

WATERLOO METRO QUARTER OVER STATION DEVELOPMENT

Environmental Impact Statement Appendix F – Architectural Design Report

Volume 3

SSD-10437 Southern Precinct

Detailed State Significant Development Development Application

Prepared for Waterloo Developer Pty Ltd

30 September 2020



PART THREE **BUILDNG 4** WATERLOO METRO QUARTER

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Common Spaces

1.0 SUMMARY

Our design focuses on creating a space that evokes a strong sense of identity and belonging. Inset niches at the entry to each apartment creates the impression of a unique address and provides a space that can be personalised by each resident.

Externally, vertical screens provide sun shading and privacy for residents, whilst the inset balconies provide outdoor spaces and allows for proper ventilation.

Residents have access to communal spaces such as the rooftop terrace, community room and shared relaxation spaces.



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1.0 SUMMARY

1.1 DEVELOPMENT SUMMARY

Proposed GFA:	5,437 m ²
Proposed Storevs (above metro box)	9

Residential Mix

Total	70 Apartments
Four Bed (Adaptable)	1
Three Bed (Adaptable)	7
Two Bedroom Apartments (Adaptable)	4
Two Bedroom Apartments	30
One Bedroom Apartments	2
Studio apartments	26

Parking

Car Spaces:

8 spaces

the Building 2 basement (subject to separate Development Application)

Bicycle Spaces:

We confirm that Guy Lake of Bates Smart directed the design of the enclosed Development Application and that Mr.

Lake is registered as an architect in accordance with the Architects Act 1921.

We confirm that in our professional opinion the proposed design is capable of achieving the design principles set out in State Environmental Planning Policy 65 - Design Quality of Residential Flat Development and has been designed with regards to the publication Apartment Design Guide (ADG).

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Note: Car spaces to be provided in

70 resident spaces 7 visitor spaces (within public domain)



2.0 DESIGN CONCEPT

The building massing, articulation and facade expression have been developed to respond to the built context, building orientation and environmental conditions such as solar shading, acoustics and privacy.



2.1 STAGE 1 DA ENVELOPE

The approved Stage 1 DA massing allows for 9 residential levels. The setbacks to the north and south are largely dictated by the setback requirements from the metro box vents below. A Om setback is permissible to the east and west subject to achieving the aforementioned vent setback requirements.





2.2 ARTICULATION OF MASSING

The proposed massing is articulated into 3 volumes with the corridor ends being expressed externally as vertical slots. The southern volume is set back from the eastern elevation to emphasise definition of the two volumes.





2.0 DESIGN CONCEPT

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.



2.3 RELATIONSHIP WITH STATION

Level 01 on the eastern elevation is setback 2.5m to create visual separation from the metro box massing and to achieve sufficient setback from the station vents. The southern volume is setback and grounded creating a one storey step in height between the two volumes.





2.4 BUILDING CROWN

The communal roof terrace is located on the top floor and 'crowns' elevated volume. The roof terrace is integrated within overall building massing and facade design.



2.0 DESIGN CONCEPT

health and environmental conditions. sites, streetscape and neighbourhood.



2.5 CONCRETE HORIZONTALS AND BRICK VERTICALS

Expressed concrete horizontals provide scale and articulation to all building elevations whilst providing for sun shading to elevations with an eastern, northern or western aspect. Brick piers provide vertical shading.





2.6 SECONDARY LAYERING OF FACADE **ELEMENTS**

A further layer of finer facade elements provides privacy, solidity and further environmental performance. Brick infill walls provide solidity and privacy whilst metal elements such as perforated aluminium balustrades, vertical sun screen and perforated aluminium panels create further detail and interest.

Principle 1: Context and neighbourhood 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,

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

Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.



The floorplate design has been developed to provide a high level of amenity to both the apartments and the shared common spaces.



