



APPENDIX E PART 2

Urban Design



5 SEPP 65 REVIEW OF 136 – 140 WALKER ST

5.1 North Sydney CBD Context

North Sydney CBD is characterised as a transit orientated high rise - mixed use environment with good access to both rail and bus services.

The CBD is going through a significant growth with several high rise buildings being approved for development including the proposal at 136-140 Walker Street which has a building height of RL 132.5m. The maximum allowable building height of RL 125 at the subject site demonstrates that Council has a vision for high rise buildings in the vicinity of 136-140 Walker Street.

facing balconies with a reduced rear setback.

In this regard, a review of the performance of the proposed development in relation to the relevant design principles has been undertaken to establish whether the impacts of the proposed substation design are considered reasonable and is presented in Table 1.

5.2 SEPP 65 Review of 136 – 140 Walker St

SEPP 65 (*Design Quality of Residential Flat Development*) provides that in determining an application for a residential flat development of three or more floors and containing four or more apartments, that the consent authority take into consideration a number of matters relating to design quality, including 10 design quality principles.

As part of the supporting documentation for the proposed approved development at 136-140 Walker Street, the proponent undertook a SEPP 65 analysis to establish how well the building performed in relation to the prescribed design principles. The conclusion of the report was that the proposed mixed use development was consistent with SEPP 65 provisions.

However, the SEPP 65 assessment undertaken for the proposed development at 136-140 Walker Street did not consider potential impacts of any future redevelopment of the properties located at 3-11 Ward Street, nor the resulting impact on the performance of the project under the provisions of SEPP 65. As a result, due consideration was not given to the future impacts of reducing the rear setback of the proposed development nor the siting of balconies to the western elevation (common boundary) and the combined effect of western

Table 1: Review of the SEPP 65 assessment

SEPP 65 PRINCIPLE	SEPP 65 ASSESSMENT FOR 136-140 WALKER STREET	IMPACT OF PROPOSED SUBSTATION ON 136-140 WALKER STREET
Context		
Good design responds and contributes to its context. Context can be defined as the key natural and built features of an area. Responding to context involves identifying the desirable elements of a location's current character or, in the case of precincts undergoing a transition, the desired future character as stated in planning and design policies. New buildings will thereby contribute to the quality and identity of the area.	The backdrop of multi-storey office buildings in combination with the surrounding high-rise residential buildings and medium to low density forms of housing sets the immediate context. The proposal regards both the adjoining 11 storey commercial building at No. 76 Berry Street and the low scale residential building at No. 142 Walker Street and two storey heritage terraces at No.144-150. The podium height of the proposed development (at RL 72) provides a break point to achieve an identifiable transition between the height and scale of buildings on either side and would complement any proposal for either retention as is where redevelopment has occurred or additions to those sites yet to be developed in terms of their scale and context. The front building façade reflects the prominence of sandstone fences and walls in the streetscape of Walker Street and neighbouring streets, through the incorporation of large sandstone piers and the retention of the expansive sandstone outcrop at the south-eastern corner of the site. The remainder of the building is stepped, locating massing and height away from the street and neighbouring sites. The proposed development also maintains the water views obtained from the roof top of the Ward Street car park as well as the height requirements with respect to Council controls and nominal curve generated from those controls. The overall built form in terms of the proposal's alignment, proportions and building type is considered compatible within the streetscape context.	The subject site and the proposed development site are located within the North Sydney CBD which is characterised by high rise buildings. The proposed substation has a height of 29.7 metres (RL 94.5m) which is substantially lower than the permissible RL of 111m to RL 125m for 3-11 Ward Street. As demonstrated in a Visual Impact Assessment undertaken for the proposed substation redevelopment and through Figures 5.1, 5.2 and 5.3, the proposed substation would fit within the existing streetscape character of Ward Street and Harnett Streets. Technical requirements and the configuration of the electrical equipment do not allow the eastern wall to be articulated or modulated. The main impact of the proposed substation would be towards the 8 west facing units between levels 5 to 8 at 136-140 Walker Street. In order to mitigate the impact and be sympathetic with the surrounding commercial and mixed use urban context, the proposed substation has been designed with (refer to Figure 5.3 and Figure 5.4): » A modulated built form with a strong vertical articulation along Ward Street. » Horizontal brick banding. » Mix of material including two shades of bricks, metal louvres and opening frames. » Skillion roof form. It is considered that there have been sufficient mitigation measures implemented to minimise the impact of a large wall towards 136-140 Walker Street and that the building responds to its context.

