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Foreword

The purpose of this document is to guide the design development phase of a social housing project, with the intention of assisting the designers to be informed of the Department of Housing and Public Works’ design and documentation processes. This guide informs and allows the designer to focus freely on creating innovative design solutions where deemed suitable for social housing by Housing and Homelessness Services.

The Social Housing Design Guide (SHDG) recognises more overall flexibility is required in achieving the Department’s desired design outcomes, and aims to provide the adequate guidance to designers.

This guide endeavours to simplify and harmonise the current range of guiding documents (Design Standards for New Construction; Social Housing: Homes and Apartments December 2015; Product Standards, Social Housing Dwellings; Minimum Standards for building products, fixtures, fittings and other items typically required for dwellings, June 2016), while providing consistency and clarity, thereby reducing the amount of information the designer must navigate through during the design and documentation process.
Introduction

Our objective

This guide supports the aims of the Queensland Housing Strategy 2017-2027 to create greater housing choice and diversity, respond to local needs and improve neighbourhood liveability to ensure every Queenslander has access to a safe, secure, affordable and livable home that meets their needs and enables participation in the social and economic life of our prosperous state.

The Department seeks to develop well-designed and located housing that represents value for money for the community. It requires social housing design to look ‘domestic’ with design features and finishes that avoid any ‘institutional’ appearance. In principle, every dwelling must deliver a variety of qualities to:

- Be comfortable, pleasant and safe to live in;
- Be designed to meet residents’ needs, both current and future;
- Use its site well and not waste built space or land;
- Look attractive, and fit into its neighbourhood;
- Respect neighbours’ privacy and amenity;
- Overlook any adjacent street or parkland opposite to provide better ‘neighbourhood watch’;
- Be well designed for the local climate and not rely substantially upon mechanical cooling or heating systems; and
- Respond sensitively and creatively to the characteristics of its site.

The Department incorporates the “Livable Housing Design Guidelines” criteria for all social housing to ensure future adaptability to changing needs is met, in particular for older and disabled people, as well as the core principles of Universal Design being integrated throughout. This design guide is key to setting benchmarks, has influence over quality and is founded on established principles that intend not to be overly onerous on the designer.
Definitions

Accessible Housing
In general, accessible housing means that the dwelling meets prescribed requirements such as wide doors, sufficient clear floor space for wheelchairs, entrances free of steps and stairs, knee spaces under sinks and an accessible path through the dwelling. Most "accessible" features are permanently fixed in place and apparent (Centre for Universal Design College of Design North Carolina State University, 2006, p.1).

Adaptable Housing
In general, adaptable housing is an approach to residential housing design in which homes can be modified (at minimal cost) to meet occupants’ changing needs over time and helping people stay in their own homes through illness, injury and aging (Centre for Universal Design College of Design North Carolina State University, 2006, p.2).

CPTED
Crime Prevention Through Environmental Design.

FECA
Fully Enclosed Covered Area is to be calculated on the sum of all such areas at all building floor levels, including basements (except unexcavated portions), garages, enclosed patios and attached enclosed covered ways alongside buildings, lift shafts, staircases and any other fully enclosed spaces and useable areas of the building, calculated by measuring from the inside face of exterior walls but ignoring any projections such as plinths, columns, piers and the like which project from the inside face of exterior walls. It shall not include open courts, light wells, connecting or isolated covered ways and net open areas of upper portions of rooms, interstitial spaces and the like which extend through the storey being calculated.

GFA
Gross Floor Area is to be calculated on total enclosed and unenclosed area of the building measured from the outside face of any enclosing walls, balustrades and supports.

LHDG
Livable Housing Design Guidelines.

Solar Reflectance Index
The solar reflectance index (SRI) provides a guide of a surfaces ability to reject solar heat on the basis of the relative temperature of surfaces with respect to a reference black (SRI=0) and white surface (SRI=100). The SRI value of a surface is calculated from its solar reflectance and thermal emittance.

Universal Housing
In general, universal housing addresses the scope of accessibility and suggests making all elements and spaces accessible and usable by all people to the greatest extent possible. Items that are usable by most people regardless of their level of ability or disability can be considered universally usable. Many accessible and adaptable features are universally usable (Centre for Universal Design College of Design North Carolina State University, 2006, p.3).

Urban Heat Islands
Urban Heat Islands form when vegetation is replaced with high mass, water resistant impervious surfaces that absorb a high percentage of incoming solar radiation.

NCC
The National Construction Code sets the minimum requirements for the design, construction and performance of buildings throughout Australia.
1.0 Planning Context

1.1 The design should reflect the desired building envelope having consideration to site cover, gross floor area, building height, and setbacks as relevant.

The planning scheme acceptable outcomes are generally to be adhered to unless the site context and surrounding development provides a basis for a performance argument that meets the planning scheme performance outcome. Where proposing a performance argument, the design should be responsive to the site conditions and adjoining developments.

A deviation from the planning scheme acceptable outcomes should be discussed with and approved by the client.

1.1.1 From the onset of the design process, projects must consider the objectives of the planning scheme and comply with planning scheme acceptable outcomes to the maximum extent possible.

A deviation from the planning scheme acceptable outcomes should be noted in the “Explanation of Variances” if applicable.

**Exclusions:** Exclusions to the above are accepted in relation to car parking provision, communal recreation space and the rate of refuse storage - which are to be provided in accordance with this design guideline.

1.1.2 Projects must clearly state the GFA and FECA and show the areas calculated diagrammatically in the drawing submission for town planning assessment.

1.1.3 Projects must clearly state the site cover based on the application definition for ‘site cover’ or ‘site coverage’ contained in the relevant planning scheme. The design must show the areas calculated diagrammatically in the drawing submission for town planning assessment.

1.1.4 The design must clearly identify building clearances to the vertical projection of the lot boundary/ies for town planning assessment.

The measurement is to be measured from either the building wall or the outermost projection of the building, depending on the definition for building setback contained in the relevant planning scheme.

