

Project Approval

Section 75J of the Environmental Planning & Assessment Act 1979

As delegate of the Minister for Planning under delegation executed on 5 December 2008, we the Planning Assessment Commission of New South Wales (the Commission) approve the project application referred to in Schedule 1, subject to the conditions in Schedule 2 and the Revised 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.



Member of the Commission



Member of the Commission



Member of the Commission

Sydney

18 January 2011

SCHEDULE 1

Application No.: MP10_0177

Proponent: Meriton Apartments Pty Limited

Approval Authority: Planning Assessment Commission

Land: 14-18 Boondah Road, Warriewood (Lot 20 in DP 1080979)

Project: Stage 1 for a residential and child care development including:

- Demolition of the existing buildings and structures on site and tree removal;
- Excavation, earthworks and flood mitigation works;
- Construction of 7 residential buildings of 3, 4 & 5 storeys in height providing 295 apartments with associated pools and gymnasium;
- Basement parking for 471 cars comprising 429 resident car spaces and 42 visitor spaces;
- Single storey childcare centre (270m²);
- External road works, internal public access roads and public pedestrian and cycle way;
- Asset Protection Zone, Environmental Buffer areas and ecological rehabilitation and landscaping works.

DEFINITIONS

Act	means the Environmental Planning and Assessment Act, 1979 (as amended).
Advisory Notes	means advisory information relation to the approved development.
BCA	means the Building Code of Australia.
Certifying Authority	has the same meaning as Part 4A of the Act.
Council	means Pittwater Council.
Department	means the Department of Planning or its successors.
Director General	means the Director General of the Department or his nominee.
Environmental Assessment (EA)	means the Environmental Assessment prepared by Architectus dated March 2010.
Minister	means the Minister for Planning.
MP No. 09_0162	means the Major Project described in the Proponent's Environmental Assessment as amended by the Preferred Project Report.
PCA	means a Principal Certifying Authority and has the same meaning as Part 4A of the Act
Preferred Project Report (PPR)	means the Preferred Project Report/ Response to submissions prepared by Architectus dated September 2010 and received by the Department on 29 September 2010.
Proponent	means Meriton Apartments Pty Limited 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 this Section

SCHEDULE 2

PART A - ADMINISTRATIVE CONDITIONS

Terms of Approval

A1. Development in Accordance with Plans and Documentation

The development will be undertaken in accordance with MP No. 10_0177 and the Environmental Assessment dated March 2010, prepared by Architectus, except where amended by the Preferred Project Report dated September 2010, prepared by Architectus, and the following drawings:

Architectural Drawings				
Drawing No.	Revision	Name of Plan	Drawn By	Date
DA00	B	Cover Sheet	Meriton Apartments Pty Ltd	6/08/2010
DA01	B	Overall Site Staging Plan	Meriton Apartments Pty Ltd	13/08/2010
DA02	B	Site Plan	Meriton Apartments Pty Ltd	12/08/2010
DA03	B	Carparking Plan 1	Meriton Apartments Pty Ltd	12/08/2010
DA04	B	Carparking Plan 2	Meriton Apartments Pty Ltd	12/08/2010
DA05	B	Podium Plan	Meriton Apartments Pty Ltd	12/08/2010
DA06	B	Typical Floor Plan (Level 2)	Meriton Apartments Pty Ltd	13/08/2010
DA07	B	Deep Planting	Meriton Apartments Pty Ltd	13/08/2010
DA10	B	Street Elevations	Meriton Apartments Pty Ltd	04/08/2010
DA11	B	Site Sections	Meriton Apartments Pty Ltd	03/08/2010
DA20	B	Building A Plans & Elevations	Meriton Apartments Pty Ltd	08/08/2010
DA21	B	Building B Plans & Elevations	Meriton Apartments Pty Ltd	03/08/2010
DA22	B	Building C Plans & Elevations	Meriton Apartments Pty Ltd	03/08/2010
DA23	B	Building D Plans & Elevations	Meriton Apartments Pty Ltd	04/08/2010
DA24	B	Building E Plans & Elevations	Meriton Apartments Pty Ltd	03/08/2010
DA25	B	Building F Plans & Elevations Sheet 1	Meriton Apartments Pty Ltd	06/08/2010
DA26	B	Building F Plans & Elevations Sheet 2	Meriton Apartments Pty Ltd	13/08/2010
DA28	B	Building G Plans & Elevations	Meriton Apartments Pty Ltd	03/08/2010
DA30	B	Childcare Pool Plans & Elevations	Meriton Apartments Pty Ltd	13/08/2010
DA70	B	Typical Unit Plans	Meriton Apartments Pty Ltd	06/08/2010

Landscape Plan				
Drawing No.	Revision	Name of Plan	Drawn By	Date
LA000	B	Title Sheet	Site Image Landscape Architects	13/08/10
LA101	B	Landscape Masterplan Vegetation Plan	Site Image Landscape Architects	13/08/10
LA102	B	Landscape Masterplan Landscape Management Zones	Site Image Landscape Architects	13/08/10
Other				
Drawing No.	Revision	Name of Plan	Drawn By	Date
C025	P1	Site Earthworks Plan and Section	AT&L Civil Engineers and Project Managers	07/09/10
C001	P1	Cover Sheet	AT&L Civil Engineers and Project Managers	26/07/10
C002	P1	Notes and Legends	AT&L Civil Engineers and Project Managers	26/07/10
C003	P4	General Arrangement Plan	AT&L Civil Engineers and Project Managers	12/08/10
C004	P2	Typical Road Cross Sections Sheet 1	AT&L Civil Engineers and Project Managers	26/7/10
C005	P1	Typical Road Cross Sections Sheet 2	AT&L Civil Engineers and Project Managers	26/7/10
C006	P1	Typical Road Cross Sections Sheet 3	AT&L Civil Engineers and Project Managers	26/7/10
C007	P2	Typical Road Cross Sections Sheet 4	AT&L Civil Engineers and Project Managers	12/08/10
C008	P1	Roadworks Details Sheet 1	AT&L Civil Engineers and Project Managers	26/7/10
C009	P1	Roadworks Details Sheet 2	AT&L Civil Engineers and Project Managers	26/7/10
C010	P2	Roadworks and Stormwater Drainage Plan Sheet 1	AT&L Civil Engineers and Project Managers	26/7/10
C011	P2	Roadworks and Stormwater Drainage Plan Sheet 2	AT&L Civil Engineers and Project Managers	26/7/10
C012	P3	Roadworks and Stormwater Drainage Plan Sheet 3	AT&L Civil Engineers and Project Managers	12/08/10
C013	P2	Roadworks and Stormwater Drainage Plan Sheet 4	AT&L Civil Engineers and Project Managers	12/08/10
C014	P6	Roadworks and Stormwater Drainage Plan Sheet 5	AT&L Civil Engineers and Project Managers	12/08/10

