

General Design Local Planning Policy

Draft April 2026

Version Control

Version #	Date	Action
1	Date of Adoption (00/00/00)	Adopted
2	Date of Amendment	Amended
3	Date of Amendment	Amended

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1. Citation

This is a local planning policy prepared under Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015*. This policy may be cited as the *General Design Local Planning Policy*.

2. Purpose and Application

2.1. Purpose

The purpose of this policy is to:

- (a) Detail the built form design requirements for non-residential development within the City of Perth.
- (b) Guide appropriate design outcomes for non-residential development within the City of Perth.

2.2. Application

This policy applies to all applications for development approval for non-residential development (including non-residential components in a mixed-use building) on land zoned on the Scheme Map.

This policy is structured to provide both objectives and provisions. Development must align with the objectives. The provisions provide a means of fulfilling the objectives. Variations to the provisions may be considered to enable design flexibility and in response to a site's context. Variations will only be considered where they are consistent with the relevant objectives, and the proposed development does not adversely impact the amenity of the area and does not detract from any cultural heritage significance.

2.3. Relationship to other planning documents

This policy should be read in conjunction with the City of Perth *Local Planning Scheme No. 3* (LPS3) and other relevant local planning policies including:

- Building Heights and Setbacks Local Planning Policy
- Heritage Local Planning Policy
- Heritage Area Local Planning Policies
- Character Area Local Planning Policies

Where this policy is inconsistent with LPS3, the provisions of LPS3 prevail to the extent of any inconsistency.

Where this policy is inconsistent with other relevant local planning policies, the provisions of this policy prevail to the extent of any inconsistency, except for the following policies which prevail:

- Heritage Local Planning Policy
- Heritage Area Local Planning Policies
- Character Area Local Planning Policies

3. Objectives

To ensure development:

- (a) enhances the existing or desired character of the built environment through sensitive, high quality building design.
- (b) makes a positive contribution to the public realm so that it is clearly defined, attractive, comfortable and safe.
- (c) delivers a high level of internal amenity for building occupants by providing for privacy, shading, thermal performance, access to natural light and ventilation.
- (d) enhances the city skyline and protects views to important landmarks.
- (e) incorporates high quality durable materials to enhance and maintain appearance.
- (f) protects and enhances the microclimate within streets and other public spaces having regard to the impact of buildings on wind, sunlight and heat radiation.
- (g) optimises the environmental sustainability and adaptability of development.
- (h) incorporates well designed landscaping where possible, to enhance biodiversity and appearance of the public and private realm.
- (i) delivers a well-designed and attractive outcome.

4. Provisions

Policy provisions may apply generally, or be specific to the Urban Setting, Landscaped Setting or Landscaped Frontage Setting as shown on the Built Form Setting Plan located within the Building Heights and Setbacks Local Planning Policy.

4.1 Built form

4.1.1. Building orientation

4.1.1.1. Objectives

- (a) To ensure buildings are oriented to address the street.
- (b) To encourage buildings to be oriented to optimise passive environmental design to help achieve comfortable internal amenity.

4.1.1.2. Provisions

- (a) Buildings shall be designed to address the street with the main entry facing the street and windows facing all streets.
- (b) Buildings on corner lots shall be designed to address both street frontages.
- (c) Rear tenancies may be designed to front onto laneways.
- (d) Buildings should be designed to maximise potential solar access in winter and minimise solar access in summer.
- (e) Buildings should be designed to allow access to prevailing winds in summer for ventilation and cooling purposes.

4.1.2. Articulation and detailing

4.1.2.1. Objectives

- (a) To ensure building articulation and detailing creates visual interest and contributes to the streetscape character.
- (b) To ensure buildings on corner sites accentuate the street corner.

4.1.2.2. Provisions

- (a) Building façades fronting streets shall include articulation and detailing that enhances the scale and character of the streetscape.
- (b) All elevations of a building shall be articulated. Large expanses of blank walls are not permitted.
- (c) Where podiums abut development of a lower height, the visible boundary walls must provide aesthetic treatments and finishes.
- (d) Corner buildings shall accentuate the street corner through greater articulation and detailing of the corner façades. Refer to Figure 1.
- (e) The lower built form shall include articulation and detailing that is of an appropriate scale when viewed from the street.
- (f) The upper built form shall include articulation and detailing that provides visual interest.

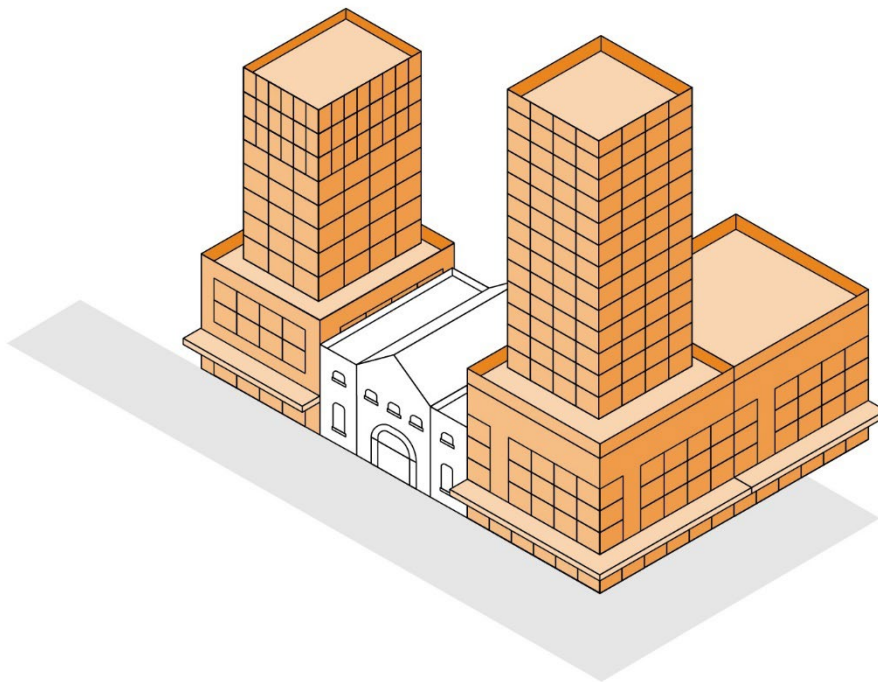


Figure 1. Articulation of buildings along the street and street corner

4.1.3. Roof design and use

4.1.3.1. Objectives

- (a) To ensure that roof design adds visual interest to the city skyline.
- (b) To encourage roofs of buildings to be accessible, functional and usable.