1.1.5 Where the site is in a transport noise corridor, development must comply with the Queensland Development Code MP4.4 Buildings in a Transport Noise Corridor.

Development adjacent to or near a State Controlled Road must comply with the Department of Transport and Main Roads, Transport Noise Management Code of Practice, November 2015.

Development adjacent to or near a rail corridor must comply with the Department of Transport and Main Roads, Guide to development in a Transport Environment: Rail, June 2015.

An acoustic impact assessment including a road traffic noise assessment, is required to address impacts of transport noise for State transport infrastructure.

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*Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.*
2.0 Housing Types

2.1 In its early days, public housing in Queensland was characterised by family dwellings and few designs. As housing need has diversified and as development locations and challenges have become more varied, the range of housing forms in the Department’s housing programs has significantly broadened.

Dwellings may be in the form of houses or apartments, attached or detached, and single, double or multiple-storey buildings depending on requirements for adaptability, the constraints of the site, styles of houses in the area, impact on neighbours, and appropriate methods of construction for the location and type of dwelling.

This document describes the following housing types:

**Detached houses, duplexes and dual occupancy:**
(Class 1a as defined in the NCC)
- 2-bedroom duplex or dual occupancy
- 4-bedroom detached house
- 5-bedroom detached house

**Apartments:**
(Class 2, as defined in the NCC)
- Studio apartment
- ‘A High-yield’ 1-bedroom apartment
- 1-bedroom apartment (includes an additional ‘multi-purpose space’)
- 2-bedroom apartment

Note: 1-bedroom apartments include a multi-purpose space for possible uses such as storage of medical equipment, study area and occasional sleeping.

- 1-bedroom (high yield) apartments do not contain this additional space.
- Apartment developments may contain a mix of apartment types (particularly a mix of 1-bed and 2-bed apartments) and a mix of features for enhanced mobility.

*Note: This document is to be read in conjunction with the: “Liveable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.*
3.0 Livable Housing

3.1 Accessibility, Adaptability & Universal Housing

3.1.1 Features for enhanced mobility are an important component of housing. The Department identifies four levels of occupancy with mobility features, categorised as:

1. **General Level** - no mobility features / with stair access.
2. **Silver Level** - (as per LHDG), with some additional requirements.
3. **Gold Level** - (as per LHDG), with some additional requirements.
4. **Platinum Level** - (as per LHDG), with some additional requirements.

Note: All projects must declare the level of occupancy provided as described in the Project Initiation Brief and/or Terms of Reference.

3.1.2 Apartments: Unless otherwise specified by the Project Brief, 30% of Social Housing apartments in any new multi-unit project must be designed to Platinum Level, with all remaining ground floor and lift-served apartments designed to Gold Level.

Gold Level and Platinum Level dwellings must be located entirely on an accessible level (ground or lift-served floor) and contain the additional features outlined in this document.

Houses: The minimum standard for houses is the Department’s Gold Level. The Department’s Platinum Level standard is to be applied in response to identified portfolio or client need. Both Gold Level and Platinum Level houses must also contain the additional features outlined in this document.

Examples of some differences that will be expanded in this document:

<table>
<thead>
<tr>
<th>Level</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Level</td>
<td>No mobility features provided / stair access.</td>
</tr>
<tr>
<td>2. Silver Level</td>
<td>- Assessible door thresholds to be provided to all external doors (incl. sliding doors);</td>
</tr>
<tr>
<td></td>
<td>- Clearance space requirements defined and provided as per LHDG Silver access requirements;</td>
</tr>
<tr>
<td></td>
<td>- Wall reinforcement provided for future retro fit as per LHDG Silver requirements;</td>
</tr>
<tr>
<td></td>
<td>- A step-free bathroom/shower floor with glass shower screen to be provided.</td>
</tr>
<tr>
<td>3. Gold Level</td>
<td>- Assessible door thresholds to be provided to all external doors (incl. sliding doors);</td>
</tr>
<tr>
<td></td>
<td>- Clearance space requirements defined and provided as per LHDG Gold requirements;</td>
</tr>
<tr>
<td></td>
<td>- Wall reinforcement provided for future retro fit as per LHDG Gold requirements;</td>
</tr>
<tr>
<td></td>
<td>- A step-free bathroom/shower floor with glass shower screen to be provided.</td>
</tr>
<tr>
<td>4. Platinum Level</td>
<td>- Assessible door thresholds to be provided to all external doors (incl. sliding doors);</td>
</tr>
<tr>
<td></td>
<td>- Clearance space requirements defined and provided as per LHDG Platinum requirements;</td>
</tr>
<tr>
<td></td>
<td>- Wall reinforcement provided for future retro fit as per LHDG Platinum requirements;</td>
</tr>
<tr>
<td></td>
<td>- All internal doors and corridors to comply with AS1428.1-2009;</td>
</tr>
<tr>
<td></td>
<td>- Step-free open shower area with shower curtain;</td>
</tr>
<tr>
<td></td>
<td>- Hand held shower and hose with T Grab rail;</td>
</tr>
<tr>
<td></td>
<td>- Recessed soap holder and semi recessed toilet roll holder;</td>
</tr>
<tr>
<td></td>
<td>- Under bench removable joinery section in kitchens. (sink and cooktop area);</td>
</tr>
<tr>
<td></td>
<td>- Shallow kitchen sink (150mm deep);</td>
</tr>
<tr>
<td></td>
<td>- Wall oven to be side hinged opening door;</td>
</tr>
<tr>
<td></td>
<td>- Cooktop controls must be positioned at front of appliance.</td>
</tr>
</tbody>
</table>
3.2 Design Principles

These design principles are ordered to assist the design process. They begin with a general residential diagram illustrating the design approach, followed by design principles and finally, address more detailed matters. The order does not imply relative priorities. There are many points of overlap and interconnection. All design issues are important. Sometimes, the pursuit of one principle may compromise another. In such cases, a shared consideration with the Department is required to determine the desired priorities in that particular case as laid out in the Project Initiation Brief/Terms of Reference.