3.1 KEY PRINCIPLES

The floorplate is divided into 3 volumes of varying depths. The north east volume is deeper to maximise apartments on this frontage for solar access. The open ended corridors create legible circulation paths from the lift lobby, whilst providing natural light, ventilation and views. Due to the restrictions of the metro box, the lift core is located to the south east of the floor plate within the Building 3 envelope.

3.2 APARTMENT LOCATIONS

Larger apartments located on the building corners whilst the smaller studios are positioned to the east elevation to maximise number of apartments with solar access. Open corners and the stepped form enable additional apartments along the eastern façade to achieve cross ventilation.

3.3 CORRIDOR & COMMON SPACE

The corridors have been designed to feel as open as possible with open ends to allow views to the outside at all times, whilst drawing in natural light. Inset niches to apartment entries create a sense of address and identity. A common space with integrated seating on the eastern slot creates a place for residents to interact. The cumulative effect of the niches and common space is a linear space that expands and contracts along its length.



3.4 TYPICAL LEVEL

The typical floorplate exists between Level 02 and 07. It contains 9 apartments of varying sizes in an efficient double loaded configuration. The design has been developed to maximise solar access and cross ventilation opportunities to the east and north, with the larger apartments located on the building corners and narrower studio apartments consolidated along the longer eastern side of the building.

Open ended corridors draw in natural light and natural ventilation into common spaces, whilst providing views and outlook out.

Entry niches to the apartments creates a sense of address to each dwelling, whilst helping to mitigate the impact of the corridor length.





3.5 CORRIDORS, APARTMENT ENTRIES AND COMMON SPACES

The residential corridors have been treated as essential communal spaces to encourage interactions between neighbours and to create a sense of address to each apartment.

A communal seating area defines the end of east-west corridor, whilst providing space for a community noticeboard that allows a dialogue between residents. Inset niches define each apartment entry creating a sense of address.

Glazed openings to the ends of corridors frame views out to the east and the north.





INDICATIVE VIEW OF CORRIDOR & APARTMENT ENTRIES









Reference Images





INDICATIVE VIEW OF CORRIDOR COMMON SPACE & APARTMENT ENTRIES

3.6 SOLAR ACCESS

The design seeks to maximise the northern and easterly aspect. A total of 73% of dwellings will receive at least 2 hours of direct sunlight to both their balconies and living spaces between 9am and 3pm at mid winter. The relevant apartments are identified on the adjacent diagrams and tabulated below.

A total of 21% of dwellings receive no direct sunlight between 9am and 3pm at mid winter, less than the maximum 15%. Extending the analysis to be between 9am and 3.45pm at mid winter results in a total of 11% of dwellings receiving no direct sunlight.

Refer to Appendix 00 - Solar Access Report for further detail.

	2 Hours	0 Hours		
		9am-3pm	9am-3.45pm	
Level 09	1/2	0/2	0/2	
Level 08	5/8	2/8	1/8	
Level 07	7/9	2/9	1/9	
Level 06	7/9	2/9	1/9	
Level 05	7/9	2/9	1/9	
Level 04	7/9	2/9	1/9	
Level 03	7/9	2/9	1/9	
Level 02	7/9	2/9	1/9	
Level 01	3/6	1/6	1/6	
Total	51 / 70	15 / 70	8 / 70	
Achieved	73%	21%	11%	



LEVEL 01



Principle 6: Amenity





LEVEL 02-07 (TYPICAL)





LEVEL 09

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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.



3.7 CROSS VENTILATION

A total of 60% of dwellings are deemed to be cross ventilated. 40 dwellings are deemed to be cross ventilated by virtue of windows facing in more than one orientation. A further 2 apartments on Levels 06 & 07 cross will be connected to the northern slot via a plenum in the ceiling of the common corridor to provide cross ventilation. In these instances, the distance between openings does not exceed 18m.











