

# BRIDGE HOUSING DESIGN GUIDELINES





### Acknowledgement of Country

Bridge Housing acknowledges Aboriginal people as the traditional owners of the land, whose culture is the oldest living culture in human history. We pay our respects to elders past and present and to all Aboriginal people and their communities.

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22 November 2017

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# FOREWORD

*Bridge Housing Design Guidelines* outlines the key design outcomes and features we expect of our partners and consultants when working with Bridge Housing.

We aim to lead by example in delivering exemplary, place-based projects built to high design standards. The design guidelines set out the high expectations that Bridge Housing has for the design quality of all its new residential developments. Best practice environmentally sustainable principles, green communal open spaces to host social interaction, robust and durable construction, and excellent residential amenity, are some of the design characteristics that will set Bridge Housing projects apart.

The design guidelines underpin the overall Bridge Housing Strategic Asset Management Plan, which guides how we procure, manage and develop our property portfolio to provide homes for over 3,000 people.

For Bridge Housing, improving lives and strengthening communities is at the heart of what we do. Our vision is 'to be a leading not for profit provider of quality affordable housing'. Bridge Housing believes that good design is fundamental to the delivery of quality affordable housing.

Housing should be more than just shelter. It should provide a safe and comfortable home. We want Bridge Housing tenants to be able to say they have a great place to live with a real sense of community. Appropriate and accessible housing should also improve tenant health and wellbeing. The design guidelines are a key enabler of these aspirations and will sit alongside 'Building Bridges', our community building and engagement strategy, and 'Places People Want to Live,' our place-making approach to the planning, design and management of communities.

I want to thank the Working Group led by our Development Director Christopher Dib with input from our Housing and Asset management staff. I also want to acknowledge the work of our tenant representatives Julia Nunes and Amanda Neszpor and our consultants Michael Zanardo of Studio Zanardo; Anthony Nolan of Kennedy Associates; and Mark Lawler of Achieve Australia.

**John Nicolades, CEO**

22 November 2017



# INTRODUCTION

*Bridge Housing Design Guidelines* is a practical resource intended to work alongside the existing legislation and codes that must be taken into consideration during the development application and construction certificate phases of a project.

Bridge Housing recognises that all sites and projects are different, so we have built flexibility into the *Bridge Housing Design Guidelines*. This document highlights the areas we believe require greater design attention, but leaves scope for how these outcomes might be achieved. Bridge Housing places particular value on design that delivers best practice outcomes without necessarily increasing costs.

*Bridge Housing Design Guidelines* is intentionally selective in scope and focus. They supplement gaps in legislation, emphasise those aspects that are most important to Bridge Housing, and assist in making decisions from the available options within the relevant frameworks. However, *Bridge Housing Design Guidelines* does not have legislative weight. Should a conflict or inconsistency with legislated or regulated provisions arise, those provisions must prevail, to the extent of any inconsistency.

Where a particular project calls for a site-specific or innovative response, or where a conflict or inconsistency arises, there is scope to vary from the *Bridge Housing Design Guidelines* with the prior approval of Bridge Housing.

*Bridge Housing Design Guidelines* is a living document. As new projects are completed, Bridge Housing will conduct post-occupancy evaluation through its Tenants Talk Design program to give our tenants a say in the way we work. This ‘co-design’ feedback will then inform subsequent revisions of *Bridge Housing Design Guidelines* to allow an evidence-based evolution in housing design to further meet the needs of tenants. Bridge Housing may also perform building walk-throughs and internal evaluations of each project to capture positive innovations and design lessons learnt, making adjustments to address shortcomings and to reinforce successes. The Development Director has overall responsibility for ensuring that *Bridge Housing Design Guidelines* remains appropriate and continue to deliver best practice development.

*Bridge Housing Design Guidelines* is structured in two parts. PART A: CONCEPT DESIGN aligns with the development application process. It covers aspects of the design that need to be considered from the outset of the project. Each section has an introductory text that describes the design issue and provides a vision statement outlining the performance required. Sections A2.0, A3.0 and A4.0 go further to include specific design guidance. These are laid out as separate numbered points and form a checklist for use by design professionals. PART B: DETAILED DESIGN aligns with the construction certificate phase. It addresses more detailed considerations, including performance specifications for construction, fittings, fixtures, and finishes.



# PART A

## CONCEPT DESIGN

### A1.0 GENERAL DESIGN

#### A1.1 LONG TERM INVESTMENT

As each development will be owned and managed by Bridge Housing for many years, the design and construction of new developments should have a long term view. Lifecycle costs of the development should be factored in and accounted for. Particular care should be taken with the design of apartments and communal spaces to think through, and design out, potential management issues. Consideration should be given to aspects such as repairs and maintenance of the building and landscape areas to avoid unnecessary and recurring costs. Where possible, the opportunity should be taken to capture value over the life of the building.

#### A1.2 SUSTAINABILITY

Across all key activities, Bridge Housing is actively implementing environmental initiatives that are reducing environmental impact, carbon emissions and resource consumption. For the design and delivery of housing, this includes conserving natural resources by reducing water and energy use, generating less waste, reducing

pollution and pursuing measures to mitigate and add resilience for climate change. Beyond minimum BASIX compliance, Bridge Housing aims to achieve an average NatHERS target of seven stars across a development. The use of materials and construction methods that provide better environmental performance without adding significant cost is strongly encouraged. Bridge Housing looks to prioritise passive systems to enhance the health and wellbeing of tenants. For example, we investigate the incorporation of environmental systems such as solar panels, grey water recycling, enhanced roof and wall insulation, and window types/treatments. The long-term interest in the building may justify the payback period. Tenants may also benefit from reduced costs for utilities. Bridge Housing wants to deliver good housing that will stand the test of time.

#### A1.3 DESIGN QUALITY

In New South Wales, *State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development* (SEPP 65) recognises that the design quality of residential apartment development is of significance for the environmental planning of the state due to the economic, environmental, cultural and social benefits of high quality

design.<sup>1</sup> SEPP 65 provides nine design quality principles that must be considered by the consent authority in the approval of any project.<sup>2</sup> The accompanying *Apartment Design Guide* (ADG) provides detailed objectives, design criteria and design guidance that must be followed to achieve these principles through design. Bridge Housing encourages strong compliance with SEPP 65 and the ADG and believes they will lead to better designed housing.

Where projects are developed under other legislative frameworks, for instance SEPP Housing for Seniors or People with a Disability or SEPP Affordable Rental Housing (SEPP ARH), Bridge Housing expects that these projects will still meet the SEPP 65 design quality principles. Specialist housing types, beyond residential flat buildings, may require further, more specific guidelines than those contained here.

<sup>1</sup> *State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development*, Clause 2(2)

<sup>2</sup> *State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development*, Schedule 1

## A2.0 SITE DESIGN

### A2.1 LARGER SITES

For larger sites, a master planning approach should be undertaken. Larger sites should consider ways to break up a site to ensure the local context is retained.

- 
- A2.1.1** Where sites are deep and buildings will not have a proper street frontage, consideration should be given to extending the public domain through the site by introducing new streets to provide a positive address to all buildings.
- 
- A2.1.2** If the site is large enough, consideration should also be given to new parks to augment the public domain and provide open space between buildings.
- 
- A2.1.3** Walking, cycling and connections to public transport should be prioritised and promoted through the design.
- 
- A2.1.4** Larger sites can be appraised for subdivision into smaller sites. Multiple projects may provide a higher yield and a better outcome than a single larger project, as well as assist with construction staging. Smaller, identifiable groupings of apartments can be positive for community-making and social outcomes. Land that is not required to meet the brief can be sold to assist the project finances.
- 
- A2.1.5** The involvement of multiple architects or architectural firms in a coordinated way can help to create a more varied and vibrant setting.
- 
- A2.1.6** Consideration should be given to how the design can be flexible at a site scale to enable a change of tenure and/or disposal over time, with clear and separable ownership patterns.
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### A2.2 PUBLIC DOMAIN

The contribution of a project to the public domain – how a building is viewed from and interacts with the street – is important to the success and acceptance of a project. Buildings should be sensitive to existing and future neighbours and seek to reduce environmental impacts. Projects should improve the place they are contributing to, be ‘tenure-blind’, and be as good, if not better, design quality and appearance than surrounding projects.

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- A2.2.1** In order to ‘blend in’ with their surroundings, projects should aim to achieve the desired future character stated in the planning controls. Projects should be seamlessly integrated with their context, respond to the local landscape character, and be indistinguishable from neighbouring buildings.
- 
- A2.2.2** Building mass should be compatible with neighbouring buildings, with consideration given to appropriate bulk and scale relationships, particularly in varied contexts.
- 
- A2.2.3** Buildings should ‘fit’ sensitively within the streetscape. However, buildings need not ‘copy’ their context to do so.
- 
- A2.2.4** The architecture should be attractive, well proportioned and composed, well detailed and of a ‘human scale’. The building should be ‘welcoming’ in appearance, and convey a ‘sense of home.’
- 
- A2.2.5** The project should strongly define the public domain as separate from private and communal areas and provide clearly delineated thresholds for building entries.
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- A2.2.6** Semi-public or semi-private spaces should be avoided, as ownership and responsibility for these sorts of spaces are often blurred.
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- A2.2.7** Provide mixed uses at lower floors only where required. The available floor space should be maximised for residential housing. Locate any mixed use spaces strategically so as not to impact the amenity of apartments.
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**A2.2.8** Buildings should overlook the street, providing casual surveillance.

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**A2.2.9** Overlooking and unreasonable overshadowing of neighbouring sites should be minimised. Negative impacts on neighbours should be avoided where possible.

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**A2.2.10** The visual impact of car park entries, services, waste rooms, substations and the like should be minimised.

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**A2.2.11** Consider building details and artworks to enhance prominent portions of the building, particularly any areas with large blank walls. Ongoing maintenance costs of any treatments need to be considered.

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## A2.3 COMMUNAL OPEN SPACE

Quality communal open spaces are a key design feature desired by Bridge Housing. Positive communal open spaces provide the opportunity for tenants to chat, gather and socialise, and to develop a sense of community. They also allow tenants of all ages to engage with green spaces and gardens and to access the health benefits they provide. Communal open spaces allow Bridge Housing to fulfil commitments to our 'Community Greening' program and 'Our Place Green Space' initiatives, which include a focus on community gardening.

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**A2.3.1** Communal open spaces should be an attractive focus for the project and provide a positive outlook from apartments.

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**A2.3.2** Future provision for a productive community garden or urban food forest is desirable.

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**A2.3.3** Communal open spaces should be designed by a registered landscape architect.

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**A2.3.4** Communal open spaces are ideally located at ground level and paired with trees in deep soil landscaping. It is highly desirable to provide deep soil planting in areas of building separation to increase visual privacy between apartments and improve outlook from apartments. Species should be selected carefully, giving consideration to mature size, root growth and ongoing maintenance.

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**A2.3.5** Communal open spaces should be usable, with shading and seating areas, and designed so that small groups of people can gather.

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**A2.3.6** Communal open spaces should be secure, with clear lines of sight and no 'left over' spaces.

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**A2.3.7** In more urban situations rooftop locations can also be acceptable, provided that shelter from wind is given and any potential overlooking issues are resolved. Any planting on structures – such as through the use of suspended planter beds or pots – should be designed to avoid damage to roof membranes.

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**A2.3.8** Communal open spaces should be easily accessible to all apartments from the common circulation areas of the building.

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**A2.3.9** Ramps with a gradient greater than 1:20 should be minimised, but where required, a ramp should be coupled with a direct pedestrian route via stairs.

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**A2.3.10** Ramps with a gradient greater than 1:20 should be minimised, but where required, a ramp should be coupled with a direct route via stairs.

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**A2.3.11** Communal open spaces should be robust, durable and low maintenance. Any communal facilities requiring significant upkeep should be avoided.

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**A2.3.12** Design measures should be taken to ensure that the acoustic and visual privacy of apartments is not impacted by activity in the communal open space.

**A2.3.13** Where the provision of individual clotheslines in private open space is not possible, communal clotheslines should be placed in the communal open space. Clotheslines should be a minimum of 1500 mm high and 1800 mm wide (to allow for items such as bed sheets). A minimum of 7500 mm line should be provided for each apartment. Clotheslines should be discrete and screened from public areas.

## **A2.4 BUILDING LAYOUT**

Making good choices in building orientation and layout at the outset of the project are critical design decisions that will influence many other more detailed aspects of the project. Building envelopes should be narrow to accommodate apartment sizes at the lower end of the range, and allow for excellent daylight and natural ventilation to apartments. Feasibilities should provide a proof-of-concept plan and a reasonable level of built-form detail to give some certainty around efficiency, yield and mix.

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**A2.4.1** Where sites are deep and buildings will not have a proper street frontage, consideration should be given to extending the public domain through the site by introducing new streets to provide a positive address to all buildings.

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**A2.4.2** If the site is large enough, consideration should also be given to new parks to augment the public domain and provide open space between buildings.

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**A2.4.3** Walking, cycling and connections to public transport should be prioritised and promoted through the design.

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**A2.4.4** Larger sites can be appraised for subdivision into smaller sites. Multiple projects may provide a higher yield and a better outcome than a single larger project, as well as assist with construction staging. Smaller, identifiable groupings of apartments can be positive for community making and social outcomes. Land that is not required to meet the brief can be sold to assist the project finances.

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**A2.4.5** The involvement of multiple architects or architectural firms in a coordinated way can help to create a more varied and vibrant setting.

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**A2.4.6** Consideration should be given to how the design can be flexible at a site scale to enable a change of tenure and/or disposal over time, with clear and separable ownership patterns.

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## A3.0 BUILDING DESIGN

### A3.1 BUILDING ENTRY

The entry to the building should be given substantial design attention to provide an identifiable and attractive address, be welcoming to visitors, and create a sense of 'homecoming' for tenants.

- A3.1.1** Letterboxes should be located externally, integrated within the building entry near to the street edge, and turned at 90 degrees to reduce their visibility, or as per the applicable authority requirements.
- A3.1.2** The path to the front door should be short, direct and obvious. Design should ensure that wayfinding signage is not required.
- A3.1.3** The entry area should feel open and safe with casual surveillance from adjacent dwellings.

