

Memorandum

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To The Mayor, Cr Susan Wynne
All Councillors

CC Executive Leadership Team

From Manager – Strategic Planning

Subject LATE CORRESPONDENCE TO COUNCIL MEETING 24 MAY 2021 - REVIEW OF PLANNING CONTROLS TO ADDRESS HYDROGEOLOGICAL AND GEOTECHNICAL IMPACTS

On 10 May 2021, a report on the review of planning controls to address hydrogeological and geotechnical impacts was considered by the *Environmental Planning Committee* (EPC) (Item R2).

The reasons for the report were to:

- respond to a Council resolution from 26 April 2021 to expand the application of draft amendments to *Chapter E2 Stormwater and Flood Risk Management* of the Woollahra DCP 2015.
- obtain Council's approval to exhibit *Draft Woollahra Development Control Plan (DCP) 2015* (Amendment 18).

During the course of the EPC meeting, staff were asked to amend the Draft DCP to place a greater emphasis on the environmental / ecological impacts of groundwater dewatering and use terminology consistent with *Clause 6.2 Earthworks* of the *Woollahra Local Environmental Plan (LEP) 2014*.

In response, staff have amended Draft Woollahra DCP 2015 (Amendment 18) to enhance the introductory text at Section 2.4.1 and Objective 1 at Section 2.4.2, and use terminology consistent with *Clause 6.2 Earthworks* of the Woollahra LEP 2014. An amended Draft Woollahra DCP 2015 (Amendment 18) is attached, with changes shown in **green**.

Should Council support these changes, Staff recommend that the recommendation for Item R2 of the EPC should read as follows:

- A. *THAT the report on the review to expand the application of draft amendments to Chapter E2 Stormwater and Flood Risk Management of the Woollahra Development Control Plan 2015 be received and noted.*
- B. *THAT Council resolve to exhibit Draft Woollahra Development Control Plan 2015 (Amendment No 18) as contained in the late correspondence to the Council meeting of 24 May 2021.*



Draft Woollahra Development Control Plan 2015 (Amendment 18)

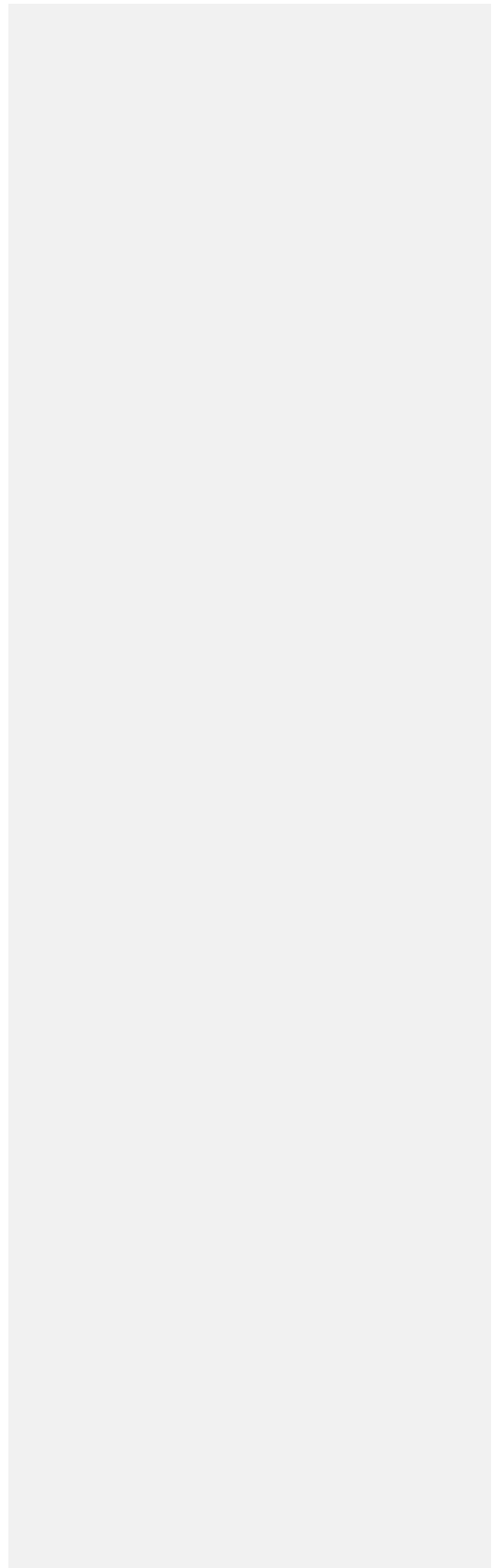
Prepared Date:	May 2021
Adopted:	TBC
Commenced:	TBC
Division/Department:	Strategic Planning
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Draft Woollahra Development Control Plan 2015 (Amendment No 18)