LEVEL 06-07



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LEVEL 09

	Cross Vent
Level 09	2/2
Level 08	5/8
Level 07	6/9
Level 06	6/9
Level 05	5/9
Level 04	5/9
Level 03	5/9
Level 02	5/9
Level 01	3/6
Total	42 / 70
Achieved	60.0%



LEVEL 02-05



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3.8 LEVEL 01

Located above the metro box roof, Level 01 is the lowest residential level. Apartments on the eastern side of the building are set back to create visual separation with the station volume and to meet the setback requirements from the station vents. The 4 bedroom adaptable apartment is located on the western side of the building with a northerly aspect to its living spaces.

At this level, the scissor stair transfers across the floorplate into the Building 3 envelope, where it descends to ground level. The building services also transfer back to the core in a services transfer zone below this floor and above the metro box roof.





VIEW OF EAST FACING LEVEL 01 APARTMENT TERRACES

SCALE 1:250 @ A3

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3.9 RESIDENTIAL APARTMENTS

Residential apartments have been designed in accordance with the Apartment Design Guide and Silver Liveable Housing Performance Guidelines. Apartment layouts have been designed to maximise resident amenity with living spaces typically being located on the façade for solar access, views and outlook.

In accordance with the brief, 100% of the storage provision required under the ADG is provided within the apartments.



PLAN OF TYPICAL STUDIO APARTMENT

Vertical aluminium batten screen for sunshading and privacy

Perforated aluminium balustrade for privacy



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3.10 ACCESSIBILITY

New residential developments are to include continuous accessible paths of travel and circulation spaces and should be designed with universal design principals so as to be visitable by people with disabilities, as well as to provide a diverse mix of adaptable apartments.

All common internal and external areas will be accessible as required. Further details are provided in the Access Report.

3.11 ADAPTABLE APARTMENTS

The proposed development provides 12 adaptable apartments comprising 17% of the total development. The mix of adaptable apartments consists of 4 two bedroom apartments, 7 three bedroom apartments and 1 four bedroom apartment.

The adaptable apartments have been designed to require minimal adaptation, with locations and sizes of bathrooms and laundries remaining being the same in pre-adaption and post-adaption configurations.

Further details of pre and post adapation layout are provided in the following architectural drawings:

/WMQ-BLD4-BSA-AR-DRG-DA160 /WMQ-BLD4-BSA-AR-DRG-DA162 /WMQ-BLD4-BSA-AR-DRG-DA163











2 BEDROOM APARTMENT (POST-ADAPTION LAYOUT)

3 BEDROOM APARTMENT (POST-ADAPTION LAYOUT)

3 BEDROOM APARTMENT (PRE-ADAPTION LAYOUT)

3.12 LIVEABLE HOUSING DESIGN

All 70 residential apartments are to meet 'Silver' Liveable Housing Design Guidelines.

- A livable home is designed to:
- / be easy to enter
- / be easy to navigate
- / be capable of easy and cost-effective adaption, and
- / be responsive to the changing needs of home occupants
- (Ref: Liveable Housing Design Guidelines - 4th Edition)

Key aspects of the Silver level requirements include:

/ provide a safe, continuous step-free path from the street to the dwelling

/ provide a minimum clear opening wdith of 820mm to the front door and all internal doors to rooms

/ provide a minimum clear width of 1000mm to all internal corridors

/ 1200mm circulation space in front of WCs



4 BEDROOM APARTMENT (PRE-ADAPTION LAYOUT)



4 BEDROOM APARTMENT (POST-ADAPTION LAYOUT)

3.13 LEVEL 09

Level 09 is the uppermost habitable floor. It contains two apartments on the western side of the plan and a large north facing communal roof terrace to the east. A canopy and pergola provides shading and shelter enabling the roof terrace to be used all year round.

To the southern side of the plan is a further communal space for use by the building residents. Opening onto the roof terrace, the Community Room is a bookable space for residents to hold meetings or small social gatherings.





