

## **PUBLIC VERSION**

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### **APPENDIX 3.5.1 PROJECT APPROVAL (DDPL)**

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### **APPENDIX 4.2.1 PROCESS FLOW DIAGRAM**

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### **APPENDIX 4.2.3 LOCATION MAP FROM SOURCE TO END**

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### **APPENDIX 4.2.10 PRELIMINARY RISK ASSESSMENT**

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### **APPENDIX 4.2.14 ENVIRONMENTAL ASSESSMENT REPORT**

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APPENDIX 3.5.1  
PROJECT  
APPROVAL

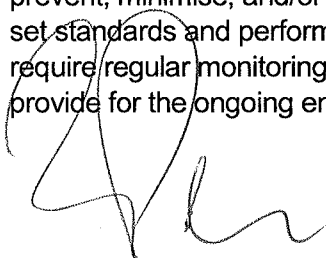
# Project Approval

## Section 75J of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning & Infrastructure under delegation executed on 14 September 2011, I approve the project referred to in Schedule 1, subject to the conditions of approval in the attached Schedule 2 and the Statement of Commitments in Schedule 3.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.



**Deputy Director General  
Development Assessment & Systems Performance  
Department of Planning & Infrastructure**

Sydney

19 March

2012

### SCHEDULE 1

#### PART A: PARTICULARS

**Application No.:**

**MP 10\_0030**

**Proponent:**

Discovery Point Pty Ltd

**Approval Authority:**

Minister for Planning & Infrastructure

**Land:**

Discovery Point, 1 Princes Highway Wolli Creek  
Lot 400 DP1161708; Lot 12 DP1062413; Lot 2 DP1048491;  
Lot 13 DP1062413; Lot 2 DP1043061 and Lot 2 DP  
1019205.

**Project:**

Discovery Point, Stage 1, including:

- demolition of existing structures, gabion wall and roadway;
- construction of 2 mixed use buildings incorporating 126 apartments; total retail area of 2531m<sup>2</sup>;
- basement car parking;
- rooftop courtyard including gym; community room and pool; water recycling facility;
- public domain works including roads, neighbourhood parks and utilities;
- landscape works;
- stratum subdivision;
- early works including earthworks and / or construction of part of the basement structure for stages 2, 4, 5 and 14; and
- temporary works including temporary bus turning loop; changes to Wolli Creek Station Access; excavation and earthworks adjacent to Stage 1 boundary.

## **PART B: NOTES RELATING TO THE DETERMINATION OF MP10\_0030**

### **Responsibility for other consents / agreements**

The Proponent is responsible for ensuring that all additional consents and agreements are obtained from other authorities as relevant, including (but not limited to) State and Federal airports/ aviation authorities.

### **Appeals**

The Proponent has the right to appeal to the Land and Environment Court in the manner set out in the Act and the Regulation.

### **Legal notices**

Any advice or notice to the approval authority shall be served on the Director General.

## PART C — DEFINITIONS

In this approval,

**Act** means the *Environmental Planning and Assessment Act, 1979* (as amended).

**Advisory Notes** means advisory information relating to the approved development but do not form a part of this approval.

**BCA** means the Building Code of Australia.

**Certifying Authority** has the same meaning as Part 4A of the Act.

**Council** means Rockdale City Council.

**Department** means the Department of Planning & Infrastructure or its successors.

**Director-General** means the Director-General of the Department or his nominee.

**Environmental Assessment (EA)** means the Environmental Assessment prepared by JBA Planning and dated June 2011.

**Minister** means the Minister for Planning & Infrastructure

**MP No. 10\_0030** means the Major Project described in the Proponent's EA as amended by the Preferred Project Report.

**Preferred Project Report (PPR)** means the Preferred Project Report prepared by JBA Planning and dated November 2011.

**Proponent** means Discovery Point Pty Ltd. or any party acting upon this approval.

**Regulation** means the Environmental Planning and Assessment Regulation, 2000 (as amended).

**Subject Site** has the same meaning as the land identified in Part A of this schedule.

**End of Schedule 1**

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## SCHEDULE 2

### PART A - ADMINISTRATIVE CONDITIONS

#### Development Description

- A1. Except as amended by the conditions of this approval, approval is only granted to carrying out the of development as described in Schedule 1 and development must be carried out consistently with the Statement of Commitments (Schedule 3)

#### Development in Accordance with Plans and Documentation

- A2. The development will be undertaken in accordance with MP No. 10\_0030 and the Environmental Assessment dated June 2011, prepared by JBA Planning Pty Ltd, except where amended by:

- the Preferred Project Report dated November 2011, and all appendices;
- additional information submitted by JBA Planning on 15 and 23 December 2011 and 5 March 2012
- Statement of Commitments prepared by JBA Planning;
- BASIX Certificate Nos. 343553M and 343532M; and
- the following drawings:

Drawing No.	Revision	Name of Plan	Date
<b>Architectural Drawings prepared by Bates Smart Pty Ltd:</b>			
DA1.001	C	Location Plan	22/06/11
DA1.002	A	Site Analysis	22/06/11
DA1.101	D	Proposed Site Plan	15/11/11
DA2.101	C	Basement Level B0 Part Plan (West)	11/11/11
DA2.102	B	Basement Level B0 Part Plan (East) & Basement Level B1 Plan	11/11/11
DA2.103	B	Basement Level B2 Plan	11/11/11
DA2.104	B	Basement Level B3 Plan	11/11/11
DA2.200	E	Ground Level Plan	15/11/11
DA2.201	C	Level 01 Plan	11/11/11
DA2.202	C	Level 02 Plan	11/11/11
DA2.203	B	Level 03 - 10	11/11/11
DA2.204	D	Level 11 - 13 & Plant Level Plan	11/11/11
DA2.205	D	Roof Level Plan	11/11/11
DA3.100	D	Permanent and Temporary Bus Stops	15/11/11
DA3.101	D	Station Stairs (as amended by SK581 below)	15/11/11
DA8.001	B	Section E - Linc Tower East Elevation Section C - Building 1C East Elevation	11/11/11
DA8.002	B	North Elevation & Section 1 - Building 1B & 1C South Elevation	11/11/11
DA8.003	B	West Elevation; Section B - Building 1B East Elevation; & Section A	11/11/11
DA8.004	B	Section D & Section 2	11/11/11
DA8.101	C	Western Boundary Section; Spark Lane	11/11/11
SK581	-	Sketch and information submitted with letter dated 23 December 2011 for temporary station stairs and ramp	8/12/11
SK582	-	Sketch and information submitted with letter dated 23 December 2011 for temporary station stairs and ramp	8/12/11
<b>Landscape Plans prepared by Turf Design Studios:</b>			
L3	D	Stage 1 Landscape Masterplan	18/11/11

Drawing No.	Revision	Name of Plan	Date
L4	D	Street Typology – Brodie Spark Drive	18/11/11
L5	C	Street Typology - Discovery Point Place	18/11/11
L6	C	Street Typology - Spark Lane	18/11/11
L7	D	Neighbourhood Park + Stage 1 - Landscape Plan	18/11/11
L8	C	Neighbourhood Park - Design Intent	18/11/11
L9	C	Neighbourhood Park - Section AA	18/11/11
L10	C	Neighbourhood Park - Section BB	18/11/11
L11	C	Neighbourhood Park - Section GG	18/11/11
L12	C	Neighbourhood Park - Planting	18/11/11
L13	C	Podium Rooftop 1B - Landscape Plan	18/11/11
L14	C	Unnamed	18/11/11
L15	C	Tower Rooftop 1C- Landscape Plan	18/11/11
L16	A	Unnamed	18/11/11
L17	A	Rooftop Terrace - Planting	18/11/11
<b>Engineering Plans prepared by Bonacci Group Pty Ltd:</b>			
CSK01	P5	Pavement / Stormwater Trunk Drainage Plan	21/01/11
CSK02	P3	Stage 1 Pavement / Stormwater Sections	21/01/11
CSK03	P3	Stage 1 Stormwater Catchment Plan Layout	21/01/11
C005	07	Early Earthworks Bulk Earthworks Plan	15/12/11
C006	07	Early Earthworks Bulk Earthworks Sections – Sheet 1	15/12/11
C007	07	Early Earthworks Bulk Earthworks Sections – Sheet 2	15/12/11
C126	03	Typical Road Sections	07/10/11
C005	04	Stg 6 Bulk Earthworks	25/11/11
C006	04	Stg 6 Bulk Earthworks Sections Sheet 1	25/11/11
C007	04	Stg 6 Bulk Earthworks Sections Sheet 2	25/11/11

<b>Other</b>				
Drawing No.	Revision	Name of Plan	Prepared By	Date
2700-34267	A	Draft Subdivision Plans	Joseph Monardo	26/09/11

except for:

- any modifications which are 'Exempt and Complying Development' as identified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 or as may be necessary for the purpose of compliance with the BCA and any Australian Standards incorporated in the BCA; and
- otherwise provided by the conditions of this approval.

#### **Inconsistencies between Documents**

- A3. In the event of any inconsistency between conditions of this approval and the drawings / documents referred to above, including the Proponent's Statement of Commitments, the conditions of this approval prevail.

#### **Prescribed Conditions**

- A4. The Proponent shall comply with the prescribed conditions of approval under Clause 98 of the Environmental Planning and Assessment Regulation 2000 in relation to the requirements of the Building Code of Australia (BCA).

**Lapsing of Approval**

- A5. This approval shall lapse 5 years after the determination date shown above in this Instrument of Approval, unless the development has been physically commenced.

**Responsibility for other approvals / agreements**

- A6. The Proponent is responsible for ensuring that all additional approvals and agreements are obtained from other authorities, as relevant.

**Concept Plan Approval**

- A7. The Proponent shall comply with all relevant requirements of the approved 'Concept Plan' (MP 10\_0003), approved by the Minister on 5 May 2011, including any approved modifications to the Concept Plan.

**Separate Approval required for fit-out and use of Retail Tenancies**

- A8. A separate development application shall be submitted for the internal fit out and use of the non-residential floor space within the development. Any future fit-out is to ensure active retail frontages along Brodie Spark Drive and on both sides of the pedestrian thoroughfare between Buildings 1B and 1C.

**Compliance with BASIX Certificate**

- A9. The development must be implemented and all BASIX commitments thereafter maintained in accordance with BASIX Certificate Nos. 343553M and 343532M submitted with the application other than superseded by any further amended consent and BASIX Certificate.

**End of Part A**

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## **PART B – PRIOR TO ISSUE OF CONSTRUCTION CERTIFICATE**

### **Construction Certificate**

- B1. A Construction Certificate must be obtained from Council or an Certifying Authority prior to any stage of building work commencing. Staged Construction Certificates may be issued prior to any stage of building works commencing.

### **Landscape Plans and Public Domain Works**

- B2. Prior to the issue of a Construction Certificate for landscape works or public domain works, fully documented landscape plans and public domain design specifications for all public domain works are to be approved by Council. Plans are to be generally in accordance with Plans approved under Condition A2, but must provide further details of the proposed material and furniture paving palette, including lighting, levels, planter heights and types, drainage, irrigation, seating and also soft works such as planting, mulching and soils. In addition, plans are to be generally consistent with the Wolli Creek and Bonar Street Precinct Public Domain Plan (PDP), particularly the Technical Manual unless variations are agreed in consultation with Council.

### **Landscape Plans and Rooftop Podiums**

- B3. Prior to the issue of a Construction Certificate for Building 1B or Building 1C, fully documented landscape plans for the rooftop podiums are to be approved by the Certifying Authority. Landscaping is to be carried out generally in accordance with Plans approved under Condition A2 (L14 – L17). Any modifications or variations to these plans are to be fully compliant with the requirements of the Discovery Point Development Design Guidelines.

### **Soil and Water Management Sign Fee**

- B4. A fee is payable to Council for a Soil and Water Management Sign (811) of \$14.95. If payment is made after the end of the financial year, the amount shall be adjusted in accordance with Council's adopted fees and charges

### **Section 94 Contributions**

- B5. A Section 94 contribution of \$1,553,762.65 shall be paid to Council in relation to the residential floor space within the development and the non-residential floor space within Building 1C only. Such a contribution is only used towards the provision or improvement of the amenities and services identified below. The amount to be paid is adjusted at the time of payment, in accordance with the contribution rates contained in Council's current Adopted Fees and Charges. The contribution is to be paid prior to the issue of any construction certificate for works above the floor level of the ground floor. (Payment of the contribution is not required prior to any separate construction certificates issued only for demolition, site preparation works and the construction of basement levels.) The contribution is calculated from Council's adopted Section 94 contributions plan in the following manner:

Open Space	\$701,989.23
Community Services & Facilities	\$54,171.56
Town Centre & Streetscape Improvements	\$128,417.09
Wolli Creek Redevelopment Area Infrastructure	\$632,265.10
Plan Administration & Management	\$36,919.67

Copies of Council's Section 94 Contribution Plans may be inspected at Council's Customer Service Centre, Administration Building, 2 Bryant Street, Rockdale.

Note: A further Section 94 contribution shall be paid to Council in relation to the non-residential floor space within Building 1B. The amount of this contribution will be determined

by Council once the commercial mix of the non-residential floor space is known. This contribution will be required as a condition of consent for the detailed fit-out and use of this floor space.

#### **Home Building Act**

- B6. In the case of residential building work for which the Home Building Act 1989 requires there to be a contract of insurance or owner builder's permit in force in accordance with Part 6 of that Act, that such a contract or permit is in place.

#### **Energy Australia**

- B7. The Proponent shall confer with Energy Australia to determine if an electricity distribution substation is required. Written confirmation of Energy Australia's requirements shall be obtained prior to issue of the Construction Certificate for any relevant stage of work.

#### **Dilapidation Survey**

- B8. A dilapidation survey shall be undertaken of all adjoining properties and/or Council infrastructure, including but not limited to all footpaths, kerb and gutter, stormwater inlet pits, and road carriageway pavements, adjoining the site which could be potentially affected by the construction of this development. Any damage caused to other properties during construction shall be rectified. A copy of the dilapidation survey and an insurance policy that covers the cost of any rectification works shall be submitted to the Certifying Authority prior to issue of the Construction Certificate. The insurance cover shall be a minimum of \$1 million.

#### **Construction Management Plan (CMP)**

- B9. The Proponent shall submit, for approval by the Certifying Authority, a detailed Construction Management Plan (CMP) prior to the issue of the Construction Certificate for each stage of works (each Construction Certificate) The CMP shall be prepared in accordance with the requirements of all relevant regulatory approval bodies. Prior to the commencement of works the Certifying Authority shall be satisfied that the Construction Management Plan has obtained all relevant regulatory approvals. The Construction Management Plan shall be implemented during demolition, excavation and construction.

#### **Construction Traffic Management Plan (TMP)**

- B10. Prior to the issue of the relevant Construction Certificate, a Construction Traffic Management Plan (TMP) prepared by a suitably qualified person shall be submitted to and approved by the Certifying Authority. The Plan shall address, but not be limited to, the following matters:
- (a) ingress and egress of vehicles to the site;
  - (b) loading and unloading, including construction zones;
  - (c) predicted traffic volumes, types and routes; and
  - (d) pedestrian and traffic management methods.

A copy of the TMP shall be submitted to Council.

#### **Waste Management Plan**

- B11. A Construction Waste Management Plan shall be prepared and submitted to the Certifying Authority prior to the issue of a construction certificate for the relevant stage of works implemented in accordance with the project application.

#### **Groundwater**

- B12. The groundwater shall be assessed by a suitably qualified and experienced environmental consultant in accordance with relevant contaminated sites guidelines published by NSW Department of Environment Climate Change and Water. A copy of the report shall be

submitted to Certifying Authority prior to the issue of the Construction Certificate for the relevant stage of works. A copy shall also be submitted to Council if Council is not the Certifying Authority.

### **Stormwater**

- B13. Stormwater management requirements for the development site, including the final discharge/end connection point in Magdalene Terrace, must comply with DCP 2011 and Rockdale Technical Specification – Stormwater Management.

### **Drainage Design**

- B14. Prior to the issue of the Construction Certificate, detailed drainage design plans for the management of stormwater are to be submitted to Council or an Certifying Authority for assessment and approval. Design certification, in the form specified in DCP 2011, and drainage design calculations are to be submitted with the plans.

### **Consistency with AUSTROADS**

- B15. Prior to the issue of the Construction Certificate of the relevant stage of works, engineers certification that all roads and public domain works are generally consistent with the requirements of AUSTROADS is to be submitted to Council or a Certifying Authority with the plans.

### **Remediation of Land**

- B16. Prior to the issue of a Construction Certificate for the relevant stage of works the Proponent shall submit to the Certifying Authority a report from a qualified environmental engineer addressing the following recommendations of the Coffey Environments Australia Pty Ltd Environmental Assessment report dated 9 June 2010 accompanying the Concept Plan Application:

- (a) placement and validation of an appropriate capping system to the neighbourhood park;
- (b) an updated Site Management Plan including maintenance of clean fill capping in the neighbourhood park;
- (c) a review of other additional areas of accessible soils,
- (d) a review of construction activities and imported materials, and
- (e) validation of all materials imported to the site or any site won materials for the approved land use and/or certification as VENM/ENM.

All Construction works are to be carried out in accordance with the recommendations of that report.

In the event that any residual contamination is found on the site, the Proponent shall submit to the Certifying Authority a Remedial Action Plan and a Hazardous Materials Survey. The Remedial Action Plan must be accompanied by a statement from a site auditor accredited by the Environmental Protection Agency to issue site audit statements. Upon completion of any remediation works on the site, a detailed Site Audit Summary Report and Site Audit Statement and Validation Report are to be submitted to the Certifying Authority. The site audit must be prepared in accordance with the Contaminated Land Management Act 1997 and completed by a site auditor accredited by the Environmental Protection Agency to issue site audit statements. The site audit must verify that the land is suitable for the proposed uses.

### **Reflectivity**

- B17. The visible light reflectivity from building materials used on the facades of the buildings shall not exceed 20% and shall be designed so as not to result in glare that causes any nuisance or interference to any person or place. A statement demonstrating compliance with these requirements is to be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate for the relevant stage of works.

### **Outdoor Lighting**

- B18. All outdoor lighting and street lighting shall comply with, where relevant, AS/NZ1158.3: 1999 *Pedestrian Area (Category P) Lighting* and AS4282: 1997 *Control of the Obtrusive Effects of Outdoor Lighting*, the BCA and any relevant standards for public lighting. Appropriate lighting shall be provided at the driveway entry in order to provide adequate visibility at night. Appropriate Details demonstrating compliance with these requirements are to be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate for the relevant stage of works.

#### **Disabled Access**

- B19. Access and facilities for people with disabilities shall be provided in accordance with Part D3 of the BCA's Access Policy. Prior to the issue of a Construction Certificate, a certificate certifying compliance with this condition from an appropriately qualified person shall be provided to the Certifying Authority.

#### **Number of Vehicle and Motorcycle Spaces**

- B20. 261 car parking spaces and 17 motor cycle spaces are to be provided in accordance with the approved plans. All vehicle spaces are to be allocated to residential and non-residential uses in accordance with the parking rates specified in Section 7.2 of the Discovery Point Development Design Guidelines. Details shall be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate.

#### **Number of Bicycle Spaces**

- B21. A minimum of 21 bicycle spaces are to be provided for the development, including 10 within the basement and 11 at the footpath / street level. Details shall be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate.

#### **Car Park and Service Vehicle Layout**

- B22. The layout of the car park shall comply with Australian Standard AS2890.1: 1993 *Parking Facilities Part 1: Off Street Parking*. All parking spaces are to be linemarked.

The layout of the service vehicle area shall comply with Australian Standard AS2890.2: 1989 *Off Street Parking Part 2 – Commercial Vehicles Facilities*.

Details demonstrating compliance with these requirements shall be submitted to the satisfaction of the Certifying Authority prior the issue of a Construction Certificate

#### **Certification of Façade Treatments**

- B23. Detailed design plans of the proposed building facades demonstrating consistency with Section 5.4 of the Bates Smart Project Application Design Report shall be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate and all materials, finishes, and architectural detailing are to be maintained in the construction documentation and final product.

#### **Natural Ventilation**

- B24. To ensure a reasonable level of ventilation to kitchens, and to comply with the details provided in the Environmental Assessment, the natural ventilation ducts proposed to the 2 kitchens on level 13 as described in the EA, and the externally ducted kitchen exhausts for all kitchens are to be detailed on the construction drawings prior to the issue of a Construction Certificate for the relevant stage of works.

#### **RailCorp Requirements**

- B25. Before issuing a Construction Certificate for any works within 25m of the rail corridor, the following documentation must be received and endorsed by RailCorp:

- Geotechnical and Structural Reports
- Construction methodology and drawings
- Structural support during excavation

If necessary after reviewing this documentation, RailCorp may also need:

- Track monitoring requirements
- A rail safety plan
- Any other matter in order to protect the rail corridor.

Prior to the issue of a Construction Certificate for the relevant stage of works, a services search must be undertaken to establish the existence and location of any rail services. If found, the proponent must discuss with RailCorp these services relocation or incorporation into the development site.

The design, installation and use of lights, signs and reflective materials must limit glare and reflectivity to the satisfaction of RailCorp.

Prior to the issue of a Construction Certificate for the relevant stage of works, a Risk Assessment/Management Plan and detailed Safe Work Method Statements are to be submitted to RailCorp for review and comment.

Prior to the issue of a CC for the relevant stage of works a plan showing all craneage and other aerial operations complying with RailCorp's requirements must be confirmed by RailCorp.

Provide details of any encroachment into RailCorp's easement or RailCorp owned lands for review and approval prior to commencement of works.

#### **End of Part B**

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## **PART C – PRIOR TO CONSTRUCTION**

### **Notify Council of Intention to Commence Works**

- C1. In accordance with the provisions of Clause 81A(2) of the Environmental Planning and Assessment Act 1979 the person having the benefit of the project approval shall appoint a Certifying Authority and give at least 2 days notice to Council, in writing, of the persons intention to commence the erection of the building.

**Licensee Details** The name, address and contractor licence number of the licensee who has contracted to carry out the work shall be furnished in writing to Council.

NB: Should changes be made for the carrying out of the work Council must be immediately informed.

### **Soil and Sedimentation Controls**

- C3. Soil and sedimentation controls are to be put in place prior to commencement of any work on site. The controls are to be maintained in effective working order during construction.

The controls are to be designed and installed in accordance with the Soil and Water Management for Urban Development Guidelines produced by the Southern Sydney Regional Organisation of Councils. Copies of the guidelines are available from Council.

### **Soil and Water Management Plan**

- C4. A Soil and Water Management Plan shall be prepared in accordance with Soil and Water Management for Urban Development Guidelines produced by the Southern Sydney Region Organisation of Councils. A copy of the plan must be submitted to Council. The Plan must include details of the proposed erosion and sediment controls to be installed on the building site. A copy of the Soil and Water Management Plan must be kept on-site at all times and made available on request. Sediment control devices shall not be located beneath the driplines of trees, which are to be retained.

### **Signs**

- C5. A sign must be erected at the front boundary of the property clearly indicating the Approval Number, description of work, builder's name, licence number and street number before commencement of work.

A sign must be erected in a prominent position on any work site on which work involved in the erection or demolition of a building is being carried out:

- i) stating that unauthorised entry to the work site is prohibited, and
- ii) showing the name of the person in charge of the work site and a telephone number at which that person may be contacted outside working hours.

Any such sign is to be removed when the work has been completed.

This condition does not apply to:

- iii) building work carried out inside an existing building or
- iv) building work carried out on premises that are to be occupied continuously (both during and outside working hours) while the work is being carried out.

### **Warning sign**

- C6. Council's warning sign for soil and water management must be displayed on the most prominent point on the building site, visible to both the street and site workers. The sign shall be erected prior to commencement of works and shall be displayed throughout construction. A copy of the sign is available from Council.

### **Landfill**

- C7. Where it is necessary to import landfill material onto the site to fill the land to levels shown on the plans forming part of the approval, a certificate, prepared by a suitably qualified and experienced Contaminated Land Consultant, shall be submitted to Council being the Regulatory Authority prior to the commencement of works, certifying that the imported fill is suitable for the land use.

#### **Fence**

- C8. The site shall be secured by a 1500 mm (minimum) high temporary fence for the duration of the work. Gates shall be provided at the opening points

#### **Suitable Screens**

- C9. Suitable screens and/or barricades shall be erected during demolition, excavation and construction and where required by the certifying authority to reduce the emission of noise, dust, water effluent or other matter from the site.

#### **Other approvals**

- C10. The proponent shall apply as required for all necessary permits including crane permits, road opening permits, hoarding permits, footpath occupation permits and/or any other approvals under Section 68 (Approvals) of the Local Government Act, 1993 or Section 138 of the Roads Act, 1993.

#### **Road opening permit**

- C11. Where it is proposed to carry out works in public roads or Council controlled lands, a road opening permit shall be obtained from Council before the carrying out of any works in public roads or Council controlled lands.

#### **Roadworks**

- C12. Where construction/building works require the use of a public place including a road or footpath, approval under Section 68 of the Local Government Act 1993 for a Barricade Permit is to be obtained from Council prior to commencement of work. Details of the barricade construction, area of enclosure and period of work are required to be submitted to the satisfaction of Council.

#### **Pedestrian and Vehicular Safety**

- C13. When the work involved in the erection or demolition of a building:
- i) is likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or
  - ii) building involves the enclosure of a public place,
- a hoarding or fence shall be erected between the work site and the public place.  
When necessary, an awning is to be erected, sufficient to prevent any substance from, or in connection with, the work falling into the public place.  
Any such hoarding, fence or awning is to be removed when the work has been completed.  
The work site must be kept lit between sunset and sunrise if it is likely to be hazardous to persons in the public place

#### **Toilet Facilities**

- C14. Toilet facilities are to be provided, at or in the vicinity of the work site, at the rate of one toilet for every 20 persons or part of 20 persons employed at the site and the toilet facilities must be designed and installed in accordance with the provisions of clause 781 of the Environmental Planning and Assessment Regulation 1994, and be installed before any other work is commenced.

#### **Acid Sulfate Soils**

- C15. An Acid Sulfate Soils Management Plan shall be prepared by a suitably qualified and experienced environmental consultant and a copy shall be provided to the Certifying Authority.

### **Management of Archaeological Heritage**

- C16. Before the commencement of works, the Proponent will nominate an excavation director approved by the heritage Branch. Details must be submitted to the Heritage Branch, and must meet the NSW Heritage Council endorsed Excavation Director Criteria and how their work will conform with the Archaeological Management Plan for the site.

Construction contractors, subcontractors and personal are to be briefed on their obligations and requirements in regard to historical archaeological sites and relics by the excavation director.

Before construction commences for the relevant stage of works, all historical archaeological relics and/or deposits of local and state significance must be excavated and recorded in accordance with the Archaeological Management Plan.

After archaeological works have been undertaken, a copy of the final excavation report must be lodged with the Heritage Council of NSW and Rockdale Council. This report must include:

- An executive summary
- Due credit to the client paying for the excavation
- Accurate site location and site plan
- Historical research, references and Bibliography
- Information on the excavation including the aim, context, procedures, treatment of artefacts and analysis of information retrieved
- Nominated repository for the salvaged relics
- Response to research questions
- Conclusions from the archaeological programme. Revisit the prior assessment
- Details how information was publicly exhibited, providing copies of such releases
- Other reporting requirements specified in the Archaeological Management Plan of 2002

On completion of archaeological works, the interpretation of results should be in accordance with "Interpreting Heritage Places and Items Guidelines" and the Archaeological Management Plan, to help the public understand the history and significance of the site. Details on this must be provided to the Heritage Council of NSW for written approval within three months completion of works.

### **RailCorp Requirements**

- C17. Prior to the commencement of works, a joint inspection of the rail infrastructure and property in the vicinity of the project is to be undertaken by the proponent and RailCorp.

An agreement with RailCorp defining the controls to be implemented in managing the access required and/or the potential impacts of the development on RailCorp and the involvement of RailCorp staff in ensuring appropriate safety and technical standards must occur.

Provide a bond for all the temporary works on RailCorp's land, forming a part of the deed/agreement.

### **End of Part C**

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## **PART D – DURING CONSTRUCTION**

### **Documentation on site**

- D1. A copy of the Construction Certificate and the approved plans and specifications must be kept on the site at all times and be available to Council officers upon request.

