

Surewin Parkview Pty Ltd
PO BOX 628
CHESTER HILL NSW 2162

APPLICATION

DA-2020/4

Date

8 May 2020

Dear Sir/Madam

Status Application

We are currently assessing your development application for the following:

Development	Residential - multi dwelling housing development comprising the construction of five (5) buildings with a total of 47 dwellings, 109 car parking spaces, associated earthworks, tree removal, internal accessway, landscaping, APZs, stormwater drainage, substation and Subdivision - Strata title
Location	Lot 90 DP 1086429 14 Cosgrove Avenue, KEIRAVILLE NSW 2500

An assessment of the application has been undertaken and a significant range of matters have been identified that are considered to have the potential to impede the timely progression toward determination.

Council will generally enable a request for further information to an applicant if it is considered the outstanding matters can be addressed within a reasonable timeframe. However, in this instance it is considered a re-design or reconsideration of the context of the proposal is required and it is unclear the length of time it will take for matters to be resolved in response to the issues raised.

In such circumstances Council requests consideration for the application be withdrawn and a more complete application be re-lodged at a future time. In this regard it is suggested that any revised proposal be first presented to our Design Review Panel, followed by a pre-lodgement meeting with Council prior to lodgement.

It is noted should correspondence be received requesting the withdrawal of the application, Council will consider a partial refund of applicable development assessment fees. Please advise us in 14 days accordingly, how you may wish to proceed.

A) External Referral Agencies

The referral comments received from the following external groups and are required to be addressed:

1. NSW Rural Fire Service (RFS)

The site is bushfire affected and the application is Integrated Development under section 100B of the Rural Fires Act 1997 and requires a Bushfire Safety Authority. The application was referred to the RFS and correspondence has been received dated 21 April 2020, with the RFS raising a number of matters that require to be addressed. Please refer to Attachment 1. Please note any changes that are made to the proposal must be consistent and address the other matters raised in this letter.

2. Natural Resources Access Regulator (NRAR)

The proposal involves works within 40 metres of the watercourse the development therefore it is considered Integrated Development pursuant to the Water Management Act 2000 requiring a Controlled Activity Approval under section 91(2). The development application was referred to NRAR for their General Terms of Approval. NRAR provided the following comments on the planning portal for the application:

The Natural Resources Access Regulator has reviewed documents for the above development application and considers that, for the purposes of the Water Management Act 2000 (WM Act), a controlled activity approval is not required and no further assessment by this agency is necessary. The proposal is generally consistent with the clearing of land exemption of the Water Management Regulation 2018 (Sch 4, cl 25).

Should the proposed development be varied in any way that results in development extending onto land that is waterfront land, or encompassing works that are defined as controlled activities, then the Natural Resources Access Regulator (NRAR) should be notified.

3. Office of Environment and Heritage (OEH)

The application was referred to OEH for concurrence with regard to the whether the proposal requires an Aboriginal heritage impact permit (AHIP) under section 90 of the National Parks and Wildlife Act 1974 and General Terms of Approval (GTAs) to be issued. Correspondence received from OEH dated 22 January 2020 as indicated that the application does not require an AHIP or GTAs however, has provided a number of matters that should be considered with regard to Aboriginal cultural heritage assessment. Please refer to Attachment 2.

4. Endeavour Energy

The application was referred to Endeavour Energy under clause 45 of State Environmental Planning Policy (Infrastructure) 2007 as development likely to affect an electricity transmission or distribution network. Correspondence was received from Endeavour Energy dated the 3 February 2020 raising a number of comments that required to be taken into consideration, at Attachment 3.

5. Sydney Water

The application was referred to Sydney Water under section 78 of the Sydney Water Act 1994. Comments were provided by Sydney Water dated 30 March 2020, at Attachment 4 for your information.

B) Council referral matters

1. Design Review Panel (DRP)

The DRP meeting minutes and recommendations from 26 March 2020 for the application are provided at Attachment 5. In summary, the Panel does not support the proposal in its current form and that a far more sensitive design approach and alternative strategies are to be developed for the site. The matters raised by DRP will need to be taken into consideration in conjunction with those matters identified in this letter. As mentioned above, it is recommended that a Design Review Panel meeting, with alternative concept designs of the proposal be held prior to lodgement of any new development application.

2. Environment

The site is approximately 4.15ha. The development application seeks consent for a multi dwelling housing development comprising the construction of five (5) buildings with a total of 47 dwellings, 109 car parking spaces, extensive associated earthworks, tree removal, internal accessway, landscaping, asset protection zones, stormwater drainage, substation and subdivision (strata title).

The proposal seeks to retain most of the existing trees and vegetation within the E2 zoned part of the subject lot – an area of 0.51 ha. This area is proposed to be managed by a Vegetation Management Plan (VMP). However, it appears that some of the E2 land may form part of the APZ.

The proposal is similar to that presented at the meeting for PL-2019/39. The notes for PL-2019/39 stated: “*The proposed development shall be sited and designed to firstly avoid adverse environmental impacts, secondly to minimise any adverse*

environmental impacts that cannot be avoided, thirdly to compensate/offset any adverse environmental impacts that cannot be minimised and to ensure positive environmental outcomes are maximised. Offsets should only be used to compensate for impacts when all feasible measures have first been taken to avoid and minimise those impacts.

Using this approach is expected to result in the development footprint including asset protection zones located within the already existing mainly cleared areas and a reduced development footprint compared with the concept plans presented at the pre-lodgement meeting.”

The proposal as submitted has not sufficiently demonstrated measures to avoid and minimise adverse environmental impacts. The proposal is considered an overdevelopment of the site resulting in unacceptable impacts on the environment.

a) Biodiversity

(NSW Biodiversity Conservation Act 2016, Clause 7.2 Natural Resource Sensitivity–Biodiversity of WLEP 2009 and Chapters E17 and E18 of Wollongong DCP 2009)

The proposal triggers the native vegetation clearance area threshold (0.25 hectares) for entry into the Biodiversity Offsets Scheme (BOS) and consequently, a Biodiversity Development Assessment Report (BDAR) has been prepared and submitted (Biosis, 29 November 2019).

The proposed vegetation removal involves areas containing Illawarra Subtropical Rainforest (Endangered under the BC Act and Critically Endangered under the EPBC Act) and hollow-bearing trees.

i) Natural Resource Sensitivity–Biodiversity

Much of the subject lot is mapped as *Natural Resource Sensitivity–Biodiversity* under Clause 7.2 of Wollongong LEP 2009. Approximately 1.5ha of mapped lands will be directly impacted as a result of this proposal. Under section (4) of Clause 7.2 of the LEP:

- (4) *Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development is consistent with the objectives of this clause and-*
- (a) *the development is designed, sited and managed to avoid potential adverse environmental impact, or*
 - (b) *if a potential adverse environmental impact cannot be avoided, the development -*
 - i. *is designed and sited so as to have minimum adverse environmental impact, and*
 - ii. *incorporates effective measures so as to have minimal adverse environmental impact, and*
 - iii. *mitigates any residual adverse environmental impact through the restoration of any existing disturbed or modified area on the site.*

The proposal has not demonstrated that it has been designed to avoid or minimise adverse impacts on the environment, particularly *Natural Resource Sensitivity–Biodiversity* mapped lands, with the sole constraint to the design appearing to be the geotechnical capability of the site. It is felt that significant opportunity exists to further avoid impacts to biodiversity across the site and the proposal does not meet the objectives of this clause in its current state.

- EPBC Act listed species and TECs are not assessed through the BAM, however the BDAR has reviewed the impacts on EPBC Act list Illawarra Subtropical Rainforest. Local vegetation mapping (NPWS 2002) indicates approximately 3ha of the CEEC within the locality. The removal of 0.2 hectares of Illawarra Subtropical Rainforest CEEC represent 6% of the community within the locality. The impact is not expected to require referral to the Commonwealth.
- Potential Impacts on EPBC Act listed Grey-headed Flying-fox have not been assessed. The BDAR argues that Grey-Headed flying-fox do not have the potential to utilise the site, stating that there are limited foraging sources on site and as such were discounted and not surveyed for. However, many feed trees were identified on site (as shown in the plot data of the BDAR) and there are camps located nearby. Council argues that the site provides suitable foraging habitat and as such an assessment against the EPBC Act is required.

ii) Biodiversity Assessment Report (BDAR)

The submitted BDAR has been reviewed and contains a number of deficiencies that are to be addressed:

- IBRAs:

- The BDAR seems to switch between IBRA subregions throughout the report. Pg 17 uses the Sydney Cataract IBRA subregion, whereas elsewhere, the Illawarra is used. Further, the BDAR states “The

subject land occurs within the Sydney Basin Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and predominantly within the Sydney Cataract IBRA subregion. The eastern corner of the study area falls within the Illawarra IBRA subregion. As the vegetation and threatened species habitat aligns more with the Illawarra IBRA subregion, this subregion has been used for the purpose of this assessment". However, the BAM Operational Manual - Stage 1 (p7) requires that "If the subject land is located within more than one IBRA subregion, the IBRA subregion selected should be the one within which the largest proportion of impact/improvement will occur, with justifications provided in the BAR".

- Figure 2 – Location Map doesn't clearly show the IBRA Sub-regions as required.
- Identification and naming of PCTs:
 - Figure 3 of the BAM does not include areas of native vegetation that were mapped as part of this BDAR exercise. The BAM Operational Manual - Stage 1 (p8) clearly states that *"Given this is primarily a desktop assessment the assessor is expected to use professional judgement and their knowledge of the landscape when determining native vegetation cover."*
 - The naming and identification of vegetation communities is inconsistent throughout the report. 'Acacia Scrub' and 'native grassland' have not been mapped as their respective PCTs and should be mapped and referred to as their PCT equivalent.
 - It is unclear if current PCTs have been used. This is to be clarified and addressed.
 - PCT1300 patch on southern boundary is referred to a poor condition in Figure 4, and moderate condition in Figure 6. This is to be clarified.
 - There is an inconsistency of the description of 'Acacia Scrub'. On pg 15 the BDAR states that "Acacia Scrub is native vegetation community that occurs following clearing of vegetation from the land. It consists of no canopy and a midstory of **wattle species only**". However, Table 1 on Pg 17 states that the "Acacia scrub consisted of Maiden's Wattle *Acacia maidenii* **and** *Streblus brunonianus* Whalebone Tree".
 - The BDAR has excluded all planted trees from assessment. Box 1 on pg15-16 of the *BAM Operational Manual - Stage 1* states that if the planted trees are native then they also must be considered as native vegetation and assigned to the most appropriate PCT. The BDAR is to be amended accordingly. Additional survey and assessment may be required.
- BAM Assessment Plots and Vegetation Integrity Scores
 - Whilst the plots do represent all the zones, many of the plots extend over multiple zones. This is not in accordance with the BAM and the BAM Operational Manual - Stage 1 (p24): *"Edge effects and ecotonal areas may distort the vegetation integrity score. Plots should be placed greater than 20 metres from ecotones, roads, disturbed areas (including watering points and fence lines) or the zone boundary."* Clear justification is required for this variation or additional assessments undertaken.
 - In assessing the BDAR, the data provided was entered into the BAM Calculator by the Environmental Assessment Officer. This resulted in different Vegetation Integrity scores to those that are presented in the BDAR, which has significant implications for the impact assessment and credit calculations. It is likely that there are reasons for this discrepancy, however, all raw field data sheets are to be provide to Council to assist in our assessment, and access to BOAMS and the BAM Calculator for this project is to be provided to Council for review.
- Threatened Species:
 - The BDAR states that (pg 30) *"One threatened species, Yellow-bellied Sheathtail Bat (ecosystem species), was recorded during targeted Anabat and stag-watching survey. One migratory species, Black-faced Monarch (Monarcha melanopsis), was recorded in the riparian vegetation along the first order waterway to the west of the subject land, within the study area"*. However, the Yellow-bellied Sheathtail Bat was not included as recorded on site in Table A.5 Fauna species recorded at the subject land. Further to this, Section 5.1 of the BDAR states that it was a Greater Broad-nosed Bat that was recorded. This is to be clarified and addressed.