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3.14 COMMUNAL ROOF TERRACE

The roof terrace is enclosed on the eastern and northern sides by a 3m high steel mesh screen. In addition to creating a safe and secure space, this screen forms a vertical surface for climbing plants to grow over. This 'green screen' provides further protection from the wind and helps to improve the visual amenity and air quality to the outdoor space.

The design of the roof terrace incorporates integrated seating, a fixed awning structure for shade and weather protection and integrated planters for a community garden.

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 useability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity and provides for practical establishment and long term management.



INDICATIVE VIEW OF OUTDOOR SEATING AREA









INDICATIVE VIEW OF COMMUNITY GARDEN



Reference Images



3.15 SECTION

The adjacent east west section describes how Building 4 is located above the metro box below. Building 4 has 3.1m floor to floors with additional height to the upper two levels for insulation and drainage.

The western elevation is setback as far as possible to maximise the separation between Building 4 and Building 3.

The communal roof terrace is located on the top floor. It is orientated to the north and east to maximise sunlight and views and resident privacy from the taller towers in the Waterloo Metro Quarter development.

Station Interface

Sandwiched between the station roof and first residential level is services zone that allows space for the building services such as stormwater, hydraulic pipework, electrical and communications to transfer back to the core.

Level 01 is setback on the Cope Street elevation to create visual separation between the metro box as well as achieving required setbacks to the station vents.



SCALE 1:250 @ A3

3.16 BUILDING SEPARATION

The western facade of Building 4 has an 18m building separation from its glassline to the glassline of Building 3. The Stage 1 DA envelope for Buildings 3 & 4 has a number of constraints that have limited the ability to provide increased separation. These constraints include:

/ The envelopes for Building 3 and 4 are located back to back in an L-shaped plan, limiting the potential to orientate the building layouts to face away from one another

/ To transfer to ground, the Building 4 lift core is located within the Building 3 envelope. The internal corner, which would typically be used for the core, becomes usable floor space.

/ The Building 4 envelope is atypical in the sense that it is located above a ~20m high metro box and being adjacent to the 3 storey high podium of Building 3.

/ To utilise the Building 4 envelope efficiently a double loaded corridor is required, with some apartments orientated to the west.

These constraints were highlighted by the Stage 1 DA reference scheme:





PLAN NTS

BUILDING 4 MASSING

The Building 4 massing is positioned as far east as possible to maximise the building separation. The residential floorplate has been planned to minimise the number of apartments with west facing living spaces to one per floor, with bedrooms and bathrooms making up a significant proportion of the facade.

BUILDING 3 MASSING

The tBuilding 3 tower has been setback from Botany Road to align with the Waterloo Church, to improve the relationship with this heritage building and to define the podium and tower as distinct volumes. Re-locating the tower further west to improve the building separation would negate the urban design benefits of the proposed Botany Road setback



SECTION NTS

ADDITIONAL PRIVACY MEASURES

Further migitation measures to provide improved privacy include:

corner of the rooms to limit view angles

west facing balcony

/ Providing a high level of facade depth and solidity on the western facade through the use of projecting horizontal slab edges, vertical brick piers and spandrels to windows helps restricts views from floors above and below

/ Angled privacy/sunscreens to the Building 3 facade help to partially obscure the windows to the student accommodation studios.

- / Glazing to bedrooms is limited to a single window that is 1.05m wide with 0.8m high solid spandrels. Bedroom windows are also located in the
- / Perforated aluminium balustrades provide further visual privacy to the

3.17 STATION INTERFACE

The interface with the station has been developed in coordination with the metro box architects and engineers.

The southern metro box has a number of intake and exhaust vents to service the station. The Level 01 floorplate has been developed to respond to the required setbacks from these station vents.

The diagram on this page indicates the station vents on each side of the building and the design moves undertaken to achieve the required setbacks from balconies and operable windows.



