PART 1

SEPP 65
DESIGN QUALITY PRINCIPLES

We confirm that Dan Szwaj of Turner is registered as an architect under the Architects Act 2003 and has directed the SSDA design and documentation of the development at Waterloo and that the design quality principles set out in Part 2 of State Environmental Planning Policy No 65-Design Quality of Residential Flat Development are achieved for the residential development.

Dan Szwaj
Registration Number: 6529

10.3.1 SEPP65 DESIGN QUALITY PRINCIPLES

DESIGN QUALITY PRINCIPLE 1

CONTEXT AND NEIGHBORHOOD CHARACTER

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.

PROPOSAL

The proposal is compatible with the existing and desired context and neighbourhood character of the precinct.
The proposal seeks to respond to and contribute to the context of Waterloo both in its present state as well as the desired future character.

Waterloo's urban fabric has been shaped by a history of growth and renewal, with the resulting diverse mix of housing typologies reflecting evolving models for living. This narrative is reflected in the environment and comprises of a diverse mix of built form, fine grain and use adapted over time to meet changing housing demands.

The Metro Quarter straddles zones of differing density and height, with Alexandria Park and the Alexandria Heritage Conservation Area to the west and Waterloo Estate - future urban renewal - to the east. Future development along Botany Road provides a potential "transition zone" between Waterloo Estate to the east and the Alexandria Heritage Conservation Area to the west, beyond Wyndham Street.

The future vision for Waterloo anticipates an intensifcation of residential development around the future Waterloo Station

The ground plane is designed to produce an attractive vibrant streetscape. The Waterloo Metro Quarter
will become a dynamic space where commuters, residents and visitors will experience a social cohesion that engages with the existing local character whilst providing an environment that welcomes the community to Waterloo

The materials and finishes for the development are of a high standard, and referential to the surrounding dwelling typologies, as well as it's historical and environmental context.

The Waterloo Metro Quarter has the opportunity to increase social sustainability and liveability by providing a more diverse mix that includes social, affordable and private dwellings. This will provide more equitable access to resources and better quality of life for all.

DESIGN QUALITY PRINCIPLE 2

BUILT FORM AND SCALE

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.

PROPOSAL

The proposal is layered composition of typologies reflecting the surrounding context.

Most critical are the interfaces to Waterloo Congregational Church and the Raglan Street junction where three heritage items on the opposing corners mark a key interface with the existing context.

The grain and character of the podium shall reflect the identity and diversity
of the locality.

The mid-rise buildings reference the scale of the medium density typologies of the urban renewal that has occurred along Botany Road, providing a transition between the podium and tall building forms.These buildings serve to mediate the building scale toward Cope Street and the public plaza along Cope Street.

The tall buildings provide a destination marker for Waterloo Station, the new activity centre, and the threshold into the Waterloo Estate. The curved tower articulation softens the building forms and reduces the floor plate size, in turn maximising outlook and daylight access within the buildings and between them to the public domain. The apartments will enjoy views in all directions, from Central Sydney to the eastern beaches and west to the mountains.

The proposed built form typologies responds to the layered and diverse mix of built form within the surrounding context, with a range of built form - low, mid and high rise - to respond to the complex nature of the site and create a new marker for Waterloo Station

DESIGN QUALITY 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.

PROPOSAL

The proposal for the Waterloo Metro Quarter – a mixed-use development integrated with the new Waterloo Station, organised around a new public domain including a station entry plaza, community plaza and pedestrian and shared laneways has an overall GFA of 68,750 square metres, generating an FSR of 5.34:1.

The indicative GFA distribution is divided into 56,200 square metres of residential foor space and 12,550 sqm of of retail, entertainment, community, recreational and local business and commercial uses is accommodated in a 3 storey podium and freestanding Community Hub building.

Approximately 700 apartments are provided, 5-10% affordable, 70 social housing dwellings and the remainder to be private market housing. The apartments are accommodated in a number of podium buildings up to 10 storeys above the approved metro station and three residential buildings of 23, 25 and 29 storeys.

DESIGN QUALITY 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.

PROPOSAL

The proposed development will be designed to be highly sustainable and to contribute positively to the environmental, social and economic aspects of the area.

The ESD principles have been considered thoroughly throughout the planning process.
Furthermore, the project team has sought to align the design response against the Green Star Communities National Framework and commits to delivering a 4 Star Green Star Design & As Built rating for the builidings withn the development.

Incorporation of water sensitive urban design (WSUD) features within the Metro Quarter will contribute to a green and resilient urban environment.

Bio-retention tree pits have been incoporated to assist with treating runoff through filtration and reduce stormwater runoff volumns along pedestrian pathways in rainfall events.

Widened footpaths along Cope Street, provides the opportunity to utilse the former kerb alignment as the new invert level therefore directing runoff into the tree pits through kerb inlets along adjacent pathways and roadsides

The development will include tanks for the retention and on-site detention of stormwater when designed as part of a future Stage 2 SSDA submission.

Energy efficient appliances and water efficient devices will be specified in line with BASIX requirements to minimise water consumption and resources.

The massing and orientation have been organised to maximise natural daylighting and solar access to the primary living spaces and external areas,
while minimising wind and noise impacts.
The development achieves the deep soil and open space recommendations of the ADG and in doing so will provide a variety of open space and landscaped areas to enhance the overall amenity for the residents.

DESIGN QUALITY 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.

PROPOSAL

As a gateway to Waterloo and the surrounding neighbourhoods of Redfern, Alexandria and Eveleigh, the public domain will unite the metro station, retail and residential components whilst integrating the Metro Quarter into the existing urban fabric.
The public domain will establish a new public plaza, creating a place that is activated, vibrant, pedestrian and cycle focused.

Trees are the predominant elements that will define the public domain character and atmosphere. The tree palette for the Metro Quarter aims to augment local character and species diversity (both native and exotic), maintaining biodiversity and support local wildlife.

