Completion Date: 8/10/2023

REFERRAL RESPONSE – DEVELOPMENT ENGINEERING

FILE NO:	**Development Applications:** 598/2022/1
ADDRESS:	17 Dover Road ROSE BAY 2029
PROPOSAL:	Demolition of existing at-grade car park and encroaching structures and construction of: A mixed use building with frontage to Wilberforce Avenue incorporating a new multi-storey car park, ground floor retail premises and community centre and public amenities across multiple levels; Single storey ground floor retail building with frontage to Dover Road; and public domain and landscaping works.
FROM:	Mehrnaz Jamali – Development Engineer
TO:	Mr V Aleidzans

1. ISSUES

- None subject to conditions. Please refer to comments and conditions.

Council's Development Planning to Note:

- Council's Traffic Section must be consulted regarding the proposed Pedestrian Crossing fronting the site on Wilberforce Avenue.
- Conditions by DPI Water must be included.

2. DOCUMENTATION

I refer to the following documents received for this report:

- Statement of Environment Effects, unreferenced, prepared by SJB Planning, dated December 2022.
- Architectural Plans, Project No. 20018, Issue 3, prepared by AJ+C, dated 15/06/2023.
- Survey, referenced 52899, prepared by S.J. Dixon & Associates, dated 02/07/2020.
- Stormwater Management Plan, Job No. 201270, Revision P8, prepared by TTW, dated 22/09/2023.
- Civil Stormwater Report, referenced 201270, prepared by TTW, dated 9 December 2022.
- Stormwater Response to Council's Referral Response – Development Engineering, referenced 201270, prepared by TTW, dated 22 September 2023.
- Geotechnical Statement, Job No. 23921B, prepared by Ideal Geotech, dated January 2023.
- Geotechnical and Hydrogeological Report, referenced P2845_02 rev3, prepared by Morrow, dated 20 September 2023.
- Traffic Report – to be referenced by Council's Traffic section.
- Swept Path Analysis Plan, Job No. 201270, Revision P4, prepared by TTW, dated 14/08/2023.
- Council's Drainage referral response, dated 13/03/2023.
- Development Engineering referral response, dated 13/07/2023 and 6/09/2023.

3. ASSESSMENT

Comments have been prepared on the following. **Where Approval is recommended, Conditions of Consent follow at the end of the comments.**

a. Site Drainage comments

There are no objections to the Stormwater Management Plan, Job No. 201270, Revision P8, prepared by TTW, dated 22/09/2023 subject to the following conditions;

- *Other than amended by Council's Asset Engineer, the discharge of stormwater by direct connection to Council's existing belowground drainage system on Dover Road and New Castle Street and Council's relocated and redesigned belowground drainage system on Wilberforce Avenue.*
  As such, Council's existing belowground drainage system on Wilberforce Avenue must be relocated and redesigned as depicted on the referenced Stormwater Management Plan or as amended by Council's Asset Engineer. The line requires three (3) Kerb Inlet Pits (KIPs) over the new line, two (Pits 5 and 6) as shown on Stormwater Management Plans and an additional third KIP (not shown on plans) placed adjacent to the proposed Pedestrian Crossing with 0.5m clearance. An additional Standard Junction Pit (Pit 4) is also required over the new line fronting the site as demonstrated on the Stormwater Management Plan. A Standard Junction Pit (Pit 1) is to be place over Council's existing line on New Castle Avenue.
  Note: The Standard Junction Pit must be in accordance with Council's standard drawing DR3 and the KIPs must be standard double grated gully pits with a 1.8m kerb lintel and in accordance with Council's standard drawing DR1. The KIPs must be at least 0.5 metre away from any vehicular crossing. The grates must be Class D "bicycle friendly" type.
  Note: The proposed Council's underground system must be made by using minimum Class 4, 375mm RRJ steel reinforced concrete pipe (RCP).
  Longitudinal sections (scale 1:100) showing the extension of Council's underground system must be submitted with all stormwater pipes having a minimum 1% gradient. All design details and location of all existing public utility services must be included in the longitudinal section.
- *All section details must provide all relevant levels, including pipe inverts, top of water levels and dimensions.*
- *Provision of a Rain Garden with the minimum area determined by a study completed by a suitably qualified practitioner in accordance with Council's Chapter E2 "Stormwater and Flood Risk Management" DCP OR with a minimum area of 24m2.*

*(*All above points have been discussed with or requested by Council's Team Leader – Infrastructure Assets).*

The concept plan is subject to the submission and approval of Stormwater Management Plan for the site prior to release of the Construction Certificate. Details are to be in accordance with Council's Chapter E2 "Stormwater and Flood Risk Management" DCP and Local Approvals Policy. This is to ensure that site stormwater is disposed in a controlled and sustainable manner.