3.2.1 Basic Approach

All housing must be consistent with the central principle, expressed in the following diagram:

Interpreting the diagram: Space A represents the road, public access. Space B typically represents the front garden and driveway. Space C represents the dwelling, and Space D the back yard.

This diagram represents the provision of spaces or zones with changing degrees of privacy and control, illustrating the transition from the public realm (usually a street) to the private territory of the dwelling and its spaces. Apartments may achieve the intent (if not the literal interpretation) of this diagram by successfully considering the relationship and transition between public, communal and internal spaces.

3.2.2 Site responsive dwelling design

Individual dwelling designs must respond to and work well in their individual site situation taking into account climate as well as neighbourhood context. The repeated use of a single design (unrelated to site conditions, neighbourhood context, orientation, group layout, etc.) is unacceptable.

3.2.3 Facing the street or park

In all projects, housing adjacent to the street or public realm must ‘face’ it, both functionally and visually. Facing the public realm encourages and allows ‘neighbourhood watch’. It is normal for houses to face the street.

On a corner site, housing must present well to both street frontages. Back to back relationships, which do not ‘expose’ backyards, may improve security while improving privacy. It is usually less attractive to present the side or back of a dwelling to the street. Only in extreme circumstances should housing present its side or back on the public realm, and then only as little as possible. These circumstances must be agreed with the Department and the design of the dwelling must respond appropriately.

3.2.4 Legibility

The front doors of houses facing streets must be visible from the street or clearly signalled by the design of the dwelling. It must not be easy or likely that a visitor or resident will get confused or lost. Legibility is an important contribution to more secure housing. As an element of universal design, the way into a group scheme must be obvious, sight lines must be clear along paths, and the front doors of other dwellings must be visible or clearly signalled from shared pathways by both the built form and its
detailing. Legibility may improve community acceptance of denser group housing.

3.2.5 Access to the front door versus private space
Visitors must have direct access to the front door without moving through private outdoor space or the back yard first. The visual privacy of the private outdoor space and backyard must not be compromised.

It is important that private external space be as private as possible. This can also improve security.

In apartment or cluster developments, access by unwelcome outsiders through the site must be prevented or the path must be formalised into a public street relationship.

If access becomes formalised into a public street, then the housing must face and overlook it. The access has become a 'frontage' to which the design must respond.

3.2.6 Fitting into the Neighbourhood
Housing must 'fit in' to the neighbourhood and not unduly draw attention to itself.

The design must achieve this through form, scale, variety, attention to detail, appearance, setbacks and general relationship to the public realm. This principle does not require stylistic imitation of adjoining houses, nor does it require an 'in your face' assertion of a different style, particularly if it is just for the sake of difference.

It does require that the project avoid doing things that stands it apart from everyone else in ways associated with lower quality outcomes.

3.2.7 Individuality, Variety and Scale
Housing must not be expressed externally in a standardised way. Artful and affordable variations in form, colour and detailing must be used to avoid a 'one design repeated many times' impression. For example, dwellings which are much smaller than existing neighbours might be designed into groups that are neither too large nor too small. This must fit more comfortably in the neighbourhood context. Variations within a street or group development may aid in its legibility.

External variations in the appearance of houses may reduce the apparent scale of a large or dense project. This in turn may improve community acceptance of the project.

3.2.8 Carparking and Street Presentation
The street elevation must not be dominated by car parking or parking structures. Properly located car parking improves the street appearance of housing and may better preserve the pattern and amenity of the neighbourhood streetscape. The access to dwellings that are further into the site must not be hidden by parking structures.

3.2.9 Privacy
The location and design of dwellings must not unreasonably impair the privacy of neighbouring dwellings, either on the same site, or on adjacent sites. Ground floor apartments can have private outdoor spaces near side or rear boundaries, the balconies or principle living spaces of upper level apartments must not be close to or designed to take their aspect from an adjoining property's private outdoor living areas. The privacy of the external space of one dwelling must not be impaired by the location and design of

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
other dwellings in the housing group. Careful consideration must be given to the location, design and screening of:

- Upstairs balcony or certain windows in relation to ground level courtyards, and
- Upstairs balcony or certain windows in relation to other upstairs apartments or balconies.

When designing to prevent overlooking, it is not acceptable to enclose balconies or screen windows to such an extent that there is little aspect from the apartment’s main living space. Windows must be screened only when the window unreasonably overlooks neighbours, or is overlooked by neighbours. (Neighbours may include other apartments in the complex, or adjoining neighbours).

Equally, residents using shared spaces within the development (such as paths or car parks) must not unreasonably diminish the level of privacy of ground floor dwellings.

3.2.10 Territoriality
The control of external spaces by immediately adjacent households (or the provision of shared space) must be unambiguously indicated by clear definitions of territory.

This might be achieved by plants and/or hard landscape such as walls, fences, kerbs, level changes, paths or mowing strips.

Reasons:
- Defined territories can avoid disputes over ‘whose patch it is’.
- It must encourage commitment and responsibility for maintaining the patch.
- Clear definition is consistent with people’s experience of traditional suburban living, which may be familiar and desirable.
- It assists in issues of home and neighbourhood security.

3.2.11 Crime Prevention through Environmental Design
Housing must be designed to facilitate casual surveillance of the front garden and the street (or the adjacent park).

![Diagram of front garden and street]

Housing must not be hidden from the street or public realm behind high fences or car accommodation.

Plant species and locations must be thoughtfully chosen so that planting does not obstruct the view of the street or the internal pathways within a housing group.

![Diagram of front garden and street]

Reasons:
- Encouraging casual surveillance of the street (or more formally, participating in ‘Neighbourhood Watch’) can be the basis of a more secure dwelling and contribute to a better community. This is one strategy of CPTED.
- Good ‘CPTED’ design can help to build positive relationships between neighbours.
- It can allow housebound residents to participate more in the life of the community.

