

Item No: R1 Recommendation to Council
Subject: **SUBTERRANEAN HABITABLE SPACES**
Author: Kelly McKellar, Strategic Planner
Approvers: Anne White, Team Leader - Strategic Planning
Chris Bluett, Manager - Strategic Planning
Allan Coker, Director - Planning & Development
File No: 18/5681
Reason for Report: To respond to a notice of motion adopted by Council on 30 October 2017 in relation to the provisions regulating subterranean areas for habitation contained in Woollahra Development Control Plan 2015.

Recommendation

- A. That the report on potential provisions to regulate subterranean habitable spaces be received and noted.
- B. That Council resolve to prepare and exhibit a draft development control plan with the provisions contained in Annexure 3 to amend Chapter B3 General Development Controls in Woollahra Development Control Plan 2015.

1. Background

This report responds to a notice of motion adopted by Council on 30 October 2017:

THAT Council requests that staff prepare and submit a report to Council's Urban Planning Committee by March 2018, which investigates introducing provisions in the Woollahra Development Control Plan 2015 to regulate the use of subterranean areas for habitation. The report to include consideration of amending Chapter B3 general development controls objectives and Part B3.4 objective of excavation controls, and any other relevant provisions to ensure that applicants understand the parameters of acceptable use for subterranean areas.

The following background information accompanied the notice of motion on the agenda for the meeting:

The 28 November 2011 Urban Planning committee report noted that:

"The case studies referred to in this report show that subterranean areas are increasingly development to provide accommodation for purposes other than parking. This accommodation includes general storage, studios, gymnasiums, home theatres, cellars and watercraft storage etc. It is considered that an allowance should be made that would facilitate reasonable expectations for this type of accommodation in subterranean areas..."

There have been a number of applications recently, which seek to extend the uses of subterranean areas to residential accommodation, which compromises internal amenity standards (including solar access, ventilation and sense of enclosure) by being below ground level.

Subterranean habitable spaces may also unnecessarily burden the environmental footprint of the built form.

The varied topography and subdivision pattern of the Woollahra Municipality means that excavation is a common part of development. Excavation allows development to respond to the slope of the land or provide car parking and storage on-site that is visually unobtrusive. However, there are substantial environmental impacts associated with extensive excavation, as well as external impacts such as amenity impacts to adjoining properties during the excavation process.

Generally, below-ground habitable rooms are undesirable because they provide lower levels of indoor amenity and increase the level of site excavation. However, property owners may still seek to use basement spaces to create additional floor space within the existing building envelope. This may include additional residential amenities such as theatre rooms, wine cellars, and gyms.

The existing excavation controls in Woollahra Development Control Plan 2015 (the DCP) restrict the volume of material that may be excavated from a site. These controls are successfully regulating excavation, protecting local amenity and indirectly limiting subterranean habitation. However, the current controls do not address indoor amenity of habitable rooms.

The DCP contains the following definition of a *habitable room*:

as defined in the Building Code of Australia (BCA).

Note: Habitable room means a room used for normal domestic activities, and:

- a) includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room and sunroom; but*
- b) excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothesdrying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.*

For example home theatre rooms are considered habitable rooms under this definition while wine cellars are considered to be non-habitable rooms.

2. Current volumetric excavation provisions

The *Woollahra Local Environmental Plan 2014* (the LEP) and *Woollahra DCP 2015* are the primary documents that contain the development standards, objectives and controls that regulate development in the Municipality.

In 2012 to respond to concerns regarding excessive excavation, the current DCP excavation controls were introduced with the aim of limiting the volume of excavated material that may be removed from a site. Measureable volumetric controls provide certainty for the community and can be enforced equitably and transparently.

The objectives and controls that apply to excavation for residential development across the Municipality are contained in Part B3.4 of *Woollahra DCP 2015*. The volumetric controls restrict the amount of excavation material and only allow variations for what may reasonably be required for:

- On-site car parking
- Domestic storage requirements
- The building design to respond to site topography.

An extract of the existing excavation objectives and controls is in **Annexure 1**.

Based on the record of previous development approvals and discussions with the Development Assessment Team it is considered that the existing controls are practical and are operating successfully to limit excessive excavation.

Furthermore, the excavation controls indirectly protect residential amenity and discourage subterranean habitation. This is because most developments in the R2 Low Density Residential Zone use the allowable volume of excavation for the construction of on-site parking and domestic storage.