Selected species will support local native bee species and foraging wildlife whilst providing canopies that will create shade minimising urban heat island effect and cooling the public domain during summer months.

To appreciate Waterloo's existing vegetation, species such as Banksia integrifolia have been included to help strengthen the threatened plant community.

Low growing, flood tolerant understorey species have been selected to further define the public domain, provide habitat and assist with WSUD, avoiding obstruction of sight lines across the site and streets creating a safe and healthy environment.

Tree and understorey species are of indigenous significance are selected and provide edible elements for cooking with flowers, fruits, roots and seeds all providing a source of food with the public domain.

Roof top terraces have been proposed to ensure outdoor spaces are both functional and visually interesting, including when viewed from above.
Furthermore tree planting assists in providing privacy to the amenity uses on ground. These areas receive good levels of solar access and a high
level of amenity, enhancing the public domain along the street edge.

DESIGN QUALITY 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, and ease of access for all age groups and degree of mobility.

PROPOSAL

The building envelopes have been designed to maximise views and access to daylight while minimising wind and noise impacts. Apartment amenity is consistent with the objectives of the Apartment Design Guide (ADG).

Botany Road presents a significant noise source to the development (70dB background). The apartments directly fronting Botany Road are most affected, though those further into the site also require consideration. To achieve acoustic levels of 55dB to living rooms and 45dB to bedrooms the following planning strategies have been adopted:

- Building orientation reduces frontages facing Botany Road, with no single aspect apartments facing the street
- All balconies are provided as re-entrant to the building facade
- Operable windows are located off protected balconies instead of the external façade
- Bedroom openings typically face east, north or south to minimise potential noise impact from Botany Road to the west
- All glazing/façade fronting Botany Road is not required to be operable to satisfy ventilation requirements.

While Botany Road facing apartments would ordinarily achieve cross ventilation compliance through their corner location, the preclusion of operable openings to exclude noise removes this ability to be counted. Similarly the apartments affected by Botany Road where the balcony and/or living area has been relocated to mitigate noise infiltration removes the ability for these balconies and/or living areas to capture solar access. The resulting cross ventilation and solar access percentages in the illustrative 'noise responsive' scheme are lower than the 'base case' scheme and ADG.

- Natural ventilation and solar access complies with NCC requiremen

DESIGN QUALITY 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.

PROPOSAL

Throughout Waterloo Metro Quarter, buildings help define the public domain. Sightlines to and from the Cope Street metro entry, are strengthened through the triangulation of the plaza, and the location of the community building providing directional movement to the Waterloo Station from Cope Street and south Waterloo

With increased setbacks along Raglan and a new Cope Street plaza along Cope street, active retail edges develop a vibrant day to night economy aligning with the Sydney Metro operating hours and encouraging pedestrian movement and use of the public domain.

Throughsite links from Botany Road to Cope Street as well as within the Metro Station, enhance sight lines and porousity of the site, increasing visability at ground level, whilst levels above maximise passive surveillance creating safe environment to live, work and play.

Passive surveillance of the buildings throughout day and night by providing safe access with clearly defined points of pedestrian entry to the buildings that are visible from the public domain.

- The entry lobbies are to be fully glazed and well-lit to accentuate the street address and appropriate lighting will be provided to all exterior areas, both public and communal;
- The building will utilise a security system at all entry points, and within the lifts. Two points of vehicular access will be secured by automatic panel lift doors.

DESIGN QUALITY 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.

PROPOSAL

Approximately 700 apartments are provided, 5-10% affordable, 70 social housing dwellings and the remainder to be private market housing.

The market housing contains a mix of studio, 1 bed, 2 bed and 3 bed apartments. Within this range there are multiple apartment types and sizes allowing a variety of options for differerent demographics and price points.

New social spaces such as the Raglan Street Plaza and the Public Plaza will draw in users to and from Waterloo Station, providing a social and retail experience in a new urban setting whilst creating moments to meet, pause and engage.

The public domain will become the ‘community door’. A place for the community, a home for residents, a destination for visitors and a workplace for commuters.

The external communal spaces will be designed to engender community spirit for residents within the development by offering north facing private and public open spaces including areas for groups to congregate and also for more private activities. All common areas are designed for equitable access.

DESIGN QUALITY 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.

PROPOSAL

The proposed building envelopes have been developed to accommodate future design opportunities for differing facade expression for each stage to achieve a high level of visual interest and aesthetics, in response to the existing and future local context.

The aesthetics of the proposal do not form part of a SSDA submission. These will be addressed as part of the future design excellence process and asubsequent Stage 2 DA SSDA submission .

This submission, however, includes illustrative plans and photomontages to give an indication of the overall scale of the buildings relative to their context.

Furthermore the design, materials and colours shown are purely indicative at this stage.

10.3.2 RESPONSE TO ADG OBJECTIVES

PART 2 _ RESPONSE TO APARTMENT DESIGN GUIDE OBJECTIVES
The following provides a design response to the relevant objectives of the Apartment Design Guide (ADG) and describes the measures by which the proposed development meets these objects.

3A Site analysis [p.47]

Objective 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

- Complies
- A site analysis plan is included in the architectural drawings demonstrating the how the design has considered the site amenities;

Refer to the SSDA report & drawing package for further information.

3B Orientation [p.49]

Objective 3B-1
Building types and layouts respond to the streetscape and site while optimising solar access within the development

- Complies
- The proposal provides building forms with a defined street edge and the opportunity for direct access from the street for both residential and amenity uses;
- The concept proposal has been designed to maximise views and access to daylight while minimising wind and noise impacts

Objective 3B-2
Overshadowing of neighbouring properties is minimised during mid-winter

Design Guidance
• 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%

- Complies with qualifications
- The concept proposal has been developed with consideration to the amenity of the surrounding context.
- The solar access of surrounding apartment buildings and dwellings has been studied at the Winter Solstice to ensure compliance with the objectives of the Sydney Development Control Plan 2012 and the Apartment Design Guide.
- The approved development for 74 - 88 Botany Road has not been accessed. A planning proposal is progress for the site.