3.2.12 Equitable Design
The design of each dwelling in a group must help create the feeling that each household ‘got a fair go’ or is ‘a little special’.

While different residents may have different views about what makes good housing, the design must seek to avoid anyone feeling that some units are significantly better than others.
3.2.13 Personalisation
Housing, especially in its detailing, should allow for the personal expression of tenants in ways that do not create long-term maintenance issues. For example, designs must allow the screening of personal belongings on balconies, and internally must allow the flexible arrangement of furniture and the display of decorative items such as artwork.

Reasons:
A household’s personalisation of their dwelling reflects their individuality and may encourage a sense of commitment and responsibility, with benefits to the individual, the landlord and the community.
The use of pot plants on balconies or landscaping in front courtyards or gardens usually improves the appearance and community acceptance of the housing.

3.2.14 Climatic Design
The detailed design of dwellings must respond to the microclimate of the site and its locality, acknowledging the different climatic regions of Queensland. In ways that are consistent with other design principles, the climatic response must be reflected in elements such as:

- The plan, shape and orientation of the dwelling;
- Location of habitable rooms;
- Materials used for construction;
- Location and shape of openings;
- Location of internal walls with respect to cross-ventilation;
- Roof form;
- Ceiling heights;
- Landscaping of adjacent ground to provide shading;
- Protection of openings against excessive solar access and rain penetration; and
- Insulation.

This principle does not require that all housing face north/south if this is at odds with other design principles. It does require that the design respond creatively and thoughtfully to the climatic context. Only in rare cases may the housing rely significantly upon mechanically assisted climatic control, where specific reasons are identified in accordance with the project brief.

3.2.15 Indoor/Outdoor Connection
A direct connection to outdoor living is important for the Queensland climate. There must be both a direct visual and a direct physical access relationship between the dwelling’s living/dining area and the private outdoor living space. It is not acceptable for occupants and visitors to only access outdoor living space through service areas such as laundries or kitchens.

Outdoor living spaces must be roofed or fully covered by upper floors.
3.2.16 Planting and Turf
Trees and plants:
- Contribute to the microclimate of the site and the locality;
- Improve the appearance of front gardens;
- Provide definition and amenity to private spaces;
- Shade or soften group car parking areas;
- Aid legibility within group schemes;
- Promote community acceptance of new development;
- Provide a habitat for wildlife.

Wherever practical, efforts should be made to retain and protect healthy significant trees. Existing trees that cannot be properly protected from damage, or pose a risk to property or personal safety should be removed. Unless there are externally imposed requirements to retain a tree, the retention of trees should not be at the expense of apartment yield or the amenity of dwellings.

The use of trees, ground covers and other plants must be an integral and thoughtful part of the overall design.

Consider the mature height of planting and ensure that it:
- is appropriate for the location and capable of surviving with minimal ongoing maintenance and no ongoing watering (e.g. planting under buildings or in undercroft areas is not acceptable);
- allows adequate light into dwellings;
- does not create maintenance issues for the building;
- is unlikely to cause health and safety issues.

Unless otherwise specified, turf is acceptable to private yards, but is unacceptable in other areas. Exceptions may apply for specific projects (e.g. if onsite management is intended, or there are requirements due to overland flow or drainage).

- Surface gravel and loose pebbles in landscaping must not be provided.
- Pavers are not acceptable.

3.2.17 Innovation and Normality
The Department seeks design excellence and the pursuit of better solutions and outcomes for its housing. The solutions may arise through fundamental design advances, the introduction of new products or changing client briefs.

The Department is open to innovation and change; however, it does not look for:
- Experimentation where there are no resources and processes for rectifying any problems that might arise;
- The pursuit of difference only for the sake of being different, rather than better;
- The abandonment of conventional, comfortable and acceptable housing techniques or solutions for no gain;
- Inappropriate typecasting or attention seeking for social housing.
4.0 Site Design

4.1 Site Analysis and Evaluation
A thorough site analysis and evaluation must be undertaken at the preliminary design stage to establish the opportunities and constraints. Any pre-existing neighbouring encroachments along boundary fences must be taken into account in the design resolution, to mitigate potential issues of conflict at the construction stage.

4.2 Dwelling Access
For all new developments, the main access pathway to all entries of dwellings must clearly be identified and visible from the public realm. Pathway layouts must discourage the use of the site as a pedestrian thoroughfare for non-residents.

A safe, continuous accessible path of travel and circulation spaces must be achieved to dwelling entrances as per the following requirements:

Detached houses, duplexes and dual-occupancies (Class 1 buildings)

- A minimum clear pathway width of 1100mm must be provided;
- A slip resistant concrete finish must be provided to all pathways, landings, stairs and external patios / balconies;
- No steps to dwelling entrances (General Level exempt);
- Allow a minimum dimension of at least 6000 (l) x 3800mm (w) for all garages in Class 1 buildings.

Access requirements:
Platinum Level only
A continuous accessible path of travel and circulation space must be provided from the garage to dwelling entrance where achievable. Note this access provision does not apply where the average slope of the ground where the path is steeper than 1:14.

- All pathways should be designed to the requirements of AS1428.1-2009 where practical and achievable.

Apartments (Class 2 buildings)

Access requirements for all apartments:
As required by the NCC, a continuous accessible path of travel and circulation spaces must be provided to all unit entrances and comply with AS1428.1-2009. (Note: 2- storey walk-up’s - upper floors exempt).

An accessible path of travel is also required across the site including the car parking area, letterbox retrieval area and refuse enclosure. All common areas must comply with the Disability (Access to Premises - Building) Standards 2010. Disability Discrimination Act 1992.

- A minimum clear pathway width of 1200mm is required.
- Pathways must comply with the requirements of AS1428.1-2009.
- Slip resistant concrete finish must be provided for all pathways, landings, stairs and external patios / balconies.
- A cross fall must be achieved of not more than 1:40 on landing areas;
- No steps to unit entrances (General Level exempt);
- Provide the following landing areas no steeper than 1:40 fall at all entrances. Platinum Level min. 1500 x 1500mm, Gold Level – min.1350 x 1350mm, Silver Level min. 1200 x 1200mm. Tenants must easily enter and exit their dwelling without obstruction.