C015	P4	Roadworks and Stormwater Drainage Plan Sheet 6	AT&L Civil Engineers and Project Managers	2/08/10
C020	P1	Road Longitudinal Sections Sheet 1	AT&L Civil Engineers and Project Managers	04/06/10
C021	P1	Road Longitudinal Sections Sheet 2	AT&L Civil Engineers and Project Managers	04/06/10
C040	A	Bio Retention Basin A Detail Plan	AT&L Civil Engineers and Project Managers	29/10/10
C041	A	Bio Retention Basin B Detail Plan	AT&L Civil Engineers and Project Managers	29/10/10
C035	P1	Pavement Plan Sheet 1	AT&L Civil Engineers and Project Managers	26/07/10
C036	P1	Pavement Plan Sheet 2	AT&L Civil Engineers and Project Managers	26/07/10
C037	P1	Pavement Plan Sheet 3	AT&L Civil Engineers and Project Managers	26/07/10
C038	P1	Pavement Plan Sheet 4	AT&L Civil Engineers and Project Managers	26/07/10
N/A	N/A	Letter regarding public open space dedication	Meriton Apartments Pty Ltd	11/11/10

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.

A2. Inconsistency between documents

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.

A3. Prescribed Conditions

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).

A4. Construction Certificate

Prior to commencement of any construction works associated with the approved development (including excavation if applicable), it is necessary to obtain a Construction Certificate. A Construction Certificate may be issued by Council or an Accredited Certifier. Plans and documentation submitted with the Construction Certificate are to be amended to satisfy all relevant conditions of this development approval.

A5. No external service ducts for multi-unit development and above

Service ducts shall be provided within the building to keep external walls free of plumbing or any other utility installations excluding downwater pipes from roof gutters. Such service ducts are to be concealed from view from the street.

A6. Further Approvals

1. Child Care Centre

A child care centre is to be provided at the north-west corner of the site, between the overland flowpath and the western alignment of the main internal road. Places are limited to a maximum of 40 children unless otherwise approved by Council. A further Development Application for the proposed use is to be submitted to Council for its assessment. This application is to demonstrate that the proposed use and its operations including parking provision can be provided with minimal impact to future residents in the majority of the development site.

2. Future Subdivision of the Land

A further Development Application for subdivision is to be submitted to Council for its assessment. This application is to address the following:

- a. The creation of individual lots for containing dwellings and any utility lots (garages storage areas etc.), development lots for future stages, community or common property, and areas to be dedicated to the public.
- b. The creation of appropriate easements, rights of way, restrictions on use of land, or positive covenants sufficient to provide appropriate legal rights for access services and facilities where they are not contained in the lot which they benefit.
- c. Creation of a Residue Lot being that part of the land not included in (a) or (b) above.
- d. Provision of binding legal mechanisms to ensure the ongoing maintenance of any facilities or activities in the Residue Lot required to be carried out over the life of the development by this Approval, including maintenance of water management facilities, pedestrian and cycle paths, Buffer Areas, Vegetation and Asset Protection Zones in the Residue Lot and to also provide for public access.
- e. The creation of suitable binding legal mechanisms to ensure the ongoing maintenance of any facilities or activities required to be carried out over the life of the development by this Approval including the maintenance of the water management facilities, roads and parking areas, Buffer Areas, Weed Management, continual maintenance of landscape vegetation, Asset Protection Zones, the gymnasium and swimming pool, and any other proposed common facilities.

End of this Section

PART B - GENERAL

B1 Density and Height Modifications

The plans described above in Terms of Approval (A1) shall be modified as follows:

- a. The dwelling yield is limited to a maximum of 60 dwellings per hectare.
Note: For the purposes of calculating the dwelling yield, the site area is the developable area of 7.45ha and excludes Fern Creek and the creekline corridor.
- b. The height of the development shall be limited to 3 storeys, with the exception of Buildings D, E, F and G which may be permitted to be a maximum of 4 storeys to achieve the maximum density specified in Condition B1(a) above, subject to;
 - (i) any 4th storey having a smaller footprint than the 3rd level below to provide articulation to the building form;
 - (ii) any change to the siting or form of the envelopes resulting from Conditions B1(a) and/or B1(b) shall maintain compliance with the relevant provisions of the Residential Flat Design Code; and,
 - (iii) the amendments shall maintain a minimum of 50% of the developable area of 7.45ha as deep soil area.

Amended plans demonstrating compliance with these modifications shall be submitted to, and approved by the Director General.

B2 Other Design Modifications

The approved plans and the relevant *Construction Certificate* plans and specifications, required to be submitted to the Certifying Authority, must detail the following amendments:

- a. The Asset Protection Zone shall be maintained as an Inner Protection Area with a minimum width of 25 metres, exclusive of the 10 metre wide Vegetated Wetland Buffer Zone.
- b. The building envelopes of Buildings F shall be amended to ensure all units comply with the requirement that 70% of units achieve 3 hours solar access in mid – winter.
- c. The building envelopes or layout of Building A shall be amended to ensure all units comply with the requirement that 60% of units be naturally cross-ventilated.
- d. The proposed Port Jackson Fig trees in the Central Courtyard shall be replaced with deciduous tree species to improve winter solar access.
- e. 50% of the proposed children's play area shall be relocated to the Central Courtyard.

Amended plans demonstrating compliance with this modification shall be submitted to, and approved by, the Director General prior to issue of the relevant Construction Certificate.

B3 Car Park and Service Vehicle Layout

- a. The layout of the car park shall comply with Australian Standard AS 2890.1-2004 Parking Facilities Part 1: Off Street Parking. All parking spaces are to be linemarked.
- b. The layout of the service vehicle areas shall comply with Australian Standard AS2890.2: 1989 Off Street Parking Part 2 – Commercial Vehicles Facilities.
- c. Driveway and ramp gradients shall comply with Clause 2.5, Clause 2.6 and Clause 3.3 of AS2890.1-2004.
- d. All new vehicular crossings are to be constructed in accordance with Council's specifications.

- e. Details demonstrating compliance with these requirements shall be submitted to the satisfaction of the Certifying Authority prior the issue of a Construction Certificate for the basement structure.

B4 Structural Details

Prior to the issue of a relevant Construction Certificate, the Proponent shall submit to the satisfaction of the Certifying Authority, structural drawings prepared and signed by a suitably qualified practising Structural Engineer that complies with:

- a. the relevant clauses of the BCA,
- b. the relevant development approval,
- c. drawings and specifications comprising the Construction Certificate, and
- d. the relevant Australian Standards listed in the BCA (Specification A1.3).

B5 Construction Management Plan

Prior to the issue of a Construction Certificate, a Construction Management Plan shall be submitted to and approved by the Certifying Authority. The Plan shall address, but not be limited to, the following matters where relevant:

- a. hours of work,
- b. contact details of site manager,
- c. Waste Management Plan,
- d. Noise and Vibration Management Plan,
- e. Air Quality Management Plan, and
- f. Construction Traffic Management Plan

The Proponent shall submit a copy of the approved plan to Council.