- Little Bentwing-Bat (*Miniopterus australis*) is included in Table 5, but then not in Table 6 or section 4.3.2. It was also not identified as a survey target species in Table 8. This is to be clarified and addressed;
- Grey-Headed flying-fox was discounted and not surveyed for, stating that there are limited foraging sources on site in *Table A.6 Threatened fauna species assessment*. However, many feed trees were identified on site (as shown in the plot data) and there are recent sightings mapped on BIONet. Camps are also located within 5km of the site – this is well within their average forage distance. Council argues that the site provides suitable foraging habitat and surveys should be undertaken. The removal of this species from the list is not accepted.
- Eastern Bentwing-Bat was discounted and not surveyed for stating that there was no roosting habitat on site in *Table A.6 Threatened fauna species assessment*. However, suitable foraging habitat does exist on site or in the study area (rainforest, wet sclerophyll forest, creeks). Council argues that the site provides suitable foraging habitat and surveys should be undertaken. The removal of this species from the list is not accepted.
- *Myxophyes balbus* Stuttering Frog was discounted and not surveyed for stating that there was no suitable habitat on site in *Table A.6 Threatened fauna species assessment*. However, Table A.6 states: “Found in rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range.” Council argues that the site provides suitable foraging habitat and surveys should be undertaken. The removal of this species from the list is not accepted.
- *Pterostylis gibbosa* Illawarra Greenhood - *Table A. 5 Threatened flora species assessment* is incomplete for this species and is to be completed.
- *Epacris purpurascens* var. *Purpurascens* - *Table A. 5 Threatened flora species assessment* is incomplete for this species and is to be completed.
- *Rhodamnia rubescens* Scrub Turpentine has not been identified as potential threatened species located on site, despite numerous records within a 5km radius. It is to be included within the BDAR and appropriate survey and assessment undertaken.
- Table 10 of the BDAR states that “Impacts of development on the habitat of threatened species or ecological communities associated with non-native vegetation - The proposal will result in the removal of some planted native trees. However, there were no threatened species recorded within the subject land that rely on these trees for resources.” This may not be an accurate statement as no assessment was undertaken for Grey-Headed flying-foxes. This is to be re-evaluated following the full assessment of potential threatened species.
- Avoid, Mitigate and Manage
 - A key objective of the BDAR process is to avoid impacts as much as practicable. This has not been demonstrated in the BDAR. The BDAR does not include discussion of alternative designs that would result in a reduced biodiversity impact such as reduced lot yield, alternative shape of development, etc including maps or plans. This is to be done in accordance with Part 1.1 of the Biodiversity Assessment Method Operational Manual – Stage 2 (DPIE 2019). Specific assessment and discussion around alternative siting and design is required. The applicant is to consider a redesign of the proposed development to reduce the impacts on native vegetation.
 - There is no discussion about other limiting constraints on the proposed development such as geotechnical risk, amenity, cost etc.
 - There has been minimal discussion of the impacts of the development, particularly the indirect impacts such as impacts to groundwater, stormwater, lighting and noise. Further consideration is required.
 - Table 9 lacks detail and thorough discussion of potential indirect impacts. Particular areas of concern that require further assessment and detail include:
 - Impacts of vegetation removal and extensive site excavation on groundwater and how this will impact on adjacent vegetation.

- Modification of microclimate in areas adjacent to the development and excavations.
- Impacts of catchment stormwater diversion from the proposed development. The proposal will remove a significant portion of natural surface and subsurface flows from existing vegetated areas within the site and within the natural valley and watercourses north and south of the site. The total catchment area diverted from these vegetated areas is approximately 8,500m² for the northern catchment and 11,000m² for the southern catchment and this has not been considered by the BDAR.

The BDAR states:

5.3 Impacts to groundwater dependent ecosystems

The subject land is located on top of a steep hill and does not contain any groundwater dependent ecosystems (GDEs). Measures to reduce any potential indirect impacts to the mapped watercourses adjacent the study area include stormwater and runoff controls during construction and operation of the development (see Section 5.1). A Vegetation Management Plan will also be implemented to ensure potential impacts to GDEs of the riparian areas are mitigated and avoided. Therefore the proposal is unlikely to result in impacts to GDEs, within the subject land or surrounding habitats.

This clearly does not consider the significant amount of stormwater diversion proposed and the impact of the catchment modification and water diversion is to be reassessed.

- Mitigation measures outlined in Section 5.1 are proposed to address the residual impacts. However, the indirect impacts identified in Table 9 should be more clearly linked to the mitigation measures. The BDAR is to clearly demonstrate SMART measures proposed to mitigate impacts as required in Section 2.6 of the *Biodiversity Assessment Method Operational Manual – Stage 2*.
- The BDAR states that: 0.005ha of “moderate condition PCT 1300 will be maintained within the APZ and was surveyed (see Table 1), but was not included as a Vegetation Zone for impact assessment purposes” (p23). However, as shown in the APZ Maintenance Path Plan (LandTeam, 12/12/2019), the APZ is proposed to have a network of 0.6m wide paths constructed only a few meters further the APZ is to be managed as an Inner Protection Area and approximately 85% of trees are proposed to be removed within the APZ. The development also proposes “communal vegetable garden, a fitness trail with 3 ‘stations’ and informal ‘meeting spaces’ within the APZs” (Statement of Environmental Effects, p82). Consequently, any vegetation within the APZ is to be assumed to be significantly impacted.
- The recommendation to remove all native vegetation that is to be removed is not supported. Where possible, large woody logs should be salvaged prior to mulching and reused within the VMP as for habitat.
- Some of the recommended mitigation measures are outside of our ability to control such as the type of barbecues people can have.
- The BDAR identifies the following residual ‘Direct Impacts’:
 - removal of 3.65 hectares of native vegetation
 - removal of 10 hollow-bearing Acacia trees
 - removal of 3.65 hectares of potential native fauna species habitat.

Only a portion of these impacts are offset through the Biodiversity Offset Scheme as identified in the BDAR. This may change following the required revision.

- Vegetation Management Plan

- A Vegetation Management Plan (Biosis, 4/10/2019) (VMP) has been submitted. The implementation of the VMP is proposed by the BDAR as a tool to minimise and mitigate impacts.
- The VMP is proposed to be for a period of 5 years. This is inconsistent with the requirements for management actions associated with a BDAR to be for 20-25 years and therefore not considered to be appropriate.

- It relates ONLY to the E2 zoned land in the South west corner of the site. This is approximately 0.51ha in size, about 12% of the entire site. However, the VMP areas does not include all the E2 zoned land, with the APZ encroaching into the E2 lands as shown in Figure 2 of the VMP.
- The VMP area has been mapped as containing the following vegetation types:
 - Illawarra Subtropical Rainforest (occurring as PCT 1300 Whalebone Tree - Native Quince dry subtropical rainforest on dry fertile slopes),
 - Illawarra Escarpment Blue Gum Wet Forest (occurring as PCT 1245 Sydney Blue Gum x Bangalay - Lilly Pilly moist forest in gullies and on sheltered slopes in both a poor/moderate and a regenerating form (referred to as derived Acacia Scrub in the VMP)).
- Vegetation descriptions in Section 4.1 have errors with the tables. Some species don't appear to be included in the tables that are included in the text. A table also appears to be missing for Illawarra Subtropical Rainforest.
- The VMP states that two hollow-bearing trees are located within the VMP area, however only one is shown on Figure 3.
- Section 6.2 and 6.3 of the VMP are associated with the development and APZ management, not with the VMP area. This should be separated out as a separate plan to avoid any confusion and aid in implementation.
- Section 6.1 and 6.4.9 - site exclusion/deer fencing: this should be detailed further to ensure that feral deer are excluded from the entire VMP area in perpetuity. The fence is to be permanent, able to withstand deer, and to have no barbed-wire.
- Habitat enhancement has not been included within the VMP. This may include the consideration of staged weed removal, installation of suitable habitat boxes and the reintroduction of large woody debris.
- The focus on mechanical weed removal such as by slashing or mowing is not supported due to the high likelihood of impacts upon regenerating native species. This is to be revised. The use of accepted bush regeneration methods are to be used.
- The VMP is to specify the following minimum levels of qualification and experience for people supervising and implementing the VMP:
 - A Certificate III in Conservation and Land Management and minimum of 500 hours practical bushland regeneration under an experienced supervisor.
 - Supervisors will need a Certificate IV in Conservation and Land Management, and a minimum of 700 hours practical bushland regeneration experience.
 - A Chemcert AQF III or higher is required for persons undertaking chemical weed control.
- Serious And Irreversible Impact (SAII)
 - Illawarra Subtropical Rainforest (PCT 1300) is identified as a potential SAII entity. Council must determine if there is likely to be a SAII associated with this proposal.
 - The BDAR states that: *"The proposal will result in the removal of 0.2 hectares of poor condition PCT 1300. The conservation of this area is unlikely to be viable in the future, given the current state of the study area and ongoing deer grazing and weed invasion"*
 - The following concerns are raised in relation to impacts on the SAII entity:
 - a. the action and measures taken to avoid the direct and indirect impact on the potential entity for a SAII.** The BDAR has not clearly demonstrated adequate attempts to avoid direct or indirect impacts upon PCT130
 - b. the area (ha) and condition of the threatened ecological community (TEC) to be impacted directly and indirectly by the proposed development. The condition of the TEC is to be represented by the vegetation integrity score for each vegetation zone.** The proposal will directly remove 0.2ha of PCT1300 with a VI of 38.7 (in Vegetation Zone 4). Whilst this is labelled as 'poor condition' in the BDAR, there is no

discussion on the on why this has been classified as 'poor condition'. What criteria was used? Is there a VI cut off score for good, moderate, or poor condition that has been used?

d. the extent and overall condition of the potential TEC within an area of 1000ha, and then 10,000ha, surrounding the proposed development footprint. the mapping undertaken as part of this assessment measured PCT 1300 local occurrence (1000ha) at 2.7 hectares. The proposed removal of 0.2 ha represents 7.5% of the local occurrence, which is a considerable amount, however it is only 0.6% of the occurrence within the IBRA subregion (this may need to be reassessed following clarification of the relevant subregion). It is not considered that sufficient attempt has been made to reduce this localised impact.

g. the development, clearing or biodiversity certification proposal's impact on:

ii. abiotic factors critical to the long-term survival of the potential TEC; for example, how much the impact will lead to a reduction of groundwater levels or the substantial alteration of surface water patterns The BDAR states that *"proposal will not affect abiotic factors critical to the long term survival of PCT 1300 (see Section 5.1). Flow patterns of water into surrounding habitats will be maintained and any runoff from the proposed development will be managed appropriately and detailed in the site management plans"*. However, the proposal will remove a significant portion of natural surface and subsurface flows from existing vegetated areas within the site and within the natural valley and watercourses north and south of the site. The total catchment area diverted from these vegetated areas is approximately 8,500m² for the northern catchment and 11,000m² for the southern catchment.

- Concerns are raised over the potential for this activity to represent a SAIL. However, this will be reassessed once the required changes are made and additional information is provided.

b) Bush Fire Management (Chapter E16 of WDCP 2009)

- The proposal includes a (mostly) 29m APZ around the perimeter of the development.
- The APZ is proposed to be intensely managed with 85% of trees removed and management tracks constructed throughout it at approximately 3m intervals. This is not considered necessary due to the level of clearing that is proposed for the APZ. Further the construction of so many paths throughout the APZ would have additional impacts on the health of the trees as all trees would have their root zones impacted. The proposed APZ management is to be reconsidered and a more appropriate plan proposed that will result in reduced impact on the natural environment.
- The Statement of Environmental Effects, and the Arborists Report state that 85% of trees within the APZ are to be removed. However, Planning for Bushfire Protection 2019 requires a maximum of 15% canopy cover. This does not necessarily equate to removing 85% of trees within the APZ and it appears that the amount of clearing is excessive, especially in the south of the site. Consequently, the existing canopy cover is to be assessed and quantified, to determine the what trees would be required to be removed and what could be retained.

c) Water Sensitive Urban Design (Chapter E15 of WDCP 2009)

- Due to the scale of the proposed development, it is required to adhere to Chapter E15 of WDCP 2009. A Water Cycle Management Study (LandTeam Australia, December 2019) proposes a Bioretention Basin for the development.
- The proposed development does not conform to the general WSUD principles for subdivision road design and lot layout as identified in Chapter E15. In particular the following are not observed:
 - The subdivision layout should promote the retention of existing landforms with cut and fill land re-shaping works being minimised, wherever possible.
 - The layout of roads in a subdivision should be designed to fit the existing topography and landform features of the site.
 - The road layout pattern should minimise road lengths running perpendicular to the slope of the site, in order to reduce run-off velocities.
 - Road design should take into account the cleansing of stormwater through the use of grass swales, filter (buffer) strips, infiltration trenches etc.

- Road carriageways are required to be designed to minimise the amount of impermeable area through reduced road carriageway widths and / or porous pavements, in order to encourage infiltration of stormwater run-off into the soil strata.