Council's Infrastructure and Sustainability Division is satisfied that adequate provision has been made for the disposal of stormwater from the land it is proposed to develop and complies with the provisions Council's Chapter E2 "Stormwater and Flood Risk Management" DCP.

b. Flooding & Overland Flow comments

The site is within a flood affected zone on both frontages.

Council's Drainage Engineer has provided the following comments:

I refer to the following documents received for this report:

23/37323 Document - TTW Letter Response - DA2022/598/1 - 17 Dover Road ROSE BAY
RECOMMENDATION

Council's drainage Engineer has determined that the development proposal is generally satisfactory, subject to the following conditions;

C.54 Flood Protection

The Construction Certificate plans and specifications, required by clause 139 of the Regulation, must include a Flood Risk Management Plan on the basis of the Flood Planning Level (FPL) detailing:

a. A permanent flood risk management plan shall be installed in a prominent area of the carpark.

b. Permanent brass plaques shall be fixed a prominent locations in the outdoor area indicating the 1% AEP flood level.

c. The Wilberforce entry terrace area and surrounding streetscape shall be designed so that it doesn't adversely affect upstream flood levels by an engineer experienced in flood mitigation.

d. The proposed non habitable floor levels near the Wilberforce Street shall be set at or above the flood planning level of 6.15m AHD

e. The proposed non habitable floor levels near Dover Road shall be set at or above the flood planning level of 7.05m AHD.

f. The vehicle entry off Dover road shall be protected by a physical threshold set at or above the flood planning level of 7.10m AHD.

g. The proposed below ground car park entry shall be protected by a physical threshold set at or above the flood planning level of 6.10m AHD.

h. Emergency self-powered lights, indicting the safe exit to a flood free area above the probable maximum flood (PMF) shall be installed in the car parking area.

i. Flood compatible materials shall be used for all flood exposed construction

j. All flood exposed electrical wiring and equipment shall be waterproofed.

k. All flood protection measures shall be inspected and certified as fit for purpose after construction is complete by an engineer experienced in flood mitigation.

c. Impacts on Council Infrastructure comments

Encroachment Works:

- *The encroachments by the proposed belowground basement carpark under Council's road reserve on Wilberforce Avenue requires formalisation. This must also include any overland encroachments by the proposed development.*
  Structural Engineering drawings for the encroaching structures must be provided and accompanied with a certificate by a suitably qualified engineer, certifying that all encroachments are structurally sound. All encroachments, including any landscaping, must be clearly depicted on plans and submitted to Council with a detailed survey plan.

Drainage Works:

- *Other than amended by Council's Asset Engineer, the discharge of stormwater by direct connection to Council's existing belowground drainage system on Dover Road and New Castle Street and Council's relocated and redesigned belowground drainage system on Wilberforce Avenue.*
  As such, Council's existing belowground drainage system on Wilberforce Avenue must be relocated and redesigned as depicted on the referenced Stormwater Management Plan or as amended by Council's Asset Engineer. The line requires three (3) Kerb Inlet Pits (KIPs) over the new line, two (Pits 5 and 6) as shown on Stormwater Management Plans and an additional third KIP (not shown on plans) placed adjacent to the proposed Pedestrian Crossing with 0.5m clearance. An additional Standard Junction Pit (Pit 4) is also required over the new line fronting the site as demonstrated on the Stormwater Management Plan. A Standard Junction Pit (Pit 1) is to be place over Council's existing line on New Castle Avenue.
  Note: The Standard Junction Pit must be in accordance with Council's standard drawing DR3 and the KIPs must be standard double grated gully pits with a 1.8m kerb lintel and in accordance with Council's standard drawing DR1. The KIPs must be at least 0.5 metre away from any vehicular crossing. The grates must be Class D "bicycle friendly" type.
  Note: The proposed Council's underground system must be made by using minimum Class 4, 375mm RRJ steel reinforced concrete pipe (RCP).
  Longitudinal sections (scale 1:100) showing the extension of Council's underground system must be submitted with all stormwater pipes having a minimum 1% gradient. All design details and location of all existing public utility services must be included in the longitudinal section.

Road and Footpath Works:

- *Refer to Council's Traffic referral response for vehicular crossing comments.*
- *Provision of a new Pedestrian Crossing fronting the site on Wilberforce Avenue. Council's Traffic Section must be consulted.*
- *The redundant Pram Ramps at the corner of Wilberforce Avenue and New Castle Street must be removed other than amended by Council's Asset Engineer.*
  ** Requested by Yasas de Silva - Council's Team Leader – Infrastructure Assets*

The remainder of Council's assets are in serviceable condition - conditions applied.

d. Traffic comments

Refer to Council's Traffic referral response for comments.

e. Vehicle Access & Accommodation comments

- *The vehicular access and accommodation generally satisfactory.*
- *Refer to Council's Traffic referral response for comments.*

f. Geotechnical, Hydrogeological and/or Structural comments

The following documents have been submitted in support of the application;

- *Geotechnical Statement, Job No. 23921B, prepared by Ideal Geotech, dated January 2023.*
- *Geotechnical and Hydrogeological Report, referenced P2845_02 rev3, prepared by Morrow, dated 20 September 2023.*

The proposal involves excavation for a basement carparking area, to a maximum depth of about 3.5m (not specified in the geotechnical report).