Refer to the Solar Access and the Urban Design & Public Domain Study for further information.

3C Public domain interface [p.51]

Objective 3C-1
Transition between private and public domain is achieved without compromising safety and security

- Complies
- Active retail edges promote a vibrant day to night economy aligning with the Sydney Metro oprating hours and encouraging pedestrian movement and use of the public domain.
- Residential access points are carefully and appropriately located for legibility for residents and visitors;
- Residential lobbies will be designed to be secured to control access and to appropriately separate circulation routes;
- Apartment windows and balconies will be located to provide for passive surveillance over the public domain;
- The proposed design has minimised any opportunities for people to be concealed.

Objective 3C-2
Amenity of the public domain is retained and enhanced

- Complies
- The public domain will provide a new community heart, creating a place that is activated, vibrant, pedestrian and cycle focused.
- Street pavements and material palettes will be consistent with the design objectives and key principles of the City of Sydney Streets Design Code and Australian Standards.
- Public domain furniture is in accordance with the City of Sydney palette and provide purpose-built elements that help identify the site's characteristics and culture. Street furniture is co-located with trees to avoid clutter and to create focus points for community activity.
- A massing wind tunnel analysis excluding awnings has been prepared. There are very few areas currently exceeding comfortable walking levels. The majority of the site meets the comfortable walking criteria and the short term and long term exposure criteria. Windtech confirms the outcomes from the modelling done to date support the rezoning. Subsequent Stage 2 SSDA submission will demonstrate ameliorative treatments comply with the relevant controls and standards.
- The design will minimise the prominence of building service facades and blank walls facing the public domain.

3D Communal and public open space [p.55]	
Objective 3D-1 *An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping.* *Design Criteria* *• Communal open space has a minimum area equal to 25% of the site* *• 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)*	• Complies • 25% of site area is classified as communal open space; • The proposal wil 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)
Objective 3D-2 *Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting*	• Capable of complying • The communal spaces have sufficient space to allow for: o seating for individuals or groups o barbecue areas o play equipment or play areas o swimming pools, gyms, tennis courts or common rooms o responds to microclimate and site conditions with access to sun in winter, shade in summer and shelter from strong winds and down drafts • Visual impacts of services should be minimised, e.g. for ventilation duct outlets from basement car parks, electrical substations and detention tanks
Objective 3D-3 *Communal open space is designed to maximise safety*	• Capable of complying • The communal spaces will be readily visible from habitable rooms and private open space areas while maintaining visual privacy. • Will be well lit • Communal open space/facilities will be provided for children and young people they are safe and contained
Objective 3D-4 *Public open space, where provided, is responsive to the existing pattern and uses of the neighbourhood*	• Complies • The new public plaza serves as the community heart and ‘arrival’ to Waterloo for those alighting from the station, providing an open, flexible, landscaped, community space referential to both the existing and future character of the locality. • The strategic location mid-block on Cope Street allows for future connection and integration with the Waterloo Estate opposite. • An active frontage will be provided adjacent the public plaza. Fine grain retail tenancies are fronting the public plaza, including café tenancies located within the Metro box that engage and activate the plaza. • The Botany Road interface with the Metro Quarter integrates a through site link and a new shared street to create direct and legible connections between the bus stops on Botany Road and the proposed new community arrival to the station from the Cope Street plaza. • The plaza responds to the flooding constraints on the site, with the stepped seating mediating the change in level required to achieve the required entry level to the station • A massing wind tunnel analysis excluding awnings has been prepared The Cope Street plaza meets the comfortable walking criteria and the short term exposure criteria (Café .

3E Deep soil zones [p.61]	
Objective 3E-1 *Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality* *Design criteria* *Deep soil zones are to meet the following minimum requirements:* *• 7% of site area* *• <650sqm – no min dimension* *• 650sqm-1500sqm – 3m min dimension* *• >1500sqm – 6m min dimension*	• Complies with qualifications • The proposal is an intergrated station development and delivers a highly active streetscape with retail uses both to the existing streets and new public plaza. There are only non-residential uses proposed at ground level which l limites the space for deep soil. • 3.5 % of deep soil is provided at street level (165 sqm within the site boundary and 305 sqm outside the site boundary), whilst an additional 11.5% (1,461 sqm) will be provided on structure. • The constructed deep soil zones will be provided throughout the development.

3F Visual Privacy [P.62]

Objective 3J-1
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:

4 storeys: 6m for habitable rooms and balconies; 3m for non-habitable rooms

5-8 storeys: 9m for habitable rooms and balconies; 4.5m for non-habitable rooms

9+storeys: 12m for habitable rooms and balconies; 6m for non-habitable room

Note: Separation distances between buildings on the same site should combine required building separations depending on the type of room
Gallery access circulation should be treated as habitable space when measuring privacy separation distances between neighbouring properties

- Complies with qualifications
- The site is bound by streets.. The road reservation plus building setbacks varies from 21.5m to 30.5m
- Where full separation is not achieved suitable design elements will be proposed to ensure visual privacy is achieved including:
    - Operable screens
    - Louvres
    - Planting, and
    - Integrated landscape design

Refer to architectural drawings for separation between buildings within the site.

Objective 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

- Complies
- Outlook and privacy will be managed by building articulation, dividing walls and privacy screens.
- In selected locations, screening is utilised to enhance privacy between apartments.
- Outlook from open space is improved significantly by relocating primary areas to rooftops for improved solar access.

3G Pedestrian access and entries [p.66]

Objective 3G-1
Building entries and pedestrian access connects to and addresses the public domain

- Complies
- Separate residential lobbies for each core will be provided at ground level and in the basement.
- Residential lobbies will be signposted and have a distinct architectural typology for legibility and amenity across the whole development.

