urban **design** guidelines

Bowden

Our challenge is to deliver a new, charismatic model for city-fringe living.

Bowden will inspire through heightened levels of creativity,

connectivity and great design.

Introduction

What are the Urban Design Guidelines?

The Urban Design Guidelines work together with the Bowden Master Plan to set out the key priorities and principles to guide and stimulate great urban design, movement, architecture and sustainable development. These guidelines contain the elements that underpin great design.

The Urban Design Guidelines form a manual for designers and developers and the community that underpins the delivery of Bowden in accordance with both the vision and the master plan. Ultimately these guidelines are investment protection for builder/developers and the future residents and businesses of Bowden.

These guidelines are the starting point for design and development. Their purpose is to provide a robust guiding and assessment framework within which both architectural diversity and quality can thrive, whilst affording priority to the public domain interface. The guidelines do not limit creativity; rather they provide a platform to achieve a built form to make a place where people will want to live, work and visit.

The Urban Design Guidelines are structured in the following manner:

- Master Plan Overview, which provides the context for development in accordance with the Bowden Master Plan;
- Bowden East Framework, which contains precinct-wide guidelines that relate to the early stages of development as well as character statements for special places;
- Site and Block Development, which provides general guidance on site and block arrangements, such as building typologies and landscape design;
- Building Design for guidance on requirements for individual buildings;
- Apartment Design for further detail related to individual apartments or terraces; and
- Sustainability, which outlines the sustainability objectives that are to be achieved for all development.

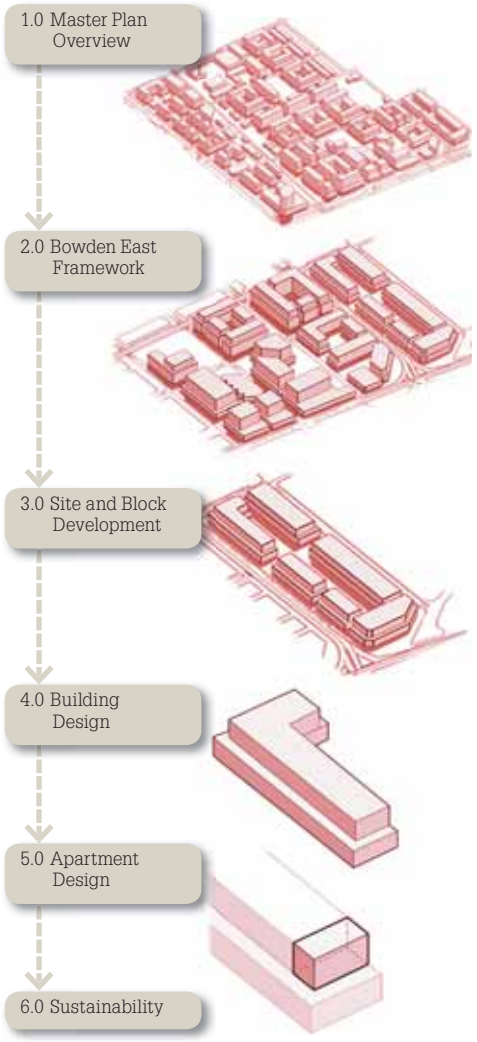


FIGURE 1: Structure and approach of the guidelines

Who will use the Guidelines?

The Urban Design Guidelines form part of the Land Management Corporation (LMC) assessment framework for building development.

The guidelines are to be used by building developers, architects and designers as they prepare proposals and by LMC in assessing proposals.

These guidelines should be read in conjunction with the Building Code of Australia (BCA), *Disability Discrimination Act* and other relevant legislation and Australia Standards, Green Star requirements and the City of Charles Sturt Development Plan.

Whilst ensuring innovative and quality design outcomes, it should be noted that approval by LMC under the Bowden Urban Design Guidelines does not guarantee approval under any of these other standards and requirements.

The Urban Design Guidelines are also available to the community for reference, education and to provide a shared understanding of how Bowden will develop.

The Design Process

The design process for buildings in Bowden should incorporate a multi-disciplinary approach and may use other innovative processes such as community engagement, design competitions (including students), charettes and workshop processes for selected sites.

Where developers and designers use these and other processes, LMC is willing to both participate and assist where practical.

How Land Purchasers will use the Urban Design Guidelines

Land Sales and Design Approval Process

LMC, as initial landowner is the development facilitator and encumbrancee. In providing an efficient and effective assessment and approval process under the encumbrance, LMC aims to ensure that the built form and architectural outcomes are of the highest standard. Prospective purchasers of development parcels will be required to submit an offer in response to an invitation to offer issued by LMC.

LMC will evaluate the offer, and if acceptable, arrange a land sale contract for execution by both parties.

To achieve the desired standards the sale offer evaluation process will focus on three elements:

- design credentials of the purchasing team with emphasis on design capability;
- organisational and financial capability; and
- commercial/price offer.

LMC will seek the advice of the Design Review Panel (see adjacent) in the evaluation process.

Contract conditions will require the selected purchaser to submit a detailed development proposal in order to obtain approval against the Urban Design Guidelines from LMC prior to the purchaser seeking statutory approvals and commencing development.

The detailed development proposal and LMC's assessment will be presented to a Design Review Panel (DRP). The DRP is established by LMC to provide expert opinion and advice on each application against the Urban Design Guidelines. The DRP will comprise:

- a chairperson with internationally recognised urban design experience;
- the Government Architect;
- 3 eminent architects, urban designers or landscape architects;
- a person with residential and retail or commercial development experience; and
- up to 2 representatives from the City of Charles Sturt are entitled to be observers at DRP meetings.

Following input from the DRP, LMC will make a determination and issue approval against the Urban Design Guidelines. Statutory approval from the relevant development authority will then be required by the purchaser. This process is shown in Table 1.

This purchase and approval model identifies the key users of the guidelines to be:

- applicants in preparing submissions for approval against the Urban Design Guidelines;
- LMC as the development facilitator;
- the Design Review Panel;
- statutory approval authority; and
- purchasers of dwelling, retail and commercial office developments.

Individual project applications will need to demonstrate consistency with the objectives and controls and specifically the design requirements of the guidelines. Variations will need to be adequately explained and will be considered by LMC on merit.

Land Sale + Design	Design Approval	Statutory Development + Building Approval	Construction
Step 1a: Invitation of offer to purchase land through sale by private treaty with submission close date.			
Step 2a: LMC evaluation of offers: ▪ Selection of preferred developer. ▪ Exchange and execution of sales contracts. ▪ Contracts and payment of deposit.	**Step 2b:** ▪ Pre-design meeting - LMC meets with interested party and their project team to discuss Urban Design Guideline requirements.		
Step 3a: Developer prepares and submits detailed designs for approval against the Urban Design Guidelines (4 weeks after contract execution). ▪ Possible refinement of design.	**Step 3b:** ▪ LMC assesses detailed designs with input from the Design Review Panel and determines application (4 weeks). ▪ Developer seeks 'As Designed' Green Star accreditation. ▪ Possible refinement to design concepts. **Step 3c:** ▪ LMC provides developer with preliminary approval against the Urban Design Guidelines.	**Step 3d:** ▪ Developer lodges plans with relevant statutory authority for Preliminary Development Plan Consent (PDPC) aka 'planning approval'. ▪ The Relevant Planning Authority assesses plans and makes a decision as to whether to grant planning approval.	
Step 4a: Settlement of land between LMC and developer as per sale contract conditions (within 12 months of sale contract execution).		**Step 4b:** ▪ Developer lodges working drawings with relevant technical information for building rules certification (demonstrating compliance with development approval [plans and conditions]). **Step 4c:** ▪ Developer receives 'As Designed' Green Star accreditation and provides to LMC. **Step 4d:** ▪ LMC provides final approval against the Urban Design Guidelines.	**Step 5a:** ▪ Developer commences construction. **Step 5b:** ▪ LMC to undertake development audits to ensure compliance with Urban Design Guideline approval at key points during construction. City of Charles Sturt to enforce Development Act compliance. ▪ Developer provides 'As Built' Green Star accreditation following practical completion for selected sites. **Step 5c:** ▪ Developer completes building.

TABLE 1: Sale, Design and Statutory Approval Process

It is not intended that the Urban Design Guidelines be a set of highly prescriptive design requirements. LMC recognises the potential for innovation and for alternative design responses on development sites.

However, Allotment Control Plans have been prepared for each release site to illustrate specific site controls and prescribed outcomes comprising building typology, height, massing, density, capacity for natural lighting and ventilation which will be considered 'absolutes' for successful design submissions. Refer to Figure 2 for example.

The Urban Design Guideline examples represent a baseline for development quality and improved or alternate design outcomes are welcome and expected.

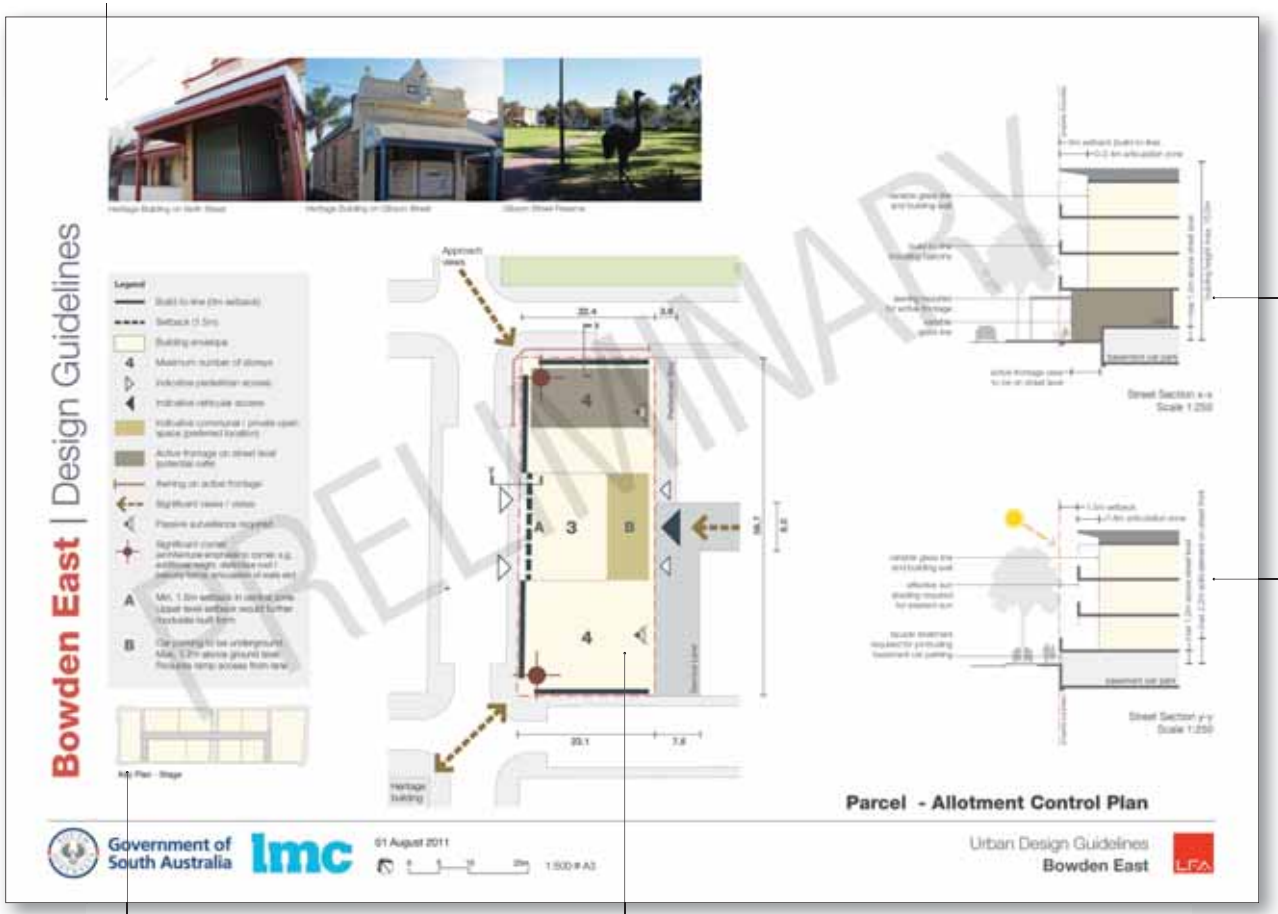


FIGURE 2: Example of Allotment Control Plan

Background

Adelaide's continued growth as an enjoyable and prosperous place to live is set out in the South Australian Government's *'30-Year Plan for Greater Adelaide'*.

One key step envisaged is the planning and implementation of new mixed-use developments that focus on public transport and allow for enjoyable and sustainable forms of living and working.

The objective is to create pedestrian-friendly precincts containing a mix of medium to higher density housing, employment opportunities and civic facilities located close to rail and tram stations.

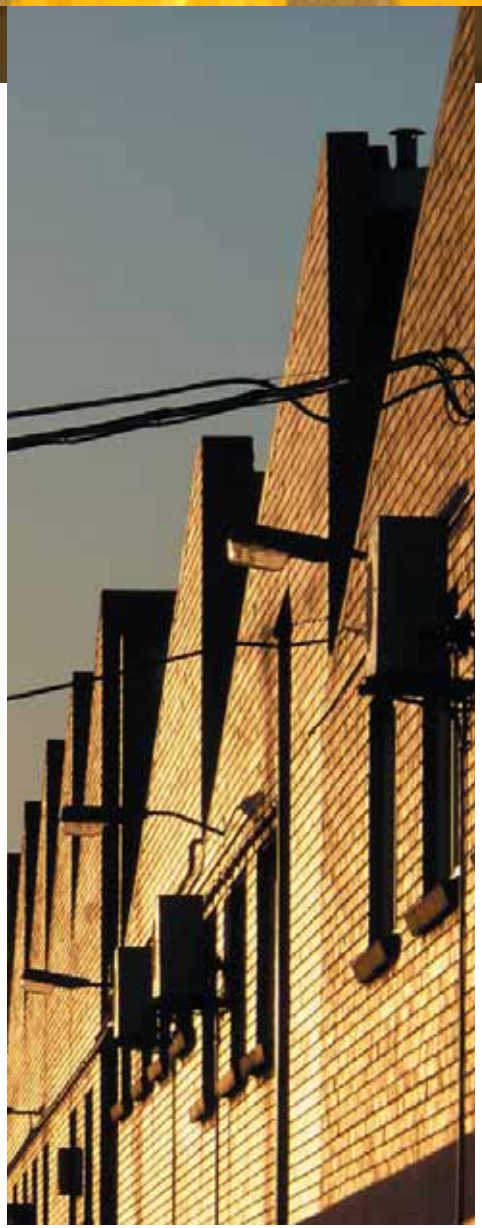
There is no "one size fits all model", however prerequisites for a successful walkable urban neighbourhood include:

- High frequency public transport;
- Higher levels of mixed development density and intensity; and
- Local shops and community facilities.

Bowden has been purchased and prepared by the South Australian Government to show how the intentions of the *30-Year Plan* can be realised.

These Urban Design Guidelines relate specifically to the Bowden East Precinct which represents the early stages of the development.

Bowden development site and Adelaide CBD



Industrial character of Bowden

Vision for Bowden

The vision for Bowden is a stimulating, sophisticated place for people to live in a local urban community.

In late 2008, LMC acquired a 10.25ha parcel of land owned by Gerard Industries (known as the Clipsal site). In early 2010, LMC acquired the adjoining 5.9ha site owned by Origin Energy (known as the Brompton Gasworks site).

Both sites are located within the City of Charles Sturt and are directly adjacent to the Adelaide parklands.

The aim is to transform the combined sites into an inner-city, higher intensity, mixed use urban village.

The final vision developed collaboratively by LMC with the community and Principal Stakeholder Group states:-

"Bowden Urban Village is a creative and diverse community, living and working in a high density sustainable urban environment.

Its character, parklands connections and integrated urban design will offer a new and distinctive place in Adelaide for residents and visitors."

Bowden is to be the flagship walkable neighbourhood in metropolitan Adelaide, creating:

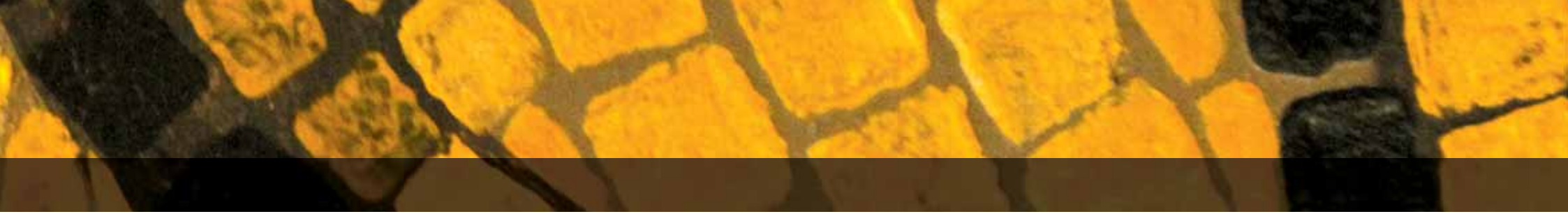
- a sustainable and commercially feasible walkable neighbourhood;
- a project that is flexible, capable of adapting to changing market and demographic conditions;
- expertise in streets, parks and development that is transferable to other infill sites locally and nationally; and
- a project that will lead the market and expand the range of dwelling types currently on offer in Adelaide.

To be successful, Bowden must have buildings and public realm (public streets, parks and squares) of the highest quality and amenity.

These guidelines are intended to promote and ensure high quality, innovative and coherent building design outcomes, which are environmentally sustainable, commercially viable and respond to place.

A high quality Bowden architecture should therefore:

- have a strong sense of local identity and place, linking Adelaide generally and Bowden specifically;
- contain a significant response to the Adelaide microclimate including sun, shade, breeze utilisation, building mass and weather protection;
- have a street based, cohesive urban character with well defined streets and building edges;
- utilise appropriate materials, forms and colours related to Adelaide and Bowden traditions including unfinished and commercial materials with a natural colour palette;
- capitalise on CBD/parkland views, especially from Park Terrace buildings without creating a "wall" effect;
- demonstrate innovation to provide a new inner city urban living experience where apartments and terraces have generosity of space and light, connected indoor-outdoor relationships and a high quality of design and finishes; and
- incorporate principles of environmentally sustainable design for energy utilisation and water management.



The Essential Bowden

This section provides an overview of key design principles promoted in the guidelines to achieve quality design outcomes.

Bowden will be typified by a high quality architecture that seeks to integrate traditional urban planning and built form with contemporary design, while referencing both the Adelaide and the site vernacular.

The character of Bowden should develop from an understanding of recurring and identifiable local themes, including the use of materials, colours, roof forms, verandahs/protected spaces, sun shading/passive design principles, and the integration of Bowden's industrial building themes, while avoiding obvious reproductions.

The guidelines seek a fine-grained and coherent urban outcome and emphasise that the majority of buildings in urban precincts are contributory or 'background' street defining architecture. Iconic or 'foreground' expression will be sought at key places such as Bowden centre, village entry points and major corner sites.

The successful architectural outcomes are likely to contain masonry with a cohesive palette of materials such as red brick, stone, concrete, and considered use of glass, steel and rendered detail.

A careful relationship of solid to void will be sought, rather than an unconsidered repetition of elements. Upper level setbacks are necessary on the northern sides of the shared streets for sunlight penetration, and will be a part of the built form character in parts of Bowden East. Defined roofscapes that create visual interest are also part of the language that is sought by the guidelines.

Careful consideration of Adelaide's microclimate will inform the sustainable design of buildings and be reflected in differing elevational façade treatments.

The built form character is to be reinforced with dense street tree planting, simple and robust urban street paving palettes, quality furniture and detailing, and local storytelling through public art and interpretation elements.

Past Character

Bowden will be defined by a built form that references its residential and more utilitarian past.

Recurring and identifiable industrial and fine-grained residential building themes, including the use of materials, colours, roof forms and passive design principles are encouraged, while avoiding obvious reproductions.

Façade Design and Sustainability

Façade design is to respond to Bowden's microclimate with varied treatments to differing elevations, clearly expressed sustainable design elements, generous protected indoor/outdoor spaces and evidence of care and quality architectural detail.

The orientation of the street grid approximately 50° west of north presents opportunities for innovative façade design and sun control.

Materials and Colours

The Adelaide Plains have a tradition of built form dominated by masonry surfaces (red brick, rubble, bluestone, light sandstone) contrasting rendered or brick detail to architraves/corners and simple parapets or pitched roofs in tile and metal. While heritage facsimiles are not sought, references to local materials and colours will help to create a coherent visual language for new development.

Base/Middle/Top

Bowden will be defined by built form that generally establishes a 'background' of street defining urban architecture, and a limited number of prominent sites and buildings that are more expressive and iconic 'foreground' elements.

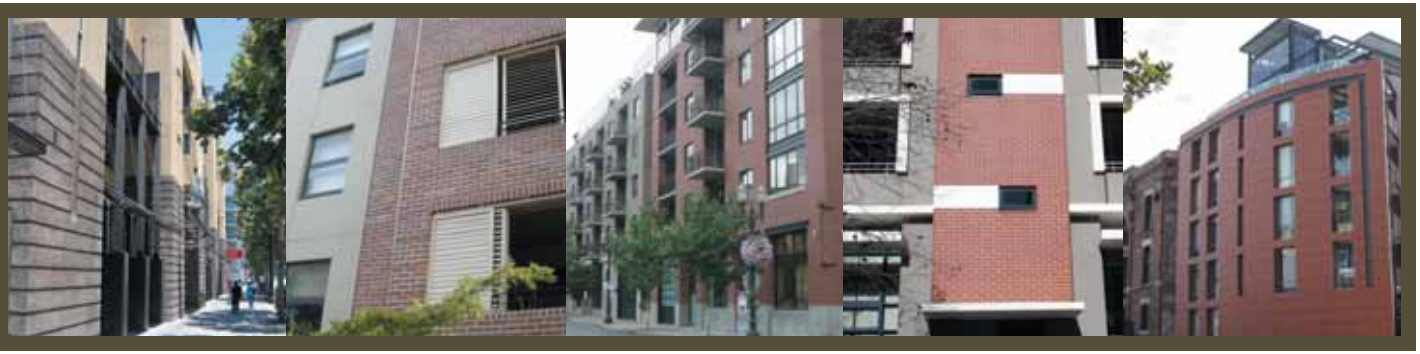
In general, built form is to establish the Base (boundary, setback, lower levels) the Middle (main façade) and the Top (Roof/Parapet/Upper Level) as elements that articulate the building plane.