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**A3.1.4** The area immediately outside the front door should be covered to provide shelter.

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**A3.1.5** The lobby should be generous and welcoming with a clear line of sight to the lift lobby and main entrance.

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**A3.1.6** Each building should have a single, secure pedestrian entry to access all dwellings. Individual entries to dwellings, for example ground floor dwellings, should be used only where required and designed, with due consideration given to safety aspects.

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**A3.1.7** Pedestrian entries should be well separated from vehicular entries.

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**A3.1.8** Consideration should be given to how the design can be flexible at a site scale to enable a change of tenure and/or disposal over time with clear and separable ownership patterns.

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### A3.2 COMMON CIRCULATION SPACES

The common circulation spaces of a building, including lobbies and corridors, should be designed to be pleasant spaces where residents can stop to chat and socialise.

- A3.2.1** All circulation spaces should be naturally lit and ventilated.
- A3.2.2** Where circulation spaces are open to the elements, they should be provided with sufficient shelter and screening to keep them partially dry, particularly in front of entry doors.
- A3.2.3** Corridors should be kept short and direct.
- A3.2.4** All common circulation spaces should be a minimum of 1800 mm wide to allow ample room for furniture removal and accessibility.



- A3.2.5** No common circulation space should compromise the visual or acoustic amenity of a habitable room in a dwelling.
- A3.2.6** Where multiple cores are employed, it is useful to connect the cores with a corridor at the entry level and at the top floor to allow alternative access in the event of lift breakdown. If the building is seven storeys or over, an intermediate connection may also be useful, and/or installation of an additional lift in each core should be considered.
- A3.2.7** Doors to common circulation spaces should be standard hinged doors. Do not use automatic doors. All accessibility should be demonstrated through the documentation by showing suitable spatial templates.
- A3.2.8** Consider opportunities to provide small social spaces within the common circulation spaces, particularly near letterboxes and garden areas. Ensure that such spaces do not impact on the privacy or quiet enjoyment of dwellings.

### A3.3 COMMUNITY ROOM

Building projects with 100 dwellings or more should consider inclusion of a community room, subject to confirmation by Bridge Housing on a project-by-project basis. This space should provide a scale suitable for gatherings such as building meetings, temporary support services and social clubs.

- A3.3.1** Community rooms are ideally located near common circulation spaces, have passive surveillance, are associated with a communal open space and should have access to sunlight.
- A3.3.2** Community rooms should be comfortable to occupy and easily accessible from all dwellings and main building entrances.
- A3.3.3** The size of community rooms should be a minimum area of 50 square metres – including a kitchen facility and wheelchair accessible bathroom – and minimum dimension of 4000 mm wide.

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**A3.3.4** Larger community rooms can provide separate meeting rooms if desirable. These should be a minimum area of nine square metres and a minimum dimension of 3000 mm wide, capable of seating at least four people and be wheelchair accessible.

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**A3.3.5** Consider providing a community room which is partially unenclosed to exclude the room from gross floor area calculations. Consideration should be given to weather protection and usability during winter months.

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### A3.4 BASEMENT CAR PARKING

All car parking should be located at basement level to improve the relationship of the building with the street and to minimise the negative impacts of vehicular movement and parking.

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**A3.4.1** Car parking should generally be located beneath the building footprint to maximise the opportunity for deep soil areas on site and minimise the requirement for transfer slabs. The footprint available should be utilised to accommodate car parking, motorcycle parking, bicycle parking, storage and service areas.

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**A3.4.2** Ideally, car parks should be limited to a single basement level. Avoid the additional excavation depth and inefficient ramping associated with a second basement level wherever possible.

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**A3.4.3** Consider opportunities to reduce the number of resident and visitor car parking spaces through the *Apartment Design Guide* (3J-1) or SEPP ARH. Onsite car share schemes may also be an option.

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**A3.4.4** Motorcycle spaces are desirable, given appropriate vacant space.

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**A3.4.5** A minimum of one bicycle space per four dwellings should be provided based on the relevant Australian Standard (AS) and or requirements of the applicable authority. Ideally, up to one bicycle space per dwelling is desirable. Corners and leftover spaces of basements are often suitable for this purpose. Ground floor dwellings may be able to accommodate bicycle storage in their private open spaces.

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**A3.4.6** Driveways should be minimised in length. Car park access and ventilation should be well integrated and should not detract from the appearance of the building. Driveways should not be located in side setbacks where landscaping would be preferable as a buffer to a neighbouring site.

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### A3.5 WASTE STORAGE AREA

The design of waste storage areas should be handled sensitively to reduce unsightliness and odour impacts.

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**A3.5.1** Waste storage areas are ideally located on-grade and in close proximity to the footpath where the collection will take place.

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**A3.5.2** Waste storage areas should not normally be located within a basement area unless required.

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**A3.5.3** Waste bins should be contained within an enclosure so that they are not visible from communal or public areas, potentially integrated with the front fence.

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**A3.5.4** Waste enclosures should not be located near to the main building entry door or within close proximity of a habitable room window.

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**A3.5.5** A bulky goods waste area should be provided with a minimum dimension of 2400 mm x 2400 mm. This area may be located in the basement.

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**A3.5.6** Do not use waste collection chutes within buildings. Refer to the Environment Protection Authority [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au) for specific waste storage guidelines.

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**A3.6 MATERIAL SELECTION AND DETAILING**

Materials should be robust and durable to provide longevity and reduce ongoing maintenance. External materials should be hard wearing, easily cleaned and easily repairable.

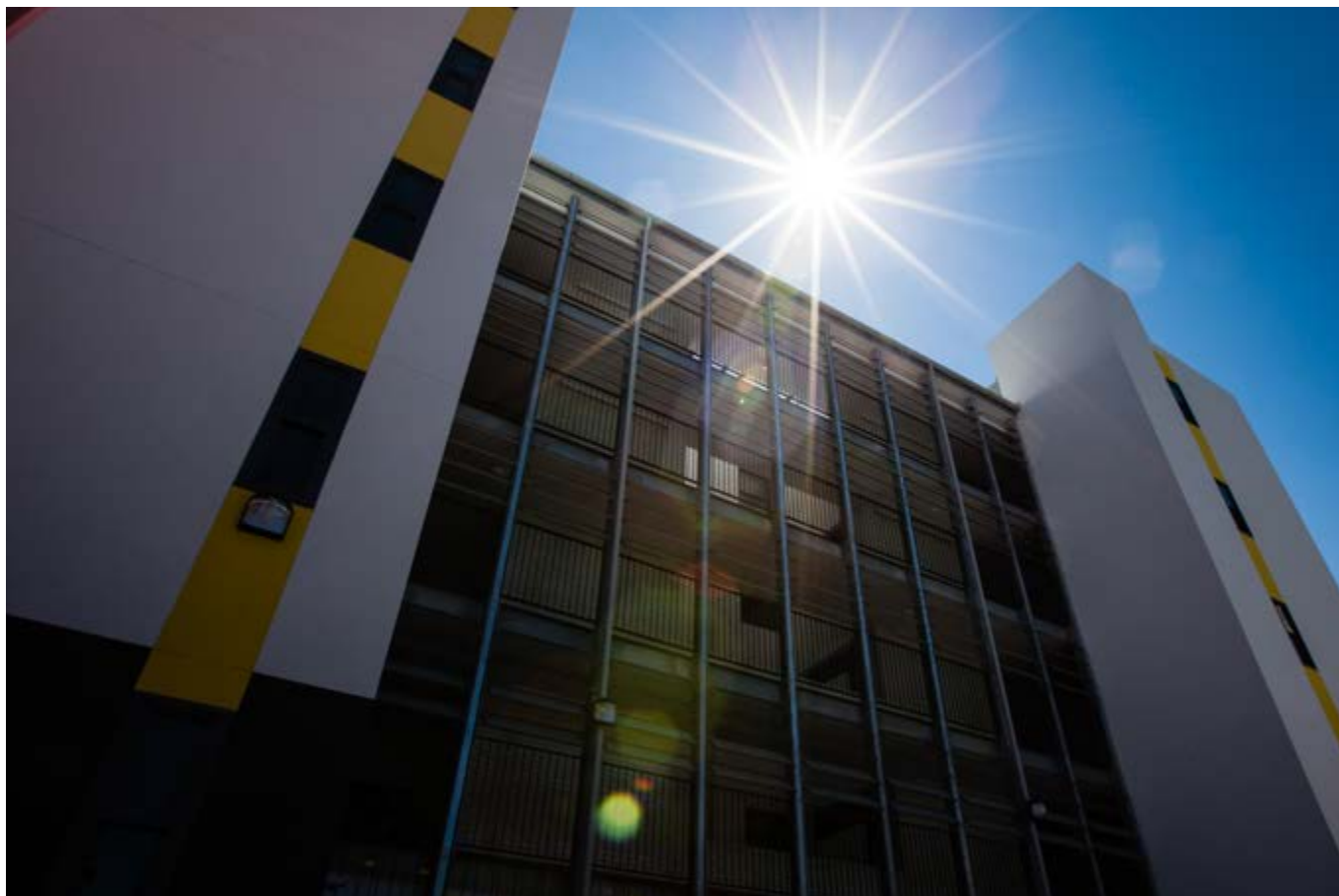
- 
- A3.6.1** Use materials with a proven track record. Face brick, concrete, sheet metal and pre-finished panels (which do not require additional elements e.g. fire sprinklers or alternative solutions to comply) are usually desirable applications.
- 
- A3.6.2** Large areas of render or painted surfaces that require scaffolding to maintain should be avoided.
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- A3.6.3** In design drawings, allow for wall thicknesses that can accommodate a variety of wall construction types.
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- A3.6.4** Complex details should be avoided, particularly where they increase the risk of water penetration.
- 
- A3.6.5** Building elements such as balconies, roofs, screens and window hoods should be designed to be 'integral' to the building design rather than appear to 'bolt on.'
- 
- A3.6.6** Avoid moving parts that are likely to break and require increased maintenance.
- 
- A3.6.7** Material selection should be appropriate to the context and not rely on alternative solutions or additional measures to comply with relevant standards. For example, avoid using external wall cladding that relies on water sprinklers to increase the fire resistance level (FRL) of the product.
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- A3.6.8** Consider the potential to recycle materials.
- 
- A3.6.9** Consider incorporating human scale details near where people come into contact with the building, such as at the building entry, to create interest and character.
- 

**A4.0 DWELLING DESIGN****A4.1 DAYLIGHT AND AIR**

Excellent residential amenity is essential to positive living environments. Access to ample daylight, sunlight, natural ventilation and natural cross ventilation are all important in good housing design.

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- A4.1.1** Window sizes and their effective openable area should be generous, with the size and location balanced against building energy efficiency ratings.
- 
- A4.1.2** Window locations in habitable rooms should not be compromised and should provide a positive outlook, capturing any available views. Avoid habitable rooms with a narrow 'snorkel' layout.
- 
- A4.1.3** The optimal maximum depth of an open-plan living room, dining room and kitchen is 2.5 times the ceiling height (for example 6750 mm deep where the ceiling is 2700 mm high) as this will ensure adequate daylight and air change at the rear of the room.
- 
- A4.1.4** Solar access to living rooms and balconies between 9am and 3pm in midwinter is highly valued and should be maximized. Exceed the minimum requirement of 70 per cent of dwellings where possible.
- 
- A4.1.5** Consider the use of skylights and clerestory windows in top floor apartments to increase the number of apartments with solar access where required. However, avoid using skylights and clerestory windows for ventilation.
- 
- A4.1.6** Skylights should not be openable and design consideration should be given to preventing any water ingress or maintenance issues.
- 
- A4.1.7** Natural cross ventilation of apartments is also a highly sought after attribute and should be maximized. Exceed the minimum requirement of 60 per cent of dwellings where possible.
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- A4.1.8** Dual aspect apartments, such as corner apartments and cross-through apartments, are particularly desirable for two-bedroom apartments and larger.
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## A4.2 PASSIVE ENVIRONMENTAL DESIGN

Passive design decreases the need for energy consumption for building operation, reduces running costs, and minimises greenhouse gas emissions.

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- A4.2.1** Effective sun control, good ventilation, wall insulation and roof insulation can reduce the need for mechanical heating and cooling.
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- A4.2.2** Avoid the use of mechanical air conditioning. Incorporate ceiling fans in the living room and all bedrooms.
- 
- A4.2.3** Provide external clothes drying areas in private open spaces to reduce the reliance on electrical clothes dryers.
- 
- A4.2.4** Willow room depths, generous window sizes and generous window head heights can reduce the need for artificial lighting during the day.
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## A4.3 VISUAL AND ACOUSTIC PRIVACY

Visual and acoustic privacy is a key factor in maintaining ongoing tenant comfort and should not be compromised.

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- A4.3.1** Primary windows to habitable rooms should not face onto communal circulation areas. Inclusion of secondary windows onto communal circulation areas can improve amenity. Window sills should be a minimum of 1500 mm to provide visual privacy and meet Building Council of Australia requirements.
- 
- A4.3.2** Avoid the use of fixed screens over windows to solve visual privacy issues between apartments. Instead, consider the use of 'pop-out' windows and bay windows to direct windows towards alternative orientations.
- 
- A4.3.3** Balconies should be screened from other balconies.
- 
- A4.3.4** Give consideration to noise transfer through party walls and floors. Grouping of like rooms, both vertically and horizontally, can assist in managing acoustic impacts between apartments.
-

**A4.4 ACCESSIBILITY**

Accessibility is a key design feature that Bridge Housing seeks in order to meet the diverse needs of tenants over time. This includes the concept of ‘ageing in place’, which allows for a dwelling to be flexible and adapt to accommodate the requirements of tenants as they age.

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**A4.4.1** All dwellings should achieve enhanced livability by meeting the silver level requirements of the *Livable Housing Design Guidelines* (4th ed., 2017).