Objective 3G-2
Access, entries and pathways are accessible and easy to identify

- Complies
- Where required, ramps and stairs will be integrated with the overall landscape and building design concept for accessible and legible entries.
- Residential lobbies and amenity building entries will be provided with a distinct architectural character and articulated awning structure over for increased legibility.

Objective 3G-3
Large sites provide pedestrian links for access to streets and connection to destinations

- Complies
- The Botany Road interface with the Metro Quarter integrates a through site link and a new shared street to create direct and legible connections between the bus stops on Botany Road and the proposed new community arrival to the station from the Cope Street plaza.
- The proposed design has minimised any opportunities for people to be concealed and will be overlooked by apartment windows and balconies, will be well lit and contains active retail uses.

3H Vehicle access [p.68]

Objective 3H-1
• Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes

- Complies
- The basement car park is designed for up to 427 car spaces.
- As the site is split into two parcels given the location of the church and Metro boxes, both the northern and southern portions require separate servicing and basement entry points.
- The access to the northern basement is off the new shared street off Cope Street. Vehicular access to the southern basement is off Wellington Street.
- Servicing and loading are located at the site edges with access off the vehicular priority streets Botany Road and Wellington Street.
- Clear sight lines will be provided at the carpark entry/exit point and vehicle crossings.
- A car bay has been provided adjacent to the church at the end of the shared way to allow funeral and wedding cars direct access to the front of the church without relying on Botany Road.

3J Bicycle and car parking [p.71]	
Objective 3J-1 *Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas* *Design criteria* *• The car parking needs for a development must be provided off street*	• Complies • The proposal is an integrated station development and the basement car park is designed for up to 427 car spaces. • Vehicular access to and circulation through the site has been minimised to reduce any potential conflict with the highly pedestrian public domain. Basement parking numbers are limited to serve only adaptable apartments, , non-residential accessible and car share spaces, reducing the number of movements within and to the site.
Objective 3J-2 *Parking and facilities are provided for other modes of transport*	• Complies • The public domain design encourages bicycle movement throughout the site, with minimal level changes, generous circulation widths and significant parking provision. The proposal maximises bicycle parking through the provision of street spaces and secure bike parking facilities. o 700 residential bicycle spaces (CoS DCP requirement of 1/dwelling) o 400 bicycle space bike hub (basement) o 40 at-grade bicycle spaces (public domain) o 180 bicycle spaces provided as part of the CSSI approval
Objective 3J-3 *Car park design and access is safe and secure*	• Complies • Car park access will be secured at appropriate levels for amenity and residential uses.
Objective 3J-4 *Visual and environmental impacts of underground car parking is minimised*	• Complies • Car parking is in the basement and accessed off Wellington Street and the new shared street • The entries to basements are minimised in width and appearance where possible while complying with the development standards.
Objective 3J-5 *Visual and environmental impacts of on-grade car parking is minimised*	• Complies • Car parking areas are not visible from the public domain; • The car parking is located below ground in basement carparks
Objective 3J-6 *Visual and environmental impacts of aboveground enclosed car parking are minimised*	• N/A

4A Solar and daylight access [p.79]	
Objective 4A-1 *To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space* *Design criteria* *• 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* *• A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter*	• Complies with qualifications • The envelopes have been designed to maximise views and access to daylight while minimising wind and noise impacts. Apartment amenity is consistent with the objectives of the Apartment Design Guide (ADG). • Botany Road presents a significant noise source to the development (70dB background). The apartments directly fronting Botany Road are most affected, though those further into the site also require consideration. To achieve acoustic levels of 55dB to living rooms and 45dB to bedrooms the following planning strategies have been adopted: o Building orientation reduces frontages facing Botany Road, with no single aspect apartments facing the street o All balconies are provided as re-entrant to the building facade

- Operable windows are located off protected balconies instead of the external façade
- Bedroom openings typically face east, north or south to minimise potential noise impact from Botany Road to the west
- All glazing/façade fronting Botany Road is not required to be operable to satisfy ventilation requirements.

- While Botany Road facing apartments would ordinarily achieve solar access compliance, the balcony and/or living areas have been relocated to mitigate noise infiltration. This removes the ability for these balconies and/or living areas to capture solar access. The resulting solar access percentages in the illustrative 'noise responsive' scheme are lower than the 'base case' scheme and ADG.
- The design is indicative only at this stage, however the base scheme achieves a minimum of 70% solar access.
- The design is indicative only at this stage, however the
  Illustrative plans achieve a maximum of 15% of apartments receive no-direct sunlight between 9am and 3pm mid-winter across the development.

Refer to the Solar Access Diagrams or further information.

Objective 4A-2
Daylight access is maximised where sunlight is limited

- Complies with qualifications
- The residential towers have been designed to maximise views and access to daylight while minimising wind and noise impacts. Apartment amenity is consistent with the objectives of the Apartment Design Guide (ADG).
- Skylights are utilised to maximise the access to sunlight mid-winter.

Objective 4A-3
Design incorporates shading and glare control, particularly for warmer months.

- Complies
- As part of the detailed design and Stage 2 SSDA, solar control shading will be considered to the northern, eastern and western facades to control solar gain and to reduce glare for individual buildings.

4B Natural ventilation [p.83]

Objective 4B-1
All habitable rooms are naturally ventilated

- Complies
- Windows and doors will be sized to allow the ADG requirements for natural ventilation;
- The proposed overall building depths facilitates ventilation to habitable rooms.

Objective 4B-2
The layout and design of single aspect apartments maxinise natural ventilation.

- Capable of complying
- The apartment depth will be limited to maximise ventilation and airflow.