### **Construction Hours**

- D2. Hours of construction shall be confined to between 7 am and 6.30 pm Mondays to Fridays, inclusive, and between 7 am and 3.30 pm Saturdays with no work being carried out on Sundays and all public holidays

### **Mandatory Critical Stage Inspections**

- D3. Building work must be inspected by the Certifying Authority on the mandatory critical stage occasions prescribed by the EP&A Act and its Regulations, and as directed by the Certifying Authority.

### **Inspections**

- D4. Upon inspection of each stage of construction, the Certifying Authority (or other suitably qualified person on behalf of the Certifying Authority ) is also required to ensure that adequate provisions are made for the following measures (as applicable), to ensure compliance with the terms of Council's approval:
- Sediment control measures
  - Provision of perimeter fences or hoardings for public safety and restricted access to building sites.
  - Maintenance of the public place free from unauthorised materials, waste containers or other obstructions.

### **Groundwater pumping**

- D5. Ground water shall only be pumped or drained to Council's stormwater system if the water is clean and unpolluted. The required standards are set out in Council's Application form and conditions for a permit to pump out.

**Note:** Where water does not meet the required standards, a permit for discharge will only be issued where prior treatment and/or filtration of the water is undertaken to achieve an acceptable water quality. It is an offence under the provisions of the Protection of the Environment Operations Act 1997 to pollute the stormwater system.

### **Protection of stormwater drainage**

- D6. Demolition operations shall not be conducted on the roadway or public footway or any other locations, which could lead to the discharge of materials into the stormwater drainage system.

Building and demolition operations such as brickcutting, washing tools or paint brushes, and mixing mortar shall not be performed on the roadway or public footway or any other locations which could lead to the discharge of materials into the stormwater drainage system

### **Compliance Certificate**

- D7. A Registered Surveyor's survey certificate or compliance certificate shall be forwarded to the certifying authority detailing compliance with Council's approval at the following stage/s of construction:
- i) After excavation work for the footings, but prior to pouring of concrete, showing the area of the land, building and boundary setbacks.

- ii) Prior to construction of each floor level showing the area of the land, building and boundary setbacks and verifying that the building is being constructed at the approved level.
- iii) Prior to fixing of roof cladding verifying the eave, gutter setback is not less than that approved and that the building has been constructed at the approved levels.
- iv) On completion of the building showing the area of the land, the position of the building and boundary setbacks and verifying that the building has been constructed at the approved levels.
- v) On completion of the drainage works (comprising the drainage pipeline, pits, overland flow paths, on-site detention or retention system, and other relevant works) verifying that the drainage has been constructed to the approved levels, accompanied by a plan showing sizes and reduced levels of the elements that comprise the works.

### **Excavation and Backfilling Safety**

D8. All excavation and backfilling associated with the erection or demolition of a building must be executed safely and in accordance with appropriate professional standards and guarded and protected to prevent them from being dangerous to life or property.

### **Excavation Works**

D9. When excavation associated with the erection or demolition of a building extends below the level of the base of the footings of a building or an adjoining allotment of land, you shall:

- i) preserve and protect the building from damage and
- ii) underpin and support the building in an approved manner, if necessary and
- iii) give notice of intention to excavate below the level of the base of the footings of a building on an adjoining allotment of land to the owner at least 7 days prior to excavation and furnish particulars of the excavation to the owner of the building being erected or demolished.

**Note:** The owner of the adjoining allotment of land is not liable for any part of the cost of work carried out for the purposes of this clause, whether carried out on the allotment of land being excavated or on the adjoining allotment of land. In this condition **allotment of land** includes a public road and any other public place.

### **Site contamination**

D10. Any new information discovered during remediation, demolition or construction works which has the potential to alter previous conclusions about site contamination, shall be notified to Council being the Regulatory Authority for the management of contaminated land.

### **Dust Management**

D11. Wind blown dust from stockpile and construction activities shall be minimised by one or more of the following methods:

- i) spraying water in dry windy weather
- ii) cover stockpiles
- iii) fabric fences

### **Permits**

D12. All contractors shall comply with the following during all stages of demolition and construction:

- A Waste Container on Public Road Reserve Permit must be obtained prior to the placement of any waste container or skip bin in the road reserve (i.e. road or footpath or nature strip). Where a waste container or skip bin is placed in the road reserve without first obtaining a permit, the Council's fees and penalties will be deducted from

the Footpath Reserve Restoration Deposit. Permits can be obtained from Council's Customer Service Centre.

- A Road Opening Permit must be obtained prior to any excavation in the road reserve (i.e. road or footpath or nature strip). Where excavation is carried out on the road reserve without first obtaining a permit, the Council's fees and penalties will be deducted from the Footpath Reserve Restoration Deposit. Permits can be obtained from Council's Customer Service Centre.
- A Hoarding Permit must be obtained prior to the erection of any hoarding (Class A or Class B) in the road reserve (i.e. road or footpath or nature strip). Where a hoarding is erected in the road reserve without first obtaining a permit, the Council's fees and penalties will be deducted from the Footpath Reserve Restoration Deposit. Permits can be obtained from Council's Customer Service Centre.
- A Crane Permit must be obtained from Council prior to the operation of any activity involving the swinging or hoisting of goods across or over any part of a public road by means of a lift, hoist or tackle projecting over the footway. Permits can be obtained from Council's Customer Service Centre.
- A Permit to Dewater or Pump Out a site must be obtained prior to the discharge of pumped water into the road reserve, which includes Council stormwater pits and the kerb and gutter

### **Stockpiles**

D13. Stockpiles are not permitted to be stored on Council property (including nature strip) unless prior approval has been granted. In addition stockpiles of topsoil, sand, aggregate, soil or other material shall be stored clear of any drainage line or easement, natural watercourse, kerb or road surface

### **Erosion Control**

D14. All disturbed areas shall be stabilised against erosion within 14 days of completion, and prior to removal of sediment controls

### **Stormwater from roof areas**

D15. Stormwater from roof areas shall be linked via a temporary downpipe to an approved stormwater disposal system immediately after completion of the roof area.

### **Stormwater pollution**

D16. Building, demolition and construction works not to cause stormwater pollution and being carried out in accordance with Section 2.8 of Council's Stormwater Pollution Control Code 1993. Pollutants such as concrete slurry, clay and soil shall not be washed from vehicles onto roadways, footways or into the stormwater system. Drains, gutters, roadways and access ways shall be maintained free of sediment. Where required, gutters and roadways shall be swept regularly to maintain them free from sediment.

**Note:** The Proponent may be liable to prosecution under the Environmental Planning and Assessment Act 1979 for a breach of an approval condition, or under the Protection of the Environment Operations Act 1997, if its employees, agents or sub-contractors allow sediment, including soil, excavated material, building materials, or other materials to be pumped, drained or allowed to flow to the street, stormwater pipes or waterways. The Proponent shall ensure that its employees, agents or sub-contractors understand and maintain sediment control measures.

### **Drainage System**

D17. The drainage system shall be constructed in accordance with the approved drainage plans. All stormwater drainage plumbing work shall comply with the NSW Code of Practice: Plumbing and Drainage and Australian Standard AS3500.

**Discovery of Archaeological Heritage**

D18. If substantial intact archaeological deposits or features not already identified are discovered, work must stop and the Heritage Branch contacted. Additional assessment and approval may be required prior to works continuing.

**Discovery of Aboriginal Heritage**

D19. If Aboriginal objects are uncovered during work, excavation or disturbance of the area, work must stop immediately. The Environmental Protection and Regulation Group of the Office of the Environment and Heritage is to be contacted. Aboriginal archaeological excavation must be co-ordinated with any proposed investigation of non-indigenous material.

**Deed required for track possessions and power outages**

D20. If track possessions and power outages are needed, a deed must be entered into with RailCorp. The proponent should be referred to the Rail Corridor Management Group for further details.

**Station Construction Liaison Group**

D21. If required by RailCorp, a Station Construction Liaison Group comprising of representatives of the proponent and RailCorp is to be established. It will meet prior to construction and at required intervals during the construction. This will ensure there is an appropriate interface to manage RailCorp's customer and operational requirements.

**RailCorp safety requirements**

D22. No metal ladders, tapes and plant/machinery, or conductive material are to be used within 6 horizontal metres of any live electrical equipment.

No scaffolding is to be used within 6 horizontal metres of the rail corridor unless prior approval has been given by RailCorp. To obtain this approval, the details will need to be submitted to RailCorp, including the type of screening to prevent materials to fall onto the rail corridor.

**Timing of temporary infrastructure provision**

D23. The temporary ramp shall be constructed prior to the commencement of any works that will impact, in RailCorp's opinion, on the current access to Wollie Creek Station. unless otherwise agreed by RailCorp.

The temporary bus turning loop road and station access shall be constructed prior to the removal of the current bus turning loop, unless otherwise agreed by RailCorp.

Temporary access ramp shall be removed within 2 months of final endorsement by RailCorp that the stairs are acceptable and fit for purpose to provide access to Wollie Creek Station, unless otherwise agreed by RailCorp.

**End of Part D**

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## **PART E – PRIOR TO ISSUE OF OCCUPATION CERTIFICATE / PRIOR TO OPERATIONS**

### **Occupation Certificate**

- E1. An Occupation Certificate shall be obtained in relation to the approved works prior to any use or occupation of the building.

### **Unit Numbers and Mailboxes**

- E2. To ensure clarity and easy identification of the units within the buildings, unit numbers shall be nominated in consultation with Council's Spatial Information team.  
Mail boxes must be installed in accordance with Australia Post Guidelines. Prominent building numbers are to be displayed, with a minimum number size of 150 mm in height for each number and letter in the alphabet

### **Excess material and waste cleared**

- E3. All excess excavated material, demolition material, vegetative matter and builder's rubbish shall be removed to the Waste Disposal Depot or the Regional Tip prior to final inspection.

**Note:** Burning on site is prohibited.

### **Anti-graffiti treatment**

- E4. Ground level surfaces are to be treated with anti-graffiti coating to minimise the potential of defacement.

### **Public Domain works**

- E5. All road, footpath, drainage, traffic management, landscaping and civil works are to be carried out in accordance with the landscape plans approved under Condition B2. The landscaping is to be maintained to the approved standard at all times.

A Landscape Architect shall provide a report to the certifying authority (with a copy provided to Council, if Council is not the Certifying Authority) stating that the works have been carried out in accordance with the approved plans and documentation.

### **Acoustic Testing**

- E6. Testing and evaluation of the wall insulation system is to be carried out at post construction stage by a suitably qualified acoustical engineer to show compliance with the Impact Isolation Class 55 which is over and above BCA for residential units has been achieved in accordance with the standards prescribed by the Association of Australian Acoustical Consultants (AAAC) in accordance with the report submitted to Council with the Development Application. A report is to be submitted to the Certifying Authority prior to the issue of the Occupation Certificate.

Testing and evaluation of the floor system is to be carried out at post construction stage by a suitably qualified acoustical engineer to show that compliance with the Impact Isolation Class 55 which is over and above BCA for residential units the report submitted to Council with the Development Application has been achieved. A report is to be submitted to the Certifying Authority prior to the issue of the Occupation Certificate

### **Certification of Waterproofing**

- E7. A certificate is to be provided to Council that all wet areas have been effectively waterproofed (prior to tiling) in accordance with AS3740 and the product manufacturer's recommendations.

### **Certification of mechanical ventilation**

- E8. Prior to occupation or use of the premises, a qualified mechanical engineer shall certify that the mechanical ventilation/air conditioning system complies in all respects with the requirements of Australian Standard 1668, Part 1 & 2.

**Certification of floor levels**

- E9. A certificate from a Registered Surveyor shall be provided to the Certifying Authority certifying that the habitable floor level is constructed to the approved minimum floor level. A copy of the certificate shall be provided to Council where Council is not the Certifying Authority.

**Certification of Stormwater**

- E10. Prior to occupation a Chartered Professional Engineer shall certify that the stormwater system has been constructed in accordance with the approved plans and as required by Council's DCP 2011. The certificate shall be in the form specified in DCP 2011 and include an evaluation of the completed drainage works. A works-as-executed drainage plan shall be prepared by a registered surveyor based on a survey of the completed works. A copy of the certificate and works-as-executed plan(s) shall be supplied to the Certifying Authority. A copy shall be provided to Council if Council is not the Certifying Authority.

**Certification of connection to Water Recycling System**

- E11. Prior to occupation, certification shall be provided to the certifying authority that all units are connected to the blackwater recycling / treatment system for the purposes of toilet flushing and laundry connections and that all common landscape areas are also connected to the system.

**Positive Covenant**

- E12. A positive covenant pursuant to the Conveyancing Act 1919 shall be created on the title of the lots that contain the water treatment facility to provide for the maintenance of the facility.

**Flood Evacuation Management Plan**

- E13. A detailed flood evacuation management plan, with warning alarms and evacuation routes for Stage 1 is required to be prepared in accordance with Requirement 11(a) of approval MP 10\_0003. This must be developed with consideration to the worst case flooding scenario identified with climate change factors, the continuing flood events up to and including the Predicted Maximum Flood with copies provided to Council and the local State Emergency Service.

**Fire Safety Certificate**

- E14. A Fire Safety Certificate shall be furnished to the Certifying Authority for all the Essential Fire or Other Safety Measures forming part of this approval prior to issue of any Occupation Certificate. A copy of the Fire Safety certificate must be submitted to the consent authority and Council by the Certifying Authority.

**Clothesline provision**

- E15. The Proponent shall submit to the Certifying Authority details that all that units have a clothes line in accordance with the requirements of the Development Design guidelines.

**RailCorp Requirements**

- E16. Prior to the issue of an Occupation Certificate (OC), a joint inspection of the rail infrastructure and property in the vicinity of the project is to be undertaken by the proponent and RailCorp.

A plan of how future maintenance of the development facing the rail corridor is to be undertaken is to be submitted and prepared to the satisfaction of RailCorp prior to the issue of the OC.

**End of Part E**

## **PART F – PRIOR TO ISSUE OF SUBDIVISION CERTIFICATE**

### **Subdivision Certificate**

- F1. A Subdivision Certificate and four (4) copies of the plans for the endorsement of the General Manager shall be submitted to Council or the Certifier prior to lodgement with the Land and Property Information office. If applicable, an original and four (4) copies of the 88B Instrument are to be submitted.

### **Submission of Subdivision Certificate Application**

- F2. The submission and approval of a subdivision certificate application. In this regard, a fee is payable in accordance with Council's or Certifiers current adopted Fees and Charges.

### **Services shown on Plan**

- F3. All existing and proposed services on the property shall be shown on a plan, and shall be submitted to Council. This includes electricity, gas, water, sewer, stormwater and telephone services. Where any service crosses one lot but benefits another lot, it is to be covered by an easement. The service easement is to be covered by a Section 88B Instrument, which may only be varied or extinguished with the consent of Rockdale City Council. These provisions are to be put into effect prior to the release of the Subdivision/Strata Certificate.

### **Dedication of Land to Council**

- F4. The dedication to Council for road widening purposes of a strip of land along the Magdalene Terrace frontage to achieve compliance with the Wolli Creek and Bonar Street Precinct Public Domain Plan. These provisions are to be put into effect prior to release of the Subdivision Certificate.

### **Subdivision in accordance with Previous approvals**

- F5. The subdivision is to occur in accordance with the Concept Approval MP 10\_0003 issued by the Minister for Planning on 5 May 2011, DA-2012/42 issued by Rockdale City Council on 22 December 2011 and any subsequent modifications. Details of compliance with the relevant conditions shall be provided to Council prior to the issue of the Subdivision Certificate.

### **Access**

- F6. Documentary easements for access must be created over the appropriate lots in the subdivision to provide for public access to public domain areas which may include lifts, lobbies, fire stairs, service areas, loading areas and car parking areas, and created pursuant to Section 88B of the *Conveyancing Act 1919*.

### **Services**

- F7. Documentary easements for services, drainage, support and shelter, use of plant, equipment, loading areas and service rooms, repairs, maintenance or any other encumbrances and indemnities required for joint or reciprocal use of part or all of the proposed lots as a consequence of the subdivision, must be created over the appropriate lots in the subdivision pursuant to Section 88B of the *Conveyancing Act 1919*.

### **Car Parking Restrictions**

- F8. The on-site residential car parking spaces, are not to be used by those other than an occupant or tenant of the residential buildings within the Discovery Point Development. Any occupant, tenant, lessee or registered proprietor of the development site or part thereof shall not enter into an agreement to lease, license or transfer ownership of any car parking spaces to those other than an occupant, tenant or lessee of the building.

These requirements are to be enforced through the following:

- (1) restrictive covenant placed on title pursuant to Section 88B of the *Conveyancing Act, 1919*,

- (2) restriction on use under Section 68 of the *Strata Schemes (Leasehold Development) Act, 1986* to all lots comprising in part or whole car parking spaces, and
- (3) sign visible at exits (excluding fire stairs and individual unit entries) from car parking areas.

These requirements are to be made to the satisfaction of Council. All costs associated with the above requirements are to be borne solely by the Proponent.

#### **Easement in gross**

- F9. Prior to the issue of a Subdivision Certificate, an easement for public access in gross for the public to enter, pass, re-pass, use and enjoy the neighbourhood park is to be registered over the land in favour of Rockdale City Council.

The terms of the easement are to be approved by Council prior to the issue of any Certificate of Subdivision or registration of the approved Plan of Subdivision.

**End of Part F**

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## **PART G – DURING OPERATIONS**

### **Establishment of Car Share Scheme**

- G1. Within 6 months of the issue of the Occupation Certificate for Building 1C, a car share scheme is to be established on the site, including at least one operational car share space for the use of residents.

### **Enclosure of Parking Spaces**

- G2. The enclosure of car spaces is not permitted unless the enclosure complies with the design requirements of AS2890.1.

### **Unobstructed Driveways and Parking Areas**

- G3. All driveways and parking areas shall be unobstructed at all times. Driveways and car spaces shall not be used for the manufacture, storage or display of goods, materials or any other equipment and shall be used solely for vehicular access and for the parking of vehicles associated with the use of the premises

### **Noise Emissions**

- G4. The use of the premises including mechanical plant including air conditioners, fans, compressors, condensers, freezers, swimming pool or spa pumps (whether commercial or domestic) shall not cause sound pressure levels in excess of the criteria given in the NSW Industrial Noise Policy - 2000.

### **Annual Fire Safety Certification**

- G5. The owner of the building shall certify to Council every year that the essential services installed in the building for the purpose of fire safety have been inspected and at the time of inspection are capable of operating to the required minimum standard. This purpose of this condition is to ensure that there is adequate safety of persons in the building in the event of fire and for the prevention of fire, the suppression of fire and the prevention of spread of fire.

**End of Part G**

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## ADVISORY NOTES

### Requirements of Public Authorities for Connection to Services

AN1. The Proponent shall comply with the requirements of any public authorities (e.g. Energy Australia, Sydney Water, Telstra Australia, AGL, etc) in regard to the connection to, relocation and/or adjustment of the services affected by the construction of the proposed structure. Any costs in the relocation, adjustment or support of services shall be the responsibility of the Proponent. Details of compliance with the requirements of any relevant public authorities are to be submitted to the satisfaction of the Certifying Authority prior to the issue of the Construction Certificate.

### Compliance with Building Code of Australia

AN2. The Proponent is advised to consult with the Certifying Authority about any modifications needed to comply with the BCA prior to submitting the application for a Construction Certificate.

### Use of Mobile Cranes

AN3. The Proponent shall obtain all necessary permits required for the use of mobile cranes on or surrounding the site, prior to the commencement of works. In particular, the following matters shall be complied with to the satisfaction of the Certifying Authority .

- (1) For special operations including the delivery of materials, hoisting of plant and equipment and erection and dismantling of on site tower cranes which warrant the on street use of mobile cranes, permits must be obtained from Council:
  - (i) at least 48 hours prior to the works for partial road closures which, in the opinion of Council will create minimal traffic disruptions, and
  - (ii) at least 4 weeks prior to the works for full road closures and partial road closures which, in the opinion of Council, will create significant traffic disruptions.
- (2) The use of mobile cranes must comply with the approved hours of construction and shall not be delivered to the site prior to 7.30am without the prior approval of Council.

### Movement of Trucks Transporting Waste Material

AN4. The Proponent shall notify the Roads and Maritime Service Traffic Management Centre (TMC) of the truck route(s) to be followed by trucks transporting waste material from the site, prior to the commencement of the removal of any waste material from the site.

### Construction Inspections

AN5. Compliance certificate/s shall be issued by the Certifying Authority and submitted to Council in accordance with the mandatory inspection requirements of the *Building Legislation Amendment—Quality of Construction Act, 2002* for each stage of construction, such as the following:

- (1) Foundations,
- (2) Footings,
- (3) Damp proof courses and waterproofing installation,
- (4) Structural concrete, including placing of reinforcement and formwork prior to pouring,
- (5) Structural beam and column framing,
- (6) Timber wall and roof framing, and
- (7) Stormwater disposal.

Any Compliance Certificate issued for the above stages of construction shall certify that all relevant ancillary or dependent work has been undertaken in accordance with the Building Code of Australia and any other conditions of consent.

### **Noise Generation**

AN6. Any noise generated during the construction of the development shall not exceed limits specified in any relevant noise management policy prepared pursuant to the *Protection of the Environment Operations Act, 1997* or exceed approved noise limits for the site.

### **Temporary Structures**

AN7. An approval under Section 68 of the Local Government Act 1993 must be obtained from the Council for the erection of the temporary structures. The application must be supported by a report detailing compliance with the provisions of the Building Code of Australia.

Structural certification from an appropriately qualified practicing structural engineer must be submitted to the Council with the application under Section 68 of the Local Government Act 1993 to certify the structural adequacy of the design of the temporary structures.

### **Disability Discrimination Act**

AN8. This application has been assessed in accordance with the Environmental Planning and Assessment Act 1979. No guarantee is given that the proposal complies with the Disability Discrimination Act 1992. The Proponent/owner is responsible to ensure compliance with this and other anti-discrimination legislation. The Disability Discrimination Act 1992 covers disabilities not catered for in the minimum standards called up in the Building Code of Australia which references AS 1428.1 - Design for Access and Mobility. AS1428 Parts 2, 3 & 4 provides the most comprehensive technical guidance under the Disability Discrimination Act 1992 currently available in Australia.

### **Commonwealth Environment Protection and Biodiversity Conservation Act 1999**

AN9. The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 provides that a person must not take an action which has, will have, or is likely to have a significant impact on a matter of national environmental significance (NES) matter; or Commonwealth land, without an approval from the Commonwealth Environment Minister.

This application has been assessed in accordance with the New South Wales Environmental Planning & Assessment Act, 1979. The determination of this assessment has not involved any assessment of the application of the Commonwealth legislation. It is the proponent's responsibility to consult Environment Australia to determine the need or otherwise for Commonwealth approval and you should not construe this grant of consent as notification to you that the Commonwealth Act does not have application. The Commonwealth Act may have application and you should obtain advice about this matter. There are severe penalties for non-compliance with the Commonwealth legislation.

### **Sydney Water**

AN10. An application will need to be made to Sydney Water for a Certificate under Part 6, Division 9, Section 73 of the Sydney Water Act, 1994 (Compliance Certificate). Evidence that a Compliance Certificate has been applied for (i.e. Notice of Requirements) will need to be produced to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate. The Section 73 Certificate will need to be submitted to the Certifying Authority prior to the occupation of the development or release of the linen plan.

### **End of Schedule 2**

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### SCHEDULE 3

#### Proponent's Statement of Commitments

Subject	Commitments	Approved by Whom	Timing
ESD	The Stage 1 Project Application will include those ESD measures identified in the Cundall Design Consultants ESD report (dated February 2011).	Department of Planning.	No Timing. General Statement of Commitment
Non Indigenous Archaeology	The management of the potential archaeological remains of the Gardener's Cottage and Pine House should be in line with the approved Archaeological Management Plan which covered Area 6 (Casey and Lowe 2002). As such, the likely location of these buildings should be determined through triangulation of historic plans and any remains be recorded in detail using archaeological excavation, detailed planning and GIS survey and mapping.	Department of Planning	No Timing. General Statement of Commitment
Electrolysis	The recommendations of the Stage 1 Electrolysis Analysis prepared by CPS and dated January 2011 will be implemented.	Department of Planning	No Timing. General Statement of Commitment
Active Frontages	Active frontages will be provided on both sides of the pedestrian thoroughfare between Buildings 1B and 1C through either specialty shops, cafe dining or clear visual links into a supermarket tenancy.	The relevant consent authority.	On the detailed fit out plans.
Environmental and Construction Management	The following Management Plans will be issued prior to works commencing for each stage: <ul style="list-style-type: none"> <li>Construction Management Plan</li> <li>Construction Traffic Management Plan</li> <li>Erosion and Sediment Control Plan</li> <li>Waste Management Plan</li> <li>Dust Control Plan.</li> <li>Acid Sulphate Soil Management Plan.</li> </ul>	-	Prior to issue of CC
Railcorp requirements	The preparation of the required procedures, safety plans, methodologies and assessment reports required by Railcorp will be submitted prior to those specific works commencing.	Railcorp	Prior to construction commencing
Contamination	The fill material for the neighbourhood park is to be suitable for open space land uses in accordance with relevant guidelines. If it were proposed to use soils sourced from the site these would need to be validated to confirm they are of suitable quality.	Relevant Certifying Authority	Prior to works commencing
Indigenous Archaeology	Further archaeological investigation is required in the Zone 2 area of the Stage 1 development area. This part of the Precinct has not been investigated previously. Prior to commencement of construction works in this area a test excavation programme should be carried out by a suitably qualified archaeologist to ascertain whether intact archaeological material is present here.	-	During construction
Excavation	Excavation method statements are to be prepared by the excavation contractor.	Relevant Certifying Authority	Prior to issue of CC

Accessibility	<p>Ensure an accessible path of travel to and within common-use facilities in line with DDA Premises Standards and AS1428.1:2009.</p> <p>Ensure the designs of the three adaptable units are compliant with AS4299 and AS1428.1:2009.</p>	Relevant Certifying Authority	Prior to issue of CC
Infrastructure and Services	<ul style="list-style-type: none"> <li>• New communications fibre or copper services are to be installed in accordance with Telstra, NBN and the Australian Communications Authority Requirements; and</li> <li>• The external roadway and public lighting will be installed in accordance with AS1158.</li> <li>• Street fire hydrants are to be provided on</li> <li>• the Authorities water main, in accordance with Sydney Water requirements.</li> <li>• Fire hydrants and fire sprinklers are to be provided as required by the BCA and relevant Australian Standards (all as confirmed with the NSW Fire Brigades);</li> <li>• Supplementary hydrants and hose reels will be installed to provide sufficient coverage to all areas as required by the relevant</li> <li>• Each building will have a fire control centre to comply with BCA.</li> </ul>	Relevant Certifying Authority	Prior to issue of CC
Stormwater	Additional stormwater sumps and grates will be constructed to limit surface stormwater depths.	Relevant Certifying Authority	Prior to issue of CC
Acoustic and Vibration	<p>The following measures are required to mitigate noise impacts from road and aircraft noise:</p> <ul style="list-style-type: none"> <li>▪ laminated glazing will be appropriate for rooms where the majority of the façade is glazed; and</li> <li>▪ Lower specification glazing is suitable for rooms with small windows.</li> </ul> <p>Mechanical plant noise is to be mitigated through standard use of attenuators, acoustic louvres, barriers, enclosures, and the appropriate location and orientation of air inlets / outlets and items of plant.</p>	Relevant Certifying Authority	Prior to issue of CC
Public Domain	Details of Rights of Way and Easements will be provided as part of future subdivision applications.	The relevant consent authority	With future application.
Car Share	Provision of one on-street care share space for Stage 1, in consultation with residents and commercial operator.	-	During early operation of the development.