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**A4.4.2** Where easy to achieve, dwellings should be upgraded to meet the gold level requirements of the *Livable Housing Design Guidelines*.

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**A4.4.3** If required, 10 per cent of dwellings should meet the platinum level requirements of the *Livable Housing Design Guidelines*. These same dwellings should also address any local control requirements for compliance with AS4299. Ensure that dwellings comply with both standards. Where local controls specify greater than 10 per cent adaptable dwellings, the number of platinum level dwellings should also be increased to match this figure.

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**A4.4.4** All AS4299 adaptable apartments should be designed and built already converted, with the exception of kitchen bench requirements. The kitchen bench should be provided at 900 mm high but allow for adjustment with a filler piece inserted below the bench and tiling behind the components.

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**A4.4.5** Meeting the Livable Housing Design silver level or platinum level may also assist with meeting NDIS requirements for ‘Improved Livability’ and ‘Fully Accessible’, when supplemented by one or more design features. Such features may include luminance contrast, improved wayfinding and clear lines of sight, outdoor private areas that are wheelchair accessible, bathroom vanity accessibility in a seated or standing position, kitchen sink and cooktop accessibility in a seated or standing position, and power supply to doors and windows to retrofit automation.

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**A4.4.6** Apartments should generally be single storey with level thresholds. Avoid stepping within dwellings.

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**A4.4.7** Ensure that all communal circulation spaces and communal spaces are fully accessible to meet BCA/National Construction Code (NCC) requirements and ensure compliance with the *Disability (Access to Premises - Buildings) Standards 2010*. These spaces include building entries, corridors, letterboxes, waste rooms, common rooms, communal open spaces, storage areas and car parking.

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**A4.4.8** Integrate building accessibility into the main path of travel for convenience and equity. Avoid creating separate indirect ‘add-on’ ramps to meet requirements.

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**A4.4.9** All accessibility should be demonstrated through the documentation by showing suitable spatial templates.

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## **A4.5 DWELLING DESIGN AND LAYOUT**

Individual dwellings should be designed to be comfortable and secure. They should feel like a ‘home’. Efficient planning of dwellings means that the space within a dwelling is functional and well utilised, with little or no wasted space.

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**A4.5.1** Apartment sizes should generally be designed to meet the minimum apartment area requirements and be kept to within a maximum of five square metres of additional floor space.

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**A4.5.2** Useful space can be maximised by reducing unnecessary corridors within apartments. However, a small corridor is desirable as a space between the living spaces and bathrooms or bedrooms.

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**A4.5.3** Corridors should be a minimum width of 1050 mm clear to meet the silver level requirements of the *Livable Housing Design Guidelines* including 50 mm tolerance. Consider 1200 mm wide corridors, where possible, to assist in meeting the gold level requirements of the *Livable Housing Design Guidelines*.

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**A4.5.4** Door widths should allow for a 850 mm clear opening to assist in meeting the gold level requirements of the *Livable Housing Design Guidelines*.

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**A4.5.5** A direct line of sight from the apartment entry into a bathroom or laundry room should be discouraged.

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**A4.5.6** Minimum furnishing should be provided, in line with the Furniture table on page 16, and drawn to scale in plan to demonstrate that comfortable movement throughout the apartment is possible.

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**A4.5.7** Open plan living rooms should be rectangular in proportion, rather than square, to accommodate space for a living room and dining room comfortably.

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**A4.5.8** Built-in wardrobes in bedrooms should be located on either wall adjacent to the door.

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**A4.5.9** Consider the location of any required bulkheads in habitable rooms. Integrate bulkheads above non-habitable spaces or built-in units to avoid reducing the ceiling height of habitable rooms.

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**A4.5.10** Consider the potential for dual key apartments to provide for flexibility in apartment mix.

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**Table 01 Furnishing Requirements**

FURNITURE	DWELLING SIZE	ITEMS	DIMENSION (MM)
<b>Dining room</b>	Studio	Dining table with 2 chairs	900 x 900
	1 bedroom	Dining table with 4 chairs	900 x 900
	2 bedroom	Dining table with 6 chairs	900 x 1500
	3+ bedroom	Dining table with 8 chairs	900 x 1800
<b>Living room</b>	Studio	1 seat armchair	900 x 900
		Coffee table	600 x 600
	1 bedroom	2 seat lounge	900 x 1800
		1 seat armchair	900 x 900
		Low storage wall unit	450 x 1200
	2 bedroom	2 seat lounge (x2)	900 x 1800
		Low storage wall unit	450 x 1200
	3+ bedroom	3 seat lounge	900 x 2100
		2 seat lounge	900 x 1800
		Low storage wall unit	450 x 1800
<b>Main bedroom</b>	All dwellings	Queen bed	1550 x 2050
		Bedside table (x2)	450 x 450
<b>Other bedrooms</b>	2+ bedrooms	King single bed	1100 x 2050
		Bedside table	450 x 450
<b>Private open space</b>	1 bedroom	Outdoor table with 2 chairs	900 x 900
	2 bedroom	Outdoor table with 4 chairs	900 x 900
	3+ bedroom	Outdoor table with 6 chairs	900 x 1500

## A4.6 KITCHENS

Kitchen provision should be in proportion with, and adequate for, the size of the dwelling.

<b>A4.6.1</b>	Minimum bench length, cooktop width, sink width and pantry width should be in line with Table 02 - Kitchen Layout requirements.
<b>A4.6.2</b>	Bench length should be measured along the surface and centreline of the bench and exclusive of fridge, wall oven, cooktop, sink and pantry. Sink drainage can count as bench space.
<b>A4.6.3</b>	All benches should be a minimum of 600 mm wide.
<b>A4.6.4</b>	Ensure a minimum of 300 mm bench to either side of a cooktop or sink and immediately adjacent to a wall oven.
<b>A4.6.5</b>	Allow for one primary bench space a minimum of 800 mm long.
<b>A4.6.6</b>	Allow for a 750 mm wide by 700 mm deep space for a fridge. The fridge is best located at the entry to the kitchen.
<b>A4.6.7</b>	Allow for a 600 mm wide wall-oven installed at kitchen bench height. Do not locate the oven immediately adjacent to the fridge. Locate a microwave space immediately above the oven.
<b>A4.6.8</b>	Pantries should be full-height with 300 mm deep shelving. Pull-out pantries are not desirable.
<b>A4.6.9</b>	Splashbacks should be a minimum of 600 mm high.
<b>A4.6.10</b>	Over-bench cupboards should be maximised and be 300 mm less wide than the bench below to allow for head room.

**A4.6.11** Ducted rangehoods are preferred where possible. Recirculating rangehoods should only be provided where the length of ducting required to reach to an external wall is greater than 6000 mm. Consider how to achieve horizontal ventilation of the rangehood to the external wall of the apartment. Refer to manufacturers requirements with regard to optimal duct lengths.

**A4.6.12** Below-bench storage should be maximised and include one bank of four drawers, at least one bank of pot drawers, and provision for a future 600 mm wide dishwasher.

**A4.6.13** Ensure that kitchen cupboard space is dedicated to daily waste collection, with separate bins for recycling and general waste. Installation of an off-the-shelf waste bin, located beneath the kitchen sink with two removable waste bins for general waste and recycling, is preferable.

**A4.6.14** The maximum height of kitchen cupboards should be 2100mm. Cupboard zones should be finished to the ceiling with a bulkhead over.

**A4.6.15** Wall kitchens are preferable to kitchens with island benches and can assist with accessibility requirements. Consider installing kitchens along a single wall or as an l-shaped kitchen around a dining table. Kitchen designs should avoid corner cupboards. Galley kitchens are preferable to u-shaped kitchens.

**A4.6.16** A window in a kitchen is a highly valued attribute. Locate a window over the sink where possible.

**A4.6.17** Shelving in cupboards beneath kitchen sinks should be avoided.

**Table 02 - Kitchen layout requirements**

KITCHENS	MINIMUM BENCH LENGTH (MM)	COOKTOP WIDTH (MM)	SINK WIDTH (MM)	PANTRY WIDTH (MM)
<b>Studio</b>	1800	Two-burner 300	Single bowl 880 x 450	450
<b>1 bedroom</b>	2100	Two-burner 300	Single bowl 880 x 450	450
<b>2 bedroom</b>	2400	Four-burner 600	One-and-a half-bowl 1050 x 450	600
<b>3+ bedroom</b>	2700	Four-burner 600	Two bowl 1400 x 450	600

**A4.7 BATHROOMS**

Bathrooms should be in proportion with, and adequate for, the size of the dwelling. Consideration should be given to the requirements in *Livable Housing Design Guidelines*.

- 
- A4.7.1** The main bathroom of all apartments should provide a shower, basin with vanity, and pan.
- 
- A4.7.2** Bathrooms should be a minimum clear width of 1800 mm and minimum clear length of 2400 mm, with a minimum ceiling height of 2400 mm.
- 
- A4.7.3** Showers should be a minimum of 900 mm in dimension and should be hobless (a maximum set down of 5 mm) to meet LHDG silver level.
- 
- A4.7.4** Use standard floor wastes in the bathroom and in the shower recess.
- 
- A4.7.5** Three bedroom apartments should provide an en suite to the same specifications as the main bathroom. A bath tub may be substituted for the shower in the main bathroom. Do not locate a showerhead over a bath tub.
- 
- A4.7.6** Provide a bathroom window for daylight and natural ventilation wherever possible.
- 
- A4.7.7** All bathrooms should be provided with a good quality ducted exhaust fan, ideally located as close as possible to the shower area (refer to manufacturer requirements regarding optimal location).
- 
- A4.7.8** No bathroom should open onto a kitchen.
- 

**A4.8 LAUNDRIES**

Laundries should be in proportion with, and adequate for, the size of the dwelling.

- 
- A4.8.1** Each apartment should be provided with its own laundry.
- 
- A4.8.2** The laundry is preferably located with the main bathroom to keep wet areas together. The laundry should have a minimum width of 1200 mm and a minimum depth of 800 mm in addition to the main bathroom dimensions. The laundry should not be enclosed with doors. The laundry should be located away from the shower to avoid splashing on electrical appliances.
- 

- 
- A4.8.3** Three-bedroom apartments should provide a separate room for a laundry. The laundry should be a minimum of 1200 mm wide and 1800 mm long, with a minimum ceiling height of 2400 mm. Consider providing additional storage within the laundry room.
- 

- A4.8.4** A strip grate should be located across the door threshold to the room containing the laundry for overflow drainage.
- 

- A4.8.5** Provision should be made for a minimum 650 mm width for the washer and dryer to be stacked vertically, a minimum 450 mm wide tub with underneath storage, a towel rack fixed to the rear wall above the tub at 1500 mm, and a space to stand a collapsed ironing board.
- 

**A4.9 SERVICES**

Well designed, located and coordinated services improve construction efficiency and avoid spatial impacts on habitable spaces.

- 
- A4.9.1** Where possible, service rooms in apartments - such as kitchens, bathrooms and laundries - should be stacked above one another. This coordination will assist in avoiding transfers and bulkheads which can impede on habitable room ceiling heights.
- 
- A4.9.2** Allow space in plans for risers and locate them appropriately so that they do not impede on habitable rooms. Consider using corners in L-shaped kitchens for risers.
- 
- A4.9.3** Where possible and appropriate, standardise the designs of kitchens, bathrooms, laundries and built in storage across apartments for efficiencies in construction and maintenance.
- 

**A4.10 STORAGE**

Ensuring that adequate and convenient storage is provided within the apartment to assist with comfortable and tidy living.

- 
- A4.10.1** Where possible, provide as much of the total storage volume required within the apartment.
-





**A4.10.2** Desirable storage includes a coat cupboard near the apartment entry, additional storage within the laundry cupboard, and cupboards within hallways, such as linen cupboards.

**A4.10.3** Demonstrate that a standard vacuum cleaner and ironing board can be accommodated within the storage space.

**A4.10.4** The switchboard should be located within a cupboard near the dwelling entry, but not within a habitable room or kitchen. The switchboard cupboard should not be included in the minimum storage requirement.

**A4.10.5** The remainder of the required total storage volume can be located in cages within communal storage rooms or within the basement.

#### **A4.11 PRIVATE OPEN SPACE**

Well designed private open space encourages an indoor/outdoor lifestyle and can augment interior dwelling spaces.

**A4.11.1** Private open space should generally be designed to meet the minimum size requirements. Private open spaces should be covered and protected from the elements. Larger private open spaces are appropriate at the ground floor, podium and roof top levels where additional space may be available. Larger private open spaces need only be covered for the minimum area requirements for the part adjacent to the door.

**A4.11.2** Fences around private open spaces should be between 1500 mm and 1800 mm high. Fences should be semi-transparent to provide visual privacy but avoid being 'wall-like.'

**A4.11.3** Balustrades should be not less than 1050 mm high above the internal finished floor level of the apartment to allow for accessibility solutions and building tolerances.

**A4.11.4** Balustrades should be partially or entirely solid to assist with visual privacy in the apartment and to conceal the contents of the balcony. Frosted glass in balustrades is not desirable.

**A4.11.5** Consider the use of fixed privacy screens to protect the balcony from overlooking and to direct views. However, ensure that the balcony does not feel enclosed. Do not use moveable screens.

**A4.11.6** Allow for a folding clothes line on all balconies. Where possible, the clothesline should be wall mounted at 1500 mm high to avoid interfering with floor waterproofing. Clotheslines should be a minimum 1800 mm wide (to allow for wider items such as bed sheets). A minimum of 7500 mm line should be provided in total. Clotheslines should be discrete and screened from communal or public areas. Show the clotheslines on the plans.

**A4.11.7** Allow for hot water units (HWU) to be located within the private open space. Show the HWU on the plans. Consider ducting requirements for HWU as per applicable authority requirements and the manufacturer's installation requirements. Consider location in relation to the clothesline.

**A4.11.8** Private open spaces should generally be hard paved or tiled to avoid the need for landscape maintenance. Do not provide turf in private open space.

