



SECTION 5

GENERAL PROVISIONS

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5.1 Dwelling mix and flexible housing

Objectives

- O1. Provide a range of housing types and sizes to support diverse households including single person families, multi-generational families, group households, students and seniors.
- O2. Ensure for equitable access to new housing opportunities for culturally and socio-economically diverse groups.
- O3. Encourage the design of buildings that are adaptable and flexible to accommodate residents' changing housing needs over their lifetimes.
- O4. Deliver a place-based dwelling mix more suited to the Belmore and Lakemba Precinct's needs.

Principles

- P1. Encourage a diversity of housing that meets the needs of Belmore and Lakemba residents and caters to different social groups.

Controls

- C1. The following dwelling mix is required for residential flat buildings and shop top housing developments containing 20 or more dwellings:
 - a) Studio: 5-10%.
 - b) 1 bedroom: 10-30%.
 - c) 2 bedroom: 40-75%.
 - d) 3 or more bedroom: minimum 10%.
- C2. The dwelling mix requirements may be altered only if the development serves the purpose of public housing or if the applicant represents a community housing or non-profit organisation.
- C3. Residential flat buildings should provide accessible apartments for people with a disability and who are elderly and family sized apartments that have level and easy access to adjoining communal space. These apartments should be located at the lower levels of the building to provide ease of access to the street.



MIRA Apartments, Ramsgate, NSW, by Architectus
(Source: Brett Boardman)



5.2 Parking

5.2.1 On-site parking

Objectives

- O1. Promote sustainable transport and limit vehicular movements by restricting private parking and facilitating increasing access to, and use of, communal modes of transport within the Precinct.
- O2. Require a lower minimum parking rate in the Local Centre 'Core' near the Belmore and Lakemba Metro stations, with a slightly higher minimum parking rate outside of the Local Centre 'Core' to minimise a reliance on private motor vehicle trips.

Principles

- P1. Encourage basement vehicular parking instead of at-grade or above ground parking.
- P2. Provide flexibility for the efficient use of car parking in development by allowing off-site users to use car parking.
- P3. Where provided, design above ground car parking so that it can be adapted to alternate uses over time.
- P4. Consider the location of car park and service vehicle entrances and exits to ensure the amenity of public domain is maintained and improved where possible.
- P5. To facilitate adaptation of car parking to other uses in the long term, above ground car parking is to remain as part of the common property and not part of, or attached to, individual strata units.



Figure 53. Riverside Quay, Southbank, VIC, by Architectus (Source: Architectus)



Controls

- C1. All car parking within the Precinct must be provided in accordance with the rates as specified in Table 6 and Figure 53. If a land use is not included in Table 6, the car parking rates in [Chapter 3.2 of the CBDP 2023](#) will apply.
- C2. Parking for non-residential uses, and non-staff related parking can be considered collectively and be shared if parking is accessible to the public and the hours of use have different peak demand times.
- C3. If the total Gross Floor Area (GFA) of retail premises exceeds 2,000m², a Transport Impact Assessment for the development proposed is to be prepared and submitted.
- C4. Any car parks containing more than 50 spaces must provide a minimum 10% of spaces for electric vehicle fast charging.
- C5. Accessible parking is required to be designed and constructed in accordance with Chapter 3.2-Parking of the CBDP 2023.

Land Use	Size/ Description	Inside Belmore and Lakemba Village Centre Core		Outside of Belmore and Lakemba Village Centre Cores	
		Minimum car parking rate	Maximum car parking rate	Minimum car parking rate	Maximum car parking rate
Detached dwelling		N/A	1 space per dwelling	N/A	1 space per dwelling
Residential flat buildings/ Shop top housing	Studio	0	0.5 space per dwelling	0	0.75 space per dwelling
	1 Bedroom	0	0.5 space per dwelling	0.2 space per dwellings	0.75 space per dwelling
	2 Bedroom	0.25	1 space per dwelling	0.5 space per dwellings	1.5 spaces per dwelling
	3 Bedroom	0.75	1.5 spaces per dwelling	1 space per dwellings	2 spaces per dwelling
	Visitor	1 per 20 dwellings	1 space per 10 dwellings	1 space per 10 dwellings	1 space per 5 dwellings
Office premises	N/A	0	1.25 spaces per 1000m ²	1 space per 100m ²	2 spaces per 100m ²
Retail premises	Shops	0	1.25 spaces per 100m ²	1 space per 100m ²	2 spaces per 100m ²
Education establishments	Schools, Universities, TAFE	0	1.25 spaces per 100m ²	1 space per 100m ²	2 spaces per 100m ²
All other land uses	N/A	Refer to Chapter 3.2- Parking of the CBDP 2023			

Table 6. Car parking requirements for the Belmore and Lakemba Precinct 'core' and outside of 'core' areas.



Car Parking Map



Legend

- Application of DCP
- Core car parking areas

Figure 54. Parking map



5.3 Underground floor space

Objectives

- O1. To facilitate large floorplate uses underground, while maximising activation and permeability at street level.

Principles

- P1. Uses permitted for underground floor space include uses that generally require large floor areas, including neighbourhood supermarkets, larger floorplate retail premises over 1000m² GFA, gym and entertainment facilities.
- P2. Larger sites that can accommodate the above mentioned uses and demonstrate improved streetscape and public domain impacts.
- P3. The underground uses should not go beyond the building footprint to ensure opportunities for deep soil planting and open space in setback areas are maintained.
- P4. Entries to the underground floor space should have an appropriate, active, ground floor frontage.



Figure 55. Riverside Quay, Southbank, NSW, by Architectus (Source: Architectus)



5.4 Sustainability

5.4.2 Urban cooling and environmental sustainability

Overview

Urban heat or the Urban heat Island effect refers to the higher temperatures experienced in urban areas compared to rural or natural areas. As more development occurs, the build-up of heat in the environment occurs through heat being trapped in streets, increased hard surfaces, reduced vegetation and heat from air conditioning units.

Objectives

- O1. To reduce the contribution of development to urban heat.
- O2. To improve comfort for residents, workers and visitors in the local urban environment.
- O3. To improve the passive comfort of dwellings and reduce the reliance on mechanical systems for amenity.
- O4. To reduce the greenhouse gas emission release to the atmosphere through leakage, or improper disposal, of synthetic refrigerant gases with high Global Warming Potential (GWP).

Figure 56. The Langston Sydney, NSW, by Architectus
(Source: Brett Broadman).