4.1.3.2. Provisions

- (a) Buildings shall incorporate well-designed rooftops that are integrated into the building and provide an attractive feature when viewed from the street, surrounding buildings and from afar.
- (b) Building services and utilities located on the roof are to be integrated into the design of the building so they are not visible from the public realm or surrounding buildings.
- (c) The roofs of buildings should, where possible, accommodate:
 - i. private or communal outdoor spaces and gardens;
 - ii. renewable energy and rainwater harvesting facilities; and

4.1.4. Materials and finishes

4.1.4.1. Objectives

- (a) To ensure that materials and finishes are high quality, fit for purpose, enhance the streetscape and contribute to the context and character of the area.

4.1.4.2. Provisions

- (a) Buildings shall be constructed of high-quality materials and finishes that are durable, low maintenance and long lasting.
- (b) Materials, finishes and colours shall provide visual interest.
- (c) External alterations and additions to existing buildings shall be composed of materials and finishes that complement the existing building.

4.2 Public realm interface

4.2.1 Relationship to the street

4.2.1.1. Objectives

- (a) To ensure building pedestrian entries are clearly visible and identifiable from the street.
- (b) To maintain visual connection between the building and the street.
- (c) To ensure development enhances the activity, safety and amenity of the street and public realm.

4.2.1.2. Provisions - General

- (a) Building pedestrian entries shall be visually prominent and highlighted through design features such as shallow recesses, minor projections, decorative features, awnings, contrasting colours, or materials.
- (b) Building pedestrian entries shall be wider than they are deep to allow for passive surveillance of the entrance space.
- (c) Window treatments that obscure views into the building at ground floor level are not permitted.
- (d) Security protection shall be incorporated within the building structure. Security grills shall be visually permeable and installed internally. Roller doors or solid security screens are not permitted.
- (e) The lower built form of a building shall provide passive surveillance of the street and public realm.

- (f) Buildings shall be designed to avoid potential entrapment areas such as recessed doorways, storage areas and other semi-enclosed spaces.

4.2.1.3. Provisions – Urban setting

- (a) The ground floor street façade of a building shall provide an active frontage.
- (b) A minimum of 75% of the ground floor street façade area of a building shall be provided as clear glazed windows. Reflective, tinted or obscured glass at street level is not permitted. Window sills and stall risers shall have a maximum height of 800mm above the adjoining footpath level. Refer to figure 2.

4.2.1.4. Provisions – Landscape and landscaped frontage setting

- (a) The ground floor street façade shall contain clear glazed windows. Reflective, tinted or obscured glass at street level is not permitted. Blank walls are not permitted.
- (b) Structures within the street setback area will generally not be supported.



Figure 2. Glazing requirements – Urban Setting

4.2.2 Pedestrian access and ground floor levels

4.2.2.1. Objectives

- (a) To ensure building pedestrian entries are easily accessible from the street.
- (b) To maintain an interactive relationship with the street by ensuring any level changes occur within the building and that equitable access is maintained for all building users.

4.2.2.2. Provisions

- (a) The main building entry shall be directly accessible from the adjoining footpath. Any change in ground floor level must occur inside the building.
- (b) The finished ground floor level of the building shall be no more than 1 metre above the adjoining footpath level.

- (c) Pedestrian access to the ground floor shall be from the street, and in the case of corner buildings, pedestrian access should be provided from all streets to encourage activation.
- (d) Pedestrian access to upper levels may be taken from the street or from a laneway or arcade.
- (e) Building design shall incorporate universal access to the main building entry and lobby and all publicly accessible areas of a building.
- (f) Building entries and lobbies shall have a minimum floor to floor height of 4.5 metres.
- (g) Ramps within the street setback area are not permitted, other than a ramp which runs directly from the street to the building entrance.

Note. Refer to NCC for more detail on universal access requirements.