- The proposal is not considerate of the surrounding natural environment. In existing conditions, the catchment areas proposed to be diverted drain to existing vegetated areas within the site and within the natural valley and watercourses north and south of the site. The total catchment area diverted from these vegetated areas is approximately 8,500m² for the northern catchment and 11,000m² for the southern catchment. The proposal will effectively remove a significant portion of natural surface and subsurface flows from these existing vegetated areas. This is not supported.
- The GPT is shown in the Water Cycle Management Study and the Stormwater Layout Plan is proposed to be downstream of the Bio-retention Basin. The GPT should be located *before* the bio-retention basin in accordance with stormwater treatment train principles to prevent gross pollutants clogging up the basin media.

d) Riparian (Clause 7.4 Riparian Lands of WLEP 2009 and Chapter E23 of WDCP 2009)

- There are two watercourses that run to the north and south-west of the site. These are both identified as Category 1 watercourses in Councils DCP, requiring a 50m riparian corridor. This is largely adhered to, however a portion of the APZ falls within a section of the corridor along the north of the site. The removal of the APZ from the riparian corridor should be considered when revising the project design.
- The proposal will remove a significant portion of natural surface and subsurface flows from existing vegetated areas within the site and within the natural valley and watercourses north and south of the site. The total catchment area diverted from these vegetated areas is approximately 8,500m² for the northern catchment and 11,000m² for the southern catchment. This has the potential to significantly impact upon the hydrology and ecology of the riparian and has not been assessed by the proponent and is not supported.

e) Stormwater and Groundwater (Chapter E14: Stormwater Management of WDCP 2009)

- The proposal will likely have a significant impact on the drainage within the surrounding natural areas. This has not been quantified or the potential impacts assessed.
- The potential impacts of this on the hydrology and ecology of the downstream environments (aquatic, riparian and terrestrial) is to be assessed and reported to Council prior to further consideration. Particular attention is to be paid to any threatened, vulnerable or locally important species or communities.

f) Earthworks (Clause 7.6 of WLEP 2009 and Chapter E19: Earthworks (Land Reshaping Works))

- The proposal is inconsistent with the following objectives identified in this chapter:
 - Prevent land filling, excavation or land reshaping works which create or contribute to environmental problems both on and off site;
 - Ensure that no adverse impact occurs to local drainage systems (including groundwater systems), overland flow characteristics and flood storage;
 - Ensure that appropriate environmental management measures are applied to conserve the landscape and protect water quality;
 - Minimise amenity impacts upon surrounding neighbourhoods;
- The site is located on a prominent ridgeline below Mount Keira. A significant amount of cut and fill is proposed for the site which is naturally very steep and highly visible from throughout the city. The works and subsequent development will have far-reaching impacts on amenity.
- The proposal will remove a significant portion of natural surface and subsurface flows from existing vegetated areas within the site and within the natural valley and watercourses north and south of the site. The total catchment area diverted from these vegetated areas is approximately 8,500m² for the northern catchment and 11,000m² for the southern catchment. This has not been assessed by the proponent. This is also contrary to 7.6 (3)(a) and (g) of the LEP - *the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality.*

- Insufficient detail has been provided in relation to the land reshaping stage of the development. The following information has not been provided
 - Noise generation as a result of excavation and associated truck movements;
 - Staging and timing of excavation;
 - Quantity of excavation and fill;
 - Noise, air quality and amenity impacts on nearby residences.

g) Soil Erosion and Sediment Control (*Chapter E22 of WDCP 2009*)

- A Soil and Water Management Plan has been submitted but is insufficient. In accordance with Chapter E22 of WDCP 2009, a Waste Management Plan (required for a site and development of this scale) should include all site soil and water management issues whereby Erosion and Sediment Control Plan is but one part of the overall management requirements. These plans include engineered solutions based on detailed numerical assessment of the probable site behaviour during construction. All plans shall be prepared in accordance with the NSW Landcom publication titled *Managing Urban Stormwater: Soils and Construction Vol.1, 4th ed.* March 2004 (Blue Book) or the latest version of this publication.

h) Noise

- Construction noise has not been considered, particularly related to the extensive amount of excavation and associated machinery and truck movements. A construction noise/acoustic assessment and management is to be undertaken and submitted.

3. Stormwater

This application has been assessed in accordance with Chapters E13 and E14 of the WDCP2009 and the following comments are noted:

- a) The concept stormwater management plan proposes to divert a significant additional catchment area from the site to Council's existing stormwater drainage system in Andrew Avenue. This proposal is not supported for the following reasons:
- i) The proposal is contrary to Section 12.2(2) of Chapter E14 of the WDCP2009, which requires that natural catchment boundaries are to remain unaltered, and in situations where proposed impervious areas straddle natural catchment boundaries, multiple separate OSD systems shall be provided.
 - ii) It has not been demonstrated that the objectives in Section 2 of Chapter E14, in particular objectives 2(1)(b),(c),(d),(e),(f),and(h), will be satisfied by the proposal.
 - iii) The proposal will remove a significant natural catchment (incl. surface and subsurface flows) from the vegetated areas downstream of the development and the potential environmental/ecological impacts of this do not appear to have been considered in the in the submitted biodiversity development assessment report.
 - iv) The submitted DRAINS modelling for the development simulates the proposed green roof areas as pervious areas. This assumption is not considered appropriate because:
 - The roof areas will not necessarily behave like natural pervious areas during significant storms, as they are underlain by what is effectively an impermeable tank with limited holding capacity to store runoff volumes. In the event that a storm occurs following prolonged rainfall where the green roof is fully saturated, runoff from the areas will be similar to that of runoff from an impervious surface.
 - It is unclear how the function of the green roof areas would be ensured over the life of the development. There is a reasonable likelihood that the systems could be modified or not maintained, in which case they would be ineffective at attenuating stormwater runoff.
 - v) The overall total post-development impervious area used in the DRAINS model (being approximately 0.9282ha according to the submitted DRAINS model files) is significantly lower than that measured from the proposed landscape plans. On this basis (and due to the previous matter noted above) it is considered that the DRAINS model underestimates post-development discharge rates from the proposed development.

- vi) A pre and post development hydrological and hydraulic analysis of the receiving stormwater drainage system in Andrew Avenue and Cedar Grove, extending downstream to a point where the diverted piped and surface flows converge with their existing flow location, has not been undertaken.
- b) The catchment plan shown in Section 3.1 of the Water Cycle Management Study is incorrect. The plan incorrectly delineates existing areas on the site that drain to Cosgrove Avenue and eventually into the watercourse north of the site, as draining to the existing drainage in Andrew Avenue.
- c) The proposed bioretention basin and associated catchment appears to be excluded from the DRAINS model.

4. Heritage

The proposed development site includes part of the Illawarra Escarpment Conservation Area. The site is located on a prominent ridgeline that is highly visible from a broad area. The development is also located within the visual setting of the State Heritage item Gleniffer Brae and the Botanic Gardens. As well as the locally listed Kemira Colliery site.

The proposal is supported by a Heritage Impact Statement prepared by GB Heritage and Visual Impact Assessment Report prepared by Urbain Architecture Pty Ltd. It is noted that the HIS does not consider the objectives of Chapter B6: Development in the Illawarra Escarpment. The proposal is inconsistent with numerous objectives and controls in Chapter B6 as detailed below.

a) General Comments on the HIS

There are various broad sweeping statements in the HIS that do not seem to be grounded in the visual analysis or other documentation are not considered adequate assessments of the potential heritage impacts:

- There is no justification to the statement that scenic quality of the site is considered to be of “little” significance (Page 14). This conclusion is not supported.
- “No Adverse impacts on views to and from the Illawarra Escarpment Conservation Area” (page 17). However, the figure below, clearly shows the site will be highly significant impacts when looking from Keiraville to the Escarpment and will create a visually obtrusive element in the landscape immediately below the culturally significant Mt Keira Summit;
- “The proposed development will not alter the scenic quality of the [Illawarra Escarpment] HCA” (page 22). It seems clear by from the visual impact assessment that the proposal will have a significant visual impact on the scenic quality of the HCA as well as resulting in the removal of several types of native flora communities that contribute to the HCA.
- “The proposed development respects the significance and character of the *Illawarra Escarpment Landscape Conservation Area*” (Page 24). It is unclear how 48 residential units with up to 10m of cut and fill is consistent with the character of the HCA.
- The HIS has not addressed the controls in Chapter B6: Development in the Illawarra Escarpment.

b) Visual Impact from State Heritage listed Gleniffer Brae site

The proposal is supported by a Visual Impact Assessment Report prepared by Urbain Architecture Pty Ltd dated December 2019.

- It is noted that the VIA responds to the context of the “Wollongong Conservatorium of Music” and does not note that whilst the Conservatorium is located on the site, site is state heritage listed as “Gleniffer Brae and Surrounds.” The significance of this site and its setting should be considered in recommendations of the VIA Report.
- The HIS notes that there will be no adverse impacts on views to and from the State Heritage item “Gleniffer Brae” (page 17). However, the figure below and the VIA, clearly shows the site will be highly visible from Gleniffer Brae. The HIS therefore does not adequately address the findings of the VIA.
- 40% of the main buildings are visible from the lawn area at Gleniffer Brae viewpoint 10, directly below the most prominent ridgeline of Mount Keira.

- The VIA notes that mature trees provide visual screening from viewpoint 9, however in winter the trees are deciduous. It is also noted that some mature coral trees may be replaced as per the CMP for the site, further reducing this screening.

viewpoint no.9 - site photo



viewpoint no.9 - full model and reference points overlaid (no visual impact)

Fig 6.3

Visual Impact Assessment of the proposed development in relation to views from the State heritage item, "Gleniffer Brae". The proposed development will not be visible from the item due to the existing topography, vegetation and development. There will be no visual impact on 'Gleniffer Brae'

Source: Urbaine Architectural

This is not consistent with the objectives of Part 12.2 of Chapter B6:

(b) To prevent the siting and orientation of any new building upon any prominent ridgeline or billtop.

c) Vegetation Removal

The impacts of the APZ on the vegetation and landscape within the Illawarra Escarpment Area will need to be carefully considered and explored. The APZ is discussed in the VMP prepared by Biosis. The APZ zone will create a large buffer around the development, making the development more visually prominent on the Escarpment ridgeline.

The HIS has conflicting information regarding the impact on vegetation in the Illawarra Escarpment Conservation Area. The SEE states *"There will be no adverse impact on the established heritage significance of the Illawarra Escarpment Landscape Conservation Area"* however the SEE also states *"The loss of a stand of Illawarra Subtropical Rainforest, which is in poor condition, is considered acceptable"*.

The Statement of Environmental Effects, and the Arborist Report state that 85% of trees within the APZ are to be removed. This wholesale tree removal and clearing of the site is not considered to meet the objectives of Objectives of Chapter B6:

(f) Ensure that development is restricted to existing cleared sites within the escarpment slope and foothill areas only.

d) Aboriginal Heritage

It is noted that the Illawarra Aboriginal Land Council has provided a submission for the application. The proposal results in unacceptable visual impacts to a highly significant cultural landscape. The proposal therefore does not meet the objectives of Part 2 Chapter B6:

(b) Protect and conserve the cultural heritage of the Illawarra Escarpment, including places of Aboriginal cultural heritage significance;

The proposed scale and design of the development does not appear to demonstrate it has appropriately responded to the inherent site constraints, natural landform features or the unique context and character of the Illawarra Escarpment Area.

Generally, the proposal sought is considered an overdevelopment of the site and will have significant visual and cultural impacts on Gleniffer Brae and the Illawarra Escarpment State Heritage Conservation Area as well as on Mount Keira.

A major re-design of the proposal would be required to achieve a satisfactory outcome. This would require a much less substantial development, with much more respect for the existing landform and its visual and scenic qualities through a design approach that utilises the existing landform without substantial cut and fill, and without the need for major engineering works that will add to the visual and physical impact of the proposal on the site. The site's cultural significance and the visual impacts of the proposal on the Illawarra Escarpment, and Mount Keira itself should be given much greater consideration in any future proposal.

The following documents are requested to be prepared and considered prior to lodging any future development proposal on the site:

- Updated HIS that addresses the finding of the Visual Impact Assessment as well as the Arborist Report and Chapter B6 of the WDCP 2009 Development in the Illawarra Escarpment. The report should also provide additional assessment of the impacts of the development on the cultural significance of the Illawarra Escarpment, including the heritage values defined within the Illawarra Escarpment Heritage Study and by the local Aboriginal Community (including within the Illawarra Escarpment Aboriginal Heritage Assessment).
- A Finalised Aboriginal Cultural Heritage Assessment Report and Archaeological Report that addresses the OEH comments on the proposal and also fully acknowledges the cultural significance of Mount Keira to the local Aboriginal Community.
- An Aboriginal Heritage Interpretation Strategy (as recommended by OEH).
- A redesign of the proposal which provide for:
 - A reduction in proposed landform alteration and change through required cut and fill.
 - Reduced tree removal compared to the current proposal.
 - A reduction in major engineering works and retaining structures that will add to the visual impact of the development on the Illawarra Escarpment and Mount Keira.
 - A reduction in development footprint, particularly on highly visual parts of the site.