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McLachlan Lister, 'North Eveleigh Residential Design Brief Draft v10,' 18 July 2012

NSW Department of Planning and Environment, *Apartment Design Guide*, July 2015

NSW Land and Housing Corporation, *Design Standards 2014, Revision 1*, July 2014

State Environmental Planning Policy No 65 - *Design Quality of Residential Apartment Development*, 17 July 2015

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Urban Possible, 'Bridge Housing Guidelines Review,' 2017





# PART B

## DETAILED DESIGN

### B1.0 BASE BUILDING

#### B1.1 BUILDING ENVELOPE AND FACADE

##### B1.1.1 GENERAL DESIGN NOTES

- (a) For all design and construct contracts, designs will be detailed to a minimum of 70 per cent full documentation stage, the contractor and principal will agree on the full extent of the documentation requirements prior to signing a construction contract. All work to comply with relevant Australian Standards, Building Codes and local and state authority requirements.
- (b) The building must be detailed with full consideration of the budget/cost plan of the project, addressing all factors including privacy, sun access and control, reflectivity, views, sustainability, wind, durability and maintenance.
- (c) Consider factors such as window cleaning, access for maintenance, and safety of occupants.
- (d) Use materials and details with a proven track record.
- (e) Guttering must be designed to codes and all valley gutters must be capable of carrying 1:50 year rainfall. Stormwater drainage design to provide overland flow paths independent of drainage system must be provided for Probable Maximum Flood (PMF) event.
- (f) Water-proofing design should be simple, minimise number of interfaces at any one point and consider carefully the location of all interface points (joints).
- (g) Toughened glass should be avoided where possible and where not possible it must be specified to follow steps to minimise risk of failure due to nickel sulphide inclusions.
- (h) Aluminium where used is to have powder-coat finish to internal areas and any external areas that will be subject to regular contact with occupants or maintenance persons. The difficulty of matching the finish in repairing damage to anodised finishes must be considered. The 'soft' nature of PVF2 must also be considered and addressed.
- (i) Minimise greenhouse gas emissions and support/promote renewable energy initiatives.
- (j) Minimise the generation of waste and encourage re-cycling during construction by achieving 85 per cent or more waste recycling.
- (k) Reduce water consumption through appropriate selection of a minimum of four star appliances and fittings. Supply a rainwater harvesting system for landscaping.
- (l) Reduce the use of materials from non-renewable sources.
- (m) Ensure a high level of acoustic privacy (BCA as a minimum). Engage an acoustic consultant to prepare a report detailing acoustic requirements of building fabric including but not limited to roofs, walls, floors, windows and partitions.
- (o) Check placements of telephone, electrical, TV outlets etc against furniture layout locations.
- (p) The development should be modelled to assess whether a 7-star NatHERS rating (average for units) rating can be achieved.
- (q) Use low volatile organic compound (VOC) paint throughout.
- (r) For all developments 3 levels or more CCTV is to be installed in foyers, car parks and garbage rooms.
- (s) The builder is to allow for connection and disconnection of all services at handover including payment of authority and services connection fees. All patch cables for phone and internet services to be supplied, connected and labelled by the builder.
- (t) Limit the number and size of openings towards noise sources. Use adequate seals on openings to prevent noise transfer through gaps and acoustic glazing.
- (u) Ensure acoustic privacy from structure-borne noise, particularly from areas with hard floor finishes above, by ameliorating noise transmission through ceilings.
- (v) There is flexibility for substitutions. However approval from Bridge Housing is required to deviate from requirements.



### B1.1.2 WINDOWS AND DOORS

- (a) Windows and doors should be selected and located to provide:
- ▀ full weather protection
  - ▀ acoustic performance as required
  - ▀ ease of operation and cleaning
  - ▀ high quality of finish
  - ▀ low maintenance
  - ▀ accessibility
  - ▀ security
  - ▀ provision for windows within an individual apartment to be keyed alike
  - ▀ provision for main access doors, common area doors (waste bin/bulky goods room) and unit entry and balcony doors where possible to the individual apartment to be keyed alike
  - ▀ main building entry doors that are commercial grade with heavy duty ball-bearing hinges and anti-liftoff pins. Hinge rating to be a minimum of double the door weight. Alternatively, install additional hinges
  - ▀ a master key for Bridge Housing.
- (b) Doors and frames should be selected to provide:
- ▀ required criteria such as fire rating, exterior grade etc.
  - ▀ appropriate access width including special requirements for disabled access
  - ▀ frames suitable for use with the substrate: e.g. masonry, stud wall etc.
  - ▀ furniture and fittings of suitable quality for use
  - ▀ apartment doors and all external windows and doors require all round weather seals
  - ▀ operable windows below 1200 mm from finished floor level that open no more than 125mm. This requirement does not apply to the ground floor (refer applicable authority requirements)
  - ▀ lockable security screens for all ground floor balcony doors
  - ▀ commercial-grade aluminium frames for all windows and sliding doors.
  - ▀ all ground floor windows to have security screens
  - ▀ use D-handles for all sliding glass doors (inside).
- (c) All laminated glass must be fully framed.
- (d) Ensure provision of operable windows in addition to sliding door sets to allow ventilation, while maintaining security. This is of particular importance in bedrooms.

### B1.1.3 BALCONIES AND BALUSTRADES

- (a) BCA requirements for balustrade heights are an absolute minimum. Therefore, balustrade dimensions should include generous tolerances (eg. 50–100 mm) to allow for tiling falls and building tolerances.
- (b) A design solution is to be provided for balcony floors to be built up to be level with internal floors to meet *Livable Housing Design Guidelines* requirements. Balustrade heights to accommodate the potential future build-up of balcony floor surface levels.
- (c) Good drainage from balconies is essential.
- (d) The balcony overflow is to be 15 mm above the adjoining finish level, but lower than the habitable floor level and/or the building weep holes of the unit. Capacity of the overflows is to be 200 per cent of the predicted requirement assuming the drain is blocked.
- (e) All laminated glass must be fully framed.
- (f) Allow for solid sections of balustrade.
- (g) Ground floor private open spaces to be provided with a tap. Do not provide a tap to upper floor balconies.

### B1.1.4 WALLS

- (a) Comply with acoustic engineer's advice regarding acoustic protection of external walls and internal partitions.
- (b) Appropriate wall types are related to the building type. Wall thickness must be determined prior to planning commencement to avoid future problems. Generally external masonry walls are acceptable. Generally brick party walls with render or direct-stick plasterboard are acceptable.
- (c) Lightweight wall construction systems are acceptable for all internal walls. Generally 13 mm impact resistant plasterboard on timber stud at 450 mm centres is acceptable.
- (d) Provide 13mm plywood to the entire stud walls of all bathrooms and powder rooms for all designated Silver Level Standard bathrooms, adaptable apartments for future installation of grab rails/handrails as required by *Livable Housing Design Guidelines*.
- (e) External walls to include ventilation openings, flashings, damp-proof courses, termite control and control joints.

### B1.1.5 ROOF

- (a) Provide watertight colorbond zincalume metal roofing including sarking, insulation, flashings, cappings, guttering and down pipes to suit terrain category.
- (b) Roof structure to be sufficient for additional services such as solar voltaic grid system and hot water solar panels.
- (c) Provide access to roof areas including walkways, ladders and guardrails, safety anchors and brackets for maintenance that comply with *Occupational Health and Safety Regulation 2001* and the health and workplace safety requirements of SafeWork NSW.
- (d) Provide leaf guards for gutters.



### B1.2 STRUCTURAL SYSTEM

#### B1.2.1 GENERAL DESIGN NOTES

- (a) The structural system will be the subject of reviews and approvals by the Bridge Housing. The reviews will assess cost, time parameters and compliance with all relevant Australian Standards, building codes and local authority requirements.
- (b) For projects above three floors use a concrete-framed structural system. Provide details of all concrete elements including reinforcement. Consider using a post tensioned ground floor slab design to reduce depth of transfer slab
- (c) Provide design and details of all roof framing.
- (d) Ensure appropriate set-downs are detailed on structural drawings for:
  - ▀ wet areas
  - ▀ across wall cavities
  - ▀ at recessed frames for external doors and windows.
- (e) Design to include all external civil works including driveways, kerbs, ramps, footpaths, retaining walls, pergolas etc.
- (f) Provide design details for stormwater retention tanks and rainwater tanks.
- (g) Provide shoring details relating to site excavations.
- (h) Provide details for required work around sewers, water mains and other services.

### B1.3 COMMON AREAS

#### B1.3.1 COMMON AREAS

- (a) The following table details project requirements in regard to the finishes to common areas. Finishes are required to be durable (minimum design life of 10 years), with simple details that can be readily maintained.

## TYPICAL ENTRY LOBBIES, LIFT LOBBIES AND CORRIDORS

<b>Amenity</b>	<ul style="list-style-type: none"> <li>▸ Signage: statutory plus floor identification number; apartment identification numbers. All lettering is to be fixed to an aluminium/glass plate, which is fixed to the door/wall (do not directly fix individual lettering to door or wall)</li> <li>▸ Key entry</li> <li>▸ Front lobby doors to have an awning to sufficiently cover people and prevent them from getting wet while accessing front doors during inclement weather</li> <li>▸ Where communal spaces pass habitable room windows, allow for window screening to protect the visual privacy of the room (note designs that rely on this arrangement should be avoided.)</li> </ul>		
<b>FABRIC</b>	<b>MATERIAL</b>	<b>FINISH</b>	<b>NOTES</b>
<b>Ceiling</b>	Plasterboard on furring channels	Professional Ultra-Hide tintable ceiling paint	Minimum height 2400 mm
<b>Access panels are to be proprietary</b>		1 seat armchair	900 x 900 mm
<b>Cornice</b>	10 mm shadow angle	Professional Ultra-Hide tintable ceiling paint	Throughout
<b>Wall</b>	Plasterboard – 13 mm impact resistant board or rendered brick	Wash-and-wear paint	Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings
<b>Floor</b>	Vitrified tiling		Minimum "P" rating per AS/BCA or applicable authority requirements
<b>Skirting</b>	Tile skirting for all hard surfaces	3 seat lounge	900 x 2100 mm
<b>Timber skirting where carpet or vinyl</b>			900 x 1800 mm
<b>Entry doors</b>	Commercial grade aluminium framed glass door	Powder-coat	Hinged doors only. No automatic doors. Use heavy duty ball-bearing hinges and anti-liftoff pins. Hinge rating to be a minimum of double the door weight, alternatively install additional hinges to ensure the door/hinge system is a suitable size and rating in relation to door opening to minimise door adjustments

Entry door frames	Commercial grade aluminium-framed glass door	Powder-coat	
Service doors	Semi-solid core	Painted in semi-gloss enamel	Fire hose reel cupboard and fire stair doors
Service door frame	Zinc chromate primed steel	Painted gloss enamel	Fire hose reel cupboard and fire stair doors
Lift doors	Stainless steel		
Lift door frame	Stainless steel		
Unit doors	Fire-rated solid core timber	Painted in semi-gloss enamel	Unit ID number and peep hole
Unit door frame	Zinc-coated steel	Outdoor table with 6 chairs	900 x 1500 mm
Fire-rated doorset assembly	Painted gloss enamel		

## JOINERY

Window reveals	Set plasterboard	Wash-and-wear paint	Windows only
Window sills	Finger jointed pine sill board or plasterboard returned	Painted in semi-gloss enamel	
Lift door reveals	Set plasterboard	Wash-and-wear paint	Stainless steel corner guards

## SERVICES/FIXTURES AND FITTINGS

## ELECTRICAL

Lighting	Recessed		LED ceiling down-lights or battens controlled by sensors and timers
Power	Double 10Amp socket outlet		Allow one double GPO every 20 metres in corridor/lobby with lockable cover for cleaner and maintenance access
Communications and security	CCTV cameras		Refer section 3.6
Furniture	Design for the following furniture show on sketch plans: <ul style="list-style-type: none"> <li>▶ Mailboxes must be external and of a type approved by Australia Post. Their location, distance from the road, and heights must meet the recommendations approved by Australia Post.</li> <li>▶ Provide a recessed mat inside lobby entry doors.</li> </ul>		



## FIRE STAIRS and EGRESS PASSAGE WAYS:

### Size and performance to BCA requirements

#### AMENITY

Signage: to statutory requirements. All lettering to be fixed to an aluminium/glass plate, not directly to door or wall.

