5-9 CROYDON STREET LAKEMBA

SEPP 65 DESIGN VERIFICATION STATEMENT
+ COMPLIANCE TABLE

PREPARED BY
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PREPARED FOR
ELOURA HOLDINGS

16.05.22

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Project
5-9 Croydon Street, Lakemba

Prepared by
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16 May 2022

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SEPP 65 Design Verification Statement

Prepared to accompany the development application submitted to City of Canterbury Bankstown in October 2020

Project Address:
5-9 Croydon St, Lakemba

Prepared on behalf of:
Eloura Holdings

Prepared by:
Studio Hollenstein and Matthew Pullinger Architect

Verification of Qualifications

Matthias Hollenstein (Studio Hollenstein) and Matthew Pullinger (Matthew Pullinger Architect) are registered architects in New South Wales in accordance with the Architects Act 2003. Their registration numbers are 9237 and 6226 respectively.

Statement of Design

Studio Hollenstein and Matthew Pullinger Architect have been responsible for the design of the project since its inception and have worked with a wider consultant team. The project has been designed to contribute positively to the local area and respond respectfully to the local planning and design controls including the best practice design principles of SEPP No. 65.

This Design Statement has been prepared to demonstrate that the proposed multi-unit residential development has been designed to be consistent with the principles outlined in the Apartment Design Guide (SEPP65) including the objectives set out in part 3 and 4 of the Apartment Design Guide.

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The subject site is located in the suburb of Lakemba within the City of Canterbury Bankstown Local Government Area, approximately 16km from the Sydney CBD.

The locality is bordered by the suburbs of Greenacre to the north, Belmore to the east, Roselands to the south and Wiley Park to the west.

The Lakemba town centre is focused along the characterful retail strip of Haldon Street, defined primarily by two storey shopfronts, and is adjacent to the existing Lakemba railway station. The immediate area comprises mixed development ranging from medium density apartment buildings to single detached houses.

The town centre is undergoing change given its strategic location and proximity to transport. A number of consolidated sites have undergone renewal in recent years, and this pattern of renewal is likely to continue given the strategic planning context and planned introduction of Sydney Metro.