5. Landscape

- a) The proposal is an overdevelopment of site with two hundred and fifty-three trees (253 No.) proposed to be removed, more than half of which are rated SULE 1 & 2 and fifteen (15) trees to be removed are also hollow bearing trees.
- b) The Landscape Plans do not meet minimum requirements set out in Chapter E6 Landscaping of WDCP 2009. Tree numbering from arborist report is to be shown on Landscape Plan and tree numbering on tree protection plan in arborist report is unclear.
- c) Contradictions are shown in submitted plans and reports. In the NE corner of site three (3 No.) trees are shown for removal on plan however, the arborist report provides that seven (7 No.) are required to be removed.
- d) Access for all landscaped areas to be shown on the plans. Access to roof garden of Units 2 & 3 not shown. There are fall heights from roof gardens in excess of three storeys in some instances therefore safe maintenance access requires to be addressed.
- e) Insufficient landscaping has been proposed. Two hundred and fifty-three trees (253 No.) are proposed to be removed and only fifty-three (53 No.) are proposed to be installed. A ratio of 1:1 or high should be sought.
- f) Landscaping to the site is to comply with the principles in Appendix 5 of Planning for Bush Fire Protection 2006 and Standards for Asset Protection Zones (NSW Rural Fire Service), take into consideration PBP 2018 and recommendations included in Bushfire Assessment report by ABPP dated 10 December 2019.
 - i) The landscape plans appear to conflict with these requirements. The elevation and section plans provided indicate tree canopies touching and overhanging dwellings. The minimum clearances to be achieved.
 - ii) Concern is raised over the addition of potential fuel to roof tops with Green Roofs approach to the landscape design for the proposal. Proposed irrigation is noted and careful plant selection of fire-resistant species however if not correctly maintained potential hazard could develop.

- iii) Considering the site is situated in a prominent location on ridgeline with wide visual catchment deep soil zone tree planting to be sited to screen proposed development which does not compromise requirements of PBP 2006.
- iv) Details in Bushfire Assessment report by ABPP dated 10 December 2019 of access trails and stairs for Asset Protection Zones require further development – stairs with a non-compliant tread/ riser ratio of 1:1 does not resolve how it would intersect with paths, base course below FRP mesh not shown with edge treatment. Side treatment of stairs with adjacent slope to be shown.
- v) Eagle Nest Park is partially located within the Asset Protection Zone and proposed to be mass planted with shrubs and trees which could provide ladder effect for flame.
- g) A 1.5m footpath on at least one side of internal road to be incorporated.
- h) Proposed nine (9 No.) sets of stairs along southern boundary not acceptable.

6. Traffic

a) Visitor car parking spaces

The development requires 10 visitor parking spaces and 15 visitor parking spaces are proposed. It appears that three (3) of these visitor spaces are located in the ground level/garage area of building 2. Clarification on the access arrangements to these spaces are required as it understood the garage level will be gated and secured for residents.

b) Visitor bicycle parking spaces

The proposed visitor bicycle parking spaces also appear to be located in the secure ground level/garage area of building 2 and adjacent to the services parking bay located in the utility and waste management area. Concerns are raised over the location and accessibility of these bicycle spaces for visitors.

Bicycle parking spaces for visitors should be easily accessible to and from the internal driveway and positioned in clear view. Both parking areas are hidden, where the bicycle space in the utility area would not be visible if a vehicle was parked in the services parking bay. The location of the bicycle parking spaces is not considered practical if you were a visiting a resident by bicycle. It is considered that the visitor spaces should be more appropriately located central to buildings 1 -5 and adjacent to the buildings and internal driveway.

It is noted that the SEE provides the residential bicycle parking spaces are to be provided in each garage of the dwellings.

d) Utility and waste management area

This area provides one (1) parking bay for service contractors. It is considered that location of this parking bay is considered impractical in the event the service contractors requires to access the buildings within the site as the it is located and traversing the driveway up to the buildings are a significant distance away and in reality contractors will drive to the required location within the site.

Section 3.11.4 of the SEE outlines that removalist vehicles are also use the service parking bay and a change to use a light vehicle vans is required to proceed further up the internal driveway to the buildings. To adequately accommodate this arrangement, it is considered more than one parking bay will be required to be provided in the utility area. Furthermore, the reality of managing a removalist truck then transitioning to a light van vehicle for the 47 dwellings at all times is considered to be difficult and potential impractical for future residents. This raises whether design of the driveway is suitable for the scale of the development, and if the proposal is essential suitable for the site.

e) Driveway grades

- i) There are several long sections of the southern access driveway which have grades of 26.8% which exceed the maximum 25% stated in AS2890.1. Confirmation that these grades are acceptable to the RFS and NSW Fire and Rescue who will need to service the site in a fire emergency.

- ii) The access road has some tight corners which have not been tested with swept paths for emergency vehicles such as the 'general' and 'specialist' fire appliances detailed on page 8 of the NSW Fire Safety Guidelines.
- iii) The maximum grades for a fire appliance are 16.6% (page 14 of NSW Fire Safety Guidelines). The internal grades within the development exceed this limit.

7. Wollongong Local Environmental Plan (WLEP) 2009

a) Clause 2.3 Zone Objectives

The subject site is partially zoned R2 Low Density Residential, with one of the objectives of the zone to be;

- *To provide for the housing needs of the community within a low density residential environment.*

The remainder of the site is zoned E2 Environmental Conservation, with objectives that include;

- *To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.*
- *To prevent development that could destroy, damage or otherwise have an adverse effect on those values.*
- *To retain and enhance the visual and scenic qualities of the Illawarra Escarpment.*

The proposal is inconsistent with the objectives for E2 – Environmental Conservation identified in the WLEP 2009 as the Bushfire Asset Protection zone encroaches into the E2 Zoned land. This is shown clearly in Figure 2 of the VMP (Biosis, 4/10/2019). This would result in detrimental impacts on the vegetation and ecological values, particularly with the extent to which the APZ is proposed to be managed. All development, including APZ, is to be removed from the E2 zone.

Furthermore, it is considered the APZ are works ancillary to the multi dwelling housing that is not permissible in the E2 zone.

It is noted that the subject site, while large, is a battle-axe block, with the residential zoned portion of the site located on a prominent spur, well above the level of the surrounding residential area. The subject site is located on the edge of the residential area, adjoining the Illawarra Escarpment and with the E2 portion of the site being mapped as part of the Illawarra Escarpment area. The general approach to development near the Illawarra Escarpment is to have a decreasing gradient of density as the development areas moves west toward the escarpment.

While the R2 zoning permits a range of dwelling types and densities to provide flexibility in dwelling types and densities to suit the variety of landforms and conditions to which the R2 zone applies, the proposed multi dwelling development of 47 dwellings is an overdevelopment of this particular site and would be more appropriate located closer to a small commercial hub or public transport route. This site sits on the fringe of the development area, where development should transition to the escarpment.

Considering the location and characteristics of the site, the appropriate design response would be to reduce the density of development in this location. It is noted that Council has previously granted consent to a three-lot subdivision, which would be more in keeping with the desired character of the precinct.

b) Clause 4.6 Exceptions to development standard/Clause 7.14 Minimum site width

Based on the matters identified for the proposal within this letter, it is considered the proposed development has not adequately demonstrated that it will achieve a better outcome for the site to meet the objectives of clause 4.6 of WLEP 2009 to support a departure to the minimum site width under Clause 7.14 of WLEP 2009.

c) Clause 5.10 Heritage Conservation

The site contains a heritage item identified under Part 2 Heritage Conservation Area, Schedule 5 of WLEP 2009, being the E2 zoned portion of the land located within the Illawarra Escarpment Landscape Area. It is considered the proposal has not demonstrated it complies with the objectives and requirements of this clause as outlined in item 4 of this letter.

d) Clause 7.8 Illawarra Escarpment Conservation Area

The E2 zoned portion of the site is mapped as Illawarra Escarpment Conservation Area. Whilst most of the development with the built form located in the R2 zoned portion, the land is affected by this constraint and is immediately adjacent to the escarpment and on the foothills below Mt Keira. As such, the site forms part of the escarpment vista at this location due to the topography of the site and is an important interface between the developed residential areas of Keiraville, and the vegetated backdrop of the escarpment.

The site slopes steeply up from Cosgrove Avenue and adjoins large tracts of bushland leading up to Mt Kiera. The development is proposed for the prominent ridgeline area of the site and is highly visible from all surrounding areas. The proposal is not sympathetic to the environmental values of the escarpment and does not present a gradual transition to environmentally sensitive areas within the escarpment.

Wollongong Development Control Plan (WDCP) 2009

8) Chapter B1 Residential Development

a) Section 4.12 Site Facilities

Concerns are raised over the location of the proposed communal clothes drying facilities for Buildings 1-4. Whilst they are screened, they are hidden amongst the built form typically located on the ground level (situated on the same level of the garages however, beneath the podium level) on the southern side of the buildings where it would appear these areas will not receive a high degree of solar access. The open-air clothes drying areas do not appear to receive an adequate amount of solar access especially in mid-winter. The clothes drying area for Building 3 does not appear to be accurately shown on the floor plans.

It is noted that further comments are provided around the access and safety to the communal clothes drying area below on item 11 of this letter.

b) Section 4.13 Fire Brigade Servicing

Concerns have already been raised in the Traffic comments at item 6, regarding the grades of the southern access driveway that exceed the maximum 25% in AS 2890.1. In the Statement of Environmental Effects (SEE) prepared City Plan, reference is made to the letter from Fahrenheit Global dated the 2 December 2019 that outline a meeting held with Fire & Rescue NSW. In this letter, it provides that FRNSW advised: *"The grades are to meet the requirements of AS 2890.1 and shall not exceed 15.5% - 18.3%."* Based on this comment, the proposal exceeds the required grade. It is also noted that the RFS have also raised concerns around the proposed access arrangements for the development with regard to compliance with Planning for Bushfire Protection 2006.

c) Section 4.14 Services

A substation is proposed within the 6m front setback of the site and concerns are raised over the potential visual impact on the streetscape and impacts on the adjoining property, No. 12 Cosgrove Avenue. In reviewing the plans it appears that the landscape perspectives provide a view of the development/site from the Cosgrove Avenue frontage, however, do not appear to show the proposed substation.

The comments from Endeavour Energy at Attachment 3 provide the requirements that need to be met including landscaping measures and clearances from the substation. It is considered that the current design does not appear to meet their design requirements as insufficient detail has been provided in relation to the proposed substation. In addition, concern is raised over the potential impacts of the substation on the amenity of the adjoining property. Further details of the substation are required including floor and elevation plans, levels, setbacks from boundaries, associated landscaping including heights of the adjacent retaining walls and a streetscape perspective.

d) Section 4.16 View Sharing

The SEE appears to have considered that this control relates to the loss of views towards the coastline. However, views could include towards the escarpment or other important scenic features. It is considered that the proposal could have the potential to impact views from adjoining/nearby properties or public places to the Illawarra Escarpment/Mount Keira and this that has not been addressed in the application.

e) Section 4.17 Retaining walls

The proposal seeks a variation to the controls in section 4.17, primarily relating to the height proposed retaining walls associated with the development that exceed a 1m and terracing controls. In the documentation provided with the application, the SEE refers to the height and location of the retaining walls is provided in the Retaining wall layout plan Drawing No. DA13 Issue L prepared by Land Team. This plan only indicates whether the retaining wall proposed is visible or not post construction and that could be either up to 6m high or 10m high. Retaining walls are shown on the architectural and landscape plans however, no detail is provided with regard to TOW or BOW. Justification to the variation is referred to in a letter from Land Team and discussed in the SEE. Each variation sought to controls WDCP 2009 are to be a separate document in accordance with the requirements of section 8 in Chapter A1 of WDCP 2009. This has not been provided. Further details of the retaining walls with TOW and BOW marked on a separate plan or form part of the landscape plans.

f) Section 5.1 Minimum site width

As raised in item 7b above, it is considered there are insufficient grounds to support this variation to the minimum site width. Furthermore, a separate variation statement has not been provided for the variation sought to this control in accordance with Chapter A1 of WDCP 2009.

g) Section 5.2 Number of storeys

Clarification is sought on whether part of Building 4 is greater than 2 storeys as a portion of the ground level associated with garages as shown on section 1 plan appears could be considered a storey.