Indicative location of horizontal air vent to the facade of the southern Metro Box

LEVEL 01 PLAN SCALE 1:250 @ A3

3.18 BUILDING 3 GROUND LEVEL

The lobby for the social housing building is off Wellington Street on the ground floor of Building 3. Double sided lifts provide step free access to the residential levels above. This level also contains the waste loading and fire egress for Building 4, as well as other shared services including the loading dock, substation, switchroom, fire control room and gas meters.

KEY



Space used by Building 4 only

Space shared with other building uses

3.19 BUILDING 3 MEZZANINE LEVEL

The Mezzanine level contains the Social Housing bike store. This space is accessed via the lifts and has an opening to Wellington Street providing natural light and ventilation.









7 # K

+ RI 16 380

Turntable 9.25m SRV

Space used by Building 4 only

Space shared with other building uses



SCALE 1:250 @ A3

SSD-10437 Design Report | Part Three: Building 4

3.20 SOCIAL HOUSING LOBBY

The social housing (Building 4) lobby is accessed off Wellington Street and connects to the social housing lifts outside the metro box on the eastern edge of the site. The lobby facade reads as a two storey volume that is set back to give the entry greater definition.

The lobby has a split level design with a generous floor to ceiling height. On the lower level, the lobby entry is at street level and contains bike spaces and the mailboxes. The upper level is elevated above the flood planning level and contains the building lifts and a small seating area for residents. Accessible access between the two levels is via a platform lift, discreetly located to one side of the lobby.



PLAN



Reference Images

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 facade concept has been developed to create a building skin that offers a high degree of privacy, solidity and environmental performance. A simple palette of materials consisting of brick, concrete and metal has been chosen for their longevity, durability and their timeless quality.

4.1 FACADE RESPONSE



SOUTH

Shading not required. Expressed brick verticals and concrete horizontals provide scale and articulation. Window sizing and acoustic ventilators to consider noise from Botany Road



Reference Images

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4.2 TYPICAL FACADE DETAIL

The facade design utilises a family of elements and materials to give the building a consistent and cohesive quality. The concrete slab edges lend the building a legible scale whilst providing integrated horizontal sunshading. The brickwork expresses a warmth and texture appropriate for residential use, whilst referencing the brickwork used in the metro box and the surrounding built context. Bronze coloured metal components such as perforated aluminium balustrades and vertical sun screens add a finer layer of elements that respond to solar orientation and privacy.

- Vertical aluminium screen for sun shading and 1 privacy
- 2 Perforated aluminium balustrade
- (3) Glass louvres fixed in open position for ventilation
- 4 Double glazed awning windows
- Aluminium spandrels to un-screened windows 5 for privacy
- Tensile mesh full height screen supports climbing plants and provides fall protection 6
- Metal profiled cladding 7

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 a well designed apartment development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.



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4.3 STUDIO APARTMENT FACADE DETAIL

The building contains 26 studio apartments (37% of the total apartment mix) which are consolidated together on the eastern facade. The facades to these apartments have been designed with a 50/50 proportion to the façade, with a compact 4sqm balcony located on the northern side and a dining space on the southern side which benefits from the morning sun.

Glass sliding doors to the rear and side of the balcony allow the living space to be opened up to the outdoors. An aluminium vertical batten screen sits in front of the façade glazing providing shading from the northern sun.



PLAN OF STUDIO APARTMENT



ELEVATIONAL VIEW OF THE STUDIO APARTMENT FACADE

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Cope Street



KEY PLAN

EAST ELEVATION OF BUILDING 4

MATERIALS PALETTE

- 1/ Exposed concrete slab edges
- Brickwork Light / Cream 2/
- 3/ Vertical aluminium batten screen - Light Bronze
- 4/ Vision glass - Clear Window frames - Dark Bronze
- Perforated aluminium balustrades Dark Bronze 5/
- 6/ Aluminium windows spandrels - Dark Bronze
- Profiled metal cladding Dark Bronze 7/
- Stainliess steel tensile wire mesh screen and 8/ vertical planting
- Brickwork Dark Grey / Brown 9/





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4.4 TYPICAL BEDROOM FACADE DETAIL

Facades to the bedrooms across the building have a consistent façade approach. Acoustic ventilators to the habitable rooms on the north, west and south elevations provide fresh air whilst reducing the noise. The ventilators are clad externally with a bronze coloured perforated aluminium panel.

