WATERLOO METRO QUARTER OVERSTATION DEVELOPMENT

Environmental Impact Statement
Appendix M – ESD Statement

SSD-10441 Amending Concept DA

State Significant Development
Development Application
Prepared for **WL Developer Pty Ltd**
30 September 2020

Reference	Description
Applicable SSD Applications	SSD-10441 Amending Concept DA
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1. Glossary and abbreviations

Reference	Description
ACHAR	Aboriginal Cultural Heritage Assessment Report
ADG	Apartment Design Guide
AHD	Australian height datum
AQIA	Air Quality Impact Assessment
BC Act	Biodiversity Conservation Act 2016
BCA	Building Code of Australia
BC Reg	Biodiversity Conservation Regulation 2017
BDAR	Biodiversity Development Assessment Report
CEEC	critically endangered ecological community
CIV	capital investment value
CMP	Construction Management Plan
Concept DA	A concept DA is a staged application often referred to as a 'Stage 1' DA. The subject application constitutes a detailed subsequent stage application to an approved concept DA (SSD 9393) lodged under section 4.22 of the EP&A Act.
Council	City of Sydney Council
CPTED	Crime Prevention Through Environmental Design
CSSI approval	critical State significant infrastructure approval
CTMP	Construction Traffic Management Plan
DA	development application
DPIE	NSW Department of Planning, Industry and Environment
DRP	Design Review Panel
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	NSW Environment Protection Authority
EPA Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ESD	ecologically sustainable design

Reference	Description
GANSW	NSW Government Architect's Office
GFA	gross floor area
HIA	Heritage Impact Assessment
IAP	Interchange Access Plan
LGA	Local Government Area
NCC	National Construction Code
OSD	over station development
PIR	Preferred Infrastructure Report
POM	Plan of Management
PSI	Preliminary Site Investigation
RMS	Roads and Maritime Services
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SEPP 55	State Environmental Planning Policy No 55—Remediation of Land
SEPP 65	State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2009
SREP Sydney Harbour	State Regional Environmental Plan (Sydney Harbour Catchment) 2005
SSD	State significant development
SSD DA	State significant development application
SLEP	Sydney Local Environmental Plan 2012
Transport for NSW	Transport for New South Wales
TIA	Traffic Impact Assessment
The proposal	The proposed development which is the subject of the detailed SSD DA
The site	The site which is the subject of the detailed SSD DA
VIA	Visual Impact Assessment

Reference	Description
WMQ	Waterloo Metro Quarter
WMP	Waste Management Plan
WSUD	water sensitive urban design

2. Executive summary

This report has been prepared by Cundall Johnston and Partners Pty Ltd (Cundall) to accompany an amendment to the concept State significant development (SSD) development application (DA) for the Waterloo Metro Quarter over station development (OSD). This concept SSD DA is submitted as an 'amending DA', that modifies the previously approved concept SSD DA issued for the site (SSD 9393). The modifications contained within the amending DA relate to the northern precinct and central building only. No change is proposed to the original concept SSD DA as it relates to the southern precinct of the Waterloo Metro Quarter site.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the amending concept SSD DA (SSD 10441).

Waterloo Metro Quarter is committed to delivering best practice sustainability. This will be demonstrated through:

- Achievement of a suite of sustainability ratings which go beyond the commitments set out in the ESD report dated 29 October 2018.
- Application of the Section Waterloo Metro Quarter Design and Amenity Guidelines dated March 2020 including Section 3R Sustainability.
- Implementation of a sustainability framework addressing environmental and social sustainability issues.

The rating tool commitments are:

- 6 star Green Star Communities v1.1 for the precinct
- 5 star Green Star Design and as-Built v1.3 ratings for buildings
- 5.5 star NABERS Energy rating for commercial
- 4.5 star NABERS Water rating for commercial
- Gold rating under WELL Core for commercial
- BASIX Energy 30 for residential including student accommodation (going beyond minimum regulatory compliance of 25)
- BASIX Water 40+ for residential including student accommodation
- One Planet Community recognition by Bioregional Australia for the precinct

3. Introduction

This report has been prepared to accompany a concept SSD DA for the over station development (OSD) at the Waterloo Metro Quarter site. The concept DA seeks consent for an amended building envelope and description of development for the northern precinct and central building of the Waterloo Quarter site approved under SSD 9393. For clarity, this concept DA (formerly referred to as a 'Stage 1' DA) is made under Section 4.22 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Minister for Planning, or their delegate, is the consent authority for the SSD DA and this application is lodged with the NSW Department of Planning, Industry and Environment (DPIE) for assessment.

The concept DA seeks to modify the approved building envelope for the northern precinct (previously comprising 'Building A', 'Building B', 'Building C' and 'Building D' under SSD 9393) through:

- increasing the maximum building height for the southern portion of the building envelope from RL56.2 to RL72.60
- removing the 'tower component' of the northern precinct, reducing the overall height of the tower envelope from RL116.9 to RL90.40, to enable the redistribution of floor space to commercial office floor plates
- amending the description of development to refer to a mid-rise (approximately 17 storey) commercial office building, comprising approximately 34,125sqm of commercial office floor space within the northern portion of the site, rather than a third residential tower.

The concept DA seeks to modify the central building approved building envelope (previously comprising 'Building E' under SSD 9393) through:

- modifying the eastern extent of the podium envelope.

This proposal will not exceed the permissible building height for the site under the Sydney Local Environmental Plan 2012 (SLEP) or the maximum height approved under SSD 9393. Separate detailed SSD DA (s) will be lodged concurrently for the detailed design, construction and operation of the northern precinct and central building. No changes are proposed to the original concept DA as it relates to the southern precinct.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 9 April 2020 and issued for the detailed SSD DA. Specifically, this report has been prepared to respond to the SEARs requirements summarised below.

Item	Description of Requirement	Section Reference (this report)
7	Ecologically Sustainable Development (ESD) The EIS shall: • Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the EP&A Regulation 2000) will be met by the Amending Concept Proposal. • include a framework for how the proposed development will reflect national best practice sustainable building principles to improve environmental performance, including energy and water efficient design and technology, use of renewable energy and best practice in waste management strategy.	9 9

Table 1 - SEARs Requirements

4. The site

The site is located within the City of Sydney Local Government Area (LGA). The site is situated approximately 3.3 kilometres south of Sydney CBD and approximately 8 kilometres northeast of Sydney International Airport within the suburb of Waterloo.

The Waterloo Metro Quarter site comprises land to the west of Cope Street, east of Botany Road, south of Raglan Street and north of Wellington Street (refer to Figure 1). The heritage listed Waterloo Congregational Church located at 103–105 Botany Road is within this street block but does not form a part of the Waterloo Metro Quarter Site boundaries.

The Waterloo Metro Quarter site (the site) is a rectangular shaped allotment and an overall site area of approximately 1.287 hectares.

The Waterloo Metro Quarter site comprises the following allotments and legal description at the date of this report. Following consolidation by Sydney Metro (the Principal) the land will be set out in deposited plan DP1257150.

- 1368 Raglan Street (Lot 4 DP 215751)
- 59 Botany Road (Lot 5 DP 215751)
- 65 Botany Road (Lot 1 DP 814205)
- 67 Botany Road (Lot 1 DP 228641)
- 124–128 Cope Street (Lot 2 DP 228641)
- 69–83 Botany Road (Lot 1, DP 1084919)
- 130–134 Cope Street (Lot 12 DP 399757)
- 136–144 Cope Street (Lots A-E DP 108312)
- 85 Botany Road (Lot 1 DP 27454)
- 87 Botany Road (Lot 2 DP 27454)
- 89–91 Botany Road (Lot 1 DP 996765)
- 93–101 Botany Road (Lot 1 DP 433969 and Lot 1 DP 738891)
- 119 Botany Road (Lot 1 DP 205942 and Lot 1 DP 436831)
- 156–160 Cope Street (Lot 31 DP 805384)
- 107–117A Botany Road (Lot 32 DP 805384 and Lot A DP 408116)
- 170–174 Cope Street (Lot 2 DP 205942).