Objective 4B-3
The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents

Design criteria
• 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
• Overall depth of a cross-over or cross through apartment does not exceed 18m, measured glass line to glass line

- Complies with qualifications
- The envelopes have been designed to maximise natural cross ventilation while minimising wind and noise impacts. Apartment amenity is consistent with the objectives of the Apartment Design Guide (ADG).
- Botany Road presents a significant noise source to the development (70dB background). The apartments directly fronting Botany Road are most affected, though those further into the site also require consideration. To achieve acoustic levels of 55dB to living rooms and 45dB to bedrooms the following planning strategies have been adopted:
  - Building orientation reduces frontages facing Botany Road, with no single aspect apartments facing the street
  - All balconies are provided as re-entrant to the building facade
  - Operable windows are located off protected balconies instead of the external façade
  - Bedroom openings typically face east, north or south to minimise potential noise impact from Botany Road to the west
  - All glazing/façade fronting Botany Road is not required to be operable to satisfy ventilation requirements.

- While Botany Road facing apartments would ordinarily achieve cross ventilation compliance through their corner location, the preclusion of operable openings to exclude noise removes this ability to be counted. The resulting cross ventilation percentages in the illustrative 'noise responsive' scheme are lower than the 'base case' scheme and ADG.
- Natural ventilation complies with NCC requirements.
- The design is indicative only at this stage, however the base scheme achieves a minimum of 60% cross-ventilation.
- Cross-through apartments do not exceed 18m glass line to glass line;
- Natural cross-ventilation is proposed by corner or cross-through strategy to the living area and n-1 bedrooms. Refer to the definition in the ADG [Appendix p.180].

Refer to the Cross Ventilation Diagrams for further information.

4C Ceiling heights [p.87]

Objective 4C-1 *Ceiling height achieves sufficient natural ventilation and daylight access* *Design criteria* *• Measured from finished floor level to finished ceiling level, minimum ceiling heights are:* *• Habitable rooms: 2.7m* *• Non-habitable: 2.4m* *• If located in mixed use area: 3.3m for ground and first floor to promote flexibility*	• Complies • A minimum floor-to-floor height of 3.1m is used to allow the ADG recommendation of 2.7m ceiling height to be achieved in living, dining and bedroom areas. • The proposed ceiling height to the kitchen has been reduced to 2.4m to allow for bulkheads, housing services. While this approach still achieves the intent of the objective by providing light to a greater depth of the habitable areas, it does not strictly comply with the objective.
Objective 4C-2 *Ceiling height increases the sense of space in apartments and provides for well-proportioned rooms*	• Noted
Objective 4C-3 *Ceiling heights contribute to the flexibility of building use over the life of the building*	• Noted

4D Apartment size and layout [p.89]

Objective 4D-1 *The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity* *Design criteria* *• Apartments are required to have the following minimum internal areas:* *• Studio: 35sqm* *• 1 bedroom: 50sqm* *• 2 bedrooms: 70sqm* *• 3 bedrooms: 90sqm* *The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m each* *A fourth bedroom and further additional bedrooms increase the minimum internal area by 12mÇ each* *• 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* *Design Guidance* *• A window should be visible from any point in a habitable room*	• Complies • The proposal allows for all apartments to meet the minimum requirements of the ADG • All habitable rooms will include windows to meet the minimum requirements of the ADG
Objective 4D-2 *Environmental performance of the apartment is maximised* *• Habitable room depths are limited to a maximum of 2.5 x the ceiling height* *• In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window*	• Capable of complying • Window and door openings have been sized to allow the ADG and NCC minimum recommendations for daylight to be achieved.

4D-3 *Apartment layouts are designed to accommodate a variety of household activities and needs* *•Master bedrooms have a minimum area of 10m2 and other bedrooms 9m2 (excluding wardrobe space)* *•Bedrooms have a minimum dimension of 3m (excluding wardrobe space)* *•Living rooms or combined living/dining rooms have a minimum width of 3.6m for studio and 1 bedroom apartments and 4m for 2 and 3 bedroom apartments* *•The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts*	• Capable of complying • All bedrooms will allow a minimum length of 1.5m for robes • The main bedroom of an apartment or a studio apartment will be provided with a wardrobe of a minimum 1.8m long, 0.6m deep and 2.1m high • Apartment layouts will allow flexibility over time, design solutions may include: o dimensions that facilitate a variety of furniture arrangements and removal o spaces for a range of activities and privacy levels between different spaces within the apartment o dual master apartments o 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 o room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) o efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms

4E Private open space and balconies [p.92]

Objective 4E-1 *Apartments provide appropriately sized private open space and balconies to enhance residential amenity*	• Complies • The proposal allows for all private open space to meet the minimum requirements of the ADG
Objective 4E-2 *Primary private open space and balconies are appropriately located to enhance liveability for residents*	• Complies with qualifications • All balconies are provided as re-entrant to the building façade to mitigate noise. • All balconies will connect directly to the primary living areas. • Where possible the bedrooms will also connect to the external space. • Private open spaces and balconies predominantly face north, east or west
Objective 4E-3 *Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building*	• Capable of complying • Subsequent Stage 2 SSDA submission will demonstrate compliance with this design guidance. • The proposed building envelopes have been developed to accommodate intergration of the balconies into the overall building design.
Objective 4E-4 *Private open space and balcony design maximises safety*	• Capable of complying • The design and detailing of the balconies will avoid opportunities for climbing and falls.

4F Common circulation and spaces [p.97]

Objective 4F-1 *Common circulation spaces achieve good amenity and properly service the number of apartments* *Design criteria* *• The maximum number of apartments off a circulation core on a single level is eight* *• For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40* *• Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level*	• Complies with qualifications • Each circulation core will service typically 8 apartments and no more than 12 apartments per level. • Each circulation core will have access to natural light increasing the amenity of the residents; • All lobbies achieve a high level of amenity as they are connected to the facade to facilitate access to daylight and natural ventilation.
Objective 4F-2 *Common circulation spaces promote safety and provide for social interaction between residents*	• Capable of complying • Common circulation spaces will be designed to provide safe, legible spaces to foster interaction and harmony between residents.