B6 Traffic & Pedestrian Management Plan

Prior to the issue of a Construction Certificate, a Traffic and Pedestrian Management Plan 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.

The Proponent shall submit a copy of the approved plan to Council.

B7 Noise and Vibration Management

Prior to the issue of a Construction Certificate, a Noise and Vibration Management Plan 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. Identification of the specific activities that will be carried out and associated noise sources;
- b. Identification of all potentially affected sensitive receivers including residences, schools, and properties containing noise sensitive equipment;
- c. The construction noise objective specified in the conditions of this approval;
- d. The construction vibration criteria specified in the conditions of this approval;
- e. Determination of appropriate noise and vibration objectives for each identified sensitive receiver,
- f. Noise and vibration monitoring, reporting and response procedures;

- g. Assessment of potential noise and vibration from the proposed construction activities including noise from construction vehicles and any traffic diversions;
- h. Description of specific mitigation treatments, management methods and procedures that may be considered to control noise and vibration during construction;
- i. Justification of any proposed activities outside the construction hours specified in the conditions of this approval; and
- j. Contingency plans to be implemented in the event of non-compliances and/or noise complaints. The Proponent shall submit a copy of the approved plan to Council.

B8 Erosion and Sediment Control

Soil erosion and sediment control measures shall be designed in accordance with the document Managing Urban Stormwater – Soils & Construction Volume 1 (2004) by Landcom. Details are to be submitted to the satisfaction of the Certifying Authority prior to the issue of the Construction Certificate.

B9 Compliance Report

Prior to the issue of the relevant Construction Certificate, the Proponent, or any party acting upon this approval, shall submit to the Private Certifying Authority a report addressing compliance with all relevant conditions of this Part.

B10 External colours and materials

Implementation of an amended materials and colour scheme in accordance with Pittwater 21 Development Control Plan (Control D16.2 Building colours and materials) ensuring that the colours and materials harmonise with the natural environment and minimises the visual prominence of the development. The following must be adhered to:

- a. The roofs of all buildings/structures are to be dark grey, brown and/or grey tones only.

B11 Accessibility

Works in the public domain must be designed and constructed to provide accessibility in accordance with the Building Code of Australia and the relevant Australian Standards (including amendments).

B12 Internal Road Network

The internal road system is to be designed and constructed in accordance with the requirements of the Warriewood Valley Roads Master Plan 2006 Update, AustRoads and Auspec with sufficient width to accommodate emergency vehicles and parallel parking where appropriate to accommodate the balance of the carparking for the site not provided in the underground parking areas.

There is to be a three (3) metre boundary setback from the existing road reserve boundary where the internal road connects to a public road network to accommodate kerb returns with the public road reserve.

B13 Car and Bicycle Parking Provision and Storage

- a. Car parking provision shall meet the requirements of Pittwater DCP 21. Visitor parking shall include a minimum of 2 spaces designated for persons with a disability. The design and construction of the parking area and parking spaces must be in accordance with AS2890.1 and AS2890.6.
- b. Secure bicycle parking is to be provided for 98 bicycles on site, designed and constructed in accordance with AS2890.3.
- c. Storage areas for each dwelling are to be provided within the unit and/or basement or part lot.

B14 BASIX Certificate Requirements

Prior to the issue of the relevant Construction Certificate, details of all treatments outlined in the BASIX Certificates submitted with the PPR, to achieve satisfactory levels of thermal comfort, and satisfactory water and energy ratings, shall be incorporated into the proposed development and provided to the PCA. Should design changes require amended BASIX Certificates, a copy is to be provided to the Department, along with stamped plans, for information.

B15 Noise

Noise from the operation of any plant or equipment at the premises, including air conditioners, shall comply with the noise provisions of the Protection of the Environment Operations Act 1997.

B16 No excavation within the 10 metres of the Vegetated Wetland Buffer Zone

No excavation is to be carried out within the 10 metre Vegetated Wetland Buffer Zone as described and shown in figure 4 of the Flora and Fauna Assessment (Total Earth Care 2010).

B17 Maintenance of existing overland flowpath

The existing overland flowpath through the Swamp Oak Forest from Boondah Road to Warriewood Wetlands is to be maintained at or below existing levels.

B18 Flooding

The minimum floor levels are the Flood Planning Levels determined by the major stormwater design as outlined and modelled in the Brown Consulting Report - Stormwater and Environmental Management Plan — Buffer Area 3 — Warriewood Valley, 14–18 Boondah Road, Warriewood (August 2010).

The storage of hazardous materials, electrical items, items of plant, equipment or stock and any other items which may be susceptible to water damage are to be located above the Flood Planning Level.

B19 Entry into Basement Parking

- a. The minimum level of the entry to all underground car parking shall be the Flood Planning Level.
- b. Emergency egress from the basement carparking is to be provided. All access, ventilation and any other potential water entry points must be above the Flood Planning Level.
- c. A clearly signposted pedestrian access via a low flood hazard area to a 'safe haven' above the Flood Planning Level separate to the vehicular access ramps is to be provided.

B20 Groundwater flows to Warriewood Wetlands

There is to be no alteration to the natural flow of groundwaters across the site to the Warriewood Wetlands.

B21 Surface Water Management

Surface waters are to be managed in accordance with the Brown Consulting Report - Stormwater and Environmental Management Plan — Buffer Area 3 — Warriewood Valley, 14–18 Boondah Road, Warriewood (August 2010) and the updated Water Management Report.

Any disposal of surface water must comply with relevant guidelines and legislation including the Protection of the Environment Operations Act 1997 and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ 2000a) for risks to recreational waters.

B22 Waste water from designated area for car washing

The wash bay must be designed and constructed so as not to cause pollution as defined by the Protection of the Environment Operations Act, 1997. Water from the wash bay shall be treated prior to entering the sewer system.

B23 Maintenance of any facilities or activities, including landscaping

The ongoing management of the water management facilities, internal road network and parking areas, the gymnasium and swimming pool building, Buffer Areas, Weed Management, landscape vegetation, Asset Protection Zones, and any other proposed common facilities is the responsibility of the party(s) nominated under a future subdivision application to be lodged in accordance with Condition A6 of this approval.

B24 Waste Management

- a. The commitments of the Waste Management Plan approved for this development, in particular the waste and recycling system incorporated for the residential development required under Condition C3 of this approval, are to be implemented.
- b. An on-site caretaker is to manage the storage and removal of waste from this development/site.

B25 Warriewood STP

The Proponent shall provide evidence of satisfactory arrangements made with Sydney Water for the payment of a contribution for the Warriewood STP at a rate of \$500,000 per net development hectare. Evidence shall be provided to the Certifying Authority prior to the issue of the relevant Construction Certificate.