4.3 Preliminary Building Layout
NCC Compliance
A building certifier must be engaged at the preliminary design stage so crucial issues with fire safety and construction types are verified for compliance with “Deemed to Satisfy” NCC requirements and to ensure general amenity is not later compromised. Alternatively, ‘acceptable solutions’ may be accepted and must be documented (written).

4.4 Shared Circulation within Buildings
Where dwellings are accessed via a shared landing area, semi-public space is to be minimised. Landing areas must be well lit for safety with adequate...

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
daylight, natural cross ventilation and must be
designed to have low to no maintenance.

4.5 Communal Recreation Space
Where a communal recreation space and/or facility is
provided for residents, it must carefully consider and
provide the following:
• enable passive surveillance by the surrounding
development;
• accessible to wheelchair users;
• designed to allow for natural light and ventilation;
• located carefully not to impact on general amenity
of the proposed or neighbouring residents.

4.6 Pedestrians and Vehicles
Detached houses, duplexes and dual occupancy:
Provide a driveway with appropriate grade transitions
and one visitor park. Provide 6m length space on the
driveway. A 1:15 maximum gradient is required along
the driveway linking the carport to the letterbox and
footpath or street. Steeper driveways are acceptable
in response to challenging site constraints subject to
approval of the Department.

Pathways are to be provided linking carport,
pedestrian entries and rubbish bin areas. A pathway is
also to be provided to the clothesline.

Handrails are typically not required along pathways.

Apartments:
Some common areas for Class 2 buildings are
covered by the Disability (Access to Premises –
Buildings) Standards 2010. The requirements detailed
in the Premises Standards and the National
Construction Code (NCC), Building Code of Australia
(BCA) Volume 1 and 2 take precedence over the
LHDG for this building class. Refer AS 2890.1:2004
Parking facilities - Off-street car parking Figure 2.8.

Communal pathways must be direct, obstacle-free
and provided adequate lighting. Way-finding signage
is to be provided – only if deemed necessary.
Occasional encroachments are acceptable (e.g.
downpipes, bollards etc.) Minimum width of paths is
1200mm.

A way finding pathway must be provided from the
entry of the site to the dwelling entrances or lift entry
of all Platinum level dwellings to indicate the most
direct, safe and accessible route. This must be
achieved with coloured concrete to distinguish
differentiation.

Pedestrian and vehicle pathways must be clearly
differentiated (coloured) ensuring an accessible route
is provided free from the movement of cars.

Provide a handrail to steps along pathways (refer AS
1428.1-2009, Clause 11). Handrails at pathways are
typically not desirable unless required by the NCC or
otherwise specified in this standard.

Footpath layout must discourage use of the site as a
pedestrian thoroughfare for non-residents, unless the
thoroughfare is properly designed as public space
with approval of the Department. It is desirable that
footpaths avoid private spaces.

Safe, direct and low gradient paths must be provided
linking ground level apartments, bottom of stairs and
lifts (or lift foyer) with car parking, pedestrian entry to
the site, letterboxes, clothes lines and rubbish bin
areas. Paving must not be exposed aggregate finish.

4.7 Carparking
Detached houses, duplexes and dual occupancy:
The design of carports or garages must complement
dwellings and comply with reasonable covenants. The
following minimum requirements apply for all houses,
duplexes and dual occupancy dwellings:

• Single attached carport 6000mm L x 3200mm W
clear space, in keeping with the design of the
house;
• An accessible pathway to the dwelling entrance;
• Garage door must be roller door type;
• Screening must be provided to sides of garage
exposed to view from the street or accessible
from the front yard; exempt if
• Sides of carparks behind 1800mm high yard
fencing may remain unscreened.

Apartments:
Carparking rates of provision:
Provide one covered car parking space per-dwelling
unit generally. Reduced parking rates must only be
considered when advised by the Project Initiation Brief

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
or Terms of Reference. The Department may consider proposals that reduce coverage to car parking spaces (without necessarily reducing the number of car parking spaces) in order to better comply with Councils’ GFA and/or site cover requirements. Proposals that reduce coverage to car parking spaces require approval from the Department.

Carparking may be designated to particular apartments, provided that every dwelling in the complex is assigned a space, and that there is adequate on-site parking space for visitors. Unless otherwise approved, all carparkings must be covered.

Design considerations:

- Covered carparkings must not be positioned between the front of the building and the street alignment;
- Stairways, lift entries and dwelling entrances must not utilise the driveways as circulation space;
- Large areas of pavement must be avoided and visually broken up with landscape;
- Visually screen vehicular lights from neighbouring properties and units within the site;
- Cars must be able to enter and exit the site driving forwards. It may be assumed that there will be a vacant car parking space to use for turning;
- Car parking sizes and dimensions are to meet relevant Australian Standards for car parking and accessible car parking. Sizes and dimensions set out below are consistent with the requirements of AS 2890.1:2004, relating to 90˚ angle parking;
- Designers must adopt the B99 design template for "swept paths" (refer AS 2890.1:2004, Appendix B, Figure B3 and B7) for parking schemes at other than 90˚;
- Entry to car bay must be in a single sweep. A multiple-point manoeuvre is not acceptable.
- Circulation aisle must be a minimum 6200mm wide (refer AS 2890.1:2004, Figure 2.2);
- Crossover must be a min. 5500mm wide x 6000mm long, measured from the kerb (refer AS 2890.1:2004, Clause 3.2.2), and fully comply with local council requirements;
- Blind aisle extension must be a minimum 1000mm long (refer AS 2890.1:2004, Figure 2.3).