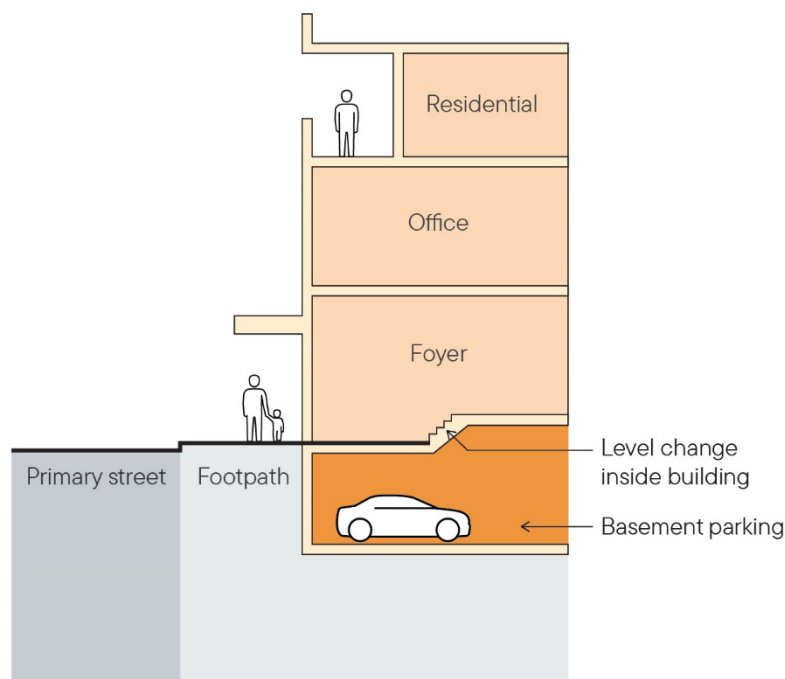


Figure 3. Ground floor levels

4.2.3 Pedestrian shelter – Urban setting

4.2.3.1. Objectives

- (a) To provide weather protection that creates a comfortable pedestrian environment.

4.2.3.2. Provisions

- (a) Buildings shall provide continuous pedestrian shelter over the adjoining footpath.
- (b) Pedestrian shelter shall:
 - i. be compatible with the scale, design and architectural features of the building to which it is attached;
 - ii. have a soffit height of between 2.75 metres (inclusive of any under awning sign) and 4.5 metres above the footpath level below;

- iii. project a minimum of 2.1 metres to a maximum of 3.5 metres over the adjoining footpath, subject to the width of the footpath, compliance with other pedestrian shelter provisions and street tree planting;
 - iv. provide a minimum horizontal clearance of 1 metre from the edge of the kerb;
 - v. be offset 1 metre from a crossover or right of way;
 - vi. align with the dimensions and materials of adjoining pedestrian shelter where practicable;
 - vii. have a fascia that does not exceed 700mm in height;
 - viii. collect and discharge rainwater within the subject site;
 - ix. be stepped on sloping sites;
 - x. avoid embayment parking, loading zones and ACROD parking bays.
- (c) Transparent/translucent awnings are not permitted as they do not achieve summer shading.
- (d) Fabric and retractable awnings are generally not supported.
- (e) Balconies in the road reserve are generally not supported, with the exception of the reinstatement of original balconies on heritage places.
- (f) Colonnades are generally not supported, except where permitted in accordance with the *Hay Street Road Reserve Widening Local Planning Policy*.

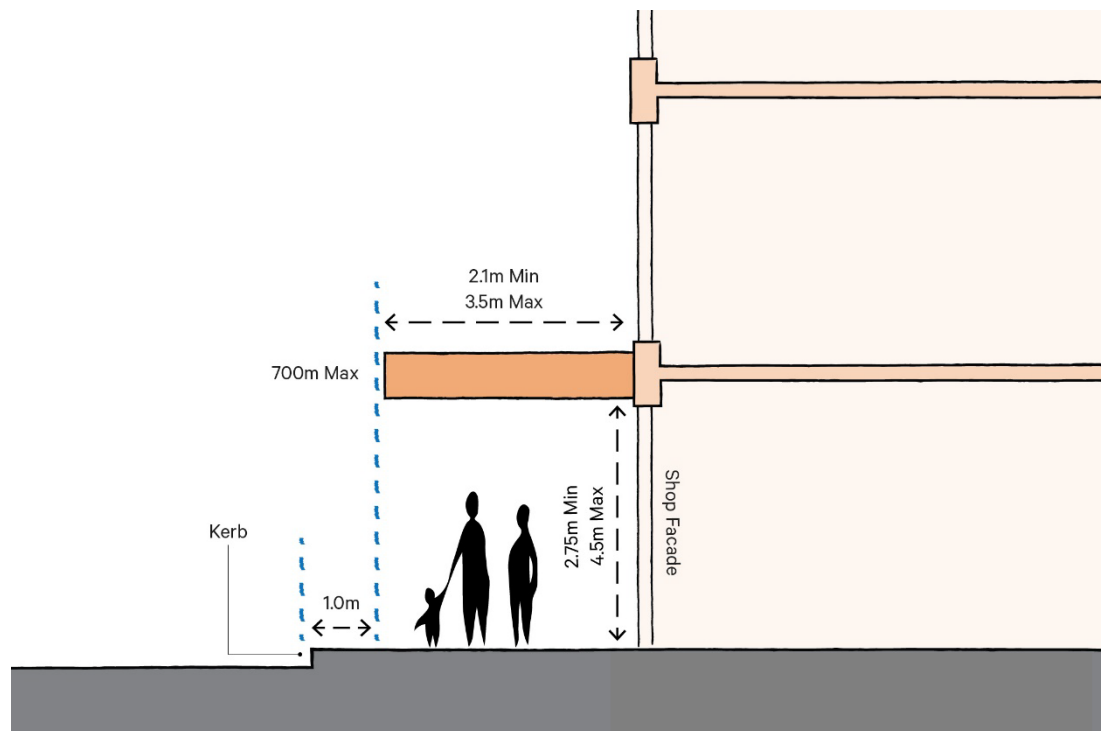


Figure 4. Pedestrian Shelter

4.2.4 Front fences and walls

4.2.4.1. Objectives

- (a) To maintain visual connection between the building and the street.
- (b) To ensure walls and fences contribute to an attractive streetscape.

4.2.4.2. Provisions – Urban setting

- (a) Fences and walls along the street boundary are not permitted.

4.2.4.3. Provisions – Landscape setting

- (a) Fencing and walls within the street setback area shall have a maximum height of 600mm above the adjoining footpath level.
- (b) Fencing and walls shall be constructed with colours and materials that complement the main building.

4.2.5 Lighting

4.2.5.1. Objectives

- (a) To provide external lighting that enhances the architectural character of the building, discourages crime and increases a sense of safety and security.
- (b) To ensure that external lighting does not adversely affect the amenity of nearby residents.

