Attachment B7(g)

Urban Design and Public Domain Study Appendix 4 Land Use, Sustainability and Resilience – Waterloo Estate (South) – Land and Housing Corporation

7.4

7.4 LAND USE, SUSTAINABILITY AND RESILIENCE

7.4.1 INDICATIVE NON-RESIDENTIAL LAND USES

Providing supporting land uses, with a mix of uses that includes retail, social infrastructure, entertainment and businesses will be important to create vibrant places and spaces

Legend

- Estate Boundary
- Waterloo South Boundary
- Private Sites
- Indicative location for community and cultural facilities

0m 75 N

Fig. 7.4.1 Indicative locations for community and cultural facilities

INDICATIVE COMMUNITY AND CULTURAL FACILITIES

Fig. 7.4.2 Storytime
Source: https://www.probuild.com.au, 2019

Fig. 7.4.3
Source: https://dynamic.architecture.com.au

Fig. 7.4.4 Bike repair workshop
Source: LAHC, 2018

Fig. 7.4.5
Source: LAHC, 2018

Fig. 7.4.6
Source: https://injalak.com, 2019

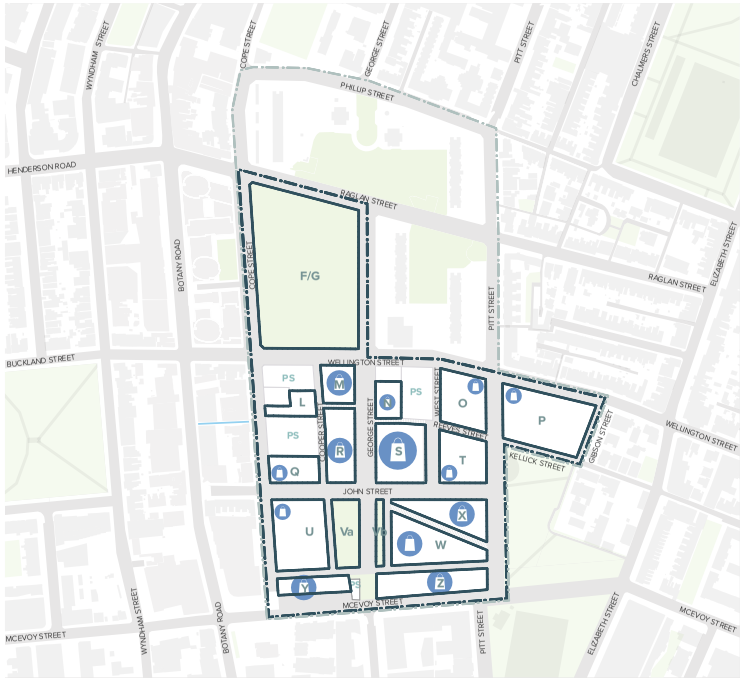
Fig. 7.4.7 Easter egg painting
Source: Turner, 2019

Fig. 7.4.8
Source: https://www.rmycph.com.au, 2019

Fig. 7.4.9 Rock climbing
Source: LAHC, 2018

Fig. 7.4.10
Source: https://cityofsydney.nsw.gov.au, 2019

The retail and ancillary non-retail offer is based on meeting the needs of local residents and workers, both existing and future, and also to draw people in from across the broader region through uses that activate Waterloo South in the evenings and on weekends



Legend

- Estate Boundary
- Waterloo South Boundary
- Private Sites
- Indicative location for retail and services

0m 75 N

Fig. 7.4.11 Indicative locations for retail and services

INDICATIVE RETAIL AND SERVICES

Fig. 7.4.12 Source: https://esperancetide.com, 2019

Fig. 7.4.13
Source: https://www.firstchoicebb.com.au, 2019

Fig. 7.4.14
Source: http://www.thecommune.co, 2019

Fig. 7.4.15 “It’s possible to love a bank”
Source: https://www.marketingmag.com.au

Fig. 7.4.16
Source: LAHC, 2018

Fig. 7.4.17 Active façades in Cabramatta encourages street life

7.4.2 RETAIL STRATEGY

Introduction

The retail strategy is informed by retail experts MacroPlan Dimasi and Right Angle Studio. This work justifies a place led approach to creating a diversity of retail experiences, including the opportunity for cooperative retail models as part of the overall project goals, focussing on equity, activity and affordability.

Research has been undertaken into precedent neighbourhoods around the world which have a similar population density to what is envisioned for Waterloo South.

These precedent neighbourhoods in conjunction with WalkScore have been used to develop an Urbanity Index - a gauge for an equitable distribution of retail and other amenities over time within Waterloo South and the Estate.

When compared with a 'business as usual' retail model that responds to immediate market demand, with the majority of the ground floor sold as residential dwellings, the research concludes a radically different approach is required to enable the intensity of retail and other amenities to evolve over time with population growth in the Redfern-Waterloo neighbourhood.

URBANITY INDEX

Urbanity and density are two very different things. In order to create the Urbanity Index we look to world best practice examples

Urbanity is the functional intensity of retail activities and other amenities people require at different population densities to have a 'liveable' city lifestyle.

Urbanity challenges conventional retail theory on commercial demand and the innovation required for truly adaptable lower levels (including ground, first floor and basement) addressing building design, legislation and ownership.

