landfill from the building and demolition sector is clean fill (or topsoil).	– McGregor Coxall will contribute to the tender documentation (as specified by Cundall) for the landscapes to ensure that credit requirement to where possible reuse topsoil excavated from the site.
Eco-4	Ecological Value	2	Australia has very high levels of biodiversity and is home to over 1 million species of fauna and flora.	– McGregor Coxall has designed the landscape areas surrounding the building to ensure that it enhances the ecological value of the site – incorporating local endemic plant species and suitable levels of vegetation to attract native flora (specifically birds).

Category	Credit	Points	Impacts	Measures and Initiatives
Emissions				
Emi-5	Watercourse Pollution (Quality and Quantity)	2	About 10% of rain finds its way directly into Australia's watercourses, by contrast in urban areas nearly 90% of rain will enter the stormwater system.	– McGregor Coxall has incorporated the following into the landscape design (and believes that Stormwater Detention can be enhanced):
2.	WSUD tree pits connected to lane way, plaza and street storm water system.			

BOTTOM. Figure 4.1.2 - Education Credits Table

5.0 LANDSCAPE DESIGN STATEMENT

5.1 Introduction

This Landscape Design Report has been prepared by McGregor Coxall on behalf of John Holland Pty ltd. The section covers the Landscape Architectural aspects of the Abercrombie Precinct Redevelopment. This statement will describe the landscape concept for the site and provide a framework for detailed design and documentation.

The experience of the landscape has been carefully considered to integrate into the future and existing context and support a diversity of spaces that offer a variety of activities and amenities. The union of Landscape Architecture and architecture, has been carefully considered so that an integrated and seamless transition is experienced between internal and external spaces.

The Landscape Architectural approach can be summarised into the following key points:

- Increase social interaction and amenity for students, workers and the surrounding community;
- Create a pedestrian friendly environment that is accessible and safe through establishing a defined hierarchy of routes and space;
- Add more trees and vegetation to the site than currently exists;
- Provide visible presence and public interaction between the site and the general public;
- To create a landscape that seamlessly interfaces with the architecture on the site and the surrounding existing and future context;
- Establish a network of spaces and routes that seamlessly connect with each other;
- Use planting to control shade and light
- Use of high quality, robust materials and finishes with minimised embodied energy
- Preference for Australian materials, e.g stone pavements and features;
- Link internal and external spaces through creation of 'open air class rooms and ehubs'

5.1.2 Drawings

This section should be read in conjunction with the following Landscape Architectural drawings included with this Landscape Design Statement:

- BUS-LAN-DRG-0001-02
- BUS-LAN-DRG-0002-02
- BUS-LAN-DRG-0003-03
- BUS-LAN-DRG-0004-02
- BUS-LAN-DRG-0005-02
- BUS-LAN-DRG-0006-02

5.2 Design Philosophy

5.1.1 Plexus

"An intricate organised network or web like formation."

The design philosophy for the landscape architecture of the project encompasses creation of a contemporary campus environment that is derived from, and guided by, the University of Sydney context, Business School uses, student housing and urban character of the site. Our aim is to make a 'Plexus' or connected network of external spaces with a hierarchy of use, and to fully adopt ecologically sustainable design principles.

The primary site design objective has been to locate and organise elements to link the building circulation into the existing street and lane network. The design is intended to maximise the opportunities for external public use by students and others creating shared flexibility in a safe and beautiful environment. Lanes are activated by the built form and ant trails of students. The internal learning environment is enhanced by the external environment. The site design components are integral to the projects' social, environmental and ecological systems forming a rich and diverse program.

5.3 Site Program

Twenty key spaces and areas have been designed around and on the building to take maximum opportunity of the potential for use.

1. Rose Walk

Taking its name from the former Rose Lane, Rose Walk is a generous set of access stairs and linear walkway that leads from Darlington Lane to the Rose lobby entrance of the Business School and on to Abercrombie Street. Along the Darlington School boundary is a heavily textured retaining wall made from salvaged pieces of stone and artefacts from the University stock piles. A pedestrian access gate and ramp is provided to the Darlington School.

2. Rose Lobby

The main western lobby for the business school accessed from Rose Walk.

3. Boundary Lane

The reinstated Boundary Lane provides 24/7 public access to the surrounding uses. It incorporates WSUD tree grilles, catenary lighting and urban furniture.

4. Private Court

Private courts with BBQ's and furniture for the student housing.

5. The Launderette

A café and launderette attached to the student housing that will generate a hive of activity at all hours ensuring the passive safety of the lane.

6. Mandelbaum Link

A mid block pedestrian access way that allows north south circulation from Darlington Lane right through the building to Abercrombie Street.

7. Roof Gardens

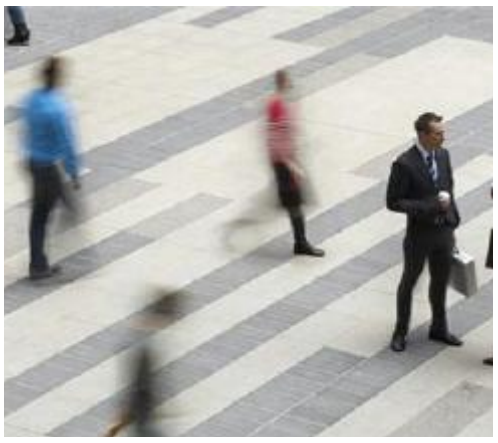
Two systems of roof garden have been designed, an intensive and an extensive system. An intensive kitchen garden is provided that can be attached to the café lease for production of fresh food onsite. An extensive roof garden forms a green blanket over the building to reduce urban heat island effect.

19. Building Connections

These are covered or uncovered walkways allowing north south access between the existing and new schools.

20. Open Air eHub

The north facing eHub enjoys a protected microclimate in the undercroft of the building. It has organic benches hard wired with power and wifi for students to enjoy views to the adjacent green walls.