4.2.5.2. Provisions

- (a) Buildings should include external lighting of the street façade.
- (b) Lighting shall be provided to the underside of awnings and pedestrian entrances. All wiring and conduits must be concealed.
- (c) External lighting and fixtures shall be compatible with the architectural style and design of the building and contribute to the character of the building.
- (d) External lighting shall be designed to minimise light spill into the night sky and nearby residential land uses.
- (e) The roofline of tall buildings should be lit to contribute to the city skyline.

4.3 Pedestrian links and public spaces

4.3.1. Pedestrian links

4.3.1.1. Objectives

- (a) To ensure that the creation of new pedestrian links improves the walkability of the city whilst integrating into and maintaining the primary pedestrian network.
- (b) To ensure that pedestrian links are of a high design quality, are universally accessible, safe and comfortable to use.

4.3.1.2. Provisions

- (a) New pedestrian links shall not undermine use and performance of the existing pedestrian network of streets, laneways, malls and arcades.
- (b) Where a pedestrian link is proposed as part of a development, it shall:
 - i. be provided at ground level at the entrance and exit points;
 - ii. be universally accessible, variations in levels are to be avoided wherever possible;
 - iii. have a minimum unobstructed width of 3 metres and a minimum height of 4 metres;

- iv. be separated or screened from adverse amenity impacts such as bins, vents, condenser units, noise sources and vehicle circulation areas; and
 - v. be designed to ensure the safety and security of users through the implementation of Crime Prevention through Environmental Design (CPTED) principles, with particular regard to lighting, layout of the space, avoidance of entrapment areas, passive surveillance and provide a direct line of sight from one end to the other.
- (c) A new pedestrian link should incorporate a variety of land uses along its edges with a range of operating hours to provide opportunities for passive surveillance during the day, night, and weekends.

4.3.2. Public spaces

4.3.2.1. Objectives

- (a) To ensure new public spaces provide opportunities for passive recreation and accommodate trees and landscaping.
- (b) To ensure that new public spaces are located where they are strategically needed.
- (c) To ensure that public spaces are of a high design quality, are universally accessible, safe and comfortable to use.

4.3.2.2. Provisions

- (a) Where a public space is provided as part of development, it shall:
 - i. be provided at street level and be open to the sky;
 - ii. be universally accessible, variations in levels are to be avoided wherever possible;
 - iii. be orientated and located in an appropriate position to optimise the microclimate;
 - iv. be connected to the street and of sufficient size to be legible as a public space;
 - v. be separated from adverse amenity impacts such as bins, vents, condenser units, noise sources and vehicle circulation area;
 - vi. be designed to ensure the safety and security of users, with regard to lighting, layout of the space, form and location of planting, avoidance of entrapment areas and include opportunities for passive surveillance;
 - vii. provide appropriate, sustainable landscaping for the scale and orientation of the public space;
 - viii. be able to be serviced and maintained; and
 - ix. include adequate and useable seating that is appropriate for the function and use of the space.
- (b) The public space should be well defined with buildings along its edges which incorporate a variety of land uses with a range of operating hours to provide opportunities for passive surveillance to the space during the day, night, and weekends.
- (c) The public space should maximise the retention of existing trees worthy of retention.

4.4 Public view corridors, landmarks and Heritage Places

4.4.1. Public Spaces and Landmarks

4.4.1.1. Objectives

- (a) To ensure development respects views to key public spaces and landmarks as they provide legibility and contribute to the city's image.

4.4.1.2. Provisions

- (a) Development should maintain view corridors to key public spaces and landmarks. Variations to development provisions will not be supported where views to key public spaces and landmarks are negatively impacted. These include, but are not limited to, those listed below.

- Swan River and foreshore
- Mount Eliza and Kings Park
- Parliament Hill, Parliament House and Barracks Arch
- Dumas House
- Forrest Place and Perth Railway Station
- GPO Building and Commonwealth Bank
- Yagan Square
- WA Museum Boola Bardip
- Swan River Bell Tower
- Elizabeth Quay
- Supreme Court Building and Supreme Court Gardens
- Council House
- Government House
- Perth Town Hall
- State Buildings
- St George's Cathedral
- Perth Concert Hall
- St Mary's Cathedral
- East Perth Cemetery Hill

- (b) Development should be sited to preserve and enhance views from within the public realm to key public spaces and landmarks.

4.4.2. Heritage Places

4.4.2.1. Objectives

- (c) To ensure development maintains views to Heritage Places as they contribute to the character of the city.
- (d) To ensure development respects the setting of adjacent Heritage Places.

4.4.2.2. Provisions

- (a) Development adjacent to Heritage Places should:
 - i. be setback to reduce visual impact on the Heritage Place;
 - ii. not overwhelm or dominate the Heritage Place; and
 - iii. preserve views of significant elevations and features of the Heritage Place.

4.5. Microclimate

4.5.1 Wind conditions

4.5.1.1. Objectives

- (a) To ensure development is designed to maintain or improve wind conditions in pedestrian accessible areas to ensure they are suitable for their intended use.
- (b) To ensure development maintains comfortable wind conditions.