The subject site is:
5-9 Croydon Street 6,335m^2

Train Line

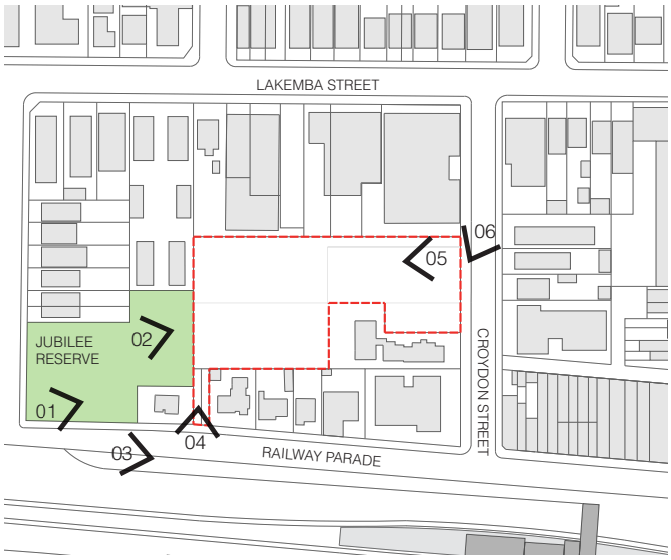
Lakemba Station

Bus Stop

'Main Street' with fine grain retail and commercial

Parkland

Place of worship


LAKEMBA STREET
JUBILEE RESERVE
01
02
03
04
05
06
CROYDON STREET
RAILWAY PARADE


01

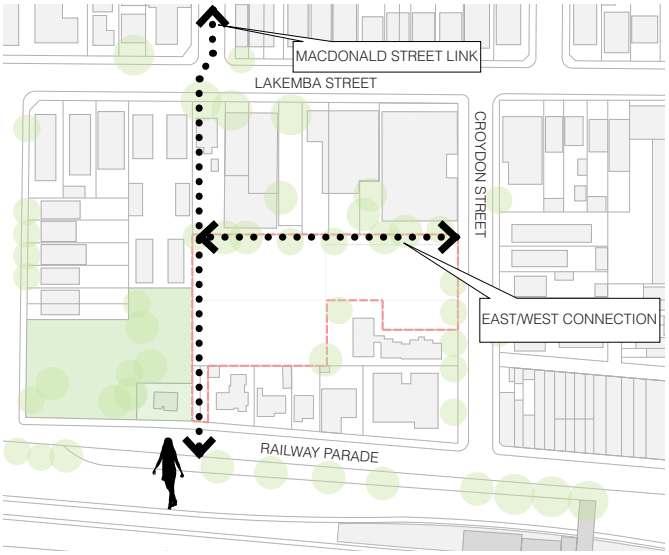

02


03

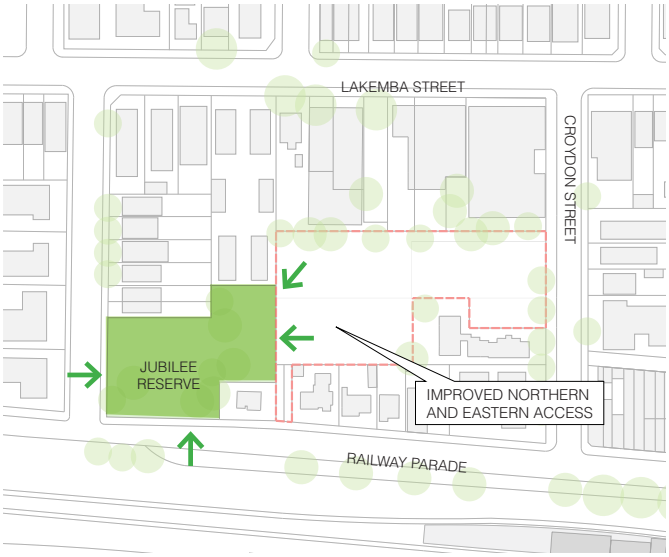

04


05


06

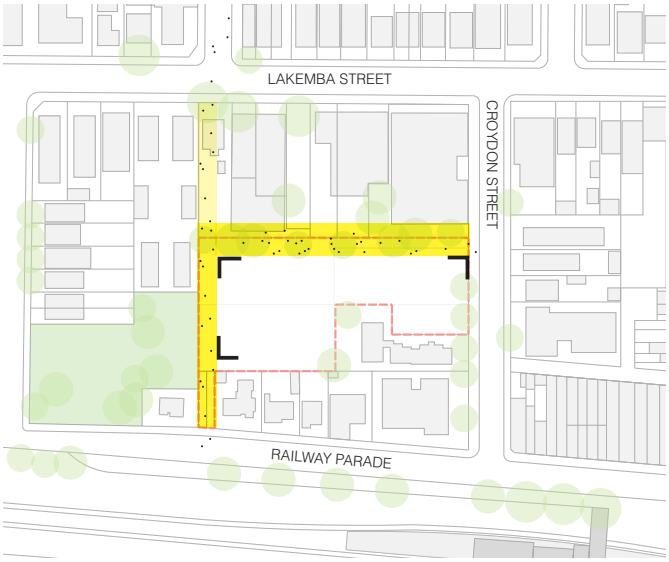


01
MAXIMISE PEDESTRIAN ACCESSIBILITY
Breaking down the scale of the block with through-site links

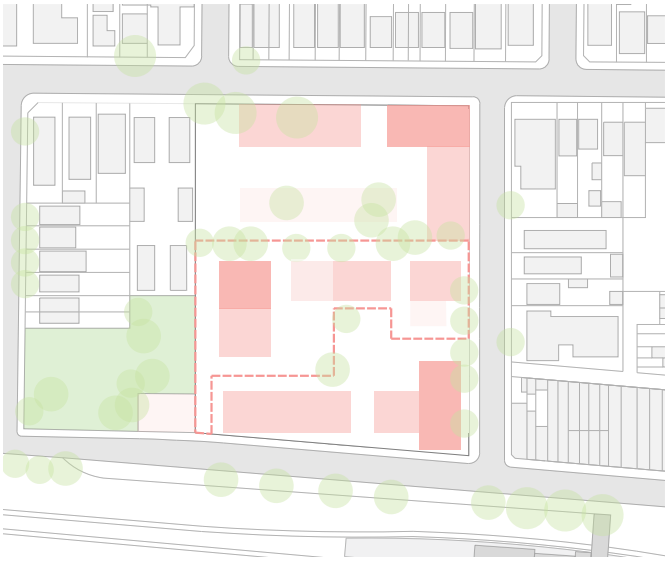


02
ENHANCE ROLE OF JUBILEE RESERVE + COMMUNITY GARDEN
Improved access to Jubille Reserve park from all directions

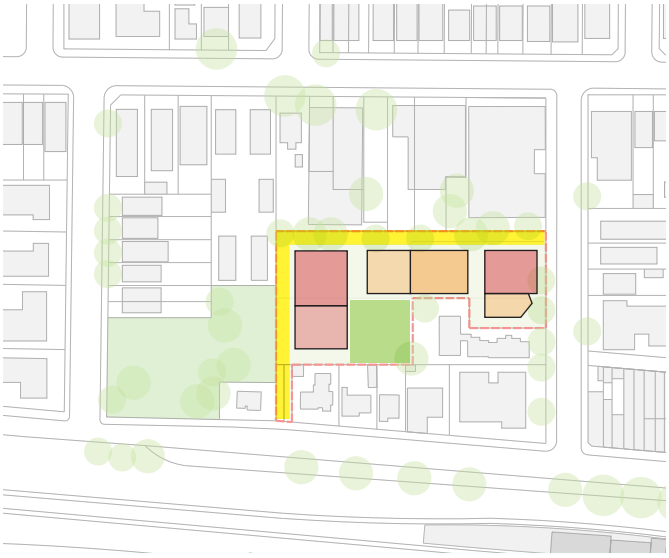
03
RETAIN + ENHANCE TREES & VEGETATION
Key trees and greenery retained. Park expanded into the block.



04
DEVELOPMENT TO FRAME + ADDRESS PUBLIC REALM
Buildings to contribute to public realm network and promote fine grain character



05
BUILT FORM
Buildings of different scales to respond to the context and controls - lower scale, urban scale, taller scale, future developments



06
A DIVERSE AND GENEROUS DEVELOPMENT
A family of buildings set along a new laneway and framing a large communal green.

SEPP65 Design Compliance Report

Principle 1: Context and Neighbourhood chatacter

Good design responds and contributes to its context. Context is the key natural and built features of an area, their relationship and the character they create when combined. It also includes social, economic, health and environmental conditions.

Responding to context involves identifying the desirable elements of an area's existing or future character. Well designed buildings respond to and enhance the qualities and identity of the area including the adjacent sites, streetscape and neighbourhood. Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.

The proposed development is located in Lakemba, within walking distance of the local shops on Haldon Street, Jubilee Reserve and Lakemba train station. Lakemba is well known as a multicultural community reflected in the vibrant mix of shops and restaurants along Haldon Street. The site sits within a large block measuring approximately 160 x 200m, framed by Lakemba Street, Croydon Street, Railway Parade and Bellevue Avenue. Jubilee Reserve sits on the south western corner of the site and includes the Lakemba Community Garden.

