

## ELEMENT 5 BUILDING LAYOUT AND DESIGN



Site design and building form refer to the arrangement of buildings, space and landscape within a site. They involve a careful consideration of building scale and form, movement patterns, and external spaces. The interrelationships between these, rather than their individual characteristics, will largely determine the effectiveness of the design. In addressing these issues, new development should achieve the highest architectural standards possible.

## DWELLING DIVERSITY

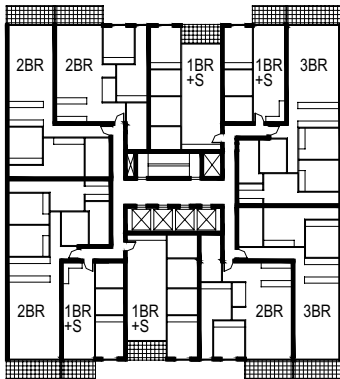
### WHY THIS IS IMPORTANT

Higher density residential development is expected to cater for a diverse range of household types in the future, particularly smaller households.

### OBJECTIVE 5.1:

**To provide a range of dwelling sizes and types in higher density residential developments.**

DESIGN SUGGESTION 5.1.1: DESIGN FOR A MIX OF DWELLING TYPES, PARTICULARLY IN LARGER RESIDENTIAL DEVELOPMENTS (E.G. TO SUIT SINGLE PEOPLE, FAMILY GROUPS OF VARYING SIZES, STUDENTS, THE ELDERLY, PEOPLE OF LIMITED MOBILITY, AND PEOPLE ON LOW TO MODERATE INCOMES).



MIX OF DWELLING TYPES AND SIZES.  
Image: SJB Architects.



DESIGN FOR A MIX OF  
DWELLING TYPES AND SIZES.  
Image: MGS Architects.



DESIGN FOR A MIX OF  
DWELLING TYPES AND SIZES.

## BUILDING LAYOUT

### WHY THIS IS IMPORTANT

The arrangement and configuration of different internal spaces and uses has a significant impact on their amenity, function and accessibility. Apartments and flats are normally smaller than other forms of housing. The careful use of space is critical to creating well laid out, efficient and comfortable apartments.

### OBJECTIVE 5.2:

**To optimise the layout of buildings in response to occupants' needs as well as identified external influences and characteristics of a site.**

DESIGN SUGGESTION 5.2.1: DESIGN THE INTERNAL LAYOUT OF NEW HIGHER DENSITY RESIDENTIAL BUILDINGS TO SUIT THE SITE AND SURROUNDINGS AS WELL AS THE NEEDS OF ITS OCCUPANTS.

The location of apartments and configuration of spaces within buildings will be influenced by external factors, such as:

- views to and from the new development
- orientation, prevailing winds and other climatic factors
- location of main street activity
- external noise sources
- access and security.

Generally layouts should seek to maximise desirable orientations (north facing, or facing a view) with the lift core placed towards the least desirable side of the building or enclosed within the building form.

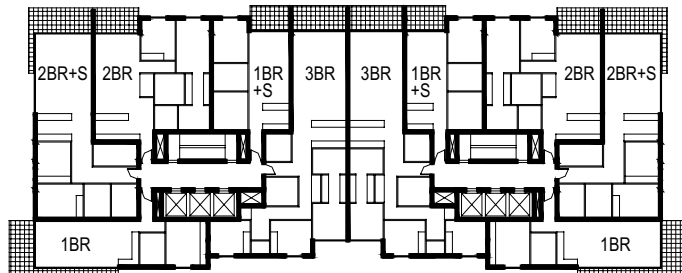
DESIGN SUGGESTION 5.2.2: CONSIDER MULTIPLE LIFTS AND STAIR CORES RATHER THAN A SINGLE CENTRAL CORE IN BUILDINGS WITH A LARGER FOOTPRINT OR FLOOR PLATE.

While multiple lift and stair cores can be more expensive than a single central core, they may be justified where they help create a better design outcome, for example by:

- reducing the length of internal corridors
- breaking up monolithic buildings
- providing building entries to a smaller number of residential units



LAYOUT SHOULD MAXIMISE DESIRABLE ORIENTATION, TOWARDS NORTH OR A VIEW



CONSIDER MULTIPLE LIFT CORES IN LARGE FLOOR PLATE BUILDINGS. Image SJB Architects.

**OBJECTIVE 5.3:**

**To create functional, flexible, efficient and comfortable residential apartments.**

DESIGN SUGGESTION 5.3.1: CHECK LAYOUTS FOR PRACTICALITY.