Street Interface

Bowden will be a walkable and inviting urban village with streets defined by relatively small building setbacks creating attractive, active and "soft" edges. Lower levels of buildings will present 'solid' fine-grained frontages to the street with setbacks, boundary treatment, shades/screens and balcony designs creating a balance of privacy and community.

Solid to Void

Bowden will be an urban infill area with a simple and robust character. Establishing a greater proportion of 'solid' wall surfaces to contrast with deep shady balcony and window 'voids' will help to create an architectural consistency throughout the evolving village. Building proportions should reflect a masonry character with generally vertical openings cut into the street wall.



Roofscape

The roof is the visual 'finish' of a building, and careful resolution of the roofscape is expected at Bowden. A variety of elements can be employed including well expressed parapets, upper level material/colour change and setback, eaves, and a variety of simple rather than complex roof forms including hips, gables and skillions.

Design Quality

Both LMC and the City of Charles Sturt are committed to design excellence at Bowden.

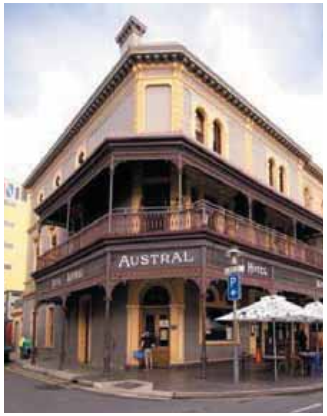
Buildings and new spaces are to be of the highest urban design quality and architectural standard. They should reflect contemporary aspirations for sustainable urban living and the ideals of a walkable community.

Design Approach

- Develop an architecture that is clearly responsive to Adelaide's Mediterranean climate – deep shade and cool spaces in summer and sheltered, sunlit spaces in winter.
- Key considerations include:
  - incorporation of verandahs/protected openings;
  - thermal mass insulation to walls and roofs;
  - solar penetration in winter;
  - passive environmental control;
  - operable sun shades - provide a dynamic character to façades;
  - relatively blank west walls for solar control;
  - low embodied energy materials; and
  - incorporation of solar/PV panels.
- Climate responsive design may be clearly expressed as part of the architectural character.
- The intent is to develop buildings where sustainability is an inherent part of good design practice rather than something that is overtly added on.
- Buildings should meet sustainable design principles in terms of solar access, natural healthy ventilation, wind control, visual and acoustic privacy, safety and security, resource, energy and water efficiency.
- Create a place where most buildings form the background setting, with buildings in important locations or with key functions forming a more architecturally expressive and iconic foreground.
- Development should demonstrate a high standard of architectural design, materials and detailing appropriate to the building type, context and location. Traditional building character and materials should form references for new development, though replica detailing is not sought.
- The form and external appearance of buildings should contribute to the quality and amenity of the public domain offering a rich and fine-grained streetscape.

Specific design components comprising density, building height, building typology, nominated colours, cross ventilation and natural lighting are critical and deemed mandatory.

A consistent and rigorous process to ensure design quality will be established by LMC including a Design Review Panel to assess design excellence and conformity with the guidelines.



Deep shade balconies


Deep shade balconies


Adjustable sun control


Sustainable elevations


Sunshading and quality detailing


Photovoltaic panels

One Planet Living

LMC is also committed to targeting the *One Planet Living* goals for sustainable development. Together with LMC's Sustainable Development Strategy, this will continue to form the basis for design and delivery at Bowden. The *One Planet Living* approach to development covers a range of target areas including:

- zero carbon;
- zero waste;
- sustainable transport;
- sustainable materials;
- local and sustainable food;
- sustainable water;
- natural habitats and wildlife;
- culture and heritage;
- equity, fair trade and local economy; and
- health and happiness.

The principles above are listed in Table 2.

Development strategy and targets at Bowden will continue to build on the *One Planet Living* principles and may change from time to time to reflect different priorities within the principles.

Zero carbon	making buildings more energy efficient and delivering all energy with renewable technologies	**Sustainable water**	using water more efficiently in buildings and in the products we buy; tackling local flooding and water course pollution
Zero waste	reducing waste, reusing where possible, and ultimately to send zero waste to landfill	**Natural habitats and wildlife**	protecting and expanding existing habitats and creating new space for wildlife
Sustainable transport	encouraging low carbon modes of transport to reduce emissions, reducing the need to travel	**Culture and heritage**	reviving local identity and wisdom; support for, and participation in, the arts
Sustainable materials	using sustainable products that have a low embodied energy	**Equity, fair trade and local economy**	inclusive, empowering workplaces with equitable pay; support for local communities and fair trade
Local and sustainable food	choosing low impact, local, seasonal and organic diets and reducing food waste	**Health and happiness**	encouraging active, sociable, meaningful lives to promote good health and well being

TABLE 2: *One Planet Living* principles

1.0 Bowden Master Plan Overview

1.1 Overview and Context

The Bowden Master Plan is the result of contributions from the community, stakeholders and consultants and is a flexible and evolving plan.

Figure 3 shows the location of the development in the inner north-west of Adelaide.

The Bowden context represents an interesting mix of uses being located at the intersection of semi-industrial and commercial areas, the River Torrens, Adelaide parklands and CBD, historical and cosmopolitan North Adelaide and the adjacent residential suburb of Brompton. This eclectic mix of adjacent uses brings together classic, modern and sometimes conflicting themes and styles. Development at Bowden should reflect this juxtaposition of uses in both the architecture and the functions in a manner which references them without seeking to replicate.

1.2 The Wider Area Plan

The context for Bowden comprises the suburbs of Bowden, Brompton, Hindmarsh and Ridleyton that are bound by South Road, Torrens Road, Park Terrace and the River Torrens.

The Wider Area Plan (Figure 3) is a contextual plan of the Bowden area. Potential future changes in the vicinity of Bowden will focus on:

- preferred land uses and how they should be arranged;
- open space provision and access to the Parklands;
- major movement and access routes; and
- transition between various higher intensity activity.

Figure 3 illustrates the distribution of the primary roads within the Wider Area Plan, and highlights the crucial location of Bowden, surrounding the heart of the commercial spine of Gibson Street and adjoining all three southeast-northwest linkages.

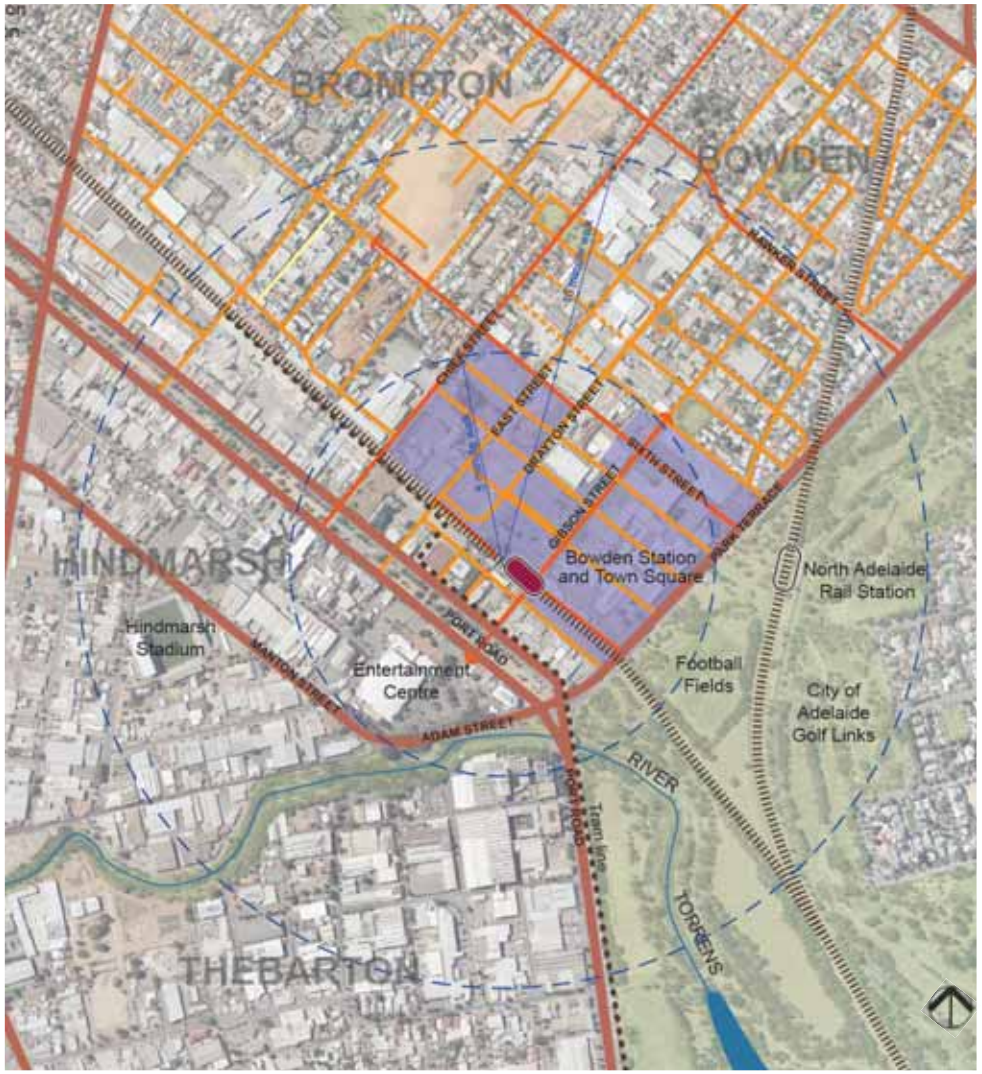


FIGURE 3: Wider Area Plan

1.3 Bowden Master Plan

The Bowden Master Plan responds to and reinforces the established wider street grid (orientated 40 degrees east of north-south) and infrastructure network that is its context.

The master plan delivers a highly permeable and legible street network for pedestrians and cyclists that directly connects with the Wider Area; created through maintaining and improving all existing streets and re-establishing and extending the alignment of streets across the large former industrial blocks.

The Concept Diagram (Figure 4) illustrates the conceptual framework for Bowden.

The main features are:

- high concentration of retail, commercial and community activity around the relocated station to activate the public domain and take advantage of convenient access. This is the heart of Bowden [1];
- Gibson Street as the Main Street being the energy and focus of the village with a traffic-calmed shared pedestrian and vehicle environment [2];
- convenient on-street parking around the village centre on the relocated Second Street above the proposed underground rail corridor (if constructed) [3];
- using the existing warehouses (Plant 3 and 4) between Third and Fourth Street as a new market culture precinct next to Bowden Village Park. Its location in the centre ensures a high degree of accessibility [4];
- a series of interconnecting public open spaces. This is to make sure the evolving village will be highly walkable and be defined by a public domain of clarity and quality [5];
- legible urban streets that are efficient and can be shared between vehicles and pedestrians. Street reserves will be relatively narrow and will encourage low vehicle speed, shared streets [6];
- responding to the gasworks precinct with scale and activity that complements the industrial heritage of the area [7];
- adding a 5m setback from Park Terrace to accommodate street widening and on-street parking to support retail/commercial at the ground floor [8];
- a secondary pedestrian/open space connection extending from the Entertainment Centre through Station Place [9];
- potential for a new focal point/landmark building at the junction of Port Road and Park Terrace [10];
- a pedestrian cycle link from the heart of the development to North Adelaide railway station [11]; and
- a pedestrian cycle bridge over Park Terrace linking the Transit Square and Greenway along Second Street to the Adelaide parklands and CBD [12].

FIGURE 4: Bowden Concept Diagram

1.4 Roads, Street and Lanes

The Bowden Proposed Street Types Plan (Figure 5) identifies a hierarchical movement network that is based on access provision and street quality.

The plan reinforces the established and legible wider cadastral grid. The street hierarchy achieves:

- convenient and safe movement for pedestrians and cyclists to destinations in the immediate environs and to external destinations;
- convenient resident access to public transport;
- provision of appropriate access for emergency and service vehicles;
- discouragement of unnecessary through traffic movements; and
- creation of a unique 'village' atmosphere through low speed and shared spaces.

Park Terrace

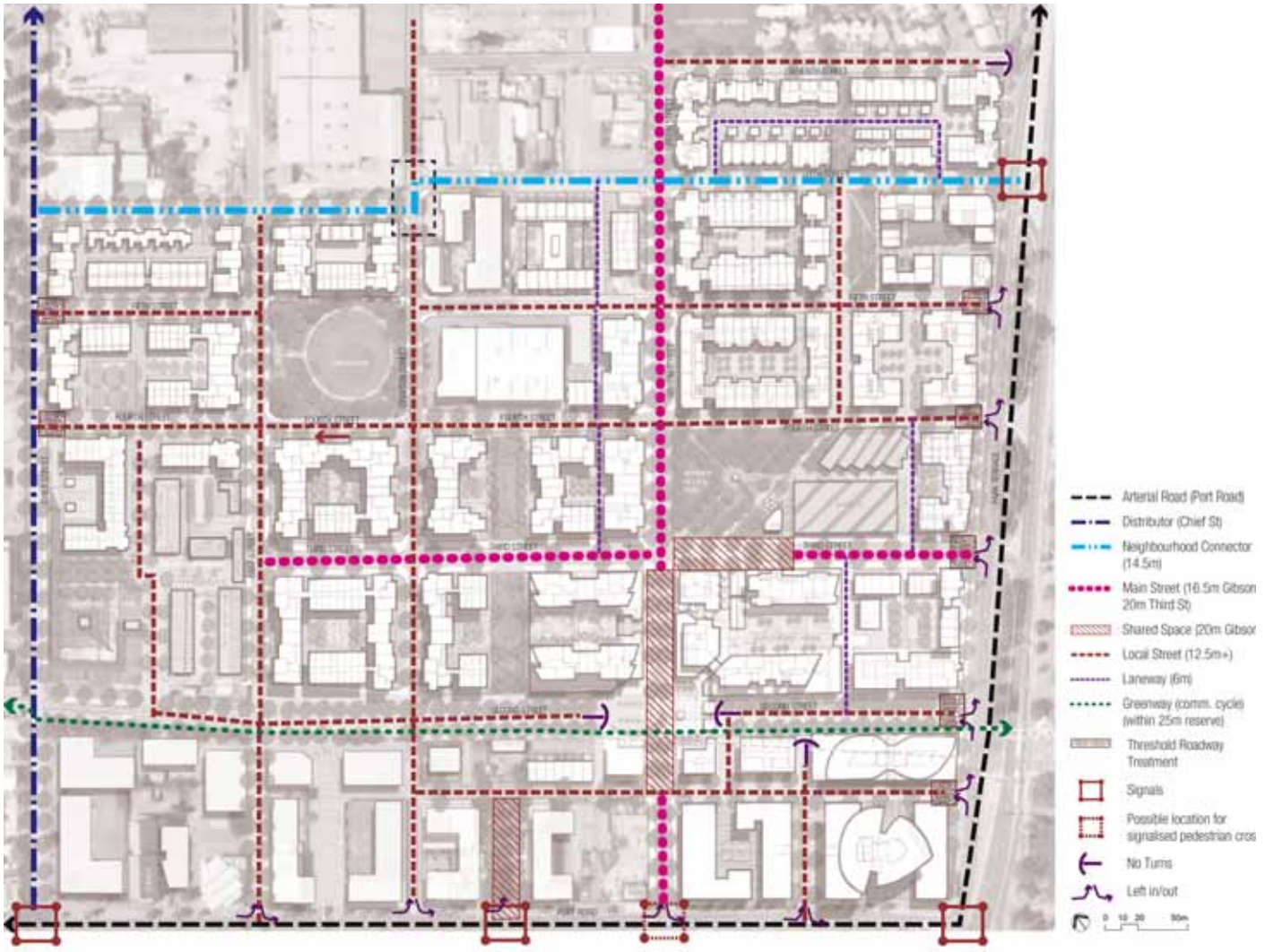


FIGURE 5: Bowden Proposed Street Types Plan

1.5 Open Space

Open space has been developed as a co-ordinated group of spaces that deliver high accessibility and diversity of facilities, recreation opportunities and experiences. The open spaces range from urban squares to a heavily planted neighbourhood park (Figure 6).

The location and mix of open spaces has been developed considering the large open spaces in the nearby parklands and adjacent local parks to the north.

The network of open spaces within Bowden sits within a hierarchy that reflects three key components; the catchment size, the type of activities facilitated and its physical size.

Existing trees to be retained in open spaces

FIGURE 6: Open Space Plan

Bowden Village Park fronting Third Street, Gibson Street and Fourth Street is an open space greater than 5,000m² incorporated into the heart of the development. The village park serves as an activator for street-edge uses, frontage for market and other uses in the retained buildings, amenity uses within the park and community uses mixed with residential living.

Incorporating *One Planet Living* principles, the park will contain hard surfaces capable of holding food/art/craft markets adjacent to the proposed fresh market adaptive re-use of Plant 4.

The existing Plant 3 is currently proposed for community and cultural use that will also help to activate Bowden day and night.

Bowden Town Square, located at the junction of Gibson Street and the re-aligned Second Street, is the arrival, waiting and departure point for people commuting to and from Bowden. It will function as a meeting place, a gateway to the supermarket, and be surrounded predominantly with hospitality-based retail activity. It is a formal hard-edged space, adaptable for a variety of future needs. Elements common to successful plaza design such as shade, shelter and greenery will be incorporated into its detailed design.

Local parks 1, 2 and 3 are relaxed and intimate spaces, serving local residents and providing for active and passive recreation needs and urban cooling.

Open space proposed for the former Origin Energy gasworks site will interpret the strong industrial heritage.

It is currently anticipated that all dwellings within Bowden will be within 250m of a green space.

The design of apartments should maximise the locational advantages of parkland settings with living areas and private open space overlooking and interacting with the public domain.

FIGURE 7: Open Space Linkages

1.6 Street, Block and Development Parcel Structure

The street layout and development parcels have been carefully devised and form the basis for the delivery of an integrated and high quality walkable urban neighbourhood.

The provision of appropriate-sized development parcels will contribute to a finer grain, human scale, mixed-used development.

It is expected that Bowden will develop in stages, generally in accordance with Figure 8.

Notwithstanding, consideration will be given to development opportunities that arise from time to time that accelerate the project or provide exceptional outcomes.

FIGURE 8: Block and Parcel Plan

1.7 Precincts

The Bowden project area comprises four identifiable precincts and acknowledges an additional two adjoining precincts, each with their defining attributes and boundaries (Figure 9).

Variations in character across the precincts are a reflection of the site's history, changes in predominant land use, intensity of pedestrian, transit and vehicle activity, the type of streets, open spaces and the built form.

The following section provides a brief overview of each precinct, outlining the desired future character and key elements that will provide this.

1.7.1 Bowden East

The Bowden East precinct covers around 7.5ha, and will establish the new urban grain and character for the emerging village. The precinct will be primarily residential in character with some retail, cafés and local business on busier street frontages. Markets will be developed in the retained warehouses on Third/Fourth Streets.

Development will scale from 3 to 4 storeys on Seventh Street to 6 to 8 storeys around the new Bowden Village Park. The character of the area will reflect the industrial and urban heritage of Bowden together with aspirations for a sustainable, high quality landscape.

The guidelines in this document apply in particular to the Bowden East precinct.

FIGURE 9: Bowden Precincts

1.7.2 Retail/Mixed Use Core Precinct

The Retail/Mixed Use Core precinct will be the heart of Bowden and has high-density mixed uses of more than 10,000m² including a supermarket, possible discount department store, main street retail, cafés, civic uses, offices and apartments creating a lively hub of activity around the new square and rail station.

Built Form Guidelines will be separately prepared and will provide for:

- active street frontages to Gibson, Second and Third Streets with posted verandahs, awnings for shade and multiple narrow width frontages designed for traditional shopfronts;
- partially shaded and roofed pedestrian lanes as external retail environments;
- appropriately located and designed vehicle entries to the multi-use blocks off Third street; and
- highly urban street façades with architectural emphasis at corners and iconic uses, particularly civic functions such as station, library and square.

1.7.3 Port Road Gateway Precinct

The Port Road Gateway precinct will be a highly visible and commercially vibrant junction point of the regional movement system. It will have significant scaled primarily commercial development framing the corner of Port Road, Park Terrace and Adam Street. At street level, the awning covered footpaths will be activated by busy commercial foyers as well as retail, local business and entertainment that support the emerging activity hub formed around the Governor Hindmarsh Hotel and the Entertainment Centre.

1.7.4 Port Road Commercial/Mixed Use Precinct

The Port Road Commercial/Mixed Use precinct forms a key part of the greater commercial centre along Port Road. Mixed-use buildings of a significant scale will contribute to a flourishing Hindmarsh District Centre, combining with older and newer redevelopments to focus on the activity generated Port Road, Chief Street and Gibson Street. Future guidelines will aim to reinforce the street-based characteristics of the key movement routes.

1.7.5 Gasworks Precinct

The Gasworks precinct has a collection of State significant industrial heritage buildings and structures. This precinct requires sensitive insertion of new streets, landscape and buildings to articulate and revitalise the gasworks as a precinct of special heritage character. Potential uses include residential, commercial and institutional. Future guidelines will be developed to respond to these uses and the particular opportunities of this area, which is currently anticipated to include a new tram stop at Second Street/Chief Street.

1.7.6 Bowden Later Stages Precinct

This precinct will be developed later in the cycle of renewal for Bowden, due to decontamination requirements. Uses will be primarily residential, and include a larger park on the site of original gas infrastructure, as well as linear parks that extend north from Station Place. Future guidelines are likely to closely follow those of the Bowden East precinct.

Gasworks

Entertainment Centre

Port Road

2.0 Bowden East (Early Stages) Framework

Bowden East

Bowden East is primarily defined by Seventh Street to the north-east, Third Street to the south-west, Park Terrace to the south-east and Gibson Street to the west. It also includes a block on the north-western side of Gibson Street between Sixth and Fifth Street. Refer to Figure 10.

The first stage of the project, referred to as the "North East Quarter" is set to commence between Sixth Street and Seventh Street and progress to encompass the area depicted in Figures 4 and 26.

As previously noted, Bowden East is the focus for this set of guidelines.

The following sections provide more detail for the urban design framework for Bowden East, including:

- activities, location and mix
- public domain relationship
- building envelope
- heritage and character buildings
- access and parking
- precincts and special places.