The definition of a storey as provided in Appendix 4 of the WDCP 2009 is as follows:

Storey: Means a space within a building that is situated between one floor level and the floor level next above, or if there is no floor above, the ceiling or roof above, but does not include:

a) A space that contains only a lift shaft, stairway or meter room, or

b) A mezzanine, or

c) An attic.

h) Section 5.5 Building character and form

The design of the buildings appears to be quite insular with the majority of the entrances to the dwellings all internally facing into a long narrow podium area and in some instances set above the adjacent driveway isolating the building from the street. Therefore, the entrances to the dwellings are not visible from the internal road/driveway.

The placement and design of the entrances to the dwellings accessed via a podium area appear to be tucked in slightly from the building façade and with limited ability for casual surveillance as the door entrance is situated on the side rather facing the podium. The only window that overlooks the podium level with the entrance is for a bedroom that is to be screened for privacy. In addition, a number of southern units in buildings 1-4 only have a door entrance at the podium level.

Overall it is considered that the design of the buildings and dwellings do not provide an identifiable and desirable street address or allow for outlook and surveillance towards the internal driveway or common areas of the development. Further, discussion is also provided on this matter with regard to CPTED measures in item 11 below.

Concern is also raised to how the dwellings and entrances can accommodate the movement of furniture.

i) Section 5.9 Deep Soil Planting

It is considered that the proposed locations for deep soil planting in development have not been designed with appropriate site analysis and is situated in convenient/left over areas, being the areas that are not developable. Deep soil planting has not been provided within the site context or controls, being located to the rear (western boundary) where the site abuts the foothills of Mount Keira and the Illawarra Escarpment. This would provide a linkage of adjacent deep soil zones on development sites and to provide habitat for native indigenous plants and birdlife in line with the objectives of the control. Other options that could be considered is centrally within the site of the development, so dwellings overlook the deep soil area rather than dwellings overlooking each other that has amenity impacts, in the current situation (discussed further in item 8n below).

j) Section 5.10 Communal open space

The location, function and size of the nominated communal open space areas for the development are not considered adequate. The main nominated COS, Eagle Nest Park located at the rear of the site has not demonstrated how it is accessible for all the residents in the development. Please refer to the DRP notes for further comments on this matter that are required to be addressed.

It is unclear if 50% of the communal open space areas will receive 3 hours of direct sunlight between 9am and 3pm on June 21. Specific shadow diagrams of these areas have not been provided.

k) Section 5.11 Private Open Space

It is noted in the assessment of the proposal for this development control, the terrace area directly connected to the living area is the nominated POS for each dwelling unless advised otherwise. Comments regarding compliance with the solar access requirement for the POS area are discussed below in section 5.12.

l) Section 5.12 Solar Access

Within the development

In conjunction with the controls in section 5.11, overall a total of 70% of the dwellings in the development require at least 50% of their private open space areas to receive a minimum of three hours of direct sunlight between 9am and 3pm on June 21. As there are 47 dwellings, 33 dwellings in development must achieve this requirement. Note it is considered the terrace area connected to the living area is the nominated POS for each dwelling unless advised otherwise.

Furthermore, the control requires windows to north facing living rooms for each of the subject dwellings in the development must receive at least 3 hours of sunlight between 9.00am and 3.00pm on 21 June.

Two (2) solar access plans are provided for within the development in Drawing No. DA/28 and DA/29. These plans only show the solar access received at 9am and 11am, noting only a total of 2-hour timeframe. Insufficient information has been provided to assess and confirm whether the proposal complies with the solar access requirements. Hourly solar access diagrams are required to be provided from 9am to 3pm for 21 June.

With regard to the assessment in accordance with the requirements of this control, the dwellings with north facing living rooms are to be clearly identified on the solar access diagrams to demonstrate they will achieve the 3 hours of direct sunlight required.

Adjoining properties

The controls in section 5.12 require windows to living rooms of adjoining dwellings must receive 3 hours of sunlight and at least 50% of the private open areas of adjoining residential properties must receive at least 3 hours of sunlight between 9.00am and 3.00pm on June 21.

It is considered that further detail and clarification is required to be provided in order to assess whether the proposal complies with the requirements and the adjoining properties are not adversely affected from the overshadowing from the proposed development. Due to the scale of the shadow diagrams and amount of detail provided it is difficult to clearly see the impact on each adjoining property. An inset of the plans is to be provided of the adjoining properties and property address marked. The existing dwellings at No. 27 and 28 Cedar Grove have not been shown on the shadow diagrams and this is required.

It is recognised that due to the existing topography of the site, a number of adjoining properties along the northern side of Cedar Grove currently experience overshadowing during mid-winter/June 21. It is noted that in the assessment of the amount of solar access received for adjoining properties, the proposal must not worsen the existing situation.

Concern is also raised when shadows are cast on existing dwellings if it affects a living room window, as locations of rooms have not been indicated on the plans. For example, a shadow is cast on the dwelling No. 22 Cedar Grove between 9am to 12pm. A summary table is to be provided of the adjoining properties to demonstrate compliance with this control.

m) Section 6.9 Basement car park

As per the requirements in section 5.4 of Chapter B1, the controls in section 6.9 apply to the development. The proposal exceeds the maximum allowed podium height of 1.2m above natural ground level or finished ground level. It is noted that the portion of the basement above 1.2m if included in the total GFA calculation, the proposal will not exceed the maximum FSR for the site.

However, this control goes on to provide that the following must be satisfied with regard to basement podiums in section 6.9.2.3:

- (a) Landscaped terraces are provided in front of the basement podium to reduce the overall visual impact;*
- (b) The height of the basement does not result in the building having a bulk and scale which dominates the streetscape; and*
- (c) The main pedestrian entry to the building is identifiable and readily accessible from the street frontage, including access by disabled persons.*

It is considered that the proposal does not satisfy these requirements with the extent of the height and use of landscaping terraces considered to be excessive and demonstrates that the design does not appropriately respond to the topography of the site.

n) Amenity between and for proposed dwellings

Concerns are raised over the design of the proposal and setbacks provided between the buildings within the development that appear to result in amenity impacts for the future occupants of the dwellings. Similar concerns were raised by DRP and further observations are made. In particular, the visual and acoustic privacy impacts between buildings 4 and 3 and potentially between buildings 3 and 2.

It is considered that living area terraces (main POS for the dwellings) on the upper ground level and the bedroom terraces on the ground floor located on the eastern side of building 4 will result in overlooking along the entire western façade of the western dwellings in building 3, that include bedrooms and the associated terraces situated on the level 1 and upper ground level and other windows. It is identified that the same potential issue is likely to occur with some of the eastern dwellings in building 3 overlooking dwellings in building 2, in particular Units 10-12.

Whilst it is recognised, depicted in the plans provided (Drawing No. DA/100) that there are proposed screening measures in place to try and ameliorate amenity impacts between these dwellings. It is considered that landscaping measures cannot be relied upon as a permanent provision of privacy and despite the proposed privacy screens and opaque balustrades, overlooking can still occur and the main POS area for the dwellings will cause acoustic privacy impacts on bedroom areas of adjacent dwellings.

Concern is also raised for the potential privacy and amenity impacts for the dwellings that contain bedrooms that are located with a window adjacent to the walkway network (podium level) that is understood to also be a communal open space area for the residents in each building. With the proposed privacy screen on the bedroom window it is considered it may not be the most appropriate room use adjacent to a nominated active space of the development.

9) Chapter B2 Residential Subdivision

For your information please note that Chapter B2 of WDCP 2009 was amended towards the end of 2019 and no saving provisions were made. As the application was lodged in 2020, the relevant version of the Chapter B2 to be considered can be found on Council's website.

10) Chapter B6 Illawarra Escarpment

Whilst there is no built form in the E2 zoned land for the site, there are works proposed associated with the VMP. The site contains lands within the Illawarra Escarpment between RL 50-150m and zoned E2 therefore it is considered this chapter applies.

a) Visual Impact Assessment

Concerns are raised over the accuracy of the visual impact assessment provided due to the lens used to take the photos and the age of the proposed vegetation/planting used in the photomontages. It appears that a wide-angle lens (35mm) was used for the report submitted. Photographs for the viewpoints are to be taken by a 50mm lens to best represent the perspective of the human eye. Also discussed in the DRP meeting, it appears that the photomontages have used semi to mature trees and it is considered the montages should use trees of 3-5 years to provide a reasonable representation of the development.

Due to the prominent location of the site and scale of the development concerns are also raised over the potential night-time visual impacts from the proposal.

Based on these concerns it is considered unclear that there will be minimal visual impact from the development and a revised visual impact assessment is required to address the matters raised.

b) Objectives

The site is located on a prominent ridgeline below Mount Keira. A significant amount of cut and fill is proposed for the site, which is naturally very steep and highly visible from throughout the city. It is also noted the boundary roads are cantilevered below the natural fall of the site. The cut and fill of up to 8-10m cut and 6m fill require retaining walls to be constructed up to 10m in height throughout the site. This is not considered to meet a range of development objectives of Part 2 of Chapter B6:

(a): Protect and maintain the visual character and high scenic environmental quality of the Illawarra Escarpment.

(d) Ensure development is designed to minimise any potential visual impact upon the escarpment, when viewed from key vantage points throughout the LGA;

(b) Ensure access roads to development are designed to minimise any adverse visual impact on the escarpment and to ameliorate any potential soil erosion or land instability impacts.

11) Chapter E2 Crime Presentation through Environmental Design (CPTED)

The SEE refers to the Crime Risk report that address Chapter E2 however, it is considered this report does not specifically or adequately address the controls in this chapter. Please also refer to the DRP notes for comments relevant to safety and CPTED matters.

a) Section 3.2 Natural surveillance and sightlines/Section 3.4 Building design

As previously mentioned, the design of the buildings appears to be quite insular with the majority of the entrances to the dwellings all internally facing into a long narrow podium area and in some instances set above the adjacent driveway, isolating the building from the street. Therefore, the entrances to the dwellings are not visible from the internal road/driveway.

The placement and design of the entrances to the dwellings accessed via a podium area, that appear to be tucked in slightly from the building façade and with limited ability for casual surveillance as the door entrance is situated on the side rather facing the podium. The only window that overlooks the podium level for a number of dwellings is for a bedroom that is to be screened for privacy. In addition, a number of southern units in buildings 1-4 only have a door entrance at the podium level. This is particularly a concern for building 1 as it does not have terraces on upper levels to provide for some surveillance.

Pedestrian access through the site is not clearly defined and consists of steep narrow paths that are obscured from view. Safe paths of movement for pedestrians throughout the development is required. It is also considered casual surveillance of the hardstand visitor car parking spaces located for all of the buildings is inadequate, either being screened for view due to being situated at a lower level with limited outlook from the proposed dwellings or being located a fair distance from the actual dwellings.

Concern is raised over the location of the communal drying areas for buildings 1-4 that appear hidden and potential areas of entrapment. Clarification is sought to whether the proposal provides for the opportunity for casual surveillance of the exercise areas shown in the landscape plans, as they appear to be hidden from view in the proposed location by retaining walls and associated landscaping.

Building 4 has the bins at one end of the floor with no clear sightlines from each dwelling and is not considered safe.

Overall, it is considered that the design of the buildings and dwellings do not provide an identifiable and desirable street address or allow for outlook and casual surveillance towards the internal driveway or common areas of the development.

b) Section 3.3 Signage

Due to the scale of the development it is considered a wayfinding and indicative signage plan is to be provided for the proposal.

12) Chapter E7 Waste Management

Appendix 2 of Chapter E7 in WDCP 2009 provides the waste and recycling generation rates for development including multi-dwelling housing. The documentation has not outlined the waste generation calculations for the development and proposed size of bins to be used. This information is required to understand the total

number of bins required and if there are adequate waste storage areas provided for the development in the nominated (in this instance buildings 1-4 where waste storage is located on the garage level) including the bin collection area on site.

In addition, clarification is requiring how residential waste will be transported to the waste collection point, utility and waste management area.

If you have any questions please contact me on the telephone number below.

This letter is authorised by

Vivian Lee
Senior Development Project Officer
Wollongong City Council
Telephone (02) 4227 7111



NSW RURAL FIRE SERVICE

Wollongong City Council
Locked Bag 8821
WOLLONGONG DC NSW 2500

Your reference: (CNR-3820) DA-2020/4
Our reference: DA20200217000595-Original-1

ATTENTION: Vivian Lee

Date: Tuesday 21 April 2020

Dear Sir/Madam,

Integrated Development Application
s100B - Subdivision - Strata Title Subdivision
14 Cosgrove Av Keiraville NSW 2500 AUS, (none)

I refer to your correspondence dated 14/02/2020 seeking general terms of approval for the above Integrated Development Application.