SEPP 65 PRINCIPLE	SEPP 65 ASSESSMENT FOR 136-140 WALKER STREET	IMPACT OF PROPOSED SUBSTATION ON 136-140 WALKER STREET
Scale		
Good design provides an appropriate scale in terms of the bulk and height that suits the scale of the street and the surrounding buildings. Establishing an appropriate scale requires a considered response to the scale of existing development. In precincts undergoing a transition, proposed bulk and height needs to achieve the scale identified for the desired future character of the area.	As above	The scale of the proposed substation design is modest compared to the scale of a building envelope allowed in NSDCP 2002. The scale and bulk of the proposed substation is consistent with that of other buildings within Ward Street, Berry Street and the western side of Harnett Street. The impact of the bulk of the building when viewed from Berry Street, Ward Street and Harnett Street is minimised through appropriate articulation and modulation (refer to Figures 5.1 and 5.3). The scale of the building towards 136-140 Walker Street is mitigated with a skillion roof that slopes towards the common boundary. In order to mitigate the impact of the large eastern wall facing 136-140 Walker Street, the building has been designed with a horizontal pattern of brick coloured bands that visually modulates the wall (refer to Figure 5.3 and 5.4).
Built Form		
Good design achieves an appropriate built form for a site and the building's purpose, in terms of building alignments, proportions, building type and the manipulation of building elements. Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.	As above	The proposed substation has been designed to be built to all boundaries in order to accommodate its specific technical requirements and constraints. Mitigation measures to address Ward Street, Harnett Street and 136-140 Walker Street include a modulated facade, a skillion roof and a mix of materials that includes two shades of coloured bricks and metal louvres. The eastern facade, adjacent to the approved development at 136-140 Walker Street, continues the horizontal rhythm of the light and dark brick bands. The building, particularly the brick facade, has been designed to complement the Federation building style characteristic to the lower North Shore area, and the previous dwellings which occupied the site. The masonry finish combined with louvred panels and window / opening details generally conform to similar low level developments in the area. To the casual observer or passer-by, the building effectively conceals its function.



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Density		
Good design has a density appropriate for a site and its context, in terms of floor space yields (or number of units or residents). Appropriate densities are sustainable and consistent with the existing density in an area or, in precincts undergoing a transition, are consistent with the stated desired future density. Sustainable densities respond to the regional context, availability of infrastructure, public transport, community facilities and environmental quality.	North Sydney Local Environmental Plan 2001 (NSLEP 2001) requires a Floor Space Ratio (FSR) between the range 3:1 and 4:1 for commercial components of Mixed Use Development, however there is no density control applicable to the development and compatibility of the built form to its context is probably a more appropriate consideration in this circumstance. The commercial component of the building will result in a FSR of 3:1 (including associated car parking) which complies with Council's LEP requirement. Similar to other multi-storey mixed use buildings in Walker Street, the residential component of the new building is set back from the both the Walker Street façade and the other three site boundaries. The built form therefore retains its compatibility with the adjacent buildings on either side of the subject site.	Construction of the proposed substation at 3-11 Ward Street would not alter the density contributions of the approved development at 136-140 Walker Street.
Resource, energy and water efficiency		
Good design makes efficient use of natural resources, energy and water throughout its full life cycle, including construction. Sustainability is integral to the design process. Aspects include demolition of existing structures, recycling of materials, selection of appropriate and sustainable materials, adaptability and reuse of buildings, layouts and built form, passive solar design principles, efficient appliances and mechanical services, soil zones for vegetation and reuse of water.	A BASIX certificate was submitted outlining all energy and water saving commitments. Energy efficient appliances and water efficient fixtures are also proposed for each of the units. Rainwater will be collected for landscape irrigation and demolished building materials will be reused and recycles where possible.	Construction of the proposed substation at 3-11 Ward Street would not alter the original SEPP 65 assessment for the approved development at 136-140 Walker Street.