The report identified that;

a) *Fill - to depths of 0.2m to 0.8m.*
b) *Sand – various densities – to depths of 1.5m to 27.5m.*
c) *Sandstone bedrock – at depths 4.6m to 27.5m.*
d) *Groundwater table from 2.8m to 5.5m.*
e) *Ground anchors and underpinning may be utilised.*

Note: the Geotechnical and Hydrogeological Report must be prepared to ensure compliance with every requirement within Council's document Attachment 6 - Guidelines for Geotechnical and Hydrogeological Reports and Section E2.2.10 of Council's Chapter E2 "Stormwater and Flood Risk Management" DCP.

Conditions covering these matters as well as others identified by Council have been added to the Referral.

Council's Infrastructure and Sustainability has no objection to the proposed excavation on technical grounds. Notwithstanding this, Council's Planning Officer is also to undertake an assessment of the proposed excavation against the relevant excavation objectives and controls prescribed under the LEP and RDCP.

Note: Use of any Ground Anchors or any retention system extending beyond site boundaries requires the approval of neighbouring properties in writing.

g. Other matters

Substantial encroachment by the proposed development over Council's road reserve and below the road reserve. Formalisation of all encroaching structures is required prior to CC approval.

4. RECOMMENDATION

Council's Development Engineer has determined that the proposal is satisfactory, subject to the following conditions:

Conditions of Consent

Please note that the standard conditions of consent are generally modified by the Infrastructure and Sustainability Division to suit a particular development application. Please ensure all Infrastructure and Sustainability conditions of consent are cut and pasted from this document only, and not inserted as standard conditions using the automatically generated (F3) function.

A. General Conditions

A.5 Approved Plans & Supporting Documents

Reference	Description	Author/Drawn	Date(s)
Job No. 201270, Revision P8	Stormwater Management Plan	TTW	22/09/2023
201270,	Civil Stormwater Report	TTW	9 December 2022
201270	Stormwater Response to Council's Referral Response – Development Engineering	TTW	22 September 2023
Job No. 23921B	Geotechnical Statement	Ideal Geotech	January 2023
P2845_02 rev3	Geotechnical and Hydrogeological Report	Morrow	20 September 2023
Job No. 201270, Revision P4	Swept Path Analysis Plan	TTW	14/08/2023

A.8 Ancillary Aspects of Development (section 4.17(2) of the Act)

A.31 No Underpinning works (Special Condition)

This development consent does NOT give approval to any works outside the boundaries of the subject site, including any underpinning works to any structures on adjoining properties without written approval from all affected properties.

B. Conditions which must be satisfied PRIOR TO THE DEMOLITION of any building or construction

B.7 Public Road Assets Prior to Any Work/Demolition

C. Conditions which must be satisfied PRIOR TO THE ISSUE OF ANY CONSTRUCTION CERTIFICATE

C.5 Payment of Long Service Levy, Security, Contributions and Fees

Property Damage Security Deposit - making good any damage caused to any property of the Council	$244,442	No	T115
Infrastructure Works Bond - completing any public work required in connection with the consent.	$679,341	No	T113

Public Road/Footpath Infrastructure Inspection Fee	$645	No	T45

C.13 Road and Public Domain Works

A separate application under section 138 of the *Roads Act* 1993 is to be made to, and be approved by Council for infrastructure works prior to the issuing of any Construction Certificate.

The following infrastructure works must be carried out at the Applicant's expense:

Encroachment Works:

a) The encroachments by the existing building (including landscaping) over Council's road reserve on Cambridge Street requires formalisation.
Structural Engineering drawings for the encroaching structures must be provided and accompanied with a certificate by a suitably qualified engineer, certifying that all encroachments are structurally sound. All new works and existing encroachments, including landscaping, must be clearly depicted on plans including a detailed survey plan.