Controls

- C1. Glazing in the external facade of an enclosed balcony or wintergarden must have a solar absorption of less than 10%.
- C2. Solar absorption of glazing must be marked on plans, and verified through inclusion of window specifications with DA.
- C3. All new air conditioning and refrigeration equipment are to use refrigerants with a GWP of less than 10 if the equipment can be supplied on similar terms to conventional systems. Confirmation prior to the release of the construction certificate is required.
- C4. Solid fuel heating and cooking systems are not permitted in any development.
- C5. Gas cooktops, gas ovens or gas internal space heating systems are not permitted in any residential development. Instead, electric systems must be installed and clearly marked on development application plans.
- C6. Basement carparks must be contained within building footprints and allow for deep soil beneath forecourts and courtyards for large canopy tree planting.

The compliance of a Development Application with the controls in 5.4 is to be shown on the drawings and plans submitted with the Development Application and included in the Statement of Environmental Effects.





5.4.2 Reduction of the Urban Heat Island Effect

Objectives

- O1. To minimise the reflection of solar heat downward from the building façade into private open space or the public domain.
- O2. To reduce the contribution of development to urban heat and to improve user comfort in the local urban environment.
- O3. To avoid or minimise the impact of heat rejection from air conditioning and refrigeration systems on the urban heat island effect and user comfort in private open space and the public domain.

Controls

- C1. The extent of the vertical façade of street walls (or if no street wall, as measured from the first 12 metres from the ground plane) that comprise Reflective Surfaces must demonstrate a minimum percentage of shading as defined in Table 7 as calculated at the relevant time of year in Table 9 and Table 10.
- C2. The extent of the vertical façade of the tower (above the street wall or if no street wall, as measured above the first 12 metres from the ground plane) that comprise Reflective Surfaces must demonstrate a minimum percentage of shading as defined in Table 8 as calculated at the relevant time of year in Table 9 and Table 10.
- C3. Compliance with C1 and C2 above is demonstrated on 21 December on the eastfacing façade at 10 AM, northeast and southeast facing façade at 11.30 AM, north-facing façade at 1 PM, northwest and southwest facing façade at 2.30 PM and the west-facing façade at 4 PM as shown in Table 9.
- C4. Compliance with C1 and C2 above is demonstrated on 21 July on the northeastfacing façade at 10 AM, north northeast facing façade at 11.30 AM and 1 PM, and northwest facing façade at 2.30 PM and 4 PM as shown in Table 10.
- C5. Shading may be provided by:
 - a) External feature shading with non-reflective surfaces.
 - b) Intrinsic features of the building form such as reveals and returns.
 - c) Shading from vegetation such as green walls, where requirements for upkeep is covered by a positive covenant.
- C6. Where it is demonstrated that shading cannot be achieved in accordance with C1-C4, development must provide:
 - a) A maximum external solar reflectance as defined in Table 8 is required for all Reflective surfaces;
 - b) Applicants must provide elevations illustrating facade surface areas, indicating the location of any shading devices and external finishes, and the solar reflectance value of the cladding;
 - c) Applicants must submit technical information that verifies the solar reflectance value of the cladding; and
 - d) Additional deep soil requirements to offset and reduce urban heat. The additional requirements will be determined by Council on a case by case basis.

The compliance of a Development Application with the controls in 5.4 is to be shown on the drawings and plans submitted with the Development Application and included in the Statement of Environmental Effects.



C7. Shadow diagrams must be submitted with the development application quantifying the extent of shading at 10 AM, 11.30 AM, 1 PM, 2.30 PM and 4 PM on 21 December and 21 June for each relevant façade. Shadows from existing buildings, structures and vegetation are not considered in the calculations. These shadow diagrams are required in addition to, and not instead of, the requisite shadow diagrams to assess solar amenity and compliance with ADG requirements. Note: Refer to Table 9 and Table 10 for sun angles corresponding to shading reference times. Calculation of RSR for each relevant façade must also be submitted with the Development Application.

- C8. Where surfaces on rooftops or podiums are used for communal open space or other active purposes, the development must demonstrate at least 50% of the accessible roof area complies with one or a combination of the following:
- Be shaded by a shade structure, or/and;
 - Be shaded by a solar panel or/and;
 - Be covered by vegetation consistent with the controls on Green Roofs or Walls or/and
 - Provide shading through canopy tree planting, to be measured on the extent of the canopy cover 2 years after planting.

Part A - Street Wall			
Reflective Surface Ration (RSR)	<30%	30-70%	≥70%
Minimum Shading (%)	0	1.5*RSR-45	75

Part B - Tower			
Reflective Surface Ration (RSR)	<30%	30-70%	≥70%
Minimum Shading (%)	0	0.8*RSR-24	75

Table 7. Shading Requirements

Reflective Surface Ration (RSR)	<30%	30-70%	≥70%
Maximum External Solar Reflectance (%)	No Maximum	62.5-0.75*RSR	10

Table 8. Maximum External Surface Reflection

Facade Orientation	Sun Angles - 21 December (Summer Solstice)
East ± 22.5°	10 am AEDT Sun Elevation: 51° Azimuth: 66°
Northeast / Southeast ± 22.5°	11:30 am AEDT Sun Elevation: 69° Azimuth: 66°
North ± 22.5°	1 pm AEDT Sun Elevation: 80° Azimuth: 352°
Northeast / Southeast ± 22.5°	2:30 pm AEDT Sun Elevation: 67° Azimuth: 290°
West ± 22.5°	4 pm AEDT Sun Elevation: 48° Azimuth: 272°

Table 9. Sun Angles during Summer Solstice



Facade Orientation	Sun Angles - 21 July (Winter Solstice)
Northeast $\pm 30^\circ$	10 am AEDT Sun Elevation: 28° Azimuth: 32°
North northeast $\pm 22.5^\circ$	11:30 am AEDT Sun Elevation: 35° Azimuth: 9°
North northwest $\pm 22.5^\circ$	1 pm AEDT Sun Elevation: 30° Azimuth: 343°
Northwest $\pm 22.5^\circ$	2:30 pm AEDT Sun Elevation: 25° Azimuth: 321°
Northwest $\pm 22.5^\circ$	4 pm AEDT Sun Elevation: 12° Azimuth: 304°

Table 10. Sun Angles during Winter Solstice

- C9. Where surfaces on rooftops or podiums are not used for private or public open space, for solar panels or heat rejection plant, the development must demonstrate the following:
- a) Materials used have a minimum solar reflectivity index (SRI) of 82 if a horizontal surface or a minimum SRI of 39 for sloped surface greater than 15 degrees.
 - b) 75% of the total roof or podium surface be covered by vegetation.
 - c) A combination of (a) and (b) for the total roof surface.
 - d) Applicants must provide a plan illustrating all roof surface areas, indicating the location of any green roofs, flat mounted PV panels, and the SRI value of the roofing.
 - e) Applicants must submit technical information that verifies the SRI performance of roofing.
- C10. Residential apartments within a mixed-use development or residential flat building must incorporate efficient heating, ventilation and cooling systems which reject heat from a centralised source on the upper-most roof.
- C11. No heat rejection units shall be located on the street wall frontage on the primary street.