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Landscape		
Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in greater aesthetic quality and amenity for both occupants and the adjoining public domain. Landscape design builds on the existing site's natural and cultural features in responsible and creative ways. It enhances the development's natural environmental performance by co-ordinating water and soil management, solar access, micro-climate, tree canopy and habitat values. It contributes to the positive image and contextual fit of development through respect for streetscape and neighbourhood character, or desired future character. Landscape design should optimise usability, privacy and social opportunity, equitable access and respect for neighbours' amenity, and provide for practical establishment and long term management.	Open terraced areas and balconies within the building will be landscaped with 2 to 4 metre wide planter boxes along their perimeters, providing a satisfactory level of plantings and localised sun protection and in turn, reasonable levels of privacy to adjoining neighbours.	Construction of the proposed substation would have minimum impacts on the approved development at 136-140 Walker Street as: » The usability of the private open spaces would not change. » The proposed substation design does not have any opening toward 136-140 Walker Street, therefore it would not alter the privacy of any private open space. » Although the substation would overshadow the private open spaces on levels 5 to 7 these can still be used and planted with plants that tolerate low light. In summary, there would be minor impacts on the landscape amenity of six west facing units. These units can still establish low light tolerant vegetation and maintain this vegetation in the long term.



SEPP 65 PRINCIPLE	SEPP 65 ASSESSMENT FOR 136-140 WALKER STREET	IMPACT OF PROPOSED SUBSTATION ON 136-140 WALKER STREET
Amenity		
Good design provides amenity through the physical, spatial and environmental quality of a development. Optimising amenity requires appropriate room dimensions and shapes, access to sunlight, natural ventilation, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, outlook and ease of access for all age groups and degrees of mobility.	Internal amenity for occupants is of a high standard. The compliance table to the Residential Flat Design Code in Annexure A of Statement of Environmental Effects demonstrates the building has been well designed with regard to room dimensions and shapes, access to sunlight, natural ventilation, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, outlook and ease of access for all age groups and degrees of mobility.	North Sydney CBD is a high density environment where amenity can be compromised by the proximity of high rise buildings. 136-140 Walker Street was approved with a reduced setback on the western boundary of 4.835 metres which is 25% less than the recommended in the NSDCP 2002 (6.5 metres). Access to natural sun light As demonstrated in the shadow diagrams shown in Figures 6.1 and 6.2 the proposed substation overshadows a small portion of the western and northern facades of the proposed development at 136-140 Walker Street. In relation to the impacts to the south-west facing units on the winter solstice (21 June): » Two units on levels 5 and 6 receive direct sunlight for approximately 1 hour; » The unit on level 7 receives direct sunlight for approximately 1.5 hours; » The unit on level 8 is not significantly affected by overshadowing, and » The unit on level 9 is not affected by overshadowing from the substation. In summary only 3 units would be impacted by overshadowing. 85% of the units would meet the Residential Flat Design Code (RFDC) requirement for 3 hours of sunlight in mid winter which is above the benchmark of 70%. Only three units would receive less than 2 hours of sunlight in mid winter, these being the ones located on the south-western side of levels 5 to 7. Irrespective of the proposed substation, these units would be impacted by the high rise buildings in Miller Street from 2 pm onwards (refer to Figures 5.5, 5.6, 5.7 and 5.8). Considering the high rise nature of North Sydney CBD and the permissible controls in the NSDCP 2002, the three impacted south-western units would have been impacted by any development at 3-11 Ward Street above the podium level.



SEPP 65 PRINCIPLE	SEPP 65 ASSESSMENT FOR 136-140 WALKER STREET	IMPACT OF PROPOSED SUBSTATION ON 136-140 WALKER STREET
Amenity		Visual privacy The proposed substation does not provide any openings on the eastern elevation. Accordingly, there is no potential to overlook the approved development's living areas or balconies located on its western elevation. Therefore there are no impacts in relation to visual privacy. Ventilation The proximity of the proposed substation would not impact the ventilation of the units between levels 5 and 7 as all these units would still be cross ventilated. Outlook The eight western units between levels 5 and 8 would be impacted by the proximity of the proposed substation building. This separation could have been 6.5 metres if the NSDCP 2002 had been respected. The proposed building mitigates this impact by adding visual interest to the wall through bands of light and cream bricks and a skillion metal roof that can be seen from levels 8 and above. Acoustic privacy The proposed substation does not provide any habitable floor space and as such, general noise associated with residential development would not present an issue. In order to mitigate acoustic issues the substation has been designed to situate all noise producing equipment (including transformers) as far away from the eastern elevation as practicable. Therefore there are no acoustic privacy impacts on units in the approved development at 136-140 Walker Street from noise emanating from the proposed substation.