4G Storage [p.101]

Objective 4G-1 *Adequate, well-designed storage is provided in each apartment* *Design criteria* *• In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided:* *• studio: 4m3* *• 1 bed: 6m3* *• 2 beds: 8m3* *• 3 beds: 10m3* *At least 50% of the required storage is to be located within the apartment*	• Capable of complying • The internal apartment layouts have not been designed at this stage • Apartments that may not accommodate the entire storage volume within the unit locate a minimum of 50% of the required storage within the apartment with the remainder located in secure and accessible locations within the basement; • A variety of storage types will be provided, accessed off living rooms and circulation corridors within the apartments.

Objective 4G-2 *Additional storage is conveniently located, accessible and nominated for individual apartments*	• Capable of complying • Storage locations will be allocated within basement levels as part of the Stage 2 SSDA proposal

4H Acoustic Privacy [p.103]

Objective 4H-1 *Noise transfer is minimised through the siting of buildings and building layout*	• Complies • Adequate building separation is provided within the development and from neighbouring buildings/adjacent uses. • Subsequent Stage 2 SSDA submission will demonstrate further compliance with this design guidance. •
Objective 4H-2 *Noise impacts are mitigated within apartments through layout and acoustic treatments*	• Capable of complying • Noisy areas within the proposed development including building entries and corridors will be generally located above each other and quieter areas above quieter areas; • Typically, bedrooms of adjacent apartments will be located next to each other and likewise with living area. • Storage, circulation areas and non-habitable rooms will be located to buffer noise from external sources; • The party walls (walls shared with other apartments) will be appropriately insulated in accordance with applicable requirements.

4J Noise and Pollution [p.105]

Objective 4J-1 *Noise impacts are mitigated within apartments through layout and acoustic treatments*	• Complies • Botany Road presents a significant noise source to the development (70dB background). The apartments directly fronting Botany Road are most affected, though those further into the site also require consideration. To achieve acoustic levels of 55dB to living rooms and 45dB to bedrooms the following planning strategies have been adopted: o Building orientation reduces frontages facing Botany Road, with no single aspect apartments facing the street o All balconies are provided as re-entrant to the building facade o Operable windows are located off protected balconies instead of the external façade o Bedroom openings typically face east, north or south to minimise potential noise impact from Botany Road to the west o All glazing/façade fronting Botany Road is not required to be operable to satisfy ventilation requirements. Refer to the Acoustic Report for further information.
Objective 4J-2 *Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission*	• Complies • The subject proposal will incorporate seals to prevent noise transfer through gaps, acoustic glazing, and other measures where necessary to attenuate noise impacts to apartments.

4K Apartment Mix [p.107]

Objective 4K-1 *A range of apartment types and sizes is provided to cater for different household types now and into the future*	• Complies • Approximately 700 apartments will be provided, 70 social housing dwellings, 5 - 10 percent affordable housing, and the remainder to be private market housing. • A variety of apartment types will be provided, including 15% adaptable and 20% to meet the requirements of Liveable Housing design. • The future apartment mix will be taking into consideration the distance to public transport, employment and education centres, as well as the current market demands and projected future demographic trends within the area.
Objective 4K-2 *The apartment mix is distributed to suitable locations within the building*	• Complies • Different apartment types will be located to achieve successful facade composition and to optimise solar access. • Larger apartment types will be located on the top levels

4L Ground floor apartments [p.109]	
Objective 4L-1 *Street frontage activity is maximised where ground floor apartments are located*	N/A
Objective 4L-2 *Design of ground floor apartments delivers amenity and safety for residents*	N/A
4M Facades [p.111]	
Objective 4M-1 *Building facades provide visual interest along the street while respecting the character of the local area*	• Capable of complying • The proposed building envelopes have been developed to accommodate future design opportunities for differing façade expressions to achieve a high level of visual interest and aesthetics, in response to the exsisting and local context. • The aesthetics of the proposal do not form part of this application, furthermore the design, materials and colours are purely indicative at this stage.
Objective 4M-2 *Building functions are expressed by the façade*	• Capable of complying • The aesthetics of the proposal do not form part of this application, furthermore the design, materials and colours are purely indicative at this stage.
4N Roof design [p.113]	
Objective 4N-1 *Roof treatments are integrated into the building design and positively respond to the street*	• Capable of complying • The aesthetics of the proposal do not form part of this application, furthermore the design, materials and colours are purely indicative at this stage. • Service elements will be integrated within the roof design

Objective 4N-2
Opportunities to use roof space for residential accommodation and open space are maximised
	• Habitable roof space is provided with good levels of amenity and include:
	  ○ penthouse apartments
	  ○ dormer or clerestory windows
	  ○ operable skylights
	• Open space is provided on roof tops with visual and acoustic privacy, comfort levels, safety and security considerations

Objective 4N-3 *Roof design incorporates sustainability features*	• Complies • Skylights will be integrated into the roof design
4O Landscape design [p.115]	
Objective 4O-1 *Landscape design is viable and sustainable*	• Complies • The tree palette for the Metro Quarter aims to augment local character and species diversity (both native and exotic), maintaining biodiversity and support local wildlife. • Species will support local native bee species and foraging wildlife whilst providing canopies that will create shade minimising urban heat island effect and cooling the public domain during summer months. • To appreciate Waterloo's existing vegetation, species such as Banksia integrifolia have been included to help strengthen the threatened plant community Eastern Suburbs • Low growing, flood tolerant understorey species have been selected to further define the public domain, provide habitat and assist with WSUD, avoiding obstruction of sight lines across the site and streets creating a safe and healthy environment. • Tree and understorey species are of indigenous significance and provide edible elements for cooking with flowers, fruits, roots and seeds all providing a source of food with the public domain. Refer to the SSDA report for further information.
Objective 4O-2 *Landscape design contributes to the streetscape and amenity*	• Complies Refer to the SSDA report for further information.