5.4.3 Energy efficient (BASIX affected buildings)

Objectives

- O1. Promote sustainable development which uses energy efficiently and minimises non-renewable energy usage during the construction and use of buildings.
- O2. Ensure all new developments to actively contribute to the collective effort of reducing energy consumption throughout the Precinct.
- O3. Decrease dependency on the main grid energy supply within the Precinct by implementing alternative energy sources and strategies.

Controls

- C1. For developments not covered by BASIX, compliance with the energy efficiency provisions of the Building Code of Australia (Section J) is mandatory. A Section J report, along with annotated plans demonstrating compliance with fabric and service requirements, must be submitted.
- C2. All development not subject to BASIX must issue documentation from a suitably qualified consultant is to be submitted with Development Applications demonstrating the measures that will be used to achieve the relevant energy efficiency scheme rating. Evidence of a formal commitment agreement or registration with the relevant scheme administrator is required to be submitted prior to the issuing of a construction certificate.
- C3. All new developments must future proof the integration of smart technologies for the purposes of monitoring energy usage (e.g. Lighting, heat, ventilation and air conditioning).
- C4. Verification of energy target achievement requires the submission of a signed Commitment Agreement from the National Australian Built Environment Rating System (NABERS).
- C5. Targets for mixed-use developments must be tailored to the specific mix and proportion of land uses, determined on a site-specific basis and at the discretion of the Council.





5.4.4 Water efficiency

Objectives

- O1. Reduce the consumption of drinking water.
- O2. Increase the amount of water harvested from rainwater and urban stormwater runoff for use.
- O3. Increase resilience to the impacts of water scarcity by providing sustainable alternative water supplies.
- O4. Decrease the technical and financial barriers to retrospective upgrades to buildings to connect to future non drinking water supply infrastructure.

Controls

- C1. All new developments must include submetering and future proof for smart technologies to minimise water consumption.
- C2. Cooling towers must be designed in accordance with best practice guidelines to reduce water consumption.
- C3. All development not subject to BASIX will need to incorporate the following water-saving measures:
 - a) Plumbing fixtures are to meet minimum Water Efficiency Labelling and Standards (WELS) Scheme Standards including 4 star rated showerheads, 4 star rated toilet cisterns, 5 star rated urinals and 6 star rated water tap outlets.
 - b) Appliances (dishwashers, clothes washers etc) are to be 5 stars (WELS Scheme) or better rated for water use efficiency.
- C4. All development not subject to BASIX must issue documentation from a suitably qualified consultant is to be submitted with development Applications demonstrating the measures that will be used to achieve the relevant water efficiency scheme rating. Evidence of a formal commitment agreement or registration with the relevant scheme administrator is required to be submitted prior to the issuing of a construction certificate.
- C5. Verification of energy target achievement requires the submission of a signed Commitment Agreement from the National Australian Built Environment Rating System (NABERS).
- C6. Targets for mixed-use developments must be tailored to the specific mix and proportion of land uses, determined on a site-specific basis and at the discretion of the Council.



5.4.5 Electric Buildings

Objectives

- O1. To minimise the reliance on the consumption of fossil fuels in new development.
- O2. To prevent indoor pollutants associated with combustion.

Controls

- C1. All new mixed-use development, residential development, commercial premises, tourist and visitor accommodation, health services facilities and educational establishments are to use only electricity for all energy requirements associated with normal operations.
- C2. The use of fossil fuels for any purpose is not to exceed 1% of the projected annual energy demand for the building. **

* Note: BASIX certification for residential developments at a DA stage must not rely on gas for heating or hot water to comply with Control C1.

** Note: This control excludes emergency services and emergency infrastructure such as pumps and generators utilised in the case of emergencies (flood, fire, etc). 1% of projected annual energy demand for fossil fuels allows for the use of diesel for standby generation.





5.4.6 Solar energy requirements

Objectives

- O1. Maximise the on-site collection of renewable energy.
- O2. Minimise the consumption of electricity generated from non-renewable resources.

Controls

- C1. Development must include the installation of a solar PV system of no less capacity than:
 - a) For sites with multiple electricity meters; rooftop photovoltaic (solar) panel system is connected to the common meter and the system is sized to offset 90-100% of estimated base building maximum demand.
 - b) For sites with a central electricity meter; the rooftop photovoltaic (solar) panels systems is sized to offset 30% of estimated maximum demand.
- C2. With any DA plans submitted, the roof plan must show the area(s) allocated to PVs and necessary access requirements for cleaning and routine maintenance. PV solar panels must be setback at least 2m from the edge of the build roof or parapet.





5.5 Flood development controls

The provisions in this section are in addition to the controls in Chapter 2.2 - Flood Risk Management of the CBDP 2023. The flood related development controls in this section are applicable to the Probable Maximum Flood (PMF) areas identified in Figure 57.

Any development in the PMF affected lots must address the requirements of this section and Chapter 2.2.

Objectives

- O1. To establish clear requirements for any shelter-in-place or evacuation provisions for future development in PMF affected areas of the Belmore and Lakemba Precinct.
- O2. To ensure that the future developments within or adjacent to floodways or Overland Flow Paths (OLFPs) have detailed hydraulic assessment and design.
- O3. To ensure that the development demonstrates maintenance of sufficient conveyance space for floodwaters.
- O4. To ensure the development will incorporate design responses such as OLFP redirection or site-specific flow management strategies.
- O5. To ensure flood risk is managed effectively particularly in areas subject to high hazard, flood emergency response limitations or development intensification.