FABRIC	MATERIAL	FINISH	NOTES
Ceiling	Concrete slab	None	Concrete slab soffit unpainted
Cornice	N/A		
Wall	Fair face block-work concrete walls	No paint finish	Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings
Floor	In situ concrete to concrete stairs		Carborundum non-slip strips to treads and landings
Skirting	N/A		
Window			Provide one fixed window per floor in enclosed stairwell to meet fire code
Service doors	Fire-rated semi-solid core timber	Painted in semi-gloss enamel	
Service door frame	Metal	Painted in semi-gloss enamel	

#### ELECTRICAL

Access/locks		Per AS/BCA and applicable authority requirements
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## SERVICES/FIXTURES AND FITTINGS

#### ELECTRICAL

Lighting	LED	PIR activated to statutory requirements
Power		N/A
Handrails		Galvanised metal
Ventilation	N/A	Naturally ventilated if possible
Furniture	Design for the following furniture, show on sketch plans: N/A	

## RISER CUPBOARDS

### Size to equipment requirements

<b>Amenity</b>	<ul style="list-style-type: none"> <li>▸ Signage: to statutory requirements. All lettering to be fixed to an aluminium, glass plate, not directly to door or wall riser cupboards (gas meter rooms, hydrant pump rooms, stair pressurisation fan rooms and AHU enclosures) to comply with the applicable authority and codes. Consider ventilation of service cupboards against acoustic and fire rating requirements.</li> <li>▸ Riser cupboards (electrical) to have non-combustible doors and sequence selectors.</li> </ul>		
<b>FABRIC</b>	<b>MATERIAL</b>	<b>FINISH</b>	<b>NOTES</b>
<b>Ceiling</b>	Concrete slab	None	Concrete slab soffit unpainted
<b>Cornice</b>	N/A		
<b>Wall</b>	Fair face block-work concrete walls	No paint finish	Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings
<b>Floor</b>	Insitu concrete		Steel trowel finish to machine plinths
<b>Fire doors</b>	Fire-rated solid core timber	Painted in semi-gloss enamel	All metal work to be zinc chromate primed
<b>Fire door frame</b>	Zinc-coated steel Fire-rated doorset assembly	Painted gloss enamel	
<b>Service doors</b>	Semi-solid core	Painted in semi-gloss enamel	
<b>Service door frame</b>	Zinc-coated steel	Painted gloss enamel	

## SERVICES/FIXTURES AND FITTINGS

### ELECTRICAL

<b>Lighting</b>	LED	
<b>Power</b>		N/A

Ventilation	N/A	Naturally ventilated only
Furniture	Design for the following furniture, show on sketch plans: <ul style="list-style-type: none"> <li>Services pipes to be finished (painted or labelled) in accordance with the requirements of the relevant authorities</li> <li>Plant equipment to consultants' specification.</li> </ul>	

## SERVICE ROOMS

### Size to equipment requirements

Amenity	Signage: to statutory requirements. All lettering to be fixed to an aluminium/glass plate, not directly to door or wall. Consider ventilation of service rooms against acoustic and fire rating requirements.		
FABRIC	MATERIAL	FINISH	NOTES
Ceiling	Concrete slab	None	Concrete slab soffit unpainted
Cornice	N/A		
Wall	Fair face block-work concrete walls	No paint finish	Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings
Floor	Monolithic machine float finish graded to falls		Steel trowel finish to machine plinths
Fire doors	Fire-rated solid core timber	Painted in semi-gloss enamel	All metal work to be zinc chromate primed
Fire door frame	Zinc-coated steel Fire-rated doorset assembly	Painted gloss enamel	
Service doors	Semi-solid core	Painted in semi-gloss enamel	
Service door frame	Zinc-coated steel	Painted gloss enamel	

## SERVICES/FIXTURES AND FITTINGS

### ELECTRICAL

Lighting	LED	
Power	Double 10 amp socket outlet	1 x number generally as required for hot water plant 4 x number Communications room
Ventilation	N/A	Naturally ventilated only
Furniture	Design for the following furniture, show on sketch plans: <ul style="list-style-type: none"> <li>Specialised plant areas (gas meter rooms, hydrant pump rooms, stair pressurisation fan rooms and AHU enclosures) to have 2-hour Fire-rated construction where applicable</li> <li>Services pipes to be finished (painted or labelled) in accordance with the requirements of the relevant authorities.</li> </ul>	

## GARBAGE ROOMS AND RECYCLE STORE

### Size to statutory requirements

Amenity	Signage: to statutory requirements. All lettering to be fixed to an aluminium/glass plate, not directly to door or wall. Design to be sympathetic to overall building and landscape design		
FABRIC	MATERIAL	FINISH	NOTES
Ceiling	Concrete slab	None	Concrete slab soffit unpainted
Cornice	N/A		
Wall	Fair face block-work concrete walls		Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings
Floor	Monolithic machine float finish graded to falls		Water/oil resistant non-slip epoxy sealed finish to integral coved skirting Galvanised floor wastes and sump covers
Skirting	N/A		
Service doors	Semi-solid core	Painted in semi-gloss enamel	Do not specify a lock on a door to a garbage room
Service door frame		Painted gloss enamel	



## SERVICES/FIXTURES AND FITTINGS

### ELECTRICAL

Lighting	LED	LED lighting with replaceable globes preferred
Power	Double 10Amp socket outlet	1 x number generally
Water	Cold water tap	1 x number generally (security key)
Drainage		Connect drainage to sewer system
Ventilation		Naturally ventilated if possible
Communications and security	Design for the following furniture, show on sketch plans	
Furniture	Design for standard required recycle bins provided by council, show on sketch plans.	

### B1.4 CAR PARK

#### B1.4.1 CAR PARK

- (a) A minimum of two bicycle lockup loops are to be provided for visitors at each entry. A minimum of one bicycle space per four dwellings should be provided to AS/BCA and applicable authority requirements. Ideally, up to one bicycle space per dwelling is desirable. Utilise leftover spaces in car parks to provide bicycle storage.

## CAR PARK

### Size to vehicle number and storage requirements

Amenity	To statutory requirements. All lettering to be fixed to an aluminium/glass plate, not directly to door or wall. Galvanised tube and fitting with chain wire storage enclosures for residents to planning requirements.		
FABRIC	MATERIAL	FINISH	NOTES
Ceiling	Concrete slab	None	Concrete slab soffit unpainted
Cornice	N/A		

<b>Wall</b>	Fair face block-work concrete walls  Off form concrete - unpainted class 3	Unpainted	Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings
<b>Floor</b>	Off form concrete	Sealed	Line marking – provide line marking and numbering for resident car parking to strata planning requirements. Provide directional arrows as required
<b>Ventilation grills</b>	Aluminium		Water/oil resistant non-slip epoxy sealed finish
<b>Entry doors</b>	Fire-rated solid core timber	Painted in semi-gloss enamel	Use powder-coated ventilation grills as appropriate
<b>Entry door frames</b>	Zinc-coated steel  Fire-rated doorset assembly	Painted in semi-gloss enamel	Statutory and directional signage
<b>Service doors</b>	Semi-solid core (fire-rated as required)	Painted in semi-gloss enamel	
<b>Service door frame</b>	Zinc-coated steel	Painted in semi-gloss enamel	Fire hose reel cupboard and fire stair doors
<b>Lift doors</b>	Stainless steel		
<b>Lift door frame</b>	Stainless steel		
<b>Unit door frame</b>	Metal	Painted gloss enamel	
<b>Vehicle door</b>	Roller shutter	Fully perforated roller shutter to allow maximum natural air flow	Connected to access system

## SERVICES/FIXTURES AND FITTINGS

### ELECTRICAL

Lighting	LED	Lights – wire guarded surface mounted lighting on timers and sensors	
Power	DGPO	Allow 1 double GPO per lift lobby for cleaning with lockable cover	
	Direct power	Dedicated power via isolator switch for each carpark entry shutter	
	Support	Electrical services to be adequately protected in cable trays	
HYDRAULIC		All hydraulic services to be signed	
Ventilation	N/A	As required	
General		All services to be unpainted, except fire services (sprinklers)	
Communications and security			
Furniture	Design for the following furniture, show on sketch plans: <ul style="list-style-type: none"> <li>▀ Fire hose reel – surface mounted</li> <li>▀ Height bar – reflective/highly visible height bar at entry</li> <li>▀ Bollards – provide concrete filled round hollow tube bollards as required for protection of entrances and exits, lift lobbies and plant rooms and all services within close proximity of vehicles</li> <li>▀ Galvanised metal handrails to ramps and stairs</li> </ul>		

## **B1.5 LANDSCAPING**

### **B1.5.1 PAVING**

- (a) Provide slip resistant in situ reinforced concrete footpaths with broom or coloured finish.
- (b) Provide light coloured broom finished concrete to car parking and driveway. Pathways to be a minimum of 1200 mm wide in common areas.

### **B1.5.2 ELECTRICAL**

- (a) Provide external power for cleaning and amenities as required. This should include security and waterproof covering.

### **B1.5.3 IRRIGATION**

- (a) Provide lockable taps connected to rainwater retention tank (size to be determined by engineer) in landscape areas.

### **B1.5.4 DRAINAGE**

- (a) Provide grated drains to base of ramped entry to carpark and trafficable pits throughout the driveways (to be coordinated with engineer).
- (b) Provide subsurface drainage beneath the basement slab which reticulates to a seepage pumpout pit.
- (c) Spoon drain to be provided around perimeter of carpark shoring walls to capture any seepage and reticulate drainage to a pumpout pit.
- (d) All pit covers located in trafficable areas turfed and landscape areas to include a trafficable cover or screen respectively.

### **B1.5.5 TURF**

- (a) All turf is to be shade and drought tolerant with a useable gradient between 1:20 and 1:100. (Topsoil to be a min 300 mm for on slab areas)

### **B1.5.6 COMMUNITY GARDENS**

- (a) Design communal open spaces to allow for future use as a community garden.
- (b) Community gardens to provide a 'sense of place', area for growing of plants for consumption (fruit and vegetables); ensure placement and siting is appropriate for such function i.e. solar access



- for plants, central location for residents etc.
- (c) Raised beds are to be provided with closely located hosecocks for watering.

### **B1.5.7 PLANTING**

- (a) Allow for subsoil drainage connected to rainwater tank appropriate to planting. Provide some mature trees that do not obstruct eye level view.
- (b) Planting beds to be located a minimum 300 mm away from building to allow for maintenance and a minimum of 1000 mm wide. Beds to have a maximum gradient of 1:4.
- (c) Predominately indigenous species to be used in accordance with council requirements. Species selected to not have invasive root systems, not drop branches, fruit or flowers and non-toxic 75 mm deep mulch garden beds. Planting design is to maintain site lines across the site and minimise opportunities for concealment and entrapment.

### **B1.5.8 ON GRADE PLANTING**

- (a) Where possible, concentrate planting within deep soil areas. Provide 300 mm top soil, or treated site soil, to Australian Standards.



### **B1.5.9 OVER STRUCTURE/SLAB PLANTING**

- (a) Allow for raised planter beds with retaining walls, waterproofing and drainage points.
- (b) Soil depths for shrubs 600 mm; trees 900 mm.

### **B1.5.10 EDGING**

- (a) Where necessary, in particular, at grass/garden bed interfaces; include timber edging.
- (b) 300 mm concrete edging against the building where it meets turf or landscaped areas.

### **B1.5.11 SIGNAGE**

- (a) Provide building and statutory signage. Well-lit and in clear visible locations. Text 150 mm for street numbers, 50 mm for letterboxes and entry doors.

### **B1.5.12 FURNITURE AND FITTINGS**

- (a) Provide galvanised metal handrails to ramps and stairs. Provide durable furniture in common open space complementary to the aesthetic of the development and landscape design.

### **B1.5.13 GENERAL LANDSCAPE MAINTENANCE**

- (a) Provide a maintenance regime appropriate to the landscape design for a period of 52 weeks.

### **B1.5.14 FENCING**

- (a) Fencing to be designed along all boundaries to meet local council requirements. Mimic masonry fencing or pool type fencing is not desirable. Do not use palisade fencing with spear points.

### **B1.5.15 LETTERBOXES**

- (a) Allow for 1 x Australia Post compliant letterbox per dwelling, size to accommodate 1 x A4 envelope. Allow one extra letterbox for building management.

### **B1.5.16 LIGHTING**

- (a) Lights to be provided at common area pathways, letterboxes, garbage areas and entry points. Lighting type and location designed to not create glare in dwellings and angled into open spaces. Stop light spill to other areas.

### **B1.5.17 CLOTHES LINES**

- (a) Provide drying facilities within available private open space.

### **B1.5.18 GARBAGE BIN ENCLOSURES**

- (a) Locate and screen easily accessible bin enclosure area(s), compliant with local council regulations.

## **B2.0 SERVICES**

### **B2.1 ELEVATORS**

#### **B2.1.1 GENERAL DESIGN REQUIREMENTS**

- (a) Lifted apartment building (max. waiting time is not to exceed 70 seconds). Single lifts are acceptable.
- (b) Stainless steel lift doors and frames.

#### **B2.1.2 REGULATIONS AND AUTHORITIES**

- (a) Generally the lift services systems will be designed to provide a quality service for this type of building that meets the relevant authorities' requirements and represents a co-ordinated scheme to accepted industry standards.
- (b) In particular, the systems will be designed and installed to conform with/to the approval of:
  - Building Code of Australia
  - NSW Fire Brigade
  - any other authorities having jurisdiction
  - relevant Australian Standards
  - service rules, regulations and requirements of SafeWork NSW.
- (c) The lift services system requirements are as follows:
  - apartment passenger lifts
  - use lifts that do not require machine rooms
  - each lift will have a capacity of 10 passengers
  - clear door opening will be to BCA and Australian Standards
  - power system will be variable voltage, variable frequency, gearless traction
  - control system will be microprocessor based group control.

**B2.1.3 LIFT CARS**

- (a) Only basic fit out will be required.
- (b) Design requirements:
  - ▀ Lift finishes must be hard wearing, easily cleaned and requiring minimal maintenance. Consider the level and type of use a lift will encounter.
  - ▀ In high use lifts, or where furniture is expected to be moved, detail finishes to provide protection at a low level. This can take the form of a bumper rail above skirting level to protect wall surfaces.
- (c) Ensure lift is designed and specified as a stretcher lift.

**B2.1.4 FLOORS**

- (a) Tiles are preferred. Where vinyl is used, it must be a colour and pattern that does not readily show dirt and marking. Carpet in lift car is not desirable.

**B2.1.5 DOORS AND THRESHOLDS**

- (a) Thresholds in lifts must be stainless steel, not tile, to avoid damage from trolleys etc.
- (b) Specify suitable material for lift doorjamb to provide adequate edge protection. Protect or detail edges to avoid damage. Do not use timber jambs.

**B2.1.6 LIGHTING**

- (a) Use LED lamps. Do not use low voltage halogen downlights in lift cars.

**B2.1.7 CONSTRUCTION NOTES**

- (a) The construction program must allow for shop drawings to be signed off before construction commences. Shop drawings must be resubmitted until they are correct and signed off.
- (b) Pay particular attention to the shop drawings of lift car button panels. Ensure the proposed graphics are appropriate to the unit numbering system and car park levels.

**B2.2 MECHANICAL****B2.2.1 GENERAL DESIGN CRITERIA**

- (a) The mechanical services will be in accordance with:
  - ▀ The requirements of the Building Code of Australia
  - ▀ Other relevant Australian Standards
  - ▀ Requirements of the relevant local fire authority (e.g. NSW Fire Brigade)
  - ▀ Local consent authority.

Note: review/incorporate changes to codes, standards and regulations.

Note: No CFC based refrigerants to be used.

Note: CO monitoring to be provided to carpark if mechanically ventilated.
- (b) Any departures from standards and codes are subject to agreement with council or approved fire engineering solutions, where required.