4P Planting on structures [p.116]	
Objective 4P-1 *Appropriate soil profiles are provided*	• Complies • Roof top terraces will be designed to accommodate planting with a minimum of 0.5m to 1.2m depth of soil.
Objective 4P-2 *Plant growth is optimised with appropriate selection and maintenance*	Complies Diverse planting that are low in maintenance and suited to the site will be incorporated to enhance the performance of the landscaped areas
Objective 4P-3 *Planting on structures contributes to the quality and amenity of communal and public open spaces*	Complies Building design will incorporate opportunities for planting on structures including: wall design that incorporates planting green roofs, particularly where roofs are visible from the public domain planter boxes

4Q Universal Design [p.118]	
Objective 4Q-1 *Universal design features are included in apartment design to promote flexible housing for all community members*	• Complies • Development will achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features
Objective 4Q-2 *A variety of apartments with adaptable designs are provided* *Adaptable housing should be provided in accordance with the relevant council policy*	• Complies • Adaptable apartments will be provided at a rate of 15% in accordance with the City of Sydney 2004 Access DCP • Several different apartment types will be used as adaptable apartments.
Objective 4Q-3 *Apartment layouts are flexible and accommodate a range of lifestyle needs*	• Capable of complying • Apartment design incorporates flexible design solutions which may include: o rooms with multiple functions o dual master bedroom apartments with separate bathrooms o larger apartments with various living space options

4S Mixed use [p.122]	
Objective 4S-1 *Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement*	• Complies • The proposal is an intergrated station development. • The proposal delivers a highly active streetscape, both to the existing streets and new public plaza. • The size and type of tenancy located along the primary pedestrian paths has been designed to respond to the nature of movement and street interfaces. • Fine grain retail tenancies are located along the modal interchange paths and fronting the community square, including café tenancies located within the Metro box that engage and activate the square • The design of the Metro box has been developed to maintain maximum visual and physical permeability, allowing clear movement paths and engaging with the open space at each entry • The community building engages with the square and Cope Street to activate the community entry point • Larger format retail/showroom located along the Botany Road frontage and defining the corners of the site
Objective 4S-2 *Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents*	• Complies with qualifications • Primary residential foyers have secure access from the adjoining streets and new public plaza.

4T Awnings and signage [p.125]	
Objective 4T-1 *Awnings are well located and complement and integrate with the building design*	• Complies

	• Awnings and covered areas will be provided over building entries for building address and public domain amenity. • Awnings will continue the existing awning line of the adjacent streetscape.
Objective 4T-2 *Signage responds to the context and desired streetscape character*	• Complies • Signage will be limited to building identification, navigation and statutory signs. It will be designed to fit harmoniously in the architecture and to contribute positively to the development.. • Any commercial signage will be subject to future and separate Development Applications.

4U Energy efficiency [p.127]

Objective 4U-1 *Development incorporates passive environmental design*	• Complies • Natural light will be provided to all habitable rooms. • Outdoor communal open space areas will be designed to provide residents with a range of spaces offering flexibility and choice demonstrating a high level of passive environmental design.
Objective 4U-2 *Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer*	• Complies • The design development will allow for future incorporation of passive solar design measures including overhangs and shading devices, insulated walls, roofs and floors, and seals on window and external door openings.
Objective 4U-3 *Adequate natural ventilation minimises the need for mechanical ventilation*	• Complies • Natural ventilation will be provided to all habitable rooms and typically, to all common areas and circulation spaces.

4V Water management and conservation [p.129]

Objective 4V-1 *Potable water use is minimized*	• Complies • The development will incorporate water efficient fittings and appliances. • Rainwater/stormwater harvesting tanks to meet BASIX Water Requirements and opportunities for additional tanks for beyond BASIX Water compliance. Rainwater can be used to irrigate public open spaces. • Plant selections are designed for the microclimate and are typically low-water use.
Objective 4V-2 *Urban storm water is treated on site before being discharged to receiving waters*	• Complies • Incorporation of water sensitive urban design (WSUD) features within Waterloo will contribute to a green and resilient urban environment. The suggested strategy for the Metro Quarter includes stormwater filter cartridges in on-site detention (OSD) tanks to assist with pollution reduction and water quality. • To further support this strategy, throughout the Metro Quarter streetscapes, bio-retention tree pits have been incorporated to assist with treating runoff through filtration and reduce stormwater runoff volumes along pedestrian pathways in rainfall events. • Widened footpaths along Cope Street, provides the opportunity to utilise the former kerb alignment as the new invert level therefore directing runoff into the tree pits through kerb inlets along adjacent pathways and roadside. Refer to the stormwater report for further information
Objective 4V-3 *Flood management systems are integrated into site design*	• Complies Refer to the stormwater and flood magagement report for further information

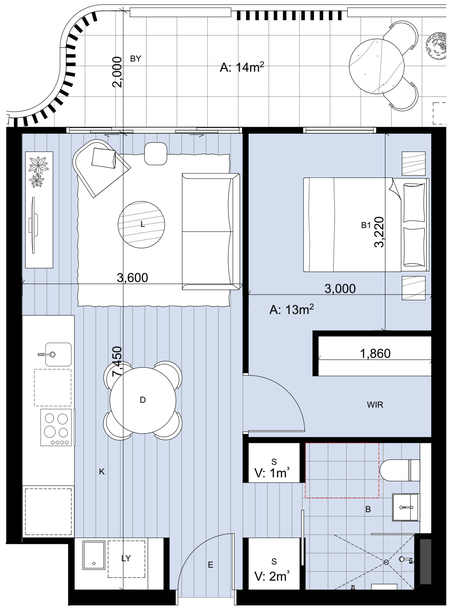
4W Waste management [p.131]

Objective 4W-1 *Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents*	• Complies • Garbage collection will be located in each loading area and is separated from public and residential areas. • Bulky waste areas will be provided internally and will be managed by the building manager

Objective 4W-2 *Domestic waste is minimised by providing safe and convenient source separation and recycling*	• Complies • Communal waste chutes will be provided for residents in convenient and accessible locations related to each vertical core. • Waste and recycling storage areas will be well ventilated and have durable and washable finishes in line with the DCP requirements. • All dwellings will be designed to have sufficient internal space for the holding of waste and recycling.
4X Building Maintenance [p.133]	
Objective 4X-1 *Building design detail provides protection from weathering*	• Complies • Building materials will be selected to withstand the demands of the environment and to weather gracefully. • Painted and applied finishes are minimised
Objective 4X-2 *Systems and access enable ease of maintenance*	• Complies • Suitable access for cleaning will be provided from the public domain or appropriately controlled roof access.