Drainage Works:

b) Other than amended by Council's Asset Engineer, the discharge of stormwater by direct connection to Council's existing belowground drainage system on Dover Road and New Castle Street and Council's relocated and redesigned belowground drainage system on Wilberforce Avenue.
As such, Council's existing belowground drainage system on Wilberforce Avenue must be relocated and redesigned as depicted on the referenced Stormwater Management Plan or as amended by Council's Asset Engineer. The line requires three (3) Kerb Inlet Pits (KIPs) over the new line, two (Pits 5 and 6) as shown on Stormwater Management Plans and an additional third KIP (not shown on plans) placed adjacent to the proposed Pedestrian Crossing with 0.5m clearance. An additional Standard Junction Pit (Pit 4) is also required over the new line fronting the site as demonstrated on the Stormwater Management Plan. A Standard Junction Pit (Pit 1) is to be place over Council's existing line on New Castle Avenue.
Note: The Standard Junction Pit must be in accordance with Council's standard drawing DR3 and the KIPs must be standard double grated gully pits with a 1.8m kerb lintel and in accordance with Council's standard drawing DR1. The KIPs must be at least 0.5 metre away from any vehicular crossing. The grates must be Class D "bicycle friendly" type.
Note: The proposed Council's underground system must be made by using minimum Class 4, 375mm RRJ steel reinforced concrete pipe (RCP).
Longitudinal sections (scale 1:100) showing the extension of Council's underground system must be submitted with all stormwater pipes having a minimum 1% gradient. All design details and location of all existing public utility services must be included in the longitudinal section.

Road and Footpath Works:

c) Refer to other condition imposed by Council's Traffic Engineer.
d) Refer to other condition imposed by Council's Traffic Engineer.
e) Provision of a new Pedestrian Crossing fronting the site on Wilberforce Avenue in accordance with Council's Specifications. Council's Traffic Section to be consulted.

f) The redundant Pram Ramps at the corner of Wilberforce Avenue and New Castle Street must be removed other than amended by Council's Asset Engineer.
g) Removal and replacement of all cracked or damaged footpath and kerb and gutter for the full width of the property on all road frontages in accordance with Council's standard drawing RF3.
h) Removal of all driveway crossings and kerb laybacks which will be no longer required.
i) Reinstatement of footpath, kerb and gutter to match existing.
j) Where a grass verge exists, the balance of the area between the footpath and the kerb over the full frontage of the proposed development must be turfed. The grass verge must be constructed to contain a uniform minimum 75mm of friable growing medium and have a total cover of Couch turf.

Note: To ensure that this work is completed to Council's satisfaction, this consent by separate condition, may impose one or more Infrastructure Works Bonds.
Note: *Road* has the same meaning as in the *Roads Act 1993*.
Note: The intent of this condition is that the design of the road, footpaths, driveway crossings and public stormwater drainage works must be detailed and approved prior to the issue of any Construction Certificate. Changes in levels may arise from the detailed design of buildings, road, footpath, driveway crossing grades and stormwater. Changes required under *Roads Act 1993* approvals and Local Government Approvals may necessitate design and levels changes under this consent. This may in turn require the Applicant to seek to amend this consent.
Note: See *section K. Advisings* of this consent titled *Roads Act Application*.
Standard Condition: C13 (Autotext CC13)

C.21 Provision of Energy Supplies

C.25 Soil and Water Management Plan – Submissions & Approval

C.36 Professional Engineering Details

C.37 Engineer Certification (Special Condition)

This development consent does NOT give approval to any works outside the boundaries of the subject property including any underpinning works to any structures on adjoining properties without written approval from all affected properties.
Any structural design is not to incorporate any underpinning works which encroaches outside the boundaries of the subject property without written approval from all affected properties.

C.40 Geotechnical and Hydrogeological Design, Certification & Monitoring

The Construction Certificate plans and specification required to be submitted to the Certifying Authority pursuant to clause 139 of the *Regulation* must be accompanied by a Geotechnical / Hydrogeological Monitoring Program together with civil and structural engineering details for foundation retaining walls, footings, basement tanking, and subsoil drainage systems, as applicable, prepared by a professional engineer, who is suitably qualified and experienced in geotechnical and hydrogeological engineering.

Note: the Geotechnical and Hydrogeological Report must be prepared to ensure compliance with every requirement within Council's document Attachment 6 - Guidelines for Geotechnical and Hydrogeological Reports and Section E2.2.10 of Council's Chapter E2 "Stormwater and Flood Risk Management" DCP.

Geotechnical reports must be prepared by an appropriately qualified Geotechnical Engineer who is NER registered with a minimum of 10 years practice in the geotechnical field in the last 15 years.

These details must be certified by a professional engineer to:

a) Provide appropriate support and retention to ensure there will be no ground settlement or movement, during excavation or after construction, sufficient to cause an adverse impact on adjoining property or public infrastructure.
b) Provide appropriate support and retention to ensure there will be no adverse impact on surrounding property or infrastructure as a result of changes in local hydrogeology (behaviour of groundwater).
c) Provide foundation tanking prior to excavation such that any temporary changes to the groundwater level, during construction, will be kept within the historical range of natural groundwater fluctuations. Where the historical range of natural groundwater fluctuations is unknown, the design must demonstrate that changes in the level of the natural water table, due to construction, will not exceed 0.3m at any time.
d) Provide tanking of all below ground structures to prevent the entry of all ground water such that they are fully tanked and no on-going dewatering of the site is required.
e) Provide a Geotechnical and Hydrogeological Monitoring Program that:
    - Will detect any settlement associated with temporary and permanent works and structures,
    - Will detect deflection or movement of temporary and permanent retaining structures (foundation walls, shoring bracing or the like),
    - Will detect vibration in accordance with AS 2187.2-1993 Appendix J including acceptable velocity of vibration (peak particle velocity),
    - Will detect groundwater changes calibrated against natural groundwater variations,
    - Details the location and type of monitoring systems to be utilised,
    - Details the pre-set acceptable limits for peak particle velocity and ground water fluctuations,
    - Details recommended hold points to allow for the inspection and certification of geotechnical and hydrogeological measures by the professional engineer, and
    - Details a contingency plan.

    Standard Condition: C40 (Autotext: CC40)

C.41 Ground Anchors

This development consent does NOT give approval to any ground anchors encroaching onto adjoining private properties. Use of any Ground Anchors extending beyond site boundaries requires the approval of neighbouring private properties in writing.

The use of permanent ground anchors under Council land is not permitted.

Temporary ground anchors may be permitted, in accordance with Council's "Rock Anchor Policy", where alternative methods of stabilisation would not be practicable or viable, and where there would be benefits in terms of reduced community impact due to a shorter construction period, reduced disruption to pedestrian and vehicular traffic on adjacent public roads, and a safer working environment.

If temporary ground anchors under Council land are proposed, a separate application, including payment of fees, must be made to Council under section 138 of the *Roads Act 1993*. Application forms and Council's "Rock Anchor Policy" are available from Council's website. Approval may be granted subject to conditions of consent. Four weeks should be allowed for assessment.

Note: To ensure that this work is completed to Council's satisfaction, this consent by separate condition, may impose one or more Infrastructure Works Bonds.
Note: *Road* has the same meaning as in the *Roads Act 1993*.
Note: Clause 20 of the *Roads (General) Regulation 2000* prohibits excavation in the vicinity of roads as follows: "**Excavations adjacent to road** - A person must not excavate land in the vicinity of a road if the excavation is capable of causing damage to the road (such as by way of subsidence) or to any work or structure on the road." Separate approval is required under the *Roads Act 1993* for any underpinning, shoring, soil anchoring (temporary)) or the like within or under any road. Council will not give approval to permanent underpinning, shoring, and soil anchoring within or under any road.
Standard Condition: C41 (Autotext: CC41)

C.45 Parking Facilities

The Construction Certificate plans and specifications required by clause 139 of the *Regulation*, must include detailed plans and specifications for all bicycle, car and commercial vehicle parking in compliance with AS 2890.3:2015 *Parking Facilities - Bicycle Parking Facilities*, AS/NZS 2890.1:2004 : *Parking Facilities - Off-Street Car Parking* and AS 2890.2:2018 – *Off-Street Parking: Commercial Vehicle Facilities* respectively and including the following;

a) Refer to other condition imposed by Council's Traffic Engineer.

Access levels and grades must comply with access levels and grade required by Council under the *Roads Act* 1993.

The *Certifying Authority* has no discretion to reduce or increase the number or area of car parking or commercial parking spaces required to be provided and maintained by this consent.
Standard Condition: C45 (Autotext: CC45)

C.48 Relocation or Reconstruction of Council's Stormwater Drainage System

C.51 Stormwater Management Plan (site greater than 500m^2)

The Construction Certificate plans and specifications, required by clause 139 of the *Regulation*, must include a Stormwater Management Plan for the site and prepared by a suitably qualified and experienced civil engineer. The Stormwater Management Plan must detail:

a) General design in accordance with the Stormwater Management Plan, Job No. 201270, Revision P8, prepared by TTW, dated 22/09/2023, other than amended by this and other conditions;
b) Other than amended by Council's Asset Engineer, the discharge of stormwater by direct connection to Council's existing belowground drainage system on Dover Road and New Castle Street and Council's relocated and redesigned belowground drainage system on Wilberforce Avenue.
As such, Council's existing belowground drainage system on Wilberforce Avenue must be relocated and redesigned as depicted on the referenced Stormwater Management Plan or as amended by Council's Asset Engineer. The line requires

three (3) Kerb Inlet Pits (KIPs) over the new line, two (Pits 5 and 6) as shown on Stormwater Management Plans and an additional third KIP (not shown on plans) placed adjacent to the proposed Pedestrian Crossing with 0.5m clearance. An additional Standard Junction Pit (Pit 4) is also required over the new line fronting the site as demonstrated on the Stormwater Management Plan. A Standard Junction Pit (Pit 1) is to be place over Council's existing line on New Castle Avenue.
Note: The Standard Junction Pit must be in accordance with Council's standard drawing DR3 and the KIPs must be standard double grated gully pits with a 1.8m kerb lintel and in accordance with Council's standard drawing DR1. The KIPs must be at least 0.5 metre away from any vehicular crossing. The grates must be Class D "bicycle friendly" type.
Note: The proposed Council's underground system must be made by using minimum Class 4, 375mm RRJ steel reinforced concrete pipe (RCP).
Longitudinal sections (scale 1:100) showing the extension of Council's underground system must be submitted with all stormwater pipes having a minimum 1% gradient. All design details and location of all existing public utility services must be included in the longitudinal section.