The boundaries of the site the subject of the amending concept DA is identified at Figure 5.1. The site is reasonably flat with a slight fall to the south.

The site previously included three to five storey commercial, light industrial and shop top housing buildings. All previous structures except for an office building at the corner of Botany Road and Wellington Street have been demolished to facilitate construction of the new Sydney Metro Waterloo station. As such the existing site is predominately vacant and being used as a construction site.

Construction of the Sydney metro is currently underway on site in accordance with critical State significant infrastructure approval (CSSI 7400).

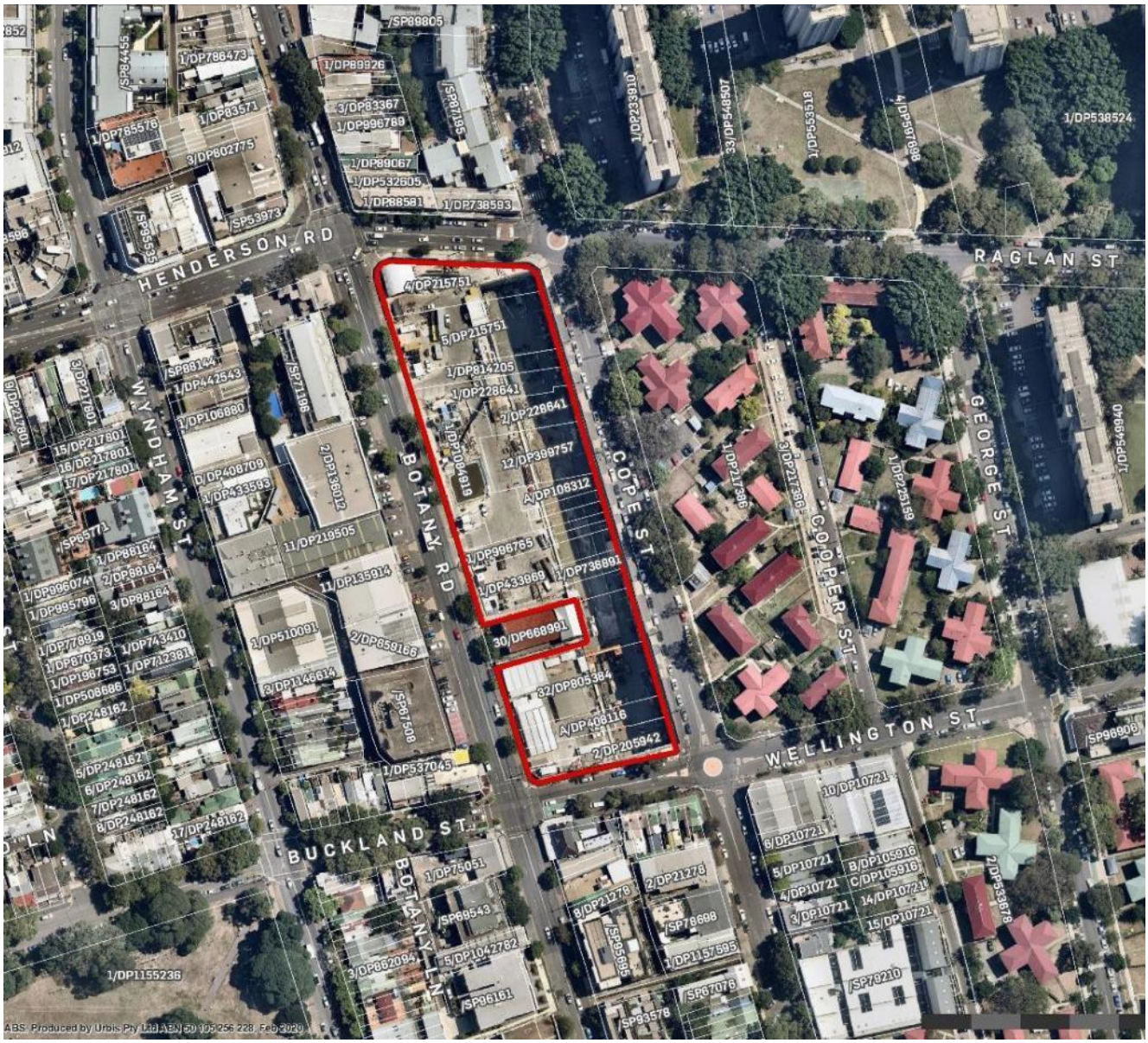


Figure 1 - Aerial of the site
Source: Urbis

The area surrounding the site consists of commercial premises to the north, light industrial and mixed-use development to the south, residential development to the east and predominantly commercial and light industry uses to the west.

5. Background

5.1 About Sydney Metro

Sydney metro is Australia's biggest public transport project. Services started in May 2019 in the city's North-west with a train every four minutes in the peak. A new standalone railway, this 21st century network will revolutionise the way Sydney travels. There are four core components:

5.1.1 Sydney Metro North West

This project is now complete and passenger services commenced in May 2019 between Rouse Hill and Chatswood, with a metro train every four minutes in the peak. The project was delivered on time and $1 billion under budget.

5.1.2 Sydney Metro City & Southwest

Sydney Metro City & Southwest project includes a new 30km metro line extending metro rail from the end of Metro Northwest at Chatswood, under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the ultimate capacity to run a metro train every two minutes each way through the centre of Sydney.

Sydney Metro City & Southwest will deliver new metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and new underground metro platforms at Central Station. In addition, it will upgrade and convert all 11 stations between Sydenham and Bankstown to metro standards.

5.1.3 Sydney Metro West

Sydney Metro West is a new underground railway connecting Greater Parramatta and the Sydney CBD. This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between these two areas, linking new communities to rail services and supporting employment growth and housing supply between the two CBDs.

The locations of seven proposed metro stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays.

The NSW Government is assessing an optional station at Pyrmont and further planning is underway to determine the location of a new metro station in the Sydney CBD.

5.1.4 Sydney Metro Greater West

Metro rail will also service Greater Western Sydney and the new Western Sydney International (Nancy Bird Walton) Airport. The new railway line will become the transport spine for the Western Parkland City's growth for generations to come, connecting communities and travellers with the rest of Sydney's public transport system with a fast, safe and easy metro service. The Australian and NSW governments are equal partners in the delivery of this new railway.

The Sydney Metro project is illustrated in Figure 2.