The usefulness of apartments can be reduced by room sizes and shapes that are too small in relation to their intended uses; by too many doors into rooms may make them difficult to use; by poor connections between related rooms or a lack of separation between others. These problems may significantly reduce the flexibility of their use and detrimentally affect their long term value.

DESIGN SUGGESTION 5.3.2: WHERE POSSIBLE, BUILD IN SOME FLEXIBILITY IN THE USES OF ROOMS.

**OBJECTIVE 5.4:**

**To ensure that a good standard of natural lighting and ventilation is provided to internal building spaces.**

DESIGN SUGGESTION 5.4.1: PROVIDE DIRECT LIGHT AND AIR TO ALL ROOMS WHEREVER POSSIBLE.

Encourage direct natural light and ventilation to all habitable rooms – living rooms, bedrooms, studies – in the form of operable windows. The 'borrowing' of light and air should be avoided, particularly in ventilating bedrooms, although this may not always be possible, when reusing existing buildings. Where light is borrowed from another room, ideally it should be taken from the principal living area rather than from corridors or other bedrooms.

DESIGN SUGGESTION 5.4.2: DESIGN LIGHT-WELLS THAT ARE ADEQUATELY SIZED FOR THEIR INTENDED PURPOSE.

Light wells need to be sufficiently generous to ensure that they provide adequate light and ventilation at their lowest level. Consider engaging expert advice to ensure light-wells provide adequate access to natural light and ventilation for habitable rooms facing the light-well.

DESIGN SUGGESTION 5.4.3: TAKE MEASURES TO REDUCE THE REVERBERATION OF NOISE IN LIGHT WELLS.

**OBJECTIVE 5.5:**

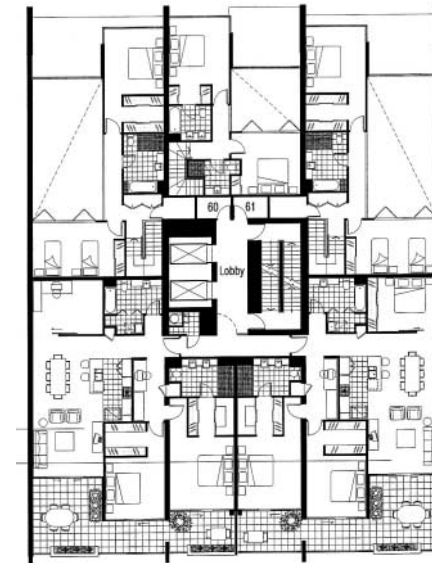
**To provide adequate storage space for household items.**

DESIGN SUGGESTION 5.5.1: PROVIDE ADEQUATE STORAGE SPACE.

Adequate storage is important in compact dwellings where space for large furniture such as wardrobes is limited. It is important that apartments in higher density developments have sufficient storage space, within the apartment and at a remote location for longer-term storage ideally within easy access.

Innovative solutions include:

- separate storage stalls that can be bought and sold separately as people's storage needs change
- storage over part of car park units
- preferential arrangements with off-site commercial storage.



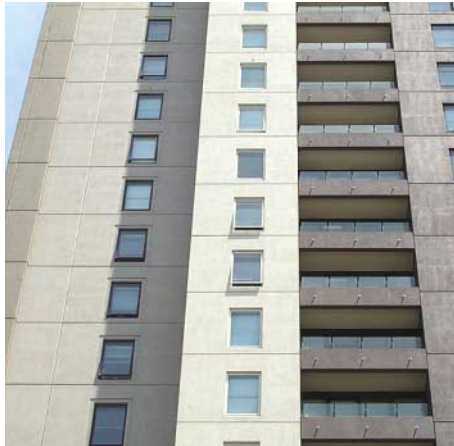
REVIEW LAYOUTS FOR PRACTICALITY.  
Image: SJB Architects.



BOLD FORMS AND ROBUST DETAILING ARE  
APPROPRIATE FOR ROOFS OF TALL BUILDINGS.



BUILDING DETAILS VISIBLE TO PEDESTRIANS REQUIRE PARTICULAR ATTENTION AT A FINE SCALE.



AVOID AN UNCONSIDERED REPETITION OF ELEMENTS.



INTEGRATE SIGNAGE AND GRAPHICS WITH THE BUILDING DESIGN.

## DESIGN DETAIL

### WHY THIS IS IMPORTANT

The detailed aspects of a design are the most tangible evidence of care and quality in the making of a building.