c) The location of the existing Stormwater Drainage System including all pipes, inspection openings, surface drains, pits and their discharge location,
d) Any remedial works required to upgrade the existing Stormwater Drainage System crossing the footpath and any new kerb outlets,
e) Any new Stormwater Drainage Systems complying with the BCA,
f) Interceptor drain(s) at the site boundary to prevent stormwater flows from the site crossing the footpath,
g) Compliance with the objectives and performance requirements of the BCA,
h) Any rainwater tank (see Note below) required by BASIX commitments including Their overflow connection to the Stormwater Drainage System,
i) General compliance with Woollahra DCP 2015 Chapter E2 – Stormwater and Flood Risk Management.
j) Provision of Water Treatment/Quality Systems and Rain Gardens with the minimum area determined by a study completed by a suitably qualified practitioner in accordance with Council's Chapter E2 "Stormwater and Flood Risk Management" DCP OR with a minimum area of 24m2.
All section details must provide all relevant levels, including pipe inverts, top of water levels and dimensions.

The Stormwater Management Plan must also include the following specific requirements:

Layout plan
A detailed drainage plan at a scale of 1:100 based on drainage calculations prepared in accordance with the Institute of Engineers Australia publication, *Australian Rainfall and Run-off, 1987* edition or most current version thereof.

The layout plan must include:

a) All pipe layouts, dimensions, grades, lengths and material specification,
b) Location of the Rain Gardens and Stormwater Treatment Systems,
c) All invert levels reduced to Australian Height Datum (AHD),
d) Location and dimensions of all drainage pits,
e) Point and method of connection to Council's drainage infrastructure, and
f) Overland flow paths over impervious areas.

Stormwater Management Systems

The Systems utilised within the site must address:

a) Any potential conflict between existing and proposed trees and vegetation,
b) Internal dimensions and volume of the proposed retention storage,
c) Diameter of the outlet to the proposed retention storage basin,
d) Plans, elevations and sections showing the retention storage basin invert level, centre-line level of outlet, top water level, finished surface level and adjacent structures,
e) Details of access and maintenance facilities,
f) Construction and structural details of all tanks and pits and/or manufacturer's specifications for proprietary products,
g) Details of the emergency overland flow-path (to an approved Council drainage point) in the event of a blockage to the System, and
h) Non-removable fixing details for Orifice plates where used.

Copies of certificates of title
a) Showing the creation of private easements to drain water by gravity, if required.

Subsoil drainage
The subsoil drainage is to address:
a) Subsoil drainage details,
b) Clean out points, and
c) Discharge point.

Where any new *Stormwater Drainage System* crosses the footpath area within any road, separate approval under section 138 of the *Roads Act* 1993 must be obtained from Council for those works prior to the issue of any *Construction Certificate*.

All *Stormwater Drainage System* work within any road or public place must comply with Woollahra Municipal Council's *Specification for Roadworks, Drainage and Miscellaneous Works* dated February 2012.

Note: This Condition is imposed to ensure that site stormwater is disposed of in a controlled and sustainable manner.
Note: The collection, storage and use of rainwater is to be in accordance with *Standards Australia HB230-2008 "Rainwater Tank Design and Installation Handbook".*
Standard Condition: C.51 (Autotext CC51)

C.54 Flood Protection

The Construction Certificate plans and specifications, required by clause 139 of the Regulation, must include a Flood Risk Management Plan on the basis of the Flood Planning Level (FPL) detailing:

a) A permanent flood risk management plan must be installed in a prominent area of the carpark.
b) Permanent brass plaques must be fixed a prominent locations in the outdoor area indicating the 1% AEP flood level.
c) The Wilberforce Avenue entry terrace area and surrounding streetscape must be designed so that it does not adversely affect upstream flood levels by an engineer experienced in flood mitigation.
d) The proposed non habitable floor levels near the Wilberforce Avenue must be set at or above the flood planning level of 6.15m AHD.
e) The proposed non habitable floor levels near Dover Road must be set at or above the flood planning level of 7.05m AHD.

f) The vehicle entry off Dover Road must be protected by a physical threshold set at or above the flood planning level of 7.10m AHD.
g) The proposed below ground car park entry must be protected by a physical threshold set at or above the flood planning level of 6.10m AHD.
h) Emergency self-powered lights, indicting the safe exit to a flood free area above the probable maximum flood (PMF) must be installed in the car parking area.
i) Flood compatible materials must be used for all flood exposed construction.
j) All flood exposed electrical wiring and equipment must be waterproofed.
k) All flood protection measures must be inspected and certified as fit for purpose after construction is complete by an engineer experienced in flood mitigation.