The design of the proposed multi-unit residential development aims to break down the scale of the block, and provide access within and through it by creating a new public laneway that runs from Croydon Street to Jubilee Park and down to Railway Parade. The laneway is then lined with a set of uniquely scaled buildings that frame a generous communal green. This large landscaped open space provides a green outlook for the development as well as its neighbouring sites. Each of the buildings within the development, as well as the gaps between them have been positioned to provide suitable setbacks and solar access to neighbouring sites.

To further accentuate the idea of a neighbourhood of buildings, each building design has been resolved in a unique way with a variety of proportions, forms and materiality to create a depth of character reflective of the rich culture of Lakemba.

Principle 2: Built Form and Scale

Good design achieves a scale, bulk and height appropriate to the existing or desired future character of the street and surrounding buildings.

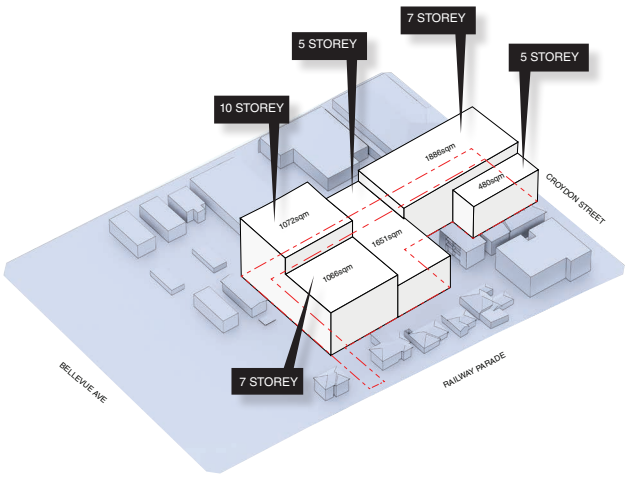
Good design also achieves an appropriate built form for a site and the building's purpose in terms of building alignments, proportions, building type, articulation and the manipulation of building elements. Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.

The site sits on the edge of Lakemba Town Centre and mediates between the taller scale of the town centre, as well as responding to the lower scale of the neighbourhood as you move away from the centre.

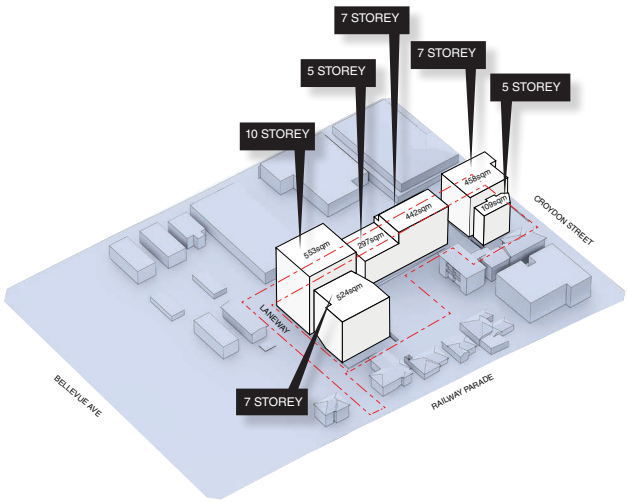
The building responds to this change of scale by;

- Creating a new landscaped public laneway that reduces the scale of the block, providing access into and through the block
- Dividing the building mass into a family of buildings, rather than a single mass. Each building with a unique sense of form and materiality as well as height.
- Resolving the level change across the site by introducing a set of landscape plinths that 'ground' each building.
- Consolidating vehicular basement access into a single point to minimise its visual impact on the context.
- Arranging the buildings to frame a central landscaped communal space that provides a landscape outlook for the residents and neighbours.

Each building is setback from the laneway by an average of 1.5m as well as 3-6m along Croydon Street. The facade for each building is designed with a gradient of openings, being smaller at street level, to provide privacy, and increasing towards the top of the building providing wider views. This facade approach creates architectural roof features at the top of the facades that sit within the upper level setbacks.



LEP HEIGHT LIMITS



PROPOSED MASSING

Principle 3: Density

Good design achieves a high level of amenity for residents and each apartment, resulting in a density appropriate to the site and its context.

Appropriate densities are consistent with the area's existing or projected population. Appropriate densities can be sustained by existing or proposed infrastructure, public transport, access to jobs, community facilities and the environment.

The site development controls have recently been amended to allow an FSR of up to 2:1. The proposed development achieves an FSR of 1.98:1 within a family of finely scaled buildings of unique form and materiality whilst also providing for a generous new public laneway, large landscaped communal open space and a number of communal roof terraces.

We believe that this approach provides suitable density adjacent Lakemba Town Centre and train station, but with significant resident and neighbourhood amenity. The development contains a variety of unit types within the building that cater to a variety of residents and lifestyles. Due to the way the facade and window openings modulate, each of these units is spatially unique with differing privacy and vista characteristics.

The total number of units is 144 with a mix of:

Studio Apartments	4.9%	(7 units)
1 Bedroom apartments	8.3%	(12 units)
2 Bedroom Apartments	77.7%	(109 units)
3 Bedroom Apartments	11.1%	(16 units)

Each building within the development contains a mix of these unit types.

Principle 4: Sustainability

Good design combines positive environmental, social and economic outcomes. Good sustainable design includes use of natural cross ventilation and sunlight for the amenity and liveability of residents and passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs. Other elements include recycling and reuse of materials and waste, use of sustainable materials, and deep soil zones for groundwater recharge and vegetation.