Part 1 Preliminary

1.1 Background

Draft Woollahra DCP 2015 (Amendment No 18) contains amendments to Chapter *D5 Double Bay Centre* related to section *D5.6.7 Geotechnology and hydrogeology* and Chapter *E2 Stormwater and Flood Risk Management* related to section *E2.2.10 Groundwater (hydrogeology)*.

On 25 February 2019 Council resolved:

THAT Council:

- A. Staff meet with concerned Double Bay residents and outline the approval process that was undertaken in relation to the DA and dewatering of 4-8 Patterson Street, Double Bay and other sites that have been approved for dewatering in Double Bay.*
- B. Follow up with the NSW Department of Primary Industry to ascertain the results of their enquiries into this issue.*
- C. Obtain a report from an expert hydro-geologist (and/or appropriate expert) informing Council as to whether there is any short, medium or long-term impacts associated with excavation, subterranean building and dewatering in the Double Bay area on the structural and geological integrity of Double Bay residential and commercial buildings, with a view to informing any amendments required to existing planning controls.*

In response to part C of Council's resolution, engineering consultants GHD Pty Ltd (GHD) were engaged in August 2019 to undertake an assessment of geotechnical and hydrogeological impacts associated with development in the Double Bay area.

On 12 April 2021, the *Double Bay – Hydrogeological Geotechnical Impacts Groundwater and Geotechnical Assessment Report* by GHD Pty Ltd, including implications on the planning controls was presented to the Environmental Planning Committee (EPC).

On 26 April 2021, Council resolved:

- A. THAT a planning proposal be prepared to amend the Woollahra Local Environmental Plan 2014 consistent with the staff recommendations identified in Table 1 of Annexure 4 of the report to the Environmental Planning Committee meeting on 12 April 2021.*
- B. THAT the planning proposal be referred to the Woollahra Local Planning Panel for advice.*
- C. THAT the advice of the Woollahra Local Planning Panel be reported to a future meeting of the Environmental Planning Committee.*
- D. THAT a draft development control plan is prepared and publicly exhibited to amend the Woollahra Development Control Plan 2015, consistent with the staff recommendations identified in Table 2 of Annexure 4 of the report to the Environmental Planning Committee meeting on 12 April 2021.*

- E. *THAT staff review the proposed controls in the draft development control plan to identify if these can be applied to Rose Bay and Bellevue Hill, and that this review is reported to a future meeting of the Environmental Planning Committee.*
- F. *THAT staff implement a condition of consent which ensures that, where relevant, the applicant has an appropriate current insurance policy to cover the reinstatement/repair of damages to surrounding properties as a result of the subject DA.*
- G. *THAT staff prepare a report which advises on mechanisms that can be utilised to prohibit excavation and dewatering in the most impacted zones in the Double Bay Floodplain (see the Double Bay Settlement zones in Figure 2 of the report to the Environmental Planning committee of 12 April 2021) including investigating:*
- *Amending the Local Environmental Plan (LEP),*
 - *Amending the Development Control Plan (DCP), and*
 - *Rezoning.*

This draft DCP has been prepared in response to Parts D and E of the Council resolution of 26 April 2021.