APPENDIX 4.2.1  
PROCESS  
FLOW  
DIAGRAM



APPENDIX 4.2.3  
LOCATION MAP  
FROM SOURCE  
TO END





**Discovery Point + Water**

A local sustainable water utility

Appendix 4.2.3 Location map from source to end

Discovery Point, Woll Creek  
Concept Plan

Indicative Design Scheme  
Roof Plan

Scale: 1:500 @ A1, 1:1000 @ A3  
Drawn: AW Checked: MA  
Project no: S11191  
Status: PLANNING  
P&ID Date: 10/06/2010 3:58:48 PM  
P&ID File: C:\1000\masterplan-discovery\101120\_Central\_Army\_Waters -  
Discovery Point  
DA2-106 A

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East Sydney NSW 2010 Australia  
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http://www.batesmart.com.au

Melbourne 1 Nicholson Street  
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Bates Smart Pty Ltd ABN 70 004 999 400

**BATESSMART**

APPENDIX  
4.2.10  
PRELIMINARY  
RISK  
ASSESSMENT

## Risk Assessment

Project phase : RWSMP  
Revision : A  
Date : 14-Nov-12



Item	Area	Sub-Area	Potential Hazard or Hazardous Event	Consequence	L	C or I	Risk	Acceptable	Controls / comments	L	C or I	Risk	Acceptable	Additional comments	Includes CCP	Includes PCP
1	Catchment	Residential	Due to staging of development initial flows will be significantly lower than the ultimate load on the WWIP. This degree of change in flow / load can impact on process performance.	Process performance	E - Almost certain	4 - Major	Very High	No	a) The WWIP is designed with two bioreactors process flexibility. Initially the one bioreactor will be brought online allowing a capacity up to 500 kL/day. The timing for bringing the second bioreactor online will be based on information collected on influent loads. (NOTE: both bioreactors will already be built)	A - Rare	4 - Major	High	Yes	Whilst Risk is categorised as High WFC has allowed for both bioreactors to be initially equipped for operation.	No	No
2			Characteristics of raw sewage are outside design influent parameters of the WWIP resulting in reduced capacity of the WWIP or effluent quality outside design.	Process performance	C - Possible	4 - Major	Very High	No	a) Design influent parameters have been based on industry guidelines for water efficient apartments as well as other similar projects. Influent strength will determine the hydraulic capacity of the WWIP. b) Occupants will be educated on acceptable discharges into the sewer.	B - Unlikely	3 - Moderate	Moderate	Yes		No	No
3			Toxic containment enters sewage system from a residence resulting in damage to biological process.	Process performance	D - Likely	3 - Moderate	High	No	a) Community education in the form of new owner information packs, newsletters, tours etc will be widely and frequently used to inform the public on what can be disposed of down the sewer. b) Key process parameters will be monitored and alarms generated should these indicate a toxic event.	B - Unlikely	3 - Moderate	Moderate	Yes		No	No
4			Outbreak of disease in recent results in increased pathogen load on WWIP.	Process performance	D - Likely	5 - Catastrophic	Very High	No	a) WWIP incorporates multiple disinfection barriers in accordance with industry best practice for the production of recycled water. The target log removal of pathogens from the proposed treatment train exceeds that required under the National Guidelines to Water Recycling. b) Raw sewage will be regularly monitored to check for levels of pathogens. c) Disinfection steps will be audited 2 / year to check on pathogen removal through flowsheet. d) Relationship is developed with Public Health to gauge any abnormal health incidents within the area. e) Newspaper reports will be monitored by WFC to identify any health indicators of the community.	D - Likely	2 - Minor	Moderate	Yes		No	No
5		Industrial	Industrial facility discharges trade waste outside raw sewage parameters and/or places unacceptable load on WWIP.	Process performance	B - Unlikely	4 - Major	High	No	a) Currently the land is not zoned for industrial use. WFC will ensure any changes to zoning takes into account potential wastewater load on the WWIP. b) Trade waste discharge agreements will be in place for any non-residential connection.	A - Rare	4 - Major	High	Yes	Whilst Risk is categorised as High it is acceptable as WFC will be involved in the consideration / approval of any potential new user contribution to the sewer.	No	No
6		Commercial	Commercial facility discharges trade waste outside raw sewage parameters and/or places unacceptable load on WWIP.	Process performance	B - Unlikely	4 - Major	High	No	a) Commercial discharges will be from restaurants, office spaces and alike; all of low duty and risk. To discharge to the sewer trade waste agreements will be in place, ensuring there is compliance. Where there is the risk of oil and greases, as a minimum grease-traps will be installed at the users discharge point.	A - Rare	4 - Major	High	Yes	Whilst Risk is categorised as High it is acceptable as WFC will be involved in the consideration / approval of any potential new user contribution to the sewer.	No	No
7		Inflow / Infiltration.	Risk of inflow from parking lot into tanks via access hatches	Process performance	C - Possible	2 - Minor	Moderate	Yes	a) WWIP has the capacity to divert excess sewage to Sydney Water sewer. b) All access hatches are water-tight specified	B - Unlikely	2 - Minor	Low	Yes		No	No
8		Wastewater Treatment Plant (WWIP)	WWIP is temporarily off-line due to a process upset.	Environmental spill	C - Possible	4 - Major	Very High	No	a) Raw sewage will be directed to the Sydney Water sewer (NOTE: there is an automated valve on the inlet to the flow balance tank to re-direct excess sewage to the Sydney Water sewer). b) Plant designed with redundancy at key process steps to reduce the probability of a single point of failure. c) Recycled water system storage can be topped up with	B - Unlikely	3 - Moderate	Moderate	Yes		No	No
9			WWIP is permanently off-line due to financial viability.	Environmental spill	B - Unlikely	5 - Catastrophic	Very High	No	The option of last resort is followed, where Sydney Water takeover ownership and operate the WWIP.	B - Unlikely	3 - Moderate	Moderate	Yes	this assumes that the WWIP is still able to effectively operate and consequently there will also be options to look for alternative operators/buyers.	No	No
10			WWIP is permanently off-line due to process failure.	Environmental spill	B - Unlikely	5 - Catastrophic	Very High	No	a) Likely solution will involve transfer of sewage to Sydney Water sewer. b) Recycled water system will revert to potable water.	B - Unlikely	5 - Catastrophic	Very High	Yes	Risk is categorised as Very High for the project as the hazard is project failure. An alternate servicing solution will be agreed with Sydney Water. The developer has upgraded the potable water supply infrastructure to ensure that Sydney Water is able to supply the whole of the area for potable and non-potable uses.	No	No
11	Sewer supply network	Pressure sewer rising main	Pressure sewer rising main is blocked preventing sewage transfer.	Environmental spill	C - Possible	4 - Major	Very High	No	a) Alarm signal from sewer pump stations sent to control room / operators. b) Emergency storage within pump stations allows an estimated 24 hours storage capacity. c) Maintenance crew engaged under emergency protocols. Flushing points utilised using recycled water to clear blockage. d) Pressure alarm as an early warning of blockages.	B - Unlikely	4 - Major	High	Yes	Whilst Risk is categorised as High it is acceptable as the on-site pump stations provide up to 24 hours of storage whilst any downstream issue is rectified.	No	No
12			Pressure sewer rising main is broken preventing sewage transfer.	Environmental spill	C - Possible	4 - Major	Very High	No	a) Flow switch identifies no flow b) Maintenance crew engaged under emergency protocols to resolve issue c) Soil is contained within basement level with limited public access.	B - Unlikely	4 - Major	High	Yes	Please note the gravity sewer network and pump stations remain the responsibility of the Body Corporate.	No	No
13		Gravity sewer (NOTE: this remains the responsibility of the Body Corporate)	Sewer integrity is compromised allowing excessive inflow / infiltration to occur which may ultimately result in sewer overflows.	Environmental spill	B - Unlikely	3 - Moderate	Moderate	No	a) The catchment has limited access to rainwater infiltration and the risk is considered low.	B - Unlikely	2 - Minor	Low	Yes		No	No
14			Minor blockage occurs in the gravity sewer network preventing sewage transfer from a minor part of the present.	Environmental spill	D - Likely	2 - Minor	Moderate	Yes	a) Contact numbers for sewerage issues to be provided to all residents. b) Maintenance contractor to be engaged to clear sewer under standard protocols. c) Residents to be notified once sewer blockage is cleared. d) Gravity sewer to be periodically inspected to check condition. Issues proactively addressed wherever possible.	D - Likely	2 - Minor	Moderate	Yes	Please note the gravity sewer network and pump stations remain the responsibility of the Body Corporate.	No	No
15			Major blockage occurs in the gravity sewer network preventing sewage transfer from a major part of the catchment.	Environmental spill	C - Possible	3 - Moderate	High	No	a) Contact numbers for sewerage issues to be provided to all residents. b) Maintenance contractor to be engaged to clear sewer under emergency protocols. c) Residents to be notified once sewer blockage is cleared. d) Gravity sewer to be periodically inspected to check condition. Issues proactively addressed wherever possible.	C - Possible	2 - Minor	Moderate	Yes	Please note the gravity sewer network and pump stations remain the responsibility of the Body Corporate.	No	No

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16			Minor breakage occurs in the gravity sewer network preventing sewage transfer from a minor part of the catchment.	Environmental spill	D - Likely	2 - Minor	Moderate	Yes	a) Contact numbers for sewerage issues to be provided to all residents. b) Maintenance contractor to be engaged to repair break under standard protocols. c) Residents to be notified once sewer blockage is cleared. d) Gravity sewer to be periodically inspected to check condition. Issues proactively addressed wherever possible.	D - Likely	2 - Minor	Moderate	Yes	Please note the gravity sewer network and pump stations remain the responsibility of the Body Corporate.	No	No
17			Major breakage occurs in the gravity sewer network preventing sewage transfer from a major part of the catchment.	Environmental spill	C - Possible	3 - Moderate	High	No	a) Contact numbers for sewerage issues to be provided to all residents. b) Maintenance contractor to be engaged to repair break under emergency protocols. c) Residents to be notified once sewer blockage is cleared. d) Gravity sewer to be periodically inspected to check condition. Issues proactively addressed wherever possible.	B - Unlikely	3 - Moderate	Moderate	Yes	Please note the gravity sewer network and pump stations remain the responsibility of the Body Corporate.	No	No
18	Water Factory	Raw sewage balancing	Excess inflow results in tank overflow.	Environmental spill	C - Possible	4 - Major	Very High	No	a) Primary level device will have back up level device should it fail. b) Inlet automatic isolation valves will close. c) Alarm will be generated for operator attendance if High-High level is detected. d) Raw sewage will be stored within the pump stations or bypass WWTP until the fault is resolved.	C - Possible	2 - Minor	Moderate	Yes		No	No
19			Tank failure resulting in discharge of tank contents.	Environmental spill	B - Unlikely	4 - Major	High	No	a) Tank will have a design life of 30 years. b) Periodic inspections of the tank will be carried out to check integrity. c) Back-up level switches in the event of level transmitter failure.	B - Unlikely	4 - Major	High	Yes	Whilst Risk is categorised as High it is acceptable as tank will be constructed in accordance with industry best practice.	No	No
20			Raw sewage balance tank mixer fails.	Process performance	C - Possible	2 - Minor	Moderate	Yes	a) Short lead time for replacement of mixer pump. b) Tank will be operated at a lower level, utilising the pipe storage capacity to reduce anaerobic conditions within the tank. c) Plant performance closely monitored during period as early warning of any potential process impacts. d) Two-stage odour scrubber system provided as additional means of air in extreme H2S conditions.	B - Unlikely	2 - Minor	Low	Yes		No	No
21			Raw sewage feed pumps fail.	Process performance	C - Possible	2 - Minor	Moderate	No	a) Raw sewage feed pumps will be installed duty / standby. The standby pump will operate until the problem with the duty pump is rectified. b) If both raw sewage feed pumps fail then raw sewage will bypass the WWTP until one of the pumps is operational.	B - Unlikely	2 - Minor	Low	Yes		No	No
22			Residence time of raw sewage in balance tank exceeds 24hours resulting in likely generation of odours.	Process performance	D - Likely	2 - Minor	Moderate	Yes	a) Level setpoints in balance can be adjusted to maintain acceptable residence times during changing flows. b) Dual stage odour scrubber designed to handle high loads and provides additional scrubbing of air.	B - Unlikely	2 - Minor	Low	Yes		No	No
23		Maceration and screening	Gross solids block feed macerator or inlet screen preventing inflow into the plant.	Process performance	D - Likely	2 - Minor	Moderate	No	a) Alarm will be generated for operator attendance if feed pump fails on low flow or there is a high level in the screen. b) Raw sewage will be stored in the flow balance tank until this fault is resolved. If required the standby macerator or screen will be used if repairs are required. c) For extended offline durations raw sewage will be bypassed to sewer.	B - Unlikely	2 - Minor	Low	Yes		No	No
24			Screen is comprised allowing oversized material to pass through and potentially damage or block downstream equipment.	Process performance	C - Possible	3 - Moderate	High	Yes	a) Screen will be periodically inspected to check for damage. b) Periodically samples of MLSS will be screened to check for oversized material. c) Selected screen design will not allow for any bypass.	C - Possible	3 - Moderate	High	Yes	Whilst Risk is categorised as High it is acceptable as MLSS will be monitored and membranes inspected regularly thus enabling problem to be identified prior to damage.	No	No
25		Biological reactor	Key indicators of bioreactor performance are outside operational limits.	Process performance	D - Likely	4 - Major	Very High	No	a) All key indicators of bioreactor performance will be continuously monitored via the site SCADA. Operators will also perform regular checks with handheld instruments. b) Where possible corrective action will be automatic to bring key performance indicators back within operational limits. For example pH correction with caustic dosing or increased / decreased aeration to adjust DO levels. c) If corrective action fails then bioreactor will stop production and receiving sewage until the fault is rectified.	C - Possible	3 - Moderate	High	Yes	PCPs to be identified in relation to bioreactor performance. Likely to include pH, temperature, MLSS, DO, foam level etc.	No	Yes
26			Excess inflow results in tank overflow.	Process performance	B - Unlikely	2 - Minor	Low	Yes	a) Bioreactor is provided with back-up level device which is interlocked to feed pumps. b) Bioreactor overflow is directed to general sump. Excess inflow to general sump will generate a LVL 1 alarm and place WWTP into standby which stops all process flows including the feed to the bioreactor.	B - Unlikely	2 - Minor	Low	Yes		No	No
27			Tank failure resulting in discharge of tank contents.	Process performance	A - Rare	4 - Major	High	No	a) Discharge from tank failure will be directed to the general sump. Excess inflow to general sump will place WWTP into standby which stops all process flows including the feed to the bioreactor. b) Tank will be periodically inspected to check condition. Repairs and / or further investigation will be undertaken as required.	A - Rare	4 - Major	High	Yes	Whilst Risk is categorised as High it is acceptable as tank will be constructed in accordance with industry best practice.	No	No
28			No recycled water demand starves biological reactor of food.	Process performance	D - Likely	2 - Minor	Moderate	No	a) Minimum flow will be maintained to bioreactor to ensure ongoing health of biomass. This will be automatic and parameters set via the SCADA.	D - Likely	2 - Minor	Moderate	Yes		No	No
29		Membrane	Key indicators of membrane performance are outside operational limits.	Process performance + Health (loss in virus removal)	C - Possible	4 - Major	Very High	No	a) All key indicators of membrane performance will be continuously monitored via the site SCADA. Operators will also perform regular checks with handheld instruments. b) Where possible corrective action will be automatic to bring key performance indicators back within operational limits. For example maintenance cleaning can be used to restore low permeability. c) If corrective action fails then membrane will stop production until the fault is rectified. Failure of CCP will cause automatic shutdown.	C - Possible	3 - Moderate	High	Yes	CCPs and PCPs identified in relation to membrane performance. Include permeability, TMP and turbidity.	Yes	Yes



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30			Excess inflow results in tank overflow.	Process performance	B - Unlikely	2 - Minor	Low	Yes	a) Membrane tank is provided with back-up level device which is interlocked to recycle pumps. b) Membrane tank overflow is directed to general sump. Excess inflow to general sump will place CPWF into standby which stops all process flows including the feed to the membrane tank.	B - Unlikely	2 - Minor	Low	Yes		No	No
31			Tank failure resulting in discharge of tank contents.	Process performance	A - Rare	3 - Moderate	Low	Yes	a) Discharge from tank failure will be directed to the general sump. Excess inflow to general sump will place WWIP into standby which stops all process flows including the feed to the bioreactor. b) Tank will be periodically inspected to check condition. Repairs and / or further investigation will be undertaken as required.	A - Rare	3 - Moderate	Low	Yes		No	No
32			Membranes catastrophically fail and need to be replaced.	Process performance	B - Unlikely	3 - Moderate	Moderate	No	a) Membranes have been sourced from a reputable supplier. b) Replacement membranes can be delivered to site and installed within a reasonable timeframe.	B - Unlikely	3 - Moderate	Moderate	Yes		No	No
33			Insufficient inflow results in low tank level thus exposing membranes to air and potentially drying them out.	Process performance	C - Possible	3 - Moderate	High	Yes	a) Membrane tank is provided with back-up level device which is interlocked to recycle pumps. b) If MLSS can not be transferred into the membrane tank within the required time the potable water service (normally used for recovery cleans) will be activated to ensure the membranes remain immersed.	C - Possible	3 - Moderate	High	Yes	Whilst Risk is categorised as High it is acceptable as membranes will not suffer instant damage.	No	No
34		Reverse Osmosis	Key indicators of RO performance are outside operational limits.	Process performance	C - Possible	4 - Major	Very High	No	a) All key indicators of RO performance will be monitored continuously via the site SCADA. Operators will also perform regular checks with handheld instruments. b) Where possible corrective action will be automatic to bring key performance indicators back within operational limits. For example initiating a RO CIP may restore performance. c) Failure of RO unit or exceedance of process limit will cause an automatic shutdown of the plant.	C - Possible	2 - Minor	Moderate	Yes	RO is monitored as a CCP (Conductivity). Multiple barrier protection and automated plant shutdown ensures the consequence is moderate	Yes	Yes
35			Duty RO units fail.	Process performance	B - Unlikely	3 - Moderate	Moderate	No	a) Recycled water production will cease if RO is not available. The WWIP will continue to operate only producing high TDS water for irrigation until the RO is back on line. Excess sewage transferred to Sydney Water sewer. b) Key spare parts will be kept on site to facilitate local / rapid repair.	A - Rare	3 - Moderate	Low	Yes		No	Yes
36		Calcite filters	Key indicators of Calcite filters performance are outside operational limits.	Process performance	C - Possible	3 - Moderate	High	No	a) All key indicators of calcite filters performance will be monitored continuously via the site SCADA. Operators will also perform regular checks with handheld instruments. b) Where possible corrective action will be automatic to bring key performance indicators back within operational limits. c) Exceedance of pH process limit will cause an automatic shutdown of the plant. d) Downstream pH dosing is provided as a back-up to ensure reliability. e) Duty / Standby calcite filters provided allowing isolation of individual units without affecting operation.	A - Rare	3 - Moderate	Low	Yes	pH is monitored as a PCP.	No	Yes
37		UV Disinfection	Key indicators of UV performance are outside operational limits.	Process performance + Health (loss in virus removal)	C - Possible	4 - Major	Very High	No	a) All key indicators of UV performance will be monitored continuously via the site SCADA. Operators will also perform regular checks with handheld instruments. b) Where possible corrective action will be automatic to bring key performance indicators back within operational limits. For example wiping of UV lamps can be used to restore UV intensity. c) If corrective action fails then UV unit will be placed into standby until the fault is rectified. Failure of UV unit or exceedance of critical limit will cause an automatic shutdown of the plant.	B - Unlikely	3 - Moderate	Moderate	Yes	UV is monitored as a CCP. Multiple barrier protection and automated plant shutdown ensures the consequence is moderate	Yes	Yes
38			Duty UV unit fails.	Process performance + Health (loss in virus removal)	D - Likely	2 - Minor	Moderate	No	a) UV units are installed duty / standby. If duty UV unit fails all flow will automatically be directed to the standby UV unit. b) Key spare parts (i.e. lamps, ballasts, etc) will be kept on site to facilitate local / rapid repair.	B - Unlikely	2 - Minor	Low	Yes		No	No
39			Duty and Standby UV units fail.	Process performance + Health (loss in virus removal)	B - Unlikely	3 - Moderate	Moderate	No	a) Recycled water production will cease if UV disinfection is not available. The CPWF will go into standby until the UV is back on line. b) Key spare parts (i.e. lamps, ballasts, etc) will be kept on site to facilitate local / rapid repair.	A - Rare	3 - Moderate	Low	Yes	PCP installed to ensure at least one UV unit is available.	Yes	Yes
40		Chlorination for disinfection	Key indicators of Chlorination for disinfection performance are outside operational limits.	Process performance + Health (loss in virus removal)	C - Possible	4 - Major	Very High	No	a) All key indicators of Chlorination for disinfection performance will be monitored continuously via the site SCADA. Operators will also perform regular checks with handheld instruments. b) Where possible corrective action will be automatic to bring key performance indicators back within operational limits. For example Chlorine dose can be increased to maintain setpoint. c) If corrective action fails then recycled water production will cease until chlorine residual returns to within the required range.	B - Unlikely	4 - Major	High	Yes	CCPs in relation to Chlorination for disinfection performance via online CT factor calculation. Multiple barrier approach provides additional protection. PCPs in relation to ancillary control around chlorine contact tank.	Yes	Yes
41			Chlorine dosing duty pump fails and dosing is temporarily interrupted.	Process performance + Health (loss in virus removal)	D - Likely	4 - Major	Very High	No	a) Chlorine dosing for disinfection pumps are installed duty / standby. If duty pump fails then standby pump will automatically start. b) Key spare parts (i.e. hoses, valves etc) will be kept on site to facilitate local / rapid repair.	A - Rare	4 - Major	High	Yes	While risk is high, sufficient control in place to ensure residual free chlorine is maintained and controlled.	No	No
42			Chlorine dosing duty and standby pump fail and chlorine for disinfection can not be dosed.	Process performance + Health (loss in virus removal)	C - Possible	4 - Major	Very High	No	a) Recycled water production will cease if Chlorine for disinfection is not available. The WWIP will go into standby until Chlorine for disinfection is back on line. b) Key spare parts (i.e. lamps, ballasts, etc) will be kept on site to facilitate local / rapid repair.	A - Rare	4 - Major	High	Yes	While risk is high, sufficient control in place to ensure residual free chlorine is maintained and controlled. PCP provided to ensure plant shuts down in the event both pumps are not available. Additional back-up via free chlorine control and CT factor calculation.	No	Yes

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43			Supply of sodium hypochlorite chemical on site is exhausted.	Process performance	C - Possible	2 - Minor	Moderate	No	a) Sodium hypochlorite storage tank will be fitted with level devices to ensure level is continuously monitored. b) Storage tank will be sized for a minimum of 30 days storage. c) Recycled water production will cease if Chlorine for disinfection is not available. The WWIP will go into standby until Chlorine for disinfection is back on line.	B - Unlikely	2 - Minor	Low	Yes		No	No
44		Chlorination for residual	Key indicators of Chlorination for residual performance are outside operational limits.	Process performance	C - Possible	2 - Minor	Moderate	No	a) All key indicators of Chlorination for residual performance will be monitored continuously via the site SCADA. Operators will also perform regular checks with handheld instruments. b) Where possible corrective action will be automatic to bring key performance indicators back within operational limits. For example Chlorine dose can be increased to maintain setpoint. c) If corrective action fails then recycled water production will cease until chlorine residual returns to within the required range.	B - Unlikely	2 - Minor	Low	Yes	PCP identified in relation to Chlorination for residual performance.	No	Yes
45			Chlorine dosing duty pump fails and dosing is temporarily interrupted.	Process performance	D - Likely	2 - Minor	Moderate	No	a) The chlorine dosing for disinfection will maintain a residual in the treated water. b) Key spare parts (i.e. hoses, valves etc) will be kept on site to facilitate local / rapid repair. c) Prolonged failure will cause a shutdown of the plant.	D - Likely	2 - Minor	Moderate	Yes	PCP installed to ensure at pump status is monitored.	No	Yes
46			Supply of sodium hypochlorite on site is exhausted.	Process performance	C - Possible	2 - Minor	Moderate	No	a) Sodium hypochlorite storage tank will be fitted with level devices to ensure level is continuously monitored. b) Storage tank will be sized for a minimum of 30 days storage. c) In all likelihood chlorine residual for disinfection will cause initial plant shutdown.	B - Unlikely	2 - Minor	Low	Yes		No	No
47		Recycled water storage	Excess inflow results in tank overflow.	Environmental spill	B - Unlikely	2 - Minor	Low	Yes	a) Recycled water storage tanks are provided with back-up level device which is interlocked to recycled water production process. b) Recycled water production is STOPPED at high level alarms	B - Unlikely	2 - Minor	Low	Yes		No	No
48			Tank failure resulting in discharge of tank contents.	Environmental spill	A - Rare	3 - Moderate	Low	Yes	a) Recycled water storage tanks are provided with back-up level device. b) Tank will be periodically inspected to check condition. Repairs and / or further investigation will be undertaken as required.	A - Rare	3 - Moderate	Low	Yes		No	No
49		Alum dosing	Alum dosing duty pump fails and dosing is temporarily interrupted.	Process performance	D - Likely	2 - Minor	Moderate	No	a) Failure of pump will cause an alarm requiring immediate operator attention. b) Key spare parts (i.e. hoses, valves etc) will be kept on site to facilitate local / rapid repair.	D - Likely	2 - Minor	Moderate	Yes		No	No
50			Supply of alum on site is exhausted.	Process performance	C - Possible	2 - Minor	Moderate	No	a) Alum storage tank will be fitted with level devices to ensure level is continuously monitored. b) Storage tank will be sized for a minimum of 30 days storage.	B - Unlikely	2 - Minor	Low	Yes		No	No
51		Caustic dosing	Caustic dosing duty pump fails and dosing is temporarily interrupted.	Process performance	D - Likely	2 - Minor	Moderate	No	a) Failure of pump will cause an alarm requiring immediate operator attention. b) Key spare parts (i.e. hoses, valves etc) will be kept on site to facilitate local / rapid repair.	D - Likely	2 - Minor	Moderate	Yes		No	No
52			Supply of Caustic on site is exhausted.	Process performance	C - Possible	2 - Minor	Moderate	No	a) Chemical storage tank will be fitted with level devices to ensure level is continuously monitored. b) Storage tank will be sized for a minimum of 30 days storage.	B - Unlikely	2 - Minor	Low	Yes		No	No
53		Acetic Acid dosing	Acetic Acid dosing duty pump fails and dosing is temporarily interrupted.	Process performance	D - Likely	2 - Minor	Moderate	No	a) Failure of pump will cause an alarm requiring immediate operator attention. b) Key spare parts (i.e. hoses, valves etc) will be kept on site to facilitate local / rapid repair.	D - Likely	2 - Minor	Moderate	Yes		No	No
54			Supply of Acetic Acid on site is exhausted.	Process performance	C - Possible	2 - Minor	Moderate	No	a) Chemical storage tank will be fitted with level devices to ensure level is continuously monitored. b) Storage tank will be sized for a minimum of 30 days storage.	B - Unlikely	2 - Minor	Low	Yes		No	No
55		Aesthetics	Poor aesthetics resulting in low community acceptance of WWIP and recycled water.	Safety	B - Unlikely	3 - Moderate	Moderate	No	a) WWIP is located within the basement with no access to the public. b) Building layout has been designed to facilitate visits from interested stakeholders.	A - Rare	3 - Moderate	Low	Yes		No	No
56		Noise	Offensive levels of noise resulting in interruption of plant operation and / or low community acceptance of WWIP.	Health	C - Possible	3 - Moderate	High	No	a) All noise generating equipment has been fitted with acoustic covers. Further acoustic treatment has been provided on the CPWF building. b) Noise modelling has been used to confirm that expected impact on surrounding stakeholders is negligible.	B - Unlikely	3 - Moderate	Moderate	Yes	Risk is acceptable as additional remedies are available to reduce noise if required.	No	No
57		Odour	Offensive levels of odour resulting in interruption of plant operation and / or low community acceptance of WWIP and recycled water.	Health	C - Possible	3 - Moderate	High	No	a) All odour generating equipment has been fitted with covers and odour treatment as required. b) Performance at similar application used to confirm that expected impact on surrounding stakeholders is negligible. c) Two stage odour scrubber installed, based on extreme H2S case to ensure low sulphur emissions (with back-up activated carbon filter) d) Odour scrubber discharges to the top of the building	B - Unlikely	3 - Moderate	Moderate	Yes	Risk is acceptable as additional remedies are available to reduce odour in the future, if required.	No	No
58		Vandalism or theft	Vandalism or theft at the WWIP restricts the capacity of the WWIP to treat sewage and produce / distribute recycled water.	Process performance	D - Likely	3 - Moderate	High	No	a) Access will be restricted to WWIP within the basement by security door (restricted access). b) WWIP area will be fitted with security system with back to base alarm. Video surveillance also included.	B - Unlikely	3 - Moderate	Moderate	Yes		No	No