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Safety and security		
Good design optimises safety and security, both internal to the development and for the public domain. This is achieved by maximising overlooking of public and communal spaces while maintaining internal privacy, avoiding dark and non-visible areas, maximising activity on streets, providing clear, safe access points, providing quality public spaces that cater for desired recreational uses, providing lighting appropriate to the location and desired activities, and clear definition between public and private spaces.	Overlooking of public and communal spaces has been achieved by orienting balconies and living areas towards the street front and the rear of the site. Entrance ways and ground areas will be well lit and security systems provided to all vehicle and pedestrian entrances.	The lack of active uses and low visual interest along Harnett Street compromises the passive surveillance of this cul-de-sac. The proposed substation building would have the main vehicular access at the end of Harnett Street which would activate the streetscape. The substation building also has CCTV cameras along Ward Street and Harnett Street which provide additional surveillance.
Social dimensions and housing affordability		
Good design responds to the social context and needs of the local community in terms of lifestyles, affordability, and access to social facilities. New developments should optimise the provision of housing to suit the social mix and needs in the neighbourhood or, in the case of precincts undergoing transition, provide for the desired future community. New developments should address housing affordability by optimising the provision of economic housing choices and providing a mix of housing types to cater for different budgets and housing needs.	The proposal will result in significant upgrading of what is presently a dated and relatively unattractive development. The proposed building with its provision of quality commercial spaces, through private and public outdoor spaces would combine to make a positive contribution to the social dimension of North Sydney. The proposed through site access and the retained scope for views across the site further the developments contribution.	Construction of the proposed substation at 3-11 Ward Street would not alter the social dimension contributions of the approved development at 136-140 Walker Street.



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Aesthetics		
Quality aesthetics require the appropriate composition of building elements, textures, materials and colours and reflect the use, internal design and structure of the development. Aesthetics should respond to the environment and context, particularly to desirable elements of the existing streetscape or, in precincts undergoing transition, contribute to the desired future character of the area.	The composition of building elements and use of modern materials and finishes will result in a high quality external appearance of and attractively modulated residential tower above a well integrated podium that together make an aesthetic contribution to North Sydney CBD that is of a very high urban design standard. The development will add to the revitalisation of the area and streetscape while respecting the nearby heritage items.	The aesthetics of the proposed substation building has been considered to generate a building that has a commercial look and is sympathetic with the surrounding commercial and mixed use urban context. Its design includes: » A modulated built form with a strong vertical articulation along Ward Street. » Horizontal brick banding. » Mix of material including two shades of bricks, metal louvres and opening frames. » Skillion roof form. In summary, the proposed substation building fits within its context and does not alter the aesthetics of the development at 136-140 Walker Street.





Source: Kann Finch Group, 2010

Figure 5.1: Photomontage of the substation viewed from Berry Street



Source: Kann Finch Group, 2010

Figure 5.2: Photomontage of the substation viewed from the end of Harnett Street



Source: Kann Finch Group, 2010

Figure 5.3: Photomontage of the substation viewed from the entrance to the car park on Ward Street



Source: Kann Finch Group 2010

Figure 5.4: Photomontage of the substation viewed from a south west facing unit (level 7)