Refer to the Acoustic report for further detail of the proposed acoustic ventilators.



INTERNAL VIEW OF THE TYPICAL BEDROOM



ELEVATIONAL VIEW OF THE TYPICAL BEDROOM FACADE (WEST ELEVATION SHOWN)

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Cope Street



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VIEW OF BUILDING 4 FROM COPE STREET LOOKING SOUTH

MATERIALS PALETTE

- Exposed concrete slab edges 1/
- 2/ Brickwork - Light / Cream
- Vertical aluminium batten screen Light Bronze 3/
- Vision glass Clear 4/ Window frames - Dark Bronze
- 5/ Perforated aluminium balustrades - Dark Bronze
- 6/ Perforated aluminium panels - Bronze/Copper Colour
- 7/ Aluminium window spandrels - Dark Bronze
- Vertical aluminium sun blades Light Bronze 8/
- Brickwork Dark Grey / Brown 9/





MATERIALS PALETTE

- 1/ Exposed concrete slab edges
- Brickwork Light / Cream 2/
- Vertical aluminium batten screen Light Bronze 3/
- 4/ Vision glass - Clear Window frames - Dark Bronze
- 5/ Perforated aluminium balustrades - Dark Bronze
- Perforated aluminium panels Bronze/Copper Colour 6/
- 7/ Aluminium window spandrels - Dark Bronze
- 8/ Vertical aluminium sun blades - Light Bronze
- Brickwork Dark Grey / Brown 9/





5.0 DENSITY & YIELD

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.

Principle 8: Housing diversity and social interaction

household budgets.

5.1 DENSITY

The overall density of the proposal has been considered with respect to the urban scale and built form within the Waterloo Metro Quarter development. The development is consistent with the Stage 1 DA Envelope and provides a broad mix of dwelling types, to suit a range of housing accommodation needs.

Building 4 also sits within the proposed Waterloo Metro Quarter, a mixed used precinct built around significant new public transport infrastructure. In addition to a new commercial building, residential tower and student accommodation, the wider development will include a range of facilities including a childcare centre, retail, food and beverage offerings, a gym and community space. The pedestrianised precinct will also provide a range of new public spaces from a large civic plaza to more intimate laneways.

5.2 DWELLING SIZE + MIX + **AFFORDABILITY**

The mix of dwelling types has been determined by the LAHC requirements set out within the project brief. The application consists of the following mix of dwelling types:

Туре	Qty	Mix
Studio	26	58%
1 Bed	2	18%
2 Bed	30	58%
2 Bed (Adaptable)	4	58%
3 Bed (Adaptable)	7	24%
4 Bed (Adaptable)	1	4%
Total 70		

As a Social Housing development, the project will contribute to the housing diversity within the Waterloo Metro Quarter precinct, as well as the broader local area. The variety of dwelling sizes and the mix of apartment types will cater for a broad range of people including singles, couples and families.

5.3 CAR PARKING

A total of 8 car spaces is provided in the Building 2 basement car park as required by the project brief. The provision and design of these car spaces is subject to a separate Development Application.

5.4 BIKE PARKING

Bike parking is provided within the Building 3 podium in a dedicated bike store on the Mezzanine level and within the Building 4 lobby on the Ground Floor. A total of 70 bike spaces is provided for residents at a rate of 1 bike space per dwelling. A further 7 visitor bike spaces are provided, at a rate of 1 per 10 dwellings, within the public domain.

Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and

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 and providing opportunities for social interaction among residents.