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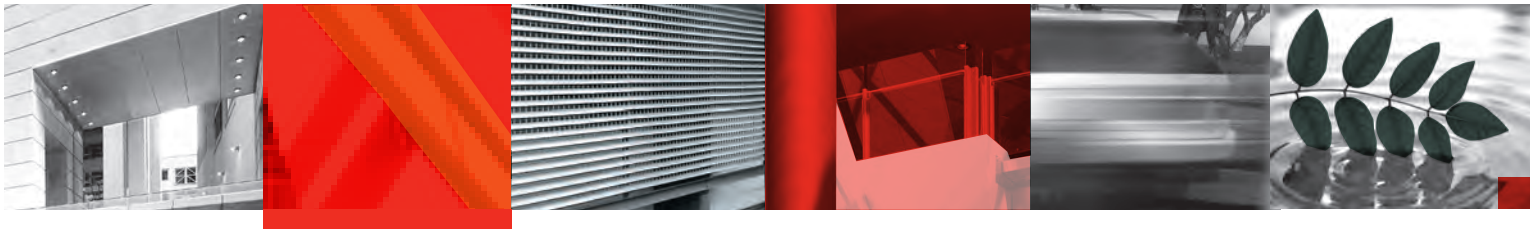


Item	Area	Sub-Area	Potential Hazard or Hazardous Event	Consequence	L	C or I	Risk	Acceptable	Controls / comments	L	C or I	Risk	Acceptable	Additional comments	Includes CCP	Includes PCP
59		Power failure	Power failure which restricts the capacity of the WWIP to treat sewage and produce / distribute recycled water.	Process performance	D - Likely	2 - Minor	Moderate	No	a) Power failure is not common for the area. b) In the event of power failure sewage will be directed to the existing Sydney Water sewer (automatic bypass valve will fall open). c) UPS system installed to ensure control and access to the plant is maintained.	D - Likely	2 - Minor	Moderate	Yes		No	No
60	Recycled water reticulation and use	Cross connections	Cross connections in reticulation network results in potential for widespread consumption of recycled water.	Health	C - Possible	3 - Moderate	High	No	a) All work on recycled water reticulation pipe work is to be performed by authorised personnel only. b) All personnel who work on the recycled water pipe work are to be provided with the required level of training on recycled water and the importance of avoiding cross connections. c) All work on the recycled water pipe work is to be inspected by an independent 3rd party. d) Audit of recycled water pipe work is to be undertaken after any major works. e) Recycled water supply pressure is to be kept below the potable supply pressure. f) Customer complaints/observations communication channel provided.	C - Possible	3 - Moderate	High	Yes	Whilst Risk is categorised as High it is acceptable as it is one of the key inherent risks in dual reticulation schemes. All available controls will be fully implemented.	Yes	No
61			Cross connections within buildings results in potential for localised consumption of recycled water.	Health	C - Possible	3 - Moderate	High	No	a) Occupants will be provided with information packs on recycled water which will include specific material on plumbing and the importance of avoiding cross connections. The information packs will also contain a list of local plumbers who have been accredited for recycled water. b) Occupants will be encouraged to complete a self audit following any changes to the plumbing inside their unit. This will involve alternate isolation of the potable and recycled water supplies and checking of various services for flow / no flow. c) Recycled water supply pressure is to be kept below the potable supply pressure. d) Usage consumption monitored for any deviations from normal expectations.	C - Possible	3 - Moderate	High	Yes	Whilst Risk is categorised as High it is acceptable as it is one of the key inherent risks in dual reticulation schemes. All available controls will be fully implemented. NOTE: the Body Corporate is responsible for plumbing and audits within the separate buildings.	No	No
62		Supply vs. demand	Supply exceeds demand resulting in an excess of recycled water that must be disposed of.	Environmental	E - Almost certain	2 - Minor	Moderate	No	a) Excess recycled water will be discharged to Sydney Water sewer via the trade waste sump.	B - Unlikely	2 - Minor	Low	Yes		No	No
63			Demand exceeds supply resulting in a shortfall of recycled water.	Health	D - Likely	2 - Minor	Moderate	No	a) Recycled water storage has been sized to buffer instantaneous demands. b) Potable water will be used to maintain supply if the recycled water storage tank drops below a minimum level.	B - Unlikely	2 - Minor	Low	Yes		No	No
64		Unauthorised use	Recycled water is used for unauthorised purposes (i.e. drinking) resulting in potential increased risk to human health.	Health	C - Possible	4 - Major	Very High	No	a) Information packs will be supplied to users on initial connection or with change of ownership. These information packs will clearly define the authorised uses for the recycled water. b) Newsletters will be sent with billing information to users reinforcing the authorised uses for the recycled water. c) WFC is committed to community education on recycled water. During site tours and school visits the authorised uses for recycled water will be discussed.	B - Unlikely	4 - Major	High	Yes	Whilst Risk is categorised as High it is acceptable as it is one of the key inherent risks in dual reticulation schemes. All available controls will be fully implemented.	No	No
65		Distribution pumps	Duty recycled water distribution pump fails resulting in temporary loss of supply pressure.	Process performance	D - Likely	2 - Minor	Moderate	No	a) Pumps are installed duty / standby with automatic changeover. b) Maintenance contractor to be engaged under standard protocols to investigate cause of pump failure.	B - Unlikely	2 - Minor	Low	Yes		No	No
66			Duty and standby recycled water distribution pumps fail resulting in loss of supply pressure.	Process performance	C - Possible	2 - Minor	Moderate	No	a) Maintenance contractor to be engaged under emergency protocols to repair pump(s) or install temporary pump.	B - Unlikely	2 - Minor	Low	Yes		No	No
67		Reticulation pipe work	Minor break in reticulation pipe work results in loss of water supply to a minor part of the service area.	Process performance	D - Likely	2 - Minor	Moderate	No	a) Reticulation pipe work will be provided with a number of valves enabling isolation of parts of the network. b) Maintenance contractor to be engaged under emergency protocols to repair leak.	D - Likely	2 - Minor	Moderate	Yes		No	No
68			Major break in reticulation pipe work results in discharge of significant quantities of recycled water to the environment.	Environmental	C - Possible	3 - Moderate	High	No	a) Reticulation pipe work will be provided with a number of valves enabling isolation of parts of the network. b) Maintenance contractor to be engaged under emergency protocols to repair leak.	C - Possible	3 - Moderate	High	Yes	Whilst Risk is categorised as High it is acceptable as it is one of the key inherent risks in dual reticulation schemes. All available controls will be fully implemented.	No	No
69			Major break in reticulation pipe work results in loss of water supply to a major part of the service area.	Health	C - Possible	3 - Moderate	High	No	a) Reticulation pipe work will be provided with a number of valves enabling isolation of parts of the network. b) Maintenance contractor to be engaged under emergency protocols to repair leak.	C - Possible	3 - Moderate	High	Yes	Whilst Risk is categorised as High it is acceptable as it is one of the key inherent risks in dual reticulation schemes. All available controls will be fully implemented.	No	No

APPENDIX  
4.2.14  
ENVIRONMENTAL  
ASSESSMENT  
REPORT



# Environmental Assessment Report Project Application



## Discovery Point, 1 Princes Highway, Wollongong Stage 1 Mixed Use Development (MP10\_0030)

Submitted to Department of Planning & Infrastructure  
On Behalf of Discovery Point Pty Ltd

June 2011 ■ 10619

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JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by: Lindsey Gray

Signature



Date 24/06/11

This report has been reviewed by: Clare Swan

Signature



Date 24/06/11

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B	Director General's Requirements <i>Department of Planning</i>
C	Civil Engineering Report and Plans <i>Bonacci</i>
D	Building Services Infrastructure Planning Considerations <i>Donnelly Simpson Cleary Consulting Engineers</i>
E	Structural Engineering Report <i>Bonacci</i>
F	Quantity Surveyors Certificate <i>Altus Page Kirkland</i>
G	Acoustic and Vibration Assessment <i>SLR Consulting</i>
H	Assessment of Traffic, Transport and Accessibility Implications <i>Transport and Traffic Planning Associates</i>
I	ESD Report <i>Cundall</i>
J	Statement of Heritage Impact <i>Tanner Architects</i>

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- K** Non-Indigenous Archaeological Remains  
*Casey and Lowe Pty Ltd*
- L** Aboriginal Heritage Assessment  
*Jo McDonald Cultural Heritage Management Pty Ltd*
- M** Access Review  
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- N** Wind Tunnel Study  
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- O** Analysis of Stray Traction Current  
*Cathodic Protection Services*
- P** Waste Master Plan  
*GHD*
- Q** Concept Plan Conditions of Approval  
*NSW Department of Planning & Infrastructure*
- R** Table of Compliance – Conditions of Approval  
*JBA Planning*
- S** Email from Rockdale City Council regarding amendments to the  
Wolli Creek Bonar Street Public Domain Plan  
*Rockdale City Council*

### Appendices – Under Separate Cover

- Architectural Design Report (including Architectural Plans and  
Landscape Report)  
*Bates Smart*

# Statement of Validity

Prepared under Part 3A of the Environmental Planning and Assessment Act, 1979 (as amended)

---

## Environmental Assessment prepared by

Name	Clare Swan	Lindsey Gray
Qualifications	BA MEnvPI MPIA CPP	BPlan (Hons) MPIA
Address	Level 7, 77 Berry Street, North Sydney	
In respect of	Project Application	

---

## Concept Plan

Applicant name	Discovery Point Pty Ltd
Applicant address	Discovery Point Office
Land to be developed	1 Princes Highway, Wolli Creek <ul style="list-style-type: none"><li>■ Lots 199, 200, 201, 202, 203 in DP 1103650;</li><li>■ Lot 12 and 13 DP 1062413; and</li><li>■ Lot 2 DP 1048491.</li></ul>
Proposed development	Construction of the first stage of residential and retail development for 130 dwellings, 2,197m <sup>2</sup> of retail floor space, new neighbourhood park and associated landscaping, car park and infrastructure works.

---

## Environmental Assessment

	An Environmental Assessment (EA) is attached
Certificate	<p>I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge:</p> <ul style="list-style-type: none"><li>■ It is in accordance with the Environmental Planning and Assessment Act and Regulation.</li><li>■ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.</li></ul>

Signature

Name

Clare Swan

Date

24 June 2011

Signature

Name

Lindsey Gray

Date

24 June 2011

# Executive Summary

## Purpose of this Report

This submission to the Department of Planning comprises an Environmental Assessment for a Project Application under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP& A Act). It relates to the development of Discovery Point, Wolli Creek, for the Stage 1 mixed use development in accordance with Concept Plan (MP10\_0003) approved by the Department of Planning & Infrastructure on 5 May 2011.

The proponent for this development is Discovery Point Pty Ltd.

## Overview of Project

The proposal seeks approval for the construction of:

- Buildings 1B and 1C including:
  - 130 apartments;
  - ground floor retail uses, including a supermarket. Total retail floor space 2,197m<sup>2</sup>;
  - roof top courtyard with residents gym, community room and pool (Building 1B) and green roof (Building 1C);
  - basement car parking for 246 car spaces;
  - basement water recycling plant;
- public open space in the form of the new Neighbourhood Park;
- associated landscaping and infrastructure works;
- demolition of existing minor structures;
- a portion of the basement structure for future stages 2, 4, 5 and 14 due to ease of construction methodology. Approval of actual parking numbers would be subject to future application;
- new roads (Spark Lane south and Discovery Point Place including bus stops along Discovery Point Place);
- resurfacing and landscaping of Brodie Spark Drive;
- extension of Brodie Spark Drive north towards Cooks River; and
- stratum subdivision of the buildings.

The proposal also includes the following temporary works:

- construction of open space fronting Magdalene Terrace (in the location of the building envelope for future Building 3);
- temporary pedestrian access to Wolli Creek Railway Station;
- road works to the north of the station to provide bus access and turning to Wolli Creek Railway Station; and
- temporary bus stop along Brodie Spark Drive.

## The site

The Discovery Point Concept Plan site is located in Wolli Creek. The Stage 1 Project Application site (the site) applies to part of the south-west portion of Discovery Point. The site is approximately 9,716m<sup>2</sup> in area and is irregular in shape, which also reflects the area to which temporary infrastructure will be provided as part of this Stage 1 application.



The site is accessed by Brodie Spark Drive to the east, Magdalene Terrace to the south, the future Discovery Point Place to the north and the future Spark Lane to the west. The site of Buildings 1B and 1C is legally described as Lot 200 DP 1103650 as shown in the Survey Plan at **Appendix A**. The land is owned by Discovery Point Pty Ltd.

### Planning context

Section 5.1 of this EAR addresses all applicable legislation, strategies and planning instruments. As per the Concept Plan assessment, the proposal complies with a range of strategic planning objectives and relevant State Environmental Planning Policies.

In particular, the proposal is consistent with the principles of the State Environmental Planning Policy No. 65 – Design Quality of Residential Development and the design quality objectives and design principles of the Residential Flat Design Code.

The proposal is permissible with consent under the Rockdale LEP 2000 and meets the objectives of the zoning. The relationship between the Concept Plan and Rockdale City Council's draft local environmental plan and development control plan (recently exhibited) is addressed within the Concept Plan's Preferred Project Report (PPR).

### Concept Plan

The proposed development is consistent with the Discovery Point Concept Plan, including building envelopes for Buildings 1B and 1C, parking rates, dwelling sizes and Statement of Commitments. The Project Application has also been designed to be consistent with the Development Design Guidelines updated by JBA to reflect the Concept Plan Conditions of Approval (June 2011).

### Environmental Impacts

All environmental impacts are considered in Section 5 of this EAR. The proposed works do not raise any adverse environmental impacts and will provide a high quality mixed use development with active ground floor uses providing service retail and pedestrian amenity.

### Conclusion

The proposal is also consistent with the Discovery Point Concept Plan, the Concept Plan Statement of Commitments and Concept Plan Conditions of Approval.

Draft Statement of Commitments for the Stage 1 Project Application have been prepared to supplement the Concept Plan Statement of Commitments and to manage construction and on-going environmental impacts. The environmental impacts of the proposal can be satisfactorily managed.

The project is of significance in that it commences the first stage of the Discovery Point Concept Plan. The proposal will create the first stage of a vibrant village centre with a supermarket and other retail services interfacing with the public domain along Discovery Point Place, Brodie Spark Drive, the new Neighbourhood Park and pedestrian pathways linking Wolli Creek Railway Station to Magdalene Terrace (via Neighbourhood Park). The Neighbourhood Park will act as a 'village centre', attracting residents of Discovery Point and Wolli Creek to shop, meet and relax in the public space and improve linkages within the site, to the developments to the south along Magdalene Terrace and to the railway station.



## 1.0 Introduction

This Project Application and Environmental Assessment Report (EAR) is submitted to the Minister for Planning pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Project Application seeks approval for the first stage of the Concept Plan development at Discovery Point, 1 Princes Highway, Wolli Creek. This EAR fulfils the Director-General Requirements (DGRs) issued on 23 March 2010 (**Appendix B**) and amended on 9 December 2010.

The report has been prepared by JBA Planning, for the proponent, Discovery Point Pty Ltd and is based on information provided by Bates Smart (provided under separate cover), and supporting technical documents provided by the expert consultant team.

This EAR describes the site, its environs and the proposed development, and includes an assessment of the proposal in accordance with the DGRs under Part 3A of the EP&A Act. It should be read in conjunction with the information contained within and appended to this report.

## 1.1 Project Background

### Concept Plan

The Discovery Point Concept Plan for the Discovery Point site, Wolli Creek was approved on 5 May 2011 (refer to Conditions of Approval at **Appendix Q**). The Concept Plan includes:

- A maximum of 132,000m<sup>2</sup> total GFA for the mixed use development (excluding car parking GFA, existing approved buildings and heritage buildings);
- A minimum of 9,000m<sup>2</sup> non-residential GFA;
- A maximum of 123,000m<sup>2</sup> residential GFA;
- A maximum of 8,000m<sup>2</sup> above ground car parking GFA (in addition to maximum GFA above);
- A residential unit mix across the site of:
  - Maximum 45% studios and one bedroom apartments;
  - Minimum 45% two bedroom apartments;
  - Minimum 10% three+ bedroom apartments.
- Total parking numbers across Discovery Point (including existing developed stages) to be capped at 2,240 parking spaces.
- Parking rates to be utilised across the Concept Plan site in future applications for development of:
  - Maximum 1 space per studio and one bedroom unit;
  - Minimum 1 space and maximum of 2 spaces per two bedroom unit;
  - 2 spaces per three+ bedroom units;
  - Minimum 1 visitor space per 20 residential units;
  - Minimum 1 space per 50m<sup>2</sup> of non-residential GFA (commercial); and
  - Minimum 1 space per 35m<sup>2</sup> of non-residential GFA (retail).
  - Minimum 1 bicycle space per 15 residential units;
  - Minimum 1 motorcycle space per 15 residential units;
  - Minimum 1 bicycle space/200m<sup>2</sup> non-residential GFA, with 15% accessible by visitors; and
  - Minimum 1 motorcycle space/20 non-residential car spaces.

- New plazas, common open space, Station Park, Waterfront Park and Neighbourhood Park;
- Minimum residential apartment size of:
  - Minimum 40m<sup>2</sup> for studio dwellings
  - Minimum 50m<sup>2</sup> for one bedroom dwellings
  - Minimum 70m<sup>2</sup> for two bedroom/one bathroom dwellings
  - Minimum 80m<sup>2</sup> for two bedroom/two bathroom dwellings
  - Minimum 100m<sup>2</sup> for three bedroom (plus) dwellings
- A network of streets, open space areas and through-site links generally as shown on the Indicative Design Scheme Site Plan, to facilitate reintegration of the site into the wider urban context including upgrade of the access to the Wolli Creek station.
- Provision of an alternative sewer water treatment facility in the form of a water recycling facility.

## 1.2 Overview of Approval Sought

This Project Application seeks approval for the Stage 1 Mixed Use Development of the Discovery Point site. In summary the development involves the construction of:

- Building 1B, including:
  - 9 apartments;
  - retail area of 1,506m<sup>2</sup>;
  - roof top courtyard on the podium including residents gym, community room and pool;
- Building 1C, including:
  - 121 apartments;
  - retail area of 691m<sup>2</sup>;
- combined basement of Buildings 1B and 1C;
  - public car park for 133 cars and 7 motorcycles;
  - 11 bicycle spaces on street level;
  - residents car park for 113 cars, 10 motorcycles and 10 bicycles;
  - water recycling facility;
- Neighbourhood Park and temporary park fronting Magdalene Terrace (in the location of the building envelope for future Building 3) until such time as construction works on Buildings 2 or 3 commence;
- temporary access to Wolli Creek Railway Station from Discovery Point Place and Brodie Spark Drive;
- road infrastructure, including:
  - replacing the existing temporary east-west cul-de-sac running south of Wolli Creek Railway Station with Discovery Point Place;
  - removing the existing temporary bus turning loop south of Wolli Creek Station and construction of a temporary road, bus stop and turning loop to the north of Wolli Creek Station;
  - resurfacing and landscaping works along Brodie Spark Drive and extension of the road to the north towards Cooks River;
  - construction of Spark Lane between Magdalene Terrace and Discovery Point Place; and
  - construction of Discovery Point Place between Spark Lane and Brodie Spark Drive.

- associated landscaping and infrastructure works;
- demolition of existing structures, gabion wall and existing road access to Wolli Creek Station (i.e. north-south road from Magdalene Terrace and east-west road south of Wolli Creek Railway Station); and
- construction of part of the basement structure for future stages 2, 3, 4, 5 and 14 due to ease of construction methodology. Approval of actual parking numbers would be subject to future application.

## 1.3 Project Team

An expert project team has been formed to deliver the project and includes:

<b>Proponent</b>	Discovery Point Pty Ltd
<b>Co-venture Partners</b>	Australand Holdings Limited and Landcom
<b>Project Manager</b>	Australand Holdings Limited
<b>Architecture and urban design</b>	Bates Smart Architects
<b>Urban Planning</b>	JBA Planning and Krason Planning
<b>Landscape</b>	Turf Design
<b>Surveyor</b>	Lockley Land Title Solutions
<b>Environmentally Sustainable Design</b>	Cundall Design Consultants
<b>Stormwater, Erosion and Sediment Control</b>	Bonacci
<b>Traffic and Transport</b>	Traffic and Transport Planning Associates
<b>European Heritage</b>	Tanner Architects and Associates and Casey and Lowe
<b>Indigenous Heritage</b>	Jo McDonald Cultural Heritage Management Pty Ltd
<b>Wind</b>	Heggies
<b>Noise and Vibration</b>	Heggies
<b>Electrolysis Analysis</b>	Cathodic Protection Services
<b>Shadow Studies</b>	Bates Smart Architects
<b>Drainage, Groundwater and Flooding</b>	Bonacci
<b>Structural</b>	Bonacci
<b>Access</b>	Morris Goding Accessibility Consulting
<b>Services</b>	Donnelly Simpson Cleary Consulting Engineers

## 2.0 Site Analysis

### 2.1 Site Location and Context

The Discovery Point Concept Plan site is located in Wolli Creek, approximately 8 kilometres south-west of the Sydney CBD. The Stage 1 Project Application site (the site) applies to part of the south-western portion of Discovery Point.

The site of the permanent building works is approximately 9,716m<sup>2</sup> in area and is irregular in shape, reflecting the area to which permanent infrastructure will be provided as part of this Stage 1 application. The site is accessed by Brodie Spark Drive to the east, Magdalene Terrace to the south, the future Discovery Point Place to the north and the future Spark Lane to the west.

The site to which the permanent building works is proposed is identified in **Figure 1**, a location plan is shown in **Figure 2** and an oblique aerial photo of the site is shown in **Figure 3**.



**Figure 1** – Locality Plan

Source: *Bates Smart*





## 2.2 Site Description

### Existing Development

The site currently contains several minor structures. The site also includes the diaphragm wall installed during the construction of the adjoining Greenbank building, providing waterproofing to three levels of basement car parking under part of the site. There is currently a gabion wall in the north-east corner of the site, providing temporary flood protection to the Wolli Creek Station.

The existing structures and gabion wall are proposed to be demolished as part of this application.

### Heritage

The site subject to the Stage 1 Project Application is not within (or immediately adjacent to) the land identified on the State Heritage Register as the Tempe House Estate. As discussed in Section 5.8, the site is identified as having potential indigenous and non-indigenous archaeology.

### Landform / Vegetation

The site is relatively flat and low lying and, as shown in **Figure 3**, the site is highly modified with little vegetation or other environmental constraints.

### Levels

The site is located on relative low lying land and site levels vary markedly, from RL 6.5 as Brodie Spark Drive crosses the railway line, to RL2.0m outside the station entrance, down to RL 6.0m at the bottom of the basement excavation.

### Acoustic Environment

The site is currently affected by a range of external noise sources, including traffic noise along the Princes Highway, rail noise along the overland Illawarra Railway Line into Wolli Creek Railway Station and aircraft noise from Sydney Airport.

### Aspect and Views

The long northern boundary of the site faces almost due north, providing optimum solar aspect for apartments facing the station. Residents at upper levels will experience views towards Waterworth Park, Wolli Creek, Sydney CBD, Kogarah Golf Course, the Sydney Airport and Botany Bay. From lower levels there are glimpses of Discovery Point Park and Cooks River.

## 2.3 Land Ownership and Legal Description

The Discovery Point Concept Plan relates specifically to the following lots:

- Lots 199, 200, 201, 202, 203 in DP1103650;
- Lot 12 DP1062413; and
- Lot 2 DP1048491 & Lot 13 1062413 (Discovery Point Park and foreshore).



Building 1B and 1C are located within Lot 200 DP 11033650. The temporary works and enabling works for Stage 1 apply across the Concept Plan area, and therefore all lots listed above. A survey plan is provided at **Appendix A**. The land is owned by Discovery Point Pty Ltd.

## 2.4 Surrounding Development

The land uses and development surrounding the site include the following as shown in **Figures 4 to 9**:

### To the north

To the north of Discovery Point is Cooks River, Kendrick Park and residential areas on the opposite side of the River. To the immediate north of the Stage 1 site is Wollie Creek Railway Station and the future northern precinct of the overall Discovery Point Concept Plan site.

### To the south

Adjoining Discovery Point to the south is a mixed use development known as "Proximity", (refer to **Figure 5**) which was developed by Multiplex. The Proximity development comprises around 290 apartments with a maximum building height of 21 storeys. To the south is also a vacant industrial site (known as 'NAHAS') which is previously subject to a Part 3A Concept Plan application with a Stage 1 Project Application approval for a mixed use development, including a supermarket.

Existing or under construction stages of Discovery Point adjoin the site to the south-east.

### To the east

To the east of Discovery Point is the Princes Highway and the Cooks River, Cahill Park, Tempe Recreation Reserve (refer to **Figure 8**) and Cooks Cove development site. To the east of Stage 1 are the Greenbank, Verge and Vine (under construction) developments within Discovery Point.

### To the west

To the west is the Illawarra Railway line, with higher density mixed use development located further to the west in the suburb of Turrella (**Figure 9**).



**Figure 4** – View to the north of the site



**Figure 5** – View of development to the south\*



**Figure 6** – View of development to the south\*



**Figure 7** – Adjacent 'NAHAS Constructions'



**Figure 8** – View to the east\*



**Figure 9** – Development located to west

\* Source: *Concept Plan Preliminary Environmental Assessment (Australand, February 2010)*

## 3.0 Description of Development Proposal

This section of the report provides a detailed description of the proposed development. Whilst the entire mixed use development has been declared a Part 3A project, the first phase of development is proposed in the Southern Precinct, to the south of the railway station.

### 3.1 Overview

The project involves the Stage 1 Mixed Use Development of the Discovery Point site, Wolli Creek (see **Figure 10**). In summary this Project Application seeks approval for:

- Building 1B, including:
  - 9 apartments;
  - retail area of 1506m<sup>2</sup>;
  - roof top courtyard on the podium including residents gym, community room and pool;
- Building 1C, including:
  - 121 apartments;
  - retail area of 691m<sup>2</sup>;
- combined basement of Buildings 1B and 1C;
  - public car park for 133 cars and 7 motorcycles;
  - 11 bicycle spaces on street level;
  - residents car park for 113 cars, 10 motorcycles and 10 bicycles;
  - water recycling facility;
- Neighbourhood Park and temporary park fronting Magdalene Terrace (in the location of the building envelope for future Buildings 3 and 5);
- temporary access to Wolli Creek Railway Station from Discovery Point Place and Brodie Spark Drive;
- road infrastructure, including:
  - replacing the existing temporary east-west cul-de-sac running south of Wolli Creek Railway Station with Discovery Point Place;
  - removing the existing temporary bus turning loop south of Wolli Creek Station and construction of a temporary road, bus stop and turning loop to the north-east at Wolli Creek Station;
  - upgrading Brodie Spark Drive and extension of the road to the north towards Cooks River;
  - construction of Spark Lane between Magdalene Terrace and Discovery Point Place; and
  - construction of Discovery Point Place between Spark Lane and Brodie Spark Drive.
- associated landscaping and infrastructure works;
- demolition of existing structures, gabion wall and existing road access to Wolli Creek Station (i.e. north-south road from Magdalene Terrace and east-west road south of Wolli Creek Railway Station); and
- construction of a portion of the basement structure for future stages 2, 4, 5 and 14 due to ease of construction methodology. Approval of actual parking numbers would be subject to future application; and
- stratum subdivision of the buildings.

Architectural drawings of the proposed development prepared by Bates Smart Architects and landscape plans prepared by Turf Design are provided under separate cover. Engineering drawings prepared by Bonacci at **Appendix C**. **Figure 10** identifies the extent of the permanent Stage 1 works.

The following enabling and temporary works are proposed outside the Stage 1 permanent works boundary, including:

- temporary bus turning loop and associated earthworks described in the Civil engineering report;
- excavation and earthworks adjacent the stage 1 boundary to enable construction (mainly on sites 2, 3 and 5) described in civil and structural engineer's drawings;
- underground services described in the services engineers drawings; and
- temporary park to sites 3 and 5.



**Figure 10** – Stage 1 permanent works

Source: *Bates Smart*

## 3.2 Design Principles

The Bates Smart *Stage 1 Project Application Design Report* provided under separate cover provides a detailed overview and rationale for the Building 1B and 1C urban design response to existing and proposed site conditions. The planning and design objectives adopted for the proposed development of the site are as follows:

- to create a vibrant residential neighbourhood with a permeable network of streets and courtyards;
- to extend the public domain with the introduction of Neighbourhood Park linking directly to Discovery Point Park and Wollie Creek Railway Station;
- to create an active and legible built form through ground floor retail and pedestrian laneways;
- to create a high quality environment for future residents;



- to maintain and enhance access to Wolli Creek Railway Station to encourage public transport patronage by future residents; and
- to establish early in the development process the main elements of the southern precinct, which includes residential and a small retail village precinct surrounding the neighbourhood park.