### OBJECTIVE 5.6:

**To promote buildings of high architectural quality and visual interest.**

DESIGN SUGGESTION 5.6.1: DESIGN VARIOUS BUILDING ELEMENTS TO SUIT THE DIFFERENT WAYS THEY ARE VIEWED.

Relatively bold forms and robust detailing are appropriate for roofs of tall buildings, whereas the details of parts of buildings that are highly visible to pedestrians (such as shop fronts and doorways) merit particular attention at a very fine scale.

DESIGN SUGGESTION 5.6.2: CONSIDER MATERIALS AS AN INTEGRAL PART OF THE DESIGN RESPONSE.

High quality materials that withstand the effects of weathering and wear are important to the value of buildings over the long term.

DESIGN SUGGESTION 5.6.3: AVOID AN UNCONSIDERED REPETITION OF ELEMENTS.

DESIGN SUGGESTION 5.6.4: USE EXTERNAL LIGHTING TO ENHANCE THE DESIGN.

DESIGN SUGGESTION 5.6.5: INTEGRATE SIGNAGE AND GRAPHICS WITH THE BUILDING DESIGN.

DESIGN SUGGESTION 5.6.6: PROVIDE A DISCRETE LOCATION FOR AIR CONDITIONER UNITS.

## ELEMENT 6 OPEN SPACE AND LANDSCAPE DESIGN



New development should contribute to the creation of private and public open spaces that are accessible, attractive, safe and comfortable for their users.



## PRIVATE AND COMMUNAL OPEN SPACE

### WHY THIS IS IMPORTANT

Access to open space is an important component of higher density residential developments. Open space can be provided as:

- private open space including balconies, terraces or courtyards
- communal open space shared between dwellings
- public open space accessible to residents and visitors.

### OBJECTIVE 6.1:

**To ensure access to adequate open space for all residents.**

DESIGN SUGGESTION 6.1.1: ENSURE PRIVATE OPEN SPACES ARE USEABLE AND PROVIDE REASONABLE LEVELS OF AMENITY.

Balconies and terraces are often used to provide private open spaces in higher density developments. However, their exposure to wind can make them unusable, and in some cases it may be more appropriate for apartments at the upper levels of buildings to be provided with semi-private gardens or public open space at ground or roof-top levels of the building.

The size, access to, orientation, proportions and finishes of balconies and terraces affects their function and amenity. If a balcony is intended to serve as private open space it should be of sufficient size to accommodate outdoor seating, with good connections between these spaces and the building's interior. Private outdoor space, in whatever form, should provide for limited recreation and entertainment uses and allow for views and privacy.

DESIGN SUGGESTION 6.1.2: CLEARLY DISTINGUISH BETWEEN PRIVATE AND PUBLIC SPACES.

Open space should be clearly defined as private or public. Access and associated facilities and landscaping should be designed accordingly.

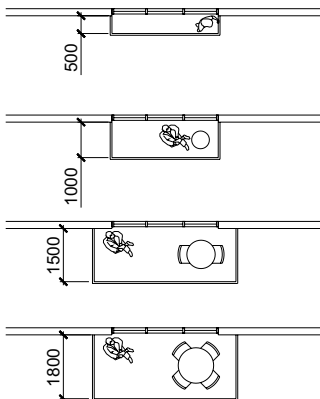


SHARED OPEN SPACES SHOULD  
PROVIDE AN OUTLOOK  
FOR AS MANY DWELLINGS  
AS POSSIBLE.

CAREFULLY CONSIDER SOLAR ACCESS TO PRIVATE OPEN SPACES.



ORIENT BALCONIES AND TERRACES TO OPTIMISE ACCESS TO SUNLIGHT. Image: Williams & Boag Architects.



DESIGN SPACES THAT ARE USEABLE.

**OBJECTIVE 6.2:**

**To ensure common or shared spaces are functional and attractive for their intended users.**

DESIGN SUGGESTION 6.2.1: CONSIDER THE AVAILABILITY OF RECREATIONAL SPACES AND FACILITIES IN THE AREA, POTENTIAL DEMANDS FOR THEM, AND PROVIDE FACILITIES THAT ARE ABSENT OR UNDERSUPPLIED.

DESIGN SUGGESTION 6.2.2: CONSIDER PROVIDING HIGH-QUALITY SPECIALISED FACILITIES THAT WILL BE SHARED BY OTHER LOCAL DEVELOPMENTS, RATHER THAN TREATING EACH DEVELOPMENT AS A STAND-ALONE ENTITY.