4.5.1.2. Provisions

- (a) Development must not create unsafe or uncomfortable wind conditions, over and above existing conditions, in existing or proposed outdoor sitting, standing or walking areas within the locality and shall incorporate design features and wind mitigation strategies to ameliorate existing adverse wind condition. Refer to Figure 6 and 7.
- (b) Public spaces and any other outdoor sitting areas designed for people to occupy within a development, including areas above ground level, must be designed for comfortable and safe wind conditions that are appropriate to their intended use.
- (c) To determine compliance with (a) and (b):
 - i. A Wind Impact Assessment must be submitted with an application for development approval where the local government considers it may have an adverse impact on wind conditions or be adversely impacted by wind conditions. These developments include, but are not limited to:
 - a. new outdoor public space or other sitting area designed for people to occupy with an area $\geq 50\text{m}^2$.
 - b. new buildings that are $>23\text{m}$ and $<73\text{m}$ in height and where existing development on or within 50 metres of the site is less than half its height.Refer to Figure 8.
 - ii. A Wind Tunnel Study must be submitted with an application for development approval for all new buildings that are $\geq 73\text{m}$ in height, if recommended by a Wind Impact Assessment, or required by the local government.
 - iii. The assessment area shall extend from the boundaries of the site to a distance equal to half the longest width of the building or half the height of the building, whichever is greater. Refer to Figure 8.
- (d) A Wind Impact Assessment or Wind Tunnel Study shall be prepared by a suitability qualified person.

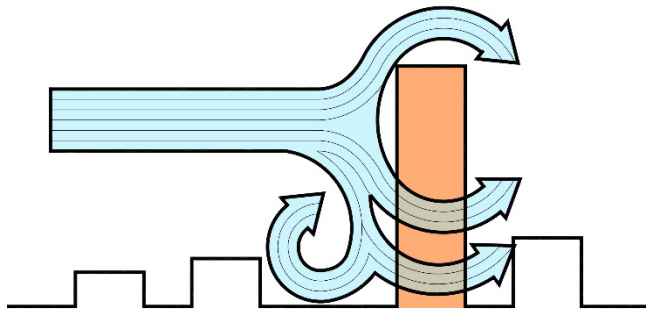


Figure 6. Development likely to create uncomfortable wind conditions (height and exposure)

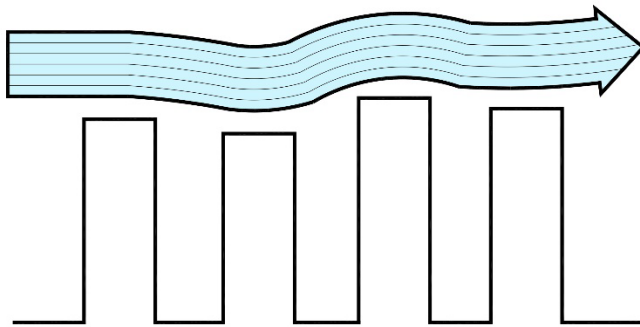


Figure 7. Development unlikely to create uncomfortable wind conditions (grouping, context)

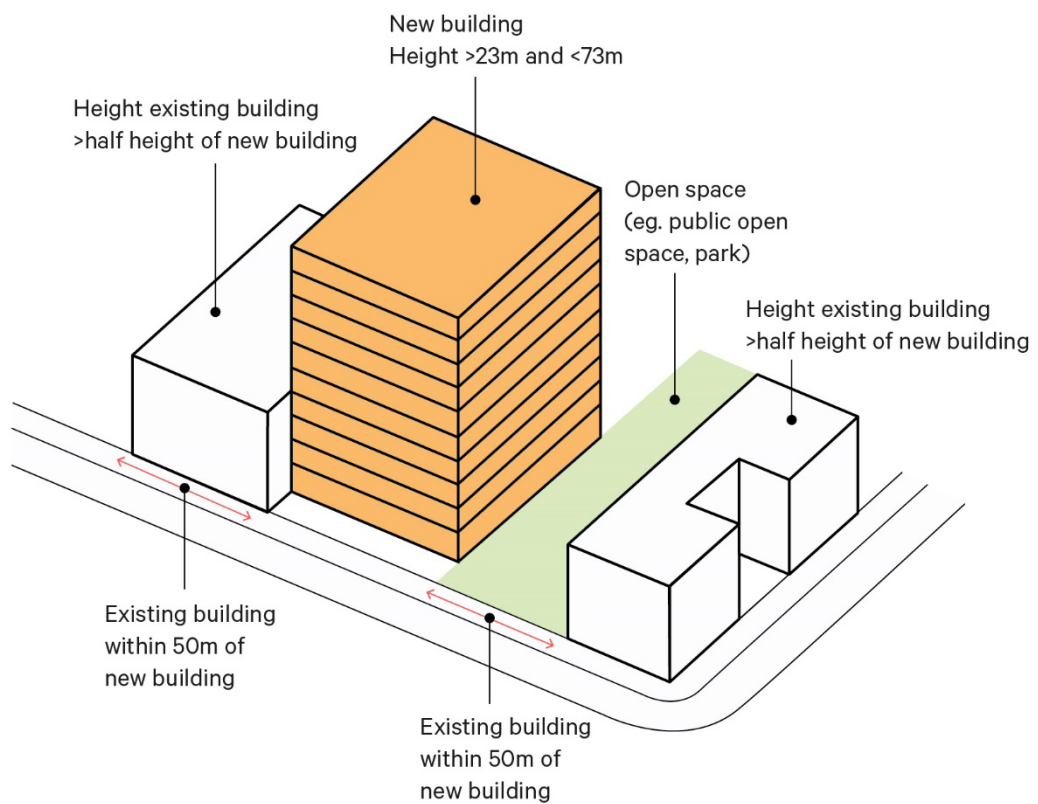


Figure 8. Development that requires a Wind Impact Assessment

4.5.2. Reflectivity

4.5.2.1. Objectives

- (a) To minimise the reflection of sunlight from buildings to surrounding areas and buildings.
- (b) To ensure that building design and materials do not create undesirable glare to pedestrians, motorists or occupants of surrounding buildings.