FIGURE 10: Aerial view from the south of the Early Stages site prior to commencement of site works

2.1 Activities Location and Mix

2.1.1 Predominant Activities

Bowden East will be a mixed use neighbourhood incorporating residential, commercial, retail, open space, creative and community land uses.

Other activities are encouraged in each parcel to contribute to overall mixed use character, vibrancy and vitality.

The type of activity at the ground floor of each development parcel, particularly on street edges plays a central role in the character of the street and broader precinct.

The most practical and marketable mixed use developments provide:

- Separate entrances for each use
- Pedestrian and lift access
- Increased ground floor height
- Designated car parking for the commercial portion of the development
- Physically separate residential uses from other uses.

Neighbourhood café

Mixed uses

Mixed uses

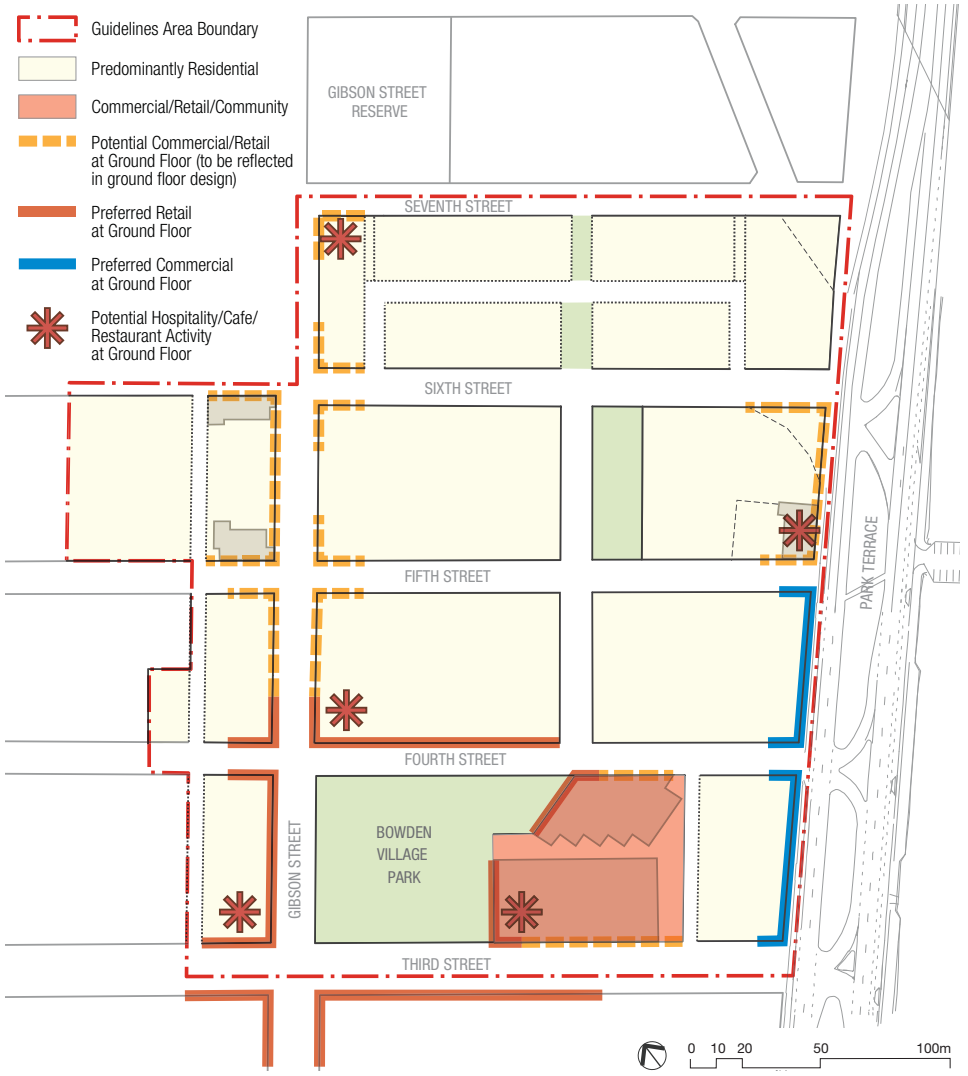


FIGURE 11: Activities Land Use Plan

Design Requirements:

- The overall build out of each parcel should ensure that at least 50% of the floorspace and/or land is used for the nominated predominant activity as shown in Figure 11.
- Within mixed use multi-storey developments comprising commercial and residential activity, provide separate pedestrian entrances, lift access, increased ground floor height and designated car parking.
- Demonstrate appropriate noise attenuation and odour abatement between retail/commercial and residential uses and surrounding uses.

Queen Street Café is an example of creating people places that engage

2.1.2 Residential Dwelling Mix

A choice in dwelling types and the subsequent diversity of households and life stages supported by this dwelling choice is an essential principle in developing the Bowden community.

Incorporating a mix of townhouses, terraces and apartment types and sizes will result in a development that meets the needs of a broad cross-section of the community and is able to respond well to future needs.

Innovative forms of housing will be encouraged such as co-housing and similar offerings responding to socio-economic and demographic changes in metropolitan Adelaide.

The size, siting and mix of affordable housing will be subject to government agency and other input. Their recommendations will be taken into account by LMC when assessing proposals for affordable housing.

These guidelines apply to all types of housing including student and affordable housing.

Design Requirements:

As general guidelines:

- For buildings over four storeys, achieve a variety of dwelling types. As a broad indication:
  - One bedroom dwellings should comprise no less than 10% of total dwelling stock.
  - Three bedroom dwellings should comprise no less than 10% of total dwelling stock.
- Smaller studio and larger three-plus bedroom apartments and other innovative, market responsive housing types are encouraged.
- Student housing is encouraged.

2.1.3 Small Office Home Office (SOHO)

A desired element in the mix of uses in Bowden is dwellings that accommodate various forms of live-work activity such as 'Small Office Home Office' (SOHO). SOHO dwellings will be at street level and could be either single level or dual level with a separation of work and living between floors.

SOHO dwellings are particularly encouraged in the areas of the Ground Floor Activities Plan (refer to Figure 12) indicated as 'creative, retail or commercial'.

Design Requirements:

- Proposals that include SOHO dwellings are designed to achieve good outcomes for both the work and living components of the dwelling and compatibility with adjacent activities. Particular considerations include:
  - Clearly separate entrances to the office space and to the private dwelling;
  - Separate bathroom facilities;
  - Separate car parking;
  - Business signage that is consistent with the signage guidance in Section 4.12; and
  - Increased ceiling height at ground floor level (minimum 3.0m).



Examples of medium density residential buildings

Mixed use

Live work

SOHO

2.2 Public Domain Relationship

2.2.1 Definition to Prominent Sites and Corners

A high quality urban public domain of streets and spaces will be an essential part of Bowden. The visual form should reflect a mixture of bold and muted urban design forms, closely linked to location, to accentuate prominent sites and their likely activity generating uses.

Prominent sites are highly visible from the public domain and provide opportunities for architectural expression to enhance the character of the area.

Important corners are secondary and require distinctive treatment e.g. emphasis, articulation, splayed treatments etc.

Buildings located at prominent sites should be bold and distinctive in style and character with exceptional urban design reflecting their prominent location. Other buildings should be more restrained in architectural expression and urban design so as to not distract from the built form on the prominent sites.

Architectural expression for prominent sites and for important corners should be created through the use of distinctive built form, use of materials/ colour, additional height and/or other means.

Figure 12 defines prominent sites and important corners.

Corner emphasis

Corner emphasis

Corner emphasis

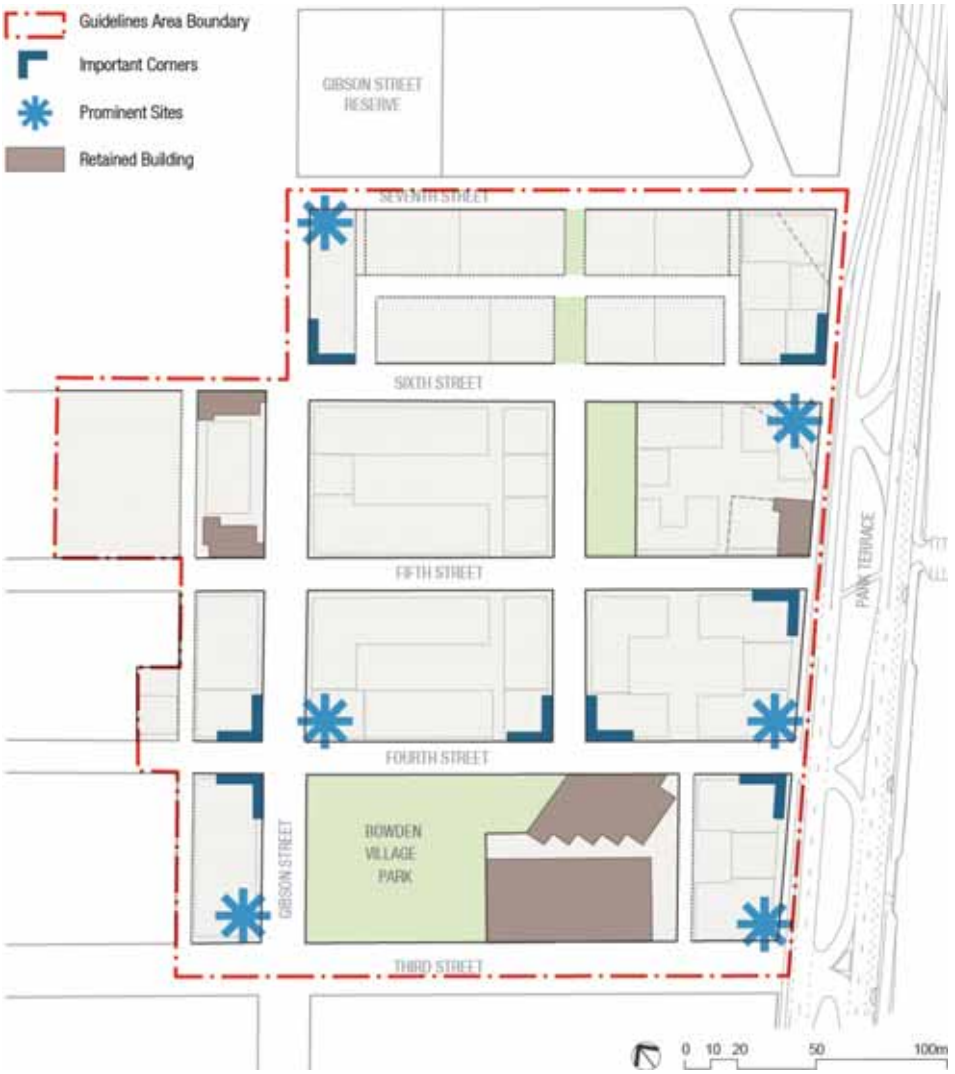


FIGURE 12: Prominent Sites and Important Corners Plan

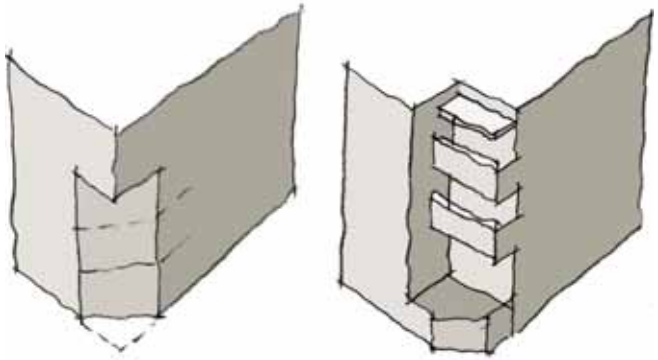
Design Requirements:

- For buildings greater than three storeys located on corner sites consider a different geometric form and street interface/setback and/or additional height to mark the corner location.
- Corner locations should be articulated and expressed volumetrically, addressing both streets and façades.
- Splayed corners above ground level should be treated through indentations of the building, by upper floor projections, setbacks or by other means.
- Corner emphasis can incorporate street verandahs – with balcony spaces over the footpath.

Corner emphasis

Articulated corner for splayed site

Articulated corner



Splayed corner treatments

2.2.2 Ground Floor - Street Level Interface

The edge, where houses meet the public domain, is vital to the quality and vitality of the street. Soft edges provide a combination of transparency and privacy, encouraging interaction between the house, the front landscaped space and the footpath. These are opposed to hard edges which lack activity and interaction with the street e.g. car park edges, non-active frontages, service areas, plant rooms etc.

The ground floor of a building and how it interfaces with the adjacent footpaths and other open spaces impacts on the types of activities that can be successfully accommodated.

Ground floors that are consistent with the adjacent street level are important for the success and accessibility of retail, commercial and community activities.

Soft edges apply to "active frontages" such as shops and cafés as well as residential apartments and dwellings.

Soft edges for retail have multiple narrow shopfronts, transparent façades, large windows, openings and goods on display. Soft edges in residential areas have semi-private front yards or well designed terraces with entry gates encouraging lively interaction.

Ground level residential uses are encouraged to be raised above the footpath. Where residences are close to the public street edge, variations in level can contribute to occupant privacy while not impacting negatively on street level amenity.

Ground floor residential street interface

Residential soft edge

Retail soft edge

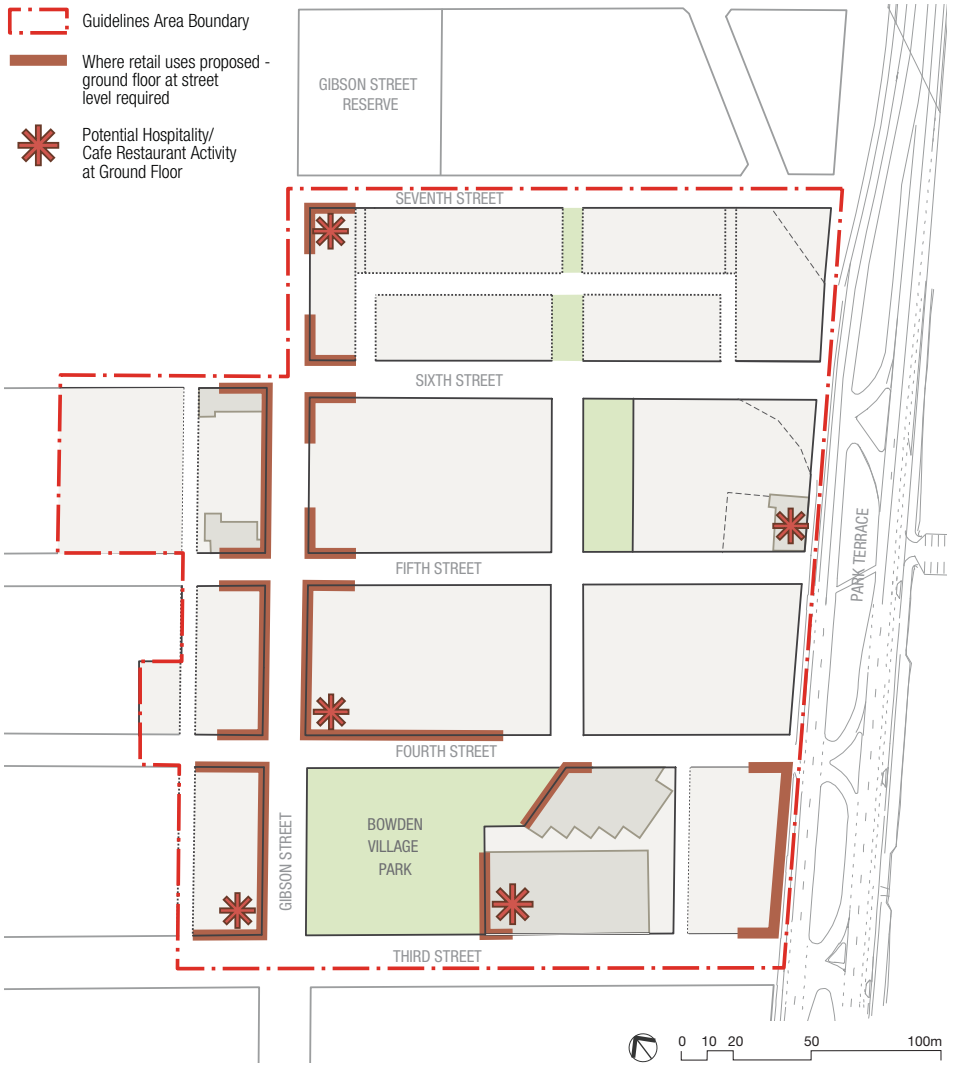


FIGURE 13: Required Ground Floor at Street Level Location Plan

Figure 13 indicates locations where the ground floor must be at the same level as the footpath of the adjacent street. This is to accommodate retail, community and commercial activity at ground floor or the potential future adaptation to such a use.

Where retail activity is proposed along a street front, its concentration is important to facilitate a vibrant and dynamic retail precinct.

A range of different sizes in retail floor areas within the retail precinct provides opportunities to attract a greater range of retail operators and uses which can, through a diversity of activities, also contribute to dynamic retail precinct.

Design Requirements:

- Uses of the ground floor of a building should be in accordance with Figure 13 (Required Ground Floor at Street Level Location Plan).
- Design any building sections with retail, commercial and community use at ground floor so that the ground floor for at least part of the premises is at the same level as the finished footpath level of the adjacent street and/or open space.
- Buildings with residential use at ground floor should be designed so that the ground floor is raised above the finished footpath level to provide for occupant privacy. 1.2m is the desirable height to minimise any adverse street wall outcomes at pedestrian sight line level. Innovative transitions (e.g. stoops) should be explored. Refer to Figure 14.
- Wherever possible, there should be access to ground floor apartments directly from the footpath.
- Retail tenancies located on the ground floor, excluding corner sites, should generally have a width to depth ratio in the order of 1:3.

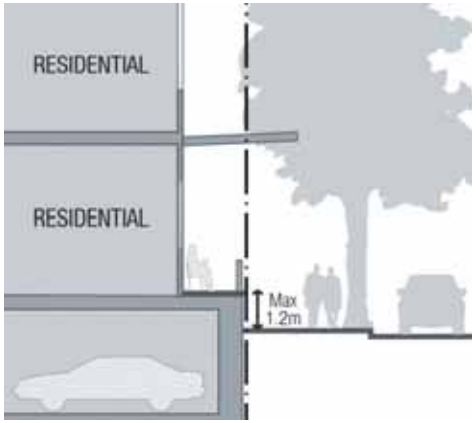


FIGURE 14: Maximum height that ground floor may be raised above finished footpath level

Ground floor retail street interface

2.3 Building Envelope

2.3.1 Building Height

Building heights across Bowden are a considered response to the immediate context, to the strong public domain network and the vision for the site as a high density mixed use walkable neighbourhood.

Taller development up to 12 storeys is located in the south-east corner of the site and building heights of 3 to 5 storeys are to the north-east edge.

Heights are expressed as the minimum number of storeys required.

Where innovation in product, design, affordability and/or sustainability is proposed, LMC will consider additional heights to those prescribed in these guidelines.

Design Requirements:

- Demonstrate all buildings are in accordance with Figure 16 (Building Height Plan) and explanation above.
- The use of considered variations across the height range within an individual building and across development parcels is encouraged to add interest to the street and deliver positive outlooks for occupants.

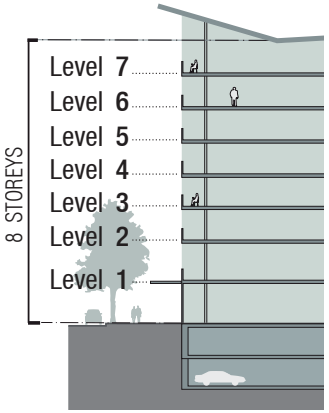


FIGURE 15: Building height

FIGURE 16: Building Height Plan

2.3.2 Building Setback – Ground Floor

The relationship of buildings to the public street boundary and other development parcel boundaries strongly contributes to streetscape character. The building street setbacks contribute to the desired character of each precinct and reflect the desired activities. Building setbacks are measured from the development parcel boundary to the front of the building.

The guidelines in this section are intended to work together with Upper Levels Setback (Section 2.3.3), Public Domain Relationship (Section 2.2) and specific Precinct Characters guidance on built form articulation to achieve appropriate built form outcomes (Section 2.6).

Design Requirements:

- Demonstrate the development proposal is generally in accordance with Figure 17 (Building Street Setback Plan) and Figures 18, 19, 20, 21 and 22 for all development parcel boundaries.

FIGURE 17: Building Setback Plan - Ground and Upper Levels

Setback Types:

- **No Setback – Build to Development Parcel Boundary**

  Purpose: Street edge alignment is required to strongly enclose the street or open space, facilitate active retail and/or commercial edges and reinforce the street grid pattern and existing built form character where relevant (e.g. Gasworks Centre and the Warehouse Precincts).

  Specific Requirements:

  – Buildings are to align with the development parcel boundary line, and to form a hard edge to the street.

  – Projection of sun shading devices into the street reserve on upper levels, recessed balcony voids and recessed windows can provide visual depth to the façade while maintaining a strong architectural presence.

- **No Setback or 1.5m Setback**

  Purpose: Street edge or near edge alignment is required to strongly enclose the key 'backbone' streets which have a good width embedded in the public street corridor (15m+).

  Specific Requirements:

  – Buildings are to align with the street edge, defined by the development parcel boundary line and form either a hard edge to the street through no setback or have a setback of 1.5m (precisely 1.5m consistently rather than any setback between 0 and 1.5m). The 1.5m setback zone may be used for private open space, terracing or gardens.

  – First floors and above may continue the 1.5m setback or may return to no setback.

  – Balconies may extend over public space at the discretion of the statutory assessment authority.

- **Minimum 1.5m Setback up to Maximum 3m Setback**

  Purpose: Buildings are setback to respond to lengths of street that are quieter, narrower and of a more residential character.

  Specific Requirements:

  – Buildings are to be setback from the development parcel boundary between a minimum of 1.5m up to a maximum of 3m. Any setback between the minimum and maximum is acceptable. The maximum 3m setback is established to maintain a degree of enclosure to the street.

  – This setback range provides a transition space between the public street and private building where landscaping, courtyards, terraces, balconies and entry porches can be located.

  – To north-facing street sides, a 3m ground floor setback is desirable for a sunny private open space.