B26 Vegetation Management

- a. Vegetation management onsite is to incorporate the following matters:
 - i. Relocation of the Asset Protection Zones (APZ) outside the 10 metre Vegetated Wetland Buffer Zone (Flora And Fauna Assessment TEC 2010) and in accordance with Planning For Bushfire Protection 2006 in terms of the Asset Protection Zone starting from the built form and moving towards the hazard.
 - ii. No excavation works within the 10 metre Vegetated Wetland Buffer Zone.
 - iii. The pedestrian/cycleway must be located outside of the 10 metre Vegetated Wetland Buffer Zone in all locations and above the 5% AEP flood level.
 - iv. Implementation of a vegetation management plan for the retention and rehabilitation of the existing Angophora Trees and native understorey adjacent to and within Boondah Road reserve.
 - v. Retention of the existing Swamp Mahogany Forest and additional trees shown to be retained on the Landscape Masterplan Vegetation Plan (Site Image, 2010).
 - vi. Planting in the Inner Creekline Corridor (25m from centre of the creekline) (including Public Riparian Zone shown in Dwy No LA102) is to be at a density of 6 plants per metre square for littoral plants, groundcovers and grasses; 1 shrub per metre square; 1 tree per 5 metre square. Turf is not permitted in this zone.
 - vii. Planting in the Outer Creekline Corridor (25-50m from centre of creekline and outside the Asset Protection Zone) (including the Buffer Strip shown in Dwg No LA102) is to be at a

density of 6 plants per metre square for littoral plants, groundcovers and grasses; 1 shrub per 10 metre square; 1 tree per 15 metre square. Trees are to have shrubs or tall ground plants (e.g. *Dianella*) planted at their base to a distance of at least 1 m from the trunk. Turf is not permitted in this zone.

- viii. Planting in the 10 metre wide Vegetated Wetland Buffer Zone (adjoining Warriewood Wetland) (shown in figure 4 Flora And Fauna Assessment TEC 2010) is to be at a density of 6 plants per metre square for littoral plants, groundcovers and grasses; 1 shrub per 1 metre square; 1 tree per 5 metre square. Turf is not permitted in this zone. The Wetland Buffer Zone is to be in accordance with DECCW and DWE requirements for foreshore lands.
 - ix. Planting in the Asset Protection Zone is to be at a density of 6 plants per metre square for littoral plants, groundcovers and grasses. Trees and shrubs are to be planted to meet the requirements for Outer and Inner Protection Areas in accordance with the Planning for Bushfire Protection (RFS, 2006), Standards for Asset Protection Zones (RFS, 2005) as listed in Bushfire Risk Management Assessment Report (Flame Zone, 2008), Management of Asset Protection Zones 14-18 Boondah Rd, Warriewood Valley.
 - x. The sides of the drainage swale are to be planted with littoral plants at a rate of 6 per metre square.
 - xi. Planting outside the Asset Protection Zones, Creekline Corridor, Wetlands Core and Wetland Buffer Zones, to the south and west of the proposed cycleway is to be at a density of 6 plants per metre square for littoral plants, groundcovers and grasses; and a minimum of 1 shrub per 10 metre square and 1 tree per 50 metre square. Any turf is to have a maintenance edge to prevent its spread into the any of the zones listed above.
 - xii. The recommendations of the Flora and Fauna Report, Arborist Report, Bushfire Report and amended Landscape Plans are to be adopted and implemented as specified except where superseded by conditions (i) to (xi) above.
- b. Native vegetation is to be maintained, particularly:
- i. The existing Swamp Sclerophyll Forest as shown on the Landscape Masterplan Vegetation Plan (Site Image 2010).
 - ii. The planting and maintenance in the various landscape zones are in accordance with the plant densities stated in (a) above, particularly within the Wetland Core and Buffer Zones.

Evidence of compliance with this condition shall be submitted to the certifying authority for approval prior to the issue of the final Occupation Certificate.

End of this Section

PART C – PRIOR TO ISSUE OF CONSTRUCTION CERTIFICATE

C1 Vegetation Management

The plant species to be used must be selected from the Species list under the adopted Warriewood Valley Urban Release Area Landscape Masterplan and Design Guidelines, in particular the west and south of the perimeter road and within 50 metres of the edge of the Warriewood Wetlands (as defined by the DECCW formerly DIPNR 2003).

The proposal to plant *Pennisetum* 'Nafray' grass species and *Stenocarpus sinuatus* is not approved given their potential to become invasive, and are to be deleted from the Plant Schedule.

A plan showing the location of the core and buffer zones, and the amended locations of the Asset Protection Zone and pedestrian/cycleway in accordance with Condition B26 is to be detailed on an amended Landscape Plan to be provided to the certifying authority for approval prior to the issue of the relevant Construction Certificate.

C2 Landscaping of the Site

- a. Detailed landscape construction plans to be prepared by a registered landscape architect generally in accordance with schematic landscape plans as prepared by Site Image P/L (Landscape Masterplan SM10041 LA 101.B). Detailed plans are to incorporate the matters detailed in this condition and prepared in conjunction with the Vegetation Management Plan as outlines in the Total Earth Care report, including:
 - i. Public Domain
The entrances into the development, off Boondah Road and Macpherson Street are to:
 - Be embellished with street tree planting to the central median (400 litre in size) incorporating structural soil to accommodate 12m³ root volume per tree. 4-6m tree spacing to landscape edges along entryway with 400 litre tree species and grasses/groundcovers at 4-6m².
 - Incorporate entry identification of the estate name and feature paving stencilling to roadway.
 - At least 2 metered watering points.
 - ii. Street Trees/Garden Areas to Road Verges (Boondah/Macpherson Street and Internal Access Roadways)
 - 400 litre street trees (as indicated on plan).
 - No turf to road verge areas, garden areas planted in accordance with Warriewood Valley Landscape Masterplan in relation to species @ 4-6 plants per m².
 - iii. Internal Access ways (between Buildings A, B, C and F, G):
 - Central access path to be 2.4m in width reinforced concrete (exposed aggregate/coloured concrete or unit paving on concrete). Trees to pathway to be at 6m centres along the pathway and installed at 200 litre sizes.
 - Gardens to all external planters in public domain to incorporate planting two per m² and include 200 litre trees as indicated on concept plan. All gardens to have minimum 500mm depth of soil medium.
 - Waterproof membranes to all on slab areas to be independently certified by waterproofing/membrane specialist as being fit for purpose and being effectively installed.
 - All playground/fitness equipment to be in accordance with AS4685, AS4486 and AS4422. All equipment as installed is to be independently certified as complying with the nominated standards prior to use by the public.