**B2.2.2 NOISE CRITERIA**

- (a) NR numbers as defined in the relevant standards will ensure they will include those addressing Air Conditioning and Mechanical Ventilation areas.
- (b) In general, the noise levels will comply with Australian Standards and council requirements.

**B2.2.3 EXHAUST SYSTEMS**

- (a) Exhaust systems will be required for bathrooms, laundries and car parks. Adequate natural ventilation may also be provided in line with BCA. Systems for bathrooms and laundries may be combined.
- (b) Kitchen exhaust systems to be ducted to external wall.
- (c) Individual fan/s in each apartment are to be ducted to the external façade of the building.
- (d) Carpark supply and exhaust requirements will depend on individual situations, and are to comply with Australian Standards and building regulations for ventilation and smoke exhaust. If possible, provide a naturally ventilated car park.
- (e) Minor exhaust systems should comply with Australian Standards and are required for switch rooms, gas meter rooms, stores and garbage rooms etc.

## B2.2.4 VENTILATION SYSTEMS

- (a) Ventilation will be provided for the following areas as specified by the relevant standards and to the specific requirements:
  - MDF Room
  - main electrical distribution board room
  - gas meter room
  - garbage rooms
  - mechanical plants.
- (b) Car parking ventilation (natural ventilation preferred).

## B2.3 HYDRAULIC SERVICES

### B2.3.1 HYDRAULIC SERVICES SYSTEMS DESCRIPTION

- (a) This section describes the proposed hydraulic services systems for the residential building.

#### B2.3.1.1 Introduction

- (a) The areas of particular consideration are:
  - amplification of services. Ensure immediate investigation of service availability/suitability
  - proximity of utilities to site.

#### B2.3.1.2 Regulations and authorities

- (a) Generally the hydraulic services systems are to be designed to provide a quality service for this type of building that meets the relevant authority's requirements and represents a co-ordinated scheme to accepted industry standards.
- (b) In particular, the systems will be designed and installed to conform with/to the approval of:
  - National Construction Code
  - Building Code of Australia
  - Sydney Water
  - Sydney Water - trade water
  - relevant gas supplier
  - NSW Fire Brigade
  - any other authorities having jurisdiction
  - other relevant Australian Standards
  - service rules, regulations and requirements of Sydney Water.

**Note:** Review/incorporate check for changes to codes, standards and regulations.

**Note:** Water fittings to be used for shower, kitchen, bathroom basins and laundry tub as detailed by BASIX requirements.

## B2.3.2 SANITARY SERVICES SYSTEMS DESCRIPTION

### B2.3.2.1 Sewer drainage system

- (a) The sewer drainage system for the project will comprise connections to the Sydney Water sewer main.
- (b) A sewer pump out system will be provided to collect the discharge from lower level fixtures unable to gravitate to the sewer main, as required.
- (c) The drainage systems will be fitted with a 150 mm (6 inch) overflow gully assembly to provide for the safe release of sewage in the event of a blockage.

### B2.3.2.2 Authorities and standards

- (a) The sewer drainage will be designed in accordance with the provisions and particular requirements of the local authority and applicable standards.

### B2.3.2.3 Materials

- (a) The sewer drainage system will be constructed of materials that comply with the relevant standards and local authority requirements. Where possible, PVC pipework will be used in residential areas.

### B2.3.2.4 Sanitary plumbing system

- (a) The sanitary plumbing system for the project will comprise a system of stacks which connect to the sewer drainage system at lower ground and ground levels.
- (b) A system of stacks and relief vents will collect the sewage from apartment fixtures and discharge by gravity to the sewer drainage system. 100/150 mm (4/6") stacks and 100/150 mm relief vent will run from the sewer drainage up through the apartment.
- (c) Vents will terminate above roof level, in discreet locations where possible.

### B2.3.2.5 Authorities and standards

- (a) The sanitary plumbing system will be designed in accordance with the relevant standards and local authority.

**B2.3.3 STORM WATER DRAINAGE SYSTEM**

- (a) The storm water drainage to street drainage systems will comprise of multiple connections. From the connection points, a drainage system will collect the discharge from all down pipes.

**B2.3.3.1 Authorities and standards**

- (a) The system will comply with the requirements of the relevant standards, and meet accepted industry standards and local authority requirements.

**B2.3.3.2 Materials**

- (a) Downpipes for the project will be constructed of materials which comply with the relevant standards and local authority requirements.
- (b) The stormwater drainage system will be constructed to comply with the relevant standards and local authority requirements. Do not use PVC downpipes where exposed to view external of the project.

**B2.3.3.3 Rainwater harvesting system**

- (a) The rainwater harvesting system will collect rainwater from all roof areas and store it in an on-site rainwater tank overflow to discharge to the on-site detention system. The rainwater harvesting system is to be used for toilet flushing and landscape irrigation. When the system is empty it should switch over to individual unit metered water with a mechanical low pressure switch. The system should not be designed to refill the tank from the town water when empty.
- (b) The stormwater detention and drainage system is to collect rainwater from all paving and terrace areas, and discharge to systems in the on-site detention system and from there into council stormwater system.

**B2.3.4 COLD WATER SYSTEMS**

- (a) The cold water systems for the project will comprise a connection to the main as required by the service provider and extended to the water meter in an approved location on the property. Provide a booster pump and assembly if required.
- (b) Pressure reducing stations to suit various pressure zones will be incorporated in the system to maintain acceptable maximum pressures if they are required.

**B2.3.4.1 Authorities and standards**

- (a) The cold water services will be designed in accordance with the relevant standards and local authority requirements.

**B2.3.5 HOT WATER SYSTEMS**

- (a) The hot water system for the building will comprise individual instantaneous gas systems for each dwelling. Each unit is to be individually metered.

**B2.3.5.1 Hot water services**

- (a) The piping system will ensure that there are minimal dead legs, non-scalding water temperature, and minimal waiting times for hot water.

**B2.3.5.2 Authorities and standards**

- (a) The hot water system will be designed in accordance with the relevant standards and local authority requirements.

**B2.3.5.3 Sanitary fixtures and faucets**

- (a) The fixtures and faucets will be of good quality and efficient.

**B2.3.6 NATURAL GAS SYSTEM**

- (a) The natural gas service system for the project will be supplied from the AGL Energy main to a gas regulator set located as per authority requirements and reticulated to the plant levels.
- (b) It will provide low pressure, clean and economical natural gas to the hot water plant, kitchens and living room gas points.

**B2.3.6.1 Gas**

- (a) Gas outlets will be to each living room only.
- (b) No gas outlets or cold water to balconies.
- (c) Gas to be provided to cook top.
- (d) The oven will be electric.

**B2.3.6.2 Authorities and standards**

- (a) The gas services will be designed to comply with the requirements of the relevant gas provider.

### **B2.3.7 METERING**

- (a) All services to be individually metered to units to allow individual tenant billing. The cold water and hot water will be measured by the same meter and comprise a Sydney Water approved/installed meter.

#### **B2.3.7.1 Cold water service**

- (a) Sydney Water meters/sub meters to residential building do not use private meters.
- (b) Individual meters to all residential apartments.

#### **B2.3.7.2 Hot water service**

- (a) Individual meters to all residential apartments.

#### **B2.3.7.3 Natural gas**

- (a) Individual gas meters to all residential apartments.

#### **B2.3.7.4 Metering**

- (a) MDL metering with data loggers will be provided to allow remote meter reading without the need to enter individual apartments. These should be installed in accordance with authority requirements.

#### **B2.3.7.5 Water pressure**

- (a) Residential levels in the building will be fed from the domestic cold water service main.
- (b) Water pressures will be maintained in the apartments at no less than 200 kPa (30PSi), and not more than 500 kPa (72.5PSi) for both hot and cold water (equally)

### **B2.4 ELECTRICAL**

#### **B2.4.1 GENERAL DESIGN CRITERIA**

##### **B2.4.1.1 Regulations and authorities**

- (a) Generally the electrical services systems are to be designed to provide a quality service for this type of building that meets the relevant authorities' requirements and represents a co-ordinated scheme to accepted industry standards.
- (b) In particular, the systems will be designed and installed to conform with/to the approval of:



- relevant Australian Standards
- service rules, regulations and requirements of Energy Australia
- requirements of the relevant local fire authority (e.g. NSW Fire Brigade)
- local consent authority
- the requirements of the Australian Telecommunications Authority (Austel)
- the requirements of the Building Code of Australia.  
Note: Review/incorporate check for changes to codes, standards and regulations.
- (d) All power outlets located in public areas are to be lockable.

#### **B2.4.2 POWER**

##### **B2.4.2.1 Mains supply**

- (a) Where required, the design for the total development provides for an independent district substation. The substation is to be a kiosk type located adjacent to the property.
- (b) Building load capacity for residential areas to the relevant standards and local authority requirements.



**B2.4.2.2 Main switchboards**

- (a) The main switchboards are to be designed to comply with relevant statutory requirements and located to Bridge Housing's approval.
- (b) The switchboards will comply with the following:

ELEMENT	REQUIREMENT
Type of construction	Form 2, front or back type connected type (depending on switchroom type)
Capacity	TBA
Circuit protection	Moulded case circuit breakers or withdrawable air circuit breakers
Indication	Ammeters and voltmeters on each phase of incoming supply
Operating conditions	The main switchboard busbars will be designed and selected such that the busbar surface temperature does not become excessively hot under maximum continuous full load conditions, with an ambient room temperature of 40°C (104°F)
Flexibility	As far as practically possible, switchboards will be designed to accommodate infra-red inspections and for flexibility of future alterations

**B2.4.2.3 Submain cables**

- (a) The rising submains for all services will be XLPE/ PVC or PVC/PVC conductors as required.
- (b) All cabling in carparks and in risers is to be distributed on cable tray.
- (c) The rating of rising submain cables will be based on the following:
  - ▀ house light and power – initial calculated maximum demand
  - ▀ lift services – initial calculated maximum demand
  - ▀ Other essential services - initial calculated maximum demand
  - ▀ Residential – initial calculated maximum demand.

**B2.4.2.4 Distribution switchboards**

- (a) Distribution switchboards will be provided with a nominal number of miniature circuit breakers.
- (b) Equipment in the riser cupboards will be installed in an optimum arrangement so as to leave any spare space available for future usage.
- (c) Residential units: 15 pole; 1 phase.
- (d) Each apartment and common area zone will be metered separately with authority meters. The sub meter is to be located within each unit's linen cupboard. Location within the bedroom robe is not preferred.

**B2.4.2.5 General requirements allocation of power fittings**

- (a) Careful consideration should be given to services location.
- (b) Consider minimising number of services outlets by using multi-gang plates.
- (c) All GPOs to be double except as noted below, generally 300 mm above FFL u.n.o. Where GPOs are fitted in accessible units, LAHC Guidelines should be considered when assessing height and location.

**B2.4.3 LIGHTING**

- (a) The lighting is to be detailed to suit the interior and exterior theme of the building.
- (b) The lighting and levels of illumination are to comply with the relevant standards, noting the intent of the building and considering the LHA Guidelines, NDIS and general accessibility requirements if nominated for the project. All lobby and foyer lighting will be automatic and LED.
- (c) Emergency lighting and exit signs will be provided to all common areas i.e. lift lobbies and stairs.
- (d) The exterior lighting is to comply with Council codes and relevant lux levels and will consist of:
  - ▀ Purpose selected under awning footpath luminaires at entry lobbies.
  - ▀ Provide external lighting in courtyard areas for security and safe access. Ensure that the lighting is not obtrusive or adversely affect residents and neighbours.
  - ▀ Purpose selected lighting should be used on the building. Use more than bare basic fittings. Use feature wall lighting at entry areas from street and at rear of building where visible from train



line. Use down-light rather than up-light features. Fittings that allow the replacement of the globe that can be purchased off the shelf are preferred.

Lighting selection in common area to consider vandalism and height to allow safe replacement of globes.

**NB:** No direct beam of light is to be directed beyond the site boundaries or upward without falling directly on a surface with the explicit purpose of illuminating that surface.

- (e) Electronic transformers to be used in lieu of magnetic transformers for internal lighting.

## B2.5 COMMUNICATION

### B2.5.1 COMMUNICATION AND TELEVISION SYSTEMS

- (a) The communication system should comprise of the following:
  - ▀ Telstra (or Optus) multi-core lead-in cable from Telstra (or Optus) street network
  - ▀ a building distributor frame (BD) located at ground level in the dedicated site communication room
  - ▀ BDs for the building are to originate from the building distributor room on the ground level or site communications room up through the risers
  - ▀ distribution cables from the BD
  - ▀ riser cables to the building
  - ▀ floor distributors on nominated floors of the building and within each nominated riser.

- (b) The communications system is to utilise cabling adequate for cable television systems and future National Broadband Network (NBN) connections (if NBN is not yet within the location).
- (c) The building distributor room should be sized to allow for accommodating communication equipment from three different carriers, as well as any fibre optic termination and connection modules, should these be required by tenants.
- (d) Each unit will have cabling pathways adequate to accommodate future connections via the National Broadband Network.
- (e) Ensure notes are included in the construction documents that require trades people/builders to physically connect all phone series at handover, including paying all connection fees.

### B2.5.2 MISCELLANEOUS PROVISION

- (a) Cabling and/or outlets will be required for:
  - ▀ each lift
  - ▀ gas and cold/hot water meter master data loggers.
  - ▀ main switchroom
  - ▀ other services that require data/phone connection.

### B2.5.3 FREE-TO-AIR TELEVISION

- (a) The antennae for reception of free-to-air TV channels will be located at roof level of the building (subject to signal strength and advice from specialist MATV contractor) to provide free-to-air reception for all dwellings.