FIGURE 18: No Setback Section

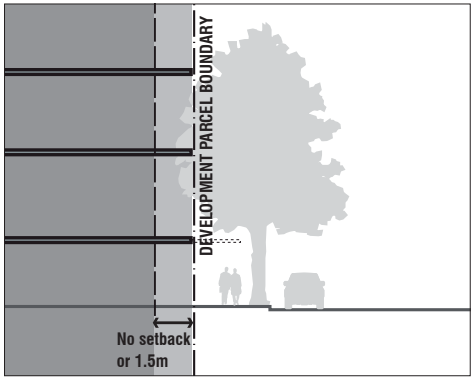


FIGURE 19: No or 1.5m Setback Section

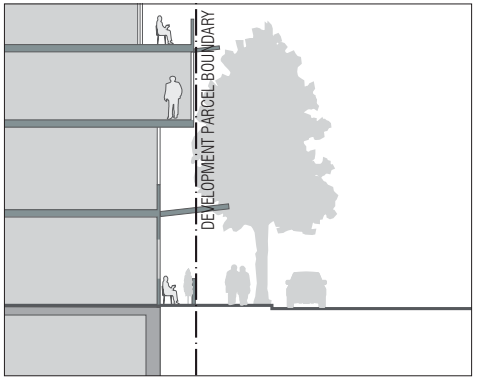


FIGURE 20: Example of No or 1.5m Setback Outcome

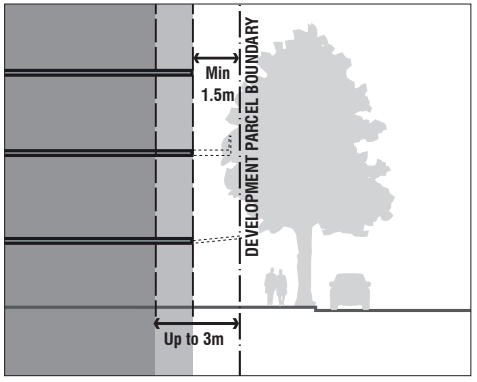


FIGURE 21: Min 1.5m up to Max 3m Street Setback Section

2.3.3 Building Setback – Upper Levels

Introducing an upper level setback contributes to consistent street enclosure and moderates the perceived height of buildings from the street. In certain instances a setback allows for sunlight to street level apartments and contributes to the distinctive character of particular precincts.

Setbacks at upper levels vary with respect to building heights (refer also to Figure 16).

Design Requirements:

- Demonstrate the development proposal is in accordance with Figure 22 (Upper Level Setbacks) and explanation below for all development parcel boundaries.
- Roofs, pergolas or other minor elements may be permitted within the setback zone where demonstrated that there will be no overshadowing impact on the public domain.

Upper Level Setback Types:

- **Setback at Level 2**

  Purpose: This requirement contributes to a complementary interface with established one and two storey dwellings to the north of Bowden.

  Specific Requirements:

  – Setback built form above Level 2 a minimum of 1.5m to 3m from the building line established by the nominated street setback.

- **Setback at Level 3**

  Purpose: This requirement is to allow winter sun to penetrate to street level for 12.5m wide streets.

  Specific Requirements:

  – Setback built form above Level 3 a minimum of 3m from the building line established by the nominated street setback.

- **Setback at Level 4**

  Purpose: This requirement contributes to the establishment of consistency in the built form envelope and avoids excessive street wall height.

  Specific Requirements:

  – Setback built form above Level 4 a minimum of 3m from the building line established by the nominated street setback.

- **Setback at Level 6**

  Purpose: This requirement contributes to the consistent strong enclosure of development parcels bordering the Bowden Village Park.

  Specific Requirements:

  – Setback built form above Level 6 a minimum of 3m from the building line established by the nominated street setback.

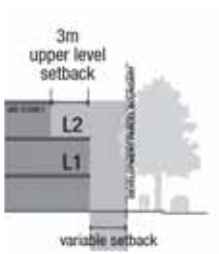
- **No Upper Level Setback**

  Purpose: There is no upper level setback requirement for development parcels bordering Park Terrace.

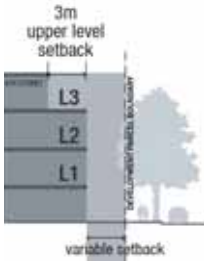
  Specific Requirements:

  – For new buildings (not applicable to existing heritage/character structures) refer to Awning guidelines in Section 4.12.

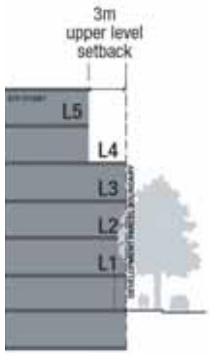
FIGURE 22: Upper Level Setbacks



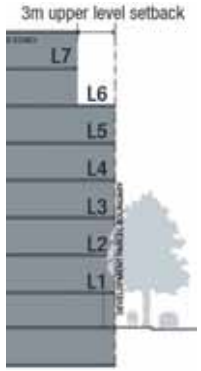
1.5-3m Setback at Level 2
Seventh St



3m Setback at Level 3
Fifth St



3m Setback at Level 4, North East of Bowden Village Park - Fourth St



3m Setback at Level 6, West of Bowden Village Park (Gibson St)

Examples of upper level setbacks

2.4 Existing Heritage and Character Buildings

The Bowden Master Plan ensures heritage listed and other identified character buildings are retained in future development. These buildings are suitable for adaptive reuse and innovative design solutions.

The detailed design process offers the opportunity to ensure an eclectic mix of buildings and structures are addressed positively as assets in creating a special place.

Creative adaptive reuse solutions are anticipated.

Design Requirements:

- Development proposals involving a building identified in Figure 23 or in the immediate vicinity of it should demonstrate how the design proposal responds to its significance including incorporating and recognising the central elements of the buildings.
- Development proposals explore and incorporate the recommendations of the LMC Cultural Mapping Study.

Park View Hotel

46 Gibson Street shop/house

Plant 3 and 4 warehouses

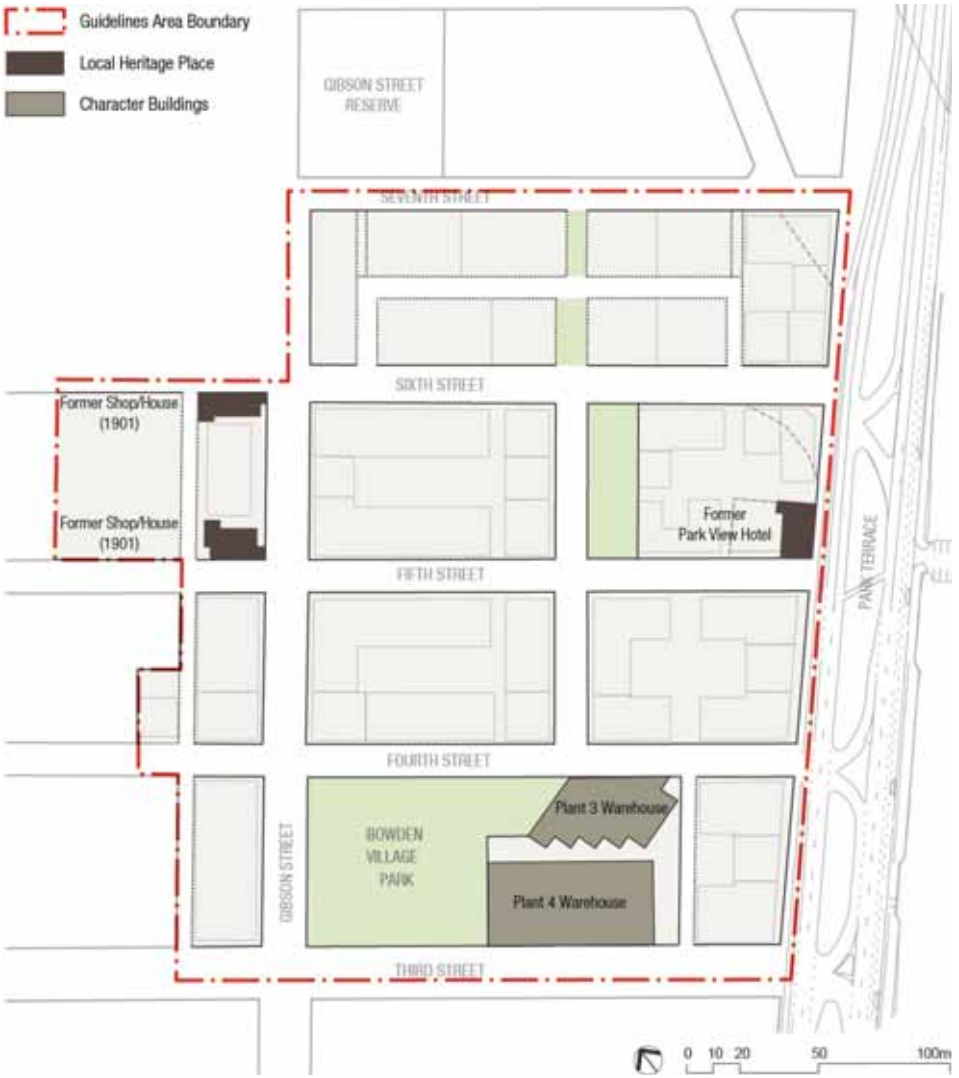


FIGURE 23: Heritage and Character Buildings

2.5 Access and Rear Lanes

2.5.1 Vehicle Driveway Crossovers

Integrated resolution of vehicle servicing, access, and parking is central to delivering pedestrian amenity and safety at Bowden. Preferred access to each development parcel is indicated on Figure 24 (Driveway Crossover) Location Plan.

Design Requirements:

- Demonstrate consistency with Figure 24 (Driveway Crossover Location Plan).
- Minimise the number of vehicle access points to each development parcel, including using shared access points.
- Ensure the maximum width of any driveway crossover is 6m.
- Design all vehicle driveway crossovers to be at footpath grade and to meet the *Disability Discrimination Act* and Australian Standards.
- Driveways to underground parking are to be raised a minimum of 300mm above the site boundary to prevent any flooding from the street.
- Reduce the visual impact of vehicle entries on the street through design strategies such as:
  - Entries to be designed as an integral part of the building façade.
  - Locating garbage collection, loading and servicing areas visually away from the street.
  - Recessing carpark entries from the primary façade line. Including security doors to carpark entries and returning the exterior materials into the recess for the distance visible from the street.

Examples of driveway entries

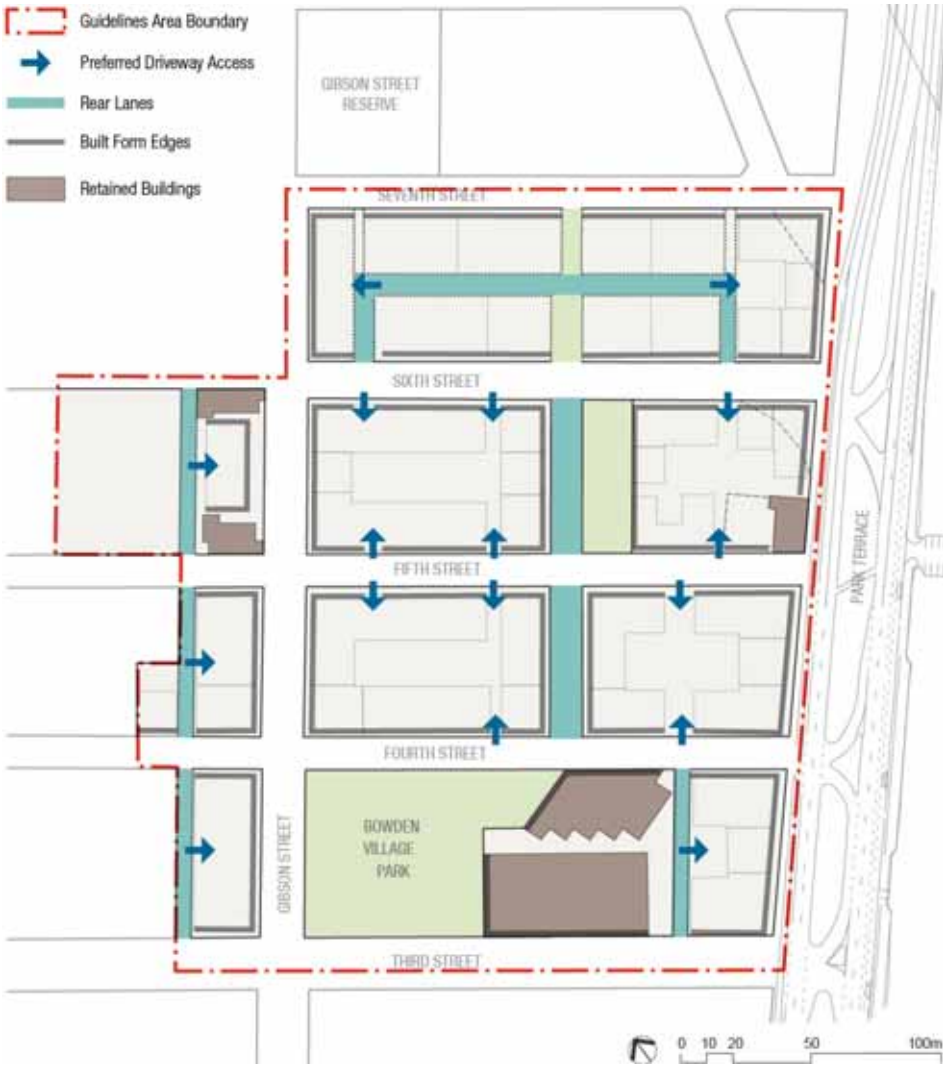


FIGURE 24: Driveway Crossover Location Plan

2.5.2 Rear Lanes

The framework incorporates rear lane vehicular access that allows for a maximum development frontage to streets and public spaces. The frontage is not broken by driveways and visitor car parking can be accommodated.

Design Requirements:

The lanes at Bowden will be designed as shared zones to be more than utilitarian service areas and will be made attractive and desirable spaces by:

- High quality landscaping and lighting.
- Design control of fences and garages e.g. rear fences to be minimum 50% transparent.
- Encouraging studios, granny and 'fonzie' flats above garages where appropriate (e.g. at corners).
- Ensuring passive surveillance with apartments and terraces overlooking laneways without compromising privacy.
- Refer to Section 4.10 Fences and Walls and Section 4.11 Garage Doors.

Studios above garage

Studios above garage

2.6 Precincts and Special Places

Bowden East incorporates a number of precincts, historic buildings and special places. These are:

- North East Quarter (Stage One Block bounded by Seventh Street, Gibson Street, Sixth Street and Park Terrace)
- Warehouse Precinct
- Bowden Village Markets
- Bowden Village Park
- Local Park 1
- Park Terrace Frontage.

FIGURE 25: Artists impression of Bowden Village (Market Culture Precinct)

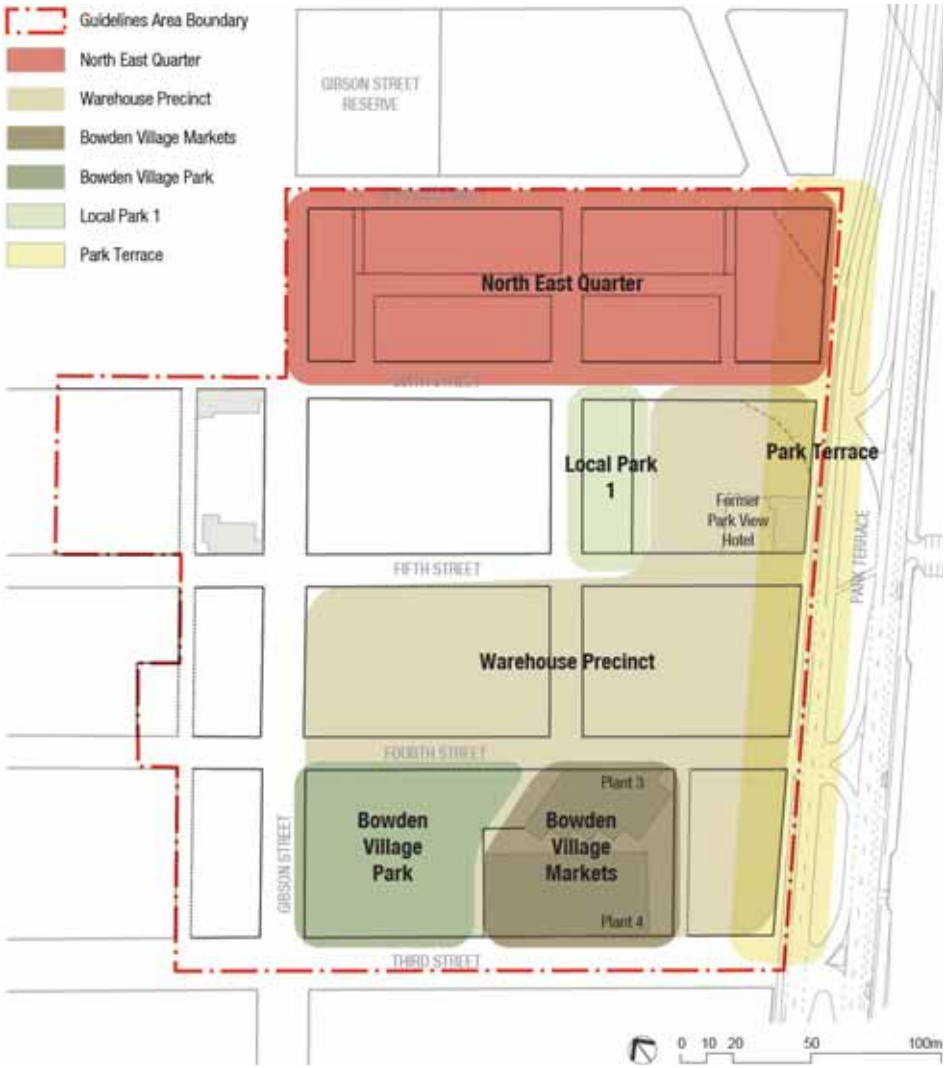


FIGURE 26: Bowden East Precinct Plan

2.6.1 North East Quarter (Stage One)

Character Statement

The North East Quarter will interface Bowden East with the established residential neighbourhood to the north-east. There will be a transition from three storey townhouses/ terraces fronting Seventh Street up to four storey apartments fronting Gibson and Sixth Streets. Apartments at the western end of Seventh Street will have a pleasant outlook over Gibson Street Reserve creating opportunities for casual surveillance. Residential buildings will frame Sixth Street as the key northern access point into Bowden from Park Terrace. Regularly spaced building entries, ground floor terraces and courtyards with colourful planting and balconies will create visually interesting streets.

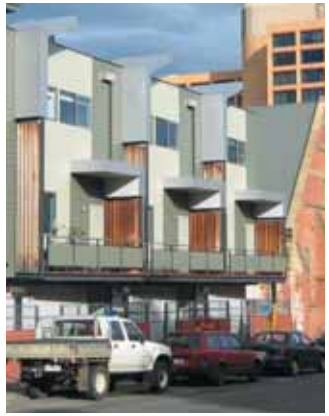
The urban block is serviced by a rear lane that eliminates all driveways from frontage streets, allowing for maximum definition and activation of a street wall. Individual lots are relatively small creating a fine grain residential character.

The block is also highly permeable with pedestrian accessways combined with landscaped laneways, allowing multiple cross movements between Sixth and Seventh Streets to Gibson Reserve and Park Terrace.

Design Requirements:

- For 3 to 4 storey residential buildings, a new typology should be developed based on innovative apartment and townhouse/terrace type models, including individual dwellings extending over multiple storeys.
- Apartment design should explore multiple core, single level, double level maisonette and crossover typologies.
- Identify each dwelling through façade treatments while maintaining an overall coherence of design along the overall length of the façade. Clearly different design styles and changes of materials for each dwelling are not supported.
- Access to allotments is to be from rear service laneways.
- If residential use, design the ground floor of new buildings fronting the existing park on the corner of Gibson and Seventh Street to enable future conversion to a café type retail space.

Gibson Street Reserve



Examples of low rise urban housing

2.6.2 Warehouse Precinct

Character Statement

The Warehouse Precinct will be a neighbourhood of residential apartments with ground and/or first floor mixed uses that could include creative art and design studios, offices and galleries. The character should reflect the synthesis of existing industrial forms and materials with best practice sustainable apartment buildings between four and eight storeys in height.

The heritage former Park View Hotel and the central character industrial warehouses are key elements. The leafy Bowden Village Park will create a diversity of options for outdoor recreation, connected by a network of intimate urban side streets and accessways.

Design Requirements:

- The precinct will require careful and considered integration of contemporary architectural and public domain design with the retained buildings.
- Retain the Plant 3 and 4 buildings converting them to an artist or creative industries manufacturing hub or village markets.
- New buildings are to be industrial in their aesthetic, composition and detailing, drawing on the existing industrial and manufacturing character of the precinct. Selection of materials should be sympathetic to the existing palette of materials with a judicious introduction of new materials and detailing.
- A vibrant mix of uses is encouraged. Artist studio and workshop spaces, galleries, retail, commercial and creative industry studios should be integrated with building entrances, small businesses, retail and residential entrances.
- The former Park View Hotel is proposed to be used in the medium term for an on-site visitor café, sales and display centre.

Table 3 sets out the following heritage/buildings of interest that are to be retained.

Building Name	Listing Class	Potential for Retention	Key Features and Issues	Potential Future Uses
Former Park View Hotel	Local	High	Brick hotel with timber balcony. Distinct building type and style from neighbouring industrial character warehouses. Maintain discrete setting in streetscape.	Commercial and/or retail/entertainment uses preferred. Visitor café, sales and display centre in the medium term.
Plant 3	Not Listed	High	1956 factory addition designed by Gerard Industries with southern glass façades.	Community based, artist, commercial and retail uses preferred. Arts, food and culture focus.
Plant 4	Not Listed	Medium	1961-1968 Brick façades including sawtooth roof form.	Commercial and retail uses preferred. Food market and culture focus.

TABLE 3: Heritage/buildings of interest to be retained

Plant 3 warehouse

Example of food market in warehouse setting

Plant 3 and 4 warehouses in potential village market setting

2.6.3 Bowden Village Markets

The two retained warehouse buildings (Plants 3 and 4) will be the focus of a lively arts, food and culture scene, providing the evolving village with an urban vibe.

Intended uses for these evocative industrial structures are produce markets and demonstration gardens, cooking school, café/restaurant, art and craft studios and galleries, lifestyle/ecology education, retail and community/performance space.

Coupled with the opportunity to reflect these uses into the adjacent Bowden Village Park this has the potential to become a cultural and retail landmark in Adelaide.

2.6.4 Bowden Village Park

Bowden Village Park is the central public open space for the development area. This will be designed with a formal grassed area and lined with avenues of trees.