16. Business School Lobby

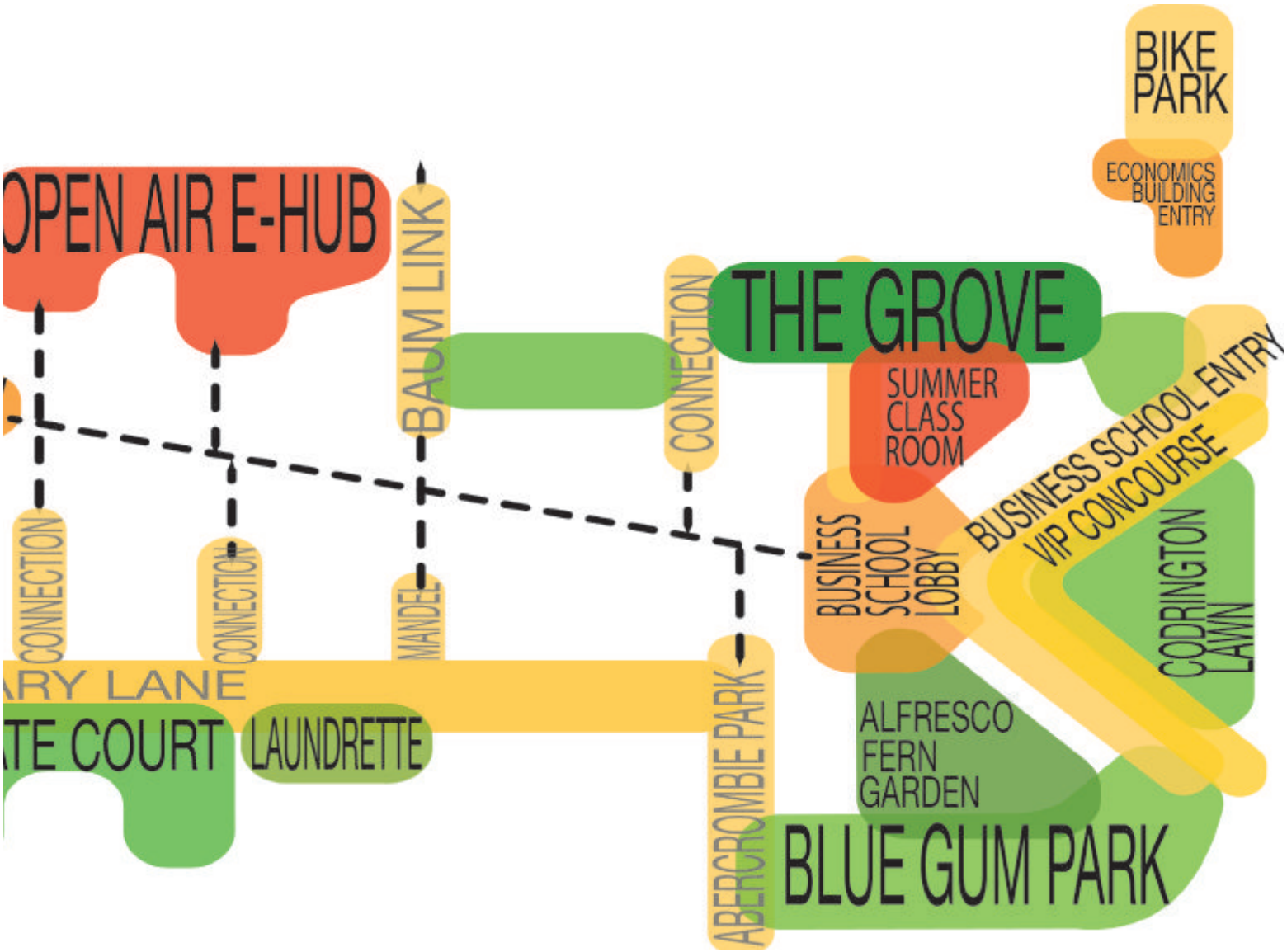
The main lobby for the Business School accesed from Codrington Street.

17. The Grove

A gridded organization of native trees that form shade for users along the walkway. WSUD rain gardens to treat storm water are located under the grove.

18. Summer Classroom

This amphitheatre takes advantage of the grade change allowing outdoor teaching under the trees. It will have a projection screen and be connected to IT and power.



14. Bike Park

A small plaza linked to the new bicycle store

15. Economics Building Lobby

A raised stone plinth providing access to the old economics school from Codrington Street.

8. Abercrombie Place

A small stone paved lane providing public access from Abercrombie Street to Boundary Lane adjacent to Mandelbaum House.

9. Blue Gum Park

A simple sun filled sloping public lawn in front of the main building on the corner of Abercrombie Street and Codrington Street planted with locally endemic Blue Gum trees.

10. Alfresco Fern Garden

A shady place to be enjoyed in summer or in the morning sun in winter with tall tree ferns towering above. The fern garden has access to the café adjacent.

11. VIP Concourse

A paved pedestrian access way that can be used to deliver VIP guests to the lower floor of the building.

12. Business School Entry

A paved accessible ramp and stair that that connects the building to Codrington Street.

13. Codrington Lawn

A simple sun filled lawn in front of the main building forecourt that retains the existing Blue Gum tree and is surrounded by a timber bench hard wired with power and also housing wifi.

5.4 Planting Philosophy

The planting is a rich and robust design using indigenous species that reflect the regions endemic character. Any microclimates created by buildings need to be evaluated for solar penetration and wind turbulence. The selected species will need to respond to these microclimates and provide aesthetic attributes such as form/ enclosure, texture and colour. The planting will take on a further functional role in providing biodiversity, shade and protection.

At the time of European settlement the western part of Sydney, from Chippendale to St Peters would have had Turpentine-Ironbark Forest on its Wianamatta Shake soils. Clearing of these areas began soon after settlement because of their proximity to Sydney and the reasonably good soils (Benson & Howell). The Turpentine Ironbark Forest is characterised by a tall tree canopy 20-30m high mainly consisting of Syncarpia glomulifera and Eucalyptus with either a shrubby or grassy understory.

5.4.1 Master Plant List

The master plant list is derived entirely of locally endemic plant species to enhance biodiversity. Appropriate species will be chosen from this list according to final site conditions, availability and detailed design considerations. A minimum of 100 new trees will be planted on the site as outlined on the landscape plans. Sizes of trees will be determined by availability at the time. Some seed collection and propagation may be required to obtain appropriate stock. It is envisioned that an early growing contract will be let to procure plant stock prior to construction so that advanced trees of the correct species are available.