## B2.6 ACCESS AND SECURITY

### B2.6.1 APARTMENT ACCESS AND SECURITY

- (a) An access and security plan will be created during first stages of design development. This will need to be addressed in detail in development applications to authorities.
- (b) The following are to be considered for the design of the system:
  - lighting (access and security, needs to be sufficient for CCTV cameras)
  - detailing of building and landscaping to avoid recesses where people can hide themselves
  - detailing of façade and landscaping to discourage graffiti and vandalism
  - direct view of entry from street.
- (c) All entry lobbies and/or lifts should be secured with standard key access and allow for emergency fire egress.
- (d) Generally, all basement car parks should have secure resident access with automatic shutters to entry ramps.

### B2.6.2 SECURITY/ACCESS CONTROL

- (a) The security system will consist of the following:
  - Allowance for CCTV digital fixed cameras as required
  - Cameras to report to an onsite hard drive with a 10-day continuous rotation recording period and be suitable to allow for remote login access

- All units to have intercom to public access points. Standard voice intercom only
- Access control for entry lobbies and car park from intercom system.

#### B2.6.2.1 General

- (a) A security and access control system will be provided to monitor and control pedestrian and vehicular entry to and from the development.
- (b) CCTV cameras should be provided to cover the following areas:
  - entry and foyer areas (quantity and location to be co-ordinated during the design development)
  - car park areas, carpark entries, exits, etc. (quantity and location to be co-ordinated during the design development)
  - garbage room.

#### B2.6.2.2 Access control

- (a) Access will use standard keys and audio intercom system.

## B2.7 FIRE CONTROL

### B2.7.1 REGULATIONS AND AUTHORITIES

- (a) Generally, the fire services systems will be designed to provide a quality service for this type of building that meets the relevant authorities' requirements, and represents a co-ordinated scheme to accepted industry standards.

- (b) In particular, the systems will be designed and installed in accordance with/to the approval of:
- ▀ Building Code of Australia
  - ▀ New South Wales Fire Brigade
  - ▀ consent authority
  - ▀ other authorities having jurisdiction
  - ▀ relevant Australian Standards
  - ▀ service rules, regulations and requirements of the relevant local fire authority (e.g. NSW Fire Brigade).
  - ▀ Include notes in construction drawings requiring trades/builder to install inspection hatches where required to allow inspection of e.g. fire collars in bathroom ceiling voids, to assist with issue of the annual fire safety statement. All access hatches to be fire and acoustic rated, as and where required.

**Note:** Review/incorporate check for changes to codes, standards and regulations.

## **B2.7.2 FIRE SERVICES SYSTEMS**

### **B2.7.2.1 Alarm indication and control system**

- (a) This system incorporates, where required by relevant codes, smoke detectors which upon sensing smoke will transmit a signal via the FIP to the fire brigade or remote monitoring base.
- (b) The fire services systems are as follows:

### **B2.7.2.2 Fire hydrant system**

- (a) To provide required fire hydrant facilities throughout the building at required pressures.
- (b) The fire hydrant system will comprise of a ring main system piping throughout the building. The system will be supplied from the fire hydrant street main which will have sufficient pressure without reliance on relay booster pumping, to all hydrants.

### **B2.7.2.3 Authorities and standards**

- (a) The fire hydrant system will be designed to comply with the relevant standards and local authority and state requirements.

### **B2.7.2.4 Materials**

- (a) The fire hydrant system will be constructed of galvanised steel pipe with roll-grooved couplings.

## **B2.7.3 FIRE HOSE REEL SYSTEM**

- (a) Fire hose reel facilities will be provided throughout the building, supplied from the cold water system at acceptable pressures.
- (b) The water supply for the fire hose reels will be supplied from the fire hydrant system.
- (c) Fire hose reels will be spaced to ensure all areas are covered.

### **B2.7.3.1 Authorities and standards**

- (a) The fire hose reel system will be designed to comply with the relevant standards and local authority and state requirements.

### **B2.7.3.2 Materials**

- (a) The fire hose reel system is to be fabricated using galvanised steel pipe.

### **B2.7.3.3 Water supply**

- (a) The water supply to the building will consist of town mains supply only.
- (b) Water supplies will have sufficient pressure so that boosting pumps will not be required.
- (c) A fire brigade booster point is to be provided if required.

## **B2.7.4 FIRE ALARM INDICATION AND CONTROL SYSTEM**

- (a) A fire alarm system will be installed throughout the building to provide monitoring, testing and control of all relevant areas, equipment and systems for firefighting purposes as required by the relevant authorities and standards.

## **B2.7.5 FIRE EXTINGUISHERS**

- (a) Fire extinguishers will be installed throughout the building, where required by relevant codes, to facilitate the fixed protection systems and provide a means of first attack firefighting appliance which is suited to the type of risk and applicable authority requirements and codes. ie: electrical fire.



- (b) Fire extinguishers, where required, will be installed to the relevant standards and local authority and state requirements.
- (c) The extinguishers will be selected according to class of fire and occupancy hazard.

#### B2.7.6 SMOKE DETECTION AND MECHANICAL OVERRIDE SYSTEM

- (a) This system will be designed in accordance with the relevant standards and local authority and state requirements.
- (b) Smoke detectors will be of the photoelectric type or to suit the environment. Smoke detectors within apartments will be provided with alarm sounders.

#### B2.7.7 WIRING

- (a) Wiring will be installed to the applicable authority and code requirements.

### B3.0 APARTMENTS

#### B3.1 APARTMENTS GENERAL REQUIREMENTS

##### B3.1.1 COLOUR SCHEMES

- (a) The designer will provide up to 3 colour schemes for review by Bridge Housing for the selection of a preferred single colour scheme for the development.

##### B3.1.2 GENERAL DESIGN NOTES

- (a) There are technical details and management processes that must be applied to the project in relation to exterior and interior design. Any change must be approved in writing by Bridge Housing before documentation.
- (b) Interior designs must be readily constructed to perform as required and be durable. Simple clean detailing is preferred. Materials are to have proven track records.
- (c) All materials must be considered in regard to their fitness for purpose and ability to perform as required.
- (d) Use of timber in any application must be carefully considered due to its tendency to deform and fail to perform to expectation in other ways. Similarly, for stone and waterproofing, specific procedures are to be followed before waterproofing and stone products are installed and installation procedures are to be confirmed.

- (e) Aluminium, where used, is to have a powder-coat finish to internal areas that will be subject to regular contact with occupants or maintenance persons. The difficulty of matching the finish in repairing damage to anodised finishes must be considered. Hairline jointing is to be employed between aluminium sections.
- (f) All light fittings within dwellings to allow globes to be interchangeable by tenants. Do not use light fittings that require uninstallation/reinstallation to change globe, or fittings with fixed globes.

#### B3.1.3 DOORS INTERNAL

- (a) The typical clear opening size to meet the silver level requirements of the *Livable Housing Design Guidelines* is 820 mm clear width
- (b) The typical clear opening size to meet the gold level requirements of the *Livable Housing Design Guidelines* is 850 mm clear width
- (c) The typical clear opening size to meet the platinum level requirements of the *Livable Housing Design Guidelines* is 900 mm clear width
- (d) Ensure door widths and circulation areas to adaptable units meet the requirements of AS 1428.
- (e) Entry doorways and circulation space to units to comply with AS128.

#### B3.1.4 CEILINGS

- (a) Ceiling height will be maximised and bulkheads will be minimised where possible. Avoid bulkheads in habitable spaces. Locate over service areas and rooms
- (b) Ceiling height minimum is 2700 mm from FFL in habitable spaces, note care must be taken in determining floor to ceiling levels to ensure sufficient floor to floor is allowed to permit the easy integration of in-ceiling services, structure, construction tolerance and in-service structural deflection.
- (c) Provide acoustic separation vertically between apartments for the entire area of each sole-occupancy unit. Any acoustic requirements between floors are to be provided within the ceiling void of the space rather than in the floor of the space above. Use acoustic mounts and insulation to provide acoustic performance.



## B3.2 ROOM REQUIREMENTS

## LIVING/ DINING/ ENTRY/ HALLWAY

FABRIC	MATERIAL	FINISH	NOTES
Ceiling	Plasterboard on furring channels	Ceiling paint	Throughout
Cornice	10 mm shadow angle Square set	Ceiling paint	General Bulkheads
Wall	13 mm impact resistant plasterboard	Wash-and-wear paint	Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings
Floor	Vitrified tiles		Provide sound insulation to prevent impact noise transmission. This requirement does not apply to living/dining on ground or over basement car parking
Stairs	Vitrified tiles		No carpet on stairs
Skirting	100 x 18 mm rectangular timber finger jointed pine	Painted semi-gloss enamel	
Doors	Semi-solid core flush 40 mm Entry Door Flush 45 mm Fire-rated to comply with BCA requirements and access requirements of AS 1428	Painted semi-gloss enamel	<ul style="list-style-type: none"> <li>▀ Satin chrome finish to door hardware</li> <li>▀ Do not use cavity sliders</li> <li>▀ Locate doorstops to all hinged doors</li> <li>▀ Lever handles are required</li> <li>▀ Doors to balconies and private open spaces should not allow tenant to be locked out</li> <li>▀ Specify stainless steel hinges in all locations 1.5 pairs per leaf</li> <li>▀ Entry doors to apartments to be fire-rated solid core with door viewer</li> <li>▀ Entry doors to apartments to include self-closing mechanism</li> <li>▀ Entry doors to apartments to include smoke seal as required by the applicable authorities and codes</li> <li>▀ Where possible, include door between living and bedroom zones unless accessible via a separate corridor.</li> </ul>

<b>Door frame</b>	Zinc-coated steel  Fire-rated doorset assembly to entry door to BCA requirements	Painted gloss enamel	
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## JOINERY

<b>Linen cupboard</b>			Provide 6 adjustable melamine shelves Minimum 600 mm wide and 600 mm deep
<b>Broom cupboard</b>			Provide fixed melamine shelf at 1500 mm high Minimum 450 mm wide and 600 mm deep

## SERVICES/FIXTURES AND FITTINGS

### ELECTRICAL

<b>Lighting</b>	Surface mounted oyster		
<b>Power</b>	Double 10Amp		<ul style="list-style-type: none"> <li>▶ Entry area</li> <li>▶ 4 x general use</li> </ul>
	Permanent connections		Power for intercom at entry (TBA)
	Unit sub-switchboard		Provide recessed switchboard, location to be advised
<b>Hot and cold water</b>	N/A		
<b>Heating and cooling</b>	Ceiling fan		<ul style="list-style-type: none"> <li>▶ With integrated light fitting</li> <li>▶ Provide one gas bayonet for un-flued heater</li> <li>▶ Do not provide air conditioning</li> </ul>
	Gas heating		Provide gas bayonet fitting ready for connecting gas heater
<b>Communications and security</b>			<p>Intercom to front entry system to be standard intercom voice only.</p> <p>Should be audio and video</p>
<b>TV</b>	TV outlet in living area		<ul style="list-style-type: none"> <li>▶ Provide cable for connection to free to air services</li> <li>▶ Provide conduit and cable for future pay TV connection</li> </ul>



Phone	Phone service		Provide phone outlet ready for use by tenant
NBN			Install NBN service ready for use by tenant
<b>LIVING/ DINING/ ENTRY/ HALLWAY</b>			
<b>FABRIC</b>	<b>MATERIAL</b>	<b>FINISH</b>	<b>NOTES</b>
Ceiling	12 mm plasterboard on furring channels	Ceiling paint	Throughout
Cornice	10 mm shadow angle Square set	Ceiling paint	General Bulkheads
Wall	13 mm impact resistant plasterboard	Wash-and-wear paint	Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings  Provide reinforced batten at window head to allow for the installation of a curtain rail
Floor	Carpet or vinyl	32oz, 80/20 nylon carpet loop pile  Slip-resistant vinyl sheeting	All floor finishes to have underlay and smooth edge except in nominated accessible and adaptable dwellings where floor finish should be direct stick without underlay  Finish Flush with adjoining surfaces Install to AS 1884 Apply 1 coat of vinyl seal to manufacturer's instructions
Skirting	100 x 18 mm rectangular timber finger jointed pine	Painted semi-gloss enamel	
Doors	Semi solid core flush 40 mm	Painted semi-gloss enamel	<ul style="list-style-type: none"> <li>▀ Satin chrome finish to door hardware</li> <li>▀ Do not use cavity sliders</li> <li>▀ Locate doorstops to all hinged doors</li> <li>▀ Lever handles are required</li> <li>▀ Specify stainless steel hinges in all locations, 1.5 pairs per leaf</li> </ul>
Door frame	Zinc-coated steel	Painted gloss enamel	

## JOINERY

<b>Wardrobe</b>	Solid sliding doors with pre-finished aluminium frame		<ul style="list-style-type: none"> <li>Full height to ceiling</li> <li>1500 x 600 mm min. dimensions</li> <li>Provide melamine shelf</li> <li>Provide S/S hanging rail to wardrobes and a minimum of 3-drawers per unit</li> <li>Carpet is to extend into/under robes</li> <li>Provide track and sliding doors</li> </ul>
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## SERVICES/FIXTURES AND FITTINGS

### ELECTRICAL

<b>Lighting</b>	Surface mounted		<ul style="list-style-type: none"> <li>Fitting integrated into ceiling fan</li> <li>2 way switching located at entry and beside bed head</li> </ul>
<b>Power</b>	Double 10Amp		Either side of bed and opposite the bed
<b>Heating and cooling</b>	Ceiling fan		With integrated light fitting

## KITCHEN

FABRIC	MATERIAL	FINISH	NOTES
<b>Ceiling</b>	Plasterboard on furring channels	Ceiling paint	Throughout
<b>Cornice</b>	10 mm shadow angle, Square set	Ceiling paint	10mm shadow angle throughout the apartment. Square set all bulkheads
<b>Wall</b>	13 mm impact resistant plasterboard	Wash and wear paint	Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings
<b>Floor</b>	Vitrified tiles		Floor finish to be continuous and extend under all cupboards and appliances
<b>Skirting</b>	100 x 18 mm rectangular timber finger jointed pine	Painted semi-gloss enamel	