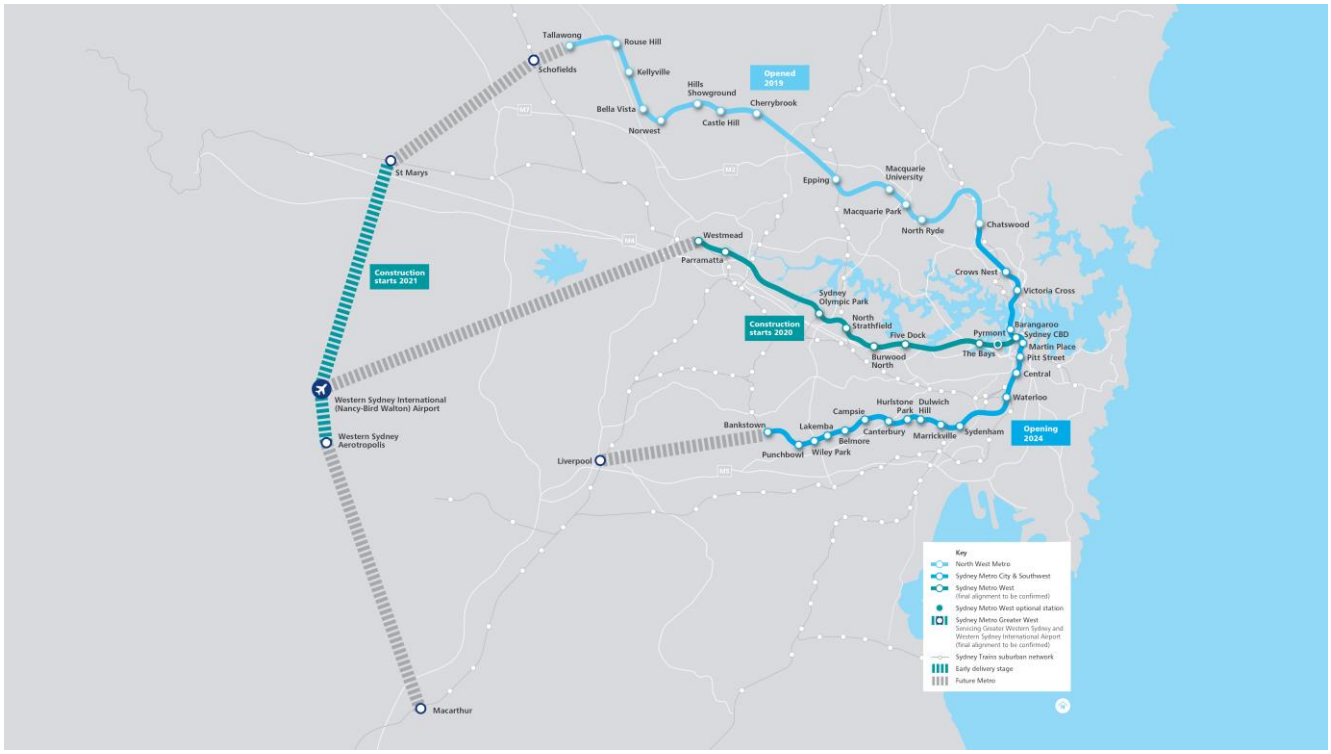


Figure 2 - Sydney Metro alignment map
Source: Sydney Metro

5.2 Sydney Metro CSSI Approval (SSI 7400)

On 9 January 2017, the Minister for Planning approved the Sydney Metro City & Southwest - Chatswood to Sydenham project as a critical State significant infrastructure (CSSI) project (reference SSI 7400) (CSSI approval). The terms of the CSSI approval includes all works required to construct the Sydney Metro Waterloo Station. The CSSI approval also includes the construction of below and above ground works within the metro station structure for appropriate integration with the OSD.

With regards to CSSI related works, any changes to the 'metro station box' envelope and public domain will be pursued in satisfaction of the CSSI conditions of approval and do not form part of the scope of the concept SSD DA or detailed SSD DA for the OSD.

Except to the extent described in the EIS or Preferred Infrastructure Report (PIR) submitted with the CSSI application, any OSD buildings and uses do not form part of the CSSI approval and will be subject to the relevant assessment pathway prescribed by the EP&A Act.

The delineation between the approved Sydney metro works, generally described as within the two 'metro station boxes' and surrounding public domain works, and the OSD elements are illustrated in Figure 3.

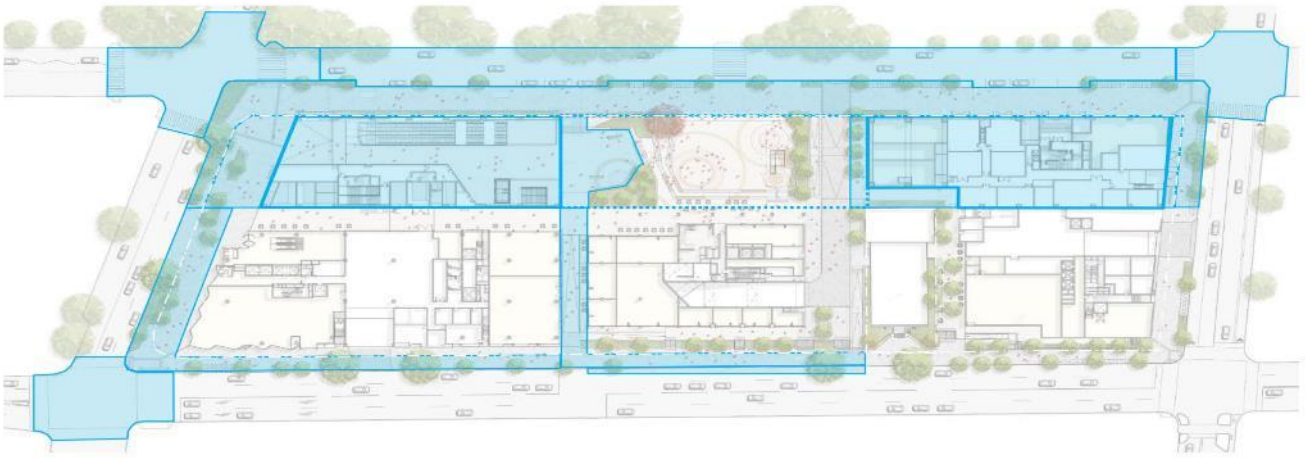


Figure 3 - CSSI Approval scope of works
Source: WL Developer Pty Ltd

5.3 Concept Approval (SSD 9393)

As per the requirements of clause 7.20 of the *Sydney Local Environmental Plan 2012* (SLEP), as the OSD exceeds a height of 25 metres above ground level (among other triggers), development consent is first required to be issued in a concept DA (formerly known as Stage 1 DA).

Development consent was granted on 10 December 2019 for the concept SSD DA (SSD 9393) for the Waterloo Metro Quarter OSD including:

- a maximum building envelope for podium, mid-rise and tower buildings
- a maximum gross floor area of 68,750sqm, excluding station floor space
- conceptual land use for non-residential and residential floor space
- minimum 12,000sqm of non-residential gross floor area including a minimum of 2,000sqm of community facilities
- minimum 5% residential gross floor area as affordable housing dwellings
- 70 social housing dwellings
- basement car parking, motorcycle parking, bicycle parking, and service vehicle spaces.

This concept DA has been prepared and submitted to the DPIE and proposes to make modifications to the approved building envelopes at the northern precinct and central building. This amending concept SSD DA does not impact the proposed development within the southern precinct.

A concurrent detailed SSD DA will seek development consent for the OSD located within the southern precinct of the site, consistent with the parameters of the original concept approval. Separate SSD DAs have been prepared and will be submitted for the northern precinct, central building, and basement proposed across the Waterloo Metro Quarter site consistent with the amending concept DA.

6. Proposed development

The amending concept DA seeks consent for an amended building envelope and description of development for the northern precinct of the Waterloo Metro Quarter site approved under SSD 9393. Specifically, the proposal seeks to modify the approved building envelope for the northern precinct (previously comprising 'Building A', 'Building B', 'Building C' and 'Building D' under SSD 9393) through:

- increasing the maximum building height for the southern portion of the Northern Precinct from RL56.2 to RL72.60
- removing the 'tower component' of the Northern Precinct, reducing the overall height of the tower envelope from RL116.9 to RL90.40, to enable the redistribution of floor space to commercial office floor plates
- amending the description of development to refer to a mid-rise (approximately 17 storey) commercial office building, comprising approximately 34,125sqm of commercial office floor space within the northern portion of the site, rather than a third residential tower.