### 3.3 Building 1B

Building 1B consists of a two storey mixed use building with ground floor retail development. The ground floor of Building 1B consists of 1506m<sup>2</sup> retail floor space, residential foyer, loading dock and waste room (as identified in **Figure 11**).

The ground floor of Building 1B will consist of retail premises' with frontage to the Neighbourhood Park and the pedestrian thoroughfare facing Building 1C. The plans depict 'Supermarket / Retail / Cafes' as this generally covers a range of land uses including a supermarket, specialty retail, food and drink premises and the like. It is not proposed to further demark the plans with detailed and specific uses, as the detailed configuration of tenancies is not known until the building is put to the market. Separate development applications will be made for use and fit-out of these spaces.

The applicant commits to providing an active retail frontage on either side of the walkway, which can be achieved through specialty shop fronts, café dining or clear visual links into a supermarket tenancy. This would be required to be included on the fit-out plans and is included in the Statement of Commitments.

The first floor of Building 1B contains nine residential apartments above the supermarket and a large plant room in the internal area (as identified in **Figure 12**). The apartments are to be located within the eastern side of the first floor, in a u-shape on the eastern, northern and part of the southern perimeter of the building. The roof or podium level of Building 1B will be used as a landscaped rooftop terrace with residents' facilities, including swimming pool, gym, change rooms, community room, barbeque facilities and pergola.

Building 4 will later be constructed above the western side of Building 1B (above the loading dock) and will include additional dwellings on the first floor and above. Building 4 will be subject to a separate development/project application.



**Figure 11** – Ground Floor Plan of Building 1B

Source: *Bates Smart*

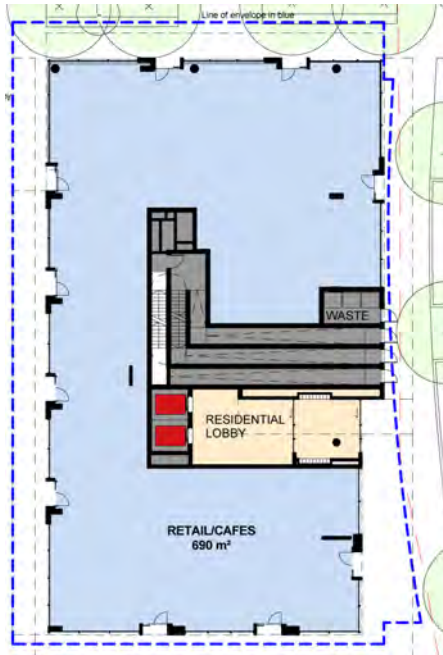


**Figure 12** – First Floor Plan of Building 1B

Source: *Bates Smart*

### 3.4 Building 1C

Building 1C is a 14 storey mixed use building located within the north-east corner of the Stage 1 site, along Brodie Spark Drive. The ground floor consists of 691m<sup>2</sup> of retail floor space and the residential foyer for the dwellings above (as shown on **Figure 13**). The retail floor space on the ground floor will consist of retail premises for the purposes of retail premises or food and drink premises (use and fit out to be subject to future development applications). Active frontages will be provided along all four frontages of Building 1C, including the pedestrian thoroughfare facing Building 1B.



**Figure 13** – Ground Floor Plan of Building 1C



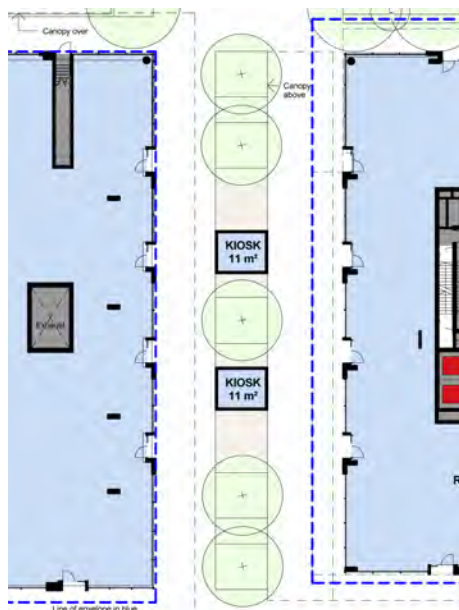
**Figure 14** – First Floor Plan of Building 1B

Source: *Bates Smart*

Storeys 1-13 include 121 residential apartments overall, with six to eleven apartments on each floor. A typical floor plan is provided at **Figure 14**. The roof top level of Building 1C is accessible to residents and will be used as a green roof including lawn, shade trees and kitchen garden.

### 3.5 Retail Kiosks

Two small retail kiosks (11m<sup>2</sup> each) are proposed within the pedestrian walk between Buildings 1B and 1C to further encourage pedestrian and retail activity along the pedestrian walk, between the Wolli Creek Railway Station and the Neighbourhood Park. These kiosks are identified in **Figure 15**.



**Figure 15** – Kiosk locations between Building 1B and 1C

Source: *Bates Smart*

## 3.6 Basement Levels

There are four basement levels proposed as part of the Stage 1 development:

- Basement Level B0 extends below Buildings 1B, 1C and Spark Lane and includes:
  - 133 public car spaces for shoppers and visitors, including disabled parking;
  - 7 motorcycle spaces for shoppers and visitors;
  - 8 residential car spaces for Building 1B;
  - service, waste and storage rooms for Buildings 1B and 1C, and future Building 4;
  - access via Spark Lane;
- Basement Level B1 extends below Building 1C and includes:
  - 34 residential car spaces (including 10 spaces to be located within the Verge, Vine and Greenbank basement) and bicycle parking;
  - 3 motorcycle spaces;
  - storage areas and service rooms;
  - part of B1 will be utilised for parking in future stages;
- Basement Level B2 extends below Building 1C and includes:
  - 40 residential car spaces (including 10 spaces to be located within the Verge, Vine and Greenbank basement) and bicycle parking;
  - 3 motorcycle spaces;
  - storage areas and service rooms;
  - water recycling facility (described in more detail in Section 3.11);
- Basement Level B3 extends below Building 1C and includes:
  - 31 residential car spaces (including 1 space to be located within the Verge, Vine and Greenbank basement) and bicycle parking;
  - 3 motorcycle spaces;
  - storage areas and service rooms;
  - water recycling facility (described in more detail in Section 3.11).

Six accessible car spaces are provided across the basement levels including one for each of the accessible apartments (totalling three spaces) and three provided for visitors/residents (i.e. 2% of all retail/visitor car spaces).

The Architectural Plans included in the Bates *Smart Stage 1 Project Application Design Report* (provided under separate cover) show how the proposed Stage 1 basement levels access the existing basement levels associated with the Verge, Vine and Greenbank development. The Architectural Plans also indicate where future access will be provided to future basement levels to the south of Stage 1.

## 3.7 Dwelling Mix and Size

Buildings 1B and 1C will accommodate 130 apartments in a range of types and sizes. **Table 1** identifies the overall dwelling mix and size of dwellings within both Buildings 1B and 1C.



Table 1 – Dwelling Mix

Type of Dwelling	Dwelling Size	No. of Dwellings	% of Dwellings
1 Bedroom	50m <sup>2</sup>	10	42%
	53m <sup>2</sup>	6	
	57m <sup>2</sup>	13	
	59m <sup>2</sup>	9	
	61m <sup>2</sup>	10	
	67m <sup>2</sup>	6	
	82m <sup>2</sup>	1	
	<b>Total</b>	<b>55</b>	
2 Bedroom, 1 Bathroom	70m <sup>2</sup>	10	50%
	77m <sup>2</sup>	4	
	78m <sup>2</sup>	1	
2 Bedroom, 2 Bathrooms	80m <sup>2</sup>	22	
	84m <sup>2</sup>	7	
	85m <sup>2</sup>	13	
	88m <sup>2</sup>	3	
	92m <sup>2</sup>	4	
	108m <sup>2</sup>	1	
	<b>Total</b>	<b>65</b>	
3+ Bedroom	100m <sup>2</sup>	2	8%
	110m <sup>2</sup>	4	
	111m <sup>2</sup>	2	
	120m <sup>2</sup>	1	
	124m <sup>2</sup>	1	
	<b>Total</b>	<b>10</b>	
<b>Stage 1</b>	<b>TOTAL</b>	<b>130</b>	<b>100%</b>
<i>Adaptable Units</i>	<i>Total</i>	<i>3</i>	<i>2.5%</i>

It is noted that the Concept Plan set a unit mix across the site of (across the whole completed Concept Plan development):

- Maximum 45% of dwellings as 1 bedroom / studio apartments;
- Minimum 45% of dwellings as 2 bedroom apartments; and
- Minimum 10% of dwellings as 3+ bedroom apartments.

Table 2 provides a schedule of proposed dwelling mix provided within the Stage 1 Project Application. As shown in Table 2, the proposed development generally accords with the Concept Plan dwelling mix, with full compliance achieved through a relevant tally kept in subsequent applications.

Table 2 – Stage 1 Dwelling Mix

Type of Dwelling	No. of Dwellings	% of Dwellings
1 Bedroom		
<b>Total</b>	55	42%
2 Bedroom		
<b>Total</b>	65	50%
3+ Bedroom		
<b>Total</b>	10	8%
<b>TOTAL Dwellings</b>	<b>130</b>	<b>100%</b>

### 3.8 Landscaping and Public Domain

The proposed landscape works are illustrated within the Landscape Report included in the Bates Smart *Stage 1 Project Application Design Report*. The key features of the proposed landscaping treatments are:

- the construction of Neighbourhood Park, 1,452m<sup>2</sup> in area, to the south of Building 1B forming the Village Square and linking a number of pedestrian thoroughfares between future buildings. The majority of Neighbourhood Park includes a deep soil planting zone;
- the construction of a temporary park adjoining Neighbourhood Park (an area of 1,600m<sup>2</sup>), in the location of the future Buildings 3 and 5, to provide access and interface with Magdalene Terrace to the south, until such time that a Building 3 or 5 Project/Development Application is lodged or construction of Building 2 commences whichever is first;
- the landscaping of the roof top podium terrace above Building 1B and roof top garden of Building 1C; and
- the street planting and landscaping of Brodie Spark Drive, Discovery Point Place and Spark Lane.

Key features of the Stage 1 landscape strategy include (and ground level works are depicted on **Figure 16**).



**Figure 16** – Proposed landscape plan

Source: *Turf Design*

## The Neighbourhood Park

Key features include:

- Contrasting tones, textures and patterns to be used to identify the park area as different from the general streetscape;
- High finish landscape elements and materials are proposed with custom design furniture to define a unique landscape character;
- An area of deep soil zone enables the provision of extensive shade tree plantings;
- A large central lawn with feature tree plantings and surrounding pedestrian walks;
- A 'play' focused water feature with fountain elements set below trafficable grill covers;
- A deck terrace comprised of deciduous trees along the future Building 3 site /south edge of park;
- A seating area on the western edge interspersed by native trees; and
- Internal pedestrian network connections, with feature trees and seating elements.

## A temporary park along Magdalene Terrace

The Temporary Park located within the future Building 3 and 5 sites (south of the Neighbourhood Park) includes the following temporary amenities;

- Pedestrian connections to the Neighbourhood Park, Railway Station and Proposed stage 1 development; and
- Extensive lawn areas for adjoining building breakout space.

## Landscape for Building 1B and Building 1C rooftops

The building 1B podium is proposed as a shared community space for Discovery Point residents. The podium features a Gym, pool and sundeck area, community function space, lawns, garden beds, tree plantings, shade structure, seating and BBQ facilities for the residents.

The pool and sun deck are proposed to the southern side of the rooftop overlooking the neighbourhood park. A dense hedge is proposed to the eastern side of the pool to screen views and noise from the adjacent building 1C. A secure fence will enclose the pool and sun deck from the surrounding shared gardens.

A space is proposed to the centre of the rooftop, located under a pergola. Seating and BBQ facilities will be provided within this area. Lush planters will surround the space adding colour, texture and accent to the garden.

Building 1C is proposed as a 'residents only' green roof, featuring allotment gardens, shade structures and BBQ facilities for small group gatherings.

## Upgrade of existing Brodie Spark Drive and extension of streetscape works

Brodie Spark Drive will be resurfaced to remove the median traffic islands and improve the planting schedules. A combination of additional tree planting, lighting design and street furniture has been designed to upgrade and enhance the amenity of the Stage 1 roads and enhance pedestrian amenity.

### Temporary Bus stop to Brodie Spark Drive

A temporary bus stop will be built on the bridge over the railway line along Brodie Spark Drive. This provides a single bus stop with shelter as temporary bus access to the station, while the permanent double bus stop along Discovery Point Place is constructed under this Project Application.

More details regarding the landscaping proposed within Stage 1 is provided within the Bates Smart *Stage 1 Project Application Design Report* provided under separate cover.

## 3.9 Transport, Access and Parking

### Road Network

Stage 1 includes the following road works:

- replacing the existing temporary east-west cul-de-sac running south of Wolli Creek Railway Station with Discovery Point Place;
- removing the existing temporary bus turning loop south of Wolli Creek Station and construction of a temporary road, bus stop and turning loop to the north at Wolli Creek Station;
- upgrading Brodie Spark Drive and extension of the road to the north towards Cooks River;
- construction of Spark Lane between Magdalene Terrace and Discovery Point Place;
- construction of Discovery Point Place between Spark Lane and Brodie Spark Drive;
- upgrading Brodie Spark Drive to provide space for new lighting improved drainage, landscaping and cycle paths and extension of the Drive to the north towards Cooks River; and
- planted verges on the Spark Lane frontage.

Discovery Point Place will be a key transport hub with a bus stop, taxi zone, kiss and ride and pedestrian links, combined with trees, planting and seating to create a high quality public realm at the entrance to Wolli Creek Station

The proposed road network will provide access to the site, as well as a number of future development stages within Discovery Point.

### Vehicle Access

Vehicle access to the site will be via Magdalene Terrace to the south (accessing the proposed Spark Lane) and Brodie Spark Drive to the east (accessing Discovery Point Place).

Vehicle access to level B0 the basement car park of both Buildings 1B and 1C and the supermarket loading dock will be via Spark Lane.

Levels B1 - B3 will be accessed using the existing ramps on Brodie Spark Drive and Magdalene Terrace.

### Car Parking

**Table 3** identifies the number of car parking spaces within Stage 1 (and are described in Section 3.6 above). As described in Section 3.6, one basement level underneath both Buildings 1B and 1C, and under Spark Lane, will be constructed.

This basement level will be used primarily for residents; Level B0 will provide some public parking. Three additional basement levels will be constructed under Building 1C.

No additional on-street parking is proposed as part of this application.

**Table 3 – Stage 1 Car Parking**

<b>Location</b>	<b>No. of Car Spaces</b>
On-street	0
Basement B0 – Public Car Spaces	133
Residential B1	42
Residential B2	40
Residential B3	31
<b>Total</b>	<b>246</b>

The application also seeks consent for the construction of a portion of the basement structure for future stages 2, 4, 5 and 14 due to ease of construction methodology. Approval of these actual parking numbers would be subject to future application. The areas of basement constructed for future car parking spaces are identified in Architectural Plans DA2.101-DA2.202.

### Service Vehicles

The residential refuse and recycling strategy for the southern precinct involves the collection of waste from storage rooms in the basement of each building and transfer to a centralised store in the ground floor of Building 1B. Retail waste collection will occur in the loading dock of Building 1B.

Adjacent to the central waste store is a loading dock which will accommodate waste collection vehicles in addition to deliveries vehicles for retail and commercial tenants, including the supermarket.

Emergency vehicles will gain access to all buildings and open spaces directly from the proposed street network

### Bicycle Parking

Bicycle parking is provided both within the basement car park and on footpaths. As part of Stage 1, 21 bicycle parking spaces are provided, 11 on-footpath for use by non-residential patrons and 10 spaces within the basement for residents.

### Wolli Creek Station Access

The station access to Wolli Creek Railway Station is via stairs and a lift from the temporary access road to the south of the station. The existing station access will be replaced as part of the Stage 1 Project Application.

To ensure station access is maintained throughout construction, Stage 1 early works will include temporary station stairs and ramp from Brodie Spark Drive, immediately to the north of the proposed Discovery Point Place alignment. To ensure bus access is also maintained to the station, Stage 1 early works will also include a temporary bus stop on the bridge over the railway line and temporary bus turning loop north of the railway station. The temporary bus stop will be located adjacent to the temporary stairs and access ramp to the station and a footpath will be provided from the bus turning loop to the station access.

Site plan of the proposed St. Margaret's Hospital campus. The plan shows various buildings including the Main Campus, Proposed Building 1C, Future Building 2, and Future Building 5. It also includes a Temporary Bus Stop, a Chapel, and a Theatre. The site is bounded by Spark Lane to the west, Millers Lane to the south, and a future road to the east. A large orange area indicates the proposed main campus and its connection to the bus stop.

Source: *Bates Smart*

Vehicular access to the station will be provided via Spark Lane and Discovery Point Place (when constructed). A permanent bus stop for two buses will be provided along the northern side of Discovery Point Place, immediately west of the proposed station access, and two bays will be provided for taxi pick up and drop off on the southern side of the road.



With the construction of the new station access, Spark Lane and Discovery Point Place (including new bus stop), the temporary station access, bus stop and bus turning loop will be demolished. Pedestrian access between the station, Neighbourhood Park and Magdalene Terrace is addressed below.

## Bus Services

Bus services will stop on Discovery Point Place, adjacent to Wolli Creek railway station. A taxi and commuter drop off is also provided in this location.

## Pedestrian and circulation

Pedestrian access will be made available to the site via:

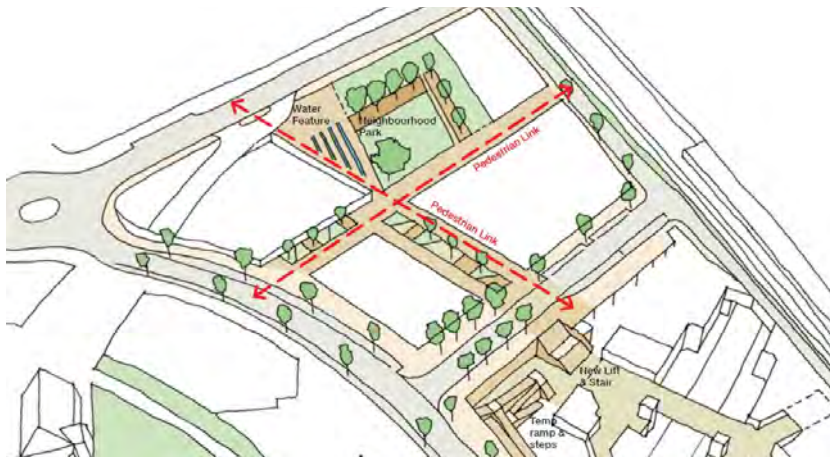
- Magdalene Terrace to the temporary park located in the future footprint of Building 3;
- Magdalene Terrace to footpaths along Spark Lane;
- Brodie Spark Drive to footpaths and public domain areas immediately to the south of Building 1C;
- Brodie Spark Drive to Discovery Point Place.

Pedestrian access will also be provided through the site, north-south via the Neighbourhood Park, Temporary Park and pedestrian thoroughfare between Buildings 1B and 1C, and east-west along the southern facade of Building 1B and 1C.

Pedestrian access into the buildings will be via:

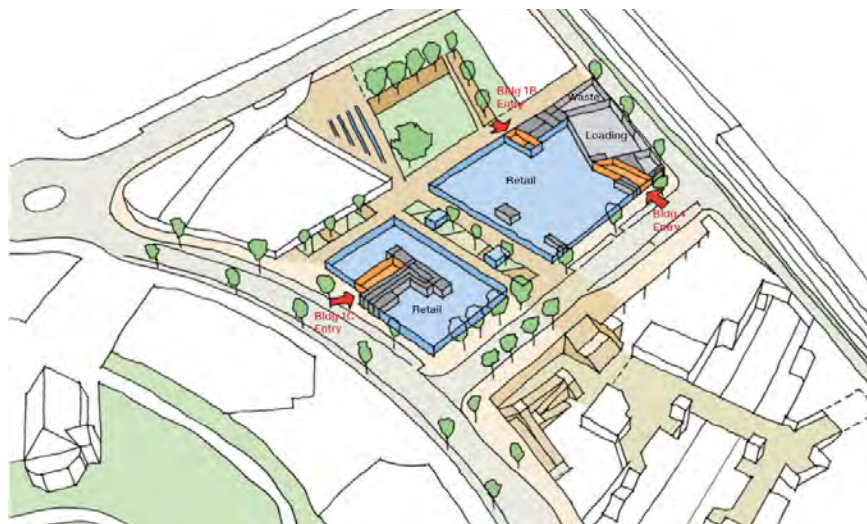
- Building 1C residential lobby along Brodie Spark Drive;
- Building 1B residential lobby adjacent to the north-west corner of the Neighbourhood Park;
- Ground floor retail frontages along Brodie Spark Drive, Discovery Point Place and the pedestrian link between Buildings 1B and 1C, and Neighbourhood Park; and
- Building 4 residential lobby on Discovery Point Place (part of a separate future application).

Pedestrian links and residential access is indicated in **Figures 18** and **19**.



**Figure 18** – Pedestrian links

Source: *Bates Smart*



**Figure 19** – Residential Pedestrian Access

Source: *Bates Smart*

### Disabled access

The following measures will be implemented to provide disabled access to the site, common areas, accessible parking, sanitary facilities, retail development and residential accommodation:

- 2% parking for retail services provided as accessible parking (i.e. 3 car spaces);
- 1 adaptable parking bay for every adaptable apartment (i.e. 3 car spaces);
- 3 adaptable apartments provided within Buildings 1B and 1C (combined);
- accessible paths into each residential lift lobby and retail tenancy;
- accessible paths from residential lift lobbies to all upper floor apartments;
- accessible paths from the temporary bus stop to the railway station (via the proposed ramp and lift);
- accessible paths to roof top terrace, including all common facilities, from the lift.

## 3.10 External Materials and Finishes

Bates Smart Architects have prepared a palette of external materials and finishes for the proposed development that complement and enhance the existing character of Wolli Creek and Discovery Point. The Bates Smart Design Report (provided under separate cover) provides the External Finishes Schedule that illustrates the typical materials detailing of various building elements and includes:

- concrete spandrels;
- aluminium louvres;
- painted sheet solid panels;
- aluminium windows; and
- metal balustrades.

The rationale for the detailed elevation approach is provided at Section 5.4 of the Bates Smart Design Report. In summary the Bates Smart design rationale is as follows:



## Building 1C

- Regular, repetitive horizontal bands act as the primary ordering device while the windows and infills shift and stagger between them. The expressed spandrels unify the overall composition and act as a scaling device.
- To break up the composition, a set of large scale gestures break the repetition of the bands including
  - a full height slot which provides light and ventilation to the common areas
  - a high level pop-out on the north-west corner provides the western apartments with larger balconies and glimpses of Discovery Point Park;
  - a high-level pop-out on the south-east corner gives several apartments a view back to the Neighbourhood Park.
- Between these horizontal bands, a family of 4 elements – balconies, windows, louvered screens and solid panels – provides outdoor space, light and ventilation, shading and protection to the apartments within.
- On the Northern and Southern elevations where the overall massing is subject to the large scale gestures, the arrangement of secondary elements is fairly ordered with little differentiation by level.
- In contrast, the east and west elevations have a simpler massing so the secondary elements shift and stagger responding to the various apartment conditions within. This provides a field effect which allows the building to read as a singular whole at the same time expressing the smaller details of each apartment and individual rooms.

## Building 1B

- The language of strong horizontals is carried through to the lower three-storey building.
- A thin projecting canopy separates the glazed ground floor from the residential floors above, which are contained by tall spandrels at floor and ceiling level. Between these is a family of elements similar to Building 1C: balconies, windows, louvered screens and solid balustrades.
- At the western end of the building, where the first floor level will be unoccupied until Building 4 is completed, a system of timber battens on plywood hoarding will ensure a similar approach to infill is completed on all four facades.

## Retail Frontages

- The residential floors float above a predominantly glazed retail base which in most locations is aligned with the building above.
- Between the residential floors and the glazed retail facade is a metal canopy. The canopy has a thin leading edge to emphasise its lightness and is made of metal to provide a visual buffer between the retail facades and residential floors above.
- The glazed retail facade is broken at each structural bay by a full height solid panel and recessed entrance door, breaking down the long expanse of glazing. Providing a entrance door in each structural bay brings two clear benefits: It allows the retail floor level to step down following the fall of the site; and encourages smaller tenancies with multiple entry points.

- Between each entrance bay, the retail facade incorporates a 600mm signage zone with a 600mm clerestory window above. Lowering the signage zone into the glazing increases the sense of openness of the facade and provides a common background onto which each of the retailers can project their branding.

### 3.11 Water Cycle Management

A Water Recycling Facility is proposed to be located in basement levels B2 and B3 of Building 1C. Waste water will be taken from the Sydney Water sewerage system mains located at the intersection of Magdalene Terrace and Brodie Spark Drive and fed into a Flow Balance Tank (to be located within the development site), future buildings within Discovery Point will be fed directly into the Flow Balance Tank. From the Flow Balance Tank, waste material will be treated in the Water Recycling Facility producing water suitable for a range of uses, including irrigation, clothes washing, car washing and toilet flushing purposes.

Recycled water will be utilised, with all apartments fitted with recycled water pipes to toilets and washing machines. In the initial stages of the Discovery Point Concept Plan implementation, surplus recycled water will also be utilised by Marrickville Council to irrigate parks and open space along the Cooks River.

### 3.12 Services and Infrastructure

An Infrastructure Planning Considerations Report has been prepared by DSC (see **Appendix D**) and to address the provision of servicing for the Stage 1 Project Application. Stage 1 includes all internal services/infrastructure installations to support Buildings 1B, 1C and the associated public domain, and also some infrastructure and utility upgrades to support future stages of the Discovery Point development.

Approval is sought for the extension/augmentation of physical infrastructure/utilities as required below:

#### Potable Water

A ringmain extension is proposed from the existing Authorities 300mm DICL water main in Brodie Spark Drive connecting to the existing Authorities 200mm uPvc water main in Magdalene Terrace via Discovery Point Place and Spark Lane.

#### Sewerage

As described in Section 3.11, a Water Recycling Facility is proposed in Basement levels B2 and B3 of Building 1C. All sewer lines will be diverted to the Water Recycling Facility, including those for existing buildings in Discovery Point (i.e. Greenbank, Vine, Verge). Overflow from the Water Recycling Facility will be diverted to the existing Sydney Water sewer main at the corner of Magdalene Terrace and Brodie Spark Drive.

#### Gas

A 210kPa pressure Authority gas main is available in Brodie Spark Drive and will be extended to reticulate down Discovery Point Place and Spark Lane. Natural gas will be made available to Building 1B and 1C, including the supermarket and retail tenancies.

## Electricity

The existing high voltage infrastructure associated with existing developments Greenbank, Vine and Verge will be upgraded and extended to service Buildings 1B and 1C. An accredited service provider will provide the design of the high voltage in accordance with Energy Australia's requirements.

## Communications

New communications fibre or copper services will be installed in accordance with Telstra, NBN and the Australian Communications Authority requirements.

## Stormwater

The proposed stormwater drainage system is shown in the Civil Report prepared by Bonacci Group Pty Ltd at **Appendix C**. Stormwater pipes are proposed along Spark Lane, Discovery Point Place, between Buildings 1B and 1C and underneath Neighbourhood Park. The Stage 1 Project Application works will integrate with the Magdalene Terrace and Brodie Spark Drive networks.

# 3.13 Site Preparation Works

## Demolition

To prepare the site for the proposed development, the demolition of several minor structures. An existing wall in the north-east corner of the site that provides flood protection (and will no longer be required) will also be demolished as part of the proposed development.