4.5.2.2. Provisions

- (a) Building design and materials that are likely to generate unacceptable glare or heat to adjacent development, public spaces and/or transport routes are not permitted. When determining whether the glare will be unacceptable consideration will be given to the:
 - time of day and year when the reflection will occur;
 - frequency and duration of the reflection;
 - area and nature of the building or space that will be affected by the reflection; and
 - weathering qualities of the reflective material.
- (b) A Reflectivity Assessment that analyses potential solar glare must be submitted as part of an application for development approval where the development is proposed to incorporate:
 - areas of highly reflective materials likely to be problematic in the opinion of the local government; and/or
 - varied geometry in building elevations and roofs, particularly concave surfaces.
- (c) Light reflectivity from external building materials must not exceed 20%.

4.6 Vehicular access and car parking

4.6.1 Location and Design of car parking

4.6.1.1. Objectives

- (a) To ensure car parking is integrated into the design of the building.
- (b) To ensure car parking is not visible from the public realm.
- (c) To ensure car parking areas are designed to allow for future adaptation.

4.6.1.2. Provisions

- (a) Car parking areas shall be located in a basement or incorporated within the building. Car parking areas located at, or above natural ground level shall be sleeved along the street with building entry lobbies, habitable floorspace or other active land uses.
- (b) Car parking bays should be designed to accord with Australian Standard 2890.1 - Parking Facilities Part 1: Off-Street Car Parking.
- (c) At grade, open air car parking is only permitted to the rear of a development site where it is consistent with the existing character of the area, is not visible from the public realm and where no other alternative is available.
- (d) Where permitted, at grade open air car parking must be landscaped with suitable shade trees at a rate of one tree per four car bays.
- (e) Lighting to car parking areas is to be provided for safe pedestrian and vehicle movement. Light spill is to be contained within the car parking area.

- (f) Car parking areas shall be designed to allow for safe pedestrian movement through the facility.
- (g) Car parking areas should provide sufficient manoeuvring space to allow vehicles to enter and exit the site in forward gear.
- (h) Above ground car parking areas shall have a minimum floor to floor height of 3.1 metres and horizontal floors except for the ramps required for vehicular access from one floor to another.
- (i) Car parking areas should be designed to allow for adaptation of the space for future needs such as electric vehicle charging and battery storage systems.

4.6.2 Vehicular access

4.6.2.1. Objectives

- (a) To minimise disruption to the pedestrian movement and amenity along the street.
- (b) To ensure vehicular access is not a visually dominant component of the streetscape.

4.6.2.2. Provisions

- (a) Vehicular access shall be taken from a laneway or secondary street where possible. Vehicular access from the primary street will only be supported where there are no alternative options.
- (b) Vehicular access must be designed and located to provide safe access and egress for vehicles and to avoid conflict with pedestrians and cyclists.
- (c) Vehicular access should be located to minimise the impact on on-street amenities such as street trees, street furniture and on-street parking.
- (d) Crossovers and car park entrances shall have a maximum width of 6 metres. Separate entrances and exits should be provided where possible. Single lane circulation should be considered where the car park has less than 25 parking bays.
- (e) Boom gates are to be located inside the vehicular access entrance to allow vehicles to queue within the parking area and to ensure cars do not block the footpath.
- (f) Roller shutters and doors shall be visually permeable and have a maximum 0.5 metre setback to avoid creating entrapment areas.
- (g) Car park entrances visible from the public realm shall be finished and detailed to a standard consistent with the primary façade.

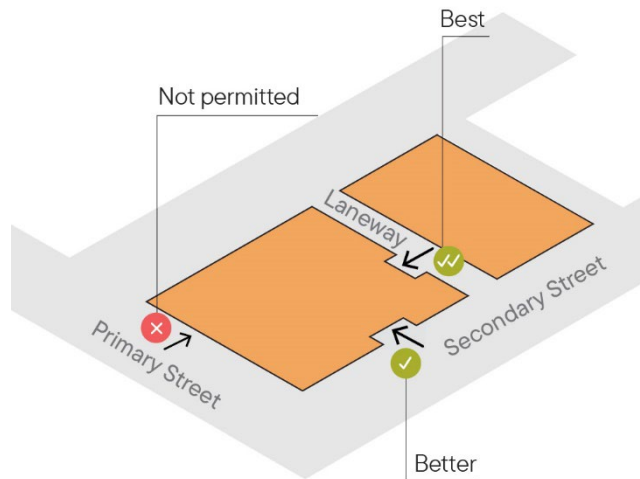


Figure 9. Vehicular Access

4.6.3 Loading/ Service Bays

4.6.3.1. Objectives

- (a) To ensure that adequate facilities for the loading/unloading of goods to and from vehicles are provided.
- (b) To ensure that loading/unloading facilities do not have an adverse impact on the amenity of adjacent areas or the public realm.

4.6.3.2. Provisions

- (a) A minimum of one clearly marked on-site loading/service bay shall be provided per site.
- (b) The design and location of loading/service bays shall be integrated into the overall design and development of a site. Loading/service bays should be located away from streets and public spaces, preferably within a basement, and in close proximity to the building access.
- (c) Vehicular access to loading/service bays shall be taken from a laneway or secondary street where possible.
- (d) Appropriate signage indicating the location of and access to loading/service bays shall be provided.
- (e) For existing buildings, the local government may consider varying or waiving the requirement for an on-site loading/service bay due to physical site constraints, or in the case of heritage places, the loading/service bay would result in an adverse impact on the cultural heritage significance of the place.

4.7 Bicycle parking and End of Trip Facilities

4.7.1 Bicycle Parking

4.7.1.1. Objectives

- (a) To ensure adequate provision of bicycle parking to support active transport modes.
- (b) To ensure bicycle parking is located and designed to be convenient and safe for users.

- (c) To ensure the provision, location and design of bicycle parking considers the ability to retrofit existing buildings and heritage places.