However, it is recognised that due to the special circumstances of the Municipality, development proposals may include subterranean areas. Recent development applications (DAs) proposing rooms partially or fully below existing ground level are on sites that typically have a significant slope or otherwise irregular topography. Additionally, these sites have often been significantly excavated previously when the existing development was constructed.

In these instances, the excavation controls may not discourage subterranean habitable rooms. It is therefore necessary to ensure that the indoor amenity of these spaces supports the well-being of residents.

3. Comparable planning controls from other Sydney Councils

In preparing this report staff researched best practice, including reviewing controls in other council's DCPs relating to subterranean spaces and excavation for sites zoned R2 Low Density Residential. The results of this research were then discussed with Council's DA Planners.

Development for subterranean habitation or excavation for extensive basements is generally discouraged across the Sydney Metropolitan area. Where it is permitted, it is typically restricted to one level that is wholly contained within the building footprint.

Councils including Mosman, North Sydney, Sutherland and Northern Beaches have DCP controls that restrict excavation to 1 metre below natural ground level, with exceptions only for parking and swimming pools. Additionally, Sutherland Shire Council permits exceptions for basements. However, these types of controls are not suited to the Woollahra Municipality because the existing volumetric excavation controls are successfully providing the flexibility needed to accommodate basement parking and storage, which is typically more than 1 metre in depth below existing ground level.

Strathfield Council allows single storey basements the full footprint of the building but prohibits any part of the basement from containing habitable space. This allows basements to create an entire additional level to a dwelling house underground for parking, storage and wine cellars. Given that the topography and historical subdivision pattern of the Woollahra Municipality often requires buildings to step down slopes it is considered that this type of control is not practical or flexible for application in Woollahra.

Waverley Council has DCP controls requiring all rooms to have at least one external wall entirely above existing ground level (see **Annexure 2**). This control is considered to be overly onerous for ensuring high levels of internal amenity, and consequently the inclusion of a similar control in Woollahra DCP 2015 is not supported.

The *Building Code of Australia* (BCA) aims to safeguard occupants from illness or loss of amenity. For dwellings (Class 1 buildings) the BCA requires that the spaces used by occupants are provided with adequate levels of fresh air, natural light and acoustic privacy. This provides the minimum level of indoor amenity. The provisions of Woollahra DCP 2015 should build upon these minimum requirements to promote appropriate levels of indoor amenity that reflect the high quality of development that is well-established across the Municipality.

4. Proposed amendment to Chapter B3 to better regulate subterranean habitation

The existing DCP controls indirectly discourage excavation for habitable rooms below ground level by limiting the volume of excavated material. To date this control has provided a transparent and effective limit on excessive excavation whilst allowing excavation for on-site car parking, storage and to accommodate sloping sites.

It is important to maintain the integrity of the excavation controls because considering each site on individual merit does not provide scope to address cumulative impacts. The purpose of variation mechanisms is to allow design solutions for difficult sites and special circumstances. Over-use of these mechanisms undermines the strategic planning behind the development standards and threatens the equity and transparency of local planning and development decisions.

As discussed earlier, in preparing this report staff have reviewed the operation of the existing excavation controls in Woollahra DCP 2015, recent DAs and the controls of other Sydney Metropolitan Councils. Based on this review staff recommend that:

- a. the existing volume based excavation controls are retained
- b. an additional section containing indoor amenity provisions is inserted into Woollahra DCP 2015, including requirements that rooms have direct natural light and direct natural ventilation. The proposed section is attached at **Annexure 3**.

New amenity objectives and controls will ensure that all rooms (excluding parking and storage areas) are provided with direct natural light and ventilation. This will promote higher levels of indoor residential amenity for the health and well-being of residents and discourage development for unsuitable subterranean living spaces.

Introducing a new indoor amenity section to the DCP is considered the best option because it will improve development outcomes for dwellings across the Municipality and will not affect the existing volumetric excavation controls.

It is noted that one of the proposed amenity controls is similar to an excavation provision in the repealed Woollahra Residential DCP 2003. It was not included in Woollahra DCP 2015 as it was considered to duplicate the aim of the current volumetric excavation provisions. The control stated that:

C 5.2.17: To minimise excavation, including cut and fill, on sloping sites and to encourage good quality internal environments, any habitable room of a dwelling must have at least one external wall fully above existing ground level

It is accepted that a part of this previous control aimed at excavation does duplicate the volumetric controls. However, it is considered that the benefit to the indoor amenity and regulation of subterranean spaces primarily derives from the improved light and ventilation derived from the window openings potentially included on the external wall. Consequently, staff do not recommend including this controls in the proposed new indoor amenity section.