Using the projections for population growth in Waterloo and analysing neighbourhoods of comparative population from around the world, the analysis of six categories including retail and other amenities standardised by WalkScore has revealed trends which can be used as a guide for Waterloo South and the Estate.

The results suggest that Waterloo South must provide significantly more truly adaptable ground floor space if it is to reach its full potential to create a great place.

Fig. 7.4.18 La Placita Public Space by Gehl
Source: http://gehlpeople.com, 2018

Chippendale, Sydney

At just over 0.5 square kilometres in size, Chippendale has a population of approximately 10,000 residents. The neighbourhood blends modern high density with adaptive use of historic buildings and the provision of quality public amenity.

Fig. 7.4.19
Source: thepeakmagazine.com. Amy Van. 2019

West End, Vancouver

West End Vancouver is a small rectangle of land of just 2 square kilometres within Vancouver's downtown peninsula. With about 42,000 residents in total, it is one of the most densely populated neighbourhoods in North America.

Fig. 7.4.20
Source: https://fraseropolis.com, 2019

WEST VILLAGE, NYC

West Village in New York City has a population density of more than 26,000 people per square kilometre. Although primarily residential in land use, it comprises a multitude of restaurants, cafes and shops. It is estimated that 13,000 people visit the neighbourhood each day.

Fig. 7.4.21
Source: https://www.tracysnewyorklife.com, 2019

WATERLOO RETAIL STRATEGY

The case studies set a benchmark for the functional intensity of retail and other non-residential uses across Waterloo South

The Urbanity Index summarises the research undertaken by Roberts Day into great neighbourhoods of a comparable density to Redfern-Waterloo over time, supported by WalkScore.

Using WalkScore, the Urbanity Index was developed by assessing the number of restaurants, bars and cafes; groceries; outdoor places; school and education facilities; art and community uses; entertainment facilities and healthcare within each of the case study areas.

These precincts were used as a benchmark to understand the provision of retail and amenities which can be offered at this density.

The key conclusions of this process are:

- To consider the change and evolution of place and retail over time.
- To explore opportunities to unlock ground floor spaces for non residential uses to reflect the minimum amenity required now and into the future;
- Retail spaces need to be flexible so they can change over time.
- Flexibility allows the delivery of sufficient amenity and services to support the target population by 2036.
- It allows us to gauge the equitable distribution of a variety of services and amenities.

Compared to a Business as Usual model, the adaptive ground floor at Waterloo South under an Urbanity Model over time is the inverse

Business as Usual

2036

Fig. 7.4.22 Retail strategy for Business as Usual model to year

Urbanity Model

2036

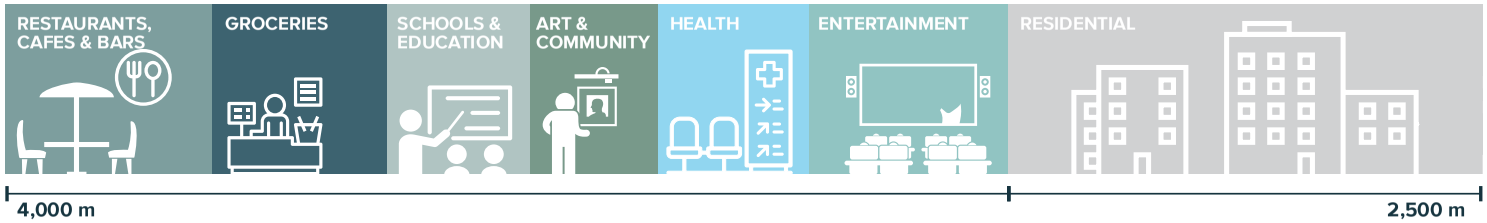


Fig. 7.4.23 Retail strategy for urbanity model to year 2036

Urbanity Model

2056

Fig. 7.4.24 Retail strategy for urbanity model to year 2056

GROUND PLANE EVOLUTION OVER TIME

There are currently very few non-residential uses activating the ground plane in Waterloo

Informed by the project vision and objectives to create a people friendly place, the following diagrams illustrate one way for retail to be distributed across Waterloo South following four principles:

1. Completing the activation of the Metro Quarter as a vibrant retail place and the reimagination and renewal of George Street into a main street retail environment.

2. Activate the perimeter of the Village Green and Waterloo Common with a diverse retail program to equitably distribute access to daily needs within the Estate.

3. Allocate retail along key connective streets, benefiting from significant flows of people, to further improve the integration of the Estate with the neighbourhood context.

4. Activate smaller spaces (laneways and social corners) with smaller scale retail units to improve retail diversity, activation, sense of place and belonging for all micro-neighbourhoods.