The concept DA seeks to modify the central building approved building envelope (previously comprising 'Building E' under SSD 9393) through:

- modifying the eastern extent of the podium envelope.

The modification of the approved concept SSD DA will enable the detailed design of a new commercial building (comprising office and retail premises) to be pursued on the site, significantly increasing the proportion of employment generating floor space on the Waterloo Metro Quarter site. This new commercial building is proposed in replacement of four building envelopes approved under SSD 9393, which comprised one residential tower, and three mid-rise residential buildings.

This proposal will not exceed the permissible building height for the site under the SLEP or the maximum height approved under SSD 9393. As noted above, separate detailed SSD DA(s) will be lodged concurrently for the detailed design, construction and operation of the northern precinct, and central building.

This amending concept DA does not propose to the amend the original concept approval as it relates to the southern precinct.

7. Scope of Assessment

No changes to the Scope of Assessment set out Section 2.0 of Appendix S – ESD Report dated 29 October 2018 are proposed.

8. Sustainability Context

No changes to the Sustainability Context set out Section 3.0 of Appendix S – ESD Report dated 29 October 2018 are proposed.

9. Sustainable Design Integration

The recommendations made in the Sustainable Design Integration set out Section 4.0 of Appendix S – ESD Report dated 29 October 2018 have been modified and updated to reflect the changes in the reference design and the approach to sustainability being adopted as the design has developed since 2018.

This section describes the updated Sustainability Framework that will apply to the project and changes to the “embedded in design” principles that were proposed in 2018 for the reference design.

9.1 Sustainability Framework

A modified version of the standard One Planet Living categories has been adopted as the impact categories for the Sustainability Framework for the project. The framework will inform design, construction and operational stages of the project. An integrated design approach will be adopted for the incorporation of sustainability measures, with input from the sustainability consultant from early planning through to construction phases. The sustainability framework impact categories are:

- Zero Carbon Energy
- Sustainable Water
- Waste Minimisation
- Materials and Supply Chain
- Land and Nature
- Travel and Transport
- Sustainable Food
- Climate Risk and Adaptation
- Health and Wellbeing
- Equity and Local Economy
- Community and Culture

The Sustainability Framework impact categories align with the various sustainability impacts identified in the following:

- Clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 – principles of ecologically sustainable development
- UN Sustainable Development Goals
- Sustainable Sydney 2030 – Community Strategic Plan 2017-2021
- Concept SSD DA (SSD 9393) dated 10 December 2019
- Secretary’s Environmental Assessment Requirements (SEARs) dated 9 April 2020
- Waterloo Metro Quarter Design and Amenity Guidelines – Section 3R sustainability
- Sydney Metro City and Southwest Sustainability Strategy 2017-2024 (June 2019 update)
- Green Star Design and As-Built rating tool v1.3
- Green Star Communities rating tool v1.1
- One Planet Community principles
- WELL Building Standard

- NABERS Energy and Water
- Mirvac's This Changes Everything strategy
- John Holland's Approach to Sustainability
- BASIX

The Sustainability Framework impact categories also align with the environmental and social impacts addressed under the various rating tools described in Section 10.1.

Refer to Appendix 1 for further details on the alignment.

9.2 Sustainability Initiatives

A broad range of initiatives will be proposed in order to minimise consumption of resources, especially energy, water and waste, and ensure delivery of a sustainable development. These will be described in more detail in the development application reports for each precinct.

The initiatives will be consistent with national best practice, will contribute towards achieving the sustainability rating tool targets described in Section 10.1 and be consistent with Section 3R of the Waterloo Metro Quarter Design and Amenity Guidelines.

Table 4 of the ESD Report dated 29 October 2018 provided a set of desired outcomes and embedded in design initiatives against the sustainability framework. The table below summarises these and notes where there are amendments to reflect the proposed reference design.

Principle	Desired Outcome	Embedded into Design	Future Considerations and Options	Amendments
Enhance Liveability				
Affordability	• A diversity of housing choices to house people from a wide range of socio-economic backgrounds • A variety of effective and affordable transport options are made available to the community • Support is provided for affordable lifestyles, including work and play	• A commitment to an affordable housing target of up to 10%, and 10% social housing for the Metro Quarter • Social and affordable housing designed to maximise natural ventilation and capture solar gain for heating • Car parking has been separated from the property title to reduce the potential cost of the property and provide flexibility to the purchaser. • ~~15 car share-only parking spaces have been designated to provide residents access to another mode of transport on an on-demand basis~~ • Potential for commercial co-working spaces provided to enable low-cost start-ups and small businesses • Provision of on-street or underground car parking dedicated to car share vehicles	• Green roofs designed to be capable of becoming community gardens to enable residents to grow their own fresh produce • Consider providing options for the property owner to install air conditioning units rather than including as default • Develop strategies to improve affordability of non-residential areas, such as subsidised leases for social enterprises and charity organisations • Provide a diversity of housing (household sizes, types, income levels) so people who provide vital City services can afford to live in the City • Consider a build to rent housing model where a property portfolio owner can realise and adapt both tenant affordability mix as well as operational efficiencies to drive down total costs	• 4no. car share spaces provided in underground parking
Healthy, Safe & Secure	• Physical activity and social engagements are encouraged and enabled in a safe and comfortable environment • A precinct that is attractive and safe for walking and cycling • The development is designed to minimise crime • Align transport infrastructure with precinct growth	• Traffic-separated cycleways are provided to allow cyclists to safely and more effectively travel in and out of the precinct • Local cycleways connect into the wider cycleway network to provide a means for workers to commute to work and for residents to visit local parks and sporting grounds • ~~Over 1,300 bicycle parking spaces available within the Metro Quarter precinct, with 700 of the spaces accessible to residents only~~ • End of trip facilities (showers and change rooms) provided in the basement for cyclists to use before and after trips • The precinct will have footpaths for pedestrian traffic in line with the street hierarchy • Master plan and urban design strategy has incorporated crime prevention principles • Ensure that all public areas are visible from at least one street to encourage passive surveillance and deter crime	• Consider means to ensure that local fresh food retail stores are within walkable distance to all habitable buildings • Provision of community gardens on green roofs to enable residents to grow their own fresh produce	Over [900] bicycle parking spaces available within the Waterloo Metro Quarter precinct with spaces provided for commercial office workers, retail employees, residential occupants and visitors to the precinct and the Metro. A minimum of [300] spaces are accessible to residents only.
Inclusiveness and Cohesiveness	• Uses and environments within the development are diverse and inclusive for all ages, abilities, cultures and socio-economic backgrounds of the community – a place where everyone belongs • The development has access to the services, employment opportunities and communities of the wider region • The community's shared vision of diversity, tolerance and respect for each other's rights and responsibilities is reflected in the built environment.	• New homes for social, affordable and private residents are not distinguishable and are modern, comfortable, efficient, sustainable and adaptable	• General access stairways between floors to create connection amongst residents and foster sense of community • Provision of breakout/open spaces every few floors to act as meeting points and recreational spaces, enhancing community connection • Consider allowing a community-led entity to manage the community facility at the Metro Quarter's central plaza • Consider allowing a community-led entity to manage at least one community program or service that serves the Metro Quarter • Create a pet-friendly public environment with appropriate fixtures and infrastructure such as walking paths, fenced areas, drinking fountains and pet amenities for residents and visitors with pets to use community facilities	
Adaptability	• The development has flexibility to adapt to changing community and individual needs that may be influenced by economy, environment, culture or other circumstances	• Potential for co-working spaces to enable flexible workspaces/workhubs as well as create a 'start-up' culture • All building entry points, where possible, are oriented away from Botany Rd and Cope St where there is a greater risk of flooding	• The concept plan and underlying land use zoning provides some flexibility to permit change of uses as the needs of the community changes • Consider caged bicycle storage areas which can also act as general storage space	