Key features are to include water management/ lake, café/outdoor eating, tree grove or bosque/ productive landscape and childrens play area with an environmental water theme. The character of this park will be semi-formal with a mixture of hard and soft landscapes.

2.6.5 Local Park 1

This local park is in the centre of Bowden East and is part of a linked sequence of spaces between the Station Square and the existing Gibson Street. It will be designed to retain the beautiful pepper trees that are a part of the history of the former Clipsal site and will be fronted by apartments providing enclosure, surveillance and an active edge.

Interior of Plant 3

Open laneway between Plant 3 and 4

Bowden Village Park and Markets

Existing trees to be retained in Local Park 1

2.6.6 Park Terrace

Park Terrace is the interface between Bowden, the parklands and the CBD. Buildings along Park Terrace will form the outside wall to the village and be seen from close and long distances. Although the aspect is to the east, the views over parklands to the CBD are a major asset to be realised.

Built forms fronting Park Terrace have been carefully considered to respond to the traffic volumes of Park Terrace as well as maximising the benefit of the expansive views over the North Adelaide parklands.

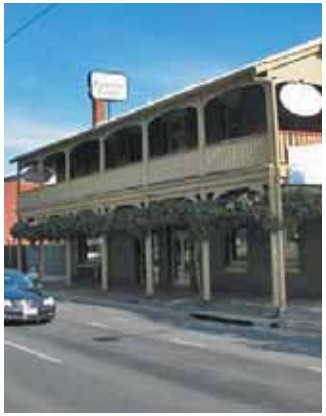
Park Terrace frontage south of Fourth Street will be predominately active with mainly commercial uses, ideally with large floor plates.

A pedestrian and bicycle bridge via Second Street – which connects the Transit Square and proposed Greenway to North Adelaide Parklands over Park Terrace – is designed to encourage pedestrian and bicycle traffic to/from the city and Bowden and surrounding areas. This bridge will be part of a gateway statement and entry sequence to Bowden.

Park Terrace frontage north of Fourth Street is likely to have a gradual change in activity to predominately residential with some commercial uses.

The guidelines encourage a graduation in building heights from east to west; taller buildings within individual blocks are to be located towards the southeast end of blocks.

Park Terrace looking north



Park View Hotel to be retained

Park Terrace from Plant 2

Artist's impression - pedestrian and bicycle bridge

3.0 Site and Block Development

3.1 Block Orientation

The diagonal orientation of the Bowden streets at approximately 50° west of north is not ideal for passive solar design. However, it will facilitate the penetration of sunlight into the streets despite the relatively dense nature of the development. This will occur mid morning for north-east to south-west oriented streets, and mid afternoon for north-west to south-east oriented streets. Although the sun is not at its strongest at those times of the day in winter, it will mean that most streets will get some sun at some time of the day in mid winter.

In summer however, it will mean that the north-west oriented streets and buildings will experience exposure to sunlight at the hottest times of the day.

Overall the result will be that most dwellings will receive some sun and hence good daylight levels at some part of the day in winter, however the detailing of building façades will require careful attention to exclude the sun in summer. This can be viewed as an opportunity for innovative façade designs with deeply set windows and moveable sun screening elements. Particularly on western façades, broad eaves and sun shading devices will add to the visual interest of the buildings.

North-West Orientation

- Maximum exposure to solar radiation in summer.
- Large roof overhangs and sun protection devices.
- Preference for narrow window openings capable of solar protection.
- Adjustable screen and awnings to maximise winter sun angles.
- Living areas to be distributed toward street façades.
- Rear façades to favour privacy and avoid over-looking.

North-East Orientation

- Generally most comfortable orientation.
- Plan to avoid unit to unit over-shadowing.
- Distribute living rooms to northerly positions.
- Generally more glazing, lower solid to void ratios.
- Large balconies as extension of living spaces.
- Treatments to south-west (rear) to favour privacy, e.g. small windows.

South-West Orientation

- Will receive some sun on street façades in winter.
- Maximise north (rear) facing components for living areas.
- Adjustable shade devices to south-west to exclude worst summer radiation.
- Higher solid to void ratios towards street.
- Large balconies/extension of living spaces.
- Generally apply as recommendations for north-east orientation to rear side.

South-East Orientation

- Will receive early morning sun only to street facades.
- Maximise north (rear) facing components for living areas.
- Generally apply north-west orientation to rear side.

FIGURE 27: Typical Bowden street block - 50° west of north

3.2 Building Typologies

A mix of residential building typologies should be considered in the early planning stages for each block. Different typologies include three storey terraces, single level single-loaded gallery access units, double loaded corridor-access units, corner aspect apartments, two storey maisonettes with gallery access units and cross-over arrangements and various combinations of the above.

There may also be single or multiple vertical access cores depending on the size of the building.

The general principles are to:

- maximise north to north-east facing apartments
- maximise cross ventilated apartments
- minimise building depth
- minimise south to south-west facing apartments
- minimise double loaded corridor access apartments.

Design Requirements:

- Generally blocks with:
  - North-west to south-east orientation should have north-east facing single aspect or dual aspect apartments.
  - North-east to south-west orientation should also have dual aspect units with attention to solar control.
- Single aspect apartments facing south-west or south-east are not encouraged and should be limited to a maximum of 10% of the total units in the development.
- Open plan arrangement.

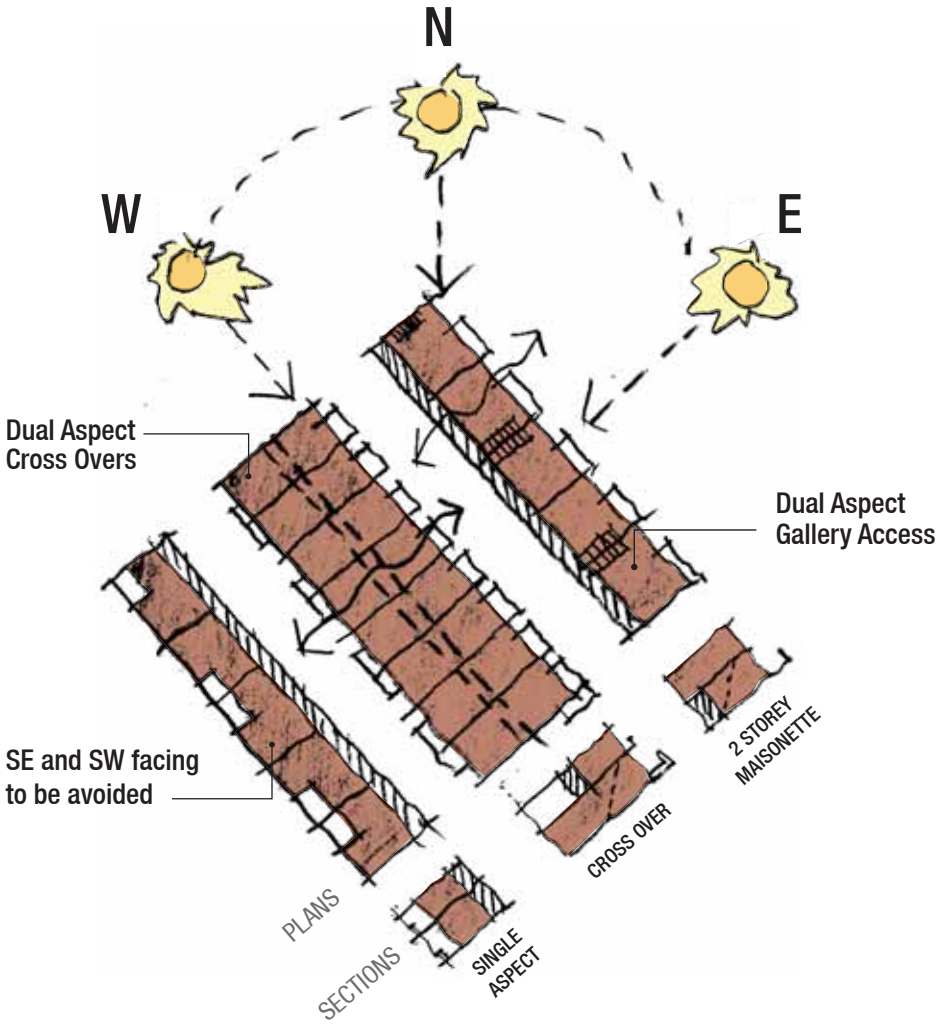


FIGURE 28: Building and Unit Orientation

3.3 Building Depth

Building depth contributes to sustainable design performance and internal amenity for occupants.

Design Requirements:

- Demonstrate buildings are of a depth that facilitates sunlight access for internal amenity and contributes to sustainable design performance.
- Residential building envelopes generally should be no greater than 22m deep (glassline to glassline a maximum of 18m) as a rule of thumb. This produces apartments that have good levels of natural light and ventilation.

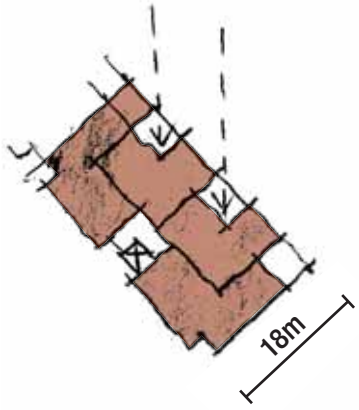


FIGURE 29: Building depth

3.4 Building Separation

The space between residential buildings (or residential floors and other buildings) is important for occupant amenity, both visual and acoustic privacy and infiltration of daylight to interior and outdoor spaces. The appropriate separation of buildings is to be considered in relation to the storey height of a building.

Design Requirements:

- Demonstrate how appropriate building separation, in combination with other design initiatives, achieves internal amenity, visual and acoustic privacy and appropriate daylight access.
- The following separation distances are a useful guide, however it is recognised that successful urban outcomes can be achieved through other methods.

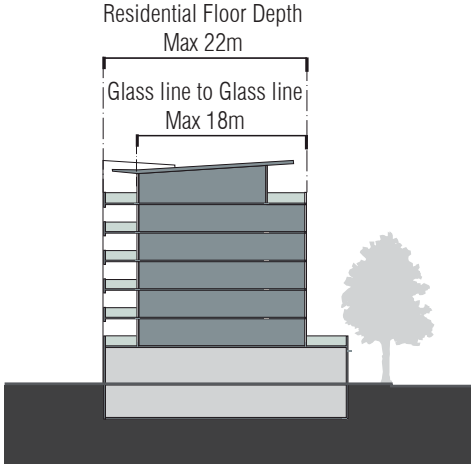


FIGURE 30: Building depth

For buildings floors up to 4 storeys:

- 12m between habitable rooms/balcony edges
- 9m between habitable rooms/balcony edges and non-habitable rooms
- 6m between non-habitable rooms.

For buildings floors between 5 – 8 storeys:

- 18m between habitable rooms/balcony edges
- 13m between habitable rooms/balcony edges and non-habitable rooms
- 9m between non-habitable rooms.

For buildings floors nine storeys and above:

- 24m between habitable rooms/balcony edges
- 18m between habitable rooms/balcony edges and non-habitable rooms
- 12m between non-habitable rooms.

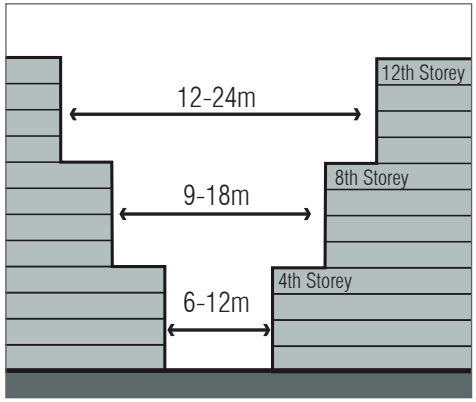


FIGURE 31: Building separation

3.5 Street Wall

A street wall is the part of a building that faces and defines the street edge. The guidelines encourage well defined and cohesive street walls that foster a sense of safety by casual surveillance from living rooms, balconies and front terraces and promotes interest by detailed design at street level.

Design Requirements

- Buildings should engage, frame and activate the street.
- Buildings are to generally align with block edges where indicated to clearly define the public domain of street hierarchies and open spaces.

3.6 Safety and Security

Bowden is to be a place where residents, workers and visitors feel safe and secure at all times.

The more windows that overlook public and communal space, the better.

Design Requirements:

- Apply Crime Prevention Through Environmental Design (CPTED) principles to all development proposals. In particular development proposals are to:
  - Clearly delineate the distinction between public and private space
  - Maximise the legibility and safety of building entrances
  - Optimise casual surveillance opportunities
  - Eliminate potential for concealment
  - Appropriately restrict access to private areas
- A CPTED statement is to be included as part of the design submissions, detailing how proposals respond to these principles.

Example of street walls

Casual surveillance of communal open space

3.7 Landscape Design

Bowden will be a place where landscape and buildings perform as an integrated system to achieve greater sustainability performance, amenity and visual quality for occupants and people in the public domain.

Design Requirements:

- Maximise the benefits of communal and private outdoor spaces through landscape design that supports outdoor living and improves microclimate and the energy performance of adjacent buildings.
- Target a minimum of 50% of communal outdoor space to be softscape planting (turf, ground covers or shrubs).
- Maximise opportunities for each development to include trees of a scale appropriate to the built form scale that facilitates growth to a mature canopy and long term health.
- Integrate landscape design with water and stormwater management.
- Select plant species appropriate to the Bowden context and the specific microclimate within the development, maximising use of endemic and native species and opportunities for urban biodiversity.
- Incorporate features to support fauna biodiversity.

Examples of deep soil zones

3.8 Deep Soil Zones

Deep soil zones are areas of soil where there is no constructed development component at any depth (e.g. basement) and where planting is in natural ground. Deep soil zones are useful in achieving the integration of large trees in developments and facilitate the infiltration of water into the ground. Refer to Figure 32.

Design Requirements:

- Maximise deep soil planting within the areas available, given other design parameters.
- Deep soil zones are to be of dimensions that achieve their function as planting space for large trees.
- Locating deep soil zones is encouraged within key communal outdoor space areas or elsewhere where a large tree will benefit the maximum number of residents and where the tree can contribute to the public domain.

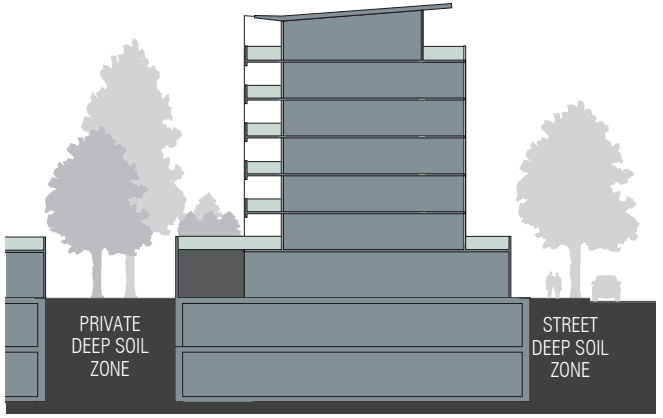


FIGURE 32: Deep soil zone

3.9 Landscaping on Structures

Basement car park, upper levels and roof terraces or green roofs are likely to result in areas of planting over built structures.

Design Requirements:

- Coordinate the design of basement car parks with the design of outdoor spaces to ensure the growth and long term health of planting to achieve the guidelines for Landscape Design (Section 3.7) and Communal and Private Outdoor Space (Section 3.10).
- Design for landscaping on structures to provide optimum conditions for plant growth by:
  - providing soil depth, soil volume and soil area appropriate to the size of the plants to be established;
  - providing appropriate soil conditions and irrigation methods; and
  - providing appropriate drainage.
- In terms of soil provision there is no minimum standard that can be applied to all situations as the requirements vary with the size of plants and trees at maturity. Table 4 sets out the advisory design standards for a range of plant sizes.
- Green roofs can be extensive - with low build-up height and soil depth suitable for self generative plants like succulents and grasses, or intensive with higher build up and soil depths suitable for trees, shrubs and vegetables.
- LMC will consider an additional storey in developments that provide green roofs and/or rooftop gardens spaces.

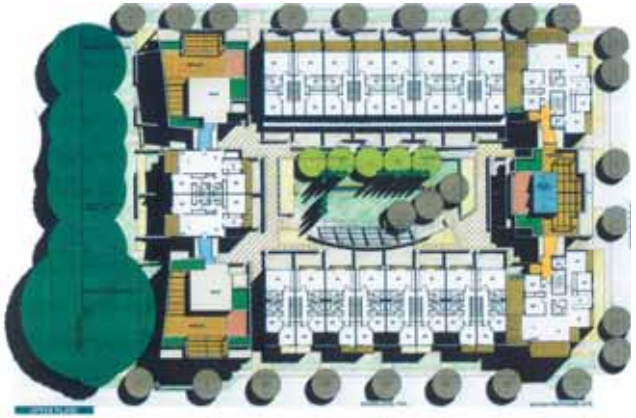
Plant Type	Minimum Soil Depth	Minimum Soil Area
Large trees (up to 16m canopy diameter at maturity)	1.3m	10m x 10m
Medium trees (8m canopy diameter at maturity)	1m	6m x 6m
Small trees (4m canopy diameter at maturity)	800mm	3.5m x 3.5m
Shrubs	500-600mm	
Ground cover	300-450mm	
Turf	100-300mm	

TABLE 4: Soil provision standards



Examples of landscaping over basement car parks or on building roofs

Abstract patterns



Site plans with central quadrangle

3.10 Communal and Private Outdoor Space

Outdoor space provides for a range of important functions in higher density residential development, including provision of recreational opportunities for residents, water management, daylight access, landscaping that delivers quality outlook, visual privacy, urban biodiversity opportunities, improved sustainable design and reduced heat island effect.

Communal Outdoor Space

Communal outdoor space is space within a private development that is shared by all residents and/or workers. Communal outdoor space may include a degree of public access to be secure.

Design Requirements:

- Locate and design communal outdoor space to maximise solar access, accommodate the intended activities, be accessible to all users, contribute to visual privacy between apartments and create a pleasant outlook.
- On larger sites for apartment living, the area of communal outdoor space should generally be at least 25% to 30% of the site area. This space requires sunlight in winter and shading in summer.
- Common open space within a development should receive at least 2 hours of sunlight in mid-winter for 25% of the area.
- Communal outdoor space should be overlooked by habitable rooms to ensure passive surveillance.
- Using roofs to provide communal outdoor space is encouraged. Also refer to Section 4.7 (Roof Level Design).
- Maximise the benefits of Water Sensitive Urban Design (WSUD) elements in communal outdoor space.
- Landscape design of the communal outdoor space should provide high level amenity to residents incorporating elements such as:
  - shade trees and structures (e.g. pergolas etc)
  - seating, tables and BBQ areas
  - artworks
  - casual play areas
  - pool
  - vegetable gardens, herbs etc
  - use low water landscapes and permeable surfaces
  - children's play equipment.

Examples of communal outdoor space

Private Outdoor Space

Design Requirements:

- Provide private outdoor space for each apartment in the form of a courtyard, terrace, balcony, deck or roof terrace. Outdoor spaces that reflect the size of the dwelling are encouraged. The primary balcony should have a minimum depth of 2.0m. The minimum provisions should be in the order of:

	Depth	Size
Studio (where there is no separate bedroom)	No minimum requirement	
One bedroom	2.0m	8m²
Two bedrooms	2.0 - 2.4m	11m²
Three or more bedrooms	2.0 - 2.4m	15m²

TABLE 5: Balcony sizes

- For private open space as a courtyard or roof level, target a minimum dimension of 4m and an area of 24m².
- For terrace houses, target a minimum 30% of lot area to cater for outdoor living areas. Minimum size target is 20m² with a minimum 3-4m width, positioned for best solar access.
- Locate primary areas of private outdoor space adjacent to the main living area.
- Where ground floor private outdoor space fronts the street or public open space, design the space to contribute to a pleasant streetscape while providing a degree of privacy to residents.
- Locate and design all private outdoor space to optimise usability, sunlight in winter and shade in summer, amenity and privacy between apartments.
- Allow for the integration of planters to provide landscaping opportunities.
- Private open space may be substituted for the equivalent area of communal outdoor space (as described at the beginning of this section) where the communal outdoor space is not publicly accessible and at least 50% of communal open space is visually private from public areas.

Examples of private outdoor space

3.11 Vehicle and Bicycle Parking

A key aim for Bowden is to manage and reduce vehicle usage over time through a combination of physical and behavioural measures. Good access to public transport, cycling and walking networks offers an alternative to reliance on cars.

Other measures such as the implementation of share car programs may also assist in reducing car use.

3.11.1 On-Site Car Parking Provision

Design Requirements:

- Residential:
  - Provide private on-site car parking spaces at the average rate of 0.75 parking spaces per dwelling unit.
- Commercial and Retail:
  - For shops, provide 3 car parking spaces per 100m² gross leasable area.
  - For tourist accommodation, 1 space for every 4 bedrooms up to 100 bedrooms and 1 space for every 5 bedrooms over 100 bedrooms.
  - For all other non-residential uses provide 3 parking spaces per 100m² of gross leasable floor area at ground floor level and 1.5 parking spaces per 100m² for gross leasable floor area above ground floor area.

A lesser car parking rate may be applied where justified based on local circumstances, for example where:

- the proposed development is adjacent to a designated pedestrian and/or cycling path;
- the proposed development is within convenient walking distance to readily accessible and frequent public transport;
- convenient on-street car parking is readily available;
- the proposed development is on or adjacent to the site of a heritage place that hinders the provision of on-site parking;
- there is the opportunity to exploit shared car parking areas between uses based on compatible hours of peak operation;
- suitable arrangements are made for any parking shortfall to be met elsewhere or by other means; or
- for studio apartments, student accommodation, affordable housing and retirement villages.