5. Next steps

If Council decides to support the proposed amendments to Woollahra DCP 2015, the next step is for staff to prepare and exhibit a draft DCP based on the new section attached at **Annexure 3**.

The process for amending a DCP is set out in the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*.

The draft DCP must be publicly exhibited for a minimum of 28 days. Public notice will be given in the Wentworth Courier and on Council's public website each week of the exhibition and we will also notify:

- Adjoining councils including Randwick, Waverley, and the City of Sydney
- Public authorities including the NSW Department of Planning and Environment and the NSW Office of Environment and Heritage.

The outcome of public consultation will be reported to a future meeting of the Urban Planning Committee for consideration.

If Council resolves to proceed with the amendment and adopts the draft DCP it will come into effect after a notice is published in the local paper.

6. Conclusion

The existing excavation controls are successfully regulating excavation, protecting local amenity and indirectly limiting subterranean habitation. However, given the varied topography and subdivision pattern across the Woollahra Municipality, development may include habitable rooms below existing ground level.

Having reviewed recent DAs and best practice, this report recommends introducing a new indoor amenity section to chapter B3 in Woollahra DCP 2015 to support the existing controls and promote higher levels of indoor amenity. This will help to further promote good development outcomes and discourage the use of unsuitable subterranean spaces for habitation.

It is recommended that Council support the preparation and exhibition of a draft DCP to amend chapter B3 of Woollahra DCP 2015 with amendments as contained in **Annexure 3**.

Annexures

1. Extract from Chapter B3.4 of Woollahra Development Control Plan 2015 [↓](#)
2. Extract from Waverley Council's Development Control Plan [↓](#)
3. Proposed amendment to Woollahra Development Control Plan 2015 [↓](#)

Annexure 1

► Part B | General Residential

B3 | General Development Controls

B3.4 Excavation

Excavation is an accepted part of development in the Woollahra Municipality where the topography varies. Excavation allows buildings on the sloping sites to be designed to step down and sit into the hillside, and it also enables cars and storage to be accommodated on site in an unobtrusive manner.

However, there are significant environmental impacts associated with extensive excavation, as well as external impacts, such as amenity impacts to adjoining properties during the excavation process.

Council has determined that the volume excavated from a given site should be limited to that which might reasonably be required for car parking and domestic storage requirements, and to allow the building to respond to the site topography in an appropriate manner.

B3.4 Excavation	
Objectives	Controls
O1 To allow buildings to be designed and sited to relate to the topography.	C1 For a dwelling house, dual occupancy or semi-detached dwelling (including attached and detached garaging)—the maximum volume of excavation permitted is no greater than the volume shown in Figure 14A.
O2 To minimise excavation.	
O3 To ensure the cumulative impacts of excavation do not adversely impact land stabilisation, ground water flows and vegetation.	C2 For a residential flat building, multi dwelling housing, or attached dwelling development (including attached and detached garaging)—the maximum volume of excavation permitted is no greater than the volume shown in Figure 14B.
O4 To minimise structural risks to adjoining structures.	
O5 To minimise noise, vibration, dust and other amenity impacts to adjoining and adjacent properties.	C3 For any other use (including attached and detached garaging) not addressed in C1 and C2 above—the maximum volume of excavation permitted is no greater than the volume shown in Figure 14B.
	C4 A variation to the volume shown in Figures 14A and 14B will be considered, however the maximum volume of excavation permitted will only be the amount needed to accommodate: <ul style="list-style-type: none"> a) car parking to comply with the maximum rates in Part E1 of this DCP and any reasonable access thereto, if the maximum car parking rates are required by the Council; and b) storage at a rate of 20m³ (cubic metres) per dwelling if for a dwelling house, dual occupancy, semi-detached dwelling or attached housing; or