If no blind isle extension, provide 7200mm circulation aisle;
- Car spaces (other than accessible car parking spaces) clear area must be 5400mm x 2400mm (refer AS 2890.1:2004, Figure 2.2) with a ceiling height of 2100mm;
- Provide additional width to car space to keep cars clear of columns, walls and obstructions (refer AS 2890.1:2004, Fig. 5.2);
- Falls along the length of the car parking bay must not exceed 1 in 20; cross falls must not exceed 1 in 16 (refer AS 2890.1:2004, Clause 2.4.6.1);
- Wheel stops must be provided for all parking bays.
- In case of flooding car bays must not exceed 200mm below flood level.

Accessible Car Parking

Accessible car parking must be located as close to the relevant unit entrance or lift core with a slope not steeper than 1:40.

Provide covered car spaces suitable for people with mobility impairment pro rata with the ratio of Platinum Level apartments to other apartments, and in accordance with AS 2890.6-2009. Note: AS 2890.6 requires 2200mm clearance along the vehicular path to the parking space and 2500mm head height clearance over the bay for operation of a vehicle wheelchair hoist).

4.8 Bicycle Parking

(applicable for apartment projects only)

Provide dedicated covered storage area for bicycle parking facilities at the rate of 1 space per 2 bedrooms of above ground apartments.

- Ensure bicycle parking and space requirements are in accordance with AS 2890.3-1993- Bicycle Parking Facilities;
- To deter theft, the bicycle storage area must have adequate screening from public view;
- May be located undercover on a hardstand, easily accessed from a path along the driveway, located under eaves or annexed to carports;
- Must be located within the site and not visible from the street, but allow surveillance by residents;

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Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
May be configured in one group, or distributed across common areas. (Not to be located in areas associated with particular apartments). Signage is not required.

4.9 Letterboxes
Provide letterboxes at the main pedestrian entry to the site, on the boundary along a footpath or beside the driveway. The access point of the letterbox (for mail retrieval) must be within the range of 700 mm – 1200 mm above the finished surface level of a level hardstand on the retrieval-side of the letterboxes. Letterbox must have capacity to have padlock attached (by tenant). A body corporate letterbox is not required.

Platinum Level Requirements
Provide an accessible path to the hard stand at the retrieval side of the letterboxes. The hard stand (maximum 1:40 cross-fall) must be minimum 1540mm wide x 1540mm long and extend minimum 400mm past the end letterboxes in the bank.

4.10 Refuse Collection
Bin numbers must be calculated on the Department’s rate of provision for waste for Social Housing. Refer Table 4.10.

Councils’ must be contacted over operational requirements for the collection of refuse (such as the maximum number of wheelie bins that will be collected from the kerb). This must be addressed at the early design stage and if necessary recommended options referred for consideration. Generally, if bin numbers exceed 10, bulk bins are the preferred option by the Department.

Ensure when bulk bins are necessary, an appropriate quantity of bins are provided that are PWD compliant. (Note: Standard 240 Litre wheelie bins are deemed by the Department to comply).

If the number of wheelie bins required by calculation is a fractional number, round-up to the next whole number.

In considering options for bulk bins, multiple weekly collections are generally preferred to multiple or oversized bins.

For apartments, if Council allows a choice of bin type, bulk bins are preferred.

The Preliminary Design submission must include written confirmation from the local council agreeing to the proposed bin management. If on-site truck access is required, provide head clearance and manoeuvring diagrams.

4.11 Bin Storage
Bin storage requires to be located close to a well-used pedestrian route but also avoid being in close proximity to habitable rooms / patios of the proposed and neighbouring dwellings. Storage areas must be covered if they are directly overlooked by neighbours or nearby dwellings and must be screened so not visible from the street.

Detached houses, duplexes and dual occupancy:
Make provision for at least two council bins per dwelling and provide a screened enclosure.

Provide an accessible path to the street where practical, preferably along the driveway.

Provide the required circulation space at the level hardstand (maximum 1:40 cross fall) in front of the bins:

- General and Silver - Min. 1000mm x 1000mm clearance.
- Gold level - Min. 1200mm x 1200mm clearance.
- Platinum level – Min. 1540mm x 1540mm clearance.

Apartments:
Bin storage areas for apartment complexes require an accessible path of travel with adequate circulation space provided (1540mm x 1540mm) on a level hardstand (max. 1:40 cross fall) in front of all bins.

Bin storage areas are to be clearly defined and to be designed in accordance with local council or waste collection service’s requirements. It is preferable for bins to be grouped where achievable.

### Table 4.10

<table>
<thead>
<tr>
<th>Apartment Type</th>
<th>Refuse (litres per unit per week)</th>
<th>Recycling (litres per unit per week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio</td>
<td>70</td>
<td>35</td>
</tr>
<tr>
<td>1-bedroom</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>2-bedroom</td>
<td>120</td>
<td>60</td>
</tr>
</tbody>
</table>

**Note:** This document is to be read in conjunction with the: "Livable Housing Design Guidelines" (LHGD) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
Note: If wash down bays are required by Council, the Department prefers alternative solutions to be achieved, such as the use of permeable paving, and draining areas to garden beds.

4.12 Private Yards
Private yards, where provided, must be fenced and accessed from the covered outdoor living area. They must be private from the street, but need not necessarily be located at the rear of the building.

Access via a gate from the front yard (for houses) or communal area (for apartments) is required where possible. Note: Only yards with gate access for maintenance can have turf.

House front yards must promote surveillance of the street. Private yards must be safe for children’s play.

- Maximum gradient in garden areas: 1:4
- Maximum gradient to turfed areas: 1:5

4.13 Clotheslines
Clothes lines must not be clearly visible from the street, be appropriately sized for the dwelling type and positioned 1800mm from ground. Refer to Appendix 2 for size requirements. Provide hardstand if in private yard with a pathway. All clotheslines must be non-removeable and positioned so not within easy reach of passers-by within the complex or external to the site.

Detached houses, duplexes and dual occupancy:
Clotheslines not positioned on a patio area must be linked to the house by a path. Rotary clotheslines must not be provided.