- All plant material is to be certified as complying with NATSPEC specifications prior to installation.
- iv. Building Setbacks to Macpherson Street/Boondah Road Frontages:
- Setback areas to be extensively landscaped to screen the building form. Tree planting to be as per the landscape plans hereby approved and incorporate 200L/400L tree sizes.
 - Three copies of a detailed Landscape Plan, drawn to scale, by a qualified landscape architect/ consultant, must be submitted to and approved prior to any relevant Construction Certificate for any works being issued.
- b. The Riparian Corridor (all land surrounding the creekline and wetlands including the Riparian Protection Zone shown in Dwg No LA102), including the Wetland Riparian edge, is to be planted in accordance with condition B26 and in accordance with the adopted *Warriewood Valley Urban Release Area Landscape Masterplan and Design Guidelines (Public Domain) 2006*.
- c. All landscaping in the approved plan is to be completed prior to an Occupation Certificate (Interim or Final) for the aboveground works being issued for that part of the site or the use commencing, whichever is earlier.

Prior to release of Occupation Certificate, all landscape works need to be certified as complying with approved landscape plans by a registered landscape architect.

- d. A Landscape Management Plan is to be prepared and implemented to outline the technique and frequency of maintenance tasks during the establishment of the landscaping and on a permanent basis. The Management Plan, is to be implemented for 24 months immediately following completion of the landscaping works on site, and is to incorporate a procedure for the replacement of failed plantings, and a reconsideration of other endemic species type where plantings do not respond to the conditions as expected. Evidence of engagement of maintenance contractor for 24 months for all landscape works as constructed by the applicant to be dedicated to Council, 24 month period to be completion of all landscape works as proposed. Evidence of engagement to be submitted to and approved by certifier/Council prior to issue of Occupation Certificate

This information is to be submitted with the Landscape Plan, in conjunction with this condition.

C3 Waste Management Plan

Prior to the relevant Construction Certificate for any works (including excavation) being issued, a Waste Management Plan is to be prepared and submitted to the Certifying Authority.

The Waste Management Plan is aimed to minimise waste materials (generated through demolition, excavation, construction and operation of the approved development) being disposed at an appropriate waste facility and where appropriate maximise opportunities for re-use/recycling, in accordance with the Waste Avoidance and Resource Recovery Strategy 2007.

The Plan is to include the following:

- a. The amount of demolition, excavation and construction wastes likely to be generated and how these materials are to be sorted and dealt with.
- b. the design and construction of the internal roads, driveways, turning circles and other infrastructure required for waste services in the development is in accordance with the stated document,

- c. all waste generated by the approved development (including residents, businesses and any other activity on the site) are to be collected by a private waste contractor,
- d. bulky waste items collected by a private waste contractor,
- e. Commitment to providing an on-site caretaker to manage the storage and removal of waste generated by the approved development.
- f. Commitment to retain the demolition, excavation and construction waste/recycling dockets will be retained on-site to confirm which authorised waste/recycling facilities received the material for recycling or disposal.

The Waste Management Plan is to be implemented prior to commencement of works and during the course of construction.

C4 Water Management Report and detailed Engineering Plans

- a. Prior to the issue of the relevant Construction Certificate, an updated Water Management Report and updated Civil and Infrastructure Drawings are to be submitted providing additional detailed designs, plans, specifications for all works to achieve full compliance with the Warriewood Valley Water Management Specification February 2001 (WMS 2001) and the Pittwater 21 Development Control Plan, based on Brown Consulting– Brown Consulting Report - Stormwater and Environmental Management Plan — Buffer Area 3 — Warriewood Valley, 14–18 Boondah Road, Warriewood (August 2010).
- b. The updated Water Management Report is to address the following:
 - i. Water Cycle Assessment
 - The demonstration that the impervious area of the development does not exceed 50% of the sector area.
 - ii. Flood Emergency Response
 - A detailed Flood Emergency Response Plan for the site and its surrounds (i.e. surrounding streets around the site) is required to cater for a flood up to the level of the probable maximum flood with a 2100 Climate Change Scenario (consistent with the NSW Government Guideline entitled “Flood Risk Management Guide – incorporating sea level rise benchmarks in flood risk assessments” (DECCW, August 2010).
 - The Flood Emergency Response Plan may involve evacuation from the site or 'shelter-in-place' and shall be incorporated in to the site's overall disaster/emergency management plan.
 - iii. Water Cycle Management – Bio-retention basins
 - The design of bio-retention basins is to prevent short-circuiting of water flow paths in all bio-retention basins, including judicious placement of inlets and outlets, and appropriate length to width ratios.
 - For safety reasons all bio-retention basins should either be enclosed with an effective security fence where submerged side slopes are steeper than a 1 in 8 batter down to a depth of at least 1.2 metres.
 - The design specifications for the bio-retention basin shall be in accordance with best practice, to meet safety, environmental, aesthetic, and practical long term maintenance constraints of the site.
 - The bio-retention basins should be located outside the 10m Vegetated Wetland Buffer Zone.
 - Groundwater sampling is to be undertaken in the vicinity of the bio-retention systems to ensure that any elevated nutrient concentrations in the groundwater system are managed through the design and construction process.

- iv. **SQID Management/ Maintenance Plan**
 - A comprehensive SQID Management/ Maintenance Plan to practically achieve long term maintenance of all water management facilities used in the development is to be prepared.
 - The Plan is to make provisions for the monitoring and reporting of the effectiveness of all water management structures. The plan is to provide details of the location, type, flow capacities, pollutant removal efficiencies, replacement life of components, access and monitoring points, and the general functioning of all Stormwater Quality Improvement Devices (SQIDS) and water management facilities and compliance with water quality.
 - v. **Water and Sediment Quality Monitoring Plan**
 - A comprehensive Water and Sediment Quality Monitoring Plan is to be prepared and maintained over the life of the development, with supporting evidence of water quality conditions at key stormwater inlet and discharge points.
 - The Plan is to provide a practical framework for the monitoring and reporting of water quality specific to the development, and mechanisms for enacting remedial measures should non-compliances occur.
 - vi. **Mosquito Risk Assessment**
 - A mosquito risk assessment is to be undertaken by an appropriately experienced and qualified medical entomologist for all proposed water management works to ensure that the mosquito risk is minimised.
- c. The detailed engineering design, construction plans and specifications for the water management system are to be in accordance with the updated Water Management Report. The water management system is to include the design for:
- i. A stormwater drainage system, which drains collected roof, road and surface water from the site and is to cater for flows from upstream catchments. The system is to include combined piped and overland flow components and comply with relevant Australian Standards and contemporary engineering best practice.
 - ii. All stormwater collection points, including On-site Detention, with details of location, volume, maintenance access points, and all system connections to achieve full compliance with water quality and quantity objectives.
 - iii. The trunk drainage system construction plans are to include longitudinal sections, cross sections, pit and pipe sizes and types and related civil engineering works. The detailed design is to include:
 - Lateral pipelines and associated drainage structures to connect flow from adjacent sites.
 - Pit and headwall inlets to the drainage systems are to be hydraulically efficient, provide ease of access for maintenance, be easy to maintain and provide for public safety. These structures are to be fully located within the subject development site.
 - Outlet structures into Fern Creek with rock surround environmentally aesthetic finish.
 - The overland flow path along the western boundary is to be designed to convey peak flows from Macpherson Street to Fern Creek during the PMF event;
 - The existing overland flowpath through the existing Swamp Oak Forest from Boondah Road to the Warriewood Wetlands is to be maintained at or below existing levels.
 - Earthwork details including volumes and cross-sections to sufficiently identify location of works for floodplain compensatory works and water management

facilities. The earthworks details are to demonstrate that no excavation works will be carried out within 10 metres of the Wetland Buffer Zone.