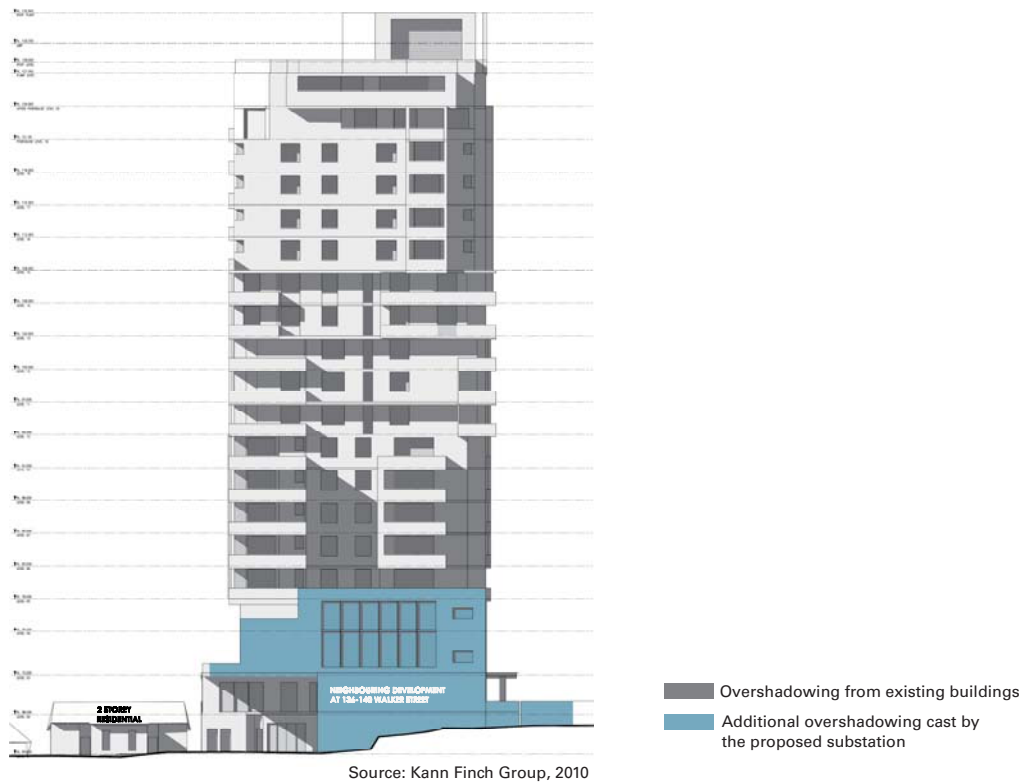


Figure 5.5: Additional Shadows Cast by Proposed Substation (June 21 12h00) - Western Elevation



Figure 5.6: Additional Shadows Cast by Proposed Substation (June 21 13h00) - Western Elevation

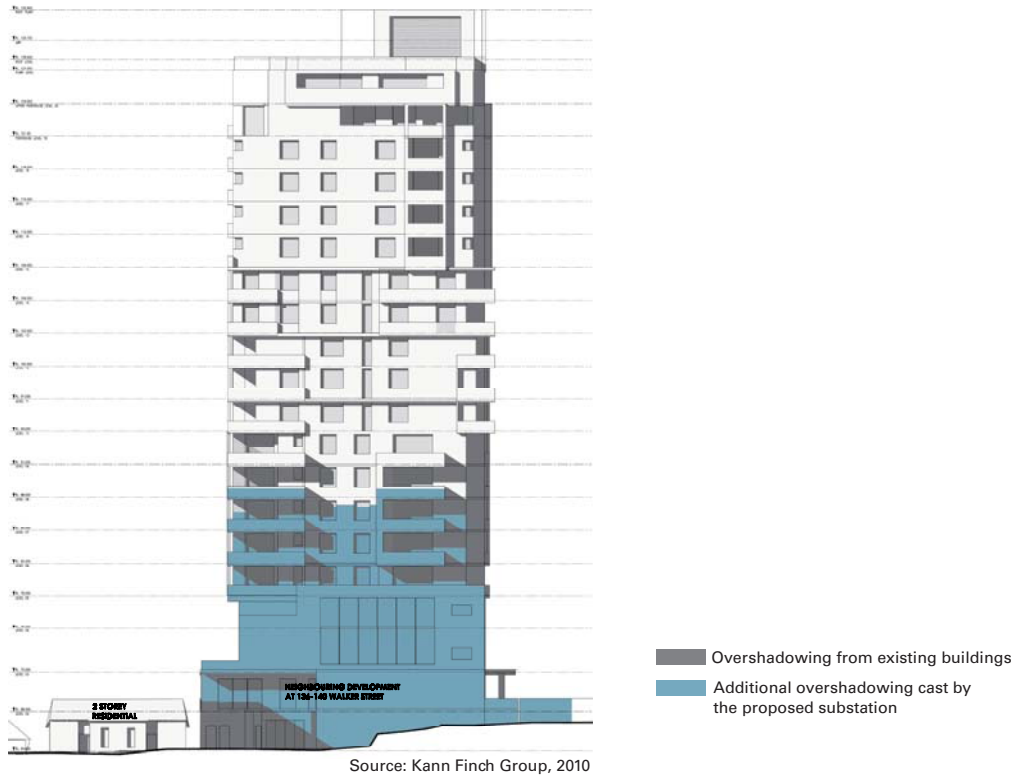


Figure 5.7: Additional Shadows Cast by Proposed Substation (June 21 14h00) - Western Elevation



Figure 5.8: Additional Shadows Cast by Proposed Substation (June 21 15h00) - Western Elevation



6 POTENTIAL BUILDING ENVELOPE IMPACTS

A 3D model of the potential building envelope was developed to illustrate the bulk and scale of a potential building that meets NSDCP 2002 requirements on the subject site.

which meets the 70% benchmark requirements in the *Residential Flat Design Code*.