- The design achieves 2 hours of direct sunlight between 9am and 3pm in mid-winter for 70.8% of units. The remaining units are provided with ample daylight provided by generous building separations and outlook.
- 60.4% of the apartment units are naturally cross ventilated.
- The proposed materials of the building and external spaces are robust to ensure longevity and sourced to ensure their embodied energy is managed appropriately.
- The communal open space has been oriented and sited to ensure adequate solar access and encourage year round use.
- The project exceeds the minimum BASIX requirements.

Principle 5: Landscape

Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in attractive developments with good amenity. A positive image and contextual fit of well designed developments is achieved by contributing to the landscape character of the streetscape and neighbourhood.

Good landscape design enhances the development's environmental performance by retaining positive natural features which contribute to the local context, co-ordinating water and soil management, solar access, micro-climate, tree canopy, habitat values, and preserving green networks. Good landscape design optimises usability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity, provides for practical establishment and long term management.

One of the key design strategies of the project is to recognise the strong landscape character and green network of the neighbourhood, and extend that through the site along the laneway and communal green.

This has been achieved by minimising the basement extent to sit solely under the building footprints and slim connections between them.

This strategy both ties the development into the neighbourhood and provides significant resident amenity. The large communal open space has been sited within this unique landscape setting, giving it a distinct character and adding to its amenity. Landscaping and planting has also been used to provide additional privacy to the ground floor units.

Principle 6: Amenity

Good design positively influences internal and external amenity for residents and neighbours. Achieving good amenity contributes to positive living environments and resident well being.

Good amenity combines appropriate room dimensions and shapes, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, and ease of access for all age groups and degrees of mobility.

The development has been designed to provide the maximum amenity to its future residents and neighbours. The building achieves the objectives of the Apartment Design Guide in regards to orientation, overlooking, ventilation and solar access.

- Each dwelling has been provided with the minimum private outdoor space and all are directly accessible from the internal living areas.
- Each building façade has been designed to allow for increased privacy to units closer to street level whilst still maintaining adequate solar access and significant outlook into the surrounding neighbourhood and landscape. The upper levels have larger windows, providing significant outlook with east facing units having views back to the city skyline.
- The buildings and units have been oriented to afford 70.8% of units at least 2 hours of sunlight between 9am and 3pm in mid-winter.
- 60.4% of units are naturally cross ventilated.
- The landscape that has been designed around the base of each building provide a high level of amenity to the lower level units and the communal open space.
- 100% of units have been designed so their kitchens are within 8m of a window.

Please refer to the Architectural drawings for further detail.

Principle 7: Safety

Good design optimises safety and security, within the development and the public domain. It provides for quality public and private spaces that are clearly defined and fit for the intended purpose. Opportunities to maximise passive surveillance of public and communal areas promote safety. A positive relationship between public and private spaces is achieved through clearly defined secure access points and well lit and visible areas that are easily maintained and appropriate to the location and purpose.

The design integrates a number of strategies to optimise its safety and security:

- Principal building entrances are clearly identifiable and allow for passive surveillance.
- Building entries are highlighted through the use of building form and materials.
- Basement car park layouts are designed to minimise opportunities for alcoves and allow for clear lines of sight
- Security access will be provided in the form of keys, swipe cards or remote controllers.
- Entries are well lit.
- Design allows for the passive surveillance of communal space and entry spaces.
- Increased pedestrian traffic will be a result of this development, especially through the new laneway.

Principle 8: Housing Diversity and Social interaction

Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and household budgets.
Well designed apartment developments respond to social context by providing housing and facilities to suit the existing and future social mix. Good design involves practical and flexible features, including different types of communal spaces for a broad range of people, providing opportunities for social interaction amongst residents.

The project achieves a mix of Studio, 1, 2 and 3 bedroom apartments. Within this mix there are a variety of unique unit types. This unit mix provides diversity to the market and caters to the emerging young mobile population of the area.

A large outdoors landscaped communal green has been provided at the heart of the development. It includes a number of shade structures and a 'playscape'.

A communal roof top terrace on Building C provides elevated social spaces for the residents and is designed with flexibility in mind. Allowing use to change absed on resiedent needs over time.

The new laneway is lined with trees and urban seats, encouraging community activity that connects with Jubilee Reserve and Croydon Street.

Principle 9: Aesthetics

Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure. Good design uses a variety of materials, colours and textures.
The visual appearance of well designed apartment development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.

Each building wthin the development has been designed as a high quality architectural contribution to the local built environment. The look and feel of the project can be seen in the architectural and landscape documents as well as the visualisations that accompany this report.

- The concept for the building has been derived largely from the local landscape and materiality.
- The project expands the existing green network across the site creating a lush landscape on the site at street level.
- The key building material is brick, a material found commonly used in Lakemba in both suburban homes and buildings within the town centre.
- Careful articulation of the brick and metal façades achieves a sense of change / transition across its expanse.
- The placement of balconies on the building corners gives a softness and openness to the building.

View from Jubilee Reserve

ADG Response Table

The following content outlines the architectural scheme's response to Part 3 & Part 4 of the Apartment Design Guide.