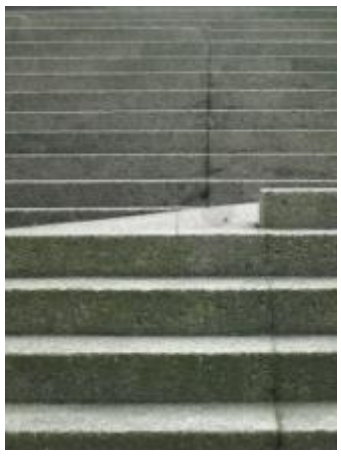
Detailed plant profiles have been developed for species listed by Benson and Howell as endemic to South Sydney and a further summary list has been developed from research to expand this list.

Name	SPRING early	SPRING mid	SPRING late	SUMMER early	SUMMER mid	SUMMER late	AUTUMN early	AUTUMN mid	AUTUMN late	WINTER early	WINTER mid	WINTER late	Fauna/ feature
Tree													
Angophora costata Sydney Red Gum, Height 15 - 20m Spread 6 - 10m Smooth Bark													
Pittosporum undulatum Sweet pittosporum, Height 10 - 15m Spread 0.3 - 0.6m Shrub-like													
Eucalyptus crebra Narrow leaved Height over 30m Spread 6 - 10m Scaly Full Bark													
Eucalyptus pilularis Blackbutt Height over 30m Spread 6 - 10m Scaly Full Bark													
Eucalyptus saligna Sydney Blue Gum Height over 30m Spread 6 - 10m Scaly Full Bark													
Eucalyptus fibrosa Broad-leaved Height over 30m Spread 6 - 10m Rough Flaky													
Eucalyptus notabilis Mountain Mahogany, Height 25 - 30m Spread 10 - 15m Rough Flaky													
Eucalyptus punctata Grey Gum Height 25 - 30m Spread 3.5 - 6m Rough Flaky													
Syncarpia glomulifera Turpentine Height over 30m Spread 6 - 10m Rough Flaky													
Eucalyptus deanei Mountain Blue Gum, Height over 30m Spread 3.5 - 6m Miscellaneous													

5.5 Materials Palette

The material palette for the landscape compliments the architecture by using a refined, minimised palette of high quality materials. These include , grey stone pedestrian sets, grey tile granite, timber decking and green walls. The planting reflects the materials approach using carefully selected species to compliment and contrast the character of the materials. Simple natural materials have been selected to fit harmoniously with the architectural composition.