5. Pedestrianisation and activation of George Street to renew it into an 'active spine' or Activity Street.

Legend

- Restaurants, Cafes and Bars
- Groceries
- Potential Supermarket Location
- Schools and Education
- Art & Community
- Entertainment
- Health
- Other Non Residential Uses

EXISTING NON-RESIDENTIAL USES 2016

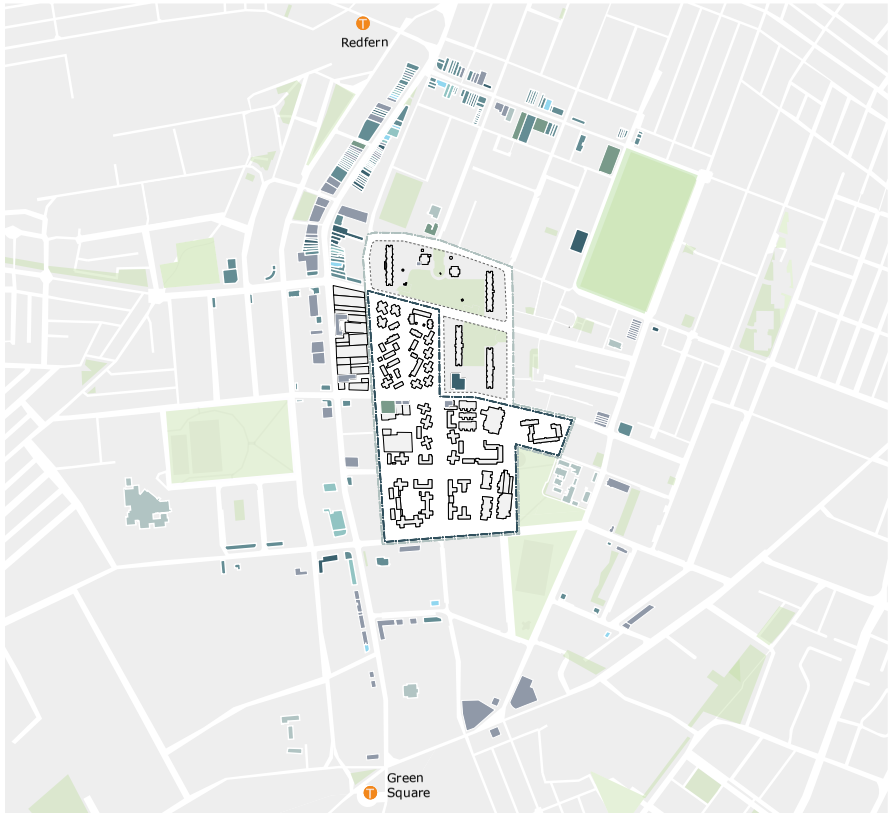


Fig. 7.4.25 Local existing non-residential ground floor uses

There are currently very few non-residential uses activating the ground plane in Waterloo.

URBANITY MODEL 2036

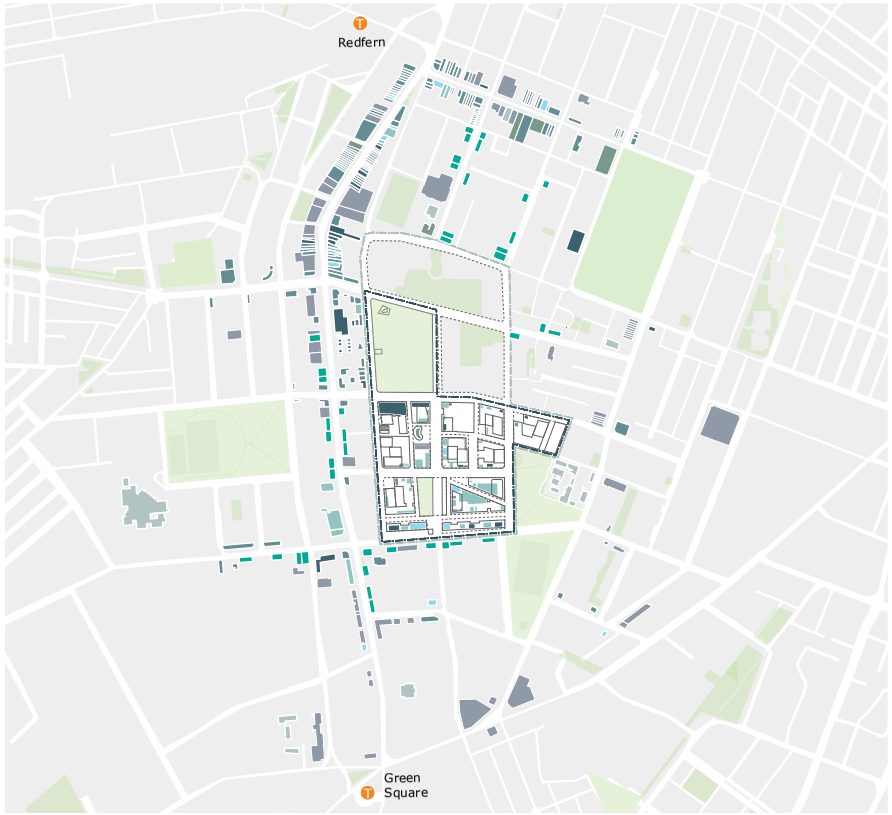


Fig. 7.4.26 Local non-residential ground floor uses under Urbanity model to year 2036

Under the Urbanity model the ground plane would accommodate considerably more non-residential uses by 2036 than a 'business as usual' approach.