Examples of public bike parking




Share cars


On street parking

3.11.2 On-Site Car Parking Location

Design Requirements:

- Locate on-site car parking to minimise impact on the provision of active building frontages edging all streets and open spaces at both street level and the first to third storeys which may also contribute to street character and opportunities for casual surveillance.
- Demonstrate that on-site car parking is not visible from any public street or open space. This can be by residential or other uses, innovative screens, artworks and/or landscape elements.
- Demonstrate how on-site car parking and access routes incorporate Crime Prevention Through Environmental Design (CPTED) principles.
- For Development Parcel 1 with three to four storey buildings:
  - Provision of on-site car parking for Development Parcels in Stage 1 fronting Sixth and Seventh Streets may be achieved through ground levels/carports, only accessed from an internal lane. Refer to Figure 33.
- For all other Development Parcels:
  - Strong preference is given to below ground basements fully below the finished street level. Refer to Figure 34.
  - Semi-basements that extend above the finished street level a maximum of 1.2m only may be considered as an alternative in locations where a raised ground floor is allowed. Refer to Figure 35.
  - Natural ventilation to basement and semi-basement car parking is encouraged on sustainability grounds. Ventilation grilles and screening of openings into façade design will require detailed design attention. Design solutions could include metal artwork, recessed walls, concealed louvres and other visual screening.
  - Configure and resolve detailed design of basements to achieve guidelines for Communal Outdoor Space (Section 3.10), Deep Soil Zones (Section 3.8) and Landscape Design (Section 3.7).
  - Containing basements within the extent of the building above is encouraged.
  - Alternatives to basement car parks will only be considered where it can be clearly demonstrated a basement configuration cannot be achieved within a development parcel. Only above-ground car parking that is fully 'wrapped' by active uses (commercial, retail and/or residential) to all street and open space frontages will be considered as a possible alternative.

3.11.3 Bicycle Parking

The provision of good quality facilities for cyclists within buildings with convenient external access is essential to encourage the use of bicycles for transport in preference to cars.

Design Requirements:

- Lockable on-site storage for bicycles should be provided in basements or other storage areas for residential uses.
- Provide a minimum of 1 bicycle space per dwelling in the basement or similar area.
- Visitor bicycle parking facilities should be provided in convenient locations at a rate of 0.25 visitor spaces per dwelling.
- Retail and/or commercial premises should consider the supply of at least one shower and change facility (including lockers) accessible by all tenants per building.

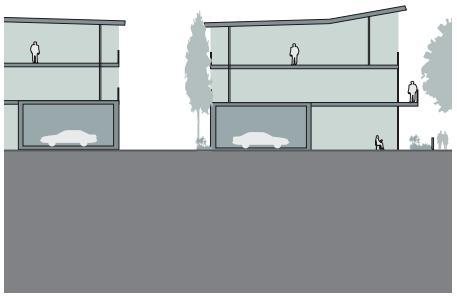


FIGURE 33: On-site parking location for development parcels in Stage 1 fronting Sixth and Seventh Streets.

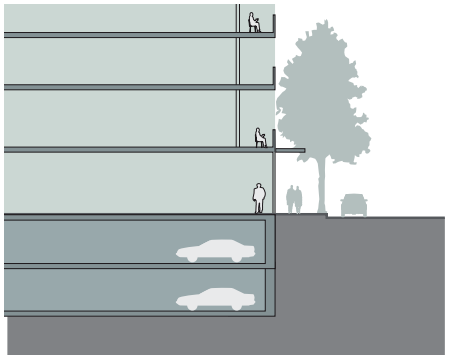


FIGURE 34: Preferred parking location in full basements

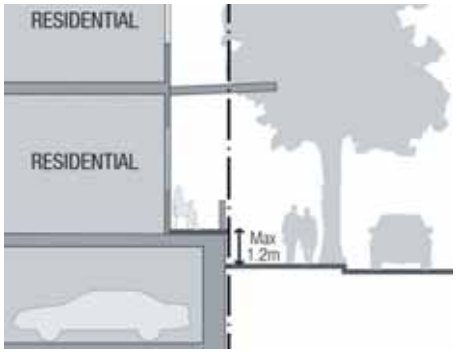


FIGURE 35: Maximum height of semi-basements above finished street level

Secure on-site bike parking for residents

4.0 The Building

4.1 Green Star Requirements

Bowden has set a number of sustainability targets based on high level objectives approved by the State Government. LMC has adopted the Green Star rating system for this project. Buildings in Bowden will be required to achieve a minimum 5-Star rating and on selected sites LMC will require buildings to achieve a 6-Star rating.

4.2 Designing for Adelaide's Climate

The design of buildings for Bowden should express a strong commitment to Ecologically Sustainable Development (ESD) principles, in particular passive design, optimal orientation, effective sun shading, cross ventilation and open plan living. This should be evident in the external architectural expression.

Adelaide is located on the coast and has a predominately temperate climate often referred to as Mediterranean. There are hot, dry summers and mild, wet winters. The average summer temperature is 29°C with some days over 40°C. The average winter temperature is 15.5°C.

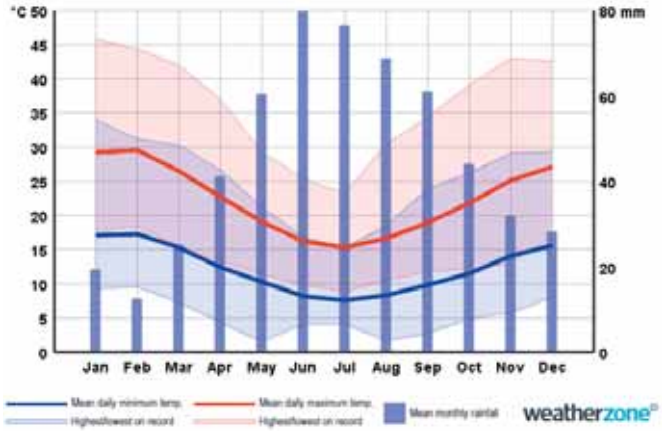
From a climatic point of view, the ideal orientation for living areas is north to north-east to receive the morning winter sun and avoid hot afternoon summer sun. There should be only minimal openings to the west; openings should be to the north and east and to the south-west for cross ventilation purposes as breezes are mainly from the south-west and west in the afternoons.

North-east facades should have large overhangs for shadow/shade. Vertical and horizontal shade devices should be provided to all east/north-east and west/north-west and south-west glazing. Eaves are generally not required for south/south-east façades

In summer the cooling influence of land and sea breezes is an important factor. Design should capture breezes from the south-west and use open plan interiors for maximum cross ventilation. Louvres rather than top-hung awning windows can be used to maximise air flow.

Buildings need insulation to keep heat in during cold weather and keep heat out in hot weather. High insulation values are desirable to walls and roofs. Thermal mass is beneficial, suggesting use of masonry.

Green Building Council of Australia's Rating Tool



Adelaide's Climate

4.3 Energy Efficient Design

Design Requirements:

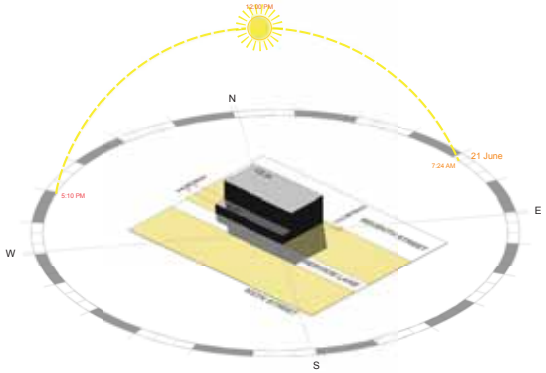
The mandating of minimum 5-Star Green Star ratings for buildings (with some higher 6-Star rated buildings) will dictate the adoption of energy efficient design practices. As a part of developing an overall energy efficient design strategy for buildings, the following are to be incorporated:

- Response to the diagonal street grid and the implications for sun control together with overshadowing of adjacent properties and public areas.
- Good passive solar design principles that reduce the reliance on mechanical systems for heating and cooling, and promote the use of natural daylight over artificial lighting. In particular, adopt good passive solar design principles in the design of façades including shading devices that exclude sun in summer and allow it into buildings in winter; locating living spaces to take advantage of winter sunlight.
- Apartment buildings should be designed with narrow depths, dual orientation and multiple entrance lobbies that allow for natural cross ventilation and good solar access for each apartment.
- High level of insulation as a simple means of reducing the energy consumption of buildings.
- Energy efficient light fittings and appropriate use of light sensors.
- Outdoor clothes drying spaces (other than balconies) or internal drying spaces within apartments to reduce reliance on clothes dryers.
- The use of green roof and green façade/green wall elements to reduce heat loads on internal building spaces.
- Tri-generation heating and cooling (excluding townhouse and 3 storey apartments).
- Good metering systems to monitor the energy performance of buildings, including individual dwellings and tenancies.
- Energy efficient appliances for residential buildings and selection of equivalent energy efficient appliances for other buildings.

Effective sun shading

Lobbies capable of natural ventilation

Sun shading, eaves and screens



Mid winter shadow study for a Stage 1 typical block in Bowden

4.4 Base/Middle/Top

Buildings that demonstrate good manners to the street usually have a base that is clearly related to pedestrians and the ground. The middle section provides visual interest and helps define the street edge. The top section finishes off the building.

Dividing a building into three distinct sections responds to the character of traditional urban architecture and reflects the mixed uses they contain.

Design Requirements:

- Buildings of four storeys or greater should be designed to clearly demonstrate base/middle/top principles.
- The masonry wall should be the dominant expression. Openings are to be generally vertical, punched into the wall and perhaps with expressed lintels.

4.5 Solid to Void Ratio

Bowden is set in an area of mixed industrial and residential character that has a strong sense of solidity in its traditional built form. The development of Bowden aims to capture a sense of simple and permanent architectural 'walls' to define the street, and to avoid frontages that read as continuous voids.

Design Requirements:

- Building façades are to be articulated by creating contrast between solid elements (e.g. walls) and voids (e.g. windows, doors, balcony openings etc), generally with a higher solid to void ratio.
- On façades where sunlight access is good and living areas are located, limit the balcony openings for bedrooms to avoid a continuously open void form. Consider side access from bedrooms to living area balconies if required.
- Indented or partially indented balconies add to the solidity of the façade, and should be employed, particularly at lower street defining levels.

Base/Middle/Top

Base/Middle/Top

Solid to Void Ratio

Indented balconies

4.6 Building Façade Design

The façades of buildings are the significant vertical enclosing elements of the public domain.

The architectural quality of façades will be influenced by the articulation of functional requirements, environmental sustainability, proportion, transparency, the interplay of light and shade, materiality and colour.

Design Requirements:

- Demonstrate that all buildings positively contribute to the character of Bowden and the quality of experience in the public domain through high quality architectural composition of façades.
- Demonstrate façades are diverse in character providing a fine grain reflecting the character of the locality and region. The use of replica style forms and detailing is not encouraged.
- Demonstrate street frontages of retail and commercial uses that maximise their important role in the building's positive contribution to the public domain, for example through active frontages, frequent entrances and glass.
- Demonstrate a clear relationship between the whole building form and the individual façade and building elements.
- Compose façades with an appropriate scale, rhythm and proportion, which respond to the building's use, height and different street frontage conditions, while avoiding an unconsidered repetition of elements.
- Demonstrate that the building is to be vertically proportioned in height, form and architectural articulation.
- Openings for windows and doors are generally to have a vertical proportion. Where a horizontal opening is used, this should be detailed with vertically proportioned framing, which can be emphasised with lighter coloured material.
- Façades should respond to Bowden's microclimate, explore different elevational treatments related to orientation, incorporate external shading components and use high quality, durable materials and finishes. Highly reflective finishes are not permitted.
- Façades should provide a richness of detail and architectural interest, especially at visually prominent locations.
- Integrate public art into the building fabric and spaces.
- Rainwater downpipes and balcony drainage are to be carefully integrated with façade design.
- Demonstrate that all building façades incorporate Crime Prevention Through Environmental Design (CPTED) principles.

FIGURE 36: Building façade design

Incorporate sustainable design elements

Adaptable screening

Quality of detailing

- Design solutions may include but are not limited to:
  - strongly articulating building entries;
  - distinguishing between the base, middle and top/roof sections of the façade;
  - selecting balcony types that respond to the building orientation and proximity to the public domain;
  - using architectural features to give a human scale at street level;
  - recessing elements such as windows or balconies to create visual depth in the façade;
  - emphasising the difference between solid and void to create a strong sense of shadow and light; and
  - further expressing upper level setbacks through a change in materials, colour or change in façade detail or rhythm.
- Ensure that buildings meaningfully engage with all street and/or open space frontages through the placement of windows, balconies, entrances, internal active spaces and the like. The design of buildings with a focus on one frontage only to the detriment of the other frontages is not supported.
- Respond to how a building may be viewed from all sides giving particular attention to how façades 'turn the corner'.
- Integrate a variety of sun shading devices, adjustable privacy screens and balcony edges into the overall design.

Balconies

- The general intention is to provide an urban "wall" or façade for the middle part of buildings. This requires a preference for fully or partially recessed balconies and terraces – subservient to the main façade. Balustrades may be solid, translucent (opaque) or transparent (glass or perforated metal).
- The degree of visual privacy from the public domain should decrease with the height of the balcony. Upper level balconies can be more transparent.
- Balconies on first and second floors in particular should be predominantly solid and/or opaque.
- The design of balconies may include adjustable or fixed shutters for privacy and solar control.
- Upper balconies may project up to 450mm over setback or property boundaries.

Recessed balconies

Innovative balcony and screen design

Solid, translucent and transparent balustrades

Projecting balconies

Recessed balconies for deep shade

Design emphasis to balconies

4.7 Roof Level Design

The roof is a key component of design and architectural expression. Quality roof design considers the contribution of the roof to the overall performance and function of the building and the character of its context, particularly if it is viewed from above in close proximity from other buildings.

At Bowden, many building roofs will be overlooked from other nearby buildings.

There will inevitably be a combination of roof forms especially on mid-rise buildings including traditional pitched roofs, industrial style skillions, as well as green and accessible roofs.

Expressed roofs for terrace houses are preferred to develop a coherent roofscape that can accommodate solar and PV panels. Avoid rooftop terraces that can compromise privacy between dwellings.

Design Requirements:

- Buildings are required to have a visual 'finish' at the roof level. This can be in the form of a roof with eaves, a parapet, a top floor recessed or a separately detailed element or a combination of the above.
- Treat roof spaces and forms as a considered aspect of the overall building form (a "fifth elevation").
- Maximise the opportunity for roofs to deliver one or multiple functions including:
  - communal and/or private outdoor recreation opportunities;
  - green roofs for improved sustainability performance, food cultivation and urban biodiversity. Refer to Section 3.9 (Landscaping on Structures); and
  - efficient installation of renewable energy technology including solar panels, solar hot water systems and other technologies.
- The considered use of pitched roof elements is encouraged to reflect traditional roof forms of Adelaide and the Bowden industrial legacy.
- Metal deck roofing is the preferred material.
- Integrate service elements (e.g. service plant, lift overruns, vent stacks, ventilation equipment) into the roof design to minimise visual intrusion and create"clean" roofscapes.
- Plant and roof equipment should be designed and coordinated to have a clean, positive visual impact to integrate sustainable features.
- Roof gardens/green roofs are a preferred solution and may be mandated on some buildings.

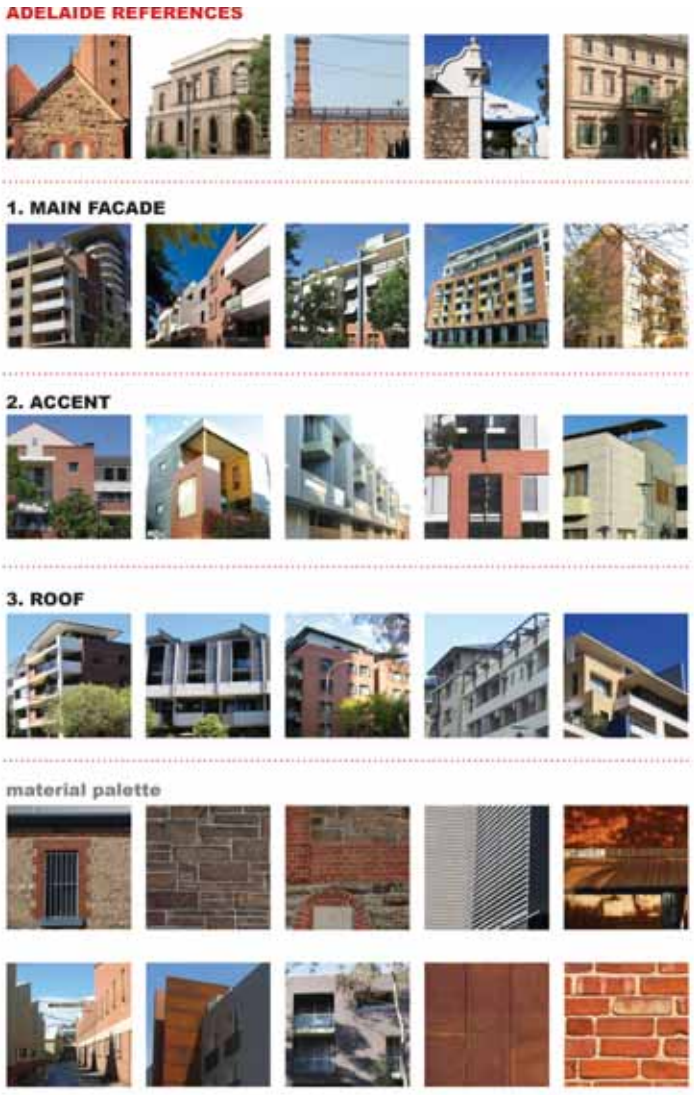
Examples of roof design and articulation

4.8 Cohesive Materials and Details

The guidelines encourage a limited materials and colour palette to achieve cohesive built form. Desired streetscape variety will be generated by individual interpretation of specific site briefs and the response to sites by each architect/developer consortium.

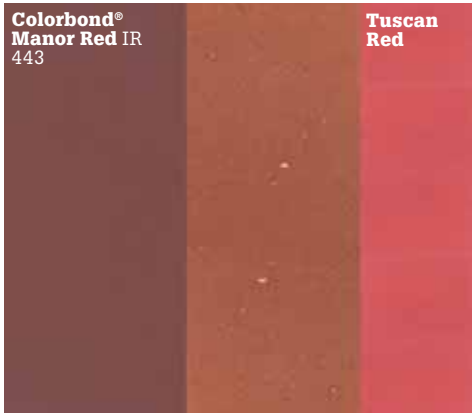
Design Requirements:

- Adopt a cohesive materials palette as an integral part of the building design.
- Select materials that contribute to the building's sustainability performance, including consideration of green walls.
- Select durable high quality materials that withstand the effects of weathering and contribute to the value of buildings and the streetscape appearance over the long term.
- Maximise the use of materials that are self-finished and/or pre-finished.
- Encourage innovative use of lightweight materials such as Zincalume, Custom Orb, CFC sheets, Corten Steel and the like.
- The use of superficial and superfluous detailing and highly saturated colour palettes is discouraged.
- Activity within non-residential buildings should be readily visible through the windows. The use of reflective or dark glass that prevents this is not supported.



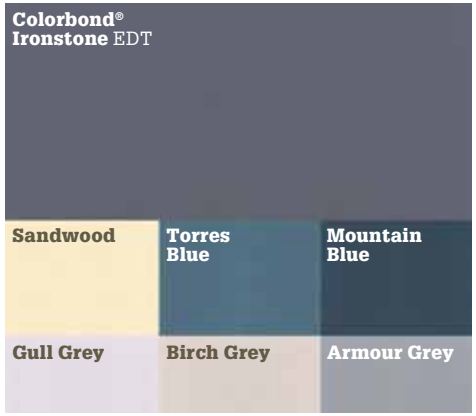
Adelaide has a tradition of building in red brick, masonry, rubble, sandstone, bluestone and rendered decorative elements/architraves/quoins.

- Façades are to be of smooth face bricks, rendered masonry or painted concrete surfaces. High quality off-form concrete may be used but not as the predominant material. Metal cladding is suitable, particularly for upper level façades and accent walling. Other materials will be considered at the discretion of LMC/Design Review Panel.
- The colour of external façades is to be predominantly mid to darker red/earth tones. Light sandstone/beige/grey on rendered or painted lightweight areas should be used to articulate the façade.
- Highly coloured, reflective or white façades are not generally encouraged.
- Precast concrete is not to be used as the primary façade material unless there is acceptable articulation, surface treatment, and integration with other architectural elements.
- For roofs, corrugated sheet metal in Colorbond or Zincalume is acceptable. Colours preferred to be neutral (not white or off-white) with low visual impact. Standard Colorbond colours would include the lighter greys of Shale Grey and Windspray and darker tones of Woodland Grey and Headland with more traditional (slate and red roof) colours used selectively.
- Change of material/colour associated with upper level setbacks is encouraged.



Mid warm earthy red tones

Mid warm earthy ochre tones



Darker slate tones

Neutral grey tones

4.9 Building Entry and Pedestrian Access

Quality and equitable pedestrian access where all residents, employees and visitors can access buildings and public and/or communal spaces is central to an inclusive community and user friendly places.

Building entrances are the primary interface of a building with the public domain, contributing to the character and legibility of a street and forming a significant component of the overall façade composition.

Design Requirements:

General

- Provide pedestrian access into all buildings and into the public spaces of retail, commercial and residential developments, including residential communal areas. Access must be equitable for those with mobility impairments, using strollers, wheelchairs or bicycles and satisfies relevant sections of the *Disability Discrimination Act*.
- Ensure equitable access is provided to all public and shared entries.
- Provide access for disabled persons (barrier free) to at least 20% of apartments in a development.
- Locate the primary entry of a building to address a development parcel's primary street frontage.
- Design entries and associated elements (e.g. signs, street numbers, mail boxes) to emphasise their visible presence from various approaches to the building.
- Provide distinct and separate entries from the street for pedestrians and cars and for commercial and residential in mixed use buildings.
- Entries are to be generous and safe with double height spaces to larger developments.

Residential

- Each individual ground floor dwelling is encouraged to have a separate entry and address to the public street to activate the street edge. The majority of street level apartments are to achieve this.
- Design shared entries for upper level dwellings to be clearly legible as the 'higher order' entries e.g. through façade modulation or awning projection.
- Provide an entry canopy for protection from sun and rain.

Double height entry

Pedestrian through-site link

Individual entry from street to apartments

Individual entry from street to terraces

Individual entry from street to apartments

4.10 Fences and Walls

The design of fences and walls has a significant impact on streetscape character, the clarity of separation between public and private realms, casual surveillance of the street and the usability of ground floor private open spaces. Front fencing is a particularly important design element that can contribute to a cohesive urban street character.

The guidelines encourage a contemporary design with a limited palette of materials that relates to Adelaide precedents. Privacy is to be achieved by dwelling design, solid side fencing and a combination of masonry, permeable fences and landscape. Built solutions that incorporate landscape elements are encouraged.

The majority of front fencing will be for apartment buildings – either at a similar level to the footpath or elevated up to 1200mm above the footpath. In Stage 1, front fencing will also be designed for terrace housing.