4.7.1.2. Provisions

- (a) Bicycle parking shall be provided on-site for:
- New non-residential development, including the non-residential component of mixed-use buildings.
 - The floor area of an addition to an existing building where the additions increase the floor area of the building by more than 1,000m².
 - All development that is providing car parking in accordance with a development approval.

All other development is encouraged to provide bicycle parking where practical given the nature of the land use and the servicing and physical constraints of the site.

- (b) Bicycle parking shall be provided on site in accordance with Table 1.

Table 1. Bicycle Parking Rates

Land use type	Minimum Bicycle Parking Requirement	
	Long term bicycle parking	Short term bicycle parking
Non-residential	1 per 200m ² floor area	1 per 750m ² floor area
Tourist and visitor accommodation and hotel	1 per 5 units	Minimum of 2
Student accommodation	1 per 3 beds	Minimum of 5
Major outdoor venue	In accordance with a Transport Management Plan	
Note: Where the bicycle parking results in a fraction of a space, the requirement is to be rounded up to the nearest whole number.		

- (c) Bicycle parking facilities shall be:
- Designed in accordance with AS 2890.3 – Parking Facilities Bicycle Parking.
 - Located in a convenient and secure position close to the main entrance points to the building and easily accessible from the public access point (road, bicycle path, footpath).
 - Directly accessible from the ground floor level and not require steps to access. Where these facilities are provided above or below the ground floor, safe, easy, and legible access must be provided. Where these facilities are visible from the street, they must be attractive and complimentary to the building and streetscape.
 - Provided with adequate lighting, appropriate signage to easily identify and locate the facility and be protected from the weather.
 - Sited to minimise conflict between vehicles, bicycles, and pedestrians.
 - Designed to allow adequate manoeuvring space for safe and convenient access to and egress of the bicycle.
 - Designed to provide charging facilities, or future adaptation for charging facilities.

- (d) For existing buildings, the local government may consider varying or waiving the requirement for bicycle parking due to physical site constraints, or in the case of heritage places, the parking would result in an adverse impact on the cultural heritage significance of the place.

4.7.2 End of Trip Facilities

4.7.2.1. Objectives

- (a) To ensure adequate provision of end of trip facilities that are located and designed to be convenient and safe for users.
- (b) To ensure the provision, location and design of end of trip facilities considers the ability to retrofit existing buildings and heritage places.

4.7.2.2. Provisions

- (a) End of trip facilities shall be provided in accordance with Table 1.

Table 1. End of Trip Facilities

Land use type	Minimum Provision for End of Trip Facilities
Non-residential (except Student accommodation)	<u>Lockers</u> 1 per long stay bicycle space. <u>Showers and change rooms</u> Up to 5 long stay bicycle spaces: 1 shower and change room facility Greater than 5 long stay bicycle space: 2 shower and change room facilities for the first 10 spaces, plus an additional 2 showers for every 10 spaces thereafter.
Student accommodation	No minimum requirement.

- (b) End of trip facilities shall:
- Be located close to the bicycle parking area, or a continuous, internal, clearly marked access path shall be provided to connect the end of trip facilities.
 - Be located as close as practical to a cyclist's destination inside the building, lobby or elevator area.
 - Provide an area with suitable volume and dimensions to allow the storage of clothing, towels, cycling helmets and footwear; well ventilated, secure and lockable; and located close to shower and change room facilities.
- (c) For existing buildings, the local government may consider varying or waiving the requirement for end of trip facilities due to physical site constraints, or in the case of heritage places, the facilities would result in an adverse impact on the cultural heritage significance of the place.

4.8 Landscaping

4.8.1 Landscaping requirements

4.8.1.1. Objectives

- (a) To provide high quality landscaping that contributes to an attractive streetscape, improves site amenity, enhances urban greening, provides natural shade and promotes on-site infiltration.
- (b) To ensure landscaped areas have sufficient area and volume to sustain healthy plant and tree growth.
- (c) To maximise opportunities for the retention and enhancement of biodiversity.

4.8.1.2. Provisions

- (a) Roof gardens and on structure landscaping is encouraged to assist in reducing heat generation and the heat loading of buildings.
- (b) Landscaped areas shall be designed to retain stormwater on-site in accordance with water sensitive urban design principles (as outlined in *State Planning Policy 2.9 – Water Resources*).
- (c) Landscaped areas should include waterwise garden design including reticulation design and plant selection preferencing appropriate indigenous species.
- (d) Landscaped areas shall maximise biodiversity through the retention and enhancement of indigenous vegetation.
- (e) Landscaping in the street setback area shall be designed to:
 - i. maintain a visual connection between buildings and the street;
 - ii. provide a safe entrance, avoiding potential entrapment areas;
 - iii. improve the built form interface at the street frontage.
- (f) The soft landscaping area shall have a minimum soil depth of 1 metre and a minimum width of 1 metre or commensurate with the type of planting.

4.8.1.3. Provisions – Urban setting

- (a) Where development is not built to the front lot boundary, the setback area shall include soft landscaping where appropriate for the proposed use.

4.8.1.4. Provisions – Landscape setting

- (a) A minimum of 25% of the total site area shall comprise soft landscaping, including a minimum of 75% soft landscaping provided within the required street setback area.

4.8.1.5. Provisions – Landscape frontage setting

- (a) A minimum of 75% of the required front setback area shall comprise soft landscaping.

4.8.2 Tree retention and provision

4.8.2.1. Objectives

- (a) To ensure site planning encourages the retention of existing healthy trees and the provision of new trees as part of the landscaping on site.

4.8.2.2. Provisions – Urban setting

- (a) Where development is not built to the front lot boundary, existing trees in the street setback area shall be retained.

4.8.2.3. Provisions – Landscape setting and Landscape frontage setting

- (a) Existing trees in the street setback area shall be retained where they are healthy with ongoing viability and not on an applicable weed register.
- (b) Trees and deep soil areas shall be provided in accordance with Table 3.3a of clause 3.3 of the R-Codes Volume 2.