The New South Wales Rural Fire Service (NSW RFS) has reviewed the information provided and advises the following:

1. Considering the density and location of the proposed development within the landscape the proposed development is required to provide reticulated water in accordance with the provisions of AS 2419.1-2005;
2. The current access arrangements appear to be impractical and does not provide RFS vehicles with suitable access to buildings within the site. Preferably, access should be a through road or should provide suitable turning areas to allow for RFS vehicles to enter and exit in a forward direction;
3. The development gains access from a single point from Cosgrove Avenue and there does not appear to be an opportunity to provide a second access point to the public road network. Considering the density of the proposed development the NSW RFS prefers two points of access to the public road network, providing through roads access to the development. The NSW RFS requires additional bushfire protection measures to be incorporated into the subdivision;
4. It appears there are a mixture of vegetation types impacting on the proposed development. It is likely disturbed vegetation on the northern elevation and south western elevation of the proposed development would regenerate to Illawarra Escarpment Blue Gum Wet Forest. Please provide a revised vegetation assessment, which addresses all hazardous vegetation within 140m of the development site;
5. The APZ tables of Planning for Bushfire Protection are provided for acceptable solutions only, with slopes up to 20 degrees. Effective slopes in excess of 20 degrees downslope will require a detailed performance assessment.

If additional information is not received within 100 days the application will be refused on the basis of Requested Information not provided. A formal request for re-assessment would be required after this time.

1

Postal address

NSW Rural Fire Service
Locked Bag 17
GRANVILLE NSW 2142

Street address

NSW Rural Fire Service
4 Murray Rose Ave
SYDNEY OLYMPIC PARK NSW 2127

T (02) 8741 5555
F (02) 8741 5550
www.rfs.nsw.gov.au



For any queries regarding this correspondence, please contact Peter Dowse on 1300 NSW RFS.

Yours sincerely,

Martha Dotter
Team Leader, Dev. Assessment & Planning
Planning and Environment Services



Planning,
Industry &
Environment

Our ref: DOC20/41201
Senders ref: DA-2020/4

Vivian Lee
Senior Development Project Officer
Wollongong City Council
Via e-mail: vlee@wollongong.nsw.gov.au

Dear Ms Lee

Subject: Proposed multi-unit housing development, site works & strata subdivision - 14 Cosgrove Ave, Keiraville – DA-2010/4

Thank you for referring the abovementioned development application via the NSW Concurrence & Referral Portal dated 14 January 2020.

The Aboriginal cultural heritage assessment report (ACHAR) prepared by Biosis (2019) has not identified any Aboriginal objects within the proposed development area. Given this, we are not able to issue an Aboriginal Heritage Impact Permit (AHIP) for the proposed works, because harm to Aboriginal objects is not being proposed. We are also therefore not able to issue General Terms of Approval as per Section 90 of the National Parks and Wildlife Act 1974.

We support the recommendation (Biosis 2019) for an interpretive strategy to appropriately recognise the Aboriginal cultural values of Mount Kiera. We suggest that this should include consultation with appropriate Aboriginal knowledge holders. It may be appropriate for intangible Aboriginal cultural values to be recognised through the design of the development, however, this can only be determined in consultation with the appropriate Aboriginal community members. This is likely to be best achieved before the DA is finalised and through consultation between the Aboriginal community, Council, the applicant, Heritage NSW and our office.

We also request that:

1. The applicant clarify whether the proposed development overlaps with the mapped extent of site 52-2-3198 as shown in the AHIMS site card.
2. The finalised ACHAR and archaeological report must be provided to the Registered Aboriginal Parties.
3. The finalised ACHAR and archaeological report must be submitted to the AHIMS Registrar: ahims@environment.nsw.gov.au.

If you have any questions about this advice, please do not hesitate to contact Mr Calvin Houlison, Senior Conservation Planning Officer via calvin.houlison@environment.nsw.gov.au or 4224 4179.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Chris Page'.

Chris Page

Senior Team Leader, Planning (Illawarra)
Biodiversity & Conservation Division
Environment, Energy and Science

22 January 2020

Attachment 3: Endeavour Energy



The General Manager
Wollongong City Council


3 February 2020

ATTENTION: Vivian Lee

Dear Sir or Madam

I refer to the below email of 14 January 2020 from NSW Planning, Industry & Environment regarding NSW Government concurrence and referral request CNR-3820 for Wollongong City Council's development application DA-2020/4 at 14 COSGROVE AVENUE KEIRAVILLE 2500 (Lot 90 DP 1086429) for 'Residential - multi dwelling housing development comprising the construction of (five) 5 buildings with a total of 47 dwellings, 109 car parking spaces associated earthworks, tree removal, internal accessway, landscaping, APZs, stormwater drainage, substation and strata subdivision'. Submissions need to be made to Council by 4 February 2020.

As shown in the below site plan from Endeavour Energy's G/Net master facility model (and extracts from Google Maps Street View) there are:

- No easements over the site benefitting Endeavour Energy (active easements are indicated by red hatching).
- It adjoins an easement for kiosk substation no. 40525 (indicated by the symbol ) which is an older style of a distribution padmount substation. There are low voltage and 11,000 volt / 11 kilovolt (kV) high voltage underground cables exiting the substation / easement going to an underground to overhead (UGOH) pole on the opposite side of the road
- No electricity infrastructure to the road frontage or customer connection point to the site.

Please note the location, extent and type of any electricity infrastructure, boundaries etc. shown on the plan is indicative only. Generally (depending on the scale and/or features selected), low voltage (normally not exceeding 1,000 volts) is indicated by blue lines and high voltage (normally exceeding 1,000 volts but for Endeavour Energy's network not exceeding 132,000 volts / 132 kV) by red lines (these lines can appear as solid or dashed and where there are multiple lines / cables only the higher voltage may be shown). This plan only shows the Endeavour Energy network and does not show electricity infrastructure belonging to other authorities or customers owned electrical equipment beyond the customer connection point / point of supply to the property. This plan is not a 'Dial Before You Dig' plan under the provisions of Part 5E 'Protection of underground electricity power lines' of the Electricity Supply Act 1995 (NSW).

Subject to the following recommendations and comments Endeavour Energy has no objection to the Development Application.

51 Huntingwood Drive, Huntingwood, NSW 2148
PO Box 811, Seven Hills, NSW 1730
T: 133 718

endeavourenergy.com.au

ABN 11 247 365 823

- Network Capacity / Connection

Endeavour Energy has noted the following in the Statement of Environmental Effects regarding the provision of electricity services to the proposed development.

3.13. Infrastructure and Utility Works

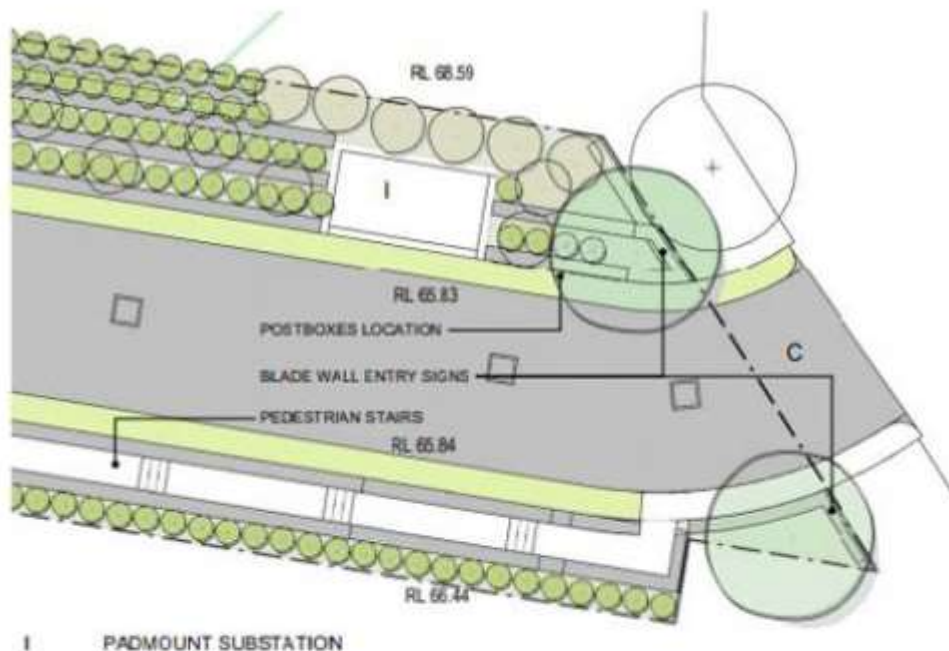
3.13.2. Electrical

A new padmount electrical substation is to be installed in the south-eastern corner of the site. Specifically, this substation is to be installed close to the site's Cosgrove Avenue frontage and north of the entry driveway. The new substation is proposed to replace the existing kiosk substation to the south of the site and will supply electricity to both the proposed development and the existing street supply.

Initial consultation has been undertaken with Endeavour Energy who has provided the applicant with a 'Design Brief' for the proposed electrical works (**Appendix 13**).

Appendix 13 is Endeavour Energy's response of 28 November 2019 to the Connection of Load Application (endeavour Energy Reference UML9423 – 2019/01906/001) in which the Design Brief details the method of supply requirements including the provision of the new padmount substation on the site.

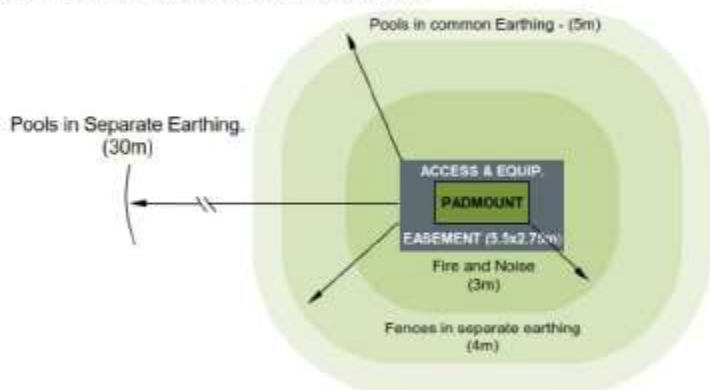
The following extract of the Part Landscape Plan 3 shows a proposed Padmount Substation location.



From Endeavour Energy's perspective the fact that provision is being made for the substation is a positive. Endeavour Energy's general requirements is for a padmount substation easement to have a minimum size of 2.75 x 5.5 metres and also have the additional restrictions for fire rating (which usually extends 3 metres horizontally from the base of the substation footing, and 6 metres vertically from the same point and also has regard to any structures etc. attached to the building that may spread a fire) and possibly swimming pools and spas (which in this instance does not appear to be applicable).

The easement and restriction/s should not affect any adjoining property (unless supported by an appropriate easement / restriction). The substation should be at ground level and have direct access from a public street (unless provided with a suitable easement for right of access). The easement and restrictions for the padmount substation are shown in the following extract of the attached copy of Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights', Figure A4.3 'Padmount easements and clearances'.

A4.3 - Padmount easements and clearances



Generally it is the Level 3 Accredited Service Provider's (ASP) responsibility (engaged by the developer) to make sure that the substation location and design complies with Endeavour Energy's standards the suitability of access, safety clearances, fire ratings, flooding etc. As a condition of the Development Application consent Council should request the submission of documentary evidence from Endeavour Energy confirming that satisfactory arrangements have been made for the connection of electricity and the design requirements for the substation, prior to the release of the Construction Certificate / commencement of works.

In regard to the proposed decommissioning of kiosk substation no. 40525, Endeavour Energy's G/Net master facility model indicates that the substation currently has 57 customer connection points servicing 61 premises. The applicant will need to arrange alternative supply to these premises. As the existing local network will not have sufficient spare capacity, the new substation will need to be constructed before the existing substation can be decommissioned.

The proponent and their Accredited Service Provider (ASP) should continue to work with Endeavour Energy's Network Connections Branch (via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm) who are responsible for managing the conditions of electricity supply to the development. The applicant will need to contact Endeavour Energy's Network Connections if this Development Application:

- Includes any contestable works projects that are outside of the existing Design Brief or approved / certified works.
- Results in an electricity load that is outside of the existing Design Brief or Supply / Connection Offer requiring the incorporation of the additional load for consideration. This is due to load being based on a desktop assessment using an After Diversity Maximum Demand (ADMD) where demand is aggregated over a large number of customers providing an ADMD for the site / per lot. Depending on the actual development proposed for the site, the ADMD provided may not be sufficient.