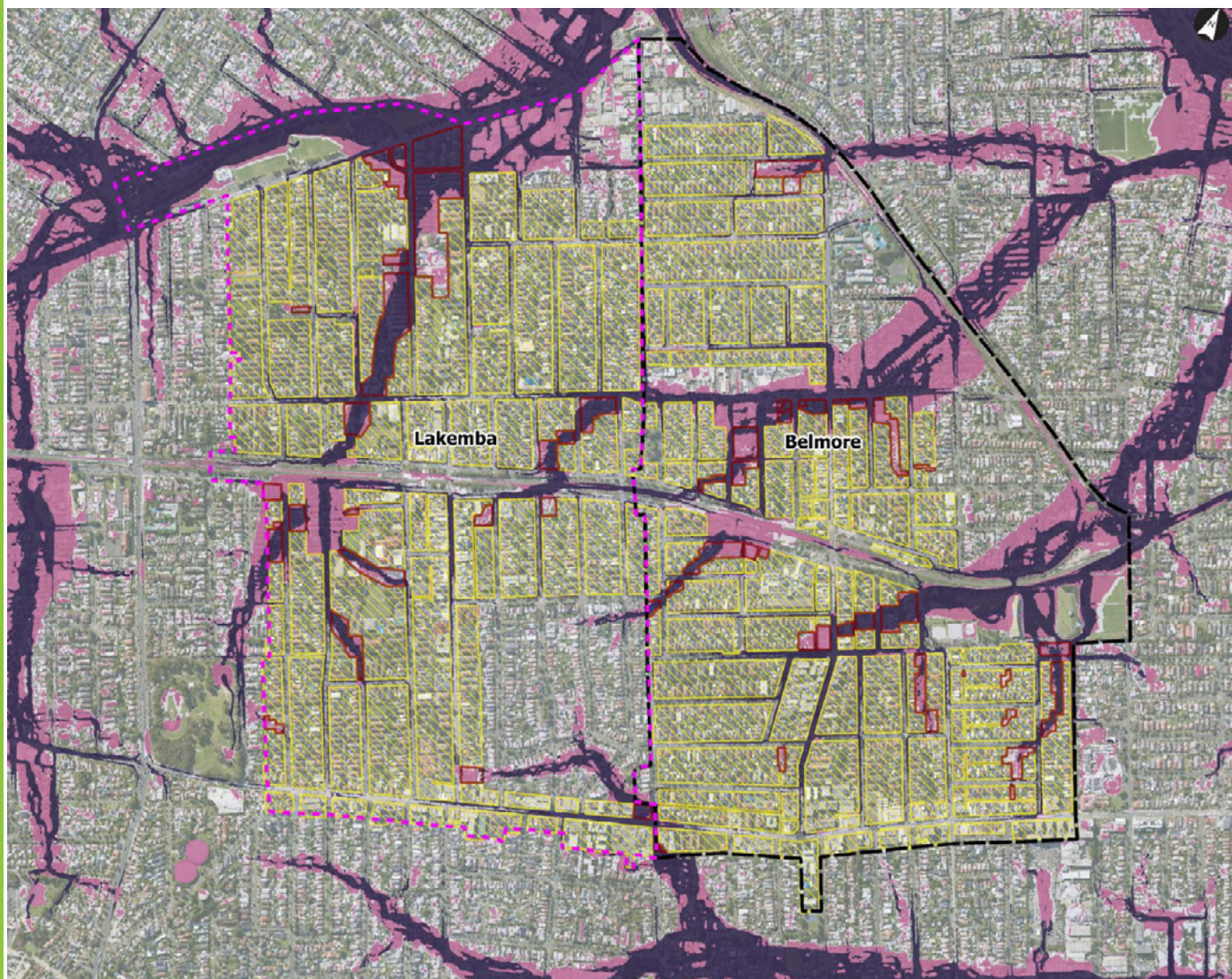


Figure 57. Flood controls application map.



Principles

- P1. Avoid obstruction of the waterway by proposed development.
- P2. Prevent adverse impacts on neighbouring properties or flood paths.

Controls

- C1. Development on the PMF affected lots must address the following key documents relating to managing flood risk:
 - a) [Floodplain Risk Management Manual \(NSW Government, 2023\)](#)
 - b) [Support for Emergency Management Planning - Flood Risk Management Guideline EM01 \(2023\)](#)
 - c) [Shelter-in-place Guidelines \(NSW Government, 2025\)](#).

Figure 58. Panoramic view of the Cooks River, Campsie
(Source: Nearmap)





5.5.1 Site specific flooding controls

Controls

- C1. The affected sites located at Spot 1 are significantly affected, (refer Figure 57) for the location where PMF flood durations exceed 6 hours and a H5 hazard is present. Ensure that these sites are only relied upon for shelter-in-place (SIP) if the design responses address following requirements:
 - a) Elevated refuge space above PMF.
 - b) Evidence that the structure is capable of withstanding expected PMF forces.
 - c) Alternate access via Hampden Road.
- C2. For any intensification, development must maintain or replace flood storage volume and preserve overland flow path function consistent with pre-development conditions.
- C3. For the developments marked in Spot 8 following requirements must be addressed:
 - a) No SIP and evacuation from McDonald Street.
 - b) Rear evacuation opportunities from Belleview Avenue or Croydon Street is subject to discussion with the Council.

5.5.2 Emergency Response Key Areas

Principles

- P1. The applicant seeking to redevelop the site (Spot1, Spot 5 & Spot 8) must hold a pre-lodgement meeting with Council to demonstrate how the future residents on the site can safely shelter-in-place.
- P2. Ensure proposed development at Spot 1 and Spot 5 demonstrates robust design measures and integration with emergency response planning that includes consultation with the NSW State Emergency Service prior to the lodgment of a Development Application with Council.

Note: Emergency Response Key Areas are locations where development may be significantly constrained due to:

- (a) Lack of viable evacuation routes.
- (b) Long-duration flooding of evacuation route (>12 hours).
- (c) High PMF hazard (H6 hazard affected sites).

5.5.3 Shelter-in-Place and Emergency Response Design

Principles

- P1. For PMF affected lots shown on Figure 57, evacuation may not be reliably achieved due to flash flooding. Development should include provisions for SIP.
- P2. Facilities for water, power, sanitation and emergency supplies should be provided where relevant to support safe isolation.
- P3. Council will not support the reliance on SIP for sites that are subject to long-duration of flash flooding, (greater than 12 hours).

Controls

- C1. A Flood Impact Risk Assessment prepared by a suitably qualified engineer in accordance with 'Flood risk management guideline LU01' must be submitted with the DA and must consider emergency response issues and options and provide management measures consistent with advice from emergency services.
- C2. To ensure SIP spaces in new developments are designed appropriately, the NSW Government Shelter-in-place Guideline (2025) sets out 10 design criteria as listed in Table 11. Any DA that proposes Shelter-in-place must demonstrate compliance with all criteria.



5.5.4 Basement flood risk management

Objectives

- O1. To ensure for the utilisation of design measures including elevated driveways, overland flow redirection, or waterproofing design for best practice flood management.
- O2. To ensure basements in new developments on PMF affected lots are designed to preserve the safety of the occupants during a PMF event.

Controls

- C3. Flood waters should be prevented from entering basements by using the Flood Planning Level (1% AEP + 500 mm) or the PMF level, whichever is greater to set the apex level.
- C4. Hydraulic analysis and/or water surface level checks for all proposed basement entries in flood-affected areas are required.