Green Wall



Stairs

Eucalyptus paniculata
Grey Ironbark
Height 25 - 30m
Spread

Miscellaneous

Notelaea longifolia
Mock Olive
Height 1.50 - 3m
Spread 2.0 - 3.5m

Branches Vase

Trema tomentosa (formerly
Native Peach, Poison
Height 5 - 10m
Spread 1.2 - 2.0m

Branches Vase

Shrub

Acacia parramattensis
Parramatta Green
Height 5 - 10m
Spread 3.5 - 6m

Tall

Maytenus silvestris
Orange Bush
Height 0.60 -
Spread 0.3 - 0.6m

Tall

Breynia oblongifolia
Coffee Bush, Oblong-
Height 1.50 - 3m
Spread >60-90cm

Small/Medium

Leucopogon juniperinus
Prickly Bearded Heath
Height 0.90 -
Spread –

Small/Medium

Rice Flower, White
Height 1.50 - 3m
Spread 1.2 - 2.0m

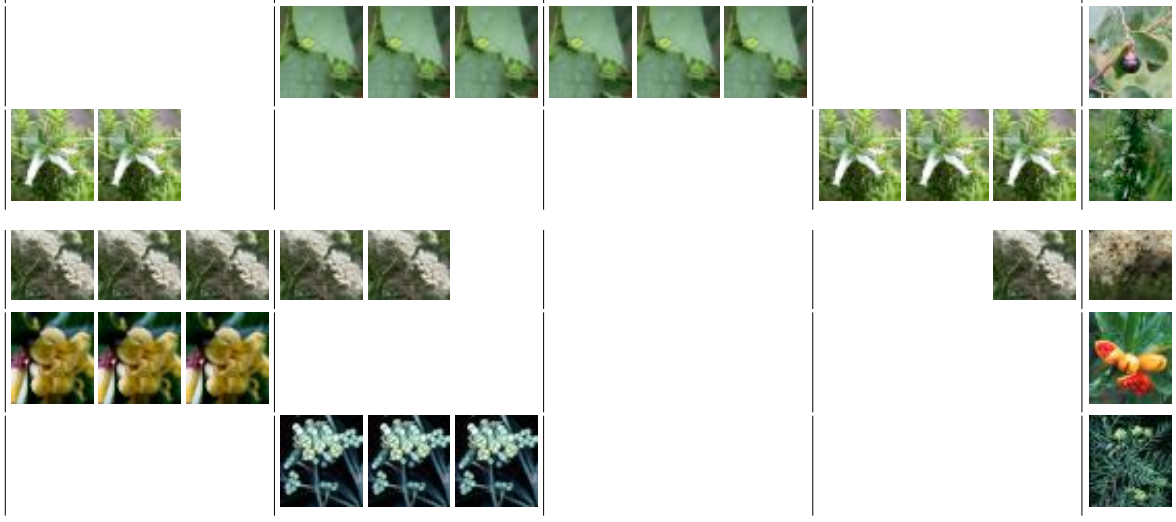
Small/Medium

Pittosporum revolutum
Brisbane Laurel,
Height 1.50 - 3m
Spread 1.2 - 2.0m

Small/Medium

Polyscias sambucifolia
Elderberry Panax,
Height 1.5 - 3.0m
Spread 0.9 - 1.2m

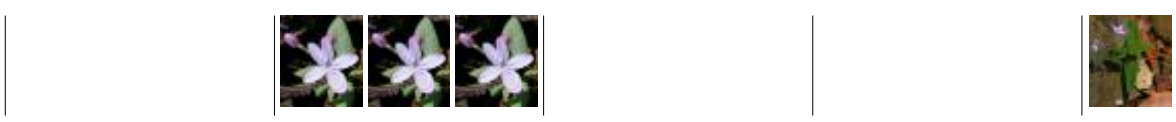
Small/Medium



Herb

Pseuderanthemum variabile
Pastel Flower
Height 0.0 - 0.3m
Spread 0.0 - 0.3m

Erect



Grass

Microlaena stipoides
Weeping Grass,
Height 0.45 -
Spread 0.6 - 0.9m

Tussock

Oplismenus aemulus
Basket Grass
Height 0.0 - 0.30m
Spread 0.0 - 0.3m

Tussock

Themeda australis/triandra
Kangaroo Grass
Height 0.45 -
Spread 0.3 - 0.6m

Tufted

Echinopogon ovatus
Forest Hedgehog
Height 0.9 - 1.5m
Spread 0.0 - 0.3m

Spear-like

Tree pit

Stone paving

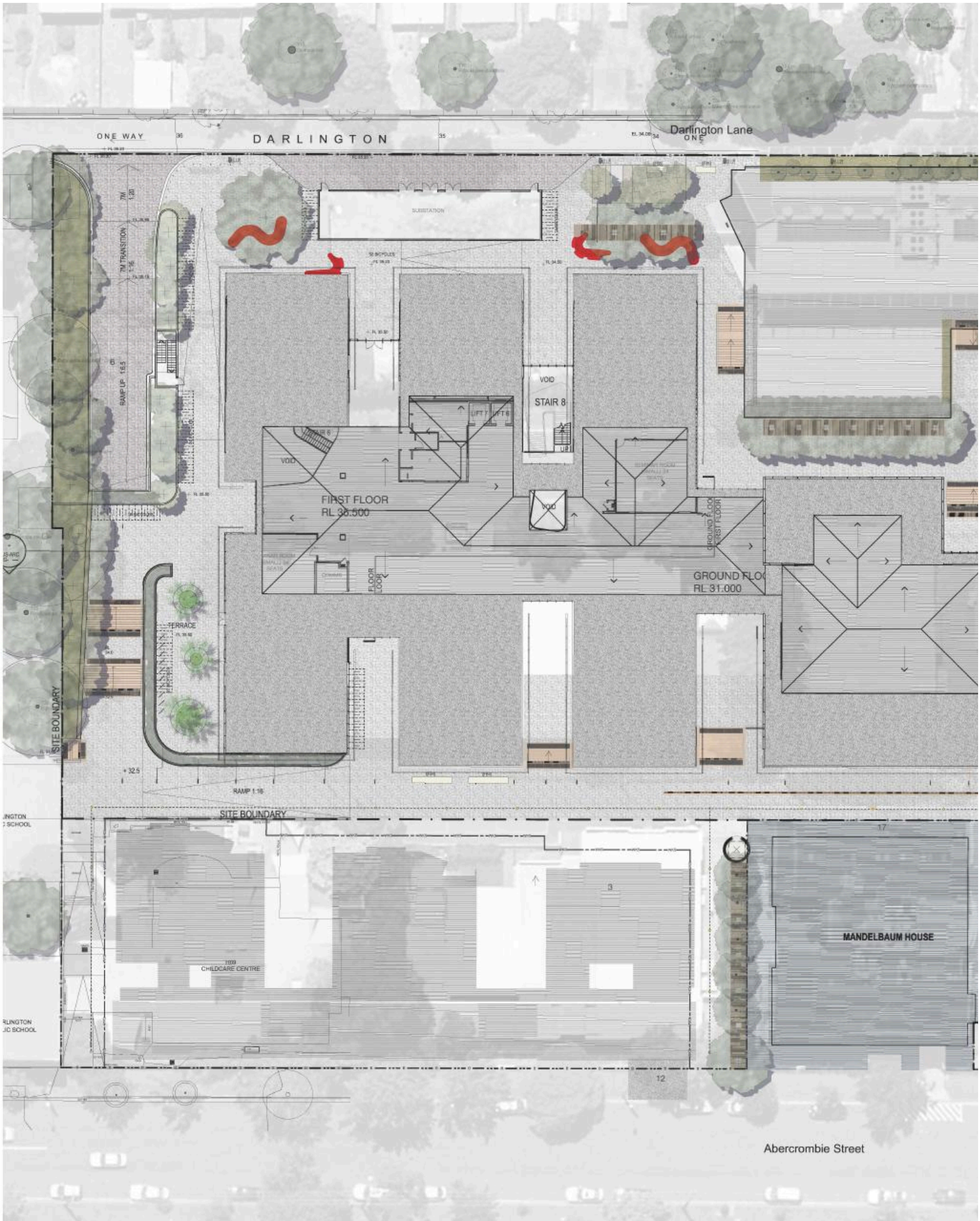
Concrete paving

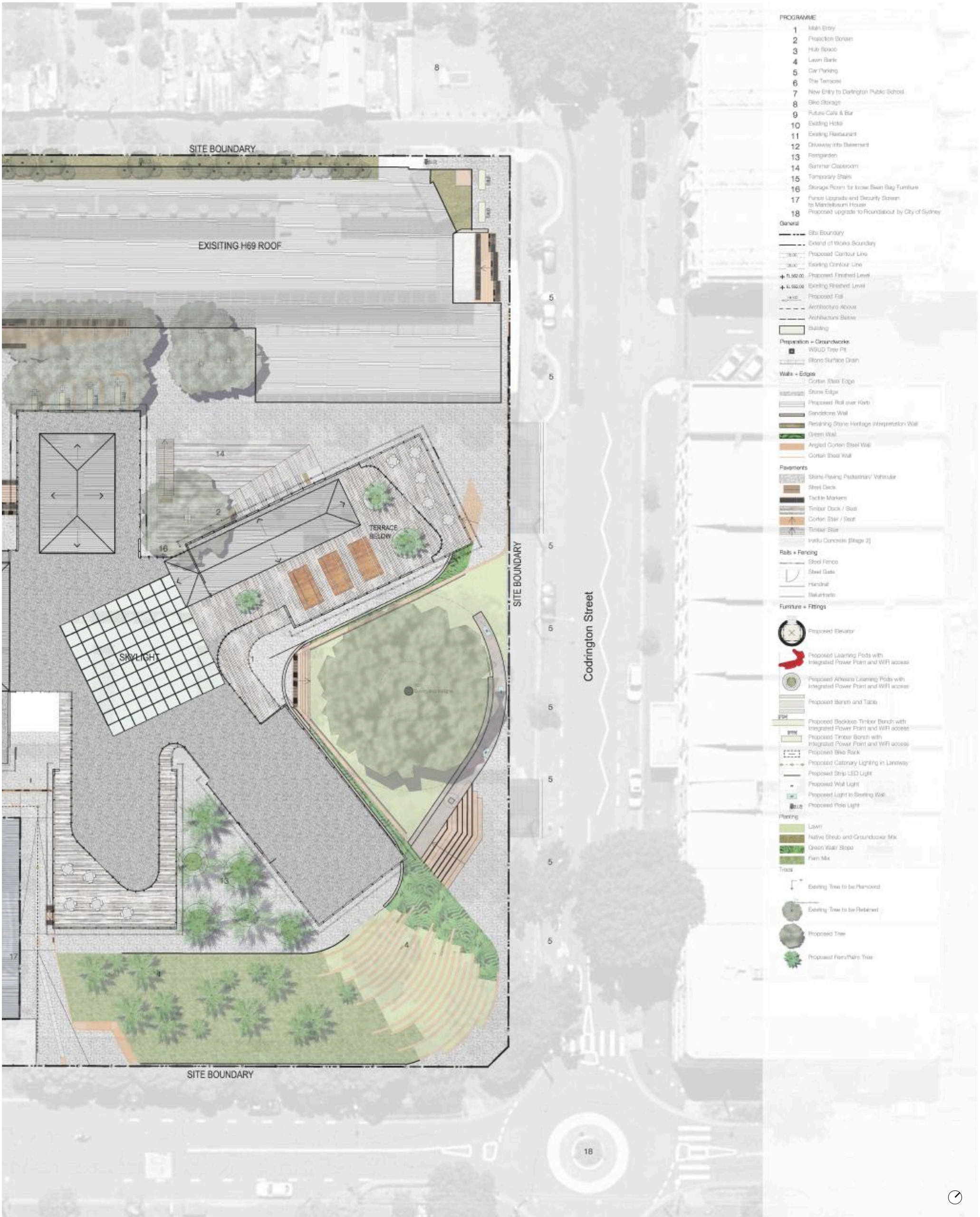
Timber Deck

5.6 Ground Floor Plan


H69
ECONOMICS AND BUSINESS BUILDING
SITE BOUNDARY
8
29
28
27
25
18
STREET
Codrington Street
CODRINGTON
SITE BOUNDARY
COVERED LINK
LEARNING HUB
STAIR 1
LIFT 2
RL 29.000
STUDENT COMMONS
STAIR 3
VOID TO LOWER GROUND
ENTRY
LEARNING HUB
CAFE SEATING
STAIR 2
LIFT 3
Outline of Building Above (typical)
SUB STN
SITE BOUNDARY
PROGRAMME
1 Main Entry
2 Projection Screen
3 Hub Space
4 Lawn Bank
5 Car Parking
6 The Terraces
7 New Entry to Darlington Public School
8 Bike Storage
9 Future Cafe & Bar
10 Existing Hotel
11 Existing Restaurant
12 Driveway into Basement
13 Reingarden
14 Summer Classroom
15 Temporary Stairs
16 Storage Room for Indoor Bean Bag Furniture
17 Fence Upgrade and Security Screen to Mandelbaum House