## Earthworks

Bulk earthworks to be undertaken as part of the proposed development will require cut of approximately 25,000m<sup>3</sup> and fill of approximately 8,600m<sup>3</sup>, resulting in the following:

- the finished level of the basement levels under Building 1C is RL -6.4m AHD (with excavation down to RL -6.7m AHD), with some localised deeper excavation to allow for construction of the water recycling facility;
- the finished level of basement B0 under Building 1B is RL 1.8m AHD (with excavation down to RL 1.4m AHD); and
- fill will be associated with the construction of the neighbourhood park, construction of Spark Lane, temporary road and bus turning loop) and fill placed on concrete slabs (which form basement carparking levels).

The bulk earthworks are identified in detail within Plans 20 0119301/ CSK04 and CSK05 appended to the Civil Report prepared by Bonacci Group Pty Ltd (**Appendix C**). The excavation will be carried out by experienced bulk excavation contractors using standard earth moving equipment to remove the predominant fill and clay materials.

### Site Retention Systems

Retention systems adjacent to the rail corridors are proposed as follows (and identified in Figure 1 of the Bonacci Structural report (**Appendix E**):

- cantilever contiguous pile walls up to the natural ground levels along the western boundary alongside the Illawarra Line rail corridor; and
- a permanent concrete wall to separate the Basement BO from the rail corridor along the northern boundary alongside Wolli Creek Railway Station and the Airport Line rail corridor.

### Basement Construction and Utilities

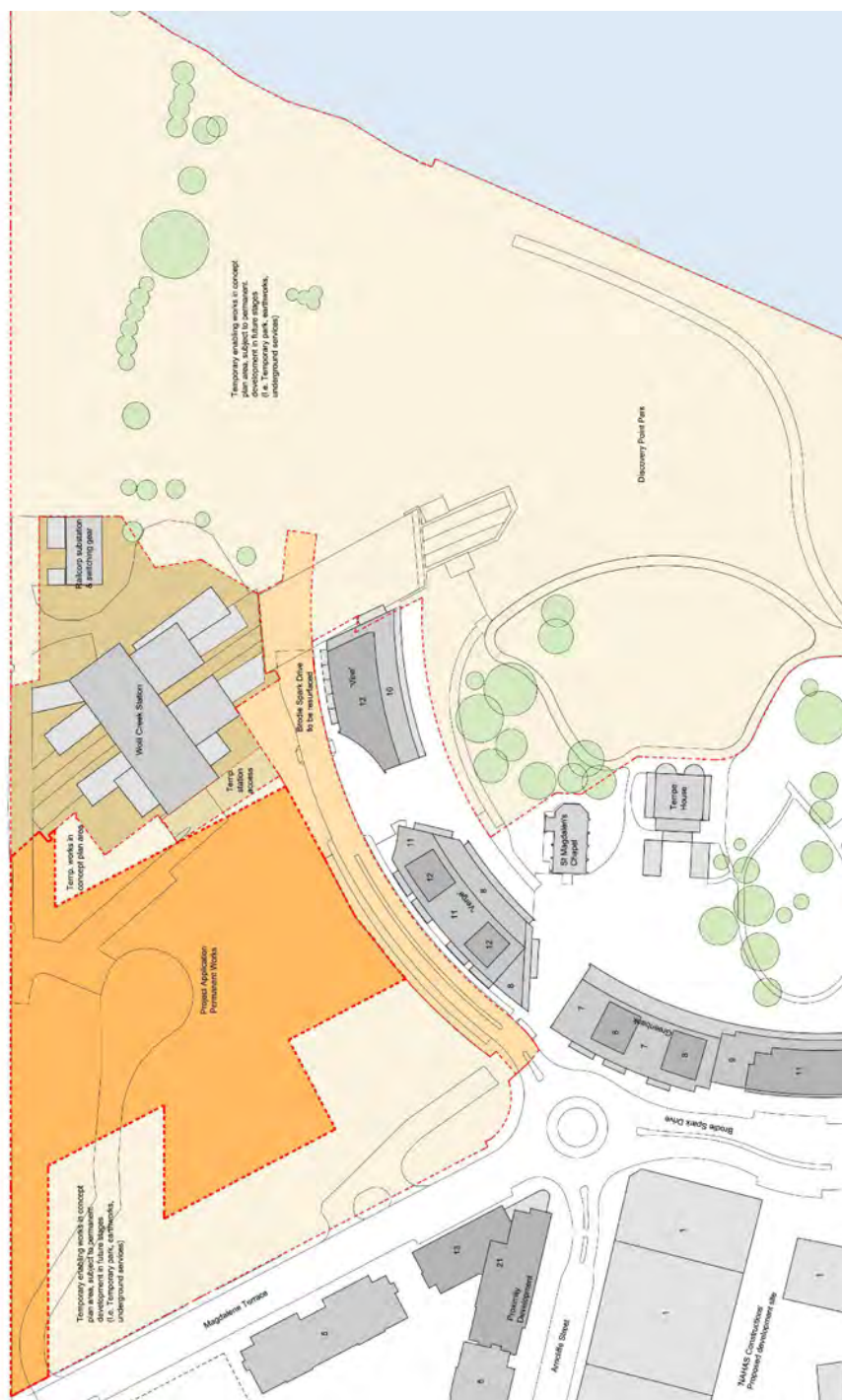
The following enabling works are proposed as part of the Stage 1 Project Application:

- the construction of a portion of the basement structure for future stages 2, 3, 4, 5 and 14 due to ease of construction methodology. Approval of actual parking numbers would be subject to future development/project applications;
- access to existing sewer lines, providing temporary access to the existing substations and truck movements (across much of the Concept Plan area); and
- the construction of a bund to protect the temporary entrance to the Stage 6 basement (proposed under separate Project Application).

## 3.14 Temporary Works

The following temporary works are proposed as part of the Stage 1 Project Application (and area to which they apply identified in **Figure 20**):

- a park constructed at the site of the future Building 3 to provide a pedestrian link from Magdalene Terrace to Neighbourhood Park, the supermarket, other retail premises' and Wolli Creek Railway Station;
- access stairs and ramp from Brodie Spark Drive into the Wolli Creek Railway Station concourse;
- a bus stop along Brodie Spark Drive (on the bridge over the railway line), providing temporary bus access to the railway station; and
- a bus turning loop to the north of the railway station (linking to Brodie Spark Drive) to maintain bus access to Wolli Creek Railway Station (as depicted in **Figure 20**).



**Figure 20 – Extent of Temporary Works**

Source: *Bates Smart*

### 3.15 Developer Contributions

As per the Discovery Point Pty Ltd offer to enter into a Voluntary Planning Agreement with Rockdale City Council (refer to JBA Planning's Concept Plan Preferred Project Report dated December 2010), contributions payable under Rockdale City Council Section 94 Plan 2004 will be payable for the Stage 1 Project Application.

### 3.16 Schedule of GFA and Car Parking

The Concept Plan includes:

- A maximum of 132,000m<sup>2</sup> total GFA for the mixed use development (excluding car parking GFA, existing approved buildings and heritage buildings);
- A minimum of 9,000m<sup>2</sup> non-residential GFA;
- A maximum of 123,000m<sup>2</sup> residential GFA;
- A maximum of 8,000m<sup>2</sup> above ground car parking GFA (in addition to maximum GFA above); and
- Total parking numbers across Discovery Point (including existing developed stages) to be capped at 2,240 parking spaces.

The amount of GFA for the existing buildings on the Discovery Point site is excluded from the above figures.

**Table 4** identifies the car parking spaces currently approved or constructed on the Discovery Point site which are included in the overall cap, and the remaining GFA and car spaces available to be developed on the site.

**Table 4** – Schedule of GFA and Parking to date (Stage 1)

Site	Standard Instrument GFA	Parking Spaces
Greenbank	N/A	147
Verge	<i>(excluded from Concept Plan maximum floor space)</i>	92
Vine		104
Building 1B	1,240m <sup>2</sup> residential 1,506m <sup>2</sup> non-residential 0m <sup>2</sup> above ground parking	246
Building 1C	9,991m <sup>2</sup> residential 691m <sup>2</sup> non-residential 0m <sup>2</sup> above ground parking	
<b>GFA Parking / Remaining</b>	111,769m <sup>2</sup> residential 6,803m <sup>2</sup> non-residential (minimum) 8,000m <sup>2</sup> above ground parking <b>118,572m<sup>2</sup> Total GFA</b>	1,651 car spaces

## 4.0 Director-General's Requirements

On 23 March 2010, in accordance with Section 75F of the EP&A Act, the Director-General of the Department of Planning issued the requirements for the preparation of an Environmental Assessment to accompany a Concept Plan, Stage 1 and Stage 2 Project Applications for the project. On 9 December 2010, the Director-General issued a revised set of requirements to accompany a Concept Plan, Stage 1 and Stage 6 Project Applications (with the requirements no longer applying to Stage 2). A copy of the revised DGRs is included in **Appendix B**.

**Table 5** provides a detailed summary of the individual matters listed in the DGRs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

**Table 5** – Director-General's Requirements

Requirement	Location in Environmental Assessment
<b>General</b>	
Executive Summary	Page 1
Site Analysis	Section 2.0
Description of the proposed development	Section 3.0
Assessment of key issues	Section 5.0
Assessment of potential impacts	Section 5.0
Draft Statement of Commitments	Section 6.0
Statement of Validity	Page 2
Quantity Surveyor's Certificate	<b>Appendix F</b>
<b>Plans and Documents</b>	
Site Survey Plan	<b>Appendix A</b>
Site Analysis Plan	Provided under separate cover
Locality / Context Plan	Section 2.1
Architectural Drawings	Provided under separate cover
Model	Addressed in Concept Plan
Geotechnical and Structural Report	Section 5.10 and <b>Appendix E</b>
Stormwater Concept Plan	<b>Appendix C</b>
Erosion and Sediment Plan	Addressed in Concept Plan
View Analysis	Addressed in Concept Plan
Landscape Plan	Section 3.8 and provided under separate cover
Shadow Diagrams	Provided under separate cover
Construction Management Plan and Traffic Management Plan	Addressed in Concept Plan and Statement of Commitments
Construction Methodology	Addressed in Concept Plan and Statement of Commitments
<b>Key Issues</b>	
Address relevant EPIs, policies and guidelines	Section 5.1
<b>Built form and height</b>	Section 5.5

Requirement	Location in Environmental Assessment
<b>Urban Design</b>	
<ul style="list-style-type: none"> <li>The design quality with specific consideration of the facade, massing, setbacks, building articulation, use of appropriate colours, materials/finishes, landscaping, safety by design (CPTED) and public domain.</li> </ul>	Sections 5.5 and 5.6
<ul style="list-style-type: none"> <li>The EA shall also provide: <ul style="list-style-type: none"> <li>Active retail frontages should be provided to Brodie Spark Drive, Magdalene Terrace and adjacent to the railway station;</li> <li>All weather protection to be provided on retail streets;</li> <li>Pedestrian access to Discovery Point Park, the Cooks River foreshore and the train station to be improved.</li> </ul> </li> </ul>	Addressed in Concept Plan  Shown in Architectural Plans provided under separate cover  Section 3.9
<b>Economic Impact Assessment</b>	Addressed in Concept Plan
<b>Environmental and Residential Amenity</b>	
<ul style="list-style-type: none"> <li>Solar access, acoustic privacy, visual privacy, view loss and wind impacts and achieve a high level of environmental and residential amenity. In this regard, consider appropriate separation distances to any adjacent residential buildings.</li> <li>The issue of noise from the airport and railway line and provide details of how this will be managed and ameliorated through the design of the building, in compliance with relevant Australian Standards.</li> </ul>	Section 5.4 and provided under separate cover.  Section 5.11 and <b>Appendix G</b>
<b>Noise and Vibration Assessment</b> The issue of noise and vibration impacts from the railway corridor and provide detail how this will be managed and ameliorated through the design of the building, in compliance with relevant Australian Standards and the Department's Development near Rail Corridors and Busy Roads – Interim Guidelines.	Section 5.11 and <b>Appendix G</b>
<b>Transport &amp; Accessibility Impacts (Construction and Operational)</b>	
<ul style="list-style-type: none"> <li>Traffic and Accessibility Impact Study prepared in accordance with the RTA's Guide to Traffic Generating Developments, considering:</li> </ul>	



Requirement	Location in Environmental Assessment
<ul style="list-style-type: none"> <li>- Traffic generation and any required road/intersection upgrades (including but not limited to the intersection of Princes Highway/Brodie Spark Drive),</li> </ul>	Addressed in Concept Plan
<ul style="list-style-type: none"> <li>- The adequacy of on-site car parking for the proposal having regard to local planning controls, RTA guidelines and the high public transport accessibility of the site (Note: the Department supports reduced car parking rates in areas well-served by public transport),</li> </ul>	Addressed in Concept Plan
<ul style="list-style-type: none"> <li>- The ability of buses to maintain services during construction and once completed;</li> </ul>	Sections 3.9 and 5.7 and <b>Appendix H</b>
<ul style="list-style-type: none"> <li>- Access, loading dock(s) and service vehicle movements;</li> </ul>	Section 5.7 and <b>Appendix H</b>
<ul style="list-style-type: none"> <li>- The potential for implementing a location-specific sustainable travel plan (e.g. "Travelsmart" or other travel behaviour change initiative)</li> </ul>	Addressed in Concept Plan
<ul style="list-style-type: none"> <li>- The implications of the proposed development for non-car travel modes (including public transport use, walking and cycling) and the provision of facilities to increase the non-car travel share, including bicycle connections from the site to the surrounding bicycle network and bicycle parking in both residential and commercial/retail portions of the proposed development (including the provision of amenities for cyclists), and</li> </ul>	Section 5.7 and <b>Appendix H</b>
<ul style="list-style-type: none"> <li>- How the proposal integrates with the Wolli Creek Railway Station and how the proposal would impact upon the operation of the existing railway lines.</li> </ul>	Section 3.9 and <b>Appendix H</b>
<b>Ecologically Sustainable Development</b>	
<ul style="list-style-type: none"> <li>▪ How the development will incorporate ESD principles in the design, construction and ongoing operation phases of the development.</li> </ul>	Section 5.14 and <b>Appendix I</b>

Requirement	Location in Environmental Assessment
<ul style="list-style-type: none"> <li>Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice.</li> </ul>	Section 5.14 and <b>Appendix I</b>
<b>Contributions</b>	Addressed in Concept Plan
<b>Staging</b>	Addressed in Concept Plan
<b>Contamination</b>	Addressed in Concept Plan
<b>Public Domain</b> The interface between the proposed uses and public domain, and the relationship to and impact upon the existing public domain and address the provision of linkages with and between other public domain spaces, including Cahill Park and Waterford Park. The EA shall consider the provision of a public art strategy	Sections 3.8 and Landscape Report (provided under separate cover).
<b>Drainage and Groundwater</b>	
<ul style="list-style-type: none"> <li>Address drainage/flooding issues associated with the development/site, including: stormwater infrastructure and incorporation of Water Sensitive Urban Design measures.</li> </ul>	Sections 5.15 and 5.16 and <b>Appendix C</b>
<ul style="list-style-type: none"> <li>An Assessment of any flood risk on site in consideration of any relevant provisions of the NSW Floodplain Development Manual (2005) including the potential effects of climate change, sea level rise and an increase in rainfall intensity.</li> </ul>	Addressed in Concept Plan
<ul style="list-style-type: none"> <li>Impacts upon groundwater resources, and when impacts are identified, provide contingency measures to remediate, reduce or manage potential impacts.</li> </ul>	Addressed in Concept Plan
<b>Heritage</b>	
The EA shall provide an Heritage Impact Assessment of the site, and a Statement of Heritage Impact, that is to include:	
<ul style="list-style-type: none"> <li>Detailed evaluation an any impacts that the development would have on the heritage significance of the site, in particular the heritage significance and setting of Tempe House and St Magdalen's Chapel</li> </ul>	Section 5.8 and <b>Appendix J</b>
<ul style="list-style-type: none"> <li>Consideration of the cumulative impacts of the proposed works on the heritage items and their curtilage</li> </ul>	Section 5.8 and <b>Appendix J</b>

Requirement	Location in Environmental Assessment
<ul style="list-style-type: none"> <li>Awareness of the possible existence of any archaeological relics which may be disturbed during the works that may require an archaeological assessment to be undertaken; and</li> </ul>	Section 5.8 and <b>Appendix K</b>
<ul style="list-style-type: none"> <li>The EA shall provide an Archaeological Assessment of Aboriginal and non-Indigenous archaeological resources, including an assessment of the significance and potential impact on the archaeological resources.</li> </ul>	Section 5.8 and <b>Appendix L</b>
<b>Electrolysis Risk</b> A report by an electrolysis expert on the Electrolysis Risk to the development from stray currents.	Section 5.13 and <b>Appendix O</b>
<b>Statement of Commitments</b> A draft Statement of Commitments detailing measures for environmental management, mitigation measures and monitoring for the project.	Section 6
<b>Land Ownership</b>	Addressed in Concept Plan
<b>Development Agreements</b>	Addressed in Concept Plan
<b>Consultation</b> Undertake an appropriate and justified level of consultation in accordance with the Department's <i>Major Project Community Consultation Guidelines October 2007</i> (including demonstrating discussions with Rockdale City Council, RailCorp, State Transit, Sydney Airport Corporation, Civil Aviation Safety Authority and Air Services Australia).	Addressed in Concept Plan

## 5.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the Project Application proposal. It addresses the matters for consideration set out in the Director-General's Environmental Assessment Requirements (DGRs).

The draft Statement of Commitments complements the findings of this section.

### 5.1 Relevant Strategy and Statutory Plans and Policies

The DGRs require the following legislation, strategies and planning instruments, which are relevant to the proposed development to be addressed:

- Objects of the EP&A Act 1979;
- NSW State Plan;
- Draft South Subregional Strategy;
- SEPP 55 - Remediation of Land;
- SEPP 65 - Design Quality of Residential Flat Development;
- SEPP (Building Sustainability Index: BASIX) 2004;
- SEPP (Infrastructure) 2007;
- Rockdale Local Environmental Plan 2000 and relevant Rockdale Development Control Plans and policies;
- Airports Act 1996 and the Airports (Protection of Airspace) Regulations 1996;
- Metropolitan Transport Plan 2010;
- Integrating Land Use and Transport policy package;
- Development Near Rail Corridors and Busy Roads - Interim Guideline; and
- Planning Guidelines for Walking and Cycling.

It is noted that the DGRs were issued as a combined set of assessment requirements for the Concept Plan, Stage 1 and Stage 6 Project Applications. As such, the strategic assessment regarding the suitability of the proposal is provided in detail in the Concept Plan EAR.

The Project Application's consistency with the relevant strategic and statutory plans and policies is located in **Table 6** below. Since the original DGRs were issued in March 2010, Rockdale Council has exhibited a new Draft Local Environmental Plan and Development Control Plan. The project's response to the draft LEP and DCP is addressed within the Concept Plan Preferred Project Report.

**Table 6** – Consistency with key strategic and statutory plans and policies

Instrument / Strategy	Comments
Objects of the EP&A Act 1979	Addressed in Concept Plan.
NSW State Plan	Addressed in Concept Plan.
Draft South Subregional Strategy	<p>This Project Application is consistent with the Strategy in that it will:</p> <ul style="list-style-type: none"> <li>provide greater housing supply and housing choice;</li> <li>contributes to achieving the targets for Rockdale LGA which require 7,000 additional dwellings and 13,000 additional jobs by 2031;</li> <li>fulfils the objectives by providing significant housing opportunities and services within a transit oriented locations; and</li> <li>improves connections to Wolli Creek Railway Station, encouraging use by residents in Discovery Point and the surrounding areas.</li> </ul>
SEPP 55	<p>The suitability of the site to support residential development under the provisions of SEPP 55 has been demonstrated in the Concept Plan.</p> <p>Addressed in <b>Section 5.1.7</b>.</p>
SEPP 65	An assessment of the proposal against the 10 design principles of SEPP 65 is included within the Bates Smart Design Report provided under separate cover.
SEPP (BASIX)	BASIX Certificates are being prepared and will be issued under separate cover with the preferred project report. An ESD Statement by Cundall demonstrates the measures that will be employed to ensure BASIX compliance.
SEPP (Infrastructure)	The project is to be referred to Railcorp as required under Division 15 of the SEPP.
Rockdale LEP 2000	Addressed in Concept Plan.
Draft Rockdale LEP 2011	Addressed in Concept Plan PPR.
Rockdale DCP	Addressed in Concept Plan.
Draft Rockdale DCP 2011	Addressed in Concept Plan PPR.
Airports Act 1996 and the Airports (Protection of Airspace) Regulations 1996	Addressed in Concept Plan.
Metropolitan Transport Plan 2010	Addressed in Concept Plan.
Integrating Land Use and Transport	Addressed in Concept Plan.
Development Near Rail Corridors and Busy Roads - Interim Guideline	Addressed in Concept Plan.
Planning Guidelines for Walking and Cycling	Addressed in Concept Plan.

## 5.2 Consistency with the Concept Plan

On 5 May 2011, the Department of Planning & Infrastructure approved the Discovery Point Concept Plan - a mixed use residential development including open space, supermarket and associated facilities/infrastructure. The Conditions of Approval are provided at **Appendix Q**. Tables of Compliance for the Conditions of Approval are provided at **Appendix R**.

## 5.3 Concept Plan

The Stage 1 PA is consistent with the structure of the approved Concept Plan as follows:

- proposes the construction of Buildings 1B and 1C in accordance with the Concept Plan building envelope (including building height) as demonstrated in Section 5.5, with maximum RLs less than 20.8m and 55.3m (i.e. RL20.3m for Building 1B and RL55.2m for Building 1C);
- will not result in the Discovery Point site exceeding the overall maximum number of dwellings, GFA (including above ground car parking), parking spaces or dwelling mix and size standards as demonstrated in the GFA and Parking Schedule at **Table 4**;
- contributes to the overall non-residential component of the Concept Plan;
- proposes the construction of Neighbourhood Park in accordance with the size, sun access and deep soil standards as demonstrated in the Concept Plan;
- adopts the same design principles as those used for the Concept Plan development; and
- is consistent with the Discovery Point Concept Plan Development Design Guidelines, updated to reflect the Concept Plan Conditions of Approval (June 2011).

### 5.3.1 Statement of Commitments

All relevant Concept Plan Statement of Commitments are met through the Project Application and no variations to the Concept Plan Statement of Commitments are required.

## 5.4 State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development

An assessment of the proposed development's consistency with the design quality principles of SEPP 65 demonstrates that the design quality of the proposal is consistent with the principles of the SEPP. A design verification statement is included with the *Bates Smart Stage 1 Project Application Design Report* provided under separate cover.

The proposed development also complies with all of the design quality objectives and design principles of the Residential Flat Design Code. However, as outlined in the Concept Plan EAR and PPR, the proposed development does not fully achieve some of the "rules of thumb", set out in the Code.

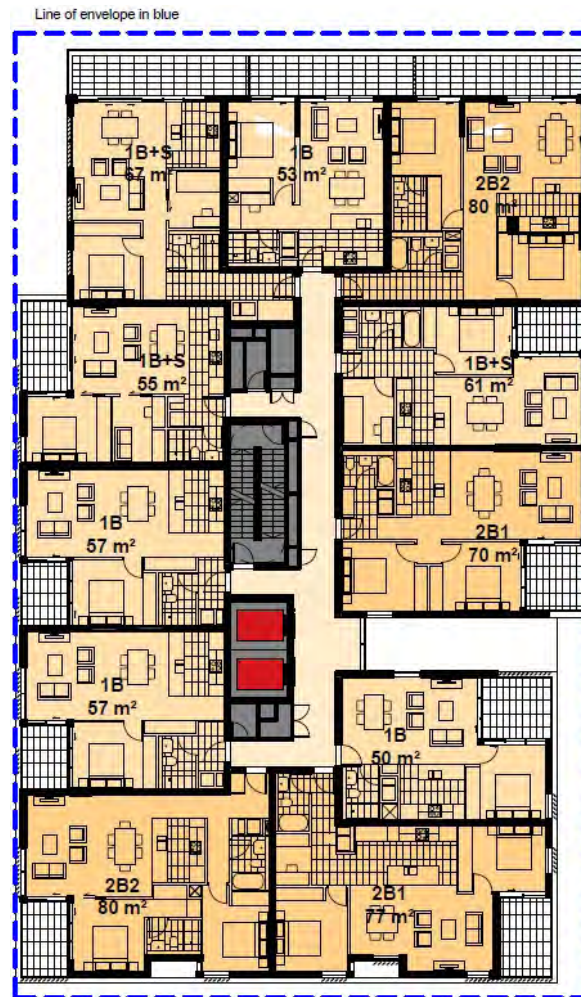
As demonstrated below, the proposed development relies on better design practice to ensure that the amenity of the proposed development is not compromised in any way or that an inability to achieve some of the rules of thumb is generally related to the context of the site. The proposed development has been designed to provide apartments with a high quality of internal amenity and outlook. The elements that warrant consideration in respect of amenity are discussed below.

### Building Depth

With a building depth of 23-25m, Building 1C exceeds the building depth 'Rule of Thumb' identified in RFDC (i.e. 18m), although are consistent with the Concept Plan building envelopes. As described in the Concept Plan EAR and PPR, although there are buildings within the Discovery Point Concept Plan that exceed the building depth 'Rule of Thumb' these buildings (including Building 1C) meet the objectives behind the RFDC in that they are functionally well organised and provide good access to natural light and ventilation.

The proposed building depth of Building 1C is acceptable as it does not exceed the building envelopes proposed within the Concept Plan and the proposed floor plans demonstrate the following positive design measures (as shown in **Figure 21**):

- the substantive parts of living areas within the building are at the 'Rule of Thumb' (18m), with private open space (balconies) accounting for the remaining building depth. The buildings will therefore be articulated on their facades;
- open plan living arrangements and suitable balcony depths (minimum 2 metres) are provided for all apartments;
- living areas and bedrooms are located to maximise solar access and natural ventilation;
- many bedrooms are adjacent to balconies; and
- kitchens comply with the RFDC 'Rule of Thumb' for the maximum distance from a window (i.e. 8 metres).



**Figure 21** – Building Floor Plate Building 1C

Source: *Bates Smart*

The dwellings proposed within Building 1B are perimeter dwellings with a maximum depth of 9.5m from a window, they are provided with good access to day light and ventilation.

### Sunlight and Daylight Access

The proposed development maximises the receipt of natural daylight to each apartment, within the constraint of ensuring suitable levels of privacy for residents in future apartment buildings and to the existing Verge and Vine apartment buildings to the south east.

Of the 130 proposed apartments within Buildings 1B and 1C, 91 apartments will receive the RFDC recommended 2 hours of sunlight to their principal living areas between 9am and 3pm in mid winter (as shown level by level in **Table 7**). This equates to 70% of apartments and complies with the RFDC 'Rule of Thumb'. Floor by floor plans demonstrating compliance have been prepared and included in the Bates Smart Project Application Design Report.

In addition, only two of all proposed apartments (across both Buildings 1B and 1C) will achieve single aspect between south-east and south-west, equating to 1.5% of all apartments. This is well below the RDfC 'Rule of Thumb' for single aspect apartments (maximum 10%) of apartments.



It is noted that although the RFDC does not apply to dwellings in Building 1B (as the building is less than three storeys), the dwellings in Building 1B have been included **Table 7** and have been incorporated into the overall Stage 1 calculations for daylight access. Even with the inclusion of Building 1B, the Stage 1 precinct complies (70%). The calculation of RFDC 'Rules of Thumb' on a precinct basis is consistent with approach on other infill residential sites such as the CUB site in Broadway.

With the calculation of solar access on the actual residential flat building of Building 1C, the percentage achieved is 70.2%.

In order to protect units from solar gain during the summer months, the proposed development incorporates balcony overhangs, louvers/screens, performance glazing, blinds and insulation.

**Table 7** – Apartments achieving the RFDC 'Rule of Thumb' for daylight access

	Apartments achieving RFDC Rule of Thumb	Total Apartments	%
Level 1 (Building 1B)	6	9	66%
Level 1 (Building 1C)	7	11	63%
Level 2	8	11	73%
Level 3	9	11	82%
Level 4	9	11	82%
Level 5	9	11	82%
Level 6	9	11	82%
Level 7	6	9	66%
Level 8	6	9	66%
Level 9	6	9	66%
Level 10	6	9	66%
Level 11	4	7	57%
Level 12	3	6	50%
Level 13	3	6	50%
<b>Total</b>	<b>91</b>	<b>130</b>	<b>70%</b>
<i>Building 1C only</i>	<i>85</i>	<i>121</i>	<i>70.2%</i>

## Views

As the first stage of the Discovery Point Concept Plan, views will be available from Building 1C to the north over the Cooks River, to the west and to the south. With the completion of the Concept Plan construction within Discovery Point, views will be available from some apartments towards the Cooks River to the north and between Verge and Vine buildings towards Discovery Point Park in the north-east. Those apartments with western and southern aspects will also achieve positive outlooks over the Building 1B rooftop courtyard and the Neighbourhood Park to the south-west.