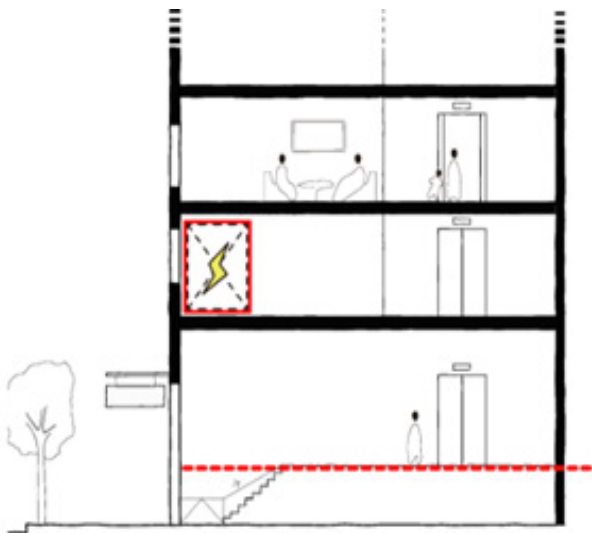


Figure 59. Essential services must be located above FPL.

5.5.5 Fill design considerations and compliance with council policy

Objectives

- O1. To prevent future developments from building on or OLFPs.

Principles

- P2. Ensure that the sites that fall within OLFP have post development flood modelling, based on high roughness assumptions to demonstrate that flood conveyance is retained.
- P3. Ensure the built form in areas within OLFP are designed to either maintain open flow corridors or incorporate suspended structures that allow floodwaters to pass beneath the development footprint.

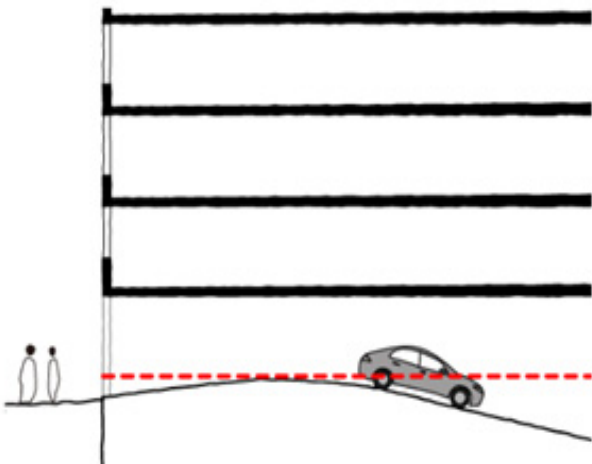


Figure 60. An apex above the flood level prevents water from entering a basement car park.

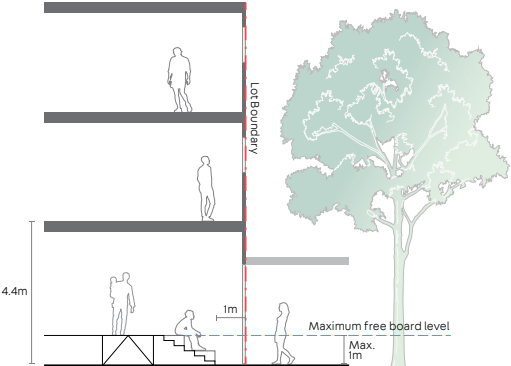
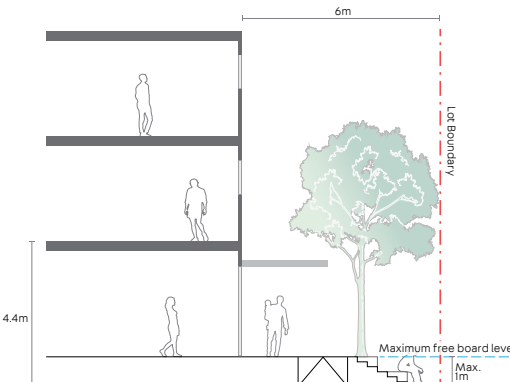
ID	SIP Guideline (2025) Design Criteria Requirement
1.	The floor level of the SIP should be part of the development be above the PMF.
2.	Structural soundness for conditions in a PMF event, considering flood and debris forces, be verified by a suitably qualified structural engineer.
3.	Area and access to the area does not rely on access to electricity and is self-directing. Have clearly marked internal access for all people on site,including consideration of access for potential occupants and/ or visitors.
4.	Protection from weather and appropriate heating and cooling.
5.	Access to personal hygiene facilities such as toilet.
6.	A minimum floor space of 2 m² per person.
7.	Items for self-sufficiency that are stored, maintained and are regularly updated in an accessible location above the PMF, including sufficient drinking water and food for occupants, fire extinguishers, radics and torches with spare batteries, and a first aid kit with an automated external defibrillator (AED).
8.	Centralised communal shelters may be considered but must be freely accessible internally at all times and externally accessible during events.
9.	Access is provided to on-site systems that generate power the shelter-in-place location during and after the event for a full range of flood events up to the PMF.
10.	Includes signage, communication or design elements to support sheltering.

Table 11. Shelter-in-place design criteria.

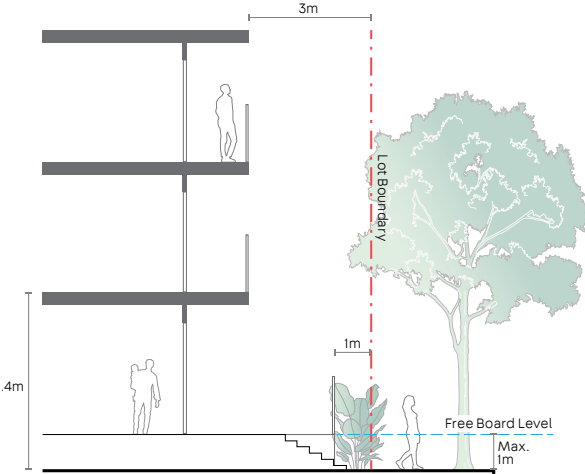
Figures Reference: [Good Design Guide for Flood Affected Areas.](#)