18 Proposed Upgrade to Roundabout by City of Sydney
General
Site Boundary
Extend of Works Boundary
Proposed Contour Line
Existing Contour Line
Proposed Finished Level
Existing Finished Level
Proposed Fall
Architecture Above
Architecture Below
Building
Preparation + Groundworks
WSUD Tree Pit
Blons Surface Drain
Walls + Edges
Corten Steel Edge
Stone Edge
Proposed Roll over Kerb
Sandstone Wall
Retaining Stone Heritage Interpretation Wall
Green Wall
Angled Corten Steel Wall
Corten Steel Wall
Pavements
Stone Paving Pedestrian/ Vehicular
Steel Deck
Tactile Markers
Timber Dock / Seat
Corten Stair / Seat
Timber Stair
Insitu Concrete (Stage 2)
Rails + Fencing
Steel Fence
Steel Gate
Handrail
Balustrade
Furniture + Fittings
Proposed Elevator
Proposed Learning Pods with Integrated Power Point and WiFi access
Proposed Alfresco Learning Pods with Integrated Power Point and WiFi access
Proposed Bench and Table
Proposed Backless Timber Bench with Integrated Power Point and WiFi access
Proposed Timber Bench with Integrated Power Point and WiFi access
Proposed Bike Rack
Proposed Catenary Lighting in Laneway
Proposed Strip LED Light
Proposed Wall Light
Proposed Light in Seating Wall
Proposed Pole Light
Planting
Lawn
Native Shrub and Groundcover Mix
Green Wall/ Slope
Fern Mix
Trees
Existing Tree to be Removed
Existing Tree to be Retained
Proposed Tree
Proposed Palm/Palm Tree

5.7 Roof Plan


ONE WAY
DARLINGTON
Darlington Lane
ONE
SUBSTATION
52 BICYCLES
VOID
STAIR 8
LIFT 7
LIFT 6
STAIR 6
VOID
FIRST FLOOR
RL 36.500
VOID
GROUND FLOOR
RL 31.000
RAMP UP 1:8.3
TERRACE
SITE BOUNDARY
RAMP 1:16
SITE BOUNDARY
3
MANDELBAUM HOUSE
CHILDCARE CENTRE
12
Abercrombie Street


SITE BOUNDARY
EXISITING H69 ROOF
TERRACE BELOW
SKYLIGHT
SITE BOUNDARY
Codrington Street
SITE BOUNDARY
PROGRAMME
1 Main Entry
2 Projection Screen
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Extend of Works Boundary
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Existing Finished Level
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Proposed Wall Light
Proposed Light in Seating Wall
Proposed Pole Light
Planting
Lawn
Native Shrub and Groundcover Mix
Green Wall Slope
Fern Mix
Trees
Existing Tree to be Removed
Existing Tree to be Retained
Proposed Tree
Proposed Fern/Palm Tree