1.2 Name of plan

This plan is *Draft Woollahra Development Control Plan 2015 (Amendment No 18)*.

1.3 Objectives of the plan

The objectives of the plan are to:

- a) Strengthen the existing objectives and controls to minimise the impacts of groundwater drawdown as a consequence of underground structures.
- b) Ensure there are no adverse hydrogeological impacts on any surrounding properties and infrastructure, both during and after construction.
- c) Apply additional technical requirements to the Double Bay settlement area based on the analysis provided by GHD Pty Ltd.

1.4 Land to which this plan applies

This plan applies to all land within the Woollahra Municipality.

1.5 Relationship of this plan to the Act, Regulation and other plans or environmental planning instruments

This plan has been prepared under Division 3.6 of the *Environmental Planning and Assessment Act 1979* and Part 3 of the *Environmental Planning and Assessment Regulation 2000*.

Woollahra Local Environmental Plan 2014 (Woollahra LEP 2014) applies to the land to which this plan applies. In the event of an inconsistency between this plan and the Woollahra LEP 2014, the Woollahra LEP 2014 prevails.

1.6 Approval and commencement of this plan

This plan was approved by Woollahra Council on TBC and came into effect on TBC.

1.7 How this plan amends Woollahra DCP 2015

This plan amends Woollahra Development Control Plan 2015 in the manner set out in Part 2 of this plan.

Part 2 Amendments to Woollahra Development Control Plan 2015

This plan amends Woollahra DCP 2015 in the following manner:

Insertions – identified in blue and underlined

Deletions – ~~identified in red and strikethrough~~

Notes in the right hand margin of each section provide further explanation on the proposed amendments.

Chapter A1 Introduction

2.1 Amendments to clause A1.1.9 Savings and transitional provisions relating to development applications

2.1.1 Insert at the end of the clause

This DCP (as commenced on TBC) continues to apply to development applications, applications to modify consents under section 4.55 of the EP&A Act and applications for review of determination under Division 8.2 Reviews of the EP&A Act that were made prior to but not determined before the commencement of Amendment No 18 to this DCP.

2.2 Amendments to clause A1.4 List of amendments

2.2.1 Insert at the end of the clause

Amendment	Date of approval and Commencement	Description of amendment
<u>No 18</u>	<u>Date approved – TBC</u> <u>Date commenced - TBC</u>	<u>Amend Chapter D5 Double Bay Centre, section D5.6.7 Geotechnology and hydrogeology by deleting this section and combine with Chapter E2 Stormwater and Flood Risk Management section E2.2.10 Groundwater (hydrogeology).</u> <u>Amend Chapter E2 Stormwater and Flood Risk Management, section E2.2.10 Groundwater (hydrogeology).</u>

Chapter D5 Double Bay Centre

2.3 Amendments to section D5.6.7 Geotechnical and hydrogeology

Commented [DCP1]: Consolidate with E2.2.10 to strengthen the existing controls in E2.2.10 to apply to the entire LGA.

2.3.1 Delete the introductory note, as they are included in the section E2.2.10.

~~Council will normally require geotechnical and hydrogeological reports for development applications which include below ground structures.~~

~~This is because the subsurface conditions within the Double Bay Commercial Centre generally comprise water charged alluvial sediments to great depth. The alluvium is predominantly sand which is typically loose near the surface but may at some locations be interlayered with soft compressible clay or peat bands at depth.~~

~~The groundwater level in the valley area is generally high and varies between RL 1.0 and RL 2.5.~~

~~Any proposed development with below ground structures must consider the sub-surface conditions and the effects of construction on adjacent properties. In addition, those which are likely to extend below the level of seasonal fluctuations in the groundwater table, must also consider the effect of any changes induced in the sub-surface water levels and the groundwater flow patterns on adjacent properties. Unless site specific information exists to the contrary, excavations deeper than 1m must be assumed to have this potential to intersect the groundwater level.~~