DESIGN SUGGESTION 6.2.3: DESIGN OPEN SPACES THAT CAN BE WELL MAINTAINED.

DESIGN SUGGESTION 6.2.4: DESIGN SPACES THAT ARE USABLE IN A RANGE OF WEATHER CONDITIONS AT VARIOUS TIMES OF THE YEAR.

The design of shared outdoor spaces should take into account the following:

- orientation and shading for optimum solar access
- shelter for access during inclement weather
- planting location and type for durability, ease of maintenance and aesthetic quality
- ground surface materials to allow access in all weather conditions
- privacy of dwellings facing open spaces
- public access and measures to control access where required
- safety, in the form of lighting, informal surveillance, as well as restricted access to pools and water features for children, changes in level and trip hazards in ground surfaces.

DESIGN SUGGESTION 6.2.5: OPEN SPACE SHOULD:

- provide a clear delineation between public, communal and private space
- be substantially fronted by active ground floors including building entries
- provide an outlook for as many dwellings as possible
- provide opportunity for mature planting to provide shade, shelter or screening
- be designed to protect any natural features on the site or immediately adjacent to the site
- be accessible and useable.

**OBJECTIVE 6.3:**

**To allow solar access to the private and shared open spaces of new high density residential units.**

DESIGN SUGGESTION 6.3.1: ORIENT BALCONIES, TERRACES AND COMMUNAL OPEN SPACE TO OPTIMISE ACCESS TO SUNLIGHT.

DESIGN SUGGESTION 6.3.2: USE THE OPEN SPACES ON BALCONIES, PODIUMS AND ROOF TERRACES TO PROVIDE OPEN SPACES WITH MAXIMUM ACCESS TO SUNLIGHT.

Roof spaces may be good locations for open space as they provide access to sun not always available at lower levels.

**OBJECTIVE 6.4:**

**To integrate the design of shared and private open space into the overall building design and facade composition.**

DESIGN SUGGESTION 6.4.1: INTEGRATE BALCONIES, TERRACES AND ROOF GARDENS WITH THE OVERALL BUILDING FORM AND FACADE COMPOSITION.

The design of balconies, terraces, roof gardens and associated balustrades, screens and canopies should be integrated as part of the overall facade composition of new buildings. These should be positioned to meet privacy requirements and to provide desired orientation and views.

A range of balcony designs can be used in the overall form of a building, for example:

- partially or fully recessed balconies and terraces, which will provide different degrees of privacy for occupants
- balustrades and screens of solid, transparent, translucent or perforated materials, or individual elements such as slats or bars to provide privacy
- canopies of solid, perforated or louvred materials to provide weather protection and privacy.



DIFFERENT BALCONY DESIGNS CAN BE USED IN THE OVERALL FORM OF THE BUILDING.



DIFFERENT BALCONY DESIGNS  
CAN BE USED IN THE OVERALL  
FORM OF THE BUILDING.  
Image: MGS Architects

**OBJECTIVE 6.5:**

**To provide for greenery within open spaces.**

DESIGN SUGGESTION 6.5.1: INCLUDE SUBSTANTIAL AREAS FOR LANDSCAPING

To provide sufficient growing room for trees between buildings and property boundaries

DESIGN SUGGESTION 6.5.2: DESIGN TO ENABLE HIGH QUALITY, SUSTAINABLE LANDSCAPING OVER STRUCTURES.

Opportunities for planting are limited on balconies and roof gardens, and may be limited even at ground level by underground structures such as car parks. In these situations, planters need to allow adequate soil depth and should be provided with drainage and irrigation. Plants should be chosen that can thrive in the given conditions, such as on exposed and windy rooftops.

DESIGN SUGGESTION 6.5.3: MINIMISE THE VISUAL EFFECTS OF WATER RUN-OFF FROM OPEN SPACE AREAS.