Platinum Level requirements:
Provide level hardstand (maximum 1:40 cross-fall) in front of the clothesline and extending under. Hardstand to extend 1540mm in front of the clothesline for the full length of the clothesline.

Apartments:
Clothes lines on apartment balconies must be fold-down type, and must not encroach on the outdoor living functional area of the covered outdoor living space.

4.14 Storage Facilities
Detached houses, duplexes and dual occupancy:
All houses, duplexes and dual occupancies must be provided an external garden locker. Garden sheds must be positioned at the rear of the dwelling’s private yard, so not visible from the street. A path is not required.

- Min. size 3.5m² (max. 1800mm high) on a pre-formed concrete slab base.

Apartment requirements:
Each ground floor level apartment with a private garden or yard is to be provided a small garden locker where practical. The garden locker must be located in the apartment’s private outdoor space, and accessed from the outside of the dwelling.

- Nominally size 2m². (max. 2100mm wide) on a pre-formed concrete slab base.

Note: All garden storage facilities must not be positioned against external walls of dwellings.

4.15 Fence Design
Detached houses, duplexes and dual occupancy:
Requirements for fencing in houses, duplexes and dual occupancy include:

- All private enclosed space, must be provided with boundary fencing to the rear and sides of the site;
- Front fencing must be provided where other houses in the street are generally fenced;
- If front fencing is provided, it must facilitate casual surveillance of the street.

Apartments:
Front and boundary fencing must be provided to all dwellings. Boundary fencing assists in creating privacy for neighbours and tenants. Front fencing must allow surveillance of the street and provide a ‘softening’ of the streetscape through planting.

Additional requirements:

- Concealment of all services may be incorporated within the fence design;
- Where patios face the street, incorporate visual screening into the section of fence in front of the patio for privacy;
- Acoustic separation may be incorporated for road noise.
4.16 Retaining Walls and Garden Edging
Retaining walls and garden edging must be constructed of a suitably long-lasting material, requiring no ongoing treatment or maintenance to maintain its integrity and appearance. Timber or dry construction (loose) interlocking blocks are not permitted.

Retaining walls must be of a design, height and location that is safe for tenants, neighbours and the public. Max. height 1400mm. Retaining walls must be located to minimise any adverse stormwater drainage, visual, amenity or overlooking impacts upon adjoining properties.

- Provide a high-build painted finish where in public view;
- For reactive soils provide pre-cast concrete sleeper type.

Garden beds in private yards, created by edging or retaining walls, must facilitate easy maintenance of the garden by tenants with impaired mobility. Provide concrete strip under fence.

- Turf: avoid turf under roof-eaves.
- Gardens: Avoid garden beds along perimeter walls so as to facilitate inspection of termite barrier zone. Provide concrete edge strip.

4.17 Site Services
(applicable for apartments only)
Ensure the anticipated space requirements for services is allowed for at the early design stage. Note: All services in visually prominent locations must be concealed with appropriate detailing or materials. In particular along primary pedestrian pathways, under stairs, lift lobbies or within under-croft parking areas.

Methods of minimising the visual, maintenance and nuisance impact of services may include:

- Locating in alcoves/hooks and semi-public spaces and/or screening to avoid damage by vehicles, tenants or the public;
- Ensuring that the service layout provides for economical construction and efficient installation;
- Screening water meters located near paths and common areas, ensuring that they are both screened from the street elevation and do not face the driveway.

Note: Ensure no ducts or services encroach into the required clearance requirements above the PWD car parking spaces.

Metering
In acknowledgement of negative perceptions by some tenants, do not locate main switchboards (MSBs) on the outside face of bedrooms or living room walls. All meters are to be located in easily accessible outdoor areas but concealed from the street or driveway view.

Provide individual metering (per dwelling) for water and electricity (including for sites that contain centrally heated hot water). The electricity supply must conform to the electricity distributor’s requirements.

Provide hasp and staple to MSBs, enabling locks to be fitted. Note: Mechanical storm water pumps are not preferred. Any proposal to manage stormwater in this way must be discussed with and approved by the Department at preliminary design stage.

Water
- Use cavities, ducts, and/or ceiling spaces to conceal water supply, soil and waste stacks;
- Locate hose-cocks in convenient locations over appropriate hard and/or free-draining surface;

Location of water meters, service lines, copper gas lines must be appropriate, inconspicuous and located to avoid damage by vehicles, tenants, etc. Consider shrouds for protection if needed.

External Taps
The surface under hose cocks to be free-draining away from buildings and paths. Provide hose cocks to private yards or gardens dedicated to apartments, to the front and back yards of houses and centrally located to communal landscaped areas for apartments. Ground floor adaptable apartments and houses must have a hose cock as close as practical to the patio, mounted to a wall or post.

Irrigation – not to be provided.

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
Hot Water Systems
Hot water systems may be located within the covered outdoor living spaces of individual dwellings, and must be appropriately screened from view. Alternatively, hot water systems may be grouped and screened on the ground floor, in a location that is accessible for maintenance. Hot water systems must be screened if they are in view of communal areas. Preference for hot water units to be in yard space if achievable, otherwise to be located on patios.

Fire
Investigate flow rate and water pressure testing results at the early stage of the schematic design stage to anticipate space requirements.

All ancillary services such as shielding structures must not be obtrusive. Providing a single shielding wall is not an acceptable outcome. Where firefighting shield wall is required seek an alternative solution in form of a 2.2m high wall with cantilever canopy or similar. Seek QFES advice at Schematic Design Stage to verify requirements. It must be submitted for approval and included in the design scope.
5.0 Building Design

5.1 Roof Design
The design and composition of roof forms contribute to the character and identity of an area. Simple but interesting roof forms (with variety of form) are preferred by the Department for their economy and reliable protection in extreme weather. Box gutters are not acceptable. Light-coloured roofs must be provided due to providing low solar absorptance and better thermal efficiency.

Gutters, downpipes and fascia products must be metal and have a Colorbond® finish or equivalent in terms of compliance and durability.