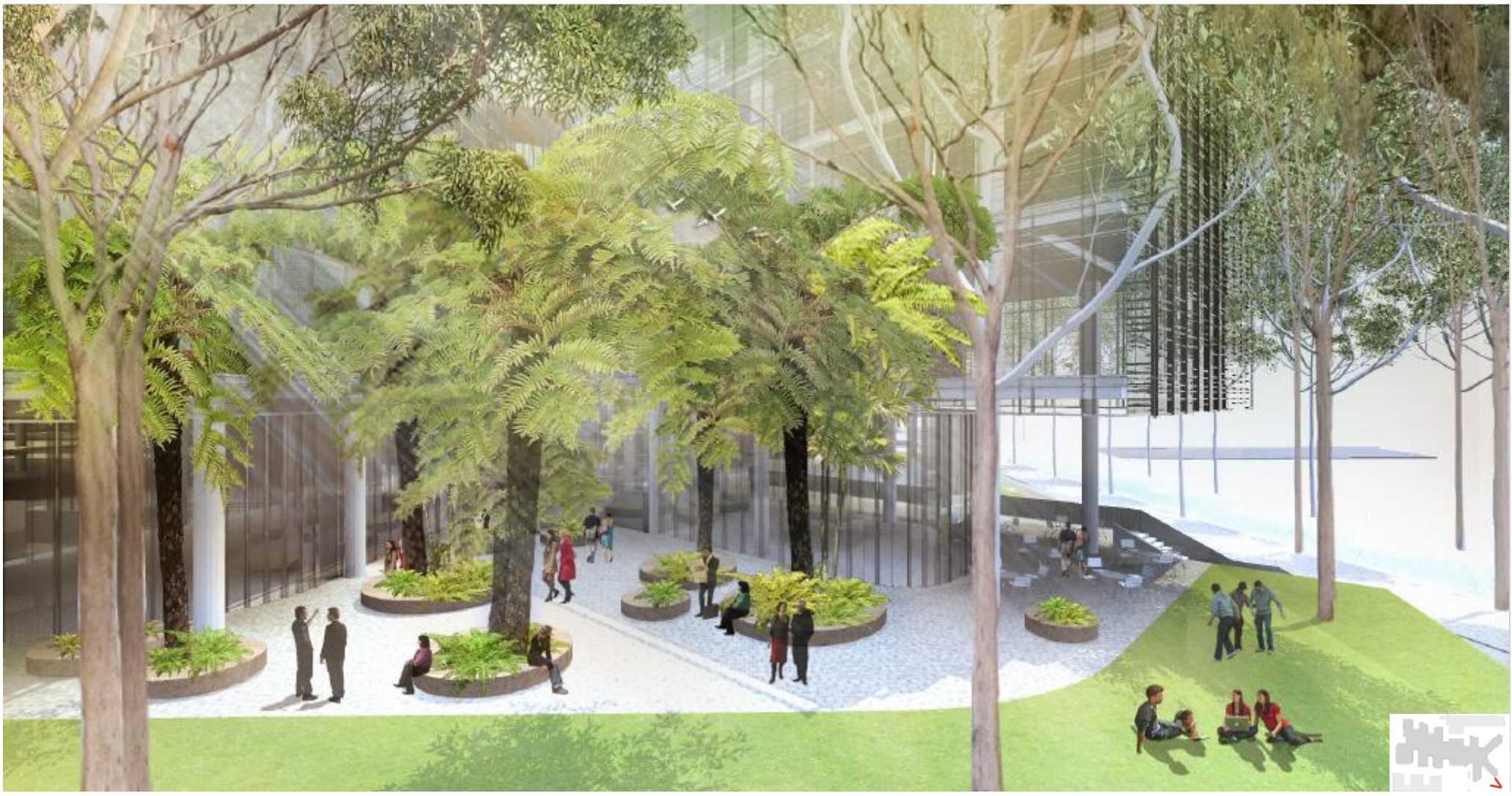
5.8 The Vision

Open Air eHhub 1

The Grove

Boundary Lane 2

Business School Entry



Alfresco Fern Garden

Blue Gum Park and Business School Entry off Abercrombie Street and Codrington Street

Blue Gum Park

Summer Classroom

6.0 APPENDIX 1: BROADER SUSTAINABILITY STRATEGY

6.1 Introduction

The context and potential strategy for the University of Sydney Campus has informed the site design of the Business School. The ESD strategy buildings on this contextual approach and establishes ESD initiatives for the Business School that have a far reaching influence on the campus as a whole.

The information below references the BioCity tool as a demonstration of how the Business School could fit within an overall campus sustainability model.

6.2 The Vision

McGregor Coxall's approach to Sustainability focuses on the site wide and precinct scale issues – it draws on and complements the work that has been complete by the project team to date.

The strategic objective of the University of Sydney's Business School is to reshape conventional higher education and create a compelling model that provides access to cutting edge learning.

"A sustainable environment that fosters creative business thinkers, encouraging collaboration and agility around teaching, learning, research, community, campus and industry… a marketplace for ideas" Georgia Singleton – Woods Bagot

The design of the Abercrombie Precinct has incorporated a broad approach to addressing holistic sustainability issues. The approach used has gone well beyond the traditional ESD issues typically addressed by the industry and has been informed by the following key documents:

- City of Sydney's Vision – Sustainable Sydney 2030
- University of Sydney's Draft Sustainability Strategy*
- Architectural Design Statement (by Woods Bagot)
- Sustainability and ESD Report for the Building (by Cundall)

The project team (lead by Woods Bagot) has developed a 'Value Proposition' based on five key themes:

— Research and Workplace

— Industry

— Community and Campus

— Teaching and Learning

— Environment and Sustainability

The BioCity Rating Tool pulls together over 20 years worth of world's best practice knowledge to provide a formal methodology that (i) captures the range of initiatives incorporated by the project team, that (ii) identify the gaps and opportunities within the existing strategy and project design and that (iii) compares the projected performance of the project against others throughout the globe.

The team at McGregor Coxall have ensured that the key strategies, reports and designs completed by other members of the project team and have been incorporated into the broader urban design and landscaping aspects of the Abercrombie.

Note: A copy of the BioCity Rating Tool should be used as a 'live' document to ensure that the project follows through on its targets.