Flood protection is to comply with Woollahra DCP 2015, Part E "General Controls for All Development" Chapter E2 "Stormwater and Flood Risk Management" DCP.

Note: The revised driveway profile, gradients and transitions must be in accordance with Australian Standard 2890.1 – 2004, Part 1 (Off-street car parking). The driveway profile submitted to Council must contain all relevant details: reduced levels, proposed grades and distances. Council will not allow alteration to existing reduced levels within the road or any other public place to achieve flood protection.
Standard Condition C.54 (autotext CC54)

D. Conditions which must be satisfied PRIOR TO THE COMMENCEMENT OF ANY DEVELOPMENT WORK

D.4 Dilapidation Reports for Existing Buildings

Dilapidation surveys and dilapidation reports must be conducted and prepared by a *professional engineer* (structural) for all buildings and/or structures that are located within the likely "zone of influence" of any excavation, dewatering and/or construction induced vibration as determined applicable by the Structural Engineer.

These properties must include (but is not limited to):

a) No. 8 Wilberforce Avenue
b) No. 18 Wilberforce Avenue
c) No. 7-13 Dover Road
d) No. 15 Dover Road
e) No. 19-21 Dover Road

The dilapidation reports must be completed and submitted to the *Certifying Authority* for approval. An approved copy of the reports must be submitted to Council with the *Notice of Commencement* prior to the commencement of any *development work*.

Where excavation of the site will extend below the level of any immediately adjoining building the *principal contractor* or *owner builder* must give the adjoining building owner(s) a copy of the dilapidation report for their building(s) and a copy of the *notice of commencement* required by Section 6.6(2) of the *Act* not less than two (2) days prior to the commencement of any work.

Note: The reasons for this condition are:
- To provide a record of the condition of buildings prior to development being carried out.
- To encourage developers and its contractors to use construction techniques that will minimise the risk of damage to buildings on neighbouring land.

Note: Also refer to the Dilapidation Report Advising for more information regarding this condition
Standard Condition: D4 (Autotext DD4)

D.5 Dilapidation Reports for Public Infrastructure

D.6 Adjoining Buildings Founded on Loose Foundation Materials

D.7 Piezometers for the Monitoring of Ground Water Levels

The Principal Contractor must be provide minimum 2 piezometers within the excavation area and a further minimum 2 piezometers around the perimeter of the wall. The piezometers are to be installed to monitor ground water levels (GWL) before and during all dewatering works for the construction phase.

The GWL monitoring wells and monitoring program must be maintained until the issue of the *Final Occupation Certificate*.

The GWL are to be regularly monitored during the course of the works as required by the work method statement for the control of GWL. Any damaged piezometers are to be replaced to allow uninterrupted monitoring.

Where there are any movements in the GWL outside a safe range set by the work method statement for the control of GWL, corrective action must be undertaken under the direction of the professional engineer (hydrological/geotechnical engineer).
Standard Condition: D7 (Autotext DD7)

D.10 Works (Construction) Zone – Approval & Implementation

D.14 Erosion & Sediment Control – Installation

E. Conditions which must be SATISFIED DURING ANY DEVELOPMENT WORK

E.7 Public Footpaths – Safety, Access and Maintenance

E.11 Maintenance of Environmental Controls

E.12 Compliance with Geotechnical / Hydrogeological Monitoring Program

E.13 Support of Adjoining Land and Buildings

E.14 Vibration Monitoring

E.15 Erosion & Sediment Controls – Maintenance

E.17 Disposal of Site Water during Construction

E.19 Site Cranes

E.20 Check Surveys - boundary location, building location, building height, stormwater drainage system and flood protection measures relative to Australian Height Datum

E.24 Compliance with Council's Specification for Roadworks, Drainage and Miscellaneous Works, Road Works and, Work within the Road and Footway

F. Conditions which must be satisfied PRIOR TO ANY OCCUPATION or use of the building (Part 4A of the Act and Part 8 Division 3 of the Regulation)

F.7 Commissioning & Certification of Systems & Works

F.9 Commissioning and Certification of Public Infrastructure Works

G. Conditions which must be satisfied PRIOR TO THE ISSUE OF ANY SUBDIVISION CERTIFICATE

G.4 Electricity Substations – Dedication as Road and/or Easements for Access

H. Conditions which must be satisfied prior to the issue of a FINAL OCCUPATION CERTIFICATE (s109C(1)(c))

H.13 Road Works (including footpaths)

H.14 Dilapidation Report for public infrastructure works

H.19 Covenant for Private Works on Council Property

Prior to the granting of an Occupation Certificate and to ensure the encroaching structures on and/or below Council public road reserve accord with Council's "Policy for Managing Encroachments on Council Road Reserves", the person with the benefit of this consent, must do the following:

a) Lodge an "Application to Formalise the proposed Encroachment on and/or below Council Land" with Council in consultation with Council's Property & Projects Department AND;
b) Enter into a legal agreement with Council for the encroachments by the existing building on and/or below Wilberforce Avenue, as depicted on the approved referenced plans within this consent.