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► B3 pg.23

B3.4 Excavation	
Objectives	Controls
	<p>c) storage at a rate of 8m³ (cubic metres) per dwelling if for a residential flat building or multi dwelling housing development.</p> <p>C5 The volume controls in C1 and C2 above do not apply to backyard swimming pools and tennis courts located outside the building envelope. (Note: Separate controls apply which limit excavation, refer to Section 3.7.4 Ancillary development - swimming pools, tennis courts and outbuildings).</p> <p>C6 Basement walls are no closer to the boundary than permitted by the setback controls (refer to Figure 15).</p> <p>C7 Notwithstanding C6, basement walls for residential flat buildings, multi dwellings housing and attached dwellings are no closer to the boundary than 1.5m (see Figure 16).</p> <p>C8 Excavation in relation to an existing attached dwelling, semi-detached dwelling, or attached dual occupancy is not to occur under:</p> <ul style="list-style-type: none"> a) common party walls; b) footings to common party wall; c) freestanding boundary walls; d) footings to freestanding boundary walls. <p>C9 Excavation below 2m and/or within 1.5m of the boundary may be accompanied by a geotechnical and hydrogeological report and a structural report demonstrating that the works will not have any adverse effect on neighbouring structures.</p> <p>Note: Council may identify other circumstances where these reports are required. All reports must be prepared in accordance with Council's guidelines. As a condition of a development consent, Council may also require the preparation and submission of a dilapidation report for properties neighbouring the development.</p>

FIGURE 14A

Maximum volume of excavation for the site of:

- a dwelling house
- dual occupancy development
- a semi-detached dwelling

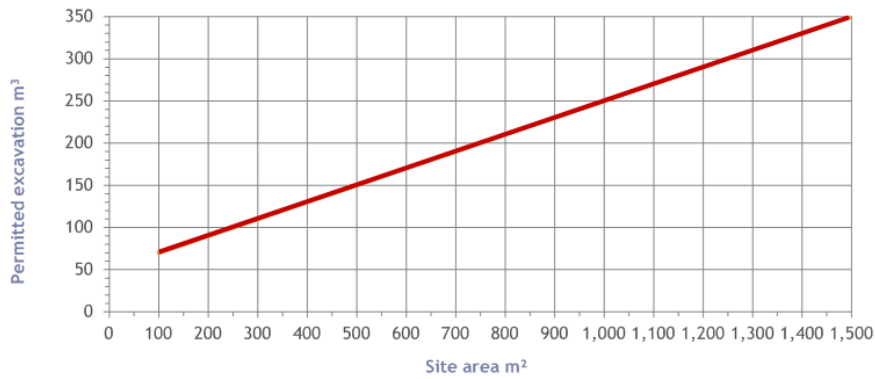
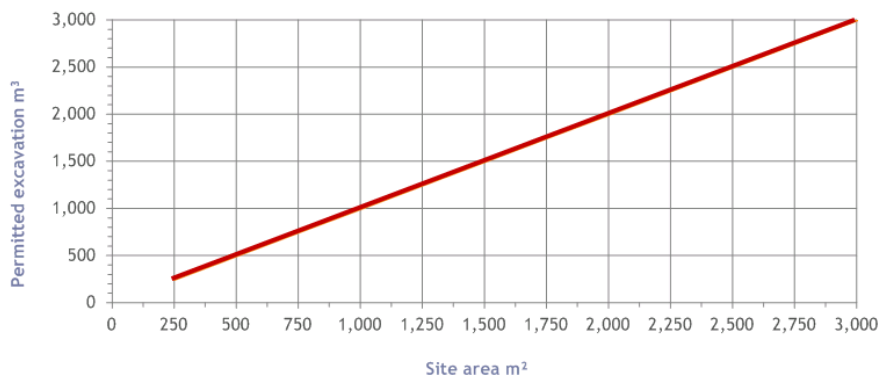


FIGURE 14B

Maximum volume of excavation for the site of:

- a residential flat building
- multi dwelling housing
- attached dwellings
- any other land use not addressed in controls C1 to C2 of Section B3.4 Excavation



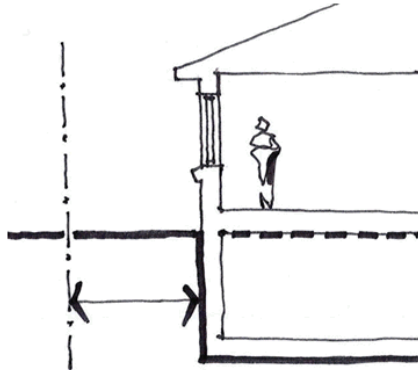


FIGURE 15
For a dwelling house, dual occupancy development and semi-detached dwellings basement walls can be no closer to the boundary than the required setback (refer to Figure 5).

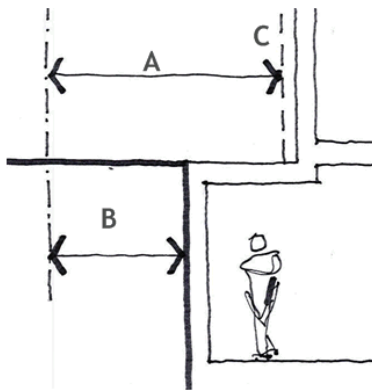


FIGURE 16
For a residential flat building, multi dwelling housing, attached dwellings and any other land use not addressed in controls C1 to C2 of Section B3.4 Excavation, basement walls can be no closer to the boundary than 1.5m.