Principle	Desired Outcome	Embedded into Design	Future Considerations and Options	Amendments
	• The precinct will be prepared for the likely impacts of the changing climate	• Canopy coverage over paved surfaces serves a as cost-effect means of mitigating urban heat island effects – street trees provide areas of respite for pedestrians • Residential areas will be raised above the Probably Maximum Flood (PMF) level to enable an effective shelter in place strategy	• Develop a climate adaptation plan for the site in response to projected future climate scenarios • Develop a Community Resilience Plan that is specific to the Waterloo community. The Plan needs to address preparation, during and post-disaster communication, safety, and response.	
Create Opportunities for Economic Prosperity				
Education and Learning	• The development provides accessible education facilities and connection to other education facilities to suit the needs of the community.	• Local cycleways provide connection to nearby schools and universities	• Consider provision of future physical sustainability education facilities within the precinct to educate the community on the embedded sustainability initiatives • Screens in public open space showing live generation data and statistics from on-site renewable generator systems	
Employment Opportunities	• Diverse local employment opportunities are available to meet the needs of the community	• ~~The provision of 12,500 m2 of commercial, community and retail GFA will increase the total number of jobs available in the local area~~ • Local cycleways connect into the wider cycleway network to provide a means for workers to commute to work • Integration with metro station to provide connection to other employment centres	• Consider facilities for startups and innovation clusters and small business ownership / security. • Consider affordability of commercial space to consider the needs of the residential / commercial and retail service jobs to have offices / work bases and amenities on site (e.g., cleaner HQ with storage, amenities and facilities).	• The provision of 34,125 m2 of commercial space and approximately 5,035m2 of retail and community facilities will increase the total number of jobs available in the local area.
Economic Investment	• Investment will be attracted into the area through the provision of key infrastructure to enable business and community connectivity.	• The Metro Quarter will have high speed broadband connection available to all residents, retail and commercial tenants	• Periodic community-run programs and events drawing visitors into the precinct and boosting the local economy	
Innovation and Competition	• Facilitate new business opportunities to enhance competitiveness and innovation • Consideration is given to lifecycle impact to encourage resource and cost efficiency • Contribute to Sydney's global competitiveness	• Potential for co-working spaces in the Metro Quarter will attract and enable entrepreneurial start-ups and small businesses to set up and gain access to necessary business infrastructure		
Efficiency and Effectiveness	• Land use and infrastructure are tailored to meet forecasted demand efficiently • Consideration is given to lifecycle impact to encourage resource and cost efficiency • Highly optimised use of high-value spaces such as podiums and rooftops	• Optimised size and spatial configuration of rooftop elements such as building plants and lift overruns to maximise open up spaces for community use or solar PV. • Solar PV panels to be mounted on awnings to unlock rooftop space for community use • Car parking provisions are significantly below BAU standards for similar sized residential buildings • Kiss-and-ride zones will be available on precinct edges to allow rapid pick up and dropping off of commuters, residents, and visitors to the precinct without the need to park – reduces congestion on local roads	• Potential for inclusion of cooled storage drop off zones in residential complexes to accept food deliveries with short-term storage • Provision of a courier hub with dedicated parking and cycling infrastructure to minimise congestion on local roads • Consideration of bulk waste from moving houses and or renovation in terms of reuse, recycling, temporary storage / removal to avoid dumping	
Foster Environmental Responsibility				
Environmental Enhancement & Conservation	• High quality native vegetation is protected and enhanced • Design and construction of the development has sought to minimise greenhouse gas emissions, contaminants and other pollutants to the environment.	• Green roofs considered on open podium areas to provide open space, recreation or community vegetable gardens and high quality native vegetation. • Water Sensitive Urban Design (WSUD) measures provided to retain and filter runoff from development areas prior to discharge into existing watercourses	• Consider soil depth and structural requirements for podiums to ensure future functionality to be realised. • Green walls considered along precinct edge facing Botany Rd if environmentally and financially appropriate.	

Principle	Desired Outcome	Embedded into Design	Future Considerations and Options	Amendments
		• Street tree canopy coverage maximised (minimum 20 percent coverage) to create a sense of place and improve microclimate conditions		
Reducing Footprint Energy & Carbon	• Energy consumption and greenhouse gas emissions have been minimised as far as is reasonably possible	• ~~Solar PV system locations identified on rooftops and podiums have been estimated to generate renewable energy to provide minimum 5% of precinct electricity use~~ • Buildings are rounded and oriented away from the west and Botany Rd to minimise undesirable solar gain and noise from the road • Building massing and spatial configuration designed to encourage cross ventilation through the Metro Quarter, alleviating the impact of urban heat island effects • High performance building envelope with shading on western façade to minimise undesirable summer afternoon solar gain • Common area hallways are naturally ventilated where possible, avoiding overall HVAC energy consumption	• Examine the feasibility of centralised heat extraction systems which can enable efficiencies and provide a more cost-effective means of artificial cooling for split air conditioning systems to avoid dumping heat on the balcony and also allowing for centralised heat exchange for the hot water system. • Consider geothermal cooling and heating systems for the precinct as opposed to conventional fan-driven cooling systems • Identify locations for future expansion of on-site solar PV system to increase future renewable energy generation as it becomes more feasible • Provision of real-time smart metering available to all residential units and commercial tenants so they can understand their energy usage patterns • Consider appropriate glazing options to improve thermal comfort and reduce heating and cooling loads • Provision of high energy efficiency appliances in residential apartments as part of apartment package, or offering financial incentive for residents to purchase high efficiency appliances	• The amount of on-site renewable energy generated on site will be maximised while also balancing the desire for green roofs to provide occupant amenity, gardens and ecological habitat. Solar PV systems will be located on un-shaded roofs where these roofs are not being used for green roofs or plant. The amount of PV to be installed is estimated to provide at least 5% of the total precinct base building electricity consumption (based on 5.5 Star NABERS Energy Base Building for Offices and equivalent for apartments) and all public realm lighting (excluding council owned street lighting).
Water	• Potable water consumption and stormwater gross pollutant loads has been minimised as far as is reasonably possible	• 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. • Commitment to beyond compliance target for BASIX Water • Detail water sensitive urban design considerations in the DCP	• Consider innovative means to increase amount of rainwater storage to achieve beyond BASIX Water compliance. • High efficiency (4, 5, 6 star WELS rated) water fixtures should be installed to reduce potable water consumption • Consider stormwater harvesting and recycling for irrigation of green roofs, green walls and open space • Selection of drought-tolerant vegetation for planting on green roofs, green walls and open space to reduce irrigation requirements	
Waste	• Reduce waste generation, the impact of disposal and improve resource recovery from waste sources	• Separated, but co-located residual waste and recycling chutes • Residential and commercial/retail waste disposal rooms separate to avoid overloading issues	• Provision of space for residents to temporarily store unwanted bulky items to be recycled or disposed of • Provision of waste and recycling bins in the public domain to reduce littering • Consider financial incentives/disincentives such as a 'pay-as-you-throw' waste management system or reduced waste levies/fees to reduce waste generation rates • Consider creating a 'Return and Earn' container collection point to allow the community to access a new income stream and promote recycling rates • Consider facilitation of local flea market to extend effective lifetime of goods and products, organic waste is reused locally • Consider recycling waste bins are readily available in all areas of the precinct, education material available to educate residents and visitors of recyclable products	
Transport	• Sustainable transport options are available and encouraged to reduce the use and reliance on fossil fuels	• Direct access to metro station • ~~15 car share only spaces provided in the parking basement~~ • ~~More than 1,300 bike parking spaces provided throughout the development~~	• Provision of electric vehicle charging infrastructure to encourage uptake of electric vehicles • Consider caged bicycle parking spaces in the basement to provide peace of mind to bicycle owners	• 4no. car share spaces provided in underground parking • Over [900] bicycle parking spaces available within the Waterloo Metro Quarter precinct with spaces provided for commercial office workers, retail employees, residential