## Circulation and Storage

The proposed development provides open plan living areas and generous room sizes to provide efficient circulation spaces within each apartment. In conformity with SEPP 65 and the RFDC, all habitable spaces have at least 2.7 metre high ceilings. Furthermore, all dwellings have secure internal storage areas and designated areas within the basement that comply with SEPP65 and the RFDC.

## Cross Ventilation

The proposed development is designed to promote cross ventilation, through corner aspects, open plan living spaces and introducing vertical light at strategic locations on the facade. Seventy-five units have a layout that provides natural cross ventilation, equating to 58% of apartments.

To improve natural ventilation, five apartments (three in Building 1B and two in Building 1C) will be provided with a dedicated natural ventilation duct from above the kitchen out through the roof or common corridor. The duct will be open even if the common corridor is closed. The RFDC acknowledges the use of such innovative techniques to further naturally ventilate internal areas. This allows 80 of the 130 proposed apartments achieving natural ventilation (i.e. 62%), thereby achieving compliance with the RFDC 60% 'Rule of Thumb' (as shown in **Table 8**). Floor by floor plans demonstrating compliance have been prepared and included in the Bates Smart Project Application Design Report.

It is noted that although the RFDC does not apply to dwellings in Building 1B (as the building is less than three storeys), the dwellings in Building 1B have been included in **Table 8** and have been included in the overall calculations for cross ventilation across the Stage 1 development. Even with the inclusion of Building 1B, the Stage 1 precinct complies (62%).

With the calculation of solar access on the actual residential flat building of Building 1C, the percentage achieved is 61%, thereby complying with the RFDC 'Rule of Thumb'

**Table 8** – Apartments achieving the RFDC 'Rule of Thumb' for cross ventilation

	Apartments achieving RFDC Rule of Thumb	Total Apartments	%
Level 1 (Building 1B)	6 (including 3 dwellings with natural ventilation duct from the roof)	9	67%
Level 1 (Building 1C)	6	11	55%
Level 2	6	11	55%
Level 3	6	11	55%
Level 4	6	11	55%
Level 5	6	11	55%
Level 6	6	11	55%
Level 7	6	9	67%
Level 8	6	9	67%
Level 9	6	9	67%
Level 10	6	9	67%
Level 11	4	7	57%
Level 12	4	6	67%
Level 13	6 (including 2 dwellings with natural ventilation duct from the roof)	6	100%
<b>Total</b>	<b>80</b>	<b>130</b>	<b>62%</b>
<i>Building 1C only</i>	<i>74</i>	<i>121</i>	<i>61%</i>



**Figure 22** – Cross ventilation of typical Building 1C floor plate

Source: *Bates Smart*

### Kitchen Ventilation

The proposed development will achieve 17 apartments with windows in the kitchen, equating to 13% of all apartments. An additional 23 apartments are naturally ventilated with the cross ventilation air flow path via the kitchen (identified in **Figure 22**). The approach allows air to be drawn through windows in the apartments at a different orientation, the air then flows through the apartment (and kitchens) and then flows again out of the apartments. As a result, 40 apartments (or 31% of all apartments) will achieve natural ventilation to the kitchen. Furthermore, all apartments will have externally ducted kitchen exhaust.

### Dwelling Size and Dimensions

The proposed dwelling sizes are identified in **Table 1** at Section 3.7. The Concept Plan specific minimum apartment sizes for the range of dwelling types of:

- Minimum 40m<sup>2</sup> for studio dwellings;
- Minimum 50m<sup>2</sup> for one bedroom dwellings;
- Minimum 70m<sup>2</sup> for two bedroom/one bathroom dwellings;
- Minimum 80m<sup>2</sup> for two bedroom/two bathroom dwellings; and
- Minimum 100m<sup>2</sup> for three bedroom+ dwellings.

As identified in **Table 1**, all dwellings comply with the minimum apartment sizes stipulated in the Concept Plan Statement of Commitments.

The minimum dimensions for rooms within apartments and external areas (e.g. balconies) comply with the Discovery Point Concept Plan Development Design Guidelines (JBA, updated June 2011 to be consistent with the Concept Plan Conditions of Approval), and are as follows:

- external area of studio and one bedroom apartments - 6m<sup>2</sup>;
- external area of two bedroom apartments - 8m<sup>2</sup>;
- external area of three+ bedroom apartments - 10m<sup>2</sup>; and
- balcony depth of 2m.

## Visual and Acoustic Privacy

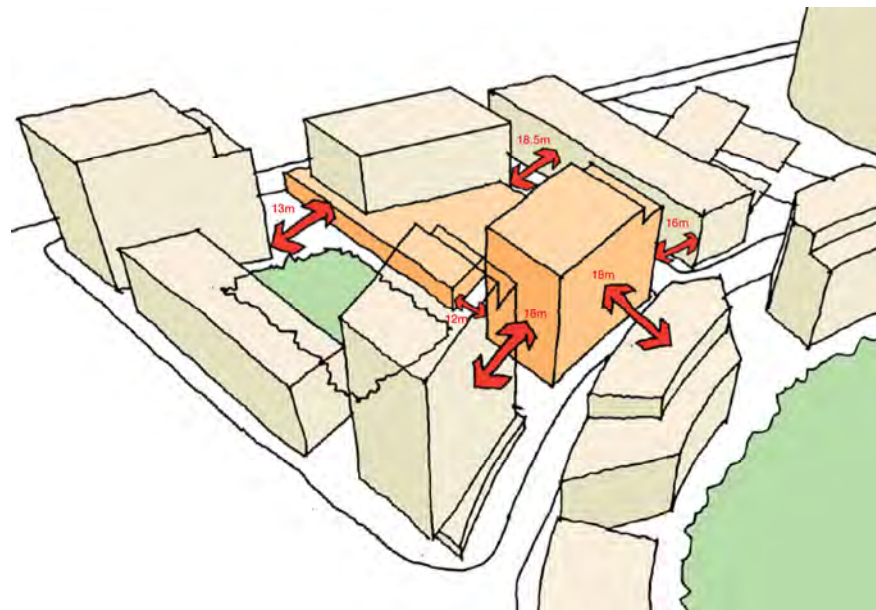
In accordance with the Concept Plan, the proposed building separation distance between Buildings 1B and 1C is 12m, which complies with the RFDC building separation 'Rule of Thumb'. The proposed building separation between the proposed buildings with the existing and future buildings is shown at **Figure 23**.

The proposed building separation between Building 1C and the Verge building is 18m (above 25m) which varies from the RFDC 'Rule of Thumb' for building separation distance of 24m. The building separation distance is consistent with the Concept Plan and is justified in detail in the Concept Plan EAR and PPR.

As described in the Concept Plan PPR, due to the offset arrangements of Building 1C and Verge variation to the building separation distance only occurs at the northern end of Verge, potentially affecting two apartments per floor within the Verge building and three apartments per floor in Building 1C. Balconies are offset where possible and separation is afforded by Brodie Spark Drive.

Apartments with a variation also have oblique outlook towards the Discovery Point Park (for Building 1C) or towards the Neighbourhood Park (for Verge) thereby ensuring these apartments do not simply face onto adjoining buildings wall/balconies/living spaces.

The proposed building separation distances comply with the Concept Plan building envelopes.



**Figure 23** – Proposed building separation

Source: *Bates Smart*

## Private Open Space

As described above, the proposed dwellings achieve the minimum balcony size and depths to comply with the Discovery Point Concept Plan Development Design Guidelines (JBA, updated June 2011). All balcony depths also comply with the RFDC balcony depth 'Rule of Thumb' minimum of 2 metres.

## Communal Open Space

Communal open space is provided for Discovery Point residents in the form of a rooftop courtyard (including community room, pool and gym) above Building 1B and a green roof above Building 1C (featuring gardens, shade structures and barbeque facilities). The landscaped podiums will contribute to the overall level of amenity by offering resident facilities and an injection of vegetation within the built fabric.

Furthermore, communal open space is provided throughout the Discovery Point site in the form of a series of existing and proposed parks including the Neighbourhood Park, Station Park, Waterfront Park and Discovery Point Park. The areas and location of the proposed communal areas are consistent with the Concept Plan.

## Acoustic Performance

As discussed in Section 5.11, an Acoustic and Vibration Report (**Appendix G**) was prepared by SLR Consulting Australia Pty Ltd for the Stage 1 Project Application. The Acoustic and Vibration Report identifies the measures integrated into the building design to ensure the relevant acoustic criteria for dwellings are achieved.

To ensure the proposed development complies with the relevant rail, aircraft, noise and mechanical noise criteria, the use of attenuators, acoustic louvres, barriers, enclosures, and the appropriate location and orientation of air inlets / outlets and items of plant, have been incorporated into the building design, where relevant, and will be detailed on construction certificate plans.

## 5.5 Built Form

The following outline of the Stage 1 design rationale is drawn from the Bates Smart Urban Design Report provided under separate cover.

### Height, Bulk and Scale

The proposal's built form has been designed to respond to the urban design parameters designed by the Concept Plan and its Statement of Commitments, the site conditions, and to provide retail and residential amenity.

Buildings 1B and 1C envelopes are within the maximum development parameters of the Concept Plan (see **Table 9** and **Figures 24** and **25**) and are consistent with the urban design principles set out in SEPP 65. The GFA and Parking Schedule at **Table 4** demonstrates that the proposed development will not exceed the overall GFA for the site.

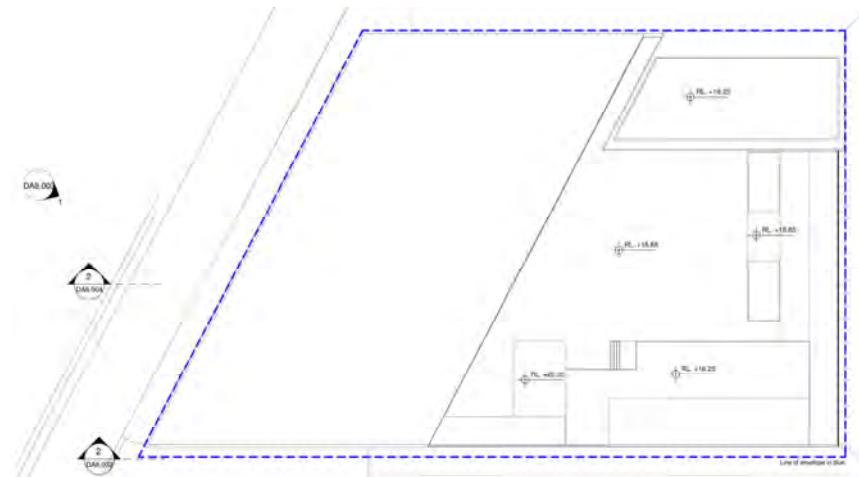
As demonstrated in **Figures 24** and **25**, the proposed building envelopes are within the Concept Plan building envelopes, with the exception of minor protrusions for architectural features such as a balcony external spandrel panel and balustrades. Drawing No DA3-001 C within the Concept Plan drawings envisaged minor encroachments beyond the building envelopes for these minor architectural features. No floorspace or balcony areas are proposed outside the Concept Plan building envelopes. Refer to Drawings DA11-101 to DA12-213 which indicate the Concept Plan building envelopes in the context of the proposed Buildings 1B and 1C envelopes.

Building 1C (the taller building within the application) has been designed as two interlocking boxes, prised slightly apart to draw closer to the optimum views, and to respond to the close proximity of Verge and future Building 2.

A light and ventilation slot has been introduced at the intersection of the two masses, to emphasise the impression of one block disengaging from the other. A 'step' or reduction in height of 3 storeys has been expressed at the northern end of the building (nearest the station), consistent with the Concept Plan, breaking up the building and reducing the apparent bulk and scale of the building.

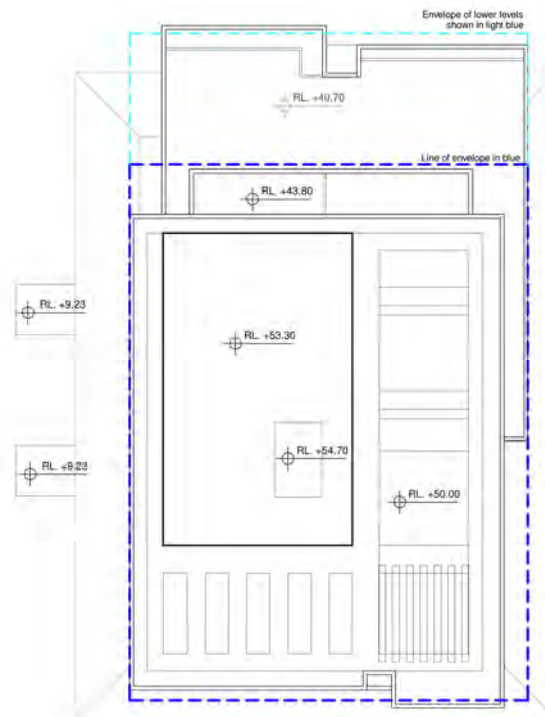
**Table 9** – Compliance with Concept Plan

	Maximum Height	Proposed Height
Building 1B	RL20.8	RL20.3
Building 1C	RL55.3	RL55.2



**Figure 24** – Proposed roof heights (Building 1B)

Source: *Bates Smart*



**Figure 25** – Proposed roof heights (Building 1C)

Source: *Bates Smart*

## 5.6 Safety and Security

In accordance with the Concept Plan Statement of Commitments, Safety Management principles are required to be considered with each Project Application. Bates Smart Architects have prepared the following audit of the proposal's security in accordance with CPTED principles:

*The proposed scheme has been designed to minimise the opportunity for crime in accordance with the four CPTED principles of surveillance, access control, territorial reinforcement, and space management.*

*The proposal will significantly improve safety and security in the local area, particularly around Wolli Creek Station, by providing at ground level a mix of active retail frontages and residential entrances, which will combine to increase pedestrian activity both day and night. The residential apartment buildings have living rooms and balconies located on all facades. These provide passive surveillance of the existing train station, proposed bus stop, surrounding streets, and the proposed Neighbourhood Park.*

*Spark Lane, conceived primarily as a traffic and services route, is passively surveilled from the adjacent station platform, the bus loop and apartments above. Access into service areas such as the car parks and loading dock will have appropriate access control.*

*The channeling of the vehicular traffic to three main streets – Brodie Spark Drive, Spark Lane, Discovery Point Place – ensures pedestrian amenity and safety is maximised. Walking and cycling paths along Brodie Spark Drive will connect to the Cooks River as Brodie Spark Drive continues northwards in future stages.*

*Both of the primary landscaped areas are designed to encourage community ownership. The Neighbourhood Park is flanked by retail on the northern edge and in the northeast corner, while future stages will add additional retail activation to the east, west and southern sides.*

*A water feature in the south east corner of the park will provide an interactive feature in the centre of the open space.*

*The landscaped podium offers a range of activities for private use by residents including swimming pool, barbecue facilities, gymnasium and a community room. Both spaces will be managed and maintained by the Discovery Point residents' association.*

## 5.7 Transport and Accessibility

Traffic and Transport Planning Associates (TTPA) prepared an assessment of the traffic, transport and accessibility implications of the Concept Plan, and have prepared an updated report for the Stage 1 Project Application (Appendix H).

### Traffic Generation

Traffic assessments have been undertaken in the past to determine the traffic impact of the Concept Plan, and prior to that, the previously approved Masterplan. The traffic assessment for the Concept Plan (prepared by TTPA) concluded that the Concept Plan traffic generation outcome would be significantly less than the previous Masterplan outcome and the traffic implications of the Concept Plan on all access intersections would be better than under the Masterplan. As a result, the traffic generation outcome of the Concept Plan does not require any additional road/intersection upgrade works.



The Stage 1 TPA report concludes that given the proposed car parking spaces within the proposed development, the traffic implications of the Stage 1 Project Application are entirely compatible with the Concept Plan, and traffic generation of the proposal is therefore acceptable.

### Road Network

The proposed Stage 1 road network has been designed according to the Concept Plan, reflecting contemporary urban design principles for road widths, with the following guiding principles:

- provision for an amenable pedestrian environment with connectivity, convenient road crossings, low vehicle speeds and 'vehicle free' corridors;
- provision for bus access, circulation and interchange of passengers in accordance with STA requirements;
- provision for cyclists; and
- provision for kerb side parking including kiss'n'ride, taxi and service vehicles.

In addition, the proposed road widths comply with the requirements of STA and RTA, contemporary design guidelines including AUSTROADS and the Discovery Point Concept Plan Conditions of Approval.

As described in the Concept Plan, the proposed road, pedestrian and cyclist network will integrate with the existing surrounding network (including the upgrade of the existing portion of Brodie Spark Drive).

### Vehicular Access

Residential and visitor vehicle access to the basement levels of Buildings 1B and 1C, and loading dock access to the supermarket, will be via Spark Lane through the following measures:

- a 5.5m combined ingress/egress driveway; and
- separate ingress and egress driveways for the retail loading dock.

Concentrating vehicle access along Spark Lane will reduce conflict caused by vehicles along highly pedestrian and cyclist routes, particularly Discovery Point Place. Furthermore, Spark Lane will be relatively straight and level at the access locations and there will be adequate sight distances available. The proposed driveways will comply with AS2980.1 and AS2980.2 and will satisfactorily accommodate all vehicles requiring access.

As described in Section 3.9, temporary pedestrian and bus access to the Wolli Creek Railway Station will be constructed as part of the early works within the Stage 1 Project Application, ensuring access is retained to the railway station as the new station access is constructed, including the new road access to the railway station (i.e. Spark Lane and Discovery Point Place).

### Car Parking

The Concept Plan seeks approval for the parking rates to be adopted, including:

- Maximum 1 space per studio and one bedroom unit;
- Minimum 1 space and maximum 2 spaces per two bedroom unit;
- Maximum 2 spaces per three bedroom unit;



- Minimum 1 visitor space per 20 residential units;
- Minimum 1 space per 50m<sup>2</sup> of non-residential GFA (commercial);
- Minimum 1 space per 35m<sup>2</sup> of non-residential GFA (retail);
- Minimum 1 bicycle space per 15 residential units;
- Minimum 1 motorcycle space per 15 residential units;
- Minimum 1 bicycle space/200m<sup>2</sup> non-residential GFA, with 15% accessible by visitors); and
- Minimum 1 motorcycle space/20 non-residential car spaces.

**Table 10** compares the proposed parking spaces against the parking rates of the Concept Plan, and shows that the proposed parking rates are in accordance with the Concept Plan parking rates.

As identified in **Table 4** (in Section 3.16), the proposed Stage 1 car parking spaces do not result in the overall maximum car parking spaces (of 2,240 spaces) being exceeded across the Discovery Point site.

The internal circulation arrangements within the basements have been designed in accordance with AS 2890.1 and AS2890.6 criteria, including ramps, aisles, bays, height clearance, grades and manoeuvring.

**Table 10** – Proposed Parking Spaces and Concept Plan Parking Parameters

	Concept Plan Parameters		Proposed
	Minimum	Maximum	parking spaces
Car Spaces			
55 x 1 bedroom units	0	55	28
65 x 2 bedroom units	65	130	65
10 x 3 + bedroom units	0	20	20
Residential visitors	7		7
Retail	63		126
<b>TOTAL</b>	<b>135</b>	<b>275</b>	<b>246</b>
Bicycle spaces			
Residential	10		10
Retail	11		11
TOTAL	21		21
Motorcycle spaces			
Residential	9		9
Retail	7		7
TOTAL	16		16
Adaptable car spaces (included in car spaces total)			
Residential	3		3
Retail	3		3
TOTAL	6		6

### Pedestrian and Cycle Access

The TTPA report identifies the following provisions for pedestrians within the Stage 1 Project Application:

- a 'vehicle free' pedestrian corridor connecting north-south to the station between Buildings 1B and 1C;
- reduced road crossing widths at intersections and along Discovery Point Place adjacent to the bus/rail interchange;
- 'vehicle free' plaza areas including the Neighbourhood Park to the south of the Building 1B;
- streetscaped footways along the Brodie Spark Drive and Discovery Point Place frontages;
- a high level of surveillance, lighting and landscaping, improving the environment for pedestrians;
- limited vehicle accesses, particularly on streets traversed by pedestrians and cyclists (Discovery Point Place);
- pedestrian access to the railway station is maintained during construction; and
- the provision of covered walkways to/from the station.

The TTPA report identifies the following provisions for cyclists within the Stage 1 Project Application:

- the bicycle lanes along Brodie Spark Drive, allowing for connection to shared footway facilities within the internal and surrounding networks;
- basement bike parking for residents; and
- bicycle racks for staff and shoppers.

### Public Transport

The TTPA report identifies the following provisions for public transport access within the Stage 1 Project Application:

- provision to satisfactorily maintain access, standing and interchange for bus services (including temporary bus stop) during the construction process;
- provision for taxis and 'kiss'n'ride' vehicles to stand on the southern side of Discovery Point Place;
- provision for buses to suitably access via Magdalene Terrace, Spark Lane and Discovery Point Place and depart via Brodie Spark Drive;
- provision of segregated standing on Discovery Point Place adjacent to the station access including shelter, lighting and other facilities;
- provision of footways and internal links to facilitate travel to/from the convenient bus and rail services; and
- reducing the need for resident trips by providing retail services on site.

### Servicing

The proposed loading dock associated with the supermarket, will provide adequate manoeuvrability and space for refuse removal. The TTPA report concludes that access will be undertaken in a forward direction at all times.

There will also be some loading zone provision on Brodie Spark Drive for deliveries to other retail tenancies, consistent with the Concept Plan.

## Conclusion

The TTPA report makes the following conclusions regarding the traffic, transport and access services proposed as part of the Stage 1 Project Application:

- it (as part of the Concept Plan) will comply with Rockdale Council's objectives of a 50% mode split to other transport modes for work related trips and precludes commuter parking;
- it will comply with the objective of providing sufficient parking to adequately service the development while at the same time managing the supply of parking to discourage excessive private car usage;
- it will comply with the objective of providing for and facilitating pedestrian and cyclist movements;
- it (as part of the Concept Plan) will not have any adverse implications and will in fact have a traffic generation which is significantly less than that within development under the former Masterplan;
- it will have suitable and appropriate vehicle access, internal circulation and servicing arrangements;
- it will provide vehicle free pedestrian corridors;
- it will suitably provide for bus access and interchange with the railway including temporary arrangements during construction;
- it will be consistent with the Director-General's Requirements, the Concept Plan Statement of Commitments and the Concept Plan Conditions of Approval; and
- it will comply with the relevant Australian Standards AS2890.1, 2, 3 and 6.

## 5.8 Heritage

Heritage Reports relating to European Heritage, Indigenous Archaeology and Non-Indigenous Archaeology were prepared by Tanner Architects, Jo McDonald Cultural Heritage Management Pty Ltd and Casey and Lowe Pty Ltd, respectively, during the Concept Plan process. Subsequent reports have been prepared specifically relating to the Stage 1 Project Application (refer to **Appendix J, K and L**).

### European Heritage

A Statement of Heritage Impact was prepared by Tanner Architects for the Stage 1 Project Application (refer to **Appendix J**). The assessment concludes that the proposed Stage 1 Project Application presents two building elements, landscaping and site works, which are considered to be sympathetic with the heritage items, their curtilage and are appropriate from a heritage perspective.

The report concludes that the Stage 1 Project Application is consistent with the approved Concept Plan and the proposed development does not adversely impact on the significance of Tempe House, St Magdalen's Chapel nor the Discovery Point Precinct as set in the endorsed Conservation Management Plan.

### Non-Indigenous Archaeology

A Statement of Heritage Impact for Non-Indigenous Archaeological Remains was prepared by Casey and Lowe for the Stage 1 Project Application (refer to **Appendix K**).

The proposed works within the Stage 1 Project Application overlap two archaeological areas – i.e. Areas 5 and 6 (as defined by Casey and Lowe). The areas are identified on **Figure 26**.

The report identifies that there are potential archaeological remains of the Gardener's Cottage and Pine House (which belonged to the 1840s development of Alexander Brodie Spark's estate and garden) as well as 'Vine Trellis Walk' as being within the Stage 1 Project Application site.

The garden belongs to a rare example of a mid-nineteenth century planned estate and is closely associated with Spark and his vision of his Tempe Estate. Because of the likely limited nature of any archaeological remains, they have a local level of heritage significance.

The archaeological items are not listed on any heritage register and are outside the Tempe Housing State Heritage Register area. They do, however, fall under the relics provisions of the NSW *Heritage Act 1977*.

Any surviving archaeological remains of the garden or its buildings within the Stage 1 site area will be impacted by the proposed Stage 1 works, but are no greater impact than those caused under the approved sub-podium (masterplan) consent. The Casey and Lowe report reiterates the following recommendation included in the Concept Plan report:

- the management of the potential archaeological remains of the Gardener's Cottage and Pine House should be in line with the approved Archaeological Management Plan which covered Area 6 (Casey and Lowe 2002). As such, the likely location of these buildings should be determined through triangulation of historic plans and any remains be recorded in detail using archaeological excavation, detailed planning and GIS survey and mapping.

This recommendation has been incorporated into the draft Statement of Commitments at Section 6.



**Figure 26** – Non-Indigenous Archaeological Areas across Concept Plan site

Source: *Casey and Lowe and Turf Design*

### Indigenous Archaeology

An Aboriginal Heritage Report was prepared by Jo McDonald Cultural Heritage Management Pty Ltd for the Stage 1 Project Application (refer to **Appendix L**).

As identified in the Concept Plan report, the land to which the Stage 1 Project Application applies has a mix of low and moderate archaeological potential or has been subject to a previous Indigenous Archaeological Study (see the zones identified in **Figure 27**).

As concluded in the Concept Plan Aboriginal Heritage Report (and reiterated in the Stage 1 Project Application report), the areas identified as having low archaeological potential do not require further archaeological work and should be considered developable without constraint. However, pockets of intact Aboriginal archaeological deposit (part of registered site AHIMS #45-6-2737) are likely to exist within the areas identified as having moderate archaeological potential.

All further recommendations of the Aboriginal Heritage Report prepared for the Concept Plan were reiterated in the report prepared for the Stage 1 Project Application and are reflected in the Statement of Commitments at Section 6, these recommendations include:

- further archaeological investigation is required in the Zone 2 area of the Stage 1 development area. This part of the Precinct has not been investigated previously. Prior to commencement of construction works in this area a test excavation programme should be carried out to ascertain whether intact archaeological material is present here; and
- Aboriginal archaeological excavation should be co-ordinated with any proposed investigation of non-Indigenous material, since intact Aboriginal archaeological deposit will be located below any historical materials.

The Aboriginal Heritage Report prepared for Stage 1 also recommends that the MLALC be consulted in relation to the Stage 1 Project Application. These recommendations have been incorporated in the Statement of Commitments at Section 6.



**Figure 27** – Zones of Archaeological potential - Stage 1 (in red outline)

Source: Jo McDonald Cultural Heritage Management Pty Ltd

## 5.9 Accessibility

An Accessibility Report was prepared by Morris Goding Accessibility Consulting (refer to **Appendix M**) to assess the suitability of the proposed development from an access perspective.

The Accessibility Report prepared for the Concept Plan identified that the Concept Plan was capable of achieving the relevant accessibility Standards and Regulations. The Concept Plan Accessibility Report (and Statement of Commitments) also included a number of specific recommendations to be incorporated into the detailed design of future project applications.



These specific recommendations, listed below, are accommodated within the Stage 1 Project Application:

- 1 adaptable unit car bay for each adaptable unit;
- an accessible toilet with every bank of male and female toilets in retail and commercial area. The accessible toilet to have internal dimensions in accordance with AS1428.1:2008;
- retail accessible car bays will be 2% of total retail car bays and commercial accessible car bays will be 1% of total commercial car bays; and
- 2% adaptable units will be provided across the Discovery Point Concept Plan site upon completion of development.

The Accessibility Report prepared for the Stage 1 Project Application assessed the proposed entry doorways, circulation areas, doorway clearance and threshold, paths of travel into and within buildings, emergency stair wells, corridors, internal door widths, lift access, common facilities, residential units, adaptable units, car parking and signage.