Part No.	Objective No.	Objective	Complies		Notes
		Design Criteria Design guidance	Yes	No	
3		**SITING THE DEVELOPMENT**			
3a		**SITE ANALYSIS**			
	3A-1	**Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context**	✓		Refer to architectural drawing DA-001
		Each element in the Site Analysis Checklist should be addressed (see ADG Appendix 1)	✓		
3B		**ORIENTATION**			
	3B-1	**Building types and layouts respond to the streetscape and site while optimising solar access within the development**			
		Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1)	✓		Refer to architectural drawing DA-002
		Where the street frontage is to the north or south, overshadowing to the south should be minimised and buildings behind the street frontage should be orientated to the east and west (see figure 3B.2)	✓		Larger building massing orientated to West and East. Refer to architectural drawing DA-002
	3B-2	**Overshadowing of neighbouring properties is minimised during midwinter**			
		Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access	✓		Some impact on adjacent properties to the south.
		Solar access to living rooms, balconies and private open spaces of neighbours should be considered	✓		Building footprint and seperations set out to minimise impacts on neighbours.
		Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%			NA
		If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy	✓		ADG and DCP building separation incorporated into designs.
		Overshadowing should be minimised to the south or downhill by increased upper level setbacks	✓		Built form reduces towards the south of the site.
		It is optimal to orientate buildings at 90 degrees to the boundary with neighbouring properties to minimise overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development	✓		Achieved
		A minimum of 4 hours of solar access should be retained to solar collectors on neighbouring buildings	✓		min 4 hrs of solar access are retained to the solar panels on the roof of 53 Railway Parade
3C		**PUBLIC DOMAIN INTERFACE**			
	3C-1	**Transition between private and public domain is achieved without compromising safety and security**			
		Terraces, balconies and courtyard apartments should have direct street entry, where appropriate	✓		Ground level apartments have deeper balconies, street landscaping and street access.
		Changes in level between private terraces, front gardens and dwelling entries above the street level provide surveillance and improve visual privacy for ground level dwellings (see figure 3C.1)	✓		Achieved
		Upper level balconies and windows should overlook the public domain	✓		Upper level balconies and windows positioned to overlook ground level public domain.
		Front fences and walls along street frontages should use visually permeable materials and treatments. The height of solid fences or walls should be limited to 1m	✓	x	Achieved. In some instances solid wall s are taller than 1m due to the natural falls across the site.
		Length of solid walls should be limited along street frontages	✓		Articulation in landscape walls and facade addresses this.
		Opportunities should be provided for casual interaction between residents and the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets	✓		

		In developments with multiple buildings and/or entries, pedestrian entries and spaces associated with individual buildings/entries should be differentiated to improve legibility for residents, using a number of the following design solutions: · architectural detailing · changes in materials · plant species · colours	✓		To improve legibility, the individual buildings each have own character and materiality to ensure legibility for residents.
		Opportunities for people to be concealed should be minimised	✓		Concealed corners within the development are minimised.
	3C-2	**Amenity of public domain is retained and enhanced**			
		Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking	✓		Planting incorporated in landscaping to soften edges of raised terraces.
		Mail boxes should be located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided	✓		Mail boxes have been located in lobbies perpendicular to street allignment.
		The visual prominence of underground car park vents should be minimised and located at a low level where possible			N/A. The proposals do not inlcude underground parking vents.
		Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view	✓		Substation is set back from the street significantly to reduce visual prominance
		Ramping for accessibility should be minimised by building entry locations and setting ground floor levels in relation to footpath levels	✓		Achieved.
		Durable, graffiti resistant and easily cleanable materials should be used	✓		Achieved.
		Where development adjoins public parks, open space or bushland, the design positively addresses this interface and uses a number of the following design solutions: · Street access, pedestrian paths and building entries which are clearly defined · Paths, low fences and plating that clearly delineate between communal/private open space and the adjoining public open space · Minimal use of blank walls, fences and ground level parking	✓		New laneway provides public access through site to Jubilee Park.
3D		**COMMUNAL AND PUBLIC OPEN SPACE**			
	3D-1	**An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping.**			
		Communal open space has a minimum area equal to 25% of the site	✓		Achieved. Total ground floor communal open space = 1,111 m2 (24.1%) Total roof terrace communal open space = 200 m2 (4.3%)
		Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid-winter)	✓		Achieved
		Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions	✓		
		Communal open space should be co-located with deep soil areas	✓		Achieved
		Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies	✓		Achieved
		Where communal open space cannot be provided at ground level, it should be provided on a podium or roof	✓		Communal space provided at ground level AND rooftops
		Where developments are unable to achieve the design criteria, such as on small lots, sites within business zones, or in a dense urban area, they should: · provide communal spaces elsewhere such as a landscaped roof top terrace or a common room · provide larger balconies or increased private open space for apartments · demonstrate good proximity to public open space and facilities and/or provide contributions to public open space			NA
	3D-2	**Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting**			
		Facilities are provided within communal open spaces and common spaces for a range of age groups (see also 4F Common circulation and spaces), incorporating some of the following elements: · seating for individuals or groups · barbecue areas · play equipment or play areas · swimming pools, gyms, tennis courts or common rooms	✓		Group / individual seating and 'Playscape' area incorporated in communal open area.
		The location of facilities responds to microclimate and site conditions with access to sun in winter, shade in summer and shelter from strong winds and down drafts	✓		Achieved

