

DEEP SOIL

In an effort to increase the Deep Soil, reducing the size of the basement footprint to facilitate greater side setbacks for the building has been considered. The Fitzsimons Lane proposed setback is already 6m as opposed to the 3m minimum DCP requirement. Increased setbacks to the south, east and west are only possible by modifying the extent of the basement level. The Carpark Basement layout has however been designed to minimum clearances as required by relevant Australian Standards and to meet minimum car parking rates established by the KDCP. Should building and the basement level setbacks be increased to create additional deep soil space, compliant car parking rates and carpark circulation cannot be achieved unless an additional basement level is provided. Aside from being unfeasible, deeper excavation will further disturb the site and is contrary to relevant development outcomes that seeks for development to respond to site topography. The design reasonably endeavours to utilise part of the existing excavated areas to accommodate proposed parking facilities, and to minimise the need for additional excavation (noting that large portions of existing excavated areas are proposed to become deep soil areas, as part of significantly increasing deep soil area across the site).

Several other design revisions have also been investigated to increase the deep soil area including but not limited to the following:

- Relocation of some basement services.
- -Relocation of the Fire Hydrant & Sprinkler Tank into the basement footprint would also require moving the fire services room, hydraulic pump room and bins rooms, resulting in the loss of parking spaces (and which would necessitate the excavation of an additional basement level, which as indicated above is not viable).
- -Relocation of the fire hydrant & sprinkler tank and fire services to Fitzsimons Lane has also been considered, however given that Fitzsimons Lane has been classified as the main activation street and Merriwa St as a supporting activation street, the decision was made to concentrate the services at Merriwa St.

The possibility of narrowing the driveway by removing the splayed area (west side) has been reviewed. The Traffic Engineer has confirmed that the width of the driveway is required to allow for the intercom and 3.5m wide roadways on either side of the centre divider for the waste vehicle. Therefore, the driveway cannot be reduced in width to provide additional deep soil area on its western side.

As a result of our investigations, the proposed design has been amended with the deletion of the NW external stairs and through site pathway on the western side of the site, with pathway access provided only for the fire stairs on that side of the building. Such amendments will increase total deep soil area to 42%, which represents an 8% variation to the Ku Ring Gai Council DCP's 50% deep soil requirement. This well exceeds the 7% minimum ADG requirement and is also well above the current existing deep soil area of 12%. By further increasing the site's deep soil area, the canopy coverage area has also increased to 1540sqm including the addition of 1 large, 1 medium and 3 small trees on the NW part of the site plus 1 large tree on the SW part of the site, next to the driveway. An additional 2 large trees have also been added to the north and east sides of the site to further respond to the objectives of the deep soil control. Please refer to the revised Landscape Plans submitted.

OVERSHADOWING IMPACT ASSESSMENT, further studies.

Additional Sun Eye diagrams for both a compliant envelope and the proposed development at No.7-9 Merriwa St have been prepared to assess the overshadowing impacts of the Height and FSR variations. Future compliant building envelopes for both adjoining properties No.1-3 Merriwa St and No.11-15 Merriwa Street have been included, as requested by Council. Refer to architectural drawings DA411A and DA414 issued with the Development Application.

Overshadowing impact to No.11-15 Merriwa St Complying Future Development:

When comparing the subject site complying envelope to the proposed development, the additional impact of the proposed development occurs in a small portion of the SE corner. The small loss of solar in the SE corner is more than offset by the solar accessible on the north and east elevations. The proposed design in response to the site conditions including orientation and topography, restricts the building height to five storeys and provides a greater setback of 6m (3m minimum required) to Fitzsimons Lane in order to maximise the direct solar to No 11-13 Merriwa's east elevation in the morning hours. The north elevation receives solar all day. Between 11am-12noon and after, the proposal has nil effect on No11-15 in terms of solar access and overshadowing.

The overshadowing assessment shows that the neighbouring building at No.1-3 Merriwa Street (currently an office/commercial use building) is not impacted by the proposal until approximately 2pm. The proposed five storey building height and Fitzsimons Lane 6m setback maximises the direct solar to No 1-3 Merriwa's west elevation in the afternoon hours.

The overshadowing impact on both No.11-15 Merriwa and No.1-3 Merriwa Street by the proposed development compared to a complying bulk is minimal and results in a better outcome for both the adjoining properties.

Overshadowing impact from No.1-3 Merriwa St Complying Future Development:

When comparing the overshadowing of a complying future development at 1-3 Merriwa Street on the subject site for both a complying envelope and the proposed development, the impact is similar. The proposed development is able to achieve equivalent direct solar to its east elevation in the morning hours.

As the proposed design restricts the height to five storeys and has an increased setback to Fitzsimons Lane to advantage the adjoining properties, it is proposed to redistribute the bulk to a partial eighth level facing Merriwa Street. The proposed partial eighth level is predominantly under the height plane and only marginally exceeds the plane however, increases the proposed development's access to solar capitalising on the site's orientation and topography. The relatively minor height exceedance is also due to the 3.2m floor-to-floor ceiling height as required by the DBP Act. The partial eighth level has nil effect on 1-3 Merriwa Street.

The north elevation of the subject proposal will receive solar all day. Between 11am-12noon and after, the future development at 1-3 Merriwa proposal has nil effect on the subject site.