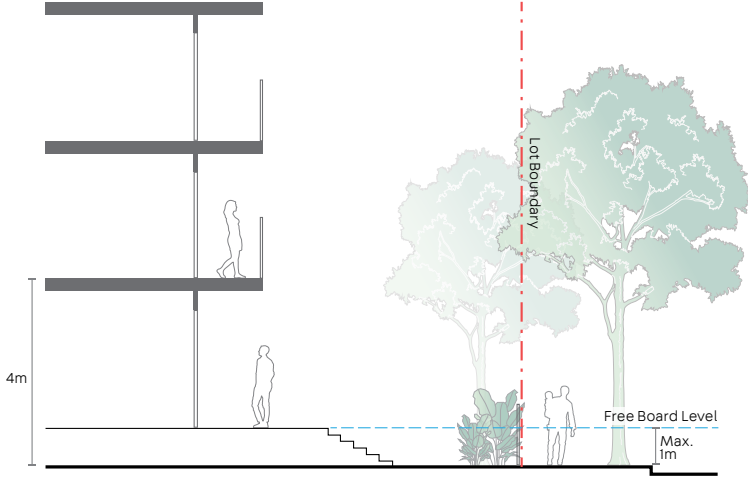
5.5.6 Overland Flow Paths

E1 Local Centre Zone			
Setback	Flood Condition	Objectives	Controls
Nil	ARI + Free board level is less or more than 1m	<p>O1. To provide internal elevation within commercial units to mitigate flood level.</p> <p>O2. To maintain active frontage along the street.</p> <p>O3. To maintain a consistent frontage across streets where the maximum freeboard level varies.</p> 	<p>C1. All internal floor levels are to be equal to or greater than the 20-year Average Recurrence Interval (ARI) flood level plus freeboard.</p> <p>C2. All stairs and ramp access is to be provided internally with a minimum 1m setback from the building line.</p> <p>C3. Where ARI + Freeboard level exceeds 1m, provide additional floor elevation through a series of terraces to allow for gradual transition.</p> <p>C4. Where ARI + Freeboard level is more than 1m, consider merging the ground floor with level 1 to retain a consistent building character along the public domain.</p>
6m	ARI + Free board level is less than 1m	<p>O1. To provide outdoor business/recreational area to create a seamless transition into the building envelope.</p> <p>O2. To maintain active frontage along the street/laneway.</p> <p>O3. To maintain a consistent frontage across streets where the maximum freeboard level varies.</p> 	<p>C1. Provide external terraces of a maximum 500mm each up to a maximum height of 1m from the public domain.</p> <p>C2. Provide a minimum 1m setback for the terrace from the public domain boundary.</p> <p>C3. The external terraces should be connected and accessible by stairs and ramp(s).</p> <p>C4. Provide activation along and on the raised terrace to accommodate various recreational and business needs.</p>



6m	ARI + Free board level is more than 1m	<ul style="list-style-type: none">O1. To provide outdoor business/recreational area to create a seamless transition into the building envelope.O2. To maintain active frontage along the street/laneway.O3. To maintain a consistent frontage across streets where the maximum freeboard level varies.	<ul style="list-style-type: none">C1. Where ARI + Freeboard level exceeds 1m, provide additional floor elevation within the building envelope through a series of terraces to allow for gradual transition.C2. Where ARI + Freeboard level is more than 1m, consider merging the ground floor with level 1 to retain a consistent building character along the public domain.
R4 High Density Zone			
3m	ARI + Free board level is less than 1m	<ul style="list-style-type: none">O1. To maintain consistent frontage.O2. To reduce the risk of extensive blank walls along the public domain.O3. To maximise usable space for residents. 	<ul style="list-style-type: none">C1. All floor levels within the building are to be equal to or greater than the 20-year Average Recurrence Interval (ARI) flood level plus freeboard.C2. Provide a minimum 1m setback from the lot boundary to the ground floor terrace.C3. Provide screen planting of a minimum 1.5m height to enhance the ground floor terrace on the public domain.C4. Provide a minimum 600mm setback from the lot boundary connecting the ground floor units to the public domain.C5. All fencing and gates along the ground floor should be installed at the top of the ground floor terrace.



6m	ARI + Free board level is less than 1m	<p>O1. To maintain consistent frontage.</p> <p>O2. To reduce the risk of extensive blank walls along the public domain.</p> <p>To maximise usable space for residents.</p> 	<p>C1. All floor levels within the building to be equal to or greater than the 20-year Average Recurrence Interval (ARI) flood level plus freeboard.</p> <p>C2. Maximise ground floor private open space on natural ground level.</p>
3m & 6m	ARI + Free board level is more than 1m	<p>O1. To maintain frontage consistency.</p> <p>O2. To reduce the risk of extensive blank walls along the public domain.</p> <p>O3. To minimise raised structure and breach to maximum height controls.</p> <p>O4. To minimise ramps and stairs.</p>	<p>C1. No habitable rooms should be provided on the ground floor where maximum ARI + freeboard level exceeds 1m.</p> <p>C2. Provide communal rooms and facilities on the ground floor addressing the public domain to maximise activation.</p>

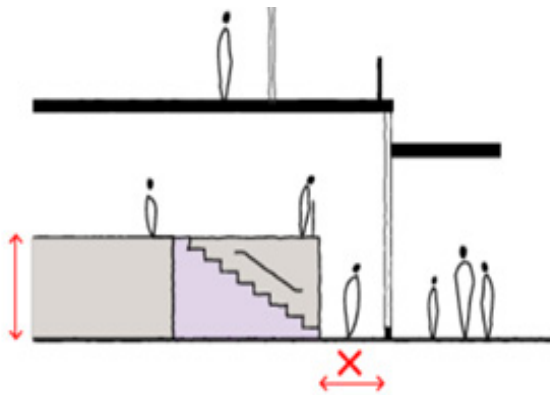


Figure 61. This transition zone creates single step transition that is out of human scale and ground floor front space that is too narrow for activation. The narrow front space below FPL is also a poor flood management outcome

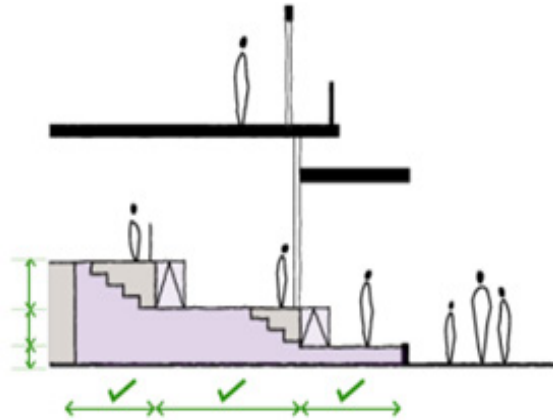


Figure 62. Transition zones can be spread across the floor to allow for gradual transition.

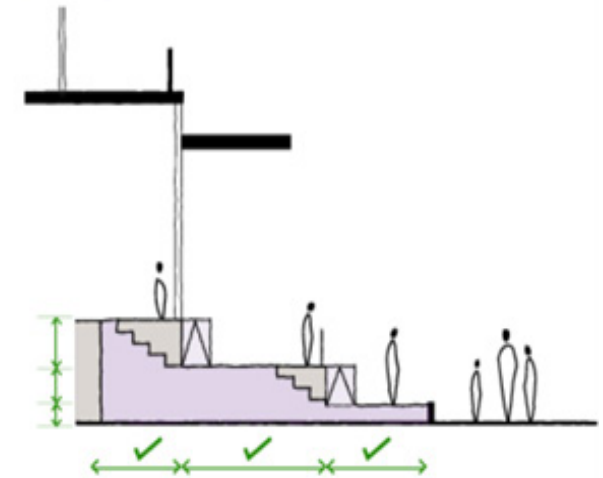


Figure 63. Transition zones can be either internal or external to the building.