~~Council's principal objective is to ensure there are no adverse geotechnical and hydrogeological impacts on any surrounding property and infrastructure as a result of development, during and after construction. Typically, adverse geotechnical impacts may include vibration induced settlements from construction methods and equipment and inadequate support of adjacent land during and after construction. Typically adverse hydrogeological impacts may include settlement induced by changes in the groundwater level and seepage problems.~~

2.3.2 Delete objectives O1 to O4, as they will be included in section E2.2.10, objectives O3-O6.

~~Objectives~~

~~Buildings must be designed and constructed with appropriate support and retention systems to ensure that:-~~

- ~~O1—There will be no ground settlement or movement, during and after construction, sufficient to cause an adverse impact on adjoining properties and infrastructure.~~
- ~~O2—There will be no change to the ground water level, during and after construction, sufficient to cause an adverse impact on surrounding properties and infrastructure.~~
- ~~O3—Vibration during construction is minimised or eliminated to ensure no adverse impact on surrounding properties and infrastructure.~~
- ~~O4—The risk of damage to adjacent existing property and infrastructure by the new development will be reduced to a level no greater than that from an event with an "unlikely" likelihood of occurrence and "minor" consequence.~~

~~Note: "adverse impact" means any damage caused to the improvements on adjoining properties by the demolition, excavation or construction on the development site.~~

2.3.3 Remove C1 and its associated notes, as it will be included in section E2.2.10, C4.

~~Controls-~~

~~C1 Excavation below 1m is accompanied by a geotechnical report and a structural report to demonstrate that the works will not have any adverse effect on the neighbouring structures.~~

~~Note: Council may identify other circumstances where these reports are required. All reports must be prepared in accordance with Council's guidelines. Council may also require the preparation and submission of a pre-commencement dilapidation report for properties neighbouring the development.~~

~~Development applications include a design statement and supporting drawings (if necessary) that show the proposed design measures minimise risk and ensure that no adverse impacts will occur.~~

Chapter E2 Stormwater and Flood Risk Management

2.4 Amendments to section E2.2.10 Groundwater (hydrogeology)

2.4.1 Insert introductory paragraph related to the geotechnical and hydrogeological requirements for development of below ground structures.

Introduction

Council will require geotechnical and hydrogeological reports for development applications, which include below ground structures.

Any proposed development with below ground structures must consider the sub-surface conditions and the effects of construction on surrounding properties. In addition, those which are likely to extend below the level of seasonal fluctuations in the groundwater table, must also consider the effect of any changes induced in the sub-surface water levels and the groundwater flow patterns on surrounding properties. Unless site specific information exists to the contrary, excavations deeper than 1m must be assumed to have this potential to intersect the groundwater level and shall be considered as below ground structures.

Council's principal objective is to ensure that earthworks and associated groundwater dewatering, during and after construction, will not have any adverse impacts on:

- Environmental functions and processes
- Neighbouring uses
- Cultural and heritage items
- Any features of the surrounding land and infrastructure that could be impacted by geotechnical and hydrogeological changes

Typically, adverse geotechnical impacts may include vibration induced settlements from construction methods and equipment and inadequate support of adjacent land during and after construction. Typically, adverse hydrogeological impacts may include settlement induced by changes in the groundwater level and seepage problems.

2.4.2 Insert new objectives O3 – O6 to strengthen the existing objectives of this section.

Objectives

~~O1 To ensure that there are no adverse hydrogeological impacts on any surrounding properties and infrastructure, both during and after construction.~~

O1 To ensure that earthworks and associated ground water dewatering, during and after construction, will not have any adverse impacts on:

- Environmental functions and processes
- Neighbouring uses
- Cultural and heritage items
- Any features of the surrounding land and infrastructure that could be impacted by geotechnical and hydrogeological changes

Commented [DCP2]: Insert introductory paragraph from section D5.6.7 to include technical requirements of the below ground structure to minimise the adverse geotechnical and hydrogeological impacts.