- Urban Network Design

Endeavour Energy's Company Policy 9.2.5 'Network Asset Design', includes the following requirements for electricity connections to new urban subdivision / development:

5.11 Reticulation policy

5.11.1 Distribution reticulation

In order to improve the reliability performance of and to reduce the operating expenditure on the network over the long term the company has adopted the strategy of requiring new lines to be either underground cables or where overhead is permitted, to be predominantly of covered or insulated construction. Notwithstanding this strategy, bare wire overhead construction is appropriate and permitted in some situations as detailed below.

In areas with the potential for significant overhanging foliage, CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown branches and debris than bare conductors. CCT must only be used in 'treed' areas as the probability of a direct lightning strike is low. In open areas where the line is not shielded from a direct lightning strike, bare conductors must generally be used for 11kV and 22kV reticulation.

Non-metallic Screened High Voltage Aerial Bundled Cable (NMSHVABC) must be used in areas which are heavily treed and where it is not practicable to maintain a tree clearing envelope around the conductors.

⁴ A "treed" area is one with a substantial number of trees adjacent to the line, in each span. In these situations CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown

5.11.1.1 Urban areas

Reticulation of new residential subdivisions will be underground. In areas of low bushfire consequence, new lines within existing overhead areas can be overhead, unless underground lines are cost justified or required by either environmental or local council requirements.

Where underground reticulation is required on a feeder that supplies a mixture of industrial, commercial and/or residential loads, the standard of underground construction will apply to all types of load within that development.

Where ducting is used, adequate spare ducts and easements must be provided at the outset to cover the final load requirements of the entire development plan.

Extensions to the existing overhead 11kV/22kV network must generally be underground. Bare wire will be used for conductor replacements and augmentations except in treed areas where CCT or NMSHVABC must be used.

Extensions to the existing overhead LV network and augmentations must either be underground or ABC. Conductor replacements greater than 100m in route length must utilise aerial bundled cable.

- Bushfire

Endeavour Energy has noted that the Statement of Environmental Effects indicates that 'The site is identified on Wollongong's Bushfire Prone Land Map as being bush fire prone land'. The accompanying Bushfire Protection Assessment which provides an assessment of the site having regards to NSW Rural Fire Service 'Planning for Bush Fire Protection 2006' does not appear to include any advice or recommendations regarding electricity services.

NSW Rural Fire Service 'Planning for Bush Fire Protection 2006' as a general bush fire protection measures requires that electricity should be located so as not to contribute to the risk of fire or impede the fire fighting effort and provides the following advice:

<p>Electricity Services</p> <ul style="list-style-type: none"> • location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings • regular inspection of lines is undertaken to ensure they are not fouled by branches. 	<ul style="list-style-type: none"> • where practicable, electrical transmission lines are underground. • where overhead electrical transmission lines are proposed: <ul style="list-style-type: none"> - lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and - no part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002).
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The following is an extract of Endeavour Energy's Company Policy 9.1.1 Bushfire Risk Management:

9.1.1 BUSHFIRE RISK MANAGEMENT

1.0 POLICY STATEMENT

The company is committed to the application of prudent asset management strategies to reduce the risk of bushfires caused by network assets and aerial consumer mains to as low as reasonably practicable (ALARP) level. The company is also committed to mitigating the associated risk to network assets and customer supply reliability during times of bushfire whilst achieving practical safety, reliability, quality of supply, efficient investment and environmental outcomes. The company is committed to compliance with relevant acts, regulations and codes.

Accordingly the network required to service the proposed development must be fit for purpose and meet the technical specifications, design, construction and commissioning standards based on Endeavour Energy's risk assessment associated with the implementation and use of the network connection / infrastructure for a bushfire prone site. In assessing bushfire risk, Endeavour Energy has traditionally focused on the likelihood of its network starting a bushfire, which is a function of the condition of the network. Risk control has focused on reducing the likelihood of fire ignition by implementing good design and maintenance practices. However the potential impact of a bushfire on its electricity infrastructure and the safety risks associated with the loss of electricity supply are also considered.

- **Streetlighting**

With the significant increase in both vehicular and pedestrian traffic, although the existing streetlighting is designed for an urban environment, the streetlighting associated with the proposed development should be reviewed and if necessary upgraded to comply with the series of standards applying to the lighting of roads and public spaces set out in with Australian/New Zealand Standard AS/NZS 1158: 2010 'Lighting for roads and public spaces' as updated from time to time.

Whilst the determination of the appropriate lighting rests with the road controlling authority, Endeavour Energy as a Public Lighting Service Provider is responsible for operating and maintaining the streetlights on behalf of local councils, Roads and Maritime Services and other utilities in accordance with the NSW Public Lighting Code 2019 (Code) as updated from time to time. Endeavour Energy recognises that well designed, maintained and managed Public Lighting offers a safe, secure and attractive visual environment for pedestrians and drivers during times of inadequate natural light.

For any Code implementation and administration / technical matters please contact Endeavour Energy's Substation Mains Assets Section via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm or email mainsenquiry@endeavourenergy.com.au.

- **Earthing**

The construction of any building or structure (including fencing, signage, flag poles, hoardings etc.) whether temporary or permanent that is connected to or in close proximity to Endeavour Energy's electrical network is required to comply with Australian/New Zealand Standard AS/NZS 3000:2018 'Electrical installations' as updated from time to time. This Standard sets out requirements for the design, construction and verification of electrical installations, including ensuring there is adequate connection to the earth. Inadequate connection to the earth to allow a leaking/fault current to flow into the grounding system and be properly dissipated places persons, equipment connected to the network and the electricity network itself at risk from electric shock, fire and physical injury.

- **Easement Management / network Access**

The following is a summary of the usual / main terms of Endeavour Energy's electrical easements requiring that the landowner:

Electric fields are strongest closest to their source, and their strength diminishes rapidly as we move away from the source.

The level of a magnetic field depends on the amount of the current (measured in amps), and decreases rapidly once we move away from the source.

Typical magnetic field measurements associated with Endeavour Energy's activities and assets given the required easement widths, safety clearances etc. and having a maximum voltage of 132,000 volt / 132 kV, will with the observance of these separation distances not exceed the recommended magnetic field public exposure limits.

The proposed padmount substation to the northern side of the driveway with the battle-axe layout of the lot means that the new multi-dwelling housing is well separated. However, the new substation will be in closer to the existing dwelling on northern adjoining 12 Cosgrove Avenue (Lot 91 DP 30903), particularly the further the substation is setback from the front boundary.

- **Vegetation Management**

The planting of large trees in the vicinity of electricity infrastructure is not supported by Endeavour Energy. Suitable planting needs to be undertaken in proximity of electricity infrastructure (including any new electricity infrastructure required to facilitate the proposed development). Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems are the best plants to use. Larger trees should be planted well away from electricity infrastructure (at least the same distance from overhead power lines as their potential full grown height) and even with underground cables, be installed with a root barrier around the root ball of the plant.

Landscaping that interferes with electricity infrastructure could become a potential safety risk, restrict access, reduce light levels from streetlights or result in the interruption of supply may become subject to Endeavour Energy's Vegetation Management program and/or the provisions of the *Electricity Supply Act 1995* (NSW) Section 48 'Interference with electricity works by trees' by which under certain circumstances the cost of carrying out such work may be recovered.

- **Dial Before You Dig**

Before commencing any underground activity the applicant is required to obtain advice from the *Dial Before You Dig 1100* service in accordance with the requirements of the *Electricity Supply Act 1995* (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical and other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

- **Public Safety**

Workers involved in work near electricity infrastructure run the risk of receiving an electric shock and causing substantial damage to plant and equipment. I have attached Endeavour Energy's public safety training resources, which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely. The public safety training resources are also available via Endeavour Energy's website via the following link:

<http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw+homepage/communitynav/safety/safety+brochures>.

- Not install or permit to be installed any services or structures within the easement site.
- Not alter the surface level of the easement site.
- Not do or permit to be done anything that restricts access to the easement site without the prior written permission of Endeavour Energy and in accordance with such conditions as Endeavour Energy may reasonably impose.

Endeavour Energy's preference is for no activities or encroachments to occur within its easement areas. However, if any proposed works (other than those approved / certified by Endeavour Energy's Network Connections Branch as part of an enquiry / application for load or asset relocation project) will encroach / affect Endeavour Energy's easements, contact must first be made with the Endeavour Energy's Easements Officer, Jennie Saban, on mobile 0417484402 or alternately via email Jennie.Saban@endeavourenergy.com.au or Easements@endeavourenergy.com.au.

For further information please refer to Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'. In regard to the future padmount substation likely required to facilitate the proposed development, please find attached for the applicant's reference a copy Endeavour Energy's 'Guide to Fencing, Retaining Walls and Maintenance Around Padmount Substations'.

It is imperative that the access to the existing electrical infrastructure on and in proximity of the site be maintained at all times. To ensure that supply electricity is available to the community, access to the electricity infrastructure may be required at any time. Restricted access to electricity infrastructure by maintenance workers causes delays in power restoration and may have severe consequences in the event of an emergency.

• Prudent Avoidance

The electricity industry has adopted a policy of prudent avoidance by doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to emissions from electricity infrastructure such as electric and magnetic fields (EMF) and noise which generally increase the higher the voltage ie. Endeavour Energy's network ranges from low voltage (normally not exceeding 1,000 volts) to high voltage (normally exceeding 1,000 volts but not exceeding 132,000 volts / 132 kV).

In practical terms this means that when designing new transmission and distribution facilities, consideration is given to reducing exposure and increasing separation distances to more sensitive uses such as residential or schools, pre-schools, day care centres or where potentially a greater number of people are regularly exposed for extended periods of time.

These emissions are usually not an issue but with Council's permitting or encouraging development with higher density, reduced setbacks and increased building heights, but as the electricity network operates 24/7/365 (all day, every day of the year), the level of exposure can increase.

Endeavour Energy believes that irrespective of the zoning or land use, applicants (and Council) should also adopt a policy of prudent avoidance by the siting of more sensitive uses eg. the office component of an industrial building, away from and less susceptible uses such as garages, non-habitable or rooms not regularly occupied eg. storage areas in a commercial building, towards any electricity infrastructure – including any possible future electricity infrastructure required to facilitate the proposed development.

Where development is proposed near electricity infrastructure, Endeavour Energy is not responsible for any amelioration measures for such emissions that may impact on the nearby proposed development.

Please find attached a copy of Energy Networks Association's 'Electric & Magnetic Fields – What We Know' which can also be accessed via their website at <https://www.energynetworks.com.au/electric-and-magnetic-fields> and provides the following advice:

If the applicant has any concerns over the proposed works in proximity of the Endeavour Energy's electricity infrastructure to the road verge / roadway, as part of a public safety initiative Endeavour Energy has set up an email account that is accessible by a range of stakeholders across the company in order to provide more effective lines of communication with the general public who may be undertaking construction activities in proximity of electricity infrastructure such as builders, construction industry workers etc. The email address is Construction.Works@endeavourenergy.com.au.

- Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days. Endeavour Energy's contact details should be included in any relevant risk and safety management plan.

I appreciate that not all the foregoing issues may be directly or immediately relevant or significant to the Development Application eg. if the existing overhead power lines are undergrounded. However, Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise should development within closer proximity of the existing and/or required electricity infrastructure needed to facilitate the proposed development on or in the vicinity of the site occur.

Could you please pass on a copy of this submission and the attached resources to the applicant? Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me or the contacts identified above in relation to the various matters. Due to the high number of development application / planning proposal notifications submitted to Endeavour Energy, to ensure a response contact by email to property.development@endeavourenergy.com.au is preferred.

Yours faithfully

Cornelis Duba

Development Application Specialist
Network Environment & Assessment

T: 9853 7896

E: cornelis.duba@endeavourenergy.com.au

51 Huntingwood Drive, Huntingwood NSW 2148

www.endeavourenergy.com.au





30 March 2020

Vivian Lee
Council Assessing Officer
Wollongong City Council
vlee@wollongong.nsw.gov.au

RE: Development Application DA-2020/4 at 14 Cosgrove Avenue, Keiraville

Thank you for notifying Sydney Water of development application DA-2020/4 at 14 Cosgrove Avenue, Keiraville which proposes a multi-housing development comprising five buildings with a total of 47 dwellings, car parking spaces, earthworks, tree removal, stormwater drainage and associated works. Sydney Water has reviewed the application based on the information supplied and provides the following comments to assist in planning the servicing needs of the proposed development.

Water Servicing

- Water servicing should be available via a 100mm CICL watermain (laid in 1961) on Cosgrove Avenue. Amplifications may be required.

Wastewater Servicing

- Wastewater services are available; however, you are required to undertake extensions in order to service your development. Full details will be given at the Section 73 stage.

This advice is not a formal approval of our servicing requirements. Detailed requirements, including any potential extensions or amplifications, will be provided once the development is referred to Sydney Water for a Section 73 application. More information about the Section 73 application process is available on our web page in the [Land Development Manual](#).