Design Requirements:

- Development is to have consistent and integrated front fencing of an urban character that provides for resident safety, privacy and community interaction.
- The design of the fences and walls is to:
  - Delineate between public and private space with front fencing located on the property boundary as a clear definition of space.
  - Allow sight lines between buildings and the street to enhance safety and opportunities for casual surveillance.
  - Provide privacy and security while not eliminating opportunities for outlook, natural light and ventilation.
  - Provide an articulated, visually interesting edge to the street with a mix of solidity and transparency.
  - Contribute to the development positively addressing the street.
- Fencing may incorporate landscaping to soften particular edges e.g. retaining walls.
- Integrate letterbox and numbering into boundary treatment detail.
- Use durable materials that are easily maintained and graffiti resistant.

Front Fences

- Materials

  Materials should be used in combinations as a "kit of parts" to provide walls, piers and plinths with open elements of palisade design.

  Preferred materials are:
  - stone (sandstone and bluestone)
  - solid walling masonry (smooth-faced brick of selected red/ochre or blue colours)
  - render (painted natural colour selection)
  - metal (painted steel – neutral grey-black)
  - timber (slats).

  The materials and/or colours of the fence should relate to those of the building and should be part of the colour palette which make up the "Essential Bowden".

- Solid to Void

  The relationship between solid and transparent/ permeable will depend on specific design circumstances. As a general guideline this should be equally balanced. The open component is to include the front gate. Other open areas can incorporate planting to provide privacy screening if required. The length of solid walls should be limited to no more than 5m.

- Heights

  There are two conditions – where the ground floor of the apartment is elevated and where the apartment or terrace is at a similar level to the street.


Landscape incorporated


Brick and metal palisade


Raised 1200mm above footpath


Metal palisade


Combination solid and void


Gates to be permeable

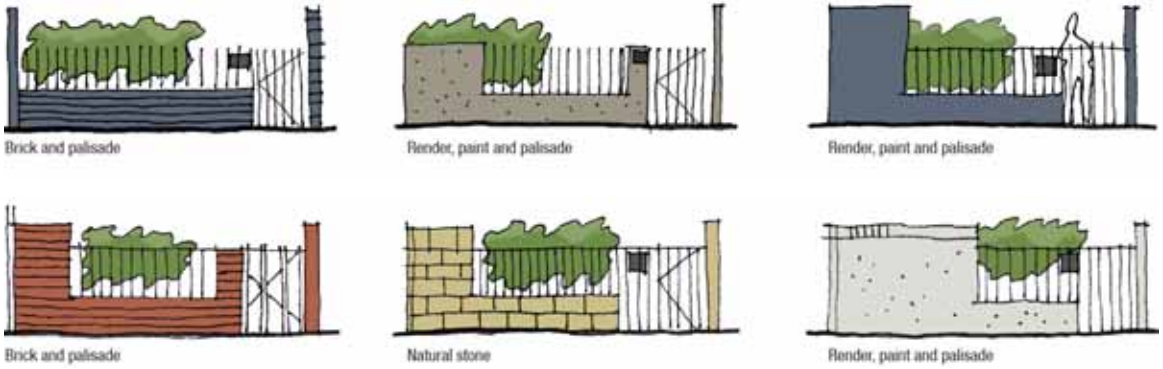
- Where the ground floor of the apartment is elevated, the wall/fence height is to be 2200mm to comply with Building Code. The lower component (from ground level to 1200mm) is to be solid, or have some car park ventilation. The upper component is to be a balustrade. The height of transparent elements (50%) should be reduced wherever possible to a maximum of 1600mm (including gates).
- Where the apartment or terrace is at similar level to the street, the maximum height of front fences should be 1800mm. The length of solid components should be limited, with preferred infill of 1500mm or 1200mm palisade fencing.
- Fences returning to the building wall should be a maximum height of 1800mm.

Laneway and Cross Site Link Fences

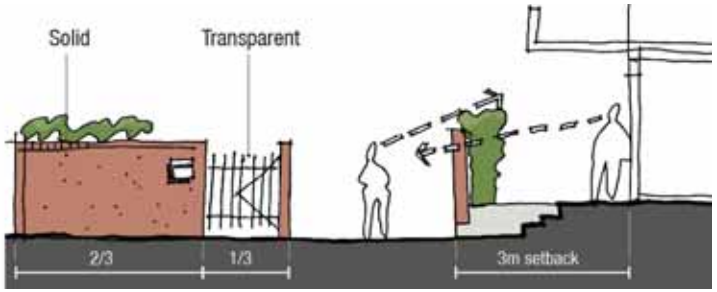
Laneway fences are to be 1800mm maximum height. Solid fences should screen service/ refuse areas. Fifty percent of the rear fence is to be visually permeable. Preferred materials are masonry, palisade and vertical timber battens. Metal fencing is not permitted.

Dividing/Side Fences

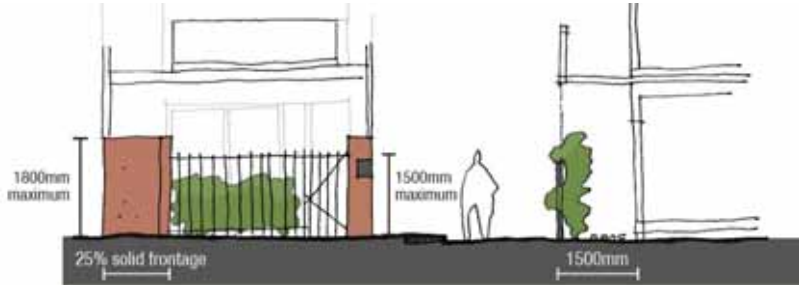
These are to be a maximum of 1800mm high, masonry or timber (lapped and capped paling). To be located 1.0m behind the front building line. Metal fencing is not permitted.



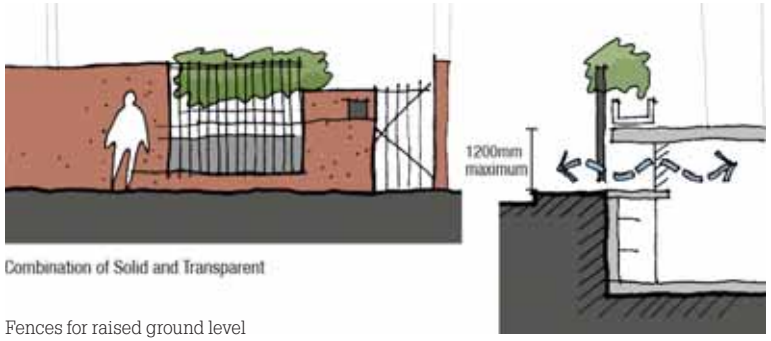
Fencing Kit of Parts



North facing terraces minimum 3m setback



South facing terraces maximum 1.5m setback



Combination of Solid and Transparent

Fences for raised ground level

4.11 Garage Doors

Garage doors are not to be overly featured and should be similar to the colours of surrounding walls. Innovative approaches to gain light and/or ventilation through garage doors are encouraged.

Well designed open carports for terrace housing are also permitted.

Design Requirements:

- Garage door materials can include special finishes such as metallic perforated sheeting, glass/perspex, polycarbonate sheeting, pre-finished sheet metal in horizontal bands and timber in neutral colours and natural finishes.
- Segmented door systems such as tilt up or panel lift and sliding doors are preferred.
- Roller doors are not permitted.

Timber louvre panels allow natural ventilation

Metallic perforated sheeting

Fineline sectional door

Recessive black mesh

4.12 Awnings and Signs

Awnings

Awnings improve the amenity of footpaths and building entries for pedestrians by providing all weather protection and contributing to building identity. Awnings are particularly important in areas of high pedestrian activity and ground floor active uses.

Awnings may require Council approval for encroachment onto public land.

Design Requirements:

- Provide continuous awnings to all buildings along Park Terrace as shown on Figure 37 (Awning Location Plan).
- Awnings/verandahs to Park Terrace to be supported by posts at regular intervals, creating a vertical rhythm typical of the built form at central Adelaide's city/park interfaces.

- Awning posts to be set back from travel lanes as advised by LMC to Council and DTEI clearance specifications.
- In other areas provide as a minimum awnings to retail frontages, and over commercial and common residential entries.
- All awnings are to have a soffit height in the range of 3.0 - 4.2m above finished footpath level.
- Awnings/verandahs to be a minimum depth of 3.0m where achievable, to reflect the deep, shady character of Adelaide's established vernacular.
- Provide under-awning lighting for pedestrian safety.
- Design awnings to ensure they do not inhibit trees in the public domain achieving full mature canopies.
- Glass-roofed awnings may be used in selected locations taking into account function and orientation.
- Awnings may be required for re-use of existing warehouse buildings and other active uses to Bowden Village Park.
- Design awnings to ensure they do not inhibit on-street car parking.

Fixed and retractable awnings

Contemporary interpretation

Traditional protection

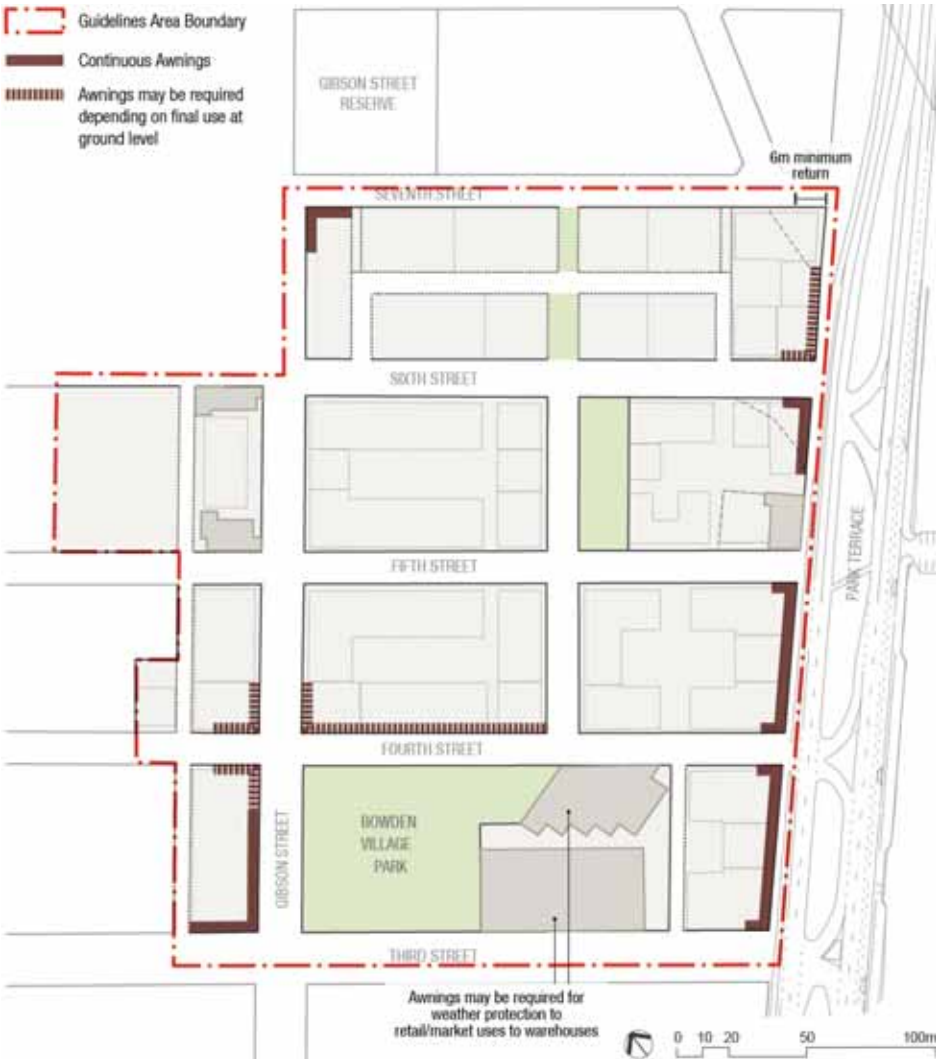


FIGURE 37: Continuous Awning Location Plan

Signs

Thoughtful integration of signs contributes to way finding and identification of buildings and individual businesses. This should be achieved without visual clutter or impacting on the desired precinct character.

Design Requirements:

- Integrate signs and building numbers into the overall fabric of development through consistency with the building scale, proportions and detailing.
- A maximum of one under-awning sign for a residential building and one per commercial or retail tenancy.
- Awning edge signs are discouraged.

4.13 Waste Collection

Well designed waste collection strategies will facilitate recycling and reduce the amount of waste going to land fill.

Design Requirements:

- Within buildings, and individual dwellings, provide correctly sized and suitable facilities to enable the easy collection, storage and disposal of recycling and segregated waste, including green and organic kitchen waste for composting.
- Provide recyclable, compostable and waste bins in equally accessible locations.
- Within buildings or on allotments, provide appropriately sized, suitably positioned and secure facilities for storage and for presentation with proper access for residents, building management and for waste collectors.
- Within buildings or on allotments provide a temporary storage area for hard waste.
- Provide on-site composting facilities or use Council's green waste collection service for residential buildings.
- Provide facilities that are appropriate in type and size including a dedicated area for on-site storage, sorting and collection of waste and recyclable materials that meets City of Charles Sturt requirements for waste storage and collection.
- Locate on-site waste storage and collection areas in locations that are unobtrusive, minimise odour and noise, and mitigates any adverse impacts on neighbouring properties.
- Provide an appropriate Waste Management Plan with building development applications in consultation with Council.
- Appropriate temporary waste facilities should be provided and maintained on site for the duration of construction and should maximise recycling opportunities for both construction and domestic type waste.
- Developments must comply with Council requirements in relation to site management matters including but not limited to erosion and stormwater control during the construction phase.

4.14 Indoor Environment Quality

The creation of pleasant indoor environments with good air quality, access to daylight, good thermal performance and appropriate noise attenuation can influence the health and well being of occupants. The adoption of best practice design in relation to these issues is encouraged.

Examples of signs

5.0 The Apartment

5.1 Apartment Size, Layout and Flexibility

Residential apartment layout impacts on the quality of occupant amenity and its environmental performance.

Design Requirements:

- Minimum apartment sizes (excludes balconies) that reflect housing affordability criteria are in the order of:
  - 30m² for studio apartments
  - 50m² for 1 bedroom apartments
  - 70m² for 2 bedroom apartments
  - 95m² for 3 bedroom apartments.
- Design apartment layouts to facilitate changing the function of rooms and furniture configurations.
- Facilitate natural ventilation and daylight through good passive design and good apartment configuration. Common rules of thumb include:
  - limit the depth of single-aspect apartments to 8m;
  - ensure the back of an apartment kitchen is no more than 8m from a window; and
  - for apartments greater than 15m deep, the apartment width is at least 4m to prevent long narrow residences.
- Provide kitchens with ample bench space within apartments that enable the easy preparation of meals from fresh ingredients. The provision of hotel type kitchens with little or no food preparation area is not supported.
- Provide sufficient space in kitchens to enable storage of waste including recyclable materials.
- Refer also to Section 3.10 (Communal and Private Outdoor Space).

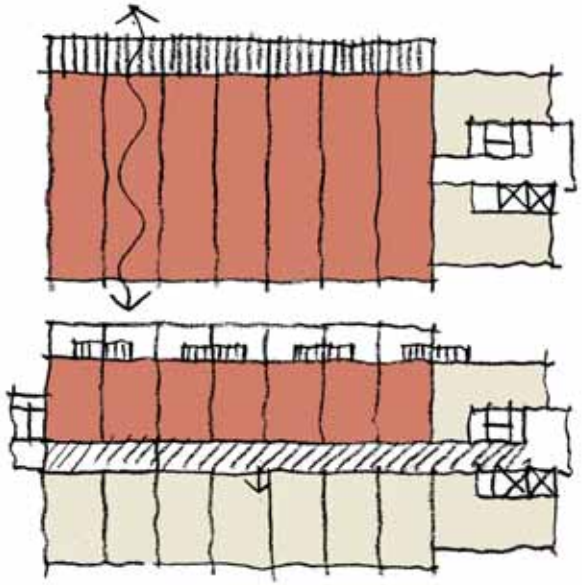


FIGURE 38: Cross Over Apartments

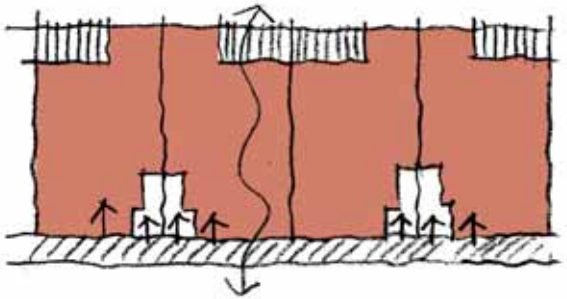


FIGURE 39: Gallery Access Apartments

5.2 Daylight Access

Management of daylight in buildings contributes to occupant amenity and can improve energy efficiency. Daylight is both skylight (diffuse light from the sky) and direct beam radiation sunlight and is dynamic throughout the day, year and changing weather.

Adequate sunlight access is to be provided to internal and external spaces during mid-winter.

Design Requirements:

- 75% of residential dwellings in each development parcel must receive at least 2 hours of direct sunlight to living rooms during mid winter.
- Design all residential development so that all habitable rooms have direct access to daylight. Light wells or borrowed light are not to be a primary source of daylight for habitable rooms.
- Provide shading devices that allow occupants to adjust their buildings on a day to day basis according to the weather conditions as a supplement to fixed passive solar design strategies.
- South facing single aspect dwellings are discouraged. As a guideline figure these should account for no more than 10% of dwellings in any development. Where such an outcome is proposed, clearly demonstrate how good daylight access will be achieved.
- Single aspect apartments should be limited in depth to 10m.
- Common areas such as foyers and lift lobbies should have access to natural daylight.

5.3 Natural Ventilation

Ventilation of buildings through effective movement of fresh air to achieve indoor thermal comfort is a fundamental component of sustainable building design, reducing the need for mechanical ventilation.

Design Requirements:

All residential habitable rooms are to have direct access to fresh air. Proposals are to demonstrate the incorporation of a range of strategies to maximise natural ventilation including (but not limited to):

- Positioning major building components and employing building configuration and sections to make use of prevailing breezes and cross ventilation.
- Inclusion of doors and operable windows that capitalise on ventilation potential created by building and apartment configuration.
- Targeting 70% of residential units in a development to be naturally cross ventilated, with a minimum of 60%.
- Ensuring that single aspect apartments have a wider facade than their depth or be double storey with a void space to encourage natural ventilation.
- Providing common areas such as foyers, lift lobbies and corridors are naturally ventilated.

5.3.1 Air Quality – Arterial Road Frontage

Notwithstanding the above, development sited along major arterial roadways is subject to exposure to pollution such as particulate matter emitted from vehicle engines and the wearing of vehicle components and road surfaces.

Design Requirements

Developments with a Park Terrace frontage should shield sensitive uses and areas through one or more of the following measures:

- Use building design elements such as varying building heights, widths, articulation, setbacks and shapes to provide greater scope for winds and breezes to disperse and carry away particle pollution.
- Within individual buildings, place rooms more sensitive to air quality further away from the emission source.

Shady outdoor living

Outdoor living room

Indoor-outdoor

Maximise daylight

- Consider whether open-able windows or a mechanical ventilation system will provide the best ventilation of the indoor areas:
  - Where windows must be kept closed, the adopted ventilation systems must meet the requirements of the Building Code of Australia and Australian Standard 1668 - The use of Ventilation and Air-conditioning in buildings.
  - Locate mechanical ventilation air inlet ports away from the emission source.
  - Use filters appropriate to the nature of the particulate pollutant.

5.4 Ceiling Heights

Ceiling heights impact significantly on the sense of space within internal spaces, their flexibility and the ability of daylight to penetrate floor plates and apartment depths. Ceiling height is measured from the finished floor level (FFL) to the finished ceiling level (FCL).

Design Requirements:

- 3.0m minimum for ground floor where future flexibility between residential, retail and commercial is desired.
- 2.7m minimum for all residential habitable rooms.
- 2.4m minimum for all residential non-habitable rooms.
- For two storey residential units (including double height spaces with mezzanines) the second storey may be a minimum of 2.4m if 50% or more of the overall apartment has a minimum of 2.7m.

5.5 Internal Circulation

The design of common internal circulation spaces within multi-unit residential buildings contributes to the building's form and articulation and to resident interaction, amenity and safety. Common internal circulation spaces include entries, lobbies, stairs, lifts and corridors.

Design Requirements:

- Residential designs should incorporate multiple lifts and stair cores (rather than a single central core) in buildings with a large footprint to increase the amount of vertical circulation points and reduce the number of apartments served by the core.
- In general, where units are arranged off a double loaded corridor, the number of units accessible from a single core/corridor should be limited to eight. Exceptions may be considered in the case of innovative unit typologies such as cross over apartments.
- Ensure lifts and stairs serve no more than 20 apartments each.
- With multiple cores, innovative arrangements in apartment and access combinations are encouraged and could include cross over, maisonette forms with central or single-sided rear access.

Refer also to Section 3.2 (Building Typologies).

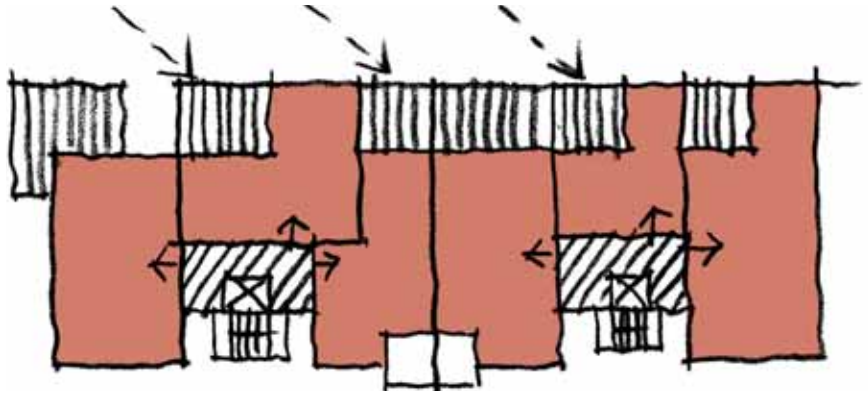


FIGURE 40: Multiple core building example

5.6 Visual Privacy

Achieving a good balance between visual privacy and positive outlook, casual surveillance, ventilation and daylight access is important in an urban neighbourhood like Bowden.