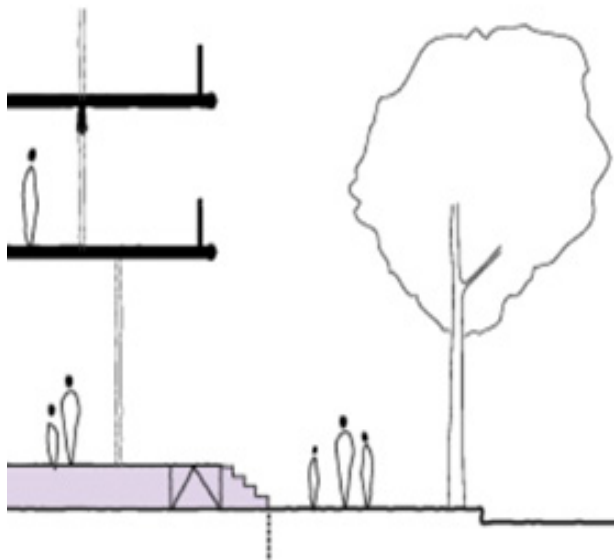


Figure 64. External transition section showing a step and ramp located outside of the building. This area can be designed to include other architectural elements.

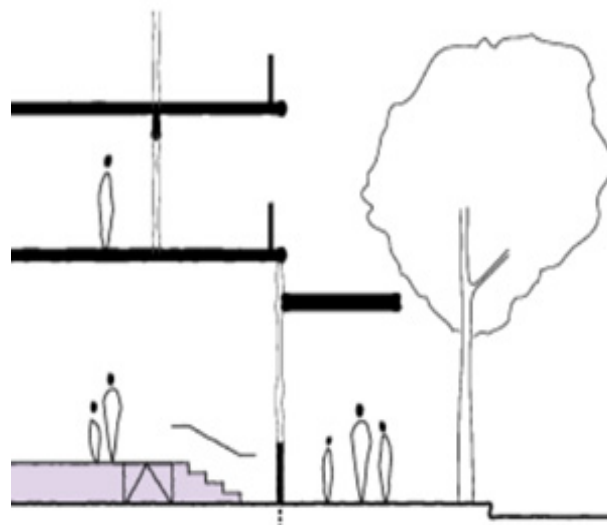


Figure 65. Small internal transition space.

Figures Reference: [Good Design Guide for Flood Affected Areas.](#)

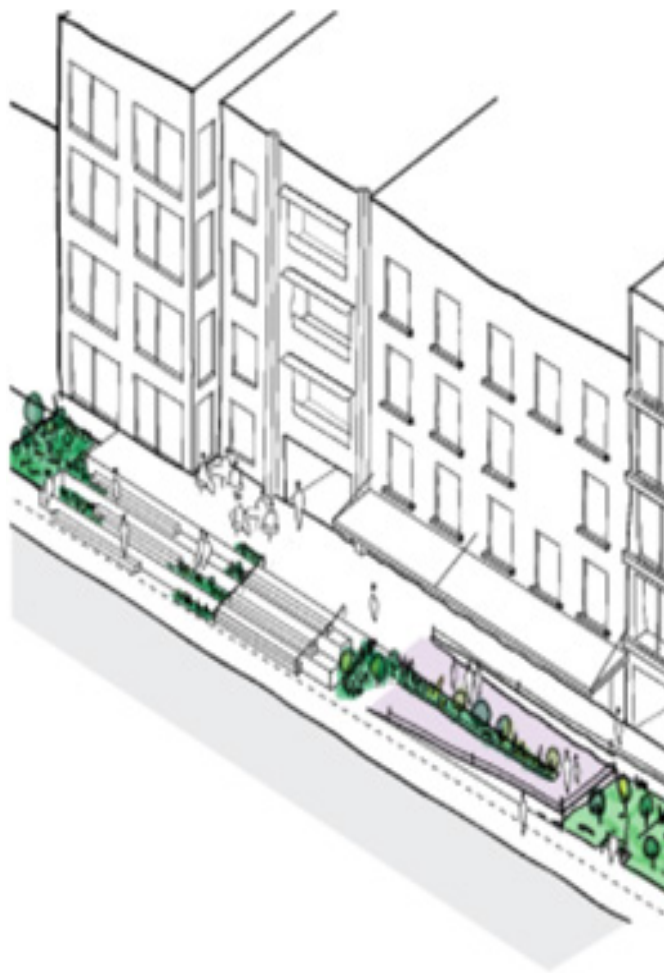


Figure 66. Elements such as terracing, seating and landscape bridge the visual gap between the elevated ground and street level and contribute to the activity and attractiveness of the streetcape

Figures Reference: [Good Design Guide for Flood Affected Areas.](#)



Figure 64. Active transitional spaces (Casba SJB, Surry Hills, Sydney).



5.5.7 Car Parking

Principles

- P1. Ensure entries to underground car parking are at, or above, the PMF level for that site.
- P2. Where basement car park entry levels cannot be raised to the required above-PMF level, Council may allow self-actuating flood gates to provide freeboard protection.
- P3. Restraints or vehicle barriers are to be provided to prevent floating vehicles leaving a site during a PMF flood event, other than for single dwelling houses, secondary dwelling, dual occupancies, semi-detached dwellings, and attached dwellings.
- P4. Self-actuating flood barriers are preferred over mechanical and manually operated systems. Any proposed use of flood barriers must be discussed with Council via a pre-lodgement meeting.
- P5. Flood barriers should be installed on the crest of a driveway at the property boundary. Installation on the footpath should be avoided.

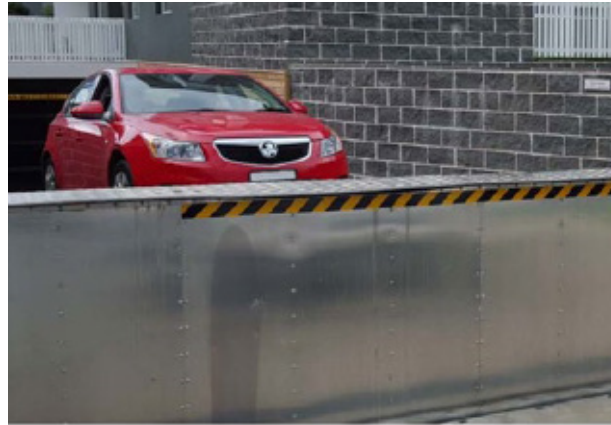


Figure 65. A self-actuating vertical rise flood barrier protects the entrance to a basement.