URBANITY MODEL 2056

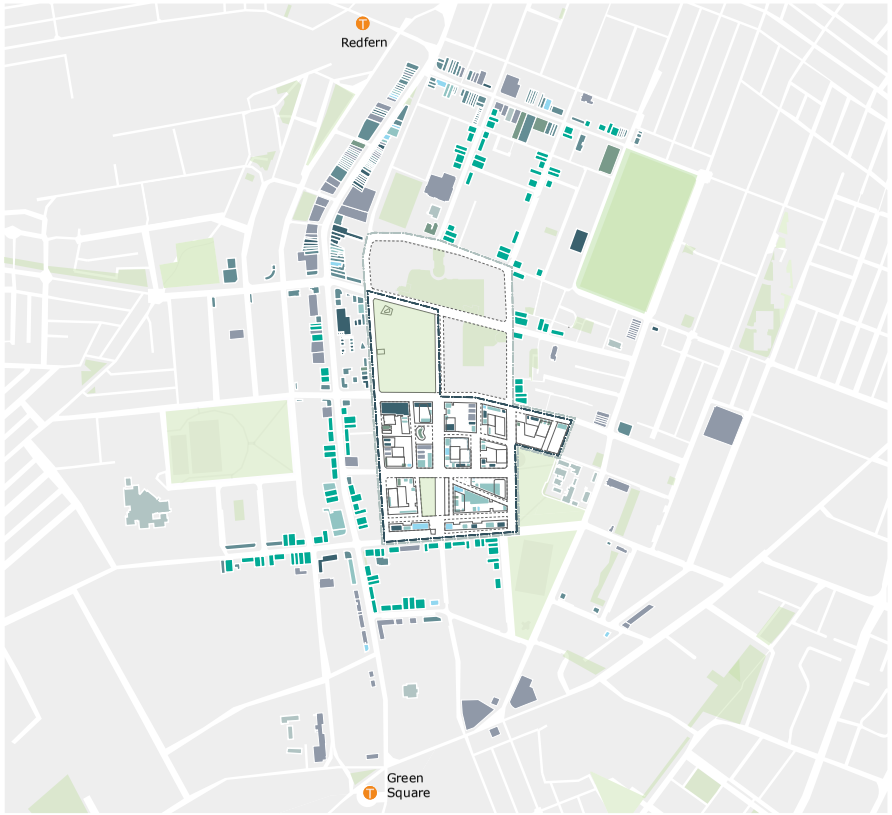


Fig. 7.4.27 Local non-residential ground floor uses under Urbanity model to year 2056

By 2056, the adaptable ground plane will have completed the activation of the Metro Quarter, Village Green and Waterloo Common, complementing the growth outside the Estate's boundaries.

NON-RESIDENTIAL ADAPTATION OVER TIME STRATEGY

A key component of the retail strategy is to design resilient and adaptable spaces that can evolve over time

International best practice reveals that designers are commonly anticipating future change by designing flexible/adaptable spaces so that a building can accommodate active uses into the future, requiring minimal internal building redesign and structural change (Marshall, 2016). This ensures the resilience and longevity of built form, allowing the building to survive and stay relevant to economic, social and cultural changes for next 50 - 100 and years.

The retail strategy for Waterloo South embraces best practice design techniques by drawing inspiration from successful local & international examples. This includes designing flexible/adaptable basement car parking which can accommodate retail, commercial and other active uses in the future. In doing so, Waterloo South can adapt and transform over time as these spaces evolve into activated retail, commercial and community space, particularly in key locations.

Additionally, by designing flexible ground level and first level residential spaces, the future Estate can accommodate retail, commercial and other active uses to adapt to the growing population and modal shift, particularly once the metro station is complete. The retail strategy for Waterloo South embraces best practice design techniques and draws inspiration from successful local examples which have done this in the past.

ADAPTABLE GROUND FLOOR AND FIRST FLOOR

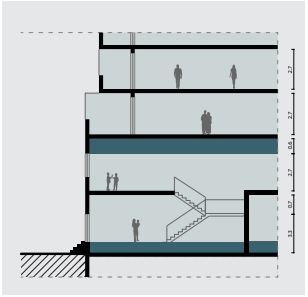


Fig. 7.4.28

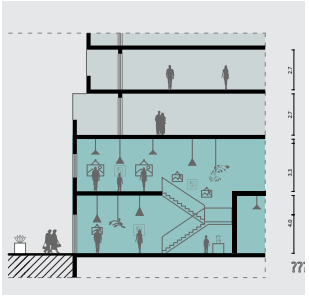


Fig. 7.4.29

Fig. 7.4.30 Retail Space, Boston
Source: https://linearretail.com, 2019

Fig. 7.4.31 Loft Apartments, Seattle
Source: http://www.seattle.gov, 2019

Fig. 7.4.32 Duke Condos, Toronto
Source: https://www.buzzbuzzhome.com

ADAPTABLE GROUND FLOOR AND BASEMENT

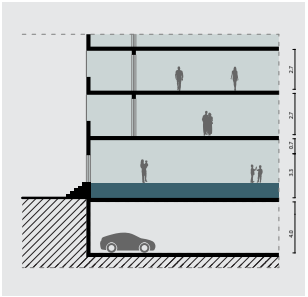


Fig. 7.4.33

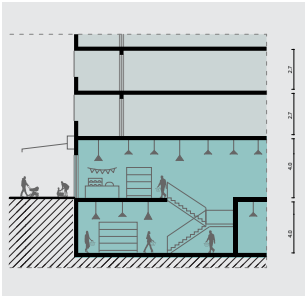


Fig. 7.4.34

Fig. 7.4.35 Paddy's Markets, Sydney
Source: https://sydneymobile-secure.straliaweb.com.au