Further advice and requirements for this proposal are in Attachment 1. If you require any further information, please contact the Growth Planning Team at urbangrowth@sydneywater.com.au.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Faith Tid-ang".

Faith Tid-ang
Growth Intelligence Specialist
City Growth and Development
Sydney Water

Attachment 1

Sydney Water Servicing

A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water.

The proponent is advised to make an early application for the certificate, as there may be water and wastewater pipes to be built that can take some time. This can also impact on other services and buildings, driveways or landscape designs.

Applications must be made through an authorised Water Servicing Coordinator. For help either visit www.sydneywater.com.au > Plumbing, building and developing > Developing > Land development or telephone 13 20 92.

Building Plan Approval

The approved plans must be submitted to the Sydney Water [Tap in™](#) online service to determine whether the development will affect any Sydney Water sewer or water main, stormwater drains and/or easement, and if further requirements need to be met.

The Sydney Water [Tap in™](#) online self-service replaces our Quick Check Agents as of 30 November 2015.

The [Tap in™](#) service provides 24/7 access to a range of services, including:

- building plan approvals
- connection and disconnection approvals
- diagrams
- trade waste approvals
- pressure information
- water meter installations
- pressure boosting and pump approvals
- changes to an existing service or asset, e.g. relocating or moving an asset.

Sydney Water's [Tap in™](#) online service is available at:
<https://www.sydneywater.com.au/SW/plumbing-building-developing/building/sydney-water-tap-in/index.htm>

Attachment 5: Design Review Panel Minutes and Recommendations

Wollongong Design Review Panel Meeting minutes and recommendations

Date	26 March 2020
Meeting location	Wollongong City Council Administration Offices
Panel members	David Jarvis Gabrielle Morrish Sue Hobley
Apologies	Mark Riordan – Manager City Planning
Council staff	Vivian Lee - Senior Development Project Officer John Wood - City Wide development Manager
Guests/ representatives of the applicant – Skype meeting	Martin Jones - Architect - AEJ Margie Rahman - AEJ Helen Deegan - Planner City Plan Stuart Scobie - Landscape- AEJ Edward Cheung - Surewin Parkview Frank Mangione - Project Manager – MAM
Declarations of Interest	
Item number	1
DA number	DA-2020/4
Determination pathway	Council Referral
Property address	14 Cosgrove Avenue Gwynneville
Proposal	
Applicant or applicant's representative address to the design review panel	
Background	The site was Inspected by the Panel on 26 March 2020
Design quality principals SEPP 65	
Context and Neighbourhood Character	<p>The proposal is located on visually prominent site at the base of Mount Kiera. The site falls 76m from its rear down to the street, creating an extremely challenging terrain</p> <p>An initial site analysis (DA/03) has been provided that outlines heritage, environmental, bush fire and geotechnical constraints, from this analysis an area of land with potential for development is identified and noted as the “<i>Site development opportunity area</i>”.</p> <p>Within the area identified as the “<i>Site development opportunity area</i>” are significant natural features which must also be identified as part of the site analysis, such as existing trees, watershed, level plateaus and knolls. These features should also be taken into consideration when developing the site.</p> <p>The remainder of the site analysis then focuses upon a single solution for the development of the site. Rather than exploring alternative strategies to respond to the constraints and opportunities of this very challenging but naturally beautiful site.</p> <p>The proposal orientates every building to achieve an outlook containing coastal and escarpment views to the north-east irrespective of the contours. This ignores the diversity of outlooks available from the site, and the opportunities this provides to develop a design that sits better within the topography and reduces drainage (and therefore also ecological) issues, tree loss, privacy,</p>

	visual and amenity impacts.
Built Form and Scale	<p><u>Access and circulation</u></p> <p>The 41,934sqm site is accessed from Cosgrove Avenue via a steep access handle (approximately 17m in width) located between existing residential dwellings. Because the natural gradients of the site are too steep to accommodate vehicular movements, the proposed road has been cut deeply into the hillside and a hairpin turn created. The hairpin entry road connects to a loop road positioned around the perimeter of the designated developable area of the site, providing access to the proposed dwellings and some elements of the communal open space. The challenging topography and limited entry option of the site are acknowledged. However, further consideration should be given to the following issues:</p> <ul style="list-style-type: none"> - The western edge of the loop road extends to almost about the western site boundary, cutting through the base of a knoll and requiring the north western corner of the site to be filled. Pulling the loop road back (approximately 50m) from the western boundary would reduce the extent of cut and fill and create a relatively level access road running in a north south direction. This could create a street from which level access could be provided to dwellings on either side, noting that this would have to be approved by the Rural Fire Services. If the RFS rejects an internal road, it would confirm the panel's opinion that the proposal represents an over-development of such a constrained site. - What safety measures are being provided at the outer perimeter of the loop road, where steep drops are created at the edge of the road. What is the aesthetic impact of the required safety measures? The applicant, when asked, confirmed that sandstone facing of engineered retaining walls up to 10m in height would be specified. The exorbitant costs and visual impact of this would, again, suggest that the proposed earthworks relate to a proposal that is an over-development of the site. - Where will the clearly defined public paths be provided to create a legible pedestrian access strategy for the site. No paths appear to be provided on the main loop road. The pedestrian paths indicated on site operation diagrams are narrow, pass through podiums in close proximity to bedroom windows and lack consistent casual surveillance. Universal access, ease of circulation and daunting way-finding result, along with potential safety concerns. An alternative pedestrian movement strategy should be developed - Have alternative access strategies been explored? For example, a clear linear stepped pedestrian access path could be provided through the centre of the site. The path could sit within a landscaped setting with generous pockets of communal open space. Creating a landscaped spine through the site, breaking down the scale of the development.

	<p><u>Topography / built form</u></p> <p>The current proposal responds to the steep undulating topography of the site with large, flat building footprints which require large-scale earthworks. Proposed buildings are up to 70 m in width, containing up to 14 dwellings. This strategy results in an excessive amount of cut (up to 10m in some locations) and projection of the dwellings well above the contours in other locations, creating building forms that relate extremely poorly to the site's natural topography and the proposed access roads. For example, the northern pedestrian entry of building 2 is located approximately 2m above the adjacent road, effectively isolating the building from the street. The southern end of the podium level pedestrian access is approximately 10m above the southern driveway. Whilst the carparking level above is 7m above the adjacent road level.</p> <p>It is recommended that smaller building footprints containing less dwellings are developed to allow buildings to be sited more sensitively, touching the site lightly using lightweight construction and stepping with the topography of the site. This will allow building entrances to be accessed directly from roads and assist in providing a better relationship with natural ground level and the environmental and urban context of the site.</p>
Density	<p>The proposal is compliant with council's numerical floor space ratio controls. However, a large proportion of the site is undevelopable, which has focused buildings into the central portion of the site. Groupings of up to 14 dwellings have been proposed, with relatively tight spaces created between dwellings. This results in a distinctly urban building typology, which is at odds with the natural environment and scenic quality of site.</p> <p>It is a concern that the current proposal reads as an over-development of this highly visible site.</p>
Sustainability	<p>Issues of water sensitive urban design, ecological management and tree loss are not acceptably addressed.</p> <p>Species selection for the landscape plantings does not acceptably address the recommendations of the Vegetation Management Plan.</p>
Landscape	<p>The landscape plan for the site appears to have been developed in response to the proposed architectural plans. On a site with such significant environmental and development constraints and such outstanding ecological improvement and amenity opportunities, an ecological landscape design understanding should drive the design process, with the architectural plans responding to it.</p> <p>The following key concerns are raised in relation to the proposed landscape design:</p> <ul style="list-style-type: none"> - The earthworks will alter the landform, requiring extensive

	<p>retaining walls that will be visually dominant and physically over-bearing. The topographical relationship with the natural context of the site will be very poor and the hydrology of nearby slopes, vegetation and watercourses will be altered, potentially giving rise to detrimental ecological and environmental outcomes.</p> <ul style="list-style-type: none"> - Total tree removal is proposed within the designated development area. - Pedestrian and bicycle access, way-finding and circulation are very poorly resolved and give rise to serious amenity concerns (see below under Amenity). - Communal Open Space (COS) is scattered across the site with poor linkage. There is lack of consideration of how each space contributes to an integrated 'communal open space masterplan' that provides for a variety of social and recreational activities for the anticipated demographic of the development and relates strongly to its environmental context. - The species list should be developed as recommended in the Vegetation Management Plan, with all plantings (except for the vegetable gardens) selected from tables 11, 12 and 13. <p>On such a steep site, a more centrally located, multi-functional COS would be more equitable and would promote the development of a sense of community among all residents. Supporting facilities, such as kitchen, ablution and under cover areas should be provided.</p> <p>The relationship between the COS and the ecological assets on and adjacent to the site should be strongly recognised in the landscape plan. Bush-walking, bushland management support and bird-watching (or wildlife observation) opportunities should be exploited to support the health of local ecosystems and the benefits of human interactions with nature. Community gardens should be sited and designed to minimise impacts on water quality and vegetation communities.</p>
<p>Amenity</p>	<p>Pedestrian access is provided to dwellings by a podium level walkway. In some locations walkways providing access to dwellings are also designated as part of the Pedestrian Site Egress path (also the main through-site circulation path) and communal open space. A significant portion of the walkway network is fronted by bedrooms, creating the potential for privacy issues. More space should be provided between building and a clear pedestrian circulation strategy must be developed.</p> <ul style="list-style-type: none"> - It is recommended that transition spaces (front gardens) should be provided to the entry of each unit. - Active areas of communal open space must be provided away from bedrooms, but still be accessible to all dwellings. - A better pedestrian connection to areas of communal open space must be provided.

	<p>The majority of dwellings are detached from the street making way-finding extremely difficult. Imagine a pizza delivery man attempting to access unit 4 of building 5. The dwelling is completely detached from any road on the site and the front door consists of a single door located at the far end of a 70m long podium. This unit effectively has no front door / meaningful point of pedestrian entry.</p> <p>The bedroom terraces of building 4 are orientated directly towards to bedroom POS of building 3. Building 4 is positioned 1.6m higher than building 3, resulting in the bedrooms and terraces of building 4 looking directly into the bedrooms and private open space of building 3. There is an attempt to address this situation with screening and landscaping (as shown in DA/100). However, both visual and acoustic privacy remain a concern.</p>
Safety	<p>The singular point of vehicular entry raises safety concerns for a development of this scale. If the main entry is blocked (road works, vehicle accident, fire) residents within the development are effectively trapped.</p> <p>Pedestrian access through the site consists of steep narrow paths that twist and turn through the site and are in places obscured from view. This effectively creates spaces to facilitate antisocial behaviour. A clearer pedestrian access strategy must be developed.</p> <p>In some locations steep embankments are located at the perimeter of the loop road. The applicant advised that universal access to the COS at the top of the site (Eagle's Nest Park) would be via the loop road. Safety measure need to be taken to ensure the safety of residents negotiating this road.</p>
Housing Diversity and Social Interaction	<p>The building typology appears too dense and urban for the site and its immediate context, A lower density (smaller groupings of dwellings) approach would be more consistent with this context.</p> <p>There is a lack of connection to the primary area of communal open space (Eagles Nest Park), this will be to the detriment of social interaction on the site. (See above under Landscape.)</p>
Aesthetics	<p>It is envisaged that the proposal aesthetic will change significantly when developed to address the issues raised in this report.</p> <p>The primary concern with the current proposal is that the large, flat footprints of the buildings proposed are at odds with the steep topography of the site. Smaller building forms that can step with the topography of the site should be developed.</p> <p>The establishment of large trees to visually screen the development and contribute to landscape amenity will be problematic in the</p>

	<p>altered site conditions that will include:</p> <ul style="list-style-type: none"> - loss of and severe damage to topsoil; - limited dimensions and constrained environmental conditions of deep soil areas among dense built form; - retaining walls, paths, paving and other built structures that will be liable to damage from tree roots and branches; and - exposure of trees to physical damage from human activities.
Key issues, further Comments & Recommendations	<p>The significant environmental constraints and visual prominence of this site demands a far more sensitive design approach than is currently proposed. A successful design must respond to and work with the steep topography of the site. Unfortunately, the large flat building footprints currently proposed impose themselves upon the natural topography of the site, creating building forms that appear far too dense and urban for the visually sensitive context of the site and its immediate surrounds.</p> <p>The proposed density also creates potential privacy issues between dwellings and lacks a coherent pedestrian circulation strategy.</p> <p>The Panel does not support the proposal in its current form. It is recommended that alternative strategies are developed for consideration. Alternative strategies should focus on smaller groupings of dwelling that step with the topography.</p>