- d. The Water Management Report, and all associated plans and detailed design are to be certified as being in accordance with the Brown Water Management Report and as meeting the requirements of this condition.
 - i. The certification is to be provided by a qualified practising Civil Engineer with corporate membership of Engineers Australia (MIEAust), or who is eligible to become a corporate member and has appropriate experience and competence in urban stormwater (quantity & quality) and floodplain management.
 - ii. A copy of the updated and certified Water Management Report is to be provided to the Council for its records.

C5 Works in Fern Creek Corridor

- a. Prior to the issue of the relevant Construction Certificate, complete detailed design of all works associated with the construction of the Fern Creek corridor section on site, from Sector 11 common boundary to the existing pond in Warriewood Wetlands, is to be submitted to Council for assessment and subsequent approval.

The detail design forms part of this approval to facilitate inter-relationship between levels of the creekline and the development.

- i. The detailed design is to include plans, longitudinal sections, cross sections (and locations where there are hydraulic controls), location and details of rock outcrops, pools, riffles and full engineering specifications of these works and landscape works.
 - ii. The creekline corridor works within the 50 metre corridor are funded through the provisions of the Warriewood Valley Section 94 Contributions Plan except where the creekline corridor forms part of any overbank flood storage in which case any additional excavation is funded by the Applicant.
- b. Written approval, issued by Council, for the design works in Fern Creek corridor is to be provided to the Certifying Authority prior to the issue of the relevant Construction Certificate.

C6 Existing Public Roads - Roads Act Approval (Pittwater Council acting as the road authority under the Roads Act 1993)

Engineering plans and specifications for all roads, drainage and other civil engineering works within an existing Public Road reserve along the Macpherson Street frontage (including 5 and 7 Macpherson Street) and along the Boondah Road frontage, must be submitted to and a written approval under Section 139 of the *Roads Act* obtained from Council prior to the issue of the relevant Construction Certificate.

The Engineering Plans and specifications are to include the following matters:

- a. Macpherson Street and Boondah Road:
Works to the full length of the Macpherson Street (including 5 and 7 Macpherson Street) and Boondah Road frontages of the development site and including works associated with the intersection access to the development, being:
- b. Kerb and Guttering (vertical faced kerb only will be permitted)
- c. Landscaping (in accordance with condition C2 above)

- d. Roundabouts at:
 - i. The intersection of Macpherson Street with the Anglican Retirement Villages (ARV) sector entry road. (Remaining portion – all cost sharing to be agreed between the Applicant and ARV), and
 - ii. At the intersection of Macpherson Street and Boondah Road - kerb and gutter, footpath and landscape construction to accommodate the future roundabout.
- e. Road shoulder and road pavement construction, including pavement design and treatments for half road construction up to the road centre line or formation of recently construction pavement to pavement design criteria in Macpherson Street (4 x 106 ESA pavement design criteria).
- f. Footpath/cycleway 2.5m wide in Macpherson Street including 5 and 7 Macpherson Street, and 2.5m wide footpath/cycleway in Boondah Road.
- g. Associated road drainage for Macpherson Street and Boondah Road.
- h. Indented parking bays in accordance with the requirements of the Warriewood Valley Roads Masterplan.
- i. Indented bus bays in locations and to the requirements of Sydney Buses.
- j. Incorporation of the design and construction recommendations of the Arborist's Report referred to in condition C2 above necessary to achieve the retention of Bangalay Sand Forest where it is outside the approved development zone.
- k. Dedication of 12.5m² Road Reserve land being a splay corner (5 metres x 5 metres) at the intersection of Macpherson Street and Boondah Road to allow the construction of a roundabout.
- l. No vehicle access (other than for temporary construction works) permitted from any private property to either Boondah Road or Macpherson Street other than via the approved access road network.
- m. Entry treatments into the site:
 - i. The entry treatment for the internal through-road linking Macpherson Street and Boondah Road is to include kerb returns and pedestrian/cycle refuge at the intersection of the roadway with Macpherson Street and Boondah Road.
 - ii. The southern-most entry treatment for the internal road at Boondah Road (south of Building P) is to be designed and constructed as a standard access driveway and gutter crossing in accordance with Council driveway standards

C7 Internal Road Network (within the development site)

- a. Engineering plans and specifications for all roads, drainage and other civil engineering works within the development site are to include the following matters:
 - i. Pedestrian facilities;
 - ii. Pavement design and treatments. Where Kerb and Guttering does not form the edge of a road pavement in a street, a means of preventing vehicles from parking off the road pavement shall be provided;
 - iii. Drainage facilities and associated water treatment facilities;
 - iv. Threshold treatments;
 - v. Street landscape, including street lighting and sign posting;
 - vi. The entry treatment for the internal through-road linking Macpherson Street and Boondah Road, to include kerb returns and pedestrian/cycle refuge at the intersection of the roadway with Macpherson Street and Boondah Road.

- b. The engineering plans and specifications are to meet the objectives and requirements of the Warriewood Valley Roads Master Plan, AustRoads, AUSSPEC and Pittwater 21 Development Control Plan, and achieve a road design and landscaped effect consistent with the Warriewood Valley Concept Masterplan (Public Domain), dated October 2007.
- c. The engineering design and plans for road and drainage works must be certified as meeting the requirements of these conditions of Approval by a suitably qualified experienced civil engineer who is NPER accredited by Engineers Australia.

C8 Geotechnical Risk

Prior to the Construction Certificate for any works being issued, Form 2 of the *Geotechnical Risk Management Policy for Pittwater* (Appendix 5 of the Pittwater 21 DCP) is to be completed and submitted to the Certifying Authority.

The recommendations of the risk assessment required to manage the hazards identified in the submitted Geotechnical Report must be incorporated in the construction plans, and implemented prior to commencement of works and during construction.

C9 Bio-retention Basins Discharge Points

Discharge of the Bio-retention Pond to Warriewood Wetlands is to be via the existing discharge points (for example, the constructed pond within the Warriewood Wetlands). The Masterplan DA Drawing is to be amended such that the discharge point is relocated to the discharge points and all reference to discharge elsewhere into the wetlands is removed.