Fig. 7.4.36 Sogo Mall, Hong Kong
Spurce: http://www.discoverhong-kong.com

Fig. 7.4.37 Mr Wong, Sydney
Source: https://merivale.com

AWNING AND COLONNADE STRATEGY

Awnings and colonnades will ensure enjoyable and well functioning non-residential frontages

A key component of the retail strategy for Waterloo South is to provide pedestrian shelter for key movement corridors and areas of anticipated foot traffic through the design of permanent and adaptable awnings and colonnades. Previous studies (Jan Gehl, 2007; CityLab 2012) have found that continuous awning structures create a more pedestrian friendly and inviting streetscape/public realm.

The awning strategy for Waterloo South is composed of three key options, with the strategy principles remaining consistent throughout. Awnings are designed/anticipated to be located based on the key movement networks, destinations and clusters of active building uses both now and into the future. Adaptable awnings can be added over time as streetscapes change and incorporate more active uses such as dining and street retail.

Based on the Retail Strategy (see 'Ground plane activities over time' on p.378-379), the following principles guide the Retail Frontage Strategy:

1. Wide (3.5m minimum) awnings and verandahs shall provide people with continuous protection from elements, particularly along main streets, the Village Green, Waterloo Common and wherever retail is located.

2. The retail frontage of smaller shared lanes will include awnings of 1.5m (maximum) wide and shall be designed for flexibility in the form of retractable awnings.

3. Colonnades are recommended for the Community Hubs and key neighbouring frontages, given the typology's significance in resolving change in levels/topography. These include both integrated colonnades and additive colonnades.

4. Retail frontages shall be an integral part of the design of the building facades.

Legend

- Awning (3.5m wide)
- Retractable Awning (1.5m wide)
- Setbacks for non-residential (colonnades)

AWNING AND COLONNADE LOCATIONS

Fig. 7.4.38 Awning and colonnade strategy

There are four types of frontages proposed as part of the Awning and Colonnade strategy

COLONNADE (INTEGRATED)

With an Integrated Colonnade, the facade of the building encroaches over the public right of way, absorbing the sidewalk within the arcade. This is the most urban of all frontage types. The colonnade adds to the width of the pedestrian footpath.

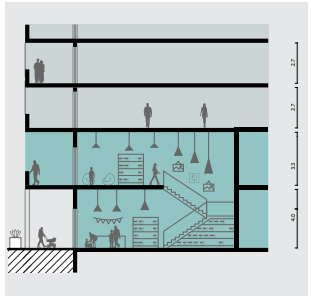


Fig. 7.4.39

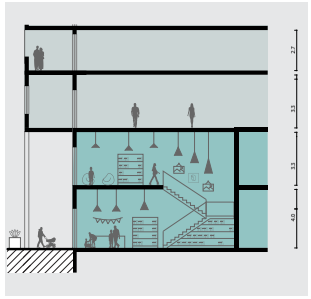


Fig. 7.4.40

Fig. 7.4.41 Thames Tower
Source: http://mydn-a.com

Fig. 7.4.42 Kenson Building, Ottawa
Source: https://urbsite.blogspot.com

Fig. 7.4.43 Chanel Boutique Store, Hong Kong
Source: http://butterboom.com

COLONNADE ADDITIVE (POST VERANDAH)

A Post Verandah Colonnade features an arcade as an additive form to the building facade, where only the arcade encroaches over the public right of way. This approah is possible in setback areas.

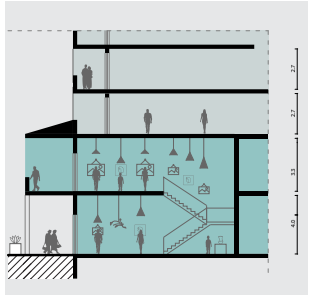


Fig. 7.4.44

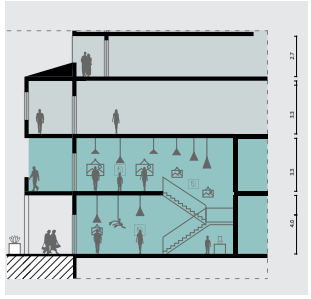


Fig. 7.4.45

Fig. 7.4.46 Bendigo Verandahs
Source: https://www.vline.com.au

Fig. 7.4.47 Angel Lane, Sydney
Source: helioscreen.com.au

Fig. 7.4.48 Beerhouse, Cape Town
Source: https://idmmag.com

AWNING

With the Awning typology, the facade is aligned with the right of way or close to the property line, with the building entrance at sidewalk grade. This type is common for retail use, with the awning covering the right of way.

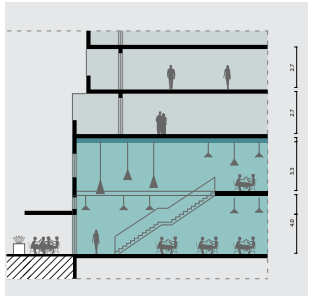


Fig. 7.4.49

Fig. 7.4.50 Mixed-Use Building, Vancouver
Source: https://www.skyscrapercity.com

Fig. 7.4.51 Northern Plaza, Monash University
Source: http://www.landezine.com

Fig. 7.4.52 Street in Athens
Source: https://www.flickr.com

Fig. 7.4.53 Awnings in Seattle
Source: https://nacto.org

RETRACTABLE AWNING

For the Retractable Awning typology, the facade has a nil setback to the right of way or is close to the property boundary. It allows space for retractable awnings to be extended and retracted according to the weather conditions and if the uses are active day and night. It is often used in laneways due to its flexibility in controlling sunlight access.