Principle	Desired Outcome	Embedded into Design	Future Considerations and Options	Amendments
		• Traffic-separated cycleways provided and connected to the City of Sydney cycling network • Bus routes and stops have been incorporated into the overall precinct concept plan and located to allow efficient interchange between bus and metro services	• Consider in unit bicycle storage as an alternative or addition to the basement storage. • Consider lift or stair design to facilitate cycle access within the lifts. • Consider stairs for the first 4 levels in parallel to the lifts with thin side ramps to allow a bike wheel	occupants and visitors to the precinct and the Metro. A minimum of [300] spaces are accessible to residents only.
Materials	• The development uses materials of high environmental quality	• Integrated design will seek to realise efficiencies in built form, facilities, amenities, parking and peak load shifting to drive up material efficiency in the build	• Consider use of low-embodied carbon materials such as recycled materials or timber products • Architectural design should consider ways to introduce and maximise the use of modularised and prefabricated components • Low VOC finishes, paints and products should be preferenced in the design	
Embrace Design Excellence				
Effective Planning Practices	• The concept plan sets clear planning and design direction for the future of Waterloo	• The planning process for Metro Quarter provides for advanced approaches to delivering a more sustainable precinct through the State planning process.	• Consider setting planning controls or incentives to provide clear direction to the desired sustainability outcomes for the development.	
Integrated Design	• The design of the development responds to the Waterloo's land, water and climatic characteristics, constraints and opportunities. • The development is consistent and sympathetic to the character of the surrounding neighbourhood • Residents, commuters and visitors are able to easily access essential services and facilities including health, wellbeing, community support, retail and government services	• Centrally plumbed hot water system within building to provide more efficient delivery of hot water • Car parking basement is shared across buildings to optimise use of space • Urban structure is coherent and provides connectivity between places	• Proposed buildings within the precinct are committed to achieving Green Star Design & As-built ratings which will interface with the Green Star –Communities rating, NatHERs rating and BASIX • Consider researching and interpreting the culture, heritage and identity of the precinct as part of the masterplanning process	
Flexibility & Adaptability	• Buildings and spaces are able to be changed to meet different needs or in response to changing community and environmental conditions.	• Car parking spaces in basement can be reconfigured to provide more bicycle storage space • Floor to ceiling heights of commercial and community spaces have been designed so that they can be adapted to meet different uses and tenancy sizes • Provision of adaptable dwellings to allow for different accessibility needs of residents	• Consider caged bicycle storage areas which can also act as general storage space • Consider design to enable potential for unit merger and de merger to create more household responsive housing needs	
Desirable Places	• Development has a distinct and recognisable identity and character. • The development creates functional, vibrant, stimulating and memorable places that evolve for people to live, work and play. • The built form and landscapes are responsive to climate, context and heritage. • The development has good visual amenity and a sense of connection with nature. • The development has activity both day and night, where people feel safe, at ease an part of a cohesive and proud community	• Design of ~~green walls~~ and green roofs to provide amenity and improve microclimate conditions, creating comfortable spaces for recreation • ~~Green walls on precinct edge facing high-traffic Botany Rd to improve usual aesthetic and provide ecosystem services such as air quality improvements and noise dampening~~	• Consider undertaking a microclimate / human comfort assessment of the public domain considering thermal and acoustic comfort	• Green Roofs, planted terraces and street level trees and planting are provided to provide amenity and improve microclimate conditions, creating comfortable spaces for recreation.

Principle	Desired Outcome	Embedded into Design	Future Considerations and Options	Amendments
Accessible Places	• The development provides physical connections internally and to surrounding areas to meet both local and metropolitan needs • The new Waterloo Metro Station and other modes of transport is well-integrated such that residents, commuters and visitors can get around easily, safely and efficiently.	• All streets are paved for ease of pedestrian and disabled access • Traffic separated cycleways to separate cyclists from pedestrians and vehicles • Through site links provided to improve accessibility across the site and between transport modes • Public domain areas to comply with applicable disability access standards		
Demonstrate Visionary Leadership and Strong Governance				
Coordination & Transparency	• The development shares the achievements of its vision in partnership with key stakeholders • The desired outcomes identified in this table are aligned with strategic objectives of the City of Sydney, the State Government and the Greater Sydney Commission	• ~~Development and adherence to the ecologically sustainable development framework identified in this table.~~	• The Site Planning, Layout and Urban Design for the Metro Quarter will undergo an in-house, mixed and then fully-independent design review before finalisation	• A sustainability framework based on the One Planet principles will be developed to guide and report on environmental and social sustainability initiatives and outcomes.
Committed to Implementation	• The vision for Waterloo will be delivered through practical and market appropriate staging through utilising the governance embedded in the planning and approvals framework • Applications throughout the development process provide an assessment of the proposal against the provisions of this sustainability framework	• Optimise the planning system to provide certainty to future developers and users as to the sustainability expectations and desired outcomes for Waterloo	• Consider contractually engaging Green Star Accredited Professionals to lead and facilitate the Green Star – Communities rating process. • Set responsibility for establishing the next action towards achieving the desired sustainability outcomes is transferred to the next development phase • Significant property transactions or development agreements include an assessment against the desired outcomes set out in this framework	
Engaged Stakeholders	• The shared vision for Waterloo has been built with the buy-in of the existing community, industry and government	• Stakeholder engagement has been undertaken through the Technical Working Groups with agencies and the City of Sydney. There have been community information and engagement sessions. Further engagement will continue through the planning and development phases.	• When developing community-related strategies, ensure that there is consultation with the community to enhance community culture, heritage and identity	
Sustainable Cultures and Behaviours	• The development provides a case study for effective sustainability for the community and development industry • The community is educated and aware of their environmental impact and are encouraged to improve their environmental performance	• Bike parking spaces have been maximised in the design to encourage uptake of cycling as a primary means of travel. • The inherent nature of the Metro Quarter as an integrated station development encourages residents and employees to travel via the metro as opposed to using private vehicles	• Consider contractually engaging Green Star Accredited Professionals to lead and facilitate the Green Star – Communities rating process to provide advice and information relating to the rating process to ensure the most sustainable outcomes are achieved	
Rewarding Innovation	• The development provides the flexibility to support innovations in planning for improved liveability, economic and environmental outcomes	• All residential units will have access to high-speed internet connection as part of the National Broadband Network	• Consider making free wireless internet access in all public activity centres within the precinct	

10. Draft Statement of Commitments

The development of the Waterloo Metro Quarter is committed to achieving sustainability best practice. This will be demonstrated through:

- Achievement of a suite of sustainability ratings which go beyond the commitments set out in the ESD report dated 29 October 2018.
- Application of the Waterloo Metro Quarter Design and Amenity Guidelines dated March 2020 including Section 3R Sustainability.
- Implementation of a sustainability framework addressing environmental and social sustainability best practice with a suite of initiatives for each.