A- Refer Figure 6

B- Minimum excavation setback 1.5m

C- Building envelope

Annexure 2

Dwelling House, Dual Occupancy, Secondary Dwelling, Semi-Detached Dwelling and Terrace Development C1

1.3 EXCAVATION

Excavation can have a detrimental effect on the local environment, neighbouring properties and streetscape.

Where excavation is proposed to exceed 3m in depth, is at or near cliff faces or on sloping sites that have a slope of 25% or more, a geotechnical report which addresses the stability of the site and surrounding properties must be submitted. The geotechnical report must confirm that the site is suitable for the proposed development and must list any relevant conditions. Please refer to Part A – Submission Requirements for additional information.

Objectives

- (a) To ensure the physical environment is preserved and enhanced by ensuring minimal site disturbance and the geotechnical stability of landfill and excavations.
- (b) To minimize cut and fill on sloping sites.
- (c) To encourage good quality internal environments including direct natural light and direct natural ventilation

Controls

- (a) Any habitable room of a dwelling must have at least one external wall fully above existing ground level with necessary glazing and openings for light and air (refer to Figure 5).
- (b) Fill shall not be used to raise the ground level.
- (c) Excavation is not permitted within 900mm of side boundaries and shall only occur within the building footprint except where access to a basement car park is required.
- (d) Excavation should not add to the visual bulk and scale of the building.
- (e) Excavation should not result in the loss of naturally occurring sandstone.
- (f) Excavation for garaging within sandstone walls facing the street must be minimised to preserve as much of the original wall as possible.
- (g) Development should accommodate stormwater detention tanks and storage systems within the excavated area.

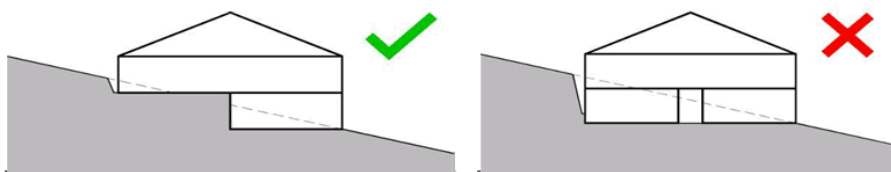


Figure 5 Habitable rooms are to have at least one external wall entirely above existing ground level

Annexure 3

B3.5.5 Internal amenity

Solar and daylight access and natural ventilation are important for providing pleasant and healthy indoor environments for people to live. This is particularly important for designing comfortable habitable rooms and other areas that are occupied for extended periods.

Provision of natural light and ventilation reduces the reliance on artificial lighting, heating, air-conditioning and mechanical ventilation. This improves energy efficiency and residential amenity.

Note:

Habitable rooms exclude bathrooms, corridors, hallways, stairways, lobbies, and other like spaces of a specialised nature occupied neither frequently nor for extended periods.

B3.5 Built form and context ▶ 3.5.5 Internal amenity	
Objectives	Controls
O1 To encourage high levels of internal amenity through the provision of direct natural light and direct natural ventilation.	C1 All habitable rooms in a dwelling must have at least one external wall primarily above the existing ground level which provides an unobstructed window opening.
O2 To encourage buildings that are designed to maximise natural light provision in habitable rooms.	C2 All habitable rooms in a dwelling must have direct natural light and direct natural ventilation.
	C3 The area of unobstructed window openings should be equal to at least 20% of the room floor area for habitable rooms.
	C4 Light wells must not be the primary air source for habitable rooms.
	C5 Any room of a dwelling either partially or fully below existing ground level (excluding basement parking and storage areas) must have a minimum width to depth ratio of 2:1 to support effective natural ground level and room circulation. NOTE: For the purposes of this provision, width is to be based on the external wall occupied by the primary window.

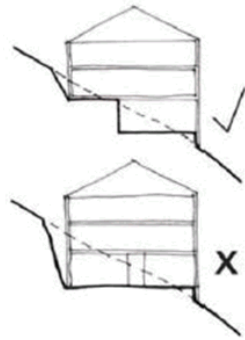


FIGURE 19A
Dwellings should be designed to locate rooms primarily above existing ground level to maximise the provision of natural light from unobstructed window openings.

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