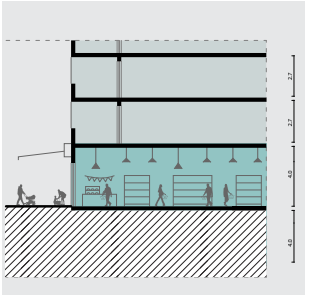


Fig. 7.4.54

Fig. 7.4.55 Angel Lane, Sydney
Source: https://www.helioscreen.com.au

Fig. 7.4.56 Newbury St, Boston
Source: https://www.tripadvisor.ie

Fig. 7.4.57 Cafe des Beaux Arts, Paris
Source: https://www.thekitchn.com

Fig. 7.4.58 Sicilian Avenue
Source: https://www.victorianawnings.co.uk

7.4.3 PARKING, LOADING AND SERVICES

COMBINED ACCESS AND SERVICES INDICATIVE STRATEGY

The combined access and services strategy will contribute to vibrant places and spaces by increasing opportunities for active uses at street level

The combined access and services strategy will:
- Minimise inactive or blank façades for an activated public domain
- Minimise vehicle entries on streets to reduce conflicts with pedestrians & cyclists
- Additional active ground level uses
- Reduce basement area through combined services & loading

New vehicle entries located on secondary laneways to reduce impact on connecting streets, with access to loading bay and carpark through a common driveway entry. Basement connections only (no parking) will be provided at a minimum depth of 1.5m below new streets. Loading bays and ramps can be sleeved with:

Active frontage
- Non-residential uses such as retail, services, community and cultural uses.
- Residential dwellings and building entries.
- Retail Display windows (regularly refreshed),eg., David Jones seasonal displays
- Greenwalls
- Public art installations

Inactive frontage
- Substations and other utilities requiring frontage to the street
- Fire booster cupboards
- Emergency egress