Figure 67. A self-actuating tilting flood barrier protects the entrance to a basement.

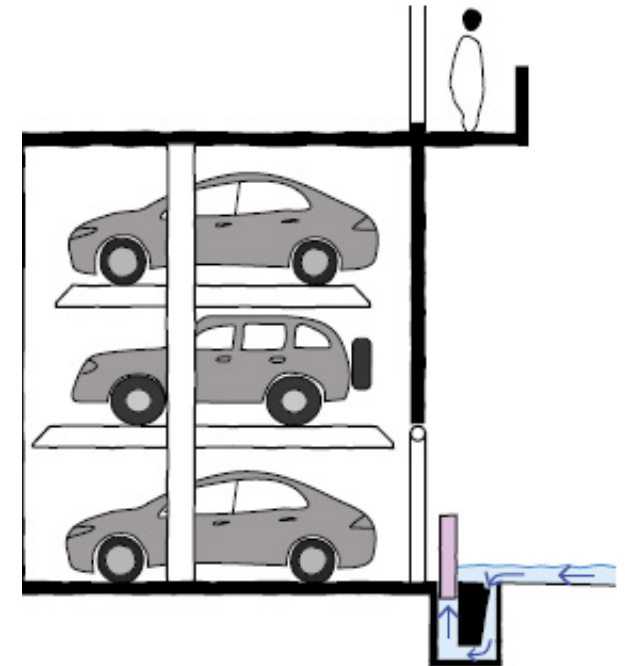


Figure 66. Self-actuating vertical-rise flood barriers detail



Figure 68. Self-actuating vertical-rise flood barriers South Melbourne lane.

Figures Reference: [Good Design Guide for Flood Affected Areas](#).



5.5.8 Management Plan

Controls

- C1. Where finished floor levels or basement car park entries are below the PMF level for the site, Council will require the applicant prepare a Flood Risk Management Plan and for this to be registered on the land title as a condition of development consent. The Flood Risk Management Plan must address the following requirements:
- a) Site-specific flood risks
 - b) General principles of operation of any flood barrier
 - c) An operational risk assessment
 - d) Flood barrier rise times
 - e) Maintenance and reporting schedule.
 - f) Identify the use of the flood barrier and the ongoing maintenance requirements for the life of the structure.
 - g) Implement a flood-risk management plan which has been approved by the Council and Sydney Water.
- C2. A maintenance plan for the flood barrier must be submitted to the Council. The maintenance plan must be treated the same as any other essential services with mandatory annual reporting and maintenance checks.

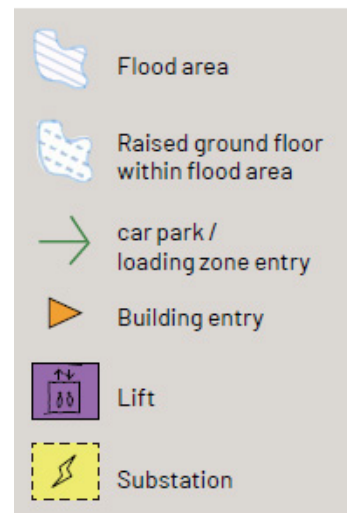
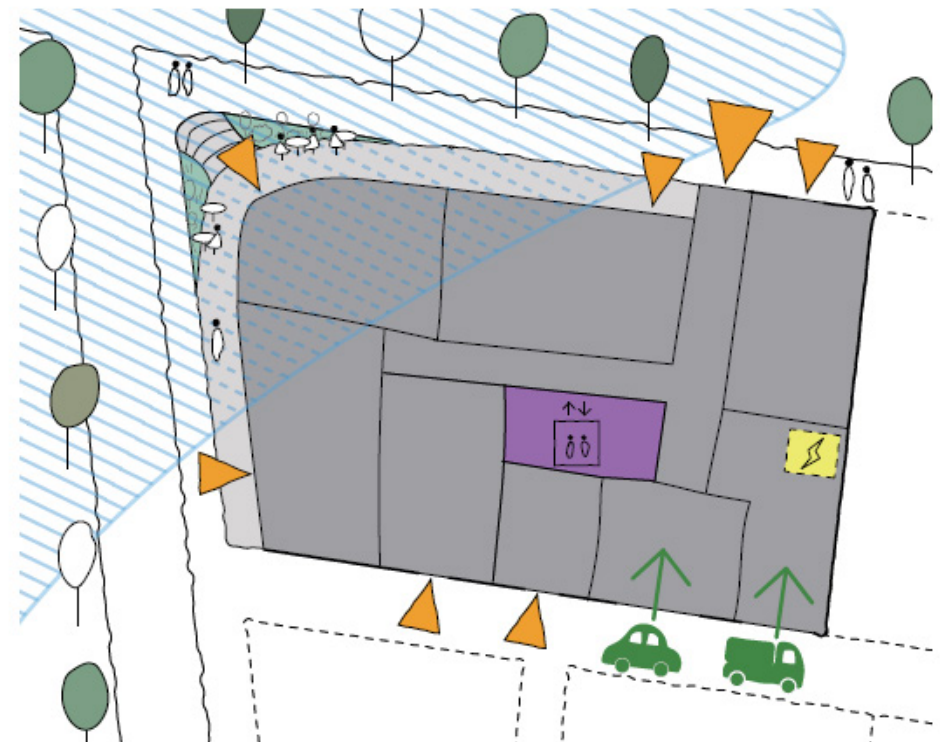


Figure 69. Building entrances are located above the flood line on natural ground and the elevated ground level via a colonnade with raised terrace. Access to car parking and loading zone is located outside of flood area at the rear of the property. The lift and substation are also located outside and above of flood area (Good Design Guide pp 27).



5.5.9 On Site Detention – Sydney Water Requirements

Controls

- C1. Any development that is connected to or will be connect to a Sydney Water Asset may require the installation of an OSD system may be required. Properties that must have a system include (but are not limited to):
- a) Commercial, industrial and special uses (for example, community, education, recreational) buildings or structures
 - b) Sealed sporting facilities (for example tennis, basketball courts).
 - c) Town houses, villas, home units or other strata subdivisions. These may use a single OSD system for the total site area if it's located on common property and the body corporate is responsible for maintenance
 - d) Dual occupancy lots. Sydney Water may require each dual occupancy lot to have its own OSD system. Each individual lot owner is responsible for maintenance

Figure 70. Elevated terrace houses in Zetland (Portman Street Terraces, smart design studios, NSW)