C10 Services

- a. Street lighting facilities to the development street frontages of the site and to the full length of the existing Public Road reserve frontages to Macpherson Street (including 5 and 7 Macpherson Street) and the frontage to Boondah Road) to be provided at the full cost of the developer and in accordance with the requirements of Energy Australia.
- b. All services, including electrical and telecommunications for the proposed lots, shall be provided underground. The location of any trenching and if required, a pad mounted substation(s) shall have regard for future and proposed landscaping in the public domain.
- c. All existing and new utility services and adjustments to those services including overhead power supply and communication cables located in the adjacent Public Road reserve verge are to be placed and/or relocated underground for the full length of the road reserve frontages (Macpherson Street including 5 and 7 Macpherson Street, and Boondah Road) of the development site at the full cost to the developer.

C11 Sydney Water – Section 73

The applicant is to consult with Sydney Water to establish whether there are any Section 73 Compliance Certificate requirements for this proposal, under the provisions of the Sydney Water Act, 1994.

A copy of any Notice of Requirements letter which may be issued by Sydney Water, is to be provided to the Certifying Authority with the Construction Certificate application.

Application must be made through an authorised Water Servicing Coordinator. Please refer to the Building Developing and Plumbing section of the web site www.sydneywater.com.au then refer to "Water Servicing Coordinator" under "Developing Your Land" or telephone 13 20 92 for assistance.

Following application a "Notice of Requirements" will advise of water and sewer infrastructure to be built and charges to be paid. Please make early contact with the Coordinator, since building of water/sewer infrastructure can be time consuming and may impact on other services and building, driveway or landscape design.

The Accredited Certifier or Council must be provided with a copy of plans that a Quick Check agent/ Sydney Water.

C12 Developer Contribution

a. The following is to be made for the provision of public infrastructure and services in respect of Stage 1 prior to the issue of the first Occupation Certificate for Stage 1 works:

- i. a total cash contribution of \$6,941,077.00 (subject to C12(c) below); and
- ii. works-in-kind to the value of \$2,586,359 (including the dedication of 6,681sqm of land in accordance with C12 (d) below).

The cash contribution required by Condition C12(a)(i) shall be proportionately reduced based on the final dwelling density and dwelling mix resulting from compliance with Condition B1 above. Details of the amended cash contribution and relevant calculations shall be submitted to and be approved by the Director General prior to the issue of the first Construction Certificate for the approved development.

- b. The Proponent shall provide evidence of payment of the cash contribution in Condition C12(a) to the Certifying Authority within 14 days of fulfilling C12(a).
- c. If the cash contribution for Stage 1 stated in C12 (a) (or any part of it) remains unpaid after 30 June 2011, the amount unpaid (whether it be the full cash contribution amount or a part of it) will increase on a quarterly basis in accordance with the applicable Consumer Price Index. If this Condition applies, the cash contribution payable under C12 (a) will be the total unpaid cash contribution in C12 (a) as adjusted under this Condition.
- d. The Proponent shall dedicate to Pittwater Council 15,601sqm of land as detailed on the plan attached to the correspondence from the Proponent dated 11 November 2010 for the provision of multi-functional creek line corridors and open space. The area to be dedicated is to be subject to a final plan of survey prepared by a registered surveyor and shall be detailed on the required Plan of Subdivision. The required dedication is to take place by way of subdivision. Evidence that the required Subdivision Certificate has been registered shall be provided to the Certifying Authority prior to the issue of the first Occupation Certificate for Stage 1 works.
- e. In accordance with the Warriewood Valley Section 94 Contributions Plan No. 15, the Proponent may negotiate with Council for the direct provision of other facilities and services and dedication of land (other than the 15,601sqm of land stated above) in lieu of the cash contribution in C12 (a) above (or any portion of that cash contribution) through an agreement for Material Public Benefit under the Warriewood Valley Section 94 Contributions Plan No. 15. Where an agreement for Material Public Benefit is sought in lieu of payment of the cash contributions in C12 (a) (or any portion of that cash contribution), the agreement for Material Public Benefit is to be finalised and signed by the Proponent and Pittwater Council prior to the release of the first Occupation Certificate.

ADVISORY NOTE:

As detailed in the Proponent's revised Statement of Commitments dated 12 November 2010 for the Concept Plan (MP09_0162), a total developer contribution for the provision of public infrastructure and services of \$19,041,428.00, comprising a total cash contribution of \$13,152,752.00 and an agreed schedule of works-in-kind to the value of \$5,888,676.00 (including the dedication of 15,601sqm of land), is to be made by the Proponent in relation to the project the subject of Concept Plan MP09_0162 (which comprises this Stage 1 and subsequent stage(s) of development). The total cash contribution detailed above shall be proportionately reduced based on

the final dwelling density and dwelling mix resulting from compliance with Modification 2 of the Concept Plan approval (MP09_0162) and Condition B1 of the Project Application approval (MP10_0177).

Following the payment of the Stage 1 contributions in C12(a), the remaining cash contribution for subsequent stage(s) of the project shall be paid prior to the issue of the first Occupation Certificate for any works associated with any subsequent stage(s) and evidence of payment shall be provided to the Certifying Authority as detailed in the Proponent's revised Statement of Commitments for the Concept Plan dated 12 November 2010, subject to conditions in any approval for subsequent stages(s) of the project.

C13 Construction Management Plan

Prior to issue of the Construction Certificate for any works, a comprehensive Construction Process Plan of Management (CPPM) is to be submitted to Council that outlines statutory obligations and regulatory requirements affecting all site works and procedures that will be implemented for the duration of all clearing works, earthworks and construction works associated with the approved development that will ensure the safety and amenity of the surrounding residents and the environment are not adversely affected. In particular, this Plan of Management must address the following requirements:

- a. A report from a qualified/practising acoustic consultant addressing the objective of demonstrating that the development may be constructed in compliance with the requirement that the L10 level measured over a period of not less than 15 minutes when the construction site is operating must not exceed the background level by more than 10 db(A) measured inside the nearest dwelling, and outlining the measures necessary for this objective to be achieved, such as: selection of specific noise reduced plant and equipment; silencing of construction site plant and equipment; location of plant; regular site monitoring by the site manager and the acoustic consultant etc. There must also be no delivery of machinery, trucks, plant or equipment to the site outside of the approved work hours.

If that acoustical report discloses that this objective cannot be satisfied, the report must identify the areas of non-compliance and must recommend the implementation of measures to achieve this objective insofar as reasonably practicable, all such measures to be to the reasonable satisfaction of the Council.

- b. Site management in terms of delivery of materials, parking for workers (including No Parking provisions in Boondah Road), removal of excavated materials, how temporary power will be supplied, and stabilisation of any temporary structures, stockpiles and stored materials.
- c. Measures for air quality management and in particular the control of airborne dust, litter and other contaminants in relation to the neighbouring properties.
- d. Waste management methodology including details of quantities of material to be transported and implementation of recycling measures (e.g. mulching of vegetative matter) in accordance with Condition C4 above.
- e. Stormwater, sediment and erosion control methodology.
- f. Commitment for the provision of site management signage including contact names and telephone numbers for 24 hour contact by the public relating to site issues including the name and telephone contact of the Principal Certifying Authority.