Commented [DCP3]: Enhance introductory text, consistent with the terminology used in Woollahra LEP 2014 Clause 6.2 Earthworks.

Commented [DCP4]: Delete existing Objective 1, and consolidate with new Objective 1.

Commented [DCP5]: Insert new Objective 1 consistent with terminology used in Woollahra LEP 2014 Clause 6.2 Earthworks.

O2 To maintain the existing groundwater level, both during and after construction.

O3 To minimise changes in groundwater level to protect surrounding property and infrastructure from damage

Buildings must be designed and constructed with appropriate support and retention systems to ensure that:

O4 There will be no ground settlement or movement, during and after construction, sufficient to cause an adverse impact on surrounding properties and infrastructure.

O5 Vibration during construction is minimised or eliminated to ensure no adverse impact on surrounding properties and infrastructure.

O6 The risk of damage to adjacent existing property and infrastructure by the new development will be reduced to a level no greater than that from an event with an "unlikely" likelihood of occurrence and "minor" consequence.

Note: "adverse impact" means any damage caused to the improvements on adjoining properties by the demolition, excavation or construction on the development site.

Commented [DCP6]: Insert a new objective to strengthen the existing objectives to minimise the impacts of below ground structures.

Commented [DCP7]: Insert objectives O4-O6 from section D5.6.7 to strengthen the objectives and apply them to the entire LGA.

2.4.3 Insert a note to identify which area this section apply to.

Controls

General controls that apply to the entire LGA.

Commented [DCP8]: Insert a note to introduce general controls that apply to the entire LGA.

2.4.4 Amend the wording of C1 to further strengthen this control to cover a larger impacted area.

~~Where this applies~~

Commented [DCP9]: Delete this note to avoid repetition.

C1 Unless site specific information exists to the contrary, excavations deeper than 1m are assumed to have a potential impact on groundwater.

Note: Where the groundwater level is high, any proposed development with below-ground structures must consider the sub-surface conditions and the impacts of construction on ~~adjacent~~ surrounding properties.

Below-ground structures which are likely to extend below the level of seasonal fluctuations in the groundwater table, must also consider the impact of any changes induced in the sub-surface water levels and the groundwater flow patterns on ~~adjacent~~ surrounding properties.

Commented [DCP10]: Delete the word 'adjacent' and replace with the word 'surrounding' to ensure that a larger area will be considered during the development assessment process.

The potential impacts of dewatering may extend a considerable distance away from the development site and this should be considered when designing development.

2.4.5 Amend the wording of C1 to further strengthen this control.

C2 All below-ground structures are fully ~~waterproofed and "tanked"~~. These type of structures must not collect and dispose of subsoil/seepage to kerb and gutter.

Commented [DCP11]: Enhance C2 to prevent the disposal of subsoil/seepage from the below ground structure to the kerb and gutter.

2.4.6 Remove notes of C3 as they will be included in C4 and C5.

C3 Groundwater does not discharged to Council's stormwater network, including stormwater pipes, pits and/or kerb and gutter.

Notes:

~~The hydrogeological report must include a site specific risk assessment matrix with appropriate definitions for qualitative measures of likelihood and consequences for assessing the risk of damage to existing developments by the new development.~~

All below-ground works must also comply with the requirements of the NSW Department of Primary Industries Office of Water.

Commented [DCP12]: Delete notes under C3 to avoid repetition. C4 and C5 include these notes and strengthen them as new controls.

~~A positive covenant will be required for the maintenance of any approved groundwater drainage system.~~

~~DAs must include a hydrogeological report, a design statement and supporting drawings (if required) that detail the measures proposed to ensure that there will be no adverse hydrogeological impacts. The report must be prepared by an experienced hydrogeological engineer, in accordance with Council's Guide for preparing Geotechnical and Hydrogeological Reports.~~ The design statement must confirm that the design of the belowground structure has been undertaken in accordance with the relevant Australian Standards where applicable.