4.9 Building services and utilities

4.9.1 Building services

4.9.1.1. Objectives

- (a) To minimise the impact of building services and utilities on the front façade of a building.
- (b) To ensure building services and utilities are integrated into the design of the development and do not detract from the amenity and appearance of the building.

4.9.1.2. Provisions

- (a) Building services and utilities (including, but not limited to, rooftop plant or equipment, air conditioning units, high pressure gas, fire booster cabinets, cabling and conduits) shall be integrated into the design of the development or completely screened so they are not visible from the public realm or surrounding buildings.
- (b) Building services and utilities shall not be located on the front façade of a building. Where there is no other option for the location of a building service or utility other than on the front façade, it shall be fully integrated into the design of the building including materials and must not be visually intrusive or impact the amenity of the streetscape.
- (c) Air conditioning units shall be integrated into the design of the building and screened from all views.
- (d) Air conditioning units shall not discharge air underneath the pedestrian shelter, to the street at ground level or across balconies or terraces.

4.9.2 Waste management

4.9.2.1. Objectives

- (a) To ensure waste storage (including recycling) and collection areas are located conveniently for the building occupants and waste collection services and minimise negative impacts on the streetscape and public realm.

4.9.2.2. Provisions

- (a) Waste storage and collection shall comply with the *City of Perth Waste Guidelines for all Developments* including minimisation of construction and demolition waste.
- (b) A Waste Management Plan prepared in accordance with the *Waste Guidelines for all Developments* shall be submitted with all applications for development approval as required by the local government.

- (c) On-site waste storage and collection is required for all new development.
- (d) Waste storage areas shall be integrated into the design of the building and must not be externally visible.
- (e) Waste storage areas shall be located in close proximity to the vehicle entrance and conveniently located for building occupants and waste collection services.

4.9.3. Telecommunication facilities

4.9.3.1. Objectives

- (a) Telecommunication facilities are to be located so they are not visually intrusive.

4.9.3.2. Provisions

- (a) Telecommunications infrastructure must be integrated into the roof of the building without detracting from the appearance of the building. This includes the infrastructure and any associated conduits, ducting or the like.
- (b) Satellite dishes and other telecommunication facilities should not be visually intrusive. This may include the concealment of the facility as part of the design of the building, a restriction in the number of facilities, or locating the facility where it will not be visible from the public realm.

4.10 Resource efficiency

4.10.1. Energy

4.10.1.1. Objectives

- (a) To encourage development to reduce energy consumption and minimise carbon emissions.

4.10.1.2. Provisions

- (a) Minimise energy consumption, by reducing reliance on artificial lighting and mechanical ventilation in accordance with clause 4.1.1.2(c) and (d).
- (b) Photovoltaic (PV) and battery storage systems are encouraged.

4.10.2. Water

4.10.2.1. Objectives

- (a) To encourage development that maximises water conservation and water efficiency.
- (b) To encourage on site water capture and storage for re-use.

4.10.2.2. Provisions

- (a) Water capture for on-site re-use is encouraged to support water conservation and for use in landscaping.
- (b) Stormwater runoff is managed on site, including increasing site permeability, wherever practicable.

4.10.3. Adaptable design

4.10.3.1. Objectives

- (a) To encourage the design of buildings that allows for future adaptation for different uses.

4.10.3.2. Provisions

- (a) Large podiums are to include lightwells or similar to allow daylight access and ventilation into each floor appropriate to the intended use or be designed to enable the creation of lightwells in the future for different land uses without structural alteration other than partial slab or roof removal.

5. Definitions

Articulation: is the arrangement of the distinct visual parts of a building in a coherent manner. This may refer to the geometric arrangement of spatial forms, the patterning of joints or structural elements or even the patterns on a surface, such as brickwork or aluminium panels.

Active frontage: means the frontage of a building or tenancy at ground level which enables visible activity and interaction between the private and public realms.

Comfortable wind conditions: for 80% of the year, measured across all hours of the year, the mean wind speed from all directions combined does not exceed:

- 3 metres/second for sitting areas (e.g. public spaces, parks, alfresco areas).
- 4 metres/second for standing areas (e.g. shopfronts, bus stops, building entrances).
- 5 metres/second for walking areas (e.g. footpaths, laneways, walkways).

Deep soil area: Refer to definition of deep soil area in the Residential Design Codes Volume 2.

Long-term bicycle parking: bicycle parking facilities typically for the use of employees, including those of security levels A and B in accordance with AS2890.3 (as amended).

Mean wind speed: the maximum of:

- Hourly mean wind speed, or
- Gust equivalent mean speed (3 second gust wind speed divided by 1.85).

Pedestrian link: pedestrian paths, accessways, walkways and laneways that connect one street to another street.

Public space: outdoor space on public or private land that are intended for the public to occupy for an extended period such as a plaza, courtyard, public square, pedestrian retreat, or park.

Reflectivity Assessment: a technical report that identifies the likelihood and extent of reflected glare impact from new development. A reflectivity assessment should include the method used for the assessment, percentage of light reflectivity from building materials, analysis and conclusions from the results and mitigation measures for potentially problematic reflected glare.

Safe wind conditions: a maximum 3 second gust does not exceed 20 metres/second from any wind direction with a probability of exceedance of not more than 0.1% (annual).

Short-term bicycle parking: bicycle parking facilities typically for the use of visitors, including those of a security level C in accordance with AS2890.3 (as amended).

Wind Impact Assessment: a qualitative assessment that may be undertaken as a desktop assessment or a computational fluid dynamics assessment.

Wind Tunnel Study: a quantitative study based on measured data from physical scale model testing.