BASEMENT STRATEGY

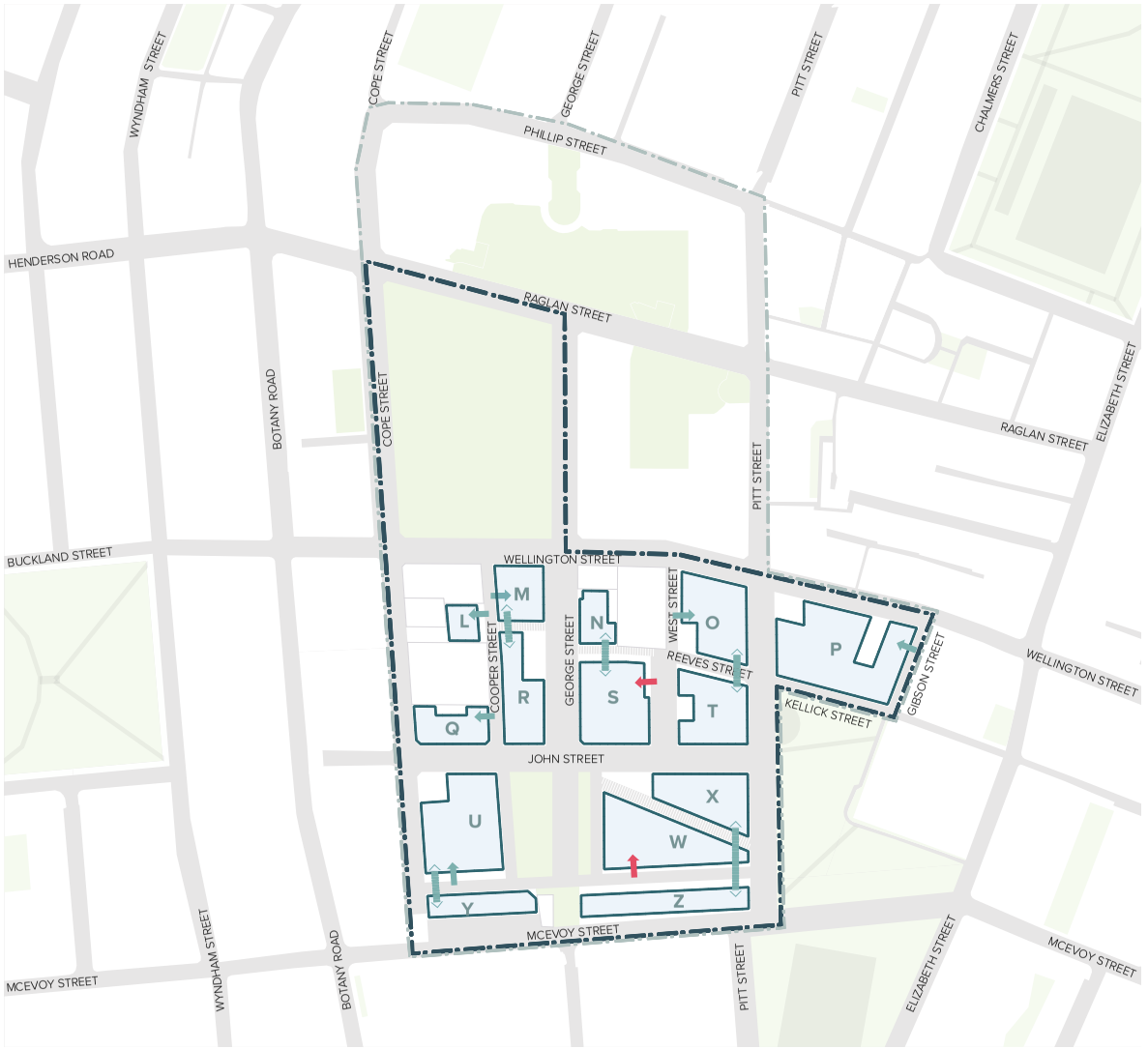
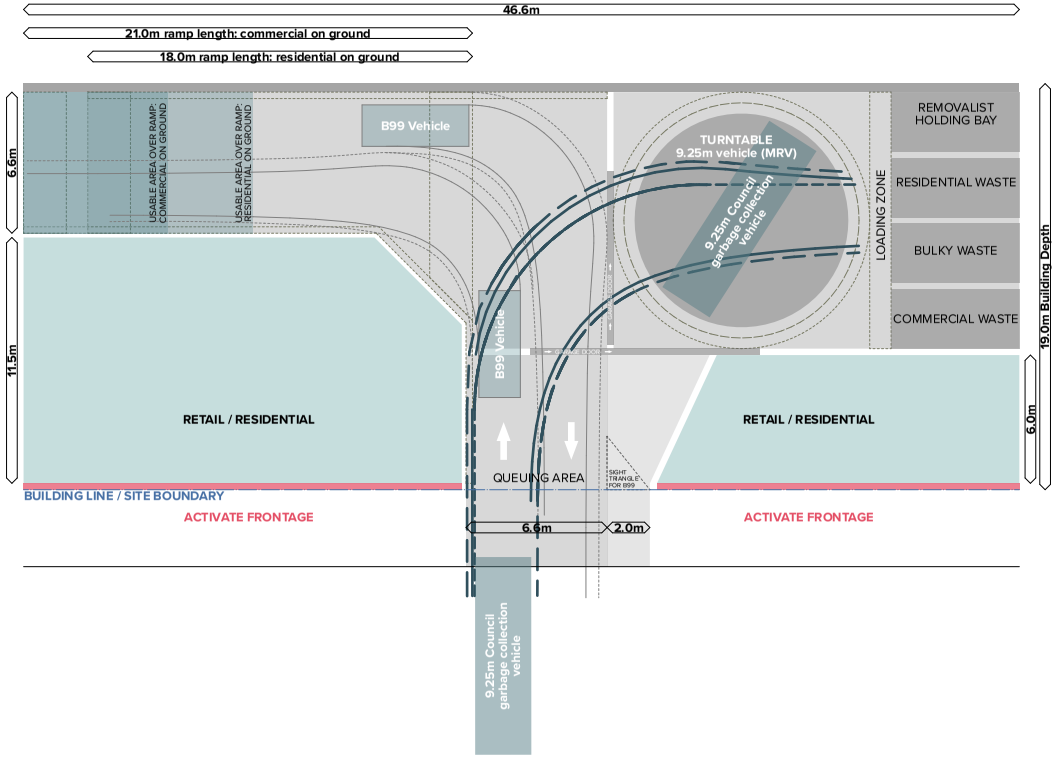