The following recommendations of the Accessibility Report are to be incorporated into the detailed design prior to the issue of the construction certificate:

- ensure an active leaf of entry doors to Buildings 1B and 1C provides at least 850mm internal clearance to comply with AS1428.1:2009;
- ensure all widths of fire doors comply with AS1428.1:2009;
- ensure emergency alarm systems have provision for visual and audio warnings and signals;
- provide 510mm internal and external latch side clearance to the door to the Building 1B residents' gym as required by AS1428.1:2009 and DDA Premises Standards;
- ensure at least 850mm clear width for active leaf door to building 1C waste room on each residential level as required by AS1428.1:2009 and DDA Premises Standard;
- lift car components (grabrails, control buttons, lighting) and lift lobby call button and arrival indicators to comply with AS735.12;
- ensure access to and within the community facility and to and within required common use areas for people with disabilities, comply with DDA Premises Standard and AS1428.1:2009;
- ensure 1:30 ramp on the podium courtyard has appropriate level landings, compliant with AS1428.1:2009;
- ensure stairway has handrails on both sides and is compliant with AS1428.1:2009;
- where common-use male and female change facilities are provided, ensure an equivalent unisex accessible change facility, compliant with AS1428.1:2009 is provided in line with DDA Premises Standard;
- ensure all mail boxes have a clear circulation area of 1550mm, suitable for use by wheelchair users, located on an accessible path of travel, compliant with AS1428.1: 2009;
- ensure each accessible/adaptable car bay provides a height clearance of 2.5 metres;
- ensure the approach to each accessible/adaptable car parking bay provides a height clearance of at least 2.3metres;

- signage for required accessible features to comply with the BCA clause D3.6;
- ensure an accessible path of travel to and within common-use facilities in line with DDA Premises Standards and AS1428.1:2009; and
- ensure the designs of the three adaptable units are compliant with AS4299 and AS1428.1:2009.

The three adaptable units will be adapted to incorporate the following design features to ensure compliance with AS4299 and AS1428.1:2009:

- the entry door to have 850mm clear width (920mm door leaf) and provide a 510mm latch side clearance on the internal and external side of the door;
- internal doors (main bedroom, bathroom, laundry) require 820mm clear width with 515mm latch side clearance;
- provisions for internal door circulation areas to comply with AS1428.1:2009;
- the bedroom requires internal dimensions of 3.6m x 3.6m, outside the robe area;
- bathroom (shower, toilet, wash basin) to comply with circulation area requirements of AS1428.1:2009 ie. provide an area of 2300mm x 1900mm around the WC pan. The wash basin to sit outside this area, and if needed only encroach into this area by 100mm (max). The shower area requires 2500mm x 1600mm;
- the kitchen is required to have a clearance of 1550mm between base cabinets (post adaptation). Provision for a separate cook top and wall mounted oven. Provide a work bench space (800mm min. width) adjacent to refrigerator, cook top, oven & sink which could be replaceable/adjustable in height;
- the living area should have clear area of 2250mm minimum diameter after the furniture has been placed will satisfy this requirement; and
- the laundry area to have a circulation area in front of the laundry appliances of 1550mm in diameter.

Compliance with the Access Report is included in the Statement of Commitments at Section 6). As a result, the proposed development will meet the relevant accessibility Standards and Regulations and the Concept Plan Statement of Commitments.

## 5.10 Structural

A Structural Report was prepared by Bonacci Group Pty Ltd (**Appendix E**) to describe the structural systems adopted within the Stage 1 Project Application, relating to development within the vicinity of the rail corridors within the Discovery Point site.

### Structural Systems

The Stage 1 proposed development will be constructed of a concrete frame consisting of reinforced load bearing columns and walls with structural slab systems. The buildings will be founded on load bearing piles that extend down to rock, and therefore no loads will be transferred into the rail corridor.



Structural materials to be used will include a combination of steel, concrete masonry and timber. Bonacci's Structural Report concludes that the proposed materials are appropriate to suit the applied loads, BCA and Australian Standard requirements.

### Geotechnical and Groundwater

The Coffeys Geotechnics Groundwater Impacts Report (June 2010) prepared for the Concept Plan identified that the proposed Concept Plan (including Stage1) would have no adverse impacts of a geotechnical nature upon structures within the rail corridors provided good practice excavation, basement shoring and service trenching are employed.

In addition, the Concept Plan Report recommended that a geotechnical engineer reviews the basement design and undertakes site observations at project application stages to confirm construction methods for basement excavation and trenching will have no adverse impact. This recommendation was included in the Concept Plan Statement of Commitments.

The basement design and groundwater levels were addressed in the Structural Report prepared by Bonacci for the Stage 1 Project Application (**Appendix E**). Groundwater testing in December 2010-January 2011 found that the groundwater levels below the Stage 1 site (outside the diaphragm wall) is RL + 1.25m and is below the Basement Level B0. Therefore the recommendation of the Concept Plan Structural Report is satisfied.

The Bonacci Structural Report also concludes that the proposed site retention systems (as indicated on Civil drawings 20 01193/CSK04 and CSK05 (**Appendix E**)) are consistent with the recommendations of the Concept Plan Structural Report.

Bonacci recommends that excavation method statements are to be prepared by the excavation contractor prior to the issue of the Construction Certification for Stage 1 early work. This recommendation has been incorporated into the Statement of Commitments at Section 6.

### Excavation Near Rail Corridors

As described in Section 3.11, site retention systems are proposed to provide an interface with the rail corridors adjacent to the site. The Structural Engineering Report concludes that the temporary and permanent structural systems proposed adjacent to rail boundaries will be designed in accordance with:

- RailCorp Document "Brief for review of geotechnical and structural design for developments adjacent to or above rail corridor for external third party works performed under the NSW Environmental Planning Policy (Infrastructure) 2007;
- "Development Near Rail Corridors and Busy Roads – Interim Guideline" by NSW D of P, in particular Section 6 – "Excavation, earthworks and other construction related issues";
- the BCA;
- relevant Australian Standards; and
- the Structural Report (June 2010) prepared by Robert Bird Group for the Concept Plan.

The Bonacci Structural report also notes that the existing diaphragm wall retention system already has authority approval for the installation of temporary anchors required during the excavation of the Stage 1 basement works.

## Structures Near Rail Corridors

The structural system along the Illawarra Line rail corridor consists of primary structure (piles and slabs) below the existing ground level. Building will be founded on load bearing piles designed in accordance with BCA and relevant Australian Standards that extend down to rock and no vertical building loads will be transferred into the rail corridor.

Spark Lane will be constructed higher than the rail boundary and will be supported by a small independent retaining wall. The Bonacci Structural Report concludes that if impacted, the retaining wall will not cause structural failure of the primary building structure.

## Rail Impact Assessment and Track Monitoring

The Bonacci Structural Report (**Appendix E**) makes the following recommendations to be undertaken prior to the issue of Construction Certificate:

- additional detailed Stage 1 specific geotechnical analysis and impact assessment reports are to be produced and provided to Railcorp. These geotechnical impact reports will follow the requirements of:
  - RailCorp Document "Brief for review of geotechnical and structural design for developments adjacent to or above rail corridor for external third party works performed under the NSW Environmental Planning Policy (Infrastructure) 2007; and
  - "Development Near Rail Corridors and Busy Roads – Interim Guideline" by NSW Department of Planning, in particular Section 6 – "Excavation, earthworks and other construction related issues".
  - the monitoring of critical rail infrastructure for vibration and movements will be developed as a comprehensive set of procedures, safety plans and methodologies and submitted to Railcorp prior to the issue of the Construction Certificate for early works and excavation.

The preparation of the required procedures, safety plans, methodologies and assessment reports mentioned above have been incorporated into the Statement of Commitments at Section 6.

## 5.11 Noise and Vibration

A detailed Acoustic and Vibration Assessment was prepared by SLR Consulting Australia Pty Ltd (refer to **Appendix G**) for the Stage 1 Project Application to address the relevant noise and vibration criteria identified in the DGRs and the recommendations of the Acoustic and Vibration Assessment prepared for the Concept Plan.

The Acoustic and Vibration Assessment prepared for the Concept Plan made the following recommendations (relevant to the Stage 1 Project Application) to be undertaken at detailed design stages:

- selection and extent of glazing solutions;
- explore laminated and/or secondary glazing to control aircraft noise in certain locations;
- project specific noise criteria to be reviewed to take into account potential shielding from the built environment;
- further assess the potential for mechanical noise associated with the development; and
- a detailed assessment of aircraft, road traffic and rail traffic, including regenerated structure borne noise.

These recommendations were undertaken as part of the preparation of the Stage 1 Acoustic and Vibration Assessment, and therefore comply with the requirements of the Concept Plan Statement of Commitments.

The Stage 1 Acoustic and Vibration Assessment identifies that rail traffic (Building 1B only due to proximity to the railway line), road traffic and aircraft noises are potential sources of intrusive noise on the site. Potential noise emitters associated with the development may include air-conditioning plant, ventilation plant and parking/vehicle movements. The car parking/vehicular movement noise caused by the proposed development will not adversely affect the proposed or surrounding developments for the following reasons:

- the car parking is underground;
- the loading dock is oriented away from development; and
- traffic caused by the Stage 1 development will not lead to an increase of more than 2dB from the existing traffic noise levels from Princes Highway.

Given the location of the site, approximately 45m from the Illawarra and East Hills-Airport Lines, the Acoustic and Vibration Assessment states that an assessment against railway vibration (including groundborne railway vibration) is not required for the Stage 1 Project Application.

To ensure the proposed development complies with the relevant noise criteria, set out in the Concept Plan Acoustic and Vibration Report, relating to all noise sources, the following mitigation measures have been incorporated into the design of Buildings 1B and 1C:

- laminated glazing will be appropriate for rooms where the majority of the facade is glazed; and
- Lower specification glazing is suitable for rooms with small windows.

As the site is affected by external noise sources, the mechanical plant noise caused by the proposed development will be adequately mitigated through standard use of attenuators, acoustic louvres, barriers, enclosures, and the appropriate location and orientation of air inlets / outlets and items of plant, which will be detailed on construction certificate plans. These recommendations are included in the Statement of Commitments at Section 6.

## 5.12 Wind Impact

A Wind Report was prepared by Heggies Pty Ltd (**Appendix N**) for the Concept Plan and a more detailed report for the Stage 1 Project Application has been prepared to assess the impact of the proposed development on the local wind environment.

The Wind Report prepared for the Concept Plan concluded that with a number of recommended mitigation measures, including landscape works and shielding of the outdoor cafe areas, the Concept Plan would contain wind levels at or below the 16m/second walking comfort criterion.

The Wind Report prepared for the Stage 1 Project Application (**Appendix N**) assesses the detailed wind mitigation detailed on the Bates Smart drawings which are proposed to meet the recommendations of the Concept Plan Wind Report (and contain wind levels at or below the 16m/second walking comfort criterion).

The Wind Report includes the results of a detailed wind tunnel test for Building 1C, including the following mitigation measures incorporated into Stage 1:

- landscape works proposed within the Neighbourhood Park; and
- undercroft design and proposed awnings of Buildings 1C.

The test results were concentrated around Building 1C, as it would be expected that the highest localised wind impacts would occur close to the surfaces of the taller of the Stage 1 buildings, and therefore specific wind testing was not required to be undertaken immediately adjacent to Building 1B.

The Wind Report concludes that with the proposed landscaping and facade designs (including undercroft design and awnings), the Stage 1 proposed development will comply with standard wind acceptability criteria for all public areas surrounding the site. Therefore, the Stage 1 development complies with recommendations of the Concept Plan Wind Report.

## 5.13 Electrolysis

An Electrolysis Report was prepared by Cathodic Protection Services (CPS) specific for Buildings 1B and 1C (**Appendix O**). The Electrolysis Report concludes that with the measures outlined below, the potential electrolysis hazards from any stray traction current from the railway lines and electrical substation/switch room to the north of the station will be eliminated.

The recommendations of the Electrolysis Report include (and are reflected in the Statement of Commitments at Section 6):

- floor or basement slabs are laid on a moisture barrier to act as an electrical insulator;
- underground walls are reinforced concrete walls provided with water barriers or air gaps to prevent the entry of stray current;
- one of the following methods is to be utilised to avoid corrosion hazard on footing reinforcement:
  - excavation provided with a moisture barrier;
  - starter bars of the footing can be electrically insulated from the slab reinforcement by applying insulating sleeving to the connection points between the footing starter bars to the slab reinforcement; and
  - the footings are constructed from high strength concrete (minimum 32 mpa) and provided with adequate cover (50mm).
- steel reinforced piers are to be constructed out of 40 mpa concrete and provided with 70mm concrete cover;
- insulating fittings, or non-metallic sections of metallic service infrastructure are insulated in the sections at or close to the property boundary; and
- a review of any metallic fences will need to be made at construction certificate stage to determine whether any fences are subject to a corrosion hazard from stray traction current.

## 5.14 Environmentally Sustainable Development

The Bates Smart Stage 1 Project Application Design Report (provided under separate cover) identifies a number of sustainability measures that have been incorporated into the proposed development:

- the Water Recycling Facility proposed in the Building 1C basement will process blackwater generated by all of the Concept Plan development and non-potable water will be provided by the facility for toilet flushing, laundries and irrigation for common area landscaping;
- water efficient fixtures and fittings will be incorporated into all the apartments;
- the deep soil zone proposed within the Neighbourhood Park enables rainwater to enter the ground and replenish the water table;
- apartment orientation and layout will maximise opportunities for cross ventilation and solar access, allowing for less energy to be used on lighting and air conditioning;
- building form and facade design have been carefully considered to balance solar heat gains, daylight, glare and views to the outside;
- passive design strategies (such as external shading, well insulating walls and ceilings, and performance glazing) are used to reduce the need for air conditioning;
- gas bayonets in living areas will help to reduced energy used for heating, while energy efficient dishwashers and clothes dryers will be installer to reduce energy consumption; and
- a variety of landscaped areas will be planted with a range of vegetation to offer a variety of environments to improve residential amenity and to reduce heat gain at podium and roof level.

In addition, Cundall was commissioned to prepare an ESD report for the Stage 1 Project Application (refer to **Appendix I**). The residential ESD initiatives listed below have been incorporated into the detailed design and as a result (and shown at **Appendix I**) will allow the dwellings to be BASIX certified. Certificates will be provided under separate cover prior to determination.

- Energy conservation strategies:
  - Building form and fabric carefully considered to balance solar heat gains, daylight, glare and views to outside. Passive design strategies include external shading, insulation for walls and ceilings, and performance glazing where necessary;
  - An efficient common area lighting design and control strategy will reduce artificial lighting energy consumption and allow maximum advantage to be taken of daylight;
  - Residential units have individual fans but centralised ducting of bathrooms as opposed to a centralised continually operating system therefore reducing energy;
  - Car park ventilation will be fitted with CO<sub>2</sub> monitoring and VSD control to vary fan speeds based on usage;
  - Day/night zoned air conditioning;
  - Energy efficient dishwashers and clothes dryers; and
  - All common area lighting and ventilation to be centrally controlled through motion sensors and/or time clocks.

- Water conservation strategies:
  - Water efficient fixtures and fittings are used throughout including 3 star WELS shower heads, 4 star WELS toilets, 4 star WELS kitchen taps and 4 star WELS bathroom taps; and
  - Connection will be made to the site-wide recycled water for toilet flushing, laundry connections and irrigation of common area landscaping.
- a portion of small car spaces;
- operable windows and doors with draught sealing;
- natural ventilation for common areas;
- recycling facilities and chutes;
- communal garden, composting strategy at podium; and
- roof garden.

The BCA 2010 Section J sets minimum energy performance requirements for all new development, which cover air-conditioning, ventilation, lighting, power and hot water, as well as building fabric considerations including thermal construction and insulation, building sealing, glazing and shading. The proposed retail component of the Stage 1 Project Application will be developed to meet the BCA energy efficiency requirements.

Site wide ESD initiatives have also been incorporated into the Concept Plan design, and some of which are implemented in the Stage 1 proposal, including:

- variable speed car park ventilation with CO monitoring and motion sensors for car park lighting;
- cool coloured paving broken up with the planting;
- native planting and grass verges are incorporated into the landscape design;
- cycle paths are provided to encourage non-motorised forms of transportation;
- low VOC and low formaldehyde, recycled and acoustic rated materials are incorporated into proposed buildings.

The proposed ESD initiatives are consistent with the recommendations of the ESD Report prepared for the Concept Plan, and compliance with the Stage 1 specific design measures has been incorporated into the Statement of Commitments.

## 5.15 Infrastructure and Servicing

The Infrastructure Planning Considerations Report (**Appendix D**) and the Civil Engineering Report (**Appendix C**) prepared by DSC and Bonacci Group Pty Ltd, respectively, indicate that the Stage 1 mixed use development can be adequately serviced by potable water, sewer, electricity, gas, telecommunications and stormwater through the infrastructure works proposed as part of the Stage 1 Project Application.

## Hydraulic Services

DSC makes the following recommendations regarding the detailed design of the services, to be confirmed at the issue of a Construction Certificate:

- street fire hydrants are to be provided on the Authorities water main, in accordance with Sydney Water requirements;
- fire hydrants and fire sprinklers are to be provided as required by the BCA and relevant Australian Standards (all as confirmed with the NSW Fire Brigades);
- supplementary hydrants and hose reels will be installed to provide sufficient coverage to all areas as required by the relevant Australian Standards; and
- each building will have a fire control centre to comply with BCA.

These recommendations have been incorporated into the Statement of Commitments at Section 6.

## Electrical Services

DSC makes the following recommendations regarding the detailed design of the services, to be confirmed at the issue of a Construction Certificate:

- new communications fibre or copper services are to be installed in accordance with Telstra, NBN and the Australian Communications Authority Requirements; and
- the external roadway and public lighting will be installed in accordance with AS1158.

These recommendations have been incorporated into the Statement of Commitments at Section 6.

## Stormwater

The Bonacci Civil Report states that the stormwater drainage system has been designed:

- based on relevant national design guidelines, Australian Standard Codes of Practice, and acceptable engineering practice;
- in accordance with AS 3500.3 National Plumbing and Drainage Code Part 3 – Stormwater Drainage;
- Institute of Engineers “Australian Rainfall and Runoff”;
- to convey the 100 year ARI flow in pipes to the existing stormwater system; and
- to reduce the volume of water flowing into the existing stormwater systems, and proposed works will reduce the catchment flowing into the existing Magdalene Terrace and Brodie Spark Drive systems.

Additional stormwater sumps and grates will be constructed to limit surface stormwater depths, and the locations of these will be determined during detailed design prior to the issue of the Construction Certificate.

## Waste

A Waste Master Plan has been prepared by GHD (**Appendix P**) for all buildings in the Concept Plan (including Buildings 1B and 1C). The Waste Master Plan identifies how residential, retail and commercial waste will be disposed and stored:

- residential garbage – placed in chutes by residents, then into 1100L bins, then taken to central storage area for collection three times per week;
- residential recycling – placed in bins on each floor by residents, then collected by cleaners and taken to central storage area for collection twice a week;
- retail garbage – placed in bins in central storage area by retailers for collection by contractor at agreed frequency;
- retail recycling – placed in bins in central storage area by retailers for collection by contractor at agreed frequency;
- commercial garbage – collected by cleaners and placed in bins in central storage area for collection by contractor at agreed frequency; and
- commercial recycling – collected by cleaners and placed in bins in central storage area for collection by contractor at agreed frequency.

The preparation of the Waste Master Plan satisfies the Concept Plan Statement of Commitments requiring the preparation of a Waste Management Plan and requiring an allowance to be made for the collection of waste by waste contractors.

## 5.16 Flooding

A Flood Assessment was prepared for the Concept Plan by Parsons Brinckerhoff. In accordance with the Concept Plan, Buildings 1B and 1C will incorporate a 2.5m freeboard, setting the building levels above the Probable Maximum Flood (PMF). As a result, the Stage 1 development is consistent with the Concept Plan's flood related Statement of Commitments.

A further assessment of flooding issues, specific to Stage 1, has been undertaken as part of the Civil Report by Bonacci Group Pty Ltd, included at **Appendix C**. The Bonacci Report found that the Stage 1 site is protected from the 200 year Average Recurrence Interval (ARI) flood event as the ground level on all sides of Stage 1 is above RL 2.4 AHD.

The Stage 1 works will, however, include the construction of a bund to protect the temporary entrance to the Stage 6 basement (proposed under a separate Project Application). This bund will protect the future temporary Stage 6 basement entrance to the probable maximum flood level.

The level of flood protection (to a level of RL 4.3m AHD) provided to the Wollie Creek interchange remains unchanged as a result of the Stage 1 development.



## 5.17 Contamination

The Concept Plan Environmental Assessment by Coffey Environments Australia Pty Ltd provided an assessment of the development suitability of land at Discovery Point as part of the Concept Plan Application. They found that the site can be made suitable for the proposed use, subject to the following recommendations:

- works should be compliant with the Site Management Plan (MPL 2006a) in light of residual contamination remaining on the site; and
- an appropriate capping system should be provided in the Neighbourhood Park.

In accordance with these recommendations, the Stage 1 Project Application includes a Statement of Commitment that the fill material for the Neighbourhood Park is suitable for open space land uses in accordance with relevant guidelines. If it were proposed to use soils sourced from the site these would need to be validated to confirm they are of suitable quality.

## 5.18 Acid Sulphate Soils

A Soil and Water Management Plan was prepared by Smart Civil for the Discovery Point Concept Plan. The Smart Civil report found that potential acid sulphate soils (PASS) have been found at various locations and depths across the Concept Plan site (which may include the Stage 1 site).

The Civil Report prepared by Bonacci for the Stage 1 Project Application (**Appendix C**) found that the depth of excavation for Stage 1 indicates that it is expected that PASS will be encountered during drilling for piers but that the volume of PASS which would be removed during this activity is small.

Furthermore, if any material suspected to be Acid Sulfate Soils is discovered, then the material will be tested on site.

The management of any Acid Sulfate Soils that might be encountered will be dealt with in an Acid Sulfate Soils Management Plan, which will be prepared prior to construction as per the Concept Plan Statement of Commitments.

## 5.19 Sediment and Erosion Control

In accordance with the Concept Plan Statement of Commitments, a Sediment and Erosion Control Plan will be implemented during construction. The design of this plan will be in accordance with the Landcom "Blue Book". The Plan is to be developed prior to construction.

## 6.0 Statement of Commitments

In accordance with the Director-General's Environmental Assessment Requirements, the proponent is required to include a Draft Statement of Commitments in respect of environmental management and mitigation measures on the site.

The majority of environmental commitments for the site are covered by the Statement of Commitments included as part of the Concept Plan. The following are additional commitments made by Discovery Point Pty Ltd to manage and minimise potential impacts arising from the Stage 1 project.

**Table 11 – Draft Statement of Commitments**

Subject	Commitments	Approved by Whom	Timing
ESD	The Stage 1 Project Application will include those ESD measures identified in the Cundall Design Consultants ESD report (dated February 2011).	Department of Planning.	No Timing. General Statement of Commitment.
Non Indigenous Archaeology	The management of the potential archaeological remains of the Gardener's Cottage and Pine House should be in line with the approved Archaeological Management Plan which covered Area 6 (Casey and Lowe 2002). As such, the likely location of these buildings should be determined through triangulation of historic plans and any remains be recorded in detail using archaeological excavation, detailed planning and GIS survey and mapping.	Department of Planning	No Timing. General Statement of Commitment
Electrolysis	The recommendations of the Stage 1 Electrolysis Analysis prepared by CPS and dated January 2011 will be implemented.	Department of Planning	No Timing. General Statement of Commitment
Active Frontages	Active frontages will be provided on both sides of the pedestrian thoroughfare between Buildings 1B and 1C through either specialty shops, cafe dining or clear visual links into a supermarket tenancy.	The relevant consent authority.	On the detailed fit out plans.
Environmental and Construction Management	The following Management Plans will be issued prior to works commencing for each stage: <ul style="list-style-type: none"> <li>Construction Management Plan</li> <li>Construction Traffic Management Plan</li> <li>Erosion and Sediment Control Plan</li> <li>Waste Management Plan</li> <li>Dust Control Plan.</li> <li>Acid Sulphate Soil Management Plan.</li> </ul>	-	Prior to issue of CC

Subject	Commitments	Approved by Whom	Timing
Railcorp requirements	The preparation of the required procedures, safety plans, methodologies and assessment reports required by Railcorp will be submitted prior to those specific works commencing.	Railcorp	Prior to construction commencing
Contamination	The fill material for the neighbourhood park is to be suitable for open space land uses in accordance with relevant guidelines. If it were proposed to use soils sourced from the site these would need to be validated to confirm they are of suitable quality.	Relevant Certifying Authority	Prior to works commencing
Indigenous Archaeology	Further archaeological investigation is required in the Zone 2 area of the Stage 1 development area. This part of the Precinct has not been investigated previously. Prior to commencement of construction works in this area a test excavation programme should be carried out by a suitably qualified archaeologist to ascertain whether intact archaeological material is present here.	-	During construction
Excavation	Excavation method statements are to be prepared by the excavation contractor.	Relevant Certifying Authority	Prior to issue of CC
Accessibility	Ensure an accessible path of travel to and within common-use facilities in line with DDA Premises Standards and AS1428.1:2009. Ensure the designs of the three adaptable units are compliant with AS4299 and AS1428.1:2009.	Relevant Certifying Authority	Prior to issue of CC
Infrastructure and Services	<ul style="list-style-type: none"> <li>▪ New communications fibre or copper services are to be installed in accordance with Telstra, NBN and the Australian Communications Authority Requirements; and</li> <li>▪ The external roadway and public lighting will be installed in accordance with AS1158.</li> <li>▪ Street fire hydrants are to be provided on the Authorities water main, in accordance with Sydney Water requirements.</li> <li>▪ Fire hydrants and fire sprinklers are to be provided as required by the BCA and relevant Australian Standards (all as confirmed with the NSW Fire Brigades);</li> </ul>	Relevant Certifying Authority	Prior to issue of CC

Subject	Commitments	Approved by Whom	Timing
	<ul style="list-style-type: none"> <li>▪ Supplementary hydrants and hose reels will be installed to provide sufficient coverage to all areas as required by the relevant Australian Standards; and</li> <li>▪ Each building will have a fire control centre to comply with BCA.</li> </ul>		
Stormwater	Additional stormwater sumps and grates will be constructed to limit surface stormwater depths.	Relevant Certifying Authority	Prior to issue of CC
Acoustic and Vibration	<p>The following measures are required to mitigate noise impacts from road and aircraft noise:</p> <ul style="list-style-type: none"> <li>▪ laminated glazing will be appropriate for rooms where the majority of the facade is glazed; and</li> <li>▪ Lower specification glazing is suitable for rooms with small windows.</li> </ul> <p>Mechanical plant noise is to be mitigated through standard use of attenuators, acoustic louvres, barriers, enclosures, and the appropriate location and orientation of air inlets / outlets and items of plant.</p>	Relevant Certifying Authority	Prior to issue of CC
Public Domain	Details of Rights of Way and Easements will be provided as part of future subdivision applications.	The relevant consent authority	With future application.

## 7.0 Conclusion

The proposed Project Application will commence the first stage of the Discovery Point Concept Plan. This will bring significant public benefit in the form of providing the new Neighborhood Park as well as providing a component of the Concept Plan non-residential floor space in the form of a supermarket and specialty retail framing the Neighbourhood Park. The Neighbourhood Park will act as a 'village centre', attracting residents of Discovery Point and Wolli Creek to shop, meet and relax in the public space and improve linkages within the site, to the developments to the south along Magdalene Terrace and to the railway station.

The Project Application seeks approval for Buildings 1B and 1C and associated landscaping, car parking, infrastructure works and new roads. Approval for temporary infrastructure works within the Concept Plan site and a temporary park on the site of Buildings 3 and 5 are also sought as part of this first Stage PA. This environmental assessment report provides assessment and justification for the development, consistent with the Concept Plan.

The preceding environmental assessment demonstrates that the matters for which approval is sought are consistent with Director General's Requirements, and will have no adverse environmental impacts.

Furthermore, the development is of a high architectural standard and provides a range of apartment types, promoting housing affordability and choice.

The Draft Statement of Commitments has been prepared to inform the detailed design of the development and manage construction and on-going environmental impacts. These will continue to be supplemented by the overall site Statement of Commitments approved with the Concept Plan.

As such, we have no hesitation in recommending this Project Application be approved.