<table>
<tr><td></td><td></td><td>Visual impacts of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks</td><td>✓</td><td></td><td>Substation is discretly located and screened with andscape where possible.</td></tr>
<tr><td></td><td>3C-3</td><td>Communal open space is designed to maximise safety</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>Communal open space and the public domain should be readily visible from habitable rooms and private open space areas while maintaining visual privacy. Design solutions may include:
· bay windows
· corner windows
· balconies</td><td>✓</td><td></td><td></td></tr>
<tr><td></td><td></td><td>Communal open space should be well lit</td><td>✓</td><td></td><td></td></tr>
<tr><td></td><td></td><td>Where communal open space/facilities are provided for children and young people they are safe and contained</td><td>✓</td><td></td><td></td></tr>
<tr><td>3E</td><td></td><td>DEEP SOIL ZONES</td><td></td><td></td><td></td></tr>
<tr><td></td><td>3E-1</td><td>Deep soil zones provide areas on the site that allow for and support healthy plant tree growth. They improve residential amenity and promote management of water and air quality</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>Deep soil zones are to meet the following minimum requirements.
<table>
<tr><td>Site area</td><td>Min Dimension</td><td>Deep soil zone (% of site area)</td></tr>
<tr><td>Less than 650sqm</td><td>-</td><td>7%</td></tr>
<tr><td>650-1,500sqm</td><td>3m</td><td>7%</td></tr>
<tr><td>Greater than 1,500sqm</td><td>6m</td><td>7%</td></tr>
<tr><td>Greater than 1,500sqm with significant existing cover</td><td>6m</td><td>7%</td></tr>
</table></td><td>✓</td><td></td><td>Total deep soil within developable area = 782 m2 (16.9% of developable area).</td></tr>
<tr><td></td><td></td><td>On some sites it may be possible to provide larger deep soil zones, depending on the site area and context:
· 10% of the site as deep soil on sites with an area of 650m^2 – 1,500m^2
· 15% of the site as deep soil on sites greater than 1,500m^2</td><td>✓</td><td></td><td>Total deep soil within developable area = 782 m2 (16.9% of developable area).</td></tr>
<tr><td></td><td></td><td>Deep soil zones should be located to retain existing significant trees and to allow for the development of healthy root systems, providing anchorage and stability for mature trees. Design solutions may include:
· basement and sub-basement car park design that is consolidated beneath building footprints.
· use of increased front and side setbacks
· adequate clearance around trees to ensure long term health
· co-location with other deep soil areas on adjacent sites to create larger contiguous areas of deep soil</td><td>✓</td><td></td><td>Basement and underground car parking has been consolidated beneath building footprints.</td></tr>
<tr><td></td><td></td><td>Achieving the design criteria may not be possible on some sites including where:
· The location and building typology have limited or no space for deep soil at ground level (e.g. central business district, constrained sites, high density areas, or in centres)
· There is 100% site coverage or non-residential uses at ground floor level
· Where a proposal does not achieve deep soil requirements, acceptable stormwater management should be achieved and alternative forms of planting provided such as on structure</td><td></td><td></td><td>NA</td></tr>
<tr><td></td><td>3F-1</td><td>Adequate building separation distances are shared equitably between neighbouring sites, to achieve reasonable levels of external and internal visual privacy</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>Separation between windows and balconies is provided to ensure visual privacy is achieved. Minimum required separation distances from buildings to the side and rear boundaries are as follows:
<table>
<tr><td>Building height</td><td>Habitable Room and Blconies</td><td>Non Habitable</td></tr>
<tr><td>Up to 12m (4 storeys)</td><td>6m</td><td>3m</td></tr>
<tr><td>Up to 25m (5-8 storeys)</td><td>9m</td><td>4.5m</td></tr>
<tr><td>Over 25m (9+ storeys)</td><td>12m</td><td>6m</td></tr>
</table>
Note:
Separation distances between buildings on the same site should combine required building separations depending on the type of room (see figure 3F.2)
Gallery access circulation should be treated as habitable space when measuring privacy separation distances between neighbouring properties</td><td>✓</td><td></td><td>Achieved. Privacy screens provided in some instances to achieve compliance.</td></tr>
<tr><td></td><td></td><td>Generally one step in the built form as the height increases due to building separations is desirable. Additional steps should be careful not to cause a ‘ziggurat’ appearance</td><td>✓</td><td></td><td></td></tr>
</table>

		For residential buildings next to commercial buildings, separation distances should be measured as follows: · for retail, office spaces and commercial balconies use the habitable room distances · for service and plant areas use the non-habitable room distances	✓		Laneway seperates the buildings from commercial properties to the north.
		New development should be located and oriented to maximise visual privacy between buildings on site and for neighbouring buildings. Design solutions include: · site layout and building orientation to minimise privacy impacts (see also section 3B Orientation) · on sloping sites, apartments on different levels have appropriate visual separation distances (see figure 3F.4)	✓		Achieved
		Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in design criteria 1) when adjacent to a different zone that permits lower density residential development to provide for a transition in scale and increased landscaping (figure 3F.5)			NA
		Direct lines of sight should be avoided for windows and balconies across corners	✓		
		No separation is required between blank walls	✓		
	3F-2	**Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space**			
		Communal open space, common areas and access paths should be separated from private open space and windows to apartments, particularly habitable room windows. Design solutions may include: · setbacks · solid or partially solid balustrades to balconies at lower levels · fencing and/or trees and vegetation to separate spaces · screening devices · bay windows or pop out windows to provide privacy in one direction and outlook in another · raising apartments/private open space above the public domain or communal open space · planter boxes incorporated into walls and balustrades to increase visual separation · pergolas or shading devices to limit overlooking of lower apartments or private open space · on constrained sites where it can be demonstrated that building layout opportunities are limited, fixed louvres or screen panels to windows and/or balconies	✓		
		Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas	✓		
		Balconies and private terraces should be located in front of living rooms to increase internal privacy	✓		
		Windows should be offset from the windows of adjacent buildings	✓		
		Recessed balconies and/or vertical fins should be used between adjacent balconies	✓		
4		**DESIGNING THE BUILDING**			
4A		**SOLAR AND DAYLIGHT ACCESS**			
	4A-1	**To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space**			
		1. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid-winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas	✓		70.8% achieve solar requirments.
		2. In all other areas, living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9 am and 3 pm at mid-winter			NA
		3. A maximum of 15% of apartments in a building receive no direct sunlight between 9am and 3pm at mid winter	✓		
4B		**NATURAL VENTILATION**			
	4B-3	**The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents**			
		1. At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed	✓		60.4% of apartments achieve natural cross ventilation requirment.
		2. Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line	✓		Achieved
4C		**CEILING HEIGHTS**			
	4C-1	**Ceiling height achieves sufficient natural ventilation and daylight access**			