- g. The Construction Plan of Management must ensure there is a process of 'site induction' to be the responsibility of the site manager whereby each employee or contractor is advised of the procedures relating to the requirements of this Plan.

The construction must be carried out in accordance with the approved Construction Plan of Management for this development.

C18 NSW Office of Water

Licences under Part V of the Water Act 1912 are required for the works for purposes of temporary dewatering as part of proposed construction.

- a. Groundwater shall not be pumped or extracted for any purpose other than temporary construction dewatering.
- b. Pumped water (tailwater) shall not be allowed to discharge off-site (e.g., adjoining roads, stormwater system, sewage system, etc) without the controlling authorities approval and/or owners consent.
- c. The licensee shall allow (subject to Occupational Health and Safety Provisions) the NSW Office of Water or any person authorised by it, full and free access to the works (excavation or bore/borefield), either during or after construction, for the purpose of carrying out inspection or test of the works and its fittings and shall carry out any work or alterations deemed necessary by the NSW Office of Water for the protection and proper maintenance of the works, or the control of the water extracted to prevent wastage and for the protection of the quality and prevention from pollution or contamination of the groundwater.
- d. If the work is abandoned at any time the licensee shall notify the NSW Office of Water that the work has been abandoned and seal off the aquifer by such methods as agreed to or directed by the NSW Office of Water.

The following documents are to be supplied to the NSW Office of Water in a form suitable to the Office:

- e. A report predicting the impacts of pumping on any licensed groundwater users or groundwater dependent ecosystems in the vicinity of the site. Any adverse impacts will not be allowed and the project will need to be modified.
- f. A report assessing the potential for salt water intrusion to occur as a result of the dewatering. This report is only required for sites within 250m of any marine or estuarine foreshore area. The generation of conditions leading to salt water intrusion will not be allowed, and the proposal will need to be modified.
- g. Descriptions of the methods used and actual volume of groundwater to be pumped (kilolitres/mega litres) from the dewatering works, the works locations, the discharge rate (litres per second), duration of pumping (number of days/weeks), the amount of lowering of the water table and the anticipated quality of the pumped water.
- h. Descriptions of the actual volume of pumped water (tailwater) to be reinjected (kilolitres/mega litres), the reinjection locations, the disposal rate (litres per second), and duration of operation (number of days/weeks) and anticipated quality of treated water to be reinjected.
- i. Monitoring of groundwater levels (minimum of 3 weekly measurements of depth to water at a minimum of 3 locations broadly distributed across the site) beneath the proposed structure shall extend greater than one floor level into the existing ground level.

C19 Ground water

- a. The design and construction of the structure must preclude the need for permanent dewatering.
- b. The design and construction of the structure that may be impacted by any watertable must include a water proof retention system (i.e. a fully tanked structure) with adequate provision for future fluctuations of water table levels. (It is recommended that a minimum allowance for a water table variation of at least +/-1.0 metre beyond any expected fluctuation be provided). The actual water table fluctuation and fluctuation safety margin must be determined by a suitably qualified professional.
- c. Construction methods and material used in and for construction are not to cause pollution of the groundwater.
- d. Monitoring of groundwater levels is to be continued at least weekly during the construction stage and at least weekly over a period of at least 2 months following cessation of dewatering, with all records being provided to the NSW Office of Water on expiration of the licence. This requirement is only for sites where the proposed structure shall extend greater than one floor level into the existing ground level.
- e. Groundwater quality testing must be conducted (and report supplied to the NSW Office of Water). Samples must be taken prior to commencement of dewatering,) and ongoing to the satisfaction of the NSW Office of Water for any extraction and reinjection activities). Collection and testing and interpretation of results must be done by suitably qualified persons and NATA certified laboratory identifying the presence of any contaminants and comparison of the data against accepted water quality objectives or criteria.
- f. Discharge of any contaminated pumped water (tailwater) that is not to be reinjected, must comply with the provisions of the Protection of the Environment Operations Act 1997 and any requirements of the relevant controlling authority. The method of disposal of pumped water (i.e. street drainage to the stormwater system or discharge to sewer) and written permission from the relevant controlling authority must be presented to the NSW Office of Water in support of the licence application.
- g. Discharge of any contaminated pumped water (tailwater) that is reinjected, must comply with the provisions of the Protection of the Environment Operations Act 1997. The quality of any pumped water (tailwater) that is to be reinjected must be compatible with, or improve the intrinsic or ambient groundwater in the vicinity of the reinjection site. Contaminated groundwater is not to be reinjected into any aquifer. The following must be demonstrated in writing:
 - i. The treatment to be applied to the pumped water (tailwater) to remove any contamination,
 - ii. The measures to be adopted to prevent redistribution of any contamination in the groundwater system. Any reinjection proposal that is likely to further spread contamination within the groundwater system will not be allowed and the project will need to be modified.
 - iii. The means to avoid degrading impacts on the identified beneficial use of the groundwater. Any reinjection proposal that is likely to lower the identified beneficial use of a groundwater system will not be allowed and the project will need to be modified.
 - iv. The means to avoid degrading impacts on the identified beneficial use of the groundwater. Any reinjection proposal that is likely to lower the identified beneficial use of a groundwater system will not be allowed and the project will need to be modified.

- h. Written advice be provided from the Certifying Authority to the NSW Office of Water to certify that the following ground settlement issues have been addressed in reports submitted by the proponent:
- i. Assessment by a suitably qualified geotechnical professional that the proposed dewatering activity does not pose an unacceptable risk of off-site impacts such as damage to surrounding buildings or infrastructure as a result of differential sediment compaction and surface settlement during and following pumping of groundwater.
- j. Settlement monitoring activities to be undertaken prior to, during and for the required period of time following the dewatering pumping to confirm the impact predictions.
- k. Locations of settlement monitoring points, and schedules of measurement.

C 20 Ground water licence

An application must be completed on the prescribed form for the specific purpose of temporary construction dewatering and a licence obtained from the NSW Office of Water prior to the installation of the groundwater extraction works. A plan drawn to scale will be required with the application clearly identifying the location of dewatering installations.

Upon receipt of Approval from the Department of Planning a fully completed licence application form, unambiguous documentation of the means by which the below-ground areas of the development will be designed and constructed to prevent any groundwater seepage inflows (and therefore preclude any need for permanent or semi-permanent pumping), together with all other required supporting information, the NSW Office of Water will issue a Water Licence under Part 5 of the Water Act, 1912.

A Licence application under Part 5 of the Water Act 1912 must be accompanied by a \$151.00 fee and must specify the proposed volume of groundwater to be pumped in total (mega litres). The licence is also subject to administrative charges as determined from time to time by the Independent Pricing and Regulatory Tribunal (IPART)

End of this Section