5.5 APARTMENT STORAGE

Apartment storage has been provided in accordance with the Apartment Design Guide. The minimum storage volumes required are as follows:

tudio	4m ³
Bed Apartment	6m ³
Bed Apartment	8m ³
+4 Bed Apartments	10m ³

The storage provision for each apartment is provided wholly within the apartment as required by the project brief.

6.0 ESD STRATEGY

The proposed buildings are to achieve the following certifications:

/ 5 Star rating – Green Star Design and As-Built rating tool v1.3

/ BASIX Energy score of ≥30

/ BASIX Water score of >40

The whole Waterloo Metro Quarter is to obtain the following site-wide certifications:

/ 6 Star rating – Green Star Communities rating tool v1.1

/ One Planet Community - recognition by **BioRegional** Australia

A broad range of sustainability measures are proposed to help achieve these targets. These are summarised on the adjacent diagram.



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.



Planters around the outdoor communal terrace contribute to a biophilic environment and contributes towards less stress and overall health and well being

Natural light and /entilation to commor corridors and lobbies is maximised



EQUITY



The apartments are designed to maximise view oppurtunities from all habitable rooms. 2hrs direct sunlight to 75% of apartments on wir solstice



is orientated give all residents the opportunity to benefit from the prime views and solar access



Communal areas provide oppurtunities for social interaction. leisure and recreation A bookable community room is available to all residents



The building facade is designed to reduce solar gain, making use of vertical and horizontal sunshades of varying depths



Large windows provide good davlight levels. whilst strategic facade design thermal mass and operational management reduce the envelope gain/loss



An envelope with high performance, low-e and low U-value glazing



ENERGY

LEDs and othe low-energy, flicker free lighting. Sensor controlled rooms systems reduce the and common areas envelope gain/loss on seperate circuits



The project responds to its cultural context with an abundance of communal spaces including a community garder



The building orientation performance and . acade treatments respond to both the immediate and broader geographical context



PLACE

The material palette of brick, concrete and metal forms a strong connection to the warehouse typologies of the surrounding area

7.0 AREA SCHEDULE

Area Scheo	dule					Residential	Product Mi	x - Social
Level	Height	RL	FFL-FFL	USE	GFA m ²	Studio	1 Bed	1 Bed +
				(Primary)				
Тор.	48.46	64.06						
9	45.16	60.76	3.30	Social / Terrace	214.0			
8	41.86	57.46	3.30	Social	638.0	2		
7	38.76	54.36	3.10	Social	641.0	4		
6	35.66	51.26	3.10	Social	641.0	4		
5	32.56	48.16	3.10	Social	641.0	4		
4	29.46	45.06	3.10	Social	641.0	4		
3	26.36	41.96	3.10	Social	641.0	4		
2	23.26	38.86	3.10	Social	641.0	4		
1	20.16	35.76	3.10	Social	576.0		2	
-		34.70	1.06	Transfer				
Blg 3 L3								
Blg 3 L2								
Blg 3 L1								
Blg 3 M				Bike Store	91.0			
Blg 3 G	0.00	15.60		Lobby	72.0			
Totals					5,437.0	26	2	0
**Refer to 3	Shared Grou	nd Plane + Ba	asement for	basement levels		37.1%	2.9%	

0.0

0.0

0.0

	2 Ded	2 Ded	2 Ded	4 Ded	Total
	2 Red	2 Bed	3 Bed	4 Bed	Iotal
1		Adadi.	Adadi.	Adadi.	
	2				2
	5		1		8
	4		1		g
	4		1		ğ
	4		1		g
	3	1	1		g
	3	1	1		G G
	3	1	1		0 0
	2	1		1	5
	2	1		1	0
	20	1	7	1	70
	30	4	10.00/	1 40/	70
	42.9%	5.7%	10.0%	1.4%	100.0%
	0.0	0.0	0.0	0.0	0.0