<table>
<tr><td></td><td></td><td>Measured from finished floor level to finished ceiling level, minimum ceiling heights are:
<table><tr><td colspan="2">Minimum ceiling height for apartment and mixed use buildings</td></tr><tr><td>Habitable rooms</td><td>2.7m</td></tr><tr><td>Non-habitable rooms</td><td>2.4m</td></tr><tr><td>For 2 storey apartments</td><td>2.7m for main living area floor
2.4m for second floor, where its apartment area does not exceed 50% of the apartment area</td></tr><tr><td>Attix Spaces</td><td>1.8m at edge of room with a 30 degree min ceiling slope</td></tr><tr><td>If located in mixed use areas</td><td>3.3m for ground and first floor to promote future flexibility of use</td></tr></table>These minimums do not preclude higher ceilings if desired</td><td>✓</td><td></td><td>Achieved.
Habitable rooms are 2.7m ceiling height and non-habitable are 2.4m</td></tr>
<tr><td>4D</td><td></td><td>APARTMENT SIZE AND LAYOUT</td><td></td><td></td><td></td></tr>
<tr><td></td><td>4D-1</td><td>The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>1. Apartments are required to have the following minimum internal areas:
<table><tr><td>Apartment Type</td><td>Min Internal Area</td></tr><tr><td>Studio</td><td>35sqm</td></tr><tr><td>1 Bedroom</td><td>50sqm</td></tr><tr><td>2 Bedroom</td><td>70sqm</td></tr><tr><td>3 Bedroom</td><td>90sqm</td></tr></table>The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m^2 each A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m^2 each</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>2. Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms</td><td>✓</td><td></td><td></td></tr>
<tr><td></td><td></td><td>Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry
space)</td><td>✓</td><td></td><td></td></tr>
<tr><td></td><td></td><td>A window should be visible from any point in a habitable room</td><td>✓</td><td></td><td></td></tr>
<tr><td></td><td></td><td>Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td>4D-2</td><td>Environmental performance of the apartment is maximised</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window</td><td>✓</td><td></td><td>Achieved. Refer to architecural drawings DA-102 to DA-111</td></tr>
<tr><td></td><td></td><td>Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maxi-mum depths</td><td>✓</td><td></td><td></td></tr>
<tr><td></td><td></td><td>All living areas and bedrooms should be located on the external face of the building</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>Where possible:
· bathrooms and laundries should have an external openable window
· main living spaces should be oriented toward the primary outlook and aspect and away from noise sources</td><td>✓</td><td></td><td>Where possible this is achieved.</td></tr>
<tr><td></td><td>4D-3</td><td>Apartment layouts are designed to accommodate a variety of household activities and needs</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>1. Master bedrooms have a minimum area of 10m^2 and other bedrooms 9m^2 (excluding wardrobe space)</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)</td><td>✓</td><td></td><td>Achieved</td></tr>
<tr><td></td><td></td><td>3. Living rooms or combined living/dining rooms have a minimum width of:
3.6m for studio and 1 bedroom apartments
4m for 2 and 3 bedroom apartments</td><td>✓</td><td></td><td>Achieved</td></tr>
<tr><td></td><td></td><td>4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deepn narrow apartment layouts</td><td></td><td></td><td>NA</td></tr>
<tr><td></td><td></td><td>Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas</td><td>✓</td><td>x</td><td>Where possible access to bedrooms have been designed to direct away from living spaces.</td></tr>
<tr><td></td><td></td><td>All bedrooms allow a minimum length of 1.5m for robes</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>The main bedroom of an apartment or a studio apartment should be provided with a wardrobe of a minimum 1.8m long, 0.6m deep and 2.1m high</td><td>✓</td><td></td><td>Achieved.</td></tr>
</table>

		Apartment layouts allow flexibility over time, design solutions may include: · dimensions that facilitate a variety of furniture arrangements and removal · spaces for a range of activities and privacy levels between different spaces within the apartment · dual master apartments · dual key apartments · Note: dual key apartments which are separate but on the same title are regarded as two sole occupancy units for the purposes of the Building Code of Australia and for calculating the mix of apartments · room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) · efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms	✓		Apartment dimensions that facilitate a variety of arrangements. Circulation spaces planned to maximise usable floor space in rooms.
4E		**PRIVATE OPEN SPACE AND BALCONIES**			
	4E-1	**Apartments provide appropriately sized private open space and balconies to enhance residential amenity**			
		All apartments are required to have primary balconies as follows: Dwelling Type / Min Area / Min Depth Studio Apartments / 4sqm / - 1 Bedroom Apartments / 8sqm / 2m 2 Bedroom Apartments / 10sqm / 2m 3 Bedroom Apartments / 12sqm / 2.4m The minimum balcony depth to be counted as contributing to the balcony area is 1m	✓		Achieved
		For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m^2 and a minimum depth of 3m	✓		Achieved.
		Increased communal open space should be provided where the number or size of balconies are reduced			N/A
		Storage areas on balconies is additional to the minimum balcony size	✓		
		Balcony use may be limited in some proposals by: · consistently high wind speeds at 10 storeys and above · close proximity to road, rail or other noise sources · exposure to significant levels of aircraft noise · heritage and adaptive reuse of existing buildings In these situations, Juliet balconies, operable walls, enclosed wintergardens or bay windows may be appropriate, and other amenity benefits for occupants should also be provided in the apartments or in the development or both. Natural ventilation also needs to be demonstrated			NA
4F		**COMMON CIRCULATION AND SPACES**			
	4F-1	**Common circulation spaces achieve good amenity and properly service the number of apartments**			
		1. The maximum number of apartments off a circulation core on a single level is eight	✓	x	Partial compliance Building C has 9 units with 2 lifts. It's upper levels comply with only 4 units per floor/core.
		2. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40	✓		Achieved.
		Greater than minimum requirements for corridor widths and/or ceiling heights allow comfortable movement and access particularly in entry lobbies, outside lifts and at apartment entry doors	✓		
		Daylight and natural ventilation should be provided to all common circulation spaces that are above ground	✓	x	Partial compliance Building A, B and C have windows/daylight adjacent lift lobbies. Building C has a skylit void adjacent to the lift lobby below L8.
		Windows should be provided in common circulation spaces and should be adjacent to the stair or lift core or at the ends of corridors	✓		
		Longer corridors greater than 12m in length from the lift core should be articulated. Design solutions may include: · a series of foyer areas with windows and spaces for seating · wider areas at apartment entry doors and varied ceiling heights	✓		Interior design will resolve articulation. Refer to the RFI response report for the design.
		Design common circulation spaces to maximise opportunities for dual aspect apartments, including multiple core apartment buildings and cross over apartments			N/A
		Achieving the design criteria for the number of apartments off a circulation core may not be possible. Where a development is unable to achieve the design criteria, a high level of amenity for common lobbies, corridors and apartments should be demonstrated, including: · sunlight and natural cross ventilation in apartments · access to ample daylight and natural ventilation in common circulation spaces · common areas for seating and gathering · generous corridors with greater than minimum ceiling heights · other innovative design solutions that provide high levels of amenity	✓		Building C has a skylit void adjacent to the lift lobby along with suitably scaled and articulated corridor.