6.3 City of Sydney – Vision 2030: Sustainable Sydney

The City of Sydney has set a sustainability vision for the city that highlights its commitment to being a green city, being a global city and being a connected city.

Within the strategy there is a set of ten (10) targets that the City of Sydney has committed to – they include:

— 1. Reduction of greenhouse gas emissions – 50% by 2030 from

BioCity - Assessment Framework and Rating Tool	
System	There are 12 systems that feature in the BioCity Studio - Assessment Framework and Rating Tool: Energy; Water; Waste; Transport; Pollution; Biodiversity; Food; Health; Culture; Governance; Economy; And Built Form.
System - Objective	Short description stating the overall vision to be achieved within each system
Core Principles	Underlying core principles of each system by which specific objectives should be set.
Core Principle - Objectives	Each core principle has a series of overarching objectives. These objectives are tailored to each BioCity Studio Assessment Framework and address the fundamental issues for a particular development.
Question	Each objective can have one or more questions that relates to a specific outcome on site that can be assessed against the BioCity Studio Assessment Framework.
Benchmarks	There are three benchmarks established per question that can be achieved - 'Good', 'Better' and 'Best' Each question can also be marked as either being 'Not Met' e.g. it falls below the criteria defined in 'Good', or 'Not Applicable' where the question is not relevant to this part of the assessment.
Benchmark Achieved	Following an independent assessment of the masterplan against the BioCity Studio faremwork, the Assessor will establish what benchmark has been achieved for each question. The Assessor is not able to award a benchmark without the correct evidence available,!and therefore it is crucial that each of the objectives are addressed in sufficient detail within the masterplan, and any accompanying documents in order that the correct benchmark met can be determined.
Evidence	As part of the formal assessment against the BioCity Studio Assessment Framework - the Assessor will clearly indicate how the benchmark awarded was determined. This will include direct reference to exerts from the Masterplan, and other accompanying documents that form the Developer's design plans, as well as the professional judgement of the Assessor.
Reference	The references that underpin the question and/or benchmarks (where available) are cited. These could include recognised standards, guidance documents, and links to national, state and local policy.
Weighting	Each question is given a weighting of either 1, 2 or 3 (1 being the most important, 3 the least). The weighting process (carried out in a stakeholder workshop) provides an order of importance to the questions within each system This assists the developer to prioritise where they should seek to meet the highest benchmarks. Please note that the systems themselves are not weighted, and therefore carry equal importance.
BioCity Score	Following the assessment an overall BioCity Score is awarded. The BioCity Score is a total percentage score based upon the cumulative total of the individual weighted scores for each system.
BioCity Rating	The BioCity Score translates into an overall BioCity Rating for the development. These are categorised as follows: – No Rating: Less than 50% – Best Practice: 50% – 65% – National Excellence: 65% – 80% – World Leadership: Greater than 80%

BOTTOM. Figure 6.2.1 - Assessment Framework and rating Tool

1990 levels.

- 2. Supply of both water and electricity locally - 100% of electricity produced locally by 2030.
- 3. Increase the levels of diversity (housing) - 48,000 additional dwellings by 2030.
- 4. Provision of social and affordable housing - 7.5% social housing and 7.5% affordable housing by 2030.
- 5. Provision of support for increase of jobs - 97,000 additional jobs by 2030.
- 6. Increase use of public transport for commuting - 80% of all work trips by 2030.
- 7. Increase cycling and walking for commuting - 10% by cycling and 50% by walking by 2030.
- 8. Increase access to local amenities - Every resident to live within 10min walk of fresh food, healthcare, social and cultural infrastructure, and educational facilities by 2030.
- 9. Increase access to open spaces - Every resident to live within 3min walk of green links and open spaces by 2030.
- 10. Increase social cohesion and interaction - 45% of residents to believe that most people can be trusted by 2030.

The BioCity Rating Tool has highlighted the key targets and initiatives that the City of Sydney has committed to and how they influence the design and potential performance of the Abercrombie Precinct Redevelopment.

The team at McGregor Coxall has taken into account many of these targets and factors when drafting the context and strategy report, ensuring that the Abercrombie Precinct Redevelopment responds to and enhances the City of Sydney's Sustainability Vision.

Example – the Open Space strategy and approach adopted by the project complements Target 9.

6.4 University of Sydney – Draft Sustainability Strategy

The draft framework, while not being formally adopted, is designed to embed the University's commitment to a sustainable future, by striving for integrated environmental, social and economic outcomes for the built environment across University of Sydney campuses.

At a high-level the UoS's Sustainability Strategy currently states that projects will be:

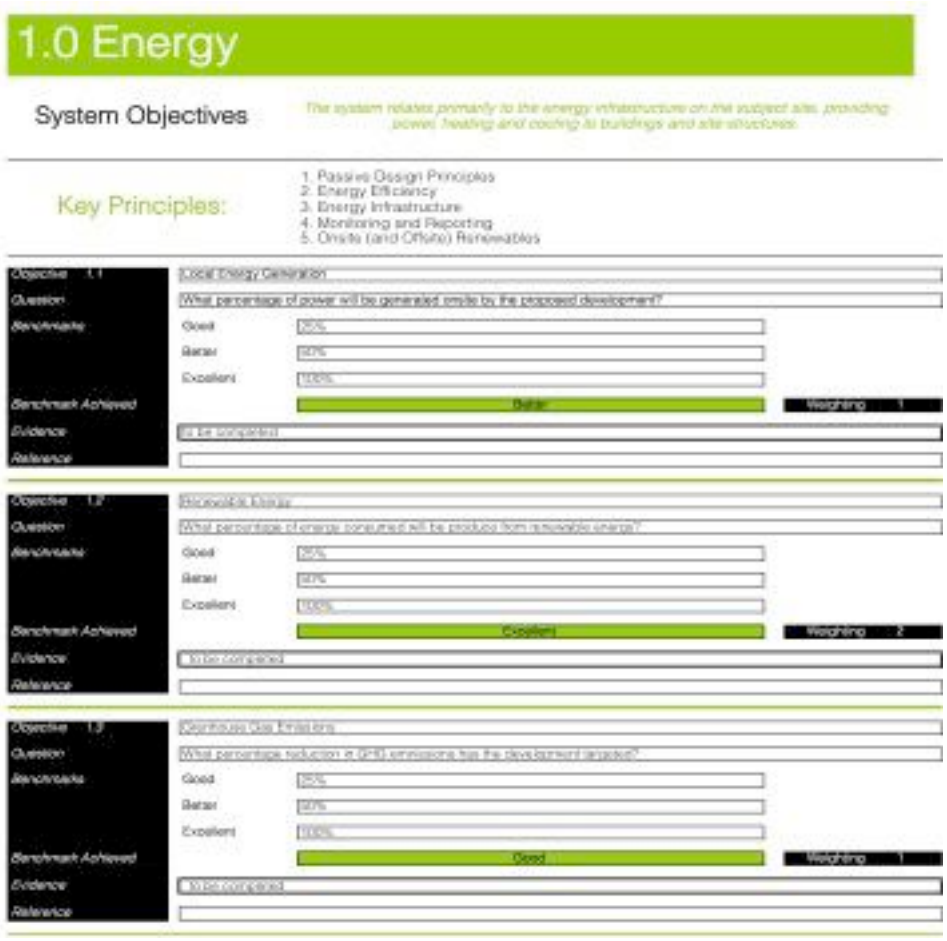
- Measurable, ensuring outcomes can be quantified.
- Comparable, ensuring projects can be benchmarked.
- Transparent, ensuring performance and results are communicated.
- Comprehensive, ensuring social, environmental and economic benefits are captured.
- Commercially and technically robust, ensuring improved business performance.
- Functional, responsive, durable and inviting to users.
- Ethical, delivering high quality built form for generations.