<b>Doors</b>	Semi solid core flush 40 mm	Painted semi-gloss enamel	<ul style="list-style-type: none"> <li>▀ Satin chrome finish to door hardware</li> <li>▀ Do not use cavity sliders</li> <li>▀ Locate doorstops to all hinged doors</li> <li>▀ Lever handles are required</li> <li>▀ Specify stainless steel hinges in all locations, 1.5 pairs per leaf</li> </ul>
<b>Door frame</b>	Zinc-coated steel	Painted gloss enamel	
<b>Door frame</b>	Zinc-coated steel	Painted gloss enamel	

**JOINERY**

<b>Benchtop</b>	20 mm reconstituted stone		<ul style="list-style-type: none"> <li>▀ 600 mm wide</li> <li>▀ If galley kitchen minimum 1050 mm between benches</li> <li>▀ Overhang of benchtops to cupboards of 20 mm</li> </ul>
<b>Under bench cupboards</b>	18 mm HMR particleboard E1 or E0 to joinery carcass	Laminate finish	D-handles to cupboards and drawers
<b>Over bench cupboards</b>	18mm HMR particleboard E1 or E0 to joinery carcass	Laminate finish	<ul style="list-style-type: none"> <li>▀ Provide overhead cupboards to 2100 mm high and provide plasterboard bulkhead above to the underside of the ceiling. Recess scribe infill by minimum 20 mm from cupboard face.</li> <li>▀ Overshoot cupboard door 20 mm to provide a lip as a handle</li> </ul>
<b>Joinery hardware</b>			Use 180 degree joinery hinges
<b>Kickboard</b>	18 mm HMR particleboard E1 or E0 to kickboard	Laminate finish	
<b>Microwave Space</b>			Allow for microwave space in joinery above the oven
<b>Refrigerator Space</b>			Refrigerator space 800 mm minimum. wide to be fully ventilated to comply with BASIX specification
<b>Bin</b>	2 x 15-litre bins in drawer		<ul style="list-style-type: none"> <li>▀ Removable bins</li> <li>▀ Locate beneath sink</li> </ul>
<b>Splashback</b>	Tiled		

## SERVICES/FIXTURES AND FITTINGS

<b>Sink</b>	Top-mounted Stainless steel with integrated recessed drainage surrounds. Bowl to be a minimum depth of 200 mm		<ul style="list-style-type: none"> <li>▮ Fitting integrated into ceiling fan</li> <li>▮ 2 way switching located at entry and beside bed head</li> </ul>
<b>Flick mixer</b>	Satin chrome finish		Do not include extendable spray nozzle fittings
<b>Cooktop</b>			<ul style="list-style-type: none"> <li>▮ 600 mm wide gas supply</li> <li>▮ For accessible units, provide 600 mm wide electric cooktop with dedicated hardwire back to 50 amp connection for potential induction cooktop</li> </ul>
<b>Oven</b>			600 mm wide electric wall oven
<b>Rangehood</b>			<ul style="list-style-type: none"> <li>▮ 600 mm wide range hood in all general units</li> <li>▮ 900 mm wide range hood to be installed in all accessible units</li> </ul>
<b>Dishwasher space</b>	<p>No dishwashers to be provided</p> <p>Spatial and services provisions only to suit future installation by tenant</p>		<ul style="list-style-type: none"> <li>▮ Make provision within kitchen cupboards for future dishwashers to all units</li> <li>▮ Provide 600 mm wide removable cupboard carcass with shelves, door and kickplate. Enclosure to have electrical and plumbing points to facilitate simple future dishwasher installation by tenant</li> </ul>
<b>ELECTRICAL</b>	Note: review all appliances to ensure amp rating and permanent connection details scheduled are correct.		
<b>Lighting</b>	Surface mounted oyster		
<b>Power</b>	Double 10Amp		<ul style="list-style-type: none"> <li>▮ Behind fridge at 1500 mm 1 x GPO and power fridge GPO</li> <li>▮ If fridge is surrounded by carcassing, provide labelled switch to fridge at benchtop within 300 mm of bench edge</li> <li>▮ 2 x general use 200 mm above benchtop at least x1 within 300 mm of bench edge</li> <li>▮ Microwave enclosure</li> </ul>
	Single 10Amp		<ul style="list-style-type: none"> <li>▮ Range hood</li> <li>▮ Stovetop gas ignition</li> <li>▮ To dishwasher enclosure</li> </ul>
	Permanent connections		<ul style="list-style-type: none"> <li>▮ Oven</li> <li>▮ Provide labelled switch to oven at benchtop within 300 mm of bench edge</li> </ul>
<b>Hot and cold water</b>			<ul style="list-style-type: none"> <li>▮ To dishwasher enclosure</li> <li>▮ To kitchen sink</li> </ul>
<b>Mechanical</b>	N/A		<ul style="list-style-type: none"> <li>▮ Range hood exhaust ducted to outside</li> </ul>

## BATHROOMS AND EN SUITES

FABRIC	MATERIAL	FINISH	NOTES
Ceiling	Plasterboard on furring channels	Ceiling paint	Minimum ceiling height is 2400 mm from FFL
Cornice	Square set	Ceiling paint	Including bulkheads
Wall	Lightweight stud with whole of bathroom lined with 12 mm ply. Services to run within cavity	Full height ceramic tile	<ul style="list-style-type: none"> <li>Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings</li> <li>Ensure that LHDG requirements are met</li> <li>Use epoxy grout to prevent mould</li> <li>Waterproof walls to BCA requirements</li> </ul>
Floor	Vitrified tiles		<ul style="list-style-type: none"> <li>Level threshold at door</li> <li>Maximum 150 x 150 mm floor tiles to allow adequate fall to floor waste</li> <li>Use epoxy grout to prevent mould</li> <li>provide sound insulation to prevent impact noise transmission. This requirement does not apply to rooms on ground or over basement car parking</li> <li>Waterproof whole of floor to BCA requirements</li> </ul>
Skirting	N/A		
Doors	Semi solid core flush 40 mm	Painted semi-gloss enamel	<ul style="list-style-type: none"> <li>Satin chrome finish to door hardware</li> <li>Do not use cavity sliders</li> <li>Avoid outwards opening doors.</li> <li>Locate doorstops to all hinged doors. Consider location to prevent stops from becoming a trip hazard.</li> <li>Lever handles are required</li> <li>Specify stainless steel hinges in all locations, 1.5 pairs per leaf</li> <li>Privacy latches to be incorporated into bathroom door hardware</li> <li>Ensure all areas of the door are painted including the top and bottom</li> <li>Lift-off hinges where required. Timber filler piece to be inserted to close gap, but allow door to be lifted if required.</li> </ul>
Door frame	Zinc-coated steel	Painted gloss enamel	



## JOINERY

<b>Benchtop</b>	40 mm laminate top		Overhang of benchtops to cupboards of 20 mm
<b>Vanity</b>	18 mm HMR joinery doors and drawer fronts with polyurethane finish		<ul style="list-style-type: none"> <li>Allow for wall mounted unit or 300 mm stainless steel legs to floor, to allow cleaning beneath</li> <li>Provide storage within vanity</li> <li>40 mm post form laminate top with bullnose to vanity unit</li> </ul>
<b>Mirror cabinet</b>			<ul style="list-style-type: none"> <li>600 mm wide, framed with anodised aluminium angle, with hinged door and storage behind, above vanity</li> <li>No requirement for pelmet lighting</li> </ul>

## SERVICES/FIXTURES AND FITTINGS

<b>Bath</b>			No bath required
<b>Basin</b>	Ceramic		Top mounted to vanity unit
<b>Toilet</b>			<ul style="list-style-type: none"> <li>Toilet to be closed couple back-to-wall with ceramic 6/3 litre cistern and polypropylene seat</li> <li>Toilet should be a back-to-wall pan with straight sides and meet neatly with the floor and wall to ease cleaning</li> </ul>
<b>Shower screen and enclosure</b>	Fixed semi-frameless glass	Clear	<ul style="list-style-type: none"> <li>Shower screens must be fixed and of suitable size to prevent splashing into bathroom</li> <li>Shower enclosure to be hobless</li> <li>Fix outside corner to opposite wall or ceiling to ensure rigidity</li> <li>A shower curtain rail may be provided where required for accessibility</li> <li>Shower to be minimum 900 x 900 mm located away from bathroom door</li> </ul>
<b>Drainage</b>	Standard floor waste	Chrome	
<b>Towel rail</b>			Provide double rail
<b>Soap tray</b>			<ul style="list-style-type: none"> <li>Provide soap tray to shower enclosure</li> <li>Provide recessed soap dish to adaptable units</li> </ul>
<b>Shampoo recess</b>	Ceramic tile		<ul style="list-style-type: none"> <li>Minimum 300 mm high x 300 mm wide</li> <li>Within wall depth</li> <li>Ensure suitable structure and waterproofing to accommodate recess</li> </ul>
<b>Toilet roll holder</b>			Provide single toilet roll holder
<b>Robe hook</b>			Provide 1 robe hook to back of door
<b>Tapware</b>	Lever handle		Satin chrome finished mixer to basin and shower

<b>ELECTRICAL</b>	Note: review all appliances to ensure amp rating and permanent connection details scheduled are correct.		
<b>Lighting</b>	Recessed		Bathroom lighting to be located so as to minimise shadows on the face of someone using the mirror and is to be adequate to light shower and bath alcoves
<b>Power</b>	Double 10Amp		Locate within mirrored storage cupboard
<b>Hot and cold water</b>			<ul style="list-style-type: none"> <li>Supply to basin</li> <li>Supply to shower</li> <li>Supply to toilet (cold only)</li> </ul>
<b>Mechanical</b>			<ul style="list-style-type: none"> <li>Exhaust fan to be extracted to building façade.</li> <li>If room has a window, fan to be operated by a separate switch (not running continuously)</li> <li>If room does not have a window, fan to be operated by the light switch and continue to run for ten minutes on a timer after light is switched off</li> <li>Locate the grille in close proximity to shower</li> <li>Ensure that the exhaust quantities are reviewed (prefer over standard design)</li> </ul>

## SERVICES/FIXTURES AND FITTINGS

<b>AMENITY</b>	<ul style="list-style-type: none"> <li>Provision of wall noggins or 13 mm plywood for dryer, 650 mm clear opening</li> <li>Provision only for washing machine. Allow 650 mm clear opening width for washing machine.</li> </ul>		
<b>FABRIC</b>	<b>MATERIAL</b>	<b>FINISH</b>	<b>NOTES</b>
<b>Ceiling</b>	Plasterboard on furring channels	Ceiling paint	Minimum ceiling height is 2400 mm from FFL
<b>Cornice</b>	Square set	Ceiling paint	Including bulkheads
<b>Wall</b>	Light weight stud with plasterboard wall system	Full height ceramic tile	<ul style="list-style-type: none"> <li>Refer to codes and acoustic consultant report for acoustic ratings and construction of walls, floors and ceilings</li> <li>Use epoxy grout to prevent mould</li> </ul>
<b>Floor</b>	Vitrified tiles		<ul style="list-style-type: none"> <li>Maximum 150 x 150 mm floor tiles to allow adequate fall to floor waste</li> <li>Use epoxy grout to prevent mould</li> <li>Provide sound insulation to prevent impact noise transmission. This requirement does not apply to rooms on ground, or over basement car parking</li> </ul>

<b>Doors</b>	Semi solid core flush 40 mm	Painted semi-gloss enamel	<ul style="list-style-type: none"> <li>Door only if laundry provided as separate room. No doors to laundry within bathroom</li> <li>Satin chrome finish to door hardware</li> <li>Do not use cavity sliders</li> <li>Avoid outwards opening doors</li> <li>Locate doorstops to all hinged doors</li> <li>Lever handles are required</li> </ul> Specify stainless steel hinges in all locations, 1.5 pairs per leaf
<b>Door frame</b>	Primed steel	Painted gloss enamel	

## JOINERY

<b>Carcass</b>	18 mm HMR particleboard E1 or E0	Laminate finish  Off the shelf proprietary tub 450 mm wide with overflow for washing machine	Proprietary unit to be face-fixed to tiles and silicone sealed
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## SERVICES/FIXTURES AND FITTINGS

<b>Washing machine</b>	On grade	Provide at least 1200 mm gap
<b>Electric dryer</b>	Wall mounted dryers to be installed by tenants	Make provision within walls (use 13 mm plywood) to facilitate future installation of clothes dryer to each apartment
<b>Tub</b>	Stainless steel	With steel storage cabinet, minimum 450 mm x 600 mm
<b>Tap set</b>		Standard laundry set
<b>Towel rack</b>	Satin chrome	Mounted on rear wall

## ELECTRICAL

<b>Lighting</b>	Recessed	
<b>Power</b>	Double 10Amp	Behind washing machine at 1200 mm
<b>Hot and cold water</b>		Washing machine
<b>Mechanical</b>		Exhaust fan to be extracted to building façade provided, separate to bathroom exhaust, runs with appliances

## BALCONY/COURTYARD

FABRIC	MATERIAL	FINISH	NOTES
Ceiling	FC Suspended ceiling system, flush joined and painted	Exterior paint	
Cornice	Square set	Exterior paint	Including bulkheads
Floor	Vitrified tiles		<ul style="list-style-type: none"> <li>▸ Fall tiles away from building</li> <li>▸ Allow adequate fall to floor waste</li> </ul>
Sliding glazed doors	Aluminium	Powder-coat	<ul style="list-style-type: none"> <li>▸ Satin chrome finish to door hardware</li> <li>▸ Lever handles are required</li> <li>▸ Recess frame to provide flush finish at doorway</li> </ul>
Door frame	Aluminium	Powder-coat	

## SERVICES/FIXTURES AND FITTINGS

Clothesline	Metal/powder-coat finish	Free standing or wall mounted
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### ELECTRICAL

Lighting	Surface mounted wall or ceiling	With steel storage cabinet, minimum 450 mm x 600 mm
Power	Double 10Amp	Waterproof double outlet
Hot water unit		<ul style="list-style-type: none"> <li>▸ Recessed instantaneous gas hot water unit</li> <li>▸ Provide cover</li> <li>▸ Provide flues if required by service provider</li> </ul>
Cold water		Provide hose cock for courtyards at ground level







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