<table>
<tr><td></td><td></td><td>Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>Primary living room or bedroom windows should not open directly onto common circulation spaces, whether open or enclosed. Visual and acoustic privacy from common circulation spaces to any other rooms should be carefully con-trolled</td><td>✓</td><td></td><td>Achieved</td></tr>
<tr><td>4G</td><td></td><td>STORAGE</td><td></td><td></td><td></td></tr>
<tr><td></td><td>4G-1</td><td>Adequate, well designed storage is provided in each apartment</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided:
<table><tr><td>Dwelling Type</td><td>Storage size</td></tr><tr><td>Studio Apartments</td><td>4m^3</td></tr><tr><td>1 Bedroom Apartments</td><td>6m3^3</td></tr><tr><td>2 Bedroom Apartments</td><td>8m^3</td></tr><tr><td>3 Bedroom Apartments</td><td>10m^3</td></tr></table>At least 50% of the required storage is to be located within the apartment</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>Storage is accessible from either circulation or living areas</td><td>✓</td><td></td><td>Archieved</td></tr>
<tr><td></td><td></td><td>Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street</td><td></td><td></td><td>N/A.
Storage not provided on balconies.</td></tr>
<tr><td></td><td></td><td>Left over space such as under stairs is used for storage</td><td></td><td></td><td>N/A</td></tr>
<tr><td></td><td>4G-2</td><td>Additional storage is conveniently located, accessible and nominated for individual apartments</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>Storage not located in apartments is secure and clearly allocated</td><td>✓</td><td></td><td>Achieved</td></tr>
<tr><td></td><td></td><td>Storage is provided for larger and less frequently accessed items, where practical</td><td>✓</td><td></td><td>Storage rooms are located in the basement for larger storage items</td></tr>
<tr><td></td><td></td><td>Storage space in internal or basement car parks is provided at the rear or side of car spaces or in cages so that allocated car parking remains accessible</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>If communal storage rooms are provided they should be accessible from common circulation areas of the building</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>Storage not located in an apartment is integrated into the overall building design and not visible from the public domain</td><td>✓</td><td></td><td>Additional storage is located in the basement</td></tr>
<tr><td>4J</td><td></td><td>NOISE AND POLLUTION</td><td></td><td></td><td></td></tr>
<tr><td></td><td>4J-1</td><td>In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>To minimise impacts the following design solutions may be used:
· physical separation between buildings and the noise or pollution source
· residential uses are located perpendicular to the noise source and where possible buffered by other uses
· non-residential buildings are sited to be parallel with the noise source to provide a continuous building that shields residential uses and communal open spaces
· Non-residential uses are located at lower levels vertically separating the residential component from the noise or pollution source. Setbacks to the underside of residential floor levels should increase relative to traffic volumes and other noise sources
· Buildings should respond to both solar access and noise. Where solar access is away from the noise source, non habitable rooms can provide a buffer
· Where solar access is in the same direction as the noise source, dual aspect apartments with shallow building depths are preferable (see figure 4J.4)
· Landscape design reduces the perception of noise and acts as a filter for air pollution generated by traffic and industry</td><td>✓</td><td></td><td>Achieved.</td></tr>
<tr><td></td><td></td><td>Achieving the design criteria in this Apartment Design Guide may not be possible in some situations due to noise and pollution. Where developments are unable to achieve the design criteria, alternatives may be considered in the following areas:
· solar and daylight access
· private open space and balconies
· natural cross ventilation</td><td></td><td></td><td>Noted</td></tr>
<tr><td></td><td>4J-2</td><td>Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>Design solutions to mitigate noise include:
· limiting the number and size of openings facing noise sources
· providing seals to prevent noise transfer through gaps
· using double or acoustic glazing, acoustic louvres or enclosed balconies (wintergardens)
· using materials with mass and/or sound insulation or absorption properties e.g. solid balcony balustrades, external screens and soffits</td><td>✓</td><td></td><td>Buildings set back from most significant noise source (rail line) and solid balcony balustrades incorprated.
Refer to architecural drawing DA-200 (Southern Elevation.)</td></tr>
</table>