Figure 4.6 shows the relationship of the potential building envelope with its surrounding context including the approved development at 136-140 Walker Street.

Figures 6.1 and 6.2 illustrate the overshadowing impact on the of the approved development at 136-140 Walker Street between 9 am and 3 pm.

The diagrams have been shaded with the following colours that illustrate:

Grey: Overshadowing from existing buildings

Blue: Additional overshadowing cast by the proposed substation

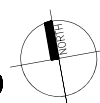
Red: Additional overshadowing from the potential building envelope at the subject site

These figures demonstrate that:

- » A potential building envelope would have overshadowed 40% more of the approved development's western elevation.
- » The overshadowing impacts of the proposed substation to 6 of the western units is minor considering the high rise nature of the North Sydney CBD and the potential building envelope at 3-11 Ward Street.

The proposed substation building overshadows 6 west facing units at 136-140 Walker Street and reduces the sun light access to less than 2 hours in mid winter to only three south-west facing units.

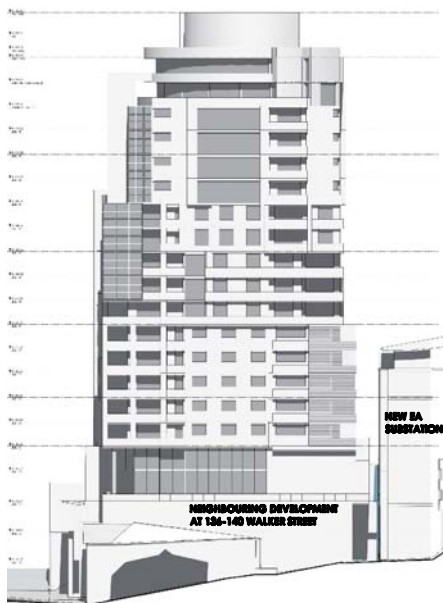
Notwithstanding the above, over 85% of the total 46 units will receive 3 hours of sunlight in mid winter



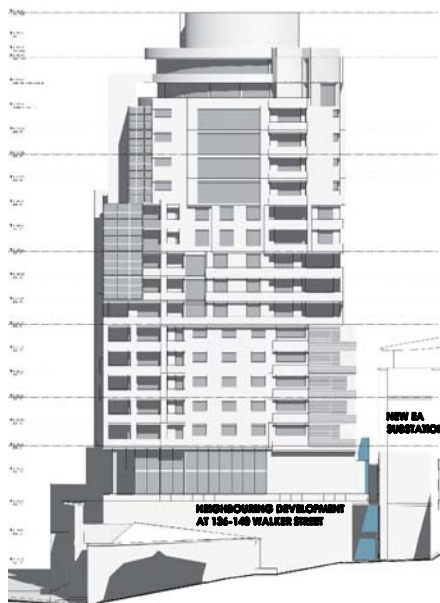
Additional overshadowing cast by the proposed substation