In allowing for drainage of balconies, terraces and courtyards, the following could be considered:

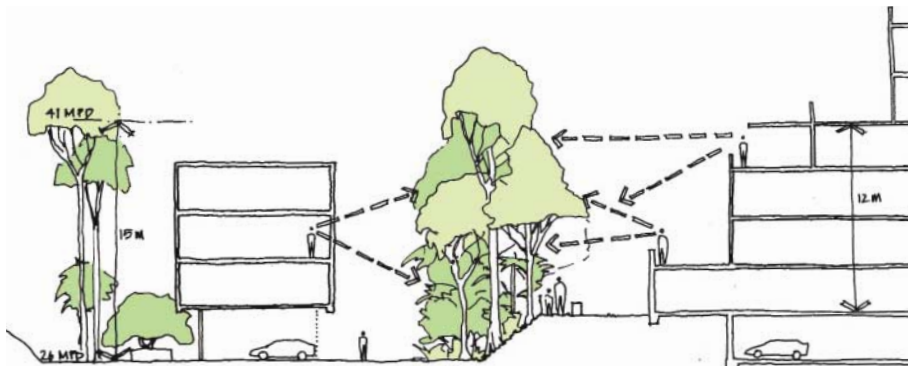
- design balconies that drain off external edges (no central floor waste) to minimise water run-off onto other balconies or public spaces below
- avoid visible services such as drain pipes that have a significant impact on the building's appearance
- control water run-off that may cause staining, damage and maintenance problems.

DESIGN SUGGESTION 6.5.4: PROVIDE PERMEABLE GROUND SURFACES.

Permeable ground surfaces in open spaces allow rainwater to penetrate the soil, helping support:

- healthy growth of trees
- protection of root zones of existing mature trees
- reduction of stormwater run-off
- absorption of rainwater to the water table.

In some urban areas it will not be possible to provide significant permeable areas on site, so developments could instead focus on the collection, storage and re-use of stormwater.



PROVIDE AN OUTLOOK FOR AS MANY DWELLINGS AS POSSIBLE. Image: Bates Smart Architects.



Image: MGS Architects.



PROVIDE FOR GREENERY WITHIN OPEN SPACES.



ENSURE NEW PUBLIC OPEN SPACES CONTRIBUTE TO A SAFE, ATTRACTIVE AND WELL USED ENVIRONMENT. Image: MGS Architect.



## PUBLIC OPEN SPACE

### WHY THIS IS IMPORTANT

In areas of higher density residential development, residents and visitors will rely in part on public open space for relaxation, recreation and meeting places. Access to adequate and safe public open spaces is essential for the well being of the whole community.

### OBJECTIVE 6.6:

**To create public open space appropriate to its context.**

DESIGN SUGGESTION 6.6.1: ENSURE NEW PUBLIC OPEN SPACES CONTRIBUTE TO A SAFE, ATTRACTIVE AND WELL USED PUBLIC ENVIRONMENT.

Public open spaces in activity centres can take a variety of forms including neighbourhood parks, squares or plazas. These are generally most successful if they are relatively small (not larger than a block), lined with active edges, with access to sun and shade and opportunities for passive recreation. They can provide a focus for community activity and should be located in prominent, important, easily accessible places. Direct access to important pedestrian routes integrated with an area's wider circulation network will support the regular use of such open spaces, and will assist in supporting their vitality and safety.

Where new public open space is proposed as part of a new high density residential development, it should be designed to reflect the above public space qualities.

## GLOSSARY

### **Active Frontages**

Refers to street frontages where there is an active visual engagement between those in the street and those on the ground floors of buildings. This quality is assisted where the front façade of buildings include the main entrance, face the street, and the ground floor uses face and open towards the street.

### **Activity Centres**

Activity Centres are the traditional focus for services, employment and social interaction in cities and towns. They are where people shop, work, meet, relax and often live. Usually well served by public transport, they range in size and intensity of use from local neighbourhood strip shopping centres to traditional town centres and major regional malls.

### **Half- Basement car parking**

Car parking space that is partial submerged below the ground level of the building.

### **Frontage development**

This is development which incorporates an “active frontage”.

### **Melbourne 2030**

An action plan of the State Government’s vision for the future planning of the Melbourne metropolitan area. Refer Melbourne 2030 Planning for sustainable growth, October 2002.

### **Mixed Use Development**

Good mixed use development involves the fine-grained mixing of compatible land uses in a balanced mix. Physically it includes both vertical and horizontal mixes of use. No single use should dominate other uses, and residential land use should generally not exceed 60% of the land use.

### **Public spaces**

Refers to spaces that are publicly owned and which are intended for use by the public; and spaces that are privately owned but encourage public use free of any impose rules or constraints of normal public behaviour.

### **Sightlines**

Lines of clear physically uninterrupted sight.

### **Surveillance**

The presence of passers-by or the ability of people to be seen in public spaces from surrounding windows.

### **Informal surveillance**

Surveillance “eyes on the street” provided by ordinary local people as they go about their daily activities.





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