10.1 Sustainability Rating Tools

Waterloo Metro Quarter will achieve the following performance targets for environmental performance ratings which go beyond minimum regulatory compliance and demonstrate sustainability best practice:

Previous Commitment (report dated 29 October 2018)	Amending DA Commitment
Precinct Overall • 6 star Green Star Communities version 1.1	Precinct Overall • 6 star Green Star Communities version 1.1 • Recognition as a One Planet Community by Bioregional Australia
Commercial / Office Uses • 5 Star Green Star Design and As-Built version 1.2	Commercial / Office Uses • 5 Star Green Star Design and As-Built version 1.3 • 5.5 Star NABERS Energy • 4.5 Star NABERS Water • Gold certification: WELL Core
Residential Uses • 5 Star Green Star Design and As-Built version 1.2 • Go beyond BASIX compliance target for Energy (25), Thermal Comfort and Water (40)	Residential Uses • 5 Star Green Star Design and As-Built version 1.3 • BASIX 30 Energy • More than BASIX 40 Water

Table 2 - Rating Tool Commitments

10.2 Waterloo Metro Quarter Design and Amenity Guidelines

The Waterloo Metro Quarter Design and Amenity Guidelines dated March 2020 supplements the concept Development Application (SSD-9393).

The Objectives set out in Section 3R Sustainability are:

- Create an integrated sustainable infrastructure network incorporating transport facilities, public domain, water systems and vegetation
- New development encourages sustainable water use practices
- Reduce energy consumption, emissions and urban heat island effect and improve air quality and the absorption of carbon

The Design criteria set out in Section 3R Sustainability are:

- Comply with the performance targets specified in development consent SSD-9393
- Water sensitive urban design measures are incorporated to improve stormwater quality flowing into waterways

The Design guidance set out in Section 3R Sustainability is:

- Reduce energy consumption and carbon emissions using measures that are:
  - Affordable for all in the community
  - Achieve low or zero carbon
  - Efficient in consumption
  - Resilient in supply and network security
  - Flexible and adaptable.
- Maximise opportunities for the installation of solar photovoltaic systems aiming to meet 5% of the forecast electricity consumption of the Metro Quarter.
- Rainwater and/or stormwater harvesting tanks to meet BASIX requirements can be used to irrigate public open spaces.
- Green roofs and/or green walls provide amenity, improve microclimate conditions and create comfortable spaces for recreation.
- Water sensitive urban design measures are incorporated to improve stormwater quality flowing into waterways.
- WSUD measures could include gross pollutant traps, passive irrigation measures, bio-retention areas and rainwater harvesting.
- Consider enabling, or not precluding, future energy technologies and initiatives.
- Energy efficient and low carbon measures could include:
  - Heat pumps to achieve the required hot water demand
  - Provision of mixed mode HVAC for commercial and retail areas
- Water efficiency measures could include:
  - Water efficient fixtures and fittings
  - Using drought-tolerant, low water use vegetation in gardens and green roofs to reduce irrigation water use.

In the subsequent detailed design stage, further development applications will be prepared and must have regard to the Guideline and the building envelopes approved under SSD-9393. A Design Review Panel will provide independent advice to Sydney Metro on the detailed design of the public domain and built form associated with the development and its integration with the station (CSSI Approval) and ensure that design excellence is achieved by the proposals.

10.3 Sustainability Framework Initiatives

The planning controls, management alternatives/initiatives and design considerations set out in Section 5 of the ESD report dated 29 October 2018 are not amended. These cover:

- Incorporation and Framing of ESD Principles
- Energy and Carbon
- Water
- Waste

11. Conclusion

Environmental, social and economic sustainability will be fully integrated into the Metro Quarter design.

The design, construction and operation of the buildings and the precinct will be verified using a combination of rating tools with independent third party certification. In addition the precinct will be recognised as a One Planet Community. The targets set go beyond business as usual practice and will deliver market-leading sustainable development outcomes.

In this report, the SEARs issued for the Metro Quarter SSD Application pertaining to ESD have been demonstrated through the development of a Sustainability Framework that incorporates the ESD principles as defined in the EP&A Regulation. The recommended initiatives that have been developed for implementation or further investigation as a product of the framework demonstrate compliance with BASIX SEPP (2004).

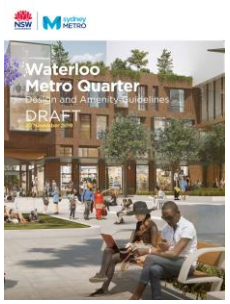
12. Appendices

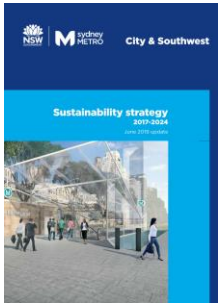
12.1 Appendix 1 – Sustainability Framework Alignment

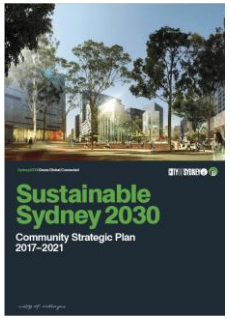
Appendix 1: Sustainability Framework Alignment

SUSTAINABLE DEVELOPMENT GOALS

mirvac JOHN HOLLAND







- Zero Carbon Energy
- Health and Wellbeing
- Materials and Supply Chain
- Ethics and Equity
- Climate Change Adaptation
- Sustainable Water
- Land and Nature
- Zero Waste
- Sustainable Food
- Travel and Transport
- Community and Culture

One Planet Living® | A framework by Bioregional

BASIX
Building Sustainability Index

greenstar

NABERS

WELL

Sustainability Framework Alignment with relevant strategies and frameworks

	Impact	Objective	Alignment with UN SDG	Clause 7(4) of Schedule 2 of EPAR 2000	Sydney Metro Sustainability Objectives	Sustainable Sydney 2030	Mirvac This Changes Everything	John Holland Sustainability
	Zero Carbon Energy	Make buildings and infrastructure energy efficient, reduce use of fossil fuels and maximise renewable energy.		Precautionary Principle Intergenerational Equity Economic Mechanisms	Carbon & energy management	2, 9	Energy	Climate Change Management
	Sustainable Water	Use water efficiently, protect local water resources and reduce flooding, drought and water pollution.		Precautionary Principle Intergenerational Equity Economic Mechanisms	Water efficiency Pollution control	2, 9	Net positive water	
	Waste Minimisation	Reduce consumption and re-use and recycle to work towards minimising waste to landfill.		Precautionary Principle Intergenerational Equity	Waste & materials consumption	2	Zero waste by 2030	Resource Use & Efficiency
	Materials and Supply Chain	Use materials from sustainable sources, apply life cycle principles, and prioritise products with transparent, ethical supply chains.		Precautionary Principle Intergenerational Equity Economic Mechanisms	Waste & materials consumption Supply Chain	9	Materials	Resource Use & Efficiency
	Land and Nature	Restore, preserve and protect land, biodiversity and natural capital for the benefit of people and wildlife.		Biological Diversity	Biodiversity conservation Pollution control	2	Biodiversity	
	Travel and Transport	Reduce the need to travel and encourage walking, cycling and low carbon transport.		Precautionary Principle Intergenerational Equity	Liveability Carbon & energy management	3, 4		
	Sustainable Food	Promote sustainable humane farming and healthy diets high in		Intergenerational Equity		-		