2.4.7 **Insert** new C4 - C6 to strengthen the existing controls.

C4 Development applications which include below ground structures must include the following documents:

- i. Structural report
- ii. Geotechnical and hydrogeological reports
- iii. Design statement and supporting drawings that show the design measures proposed to minimise risks and to ensure that no adverse impacts will occur.

Note: Council may identify other circumstances where these reports are required. All reports must be prepared in accordance with Council's guidelines. Council may also require the preparation and submission of a pre-commencement dilapidation report for properties neighbouring the development.

C5 A qualified and experienced geotechnical and/or hydrogeological engineer must prepare the reports.

The reports must include a site-specific risk assessment matrix with appropriate definitions for qualitative measures of likelihood and consequences for assessing the risk of damage to existing developments by the new development.

C6 Where groundwater is present and dewatering is likely to occur on the site, the requirements of Council's DA Guide under the 'Investigations' section must be implemented.

C7 Any geotechnical and hydrogeological reports must contain an Implementation Plan, including a Monitoring Program, Contingency Plan and Construction Methodology.

Note: All reports and requirements must be prepared in accordance with Council's DA Guide. 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.

Commented [DCP13]: Insert new controls C4-C7 to strengthen the existing controls and to further minimise the hydrogeological impacts of the potential development with below ground structure.

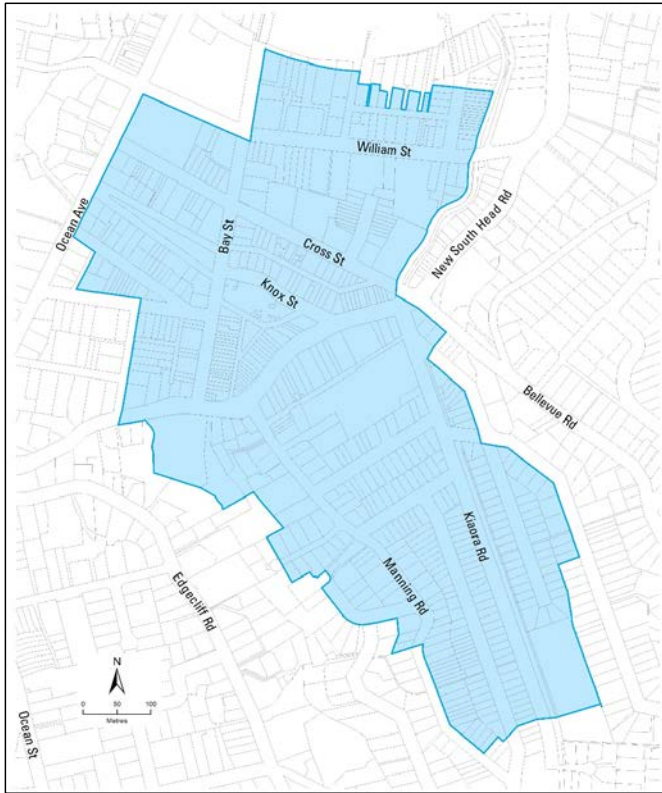
2.4.8 **Insert** the Double Bay settlement map.

Land in the Double Bay settlement area.

In addition to the general controls in this section, the following applies to the land in the Double Bay settlement area, as shown below.

Commented [DCP14]: Insert a note and a map to introduce the sensitive lands in the Double Bay settlement area.

FIGURE 1: Double Bay settlement area



2.4.9 Insert a new **C8** which applies to the Double Bay settlement area.

C8 Temporary changes to the groundwater level, due to construction, must not exceed 0.2 m from the average monitored pre-construction groundwater level unless calculations using the results of specific field testing, support a greater change and demonstrate that the change will not induce settlement greater than the characteristic surface movement of a Class S site as defined in Table 2.3 of Australian Standard AS2870-2011.

Commented [DCP15]: Insert a Control to specify the required limits and measurements for the below ground structure in the Double Bay settlement area to minimise the hydrogeological impacts of below ground structures.