Fig. 7.4.59 Basement location and connection strategy

COMMON DRIVEWAY
PERPENDICULAR RAMP



COMMON DRIVEWAY
DIRECT ACCESS TO RAMP

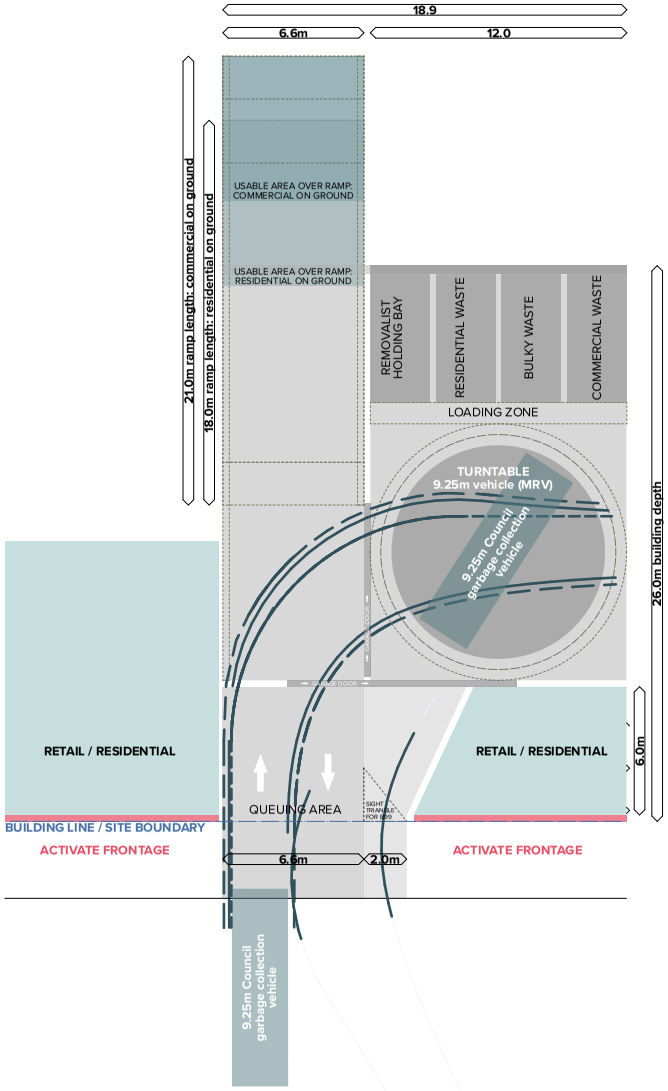


Fig. 7.4.60 Typical basement entry arrangements

7.4.4 SUSTAINABILITY AND RESILIENCE

The renewal of Waterloo South is an opportunity to deliver on local, metropolitan and regional sustainability targets offering a new benchmark for sustainable urban precincts

Waterloo has a long history underpinned by community and practical sustainability initiatives. The greatest opportunity to be realised at Waterloo South will be its ability to provide long term value to the community through being more sustainable and resilient in the face of future challenges and opportunities. Careful consideration of the existing context, as well as an appreciation of stakeholder needs, expectations and impacts, provides an important baseline to drive more sustainable outcomes for the Estate.

HEALTH, WELL-BEING & SAFETY

Access to fresh food, safe walkable streets, sense of community, wellness spaces and pride of place will contribute to the health and well-being of current and future Estate residents

Fig. 7.4.61 Passeig De St Joan Boulevard

The design and planning of Waterloo South will have a profound effect on the physical health and mental well-being of residents and visitors. Urban farms, community gardens and food cooperatives provide an opportunity for residents to have affordable fresh food. Public domain activation, walkable streets, open space and community hubs will contribute to the overall safety of the Estate offering health benefits by keeping people more active and connected to their community.

ACTIVATION (STAGING)

The Estate is already an established place and renewal of tWaterloo South must ensure strong place outcomes and continuous activation within the community

Fig. 7.4.62 High Line, New York

The scale and staging of the Estate renewal offers considerable opportunities for temporary activation and engagement with current residents and the surrounding community. Maintaining pedestrian access, community art project, tactical urbanism and community drop-in or project 'discovery' centres are just some of the ways to keep the community members informed and social connections intact during construction and throughout the life cycle of the development.

RESILIENCE AND ADAPTATION

Buildings and infrastructure within Waterloo South should be designed for flexibility to adapt for changing community and individual needs that may be influenced by economics, environmental, cultural or other circumstances

Fig. 7.4.63 Sankt Kjelds Quarter

Global warming is predicted to increase localised weather events within Waterloo, particularly in relation to heat waves and flooding. Buildings and infrastructure need to adapt to these changes over time to improve the overall safety and resilience of the communities.

COMMUNITY FACILITIES

Community hubs and other community-centred facilities will provide social spaces to strengthen social bonds and relationships across the community offering critical services and support for all residents

Fig. 7.4.64 Joyton Avenue Creative Centre

Community hubs located throughout each of Waterloo South's character areas will offer spaces for local community events and programs. Hubs should be designed and programmed to be diverse and inclusive for all ages, abilities, cultures and socio-economic backgrounds where everyone feels welcome. Programs and uses should align with local community needs such as recreation, education, training and health related services.

WATER MANAGEMENT

The story, culture, use and treatment of water within the public domain, open space and buildings is an integral component of the Waterloo community

Fig. 7.4.65 Sydney Park

There are significant opportunities for water sensitive urban design and sustainable water systems within Waterloo South. Traditionally a wetland, water plays a central role in the history of Waterloo. Site areas prone to flooding should consider ecologically passive stormwater and treatment solutions such as bio-filtration swales. Vegetative walls and roofs should be integrated to both slow and treat storm water flows throughout Waterloo South. Surface level water treatment should be prioritised in open space and public domain areas, where feasible, to align with regional Blue and Green Grid goals.

ENERGY

A combination of passive design strategies and integration of efficient and clean energy technologies will make Waterloo South a low carbon, energy smart precinct

Fig. 7.4.66 National University of Singapore

Massing and built form design within Waterloo South considers optimum solar access for open space and private residences. Building envelopes are to be designed with optimal thermal efficiencies to reduce mechanical energy loads. Consideration should be given to smart, renewable and scalable energy solutions for public domain and residential structures. Intelligent metering and operating systems will promote efficient use of energy through the life of the Estate.

WASTE

Planning and design of Waterloo South will facilitate and prioritise waste management practices in line with city and regional waste reductions targets.

Fig. 7.4.67 Dockside Green, Canada

Building and public domain design should provide conveniently located waste management and recycling infrastructure to reduce littering and promote recycling. Estate-wide organic composting should be considered in support of precinct goals for productive landscapes such as roof top and community gardens. Waste governance strategies should be considered for commercial use spaces to allow for reduction in landfill waste, particularly single use plastics.