	Impact	Objective	Alignment with UN SDG	Clause 7(4) of Schedule 2 of EPAR 2000	Sydney Metro Sustainability Objectives	Sustainable Sydney 2030	Mirvac This Changes Everything	John Holland Sustainability
		local, seasonal organic food and vegetable protein.						
	Climate Risk and Adaptation	Apply practical actions to manage risks from climate impacts, protect communities and strengthen the resilience of the local economy.		Precautionary Principle Intergenerational Equity Economic Mechanisms	Climate Change Resilience	2	Climate change risk	Climate Change Management
	Health and Wellbeing	Encourage active, social, meaningful lives and provide the buildings, infrastructure and spaces to support good health and wellbeing for all ages.		Intergenerational Equity	Liveability	4, 9	Wellbeing	Safety & Wellbeing
	Equity and Local Economy	Create safe, just and equitable places to live, work, learn & trade, and support local prosperity and fair trade.		Intergenerational Equity Economic Mechanisms	Workforce development Economic Liveability	1, 6, 10	Social return Reconcilliation Affordability	Supply Chain Resilience
	Community and Culture	Nurture local identity and heritage, empower communities and promote a culture of sustainable living.		Intergenerational Equity	Heritage conservation Community Benefit	1, 5, 6, 9	Community engagement	Community Value

Sustainability Framework Alignment with 2018 Sustainability Framework

	Impact	2018 Sustainability Framework Principles and Desired Outcome
	**Zero Carbon Energy**	**Innovation and Competition** – Consideration is given to lifecycle impact to encourage resource and cost efficiency **Reducing Footprint: Energy & Carbon** – Energy consumption and greenhouse gas emissions have been minimised as far as is reasonably possible **Integrated Design** – The design of the development responds to the Waterloo's land, water and climatic characteristics, constraints and opportunities
	**Sustainable Water**	**Environmental Enhancement & Conservation** – Design and construction of the development has sought to minimise greenhouse gas emissions, contaminants and other pollutants to the environment. **Reducing Footprint: Water** – Potable water consumption and stormwater gross pollutant loads has been minimised as far as is reasonably possible
	**Waste Minimisation**	**Reducing Footprint: Waste** – Reduce waste generation, the impact of disposal and improve resource recovery from waste source
	**Materials and Supply Chain**	**Innovation and Competition** – Consideration is given to lifecycle impact to encourage resource and cost efficiency **Reducing Footprint: Materials** – The development uses materials of high environmental quality
	**Land and Nature**	**Environmental Enhancement & Conservation** – High quality native vegetation is protected and enhanced **Desireable Places** – The development has good visual amenity and a sense of connection with nature
	**Travel and Transport**	**Affordability** – A variety of effective and affordable transport options are made available to the community **Healthy, Safe and Secure** – Align transport infrastructure with precinct growth **Healthy, Safe and Secure** – A precinct that is attractive and safe for walking and cycling **Reducing Footprint: Transport** – Sustainable transport options are available and encouraged to reduce the use and reliance on fossil fuels **Flexibility and Adaptability** – Buildings and spaces are able to be changed to meet different needs or in response to changing community and environmental conditions **Accessible Places** – The new Waterloo Metro Station and other modes of transport is well-integrated such that residents, commuters and visitors can get around easily, safely and effiently

	Impact	2018 Sustainability Framework Principles and Desired Outcome
	**Sustainable Food**	Not addressed
	**Climate Risk and Adaptation**	**Adaptability** – The precinct will be prepared for the likely impacts of the changing climate **Flexibility and Adaptability** – Buildings and spaces are able to be changed to meet different needs or in response to changing community and environmental conditions
	**Health and Wellbeing**	**Healthy, Safe and Secure** – Physical activity and social engagements are encouraged and enabled in a safe and comfortable environment **Desireable Places** – The development creates functional, vibrant, stimulating and memorable places that evolve for people to live, work and play **Desireable Places** – The development has good visual amenity and a sense of connection with nature
	**Equity and Local Economy**	**Affordability** – A diversity of housing choices to house people from a wide range of socio-economic backgrounds. **Affordability** – Support is provided for affordable lifestyles, including work and play. **Healthy, Safe and Secure** – The development is designed to minimise crime. **Inclusiveness and Cohesiveness** – The development has access to the services, employment opportunities and communities of the wider Region. **Adaptability** – The development has flexibility to adapt to changing community and individual needs that may be influenced by economy, environment, culture or other circumstance. **Employment Opportunities** – Diverse local employment opportunities are available to meet the needs of the community **Economic Investment** – Investment will be attracted into the area through the provision of key infrastructure to enable business and community connectivity **Innovation and Competition** – Facilitate new business opportunities to enhance competitiveness and innovation **Innovation and Competition** – Contribute to Sydney's global competitivenes **Flexibility and Adaptability** – Buildings and spaces are able to be changed to meet different needs or in response to changing community and environmental conditions **Accessible Places** – The development provides physical connections internally and to surrounding areas to meet both local and metropolitan needs

	**Community and Culture**	**Inclusiveness and Cohesiveness** – Uses and environments within the development are diverse and inclusive for all ages, abilities, cultures and socio-economic backgrounds of the community – a place where everyone belongs. **Inclusiveness and Cohesiveness** – The community's shared vision of diversity, tolerance and respect for each other's rights and responsibilities is reflected in the built environment. **Education and Learning** – The development provides accessible education facilities and connection to other education facilities to suit the needs of the community. **Integrated Design** – The development is consistent and sympathetic to the character of the surrounding neighbourhood **Desireable Places** – Development has a distinct and recognisable identity and character. **Desireable Places** – The built form and landscapes are responsive to climate, context and heritage. **Desireable Places** – The development has activity both day and night, where people feel safe, at ease an part of a cohesive and proud community **Sustainable Cultures and Behaviours** – The development provides a case study for effective sustainability for the community and development industry **Sustainable Cultures and Behaviours** – The community is educated and aware of their environmental impact and are encouraged to improve their environmental performance

Sustainability Framework Alignment with SEARs, SSD and rating tools

	Impact	SEARs and SSD conditions	WMQ Design & Amenity Guidelines	Green Star for Buildings v1.3	Green Star Communities	NABERS	BASIX	WELL Building Standard v2
	**Zero Carbon Energy**	Energy efficiency Renewable energy Low carbon	BASIX 30 NABERS 5.5 5% PV	Energy Management	Greenhouse gas strategy	Energy 5.5 stars	Energy 30	
	**Sustainable Water**	Water efficiency	BASIX 40+ WSUD Water Use	Water Emissions	Integrated water cycle	Water 4.5 stars	Water 40+	
	**Waste Minimisation**	Waste management	Reduce Waste	Management Materials	Construction, demolition & operational waste			
	**Materials and Supply Chain**			Materials	Life cycle assessment			Materials
	**Land and Nature**		Tree Canopy Green Roofs Biodiversity	Land Use & Ecology	Sustainable sites – reuse of land, contamination, biodiversity enhancement, light pollution			
	**Travel and Transport**	Optimise carparking	Prioritise walking, cycling & public transport	Transport	Sustainable transport & movement			Movement
	**Sustainable Food**				Access to fresh food Food production			Nourishment

	Impact	SEARs and SSD conditions	WMQ Design & Amenity Guidelines	Green Star for Buildings v1.3	Green Star Communities	NABERS	BASIX	WELL Building Standard v2
	**Climate Risk and Adaptation**		Reduce heat island effect	Management	Adaptation & resilience Heat island effect			
	**Health and Wellbeing**		Noise control Solar amenity Air quality	Indoor Environment Quality	Liveability (recreation, active lifestyles, healthy places); Access to amenities, Safe places			Air, Light, Thermal Comfort, Sound, Mind
	**Equity and Local Economy**		Social housing Affordable housing	-	Community investment; Affordability; Employment & economic resilience; Education & skills development; Return on investment; Incentive programs; Digital infrastructure.			
	**Community and Culture**				Engagement; Sustainability awareness; Community facility and programs; Community development; Enhancing local culture, heritage and identity.			Community