The owner must enter into a legal agreement as follows:

A positive covenant, pursuant to section 88E of the *Conveyancing Act 1919,* must be created on the title of the subject property, providing for the indemnification of Council from any claims or actions, and the on-going maintenance of any private structures on or over or below Council property for which consent has been given, such as steps, retaining walls, access ways, overhang, balconies, awnings, signs and the like.

The wording of the Instrument must be in accordance with Council's standard format and the Instrument must be registered with the NSW Land Registry Services prior to the issuance of any Occupation Certificate.

Note: The required wording of the Instrument can be downloaded from Council's website www.woollahra.nsw.gov.au. The PC must supply a copy of the WAE plans to Council together with the Occupation Certificate.
Note: No Occupation Certificate must be issued until this condition has been satisfied.
Standard Condition: H19 (Autotext HH19)

H.20 Positive Covenant & Works-As-Executed Certification of Stormwater Systems

On completion of construction work, stormwater drainage works are to be certified by a *professional engineer* with Works-As-Executed drawings supplied to the *PCA* detailing:

a) Compliance with conditions of development consent relating to stormwater;
b) The structural adequacy of the Rain Gardens and Stormwater Treatment/Quality Systems.
c) That the works have been constructed in accordance with the approved design and will be in accordance with the submitted calculations;
d) Pipe invert levels and surface levels to Australian Height Datum;
e) Contours indicating the direction in which water will flow over land should the capacity of the pit be exceeded in a storm event exceeding design limits.

A positive covenant pursuant to section 88E of the *Conveyancing Act 1919* must be created on the title of the subject property, providing for the indemnification of Council from any claims or actions and for the on-going maintenance of the Rain Gardens and Stormwater Treatment/Quality Systems incorporated in the development. The wording of the Instrument must be in accordance with Council's standard format and the Instrument must be registered with the NSW Land Registry Services.

Note: The required wording of the Instrument can be downloaded from Council's website www.woollahra.nsw.gov.au. The PC must supply a copy of the WAE plans to Council together with the Final Occupation Certificate.
Note: The Final Occupation Certificate must not be issued until this condition has been satisfied.
Standard Condition: H20 (Autotext HH20)

I. Conditions which must be satisfied during the ONGOING USE OF THE DEVELOPMENT

I.29 On-going Maintenance of the Rain Gardens and Stormwater Treatment/Quality Systems (Special Heading and Context)

The Owner(s) must in accordance with this condition and any positive covenant:

a) Permit stormwater to be temporarily detained by the system;
b) Keep the system clean and free of silt rubbish and debris;
c) If the car park is used as a retention basin, a weather resistant sign must be maintained in a prominent position in the car park warning residents that periodic inundation of the car park may occur during heavy rain;
d) Maintain renew and repair as reasonably required from time to time the whole or part of the system so that it functions in a safe and efficient manner and in doing so complete the same within the time and in the manner reasonably specified in written notice issued by the Council;
e) Carry out the matters referred to in paragraphs (b) and (d) at the Owners expense;
f) Not make any alterations to the system or elements thereof without prior consent in writing of the Council and not interfere with the system or by its act or omission cause it to be interfered with so that it does not function or operate properly;
g) Permit the Council or its authorised agents from time to time upon giving reasonable notice (but at any time and without notice in the case of an

emergency) to enter and inspect the land with regard to compliance with the requirements of this covenant;

h) Comply with the terms of any written notice issued by Council in respect to the requirements of this clause within the time reasonably stated in the notice;

i) Where the Owner fails to comply with the Owner's obligations under this covenant, permit the Council or its agents at all times and on reasonable notice at the Owner's cost to enter the land with equipment, machinery or otherwise to carry out the works required by those obligations;

j) Indemnify the Council against all claims or actions and costs arising from those claims or actions which Council may suffer or incur in respect of the system and caused by an act or omission by the Owners in respect of the Owner's obligations under this condition.

Note: This condition has been imposed to ensure that owners are aware of require maintenance requirements for their stormwater systems.

Note: This condition is supplementary to the owner(s) obligations and Council's rights under any positive covenant.

Standard Condition: I29

K. Advisings

K.23 Dilapidation Report

K.24 *Roads Act 1993* Application