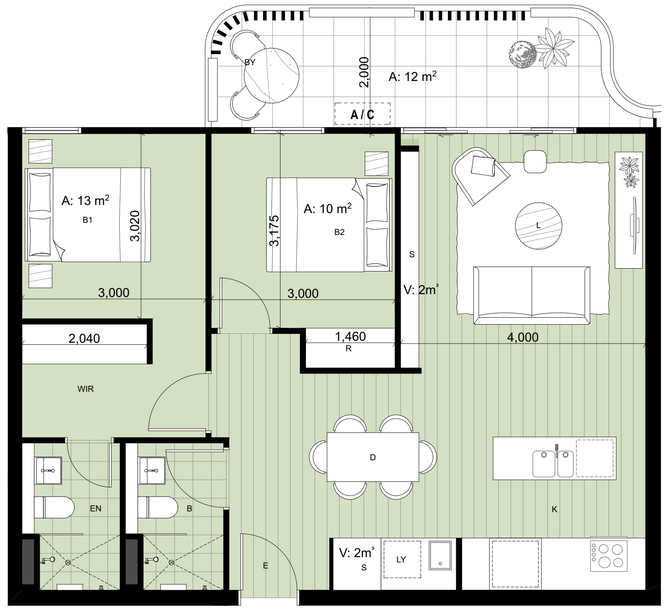
Objective 4X-3
Material selection reduces ongoing maintenance costs
	• Complies
	• The use of applied finishes will be minimised in the development.
	• The proposed development will incorporate the following measures:
	  ○ Sensors to control artificial lighting in common circulation spaces
	  ○ Materials that weather with time Robust and durable materials and finishes

ADG ASSESSMENT - APARTMENT AMENITY



Typical 1 Bed

Internal Area: Minimum 50 m²
External Area: Minimum 8 m²



Typical 2 Bed

Internal Area: Minimum 75 m² (for 2 bathrooms)
External Area: Minimum 10 m²

Typical 3 Bed

Internal Area: Minimum 95 m²
External Area: Minimum 12 m²

Fig. 8.2.8 Typical apartment layouts demonstrating compliance with ADG amenity requirements
Typical layouts have been used in projects including Canterbury Road Apartments, Roselands

10.3.3 BETTER PLACED ASSESSMENT

Better Placed is a draft guideline by the Government Architect of NSW for a design-led planning strategy to create liveable, productive, sustainable and resilient communities.

The Metro Quarter is a catalyst for the positive evolution of the Waterloo Estate and surrounding areas. To achieve this successfully, a number of strategies have been developed based on the seven Better Placed objectives. These strategies will ensure the built environment will be healthy, responsive, integrated, equitable and resilient:

Better Fit

Contextual, local and of its place

Good design is place based and relevant to and resonant with local character, heritage and communal aspirations. It contributes to evolving and future character and setting.

The Metro Quarter response:

- Positively responds to the existing character and built environment of the area as well as the potential future character of the Waterloo Estate

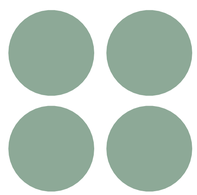
Better Performance

Sustainable, adaptable and durable

Environmental sustainable and responsiveness is essential to achieve the highest performance standards and for functional, whole of life design.

The Metro Quarter response:

- The design of built form considers the environmental impact of the development onto the surrounding context and their inherent environmental amenities
- Detail design of the Metro Quarter and the choice of high quality and durable materials and finishes will tie into the existing character
- Innovative initiatives are integrated, e.g., WSUD



Better for Community

Inclusive, connected and diverse

Incorporating diverse uses, housing types and economic frameworks will support engaging places and resilient communities and create inclusive, welcoming and equitable environments.

The Metro Quarter response:

- Variety of land uses proposed to complement existing uses
- A range of public spaces and buildings
- Potential for the community to program the public space for events
- Social and affordable housing provided to support more choice and affordability for the community
- Delivery of public benefits upfront

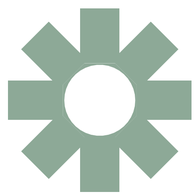
Better for People

Safe, comfortable and liveable

Design should focus on safety, comfort and the functionality of place to support good and functional places for people.

The Metro Quarter response:

- All inclusive access
- Convenient and easy navigation through the space
- Passive surveillance promoted through siting and location of uses
- Public spaces provided with good amenity and quality of finishes



Better working

Functional, efficient and fit for purpose

Buildings and spaces that work well for their proposed use and have the ability to adapt to change will remain valuable and well-utilised.

The Metro Quarter response:

- Non residential uses provide services and facilities required for the future community
- Buildings and spaces are designed to accomodate future change and adapt by providing flexible floor plates and appropriate heights

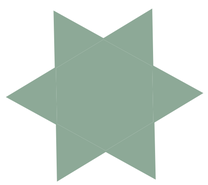
Better Value

Creating and Adding Value

Good design generates on-going value for people and communities, minimises costs over time, raises standards and quality of life for users and provides return on investment for industry.

The Metro Quarter response:

- Use of high quality finishes that require less cost to maintain
- Buildings located to maximise amenity benefits for solar, wind and noise mitigation



Better Look & Feel

Engaging, inviting and attractive

The built environment should be welcoming, aesthetically pleasing and promote positive engagement by encouraging community use and enjoyment.

The Metro Quarter response:

- Design of safe and attractive public domain
- Spaces designed to encourage social interaction (both programmed and unprogrammed)

WATERLOO METRO QUARTER

URBAN DESIGN AND PUBLIC DOMAIN REPORT