Design Requirements:

- Design building configurations to minimise direct overlooking between apartments and into apartments from circulation and communal spaces.
- Employ detailed design elements to increase privacy without compromising access to natural ventilation and light. This may include adjustable privacy screens to windows, balconies and ground floor private outdoor spaces.

5.7 Acoustic Privacy

Buildings should be designed to protect occupants from existing noise and potential noise sources. The aim is to ensure noise levels are low enough indoors to enable the majority of people to work, relax, read, study, have conversations and sleep without a high level of interference from road, rail and point source noise.

Noise sources affecting Bowden include traffic noise from Park Terrace and Port Road, the train and tram lines, and entertainment and commercial developments.

Development proposals will be required to meet statutory acoustic standards, as they apply in South Australia.

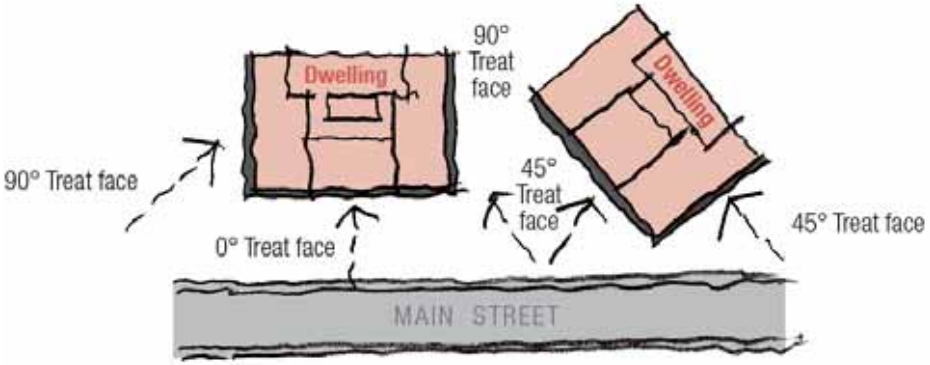


FIGURE 41: Determination of treated facades

5.7.1 Internal Noise Levels

Residential development adjacent to road/rail/tram corridors should be designed to achieve the following noise levels with windows and doors closed.

Noise Source	Criteria – Internal Noise Level LAeq dB(A)			
	Living Areas		Sleeping Areas	
	Day (7am to 10pm)	Night	Day (7am to 10pm)	Night
Road traffic	35 (over 15 hours and averaged over all living rooms in the building) 40 (over 15 hours and the maximum in any room)			30 (over 9 hours and averaged over all bedrooms in the building) 35 (over 9 hours and the maximum in any bedroom)
Industry and commerce	35 (15 minutes)		32 (15 minutes)	30 (15 minutes)
Patrons in a public place	35 (over 15 hours and averaged over all living rooms in the building) 40 (over 15 hours and the maximum in any room)			30 (over 15 minutes and averaged over all bedrooms in the building) 35 (over 15 minutes and the maximum in any bedroom)
Music				45 dB(C)1 L10,15min
Rail traffic	35 (over 15 hours and averaged over all living rooms in the building) 40 (over 15 hours and the maximum in any room)			30 (over 9 hours and averaged over all bedrooms in the building) 35 (over 9 hours and the maximum in any bedroom)

TABLE 6: Internal Noise Levels
The dB(C) L10,15min is a different descriptor compared to the other noise sources in Table 6 which identifies noise sources with low frequency and beat such as music.

Design Requirements:

Development should be designed to maximise the potential for acoustic privacy for building occupants through measures such as:

- Siting and orienting the building away from the noise source and/or providing an external area that limits noise levels.
- Arrangement of apartments/tenancies within a building to minimise noise transfer between individual apartments/tenancies.
- Locating noise sensitive rooms such as bedrooms and private open space areas away from a noise source.
- Locating and designing entrances to be sealed and to provide air lock entries to sensitive rooms.
- Window location and design through thicker glass or double glazing of windows in recognition of a noise source.
- Sloping of roof or flat/parapet design to assist in noise passing overhead rather than penetrating through the roof of the dwelling.
- Selecting appropriate construction materials, such as sound-absorbing materials or materials that reduce sound transmission for glazing, external walls, floors, roofs, ceilings and doors.
- Use of buildings that serve as a buffer between different uses, e.g. the location of offices between residential and noise generating uses.
- Constructing shared walls and floors between apartments/tenancies in a way which minimises the transmission of noise.
- Separating openings of adjacent apartments/ tenancies by a distance of at least 3.0m.
- Use of acoustic barriers/fencing/walls/ mounds.

A noise assessment has been undertaken and provides conceptual treatment recommendations in order to achieve acceptable noise levels. Acoustic treatments are for habitable rooms exposed to a noise source where the angle between the facade and the sources (e.g. main road) is 90° or less. The treatments generally consist of upgrading the building facade construction.

The type of acoustic treatments expected to be required to comply with Table 6 will include:

- Upgrade external door construction to solid core or laminated glass door;
- Upgrade external window construction to a double glazing arrangement incorporating an additional laminated glass pane;
- Incorporate acoustic seals to all external doors and windows;
- Restrict the use of air vents or use acoustic type vent or mechanical ventilation systems;
- Upgrade external light-weight wall construction; and
- Upgrade roof and ceiling constructions of dwellings on the top level of multi-storey buildings.

Developers may propose alternative means of acoustic control that would need to be supported by an acoustic study.

5.8 Storage

Appropriate storage space consistent with apartment size is important to the liveability of a residence, particularly in multi-unit buildings.

Design Requirements:

- In addition to kitchen cupboards and bedroom wardrobes, provide conveniently accessible and secure storage facilities (excluding bike storage) at the following rates:
  - Studio apartments 8m³.
  - One-bedroom apartments 8m³.
  - Two-bedroom apartments 8-10m³.
  - Three plus bedroom apartments 10-12m³.
- A maximum of 50% of this secure storage may be located in the basement or within common areas.
- See also bicycle parking in Section 3.11.

Storage ideas

5.9 Communications

The provision of good, high speed telecommunications access will be an integral part of enabling residents and workers in Bowden to access information on the ecological performance and activities of the development, and will enable residents to readily establish home offices, reducing the need to travel to work.

All developments in Bowden will have the opportunity to be connected to fibre-based telecommunications, enabling significantly faster internet speeds.

At a minimum, these services will include internet access and telephony. However, there may be a broad range of new or improved services offered by retail service providers over time, such as:

- Internet Protocol Television (IPTV)
- telemedicine
- video calling
- education delivery.

To maximise the benefit of a connection to the network, it is important to take the time to identify the likely future positions of customer equipment in individual premises, and to include those requirements in the building design.

Design Requirement

- Install wiring in each new dwelling according to the requirements of the NBN Co In-Home Wiring Guide for Single Dwelling Units and Multi Dwelling Units. Refer to the NBN Co website for the latest version.

5.10 Building Services Facilities

The positioning and integration of building services facilities, particularly any interfacing with the street, influences the quality of the public domain.

Building services facilities include (but are not limited to) waste collection and disposal, sprinkler valve sets, substations, communications rooms and egress stair discharge points.

Design Requirements:

- Where possible and appropriate, locate building services facilities away from street frontages, preferably in basement car parks, unless regulations require direct street access with no alternative available.
- Service meters are to be integrated with building design. Any plant equipment, antennae/dishes, hot water storage tanks, water or vent pipes are to be concealed from street/public view. No roof top mounted air conditioning is permitted.
- Solar or photovoltaic panels can be located on a roof, preferably related to roof pitch and shape.
- Rubbish bins and clothes drying areas should be screened from public view.
- Where street frontage locations are unavoidable, locate only on streets where driveway access is permitted.
- Minimise the lengthy colocation of building service facilities unbroken by active uses.
- Location on the following street frontages is prohibited:
  - Gibson Street
  - frontage to open space
  - building corners.

Photovoltaic panels

6.0 Sustainability

6.1 Development Sustainability Performance

The guidelines are underpinned by environmental, social and economic sustainability principles.

This section articulates specific practices to be adopted in the design and construction of individual developments in Bowden by linking development types to the nationally recognised environmental rating system Green Star.

This rating system has been chosen as it covers a broad range of sustainability issues; is well tested; and is widely accepted throughout Australia. Green Star continually revises its rating assessment tools to reflect changing practices to ensure that the highest environmental performance is achieved.

Development proposals will be assessed using the version of each rating tool current at the time of lodgement. As a minimum, all buildings are expected to attain a 5-Star rating 'as designed' prior to final approval against the Urban Design Guidelines being issued, and selected sites will require a 5-Star rating 'as built' following construction on selected sites.

LMC will engage an experienced Green Star accredited professional to assist builders/designers with the process of achieving the Green Star ratings under the Green Star Multi Unit residential tool. This service is outlined opposite and will be subsidised by LMC up to a capped amount for builders/designers who enter into a sale contract with LMC.

LMC will provide the following Green Star service to stage 1 applicants:

- common Green Star credits that would apply to all buildings within Bowden as a result of the project wide sustainability measures;
- a template application and checklist for builder/designers in order to facilitate Green Star ratings;
- 20 hours of a consultant service to meet with builder/designers to discuss concept designs and options for Green Star accreditation;
- recommendations on the specification and design in order to achieve value for money and optimise the Green Star rating;
- a written summary of the outstanding requirements for the design to achieve the minimum standard;
- input into the preparation of a final application for Green Star accreditation for lodgement of the application by the builder/designer.

Where a builder/designer has expertise in Green Star rating (has a Green Star accredited professional or wishes to engage their own professional), the LMC Green Star professional would only check the application prepared by the applicant.

6.2 Mandatory Green Star Rating Accreditation (Green Building Council of Australia)

Development Type	Applicable Tool	Compliance
Office	Green Building Council of Australia Green Star Office Design and As Built Green Building Council of Australia Green Star Office Interiors	Achieve 5-Star 'As Designed' and for selected sites, 'As Built' Green Star Certified Rating.
Retail	Green Building Council of Australia Green Star Retail Rating	Achieve 5-Star 'As Designed' and for selected sites, 'As Built' Green Star Certified Rating.
Residential	Green Building Council's Green Star Multi Unit Residential sustainability design rating tool.	Achieve 5-Star 'As Designed' and for selected sites, 'As Built' Green Star Certified Rating.
Mixed use	Green Building Council's Custom Tool.	Achieve 5-Star 'As Designed' and for selected sites, 'As Built' Green Star Certified Rating.

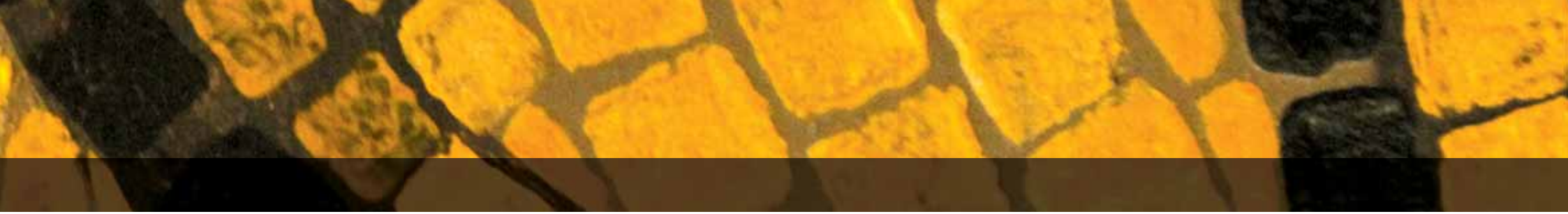
TABLE 7: Mandatory Green Star Rating Accreditation (GBCA)

6.3 Mandatory Individual Green Star Credits

Development Type	Summary of Mandatory Credits
Office	ALL Water Credits all points Mat 1 - Recycling Waste Storage 2 points Mat 9 - Water management for Tenancy Operations 2 points Tra 3 - Cyclist Facilities 2 points
Retail	ALL Water Credits all points Tra 3 - Cyclist Facilities 3 points Mat 1 - Recycling Waste Storage 3 points
Residential	ALL Water Credits all points Mat 1 - Recycling Waste Storage 3 points Eco 5 - Outdoor Communal Facilities 3 points IEQ 7 - Internal Noise Levels 1 point IEQ 21 - Dwelling Ventilation 1 point IEG 22 - Natural Ventilation 2 points Tra 3 - Cyclist Facilities 3 points

Note:
Mat - Materials
Tra - Transport
Eco - Land Use and Ecology
IEQ - Indoor Environment Quality
Ene - Energy

TABLE 8: Mandatory Individual Green Star Credits



6.4 District Tri-generation Heating and Cooling

Bowden East Stage 1 (excluding 3 storey buildings between Sixth and Seventh Streets) will be serviced by a district tri-generation heating and cooling system that will provide domestic hot water, heating hot water and chilled water to nominated buildings in the development. A contractor will be selected to run the district heating and cooling system and to manage the energy metering and billing to customers in the development.

Design Requirements:

- Each building (excluding 3 storey townhouses and apartments) will be required to connect into the district heating and cooling system. Buildings that are connected to the district energy system will not be able to install separate electrical air-conditioning units.

6.4.1 Energy Transfer Stations

- Buildings in the development will require an Energy Transfer Station (ETS) to allow the tri-generation system to deliver domestic hot water, space heating and cooling to the building and to provide metering of the above services for billing.
- Builder/developers will need to provide plant space suitable for the ETS in the basement or ground floor level of their building. The ETS will be on common property on the building perimeter or as near to the building perimeter as practical. The exact location of the ETS will be negotiated between the builder/developer and tri-generation operator to suit the reticulation design.
- Builder/developers will need to procure an easement in favour of the tri-generation operator to facilitate the installation and maintenance of and access to the ETS.

6.5 Water

A key target for Bowden is to reduce water consumption within the development compared to standard practice.

Design Requirements:

- Specify and install appliances and plumbing fixtures of the highest relevant rating for all buildings.
- All terraces must demonstrate rainwater capture and reuse within individual sites.
- All development within Bowden must demonstrate connection to the Bowden recycled water scheme, including (but not limited to) use in irrigation, toilet flushing and washing machines. Washing machine connection is subject to an alternative potable water connection being provided and use of recycled water will be at the resident's discretion.

6.6 Materials

The use of locally sourced materials is encouraged to support the *One Planet Living* principle for sustainable materials.

Design Requirements:

- The use of low embodied energy materials is encouraged, subject to appropriate whole-of-life analysis.
- Adoption of techniques is encouraged that reduce the amount of material used for construction, the environmental impact of the selected construction materials, and the efficient use of those materials. Particular attention is drawn to the credits available in the Materials section of the Green Star Multi Unit Residential Design rating tool.
- The use of materials with low global warming and ozone depleting potential is encouraged. Particular attention is drawn to the credits available in the Emissions section of the Green Star Multi Unit Residential Design Rating Tool.
- Illustrate the value of materials sourced from within a 500km radius of the Adelaide GPO, expressed as a percentage.

References

- NSW Department of Planning, NSW Residential Flat Design Code, Sydney, NSW Department of Planning, 2002
- NSW Department of Planning, Improving Flat Design: a progress report, Sydney, NSW Department of Planning, 2004
- QLD Department of Housing, Kelvin Grove Urban Village Design Guidelines, Brisbane, Department of Housing, 2007
- VIC Department of Sustainability and Environment, Guidelines for Higher Density Residential Development, Melbourne, 2004
- South Sydney Development Control Plan 1997 Amendment Park H: Green Square Town Centre, City of Sydney, Sydney, 2006
- HASSELL and DPWS, Victoria Park Refined Master Plan, Sydney, 1999
- HASSELL, Victoria Park Refined Master Plan Built Form Quality Objectives, Sydney, 2000
- London Development Agency, London Housing Design Guide Draft for Consultation, July 2009
- City of Charles Sturt Open Space Strategy, October, 2007
- 2007 Adelaide City Council Development Plan
- NSW Department of Planning, Development Near Rail Corridors And Busy Roads – Interim Guideline, 2008
- Boston Redevelopment Authority, Air Quality At Street Level: Strategies For Urban Design, 1986
- Adelaide City Council Development Plan, February 2011
- Queensland Development Code – MP 4.4 – Buildings in a Transport Noise Corridor, 2010
- SA Department of Planning and Local Government – State's Planning Policy Library, Version 6 Draft, 2011
- Good Solutions Guide for Apartments, Auckland Council (formerly North Shore City Council), 2006
- NSW Department of Planning, Good Design for Medium Density Living (Draft), March 2011
- NSW Department of Planning, Residential Flat Design Pattern Book, 2011
- We are pleased to include artworks from the talented local creative community in Bowden and surrounding areas within this book.

Checklist

Urban Design Approval Checklist Conformance with Bowden Urban Design Guidelines	Applicant to Confirm
Applicant to provide a concise response, in written point and graphic form, how the proposed design responds to the following required design qualities: ▪ architectural character ▪ responsive to local climatic conditions ▪ inherent sustainability design principles ▪ contribution and expression appropriate to setting ▪ standard of design, materiality and detailing ▪ contribution to public domain amenity	
2.0 Location, Activity, Height & Setback	
Activities Location and Mix (Section 2.1) ▪ predominant activity comprises >50% of floorspace ▪ entrance separation in mixed use developments ▪ activity at ground floor ▪ dwelling mix	
Public Domain Relationship (Section 2.2) ▪ architectural expression relative to site location ▪ definition of visually significant corners ▪ street level interface at the ground floor ▪ retail frontage depth – ability to cluster activity	
Building Envelope (Section 2.3) ▪ building height ▪ building setback (ground floor and upper levels)	
Existing Heritage and Character (Section 2.4) ▪ responsiveness to adjacent retained heritage and character buildings and structures	
Access and Rear Lanes (Section 2.5) ▪ vehicle driveway crossovers location and width ▪ containment if vehicle driveways within the building façade ▪ development responses to rear lane frontage	
3.0 Site and Block Development	
Block Orientation (Section 3.1) ▪ orientation of proposed development to site	
Building Typologies (Section 3.2) ▪ extent of typology combination	
Building Depth (Section 3.3) ▪ demonstrate appropriate building depth to facilitate sunlight / daylight access	
Building Separation (Section 3.4) ▪ for buildings floors up to 4 storeys ▪ for buildings floors between 5 – 8 storeys ▪ for buildings floors 9 storeys and above	
Street Wall (Section 3.5) ▪ building alignment and extent of engagement to street edge	
Safety and Security (Section 3.6) ▪ application of Crime Prevention Through Environmental Design (CPTED) principles ▪ CPTED Statement	
Landscape Design (Sections 3.7 - 3.9) ▪ plant species selection ▪ integration of stormwater management with landscape design ▪ deep soil zones for large tree integration ▪ provision and design of landscaping on structures	
Communal and Private Outdoor Space (Section 3.10) ▪ design and amenity of communal open space ▪ solar access ▪ passive surveillance ▪ design, amenity and location of private open space	
Vehicle and Bicycle Parking (Section 3.11) ▪ provision of on-site car parking ▪ justification (if any) for lesser provision of on-site carparking ▪ on-site parking location and impact of building frontage ▪ provision and location of bicycle parking and storage	
4.0 The Building	
Energy Efficient Design (Section 4.3) ▪ assessment of design against nominated Green Star rating ▪ application of passive solar design principles ▪ connection to proposed Tri generation system (where applicable)	
Building Façade Design (Sections 4.4 – 4.6) ▪ demonstration of base / middle/ top principles for buildings 4 storeys and greater ▪ demonstration of façade articulation through use of solid and voids elements ▪ expression of fine grain reflecting the character of the locality and region ▪ scale, rhythm and proportion which responds the building's use, height and street frontage ▪ consideration and response to the locality's microclimate ▪ balcony design subservient to main façade	

Roof Level Design (Section 4.7) ▪ treatment of roof space and design to complement building façade ▪ demonstrate roofs to deliver one of the following functions – communal or private outdoor space, green roof, or installation of renewal energy technology ▪ integration of service elements into roof design to minimise visual intrusion/create 'clean' roof scapes	
Materiality and Colour (Section 4.8) ▪ integration of a cohesive materials palette integral to the building design ▪ selection of high quality, durable materials ▪ colour palette selection reflecting the locality's building tradition	
Building Entry and Pedestrian Access (Section 4.9) ▪ equitability in access to the building for all users ▪ distinction / separation for pedestrian and vehicle access and for commercial and residential in mixed used developments ▪ entry design emphasizing visual presence ▪ street activation with individual entry treatments for ground floor dwellings	
Fences & Walls, Garage Doors (Section 4.10 – 4.11) ▪ design contribution to public realm ▪ articulation, solidity and transparency ▪ fencing /wall materially and height consideration ▪ landscaping ▪ garage doors materially and finish	

Awnings and Signs (Section 4.12) ▪ awning provision and design contribution to public realm ▪ signage integration	
Waste Collection (Section 4.13) ▪ provision of facilities (appropriately sized and positioned)	
5.0 The Apartment	
Apartment Size, Layout & Flexibility, Daylight Access (Section 5.1 – 5.2) ▪ apartment typology size ▪ width/depth of single/double aspect apartments ▪ kitchen provision ▪ solar access / direct sunlight to the living areas for nominated period	
Natural Ventilation (Section 5.3) ▪ minimum target achieved for naturally cross ventilated dwellings ▪ ventilation of common areas ▪ positioning of sensitive uses and mechanical ventilation / air inlet ports for dwellings with arterial road frontage	
Ceiling Heights (Section 5.4) ▪ achievement of minimum ceiling heights	
Internal Circulation (Section 5.5) ▪ application of multiple lift and stair cores for dwelling served ▪ Single core / doubled loaded corridor dwelling thresholds	

Visual Privacy (Section 5.6) ▪ direct overlooking between dwellings addressed ▪ privacy design elements	
Acoustic Privacy (Section 5.7) ▪ achievement of statutory acoustic standards for internal and private / communal open space noise levels	
Storage (Section 5.8) ▪ provision of secure storage space specific to dwelling typology	
Communications (Section 5.9) ▪ connection to fibre based telecommunications	
Building Services Facilities (Section 5.10) ▪ appropriate siting of building services facilities ▪ concealment of plant equipment and service elements ▪ exclusion of roof top mounted air condition units	
6.0 Sustainability	
Development Sustainability Performance (Sections 6.1 – 6.6) ▪ achievement of nominated Green Building Council of Australia (GBCA) Green Star rating 'as designed' ▪ attainment of mandatory individual Green Star credits ▪ space provision and connectability to Tri-generation energy system ▪ connection to recycled water scheme ▪ demonstrate (as a percentage value) of construction materials sourced from within 500km of Adelaide GPO	

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