The BioCity Rating Tool has identified key elements of the UoS's Sustainability Strategy that could be incorporated into the BioCity Rating Tool if the UoS was to formally adopt the strategy. That being said there is an opportunity for considerable enhancement and clarification on the key targets within the strategy.

6.5 Abercrombie Precinct and Business School

Cundall has completed a Preliminary Sustainability & ESD Report taking into account Green Star – Education requirements for the New Building within the School of Business. This will be the first

BIOCITYSTUDIO



BOTTOM. Figure 6.3.1 - BioCity Rating Tool - Energy

Green Star certified project for the UoS and is targeting a 5 star rating against Green Star.

The ESD Report has taken into account Ecologically Sustainable Development issues for the building and surrounding area. The ESD team has identified a list of key objectives the responses to the expectations of key stakeholders - these include:

- Optimising indoor environment quality and occupant amenity
- Reduce environmental impact by generating awareness
- Promote and facilitate low-carbon transport
- Reduce operational resource consumption
- Engage the wider UoS and city networks to effect change
- Design flexibility for future proofing against climate change
- Target a green rating to promote awareness and demonstrate environmental stewardship

The BioCity Rating Tool has incorporated many of the key issues identified within the ESD Report that specifically relate to the building and its immediate surrounds.

The team at McGregor Coxall have incorporated key initiatives, such Water Sensitive Urban Design and a Greywater Treatment System connection for water re-use, into the broader Concept Report and Urban Design Strategy.

6.6 Campus and Precinct BioCity Rating

The BioCity Rating Tool has 12 systems through which it can influence not only the potential performance of the project, but effect change for the surrounding community.

The BioCity Summary Table provide an outline on the potential Score and Rating for the Abercrombie Precinct. At this stage – it must be noted that further information is required to confirm key commitments

McGregor Coxall has incorporated these 'key commitments' that have been highlighted in the BioCity Rating Tool for the Abercrombie Precinct into the Concept Report and drawings.

It is predicted that the project currently has the potential to achieve a 5 Green Star – Communities Rating or become a One Planet Communities at Level 2.

An example of one of the 12 Systems is provided on the left-hand side of the page for Energy.

6.7 BioCity Rating and Options

The BioCity Rating Tool builds on issues addressed in the Green Star – Education Rating Tool and the work completed by Cundall (and the project team). It formally looks at issues that go beyond the boundary of the site and provides a mechanism for the developer to influence these issues – this could include location of key transport nodes, the capacity of key service utilities or the risks associated with localised flooding issues.

The BioCity Rating Tool also bring to attention the social and economic factors traditionally ignored by green building rating tools and provides the developer with the ability to monitor and report on its performance – a self-assessment methodology.

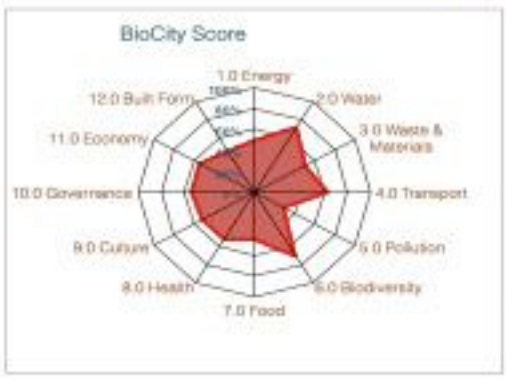
Note: A copy of the functional self-assessment BioCity Rating Tools will be provided for use by the project team with the submission of the final report.

By using the BioCity Rating Tool the University of Sydney will be very well placed if it is interested in pursuing a formal rating against either the nationally recognised Green Star – Communities or the internationally recognised One Planet Communities.

Site:	Abercrombie Precinct - University of Sydney
Assessor:	Ed Cotter
Date:	09-July-2012

	BioCity System	Benchmark Achieved: Excellent	Better	Good	Not Met	Not Applicable	BioCity Score
1	1.0 Energy	2	3	1	0	0	49%
2	2.0 Water	3	1	2	0	0	71%
3	3.0 Waste & Materials	1	2	1	1	1	50%
4	4.0 Transport	3	2	0	1	0	63%
5	5.0 Pollution	1	1	2	1	0	38%
6	6.0 Biodiversity	1	1	1	0	0	70%
7	7.0 Food	1	1	3	1	0	46%
8	8.0 Health	2	2	2	0	0	52%
9	9.0 Culture	3	1	1	1	0	51%
10	10.0 Governance	2	2	0	1	0	53%
11	11.0 Economy	1	2	2	0	1	50%
12	12.0 Built Form	2	3	1	0	0	45%
		22	21	16	6	2	53%

BioCity Rating: Best Practice



BOTTOM. Figure 6.7.1 - BioCity Rating Tool Assessment