Figure 6.1: Overshadowing Analysis - Plan View

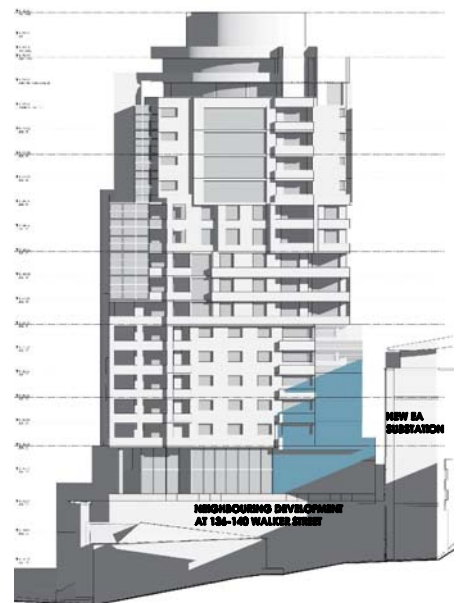
Source: Kann Finch Group, 2010



JUNE 21 11h30 NORTH ELEVATION



JUNE 21 12h00 NORTH ELEVATION



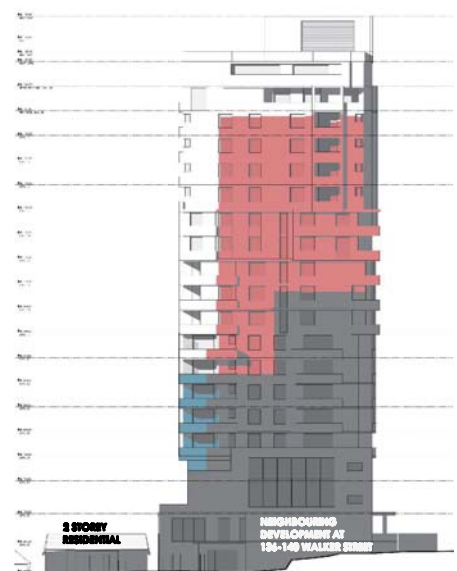
JUNE 21 15h00 NORTH ELEVATION



JUNE 21 11h30 WEST ELEVATION



JUNE 21 12h00 WEST ELEVATION



JUNE 21 15h00 WEST ELEVATION

■ Overshadowing from existing buildings

■ Additional overshadowing cast by the proposed substation

■ Additional overshadowing from the potential building envelope at the subject site

Figure 6.2: Overshadowing Analysis - Elevation View

Source: Kann Finch Group, 2010



7 CONCLUSIONS

The proposed substation building and the approved development at 136-140 Walker Street are located within the North Sydney CBD which is characterised by a dense and high rise building environment.

The substation would be built to all boundaries and up to a height of RL 94.5 to meet specific technical requirements, the Building Code of Australia and EnergyAustralia network standards. This height is 16.5 metres less than the permissible height at the south end and 30.5 metres less than the permissible height at the north end.

A number of substation designs were considered, however, the current substation design is the only option that satisfies all required equipment constraints.

The substation design has incorporated appropriate design measures to respond to its context and blend into the existing character of the North Sydney CBD. Some of the design elements include an articulated elevation towards Ward Street, a horizontal pattern of dark and light bricks and a skillion roof form.

The proposed substation building fits within its context and would not impact on urban design matters such as scale, built form or aesthetics in relation to its setting and streetscape.

The approved proposed development for 136-140 Walker Street would be separated approximately 4.8 metres from the eastern wall of the proposed substation. The distance between the substation and the apartment balconies at level 5 is 1.235 metres and 2.885 metres at levels 6 to 8.

The proposed substation building would result in impacts in relation to SEPP 65 matters to the approved proposed development at 136-140 Walker Street. These impacts are:

- » Reduction to less than 2 hours of sunlight to 3 south-west units during mid winter.
- » Outlook impact to 8 west facing units.
- » Overshadowing to the western elevation and private open spaces of 6 west facing units in mid winter.

Notwithstanding these impacts, over 85% of the units would still achieve more than 3 hours of sunlight in mid winter which is above the 70% benchmark outlined in the Residential Flat Design Code.

Mitigation measures in the proposed design to address outlook and visual impacts include:

- » A facade treatment that creates interest through a pattern of light and dark bricks.
- » A skillion roof form that reduces the bulk towards its eastern boundary.

Although the private open space of 8 western units would be overshadowed in mid winter, these spaces can still be planted with low light tolerant species.

A separation of 6.5 metres could have been achieved between residential units and the eastern facade of the substation site, if the NSDCP 2002 controls had been adopted for the approved proposed development at 136-140 Walker Street.

The impacts on the approved proposed development are small considering the nature and character of the North Sydney CBD.

In summary, the report demonstrates that:

- » The proposed substation has taken the necessary measures to respond to its context and mitigate urban design impacts.
- » The approved development at 136-140 Walker Street would still meet all of the SEPP 65 urban design principles if the substation design is approved for development.
- » A building that meets the NSDCP 2002 envelope would create far more impacts than those generated by the proposed substation building.

On balance it is considered that the minor urban design impacts to units at 136-140 Walker Street are acceptable and that the proposed substation building should be considered for approval.