Passive vents must be provided to all dwelling roofs and in-take vents to eaves and/or soffits.

Ensure adequate eaves and overhangs to shade walls and windows from the summer sun and weather. Provide the minimum of a 600mm roof overhang (not more than 400mm if located above the head height of windows and doors) to all dwellings and outdoor living spaces to shade the building envelope and reduce solar heat gain.

5.2 Weather Protection
Ensure a covered area is provided to all dwelling’s entry spaces, sufficient for weather protection and hoods and awnings over windows and doors to protect from sun and weather. Provide min. 450mm to windows and min. 900mm to external doors where directly exposed. Extend hood past jambs or provide sides.

Water must be prevented from entering dwelling entrances, lift areas and minimised on covered walkways where possible.

Provide features such as:
- appropriate overhangs, eaves and verandas to provide protection;
- a gradient (max 1:50 fall) to landing areas;
- appropriate falls away from these areas;
- floor wastes across lift areas.

5.3 Passive Design
The design approach to all dwellings must take full advantage of passive design strategies such as:
- northern orientation – living, dining, and outdoor spaces should be configured to the north where possible;
- ensure cross ventilation is achieved - as air movement is the most essential element to passively cooling spaces;
- wide eaves to assist in shading windows and walls.

Ceiling fans
Ceiling fans must be provided to all habitable rooms and ceiling heights must be nominal 2700mm.

In addition, mechanical cooling such as air-conditioning is deemed to be only required in areas within Climatic Zone 3 – (Refer NCC Energy Efficiency Handbook Vol 2, Fig. 1.1.4. Climate Zones for Thermal Design). The decision must be approved by the Department at the early stages of the design. Ceiling fans must be provided regardless.

5.4 Building Character and Form
All buildings that face the street should consider a composition of varied building elements that define a base, middle and top to modify the prominence of the design within the streetscape. Changes in material, texture, colour and detail must be carefully considered and provided to modify and integrate the building façade within its surroundings.

5.5 Doors and Windows
All external hinged doors to include a security lockable grille/screen door, unless a fire rated door with self-closing mechanism is required by the NCC. Security swing doors must not impede the path of travel and hinged on same jamb as door leaf. A combi-door is acceptable. All fire rated doors must be provided peep holes for safety and security.

Sliding glass doors on patios/balconies must be 2100mm wide.
Window frames must be powder coated or anodised aluminium. Sliding glass windows are preferred. Double hung windows are not acceptable.
Generally, window sills are to be no higher than 900mm above FFL. (typical exceptions include bathroom and kitchen windows and the second window in the bedroom).

All windows must be provided with security lockable grilles on the operable side only. All windows adjacent to the front door must be fixed glass to ensure security is maintained.

5.6 Privacy Screening and Balustrades

Window privacy screens
Window privacy screens (and/or fixed shading devices) must be provided for privacy and comfort of the occupants.

Departmental requirements for privacy screens:
- privacy screening must be provided to all bedroom windows;
- windows where exposed to on-looking;
- windows with primary viewing facades (living spaces and kitchens) where deemed exposed to public and semi-public spaces, driveways and thoroughfares;
- where glare reduction is deemed to be required on west facing windows for NCC Section J energy efficiency compliance.

General screening and balustrades
All fixed privacy screening must comply with local council requirements and allow no more than 25% permeability (or max. 25mm batten spacing to ensure adequate privacy is achieved. All screens and balustrades must be designed so not to promote or encourage climbing by children or intruders.

All balustrades facing a street or public space (including lightweight balustrades) must provide adequate screening for occupants’ privacy and conceal belongings on patios, particularly on upper floor apartments. All clothes lines and hot water systems located on patios or balconies must be concealed appropriately from view.

5.7 External Timber
Design detailing with external timber is deemed not permissible due to the requirement of ongoing maintenance.

5.8 Stairs
Provide mid-landings to principle access stairs and apartments that are not lift-served where space permits, allowing the user a place to stop and rest while ascending.

Note: In 2-storey apartment projects, it may be cost-effective to take advantage of concession clause in NCC for Type C construction by providing individual stair flights.

5.9 Lifts
Lifts must be provided on projects of three or more storeys, unless otherwise directed on particular projects. Generally, min. quantity of apartments served = 10 to justify costs.

A clear path of travel from the lift to all apartments served by the lift must be provided (refer AS1428.1 – 2009). Controls in the lift car must be suitably located and labelled for people with mobility and sight impairment.

Locate the lift entry in an area with of high surveillance. Access to lifts must be limited to residents and legitimate visitors where achievable. Early consultation with the Department, tenancy and property management on individual requirements is recommended.

Methods of achieving this could include:
- key or card access to the lift;

Minimum internal dimensions of the lift car provided must be 1400mm(w) x 1600mm(d).

5.10 Communal Space
Applicable for apartment projects only:
Communal space (including foyer spaces, stairs, lift and common areas) must be carefully considered to ensure access to apartments is direct, safe and minimises multiple pathways. Stairs and lift areas must be clearly defined on entering the site and allow for passive surveillance without impacting on the privacy of the tenants.
6.0 Internal Space

6.1 Form and Functionality
All proposed plans must show they can accommodate the required furniture, fittings, access requirements relating to the declared level of occupancy and state the Gross Floor Area achieved. Refer to Appendix 2 - Furniture Schedule for relevant requirements and BAS typical joinery details for further clarification.

6.2 Dwelling Entrances and Thresholds
Avoid locating dwelling entrances and outdoor living spaces directly adjacent or opposite one another to avoid onlooking. Screening or other methods or devices must be provided to achieve adequate privacy for the occupants. Ensure the security screen door swing - does not impede the path of travel.

Provide externally, the required circulation space at all entry doors in accordance with AS1428.1:2009 for all Class 2 buildings. Only a latch-side approach or front approach is acceptable for main entry doors (refer AS 1428.1-2009, Fig 31 (f), or (h)).

For Class 1 buildings refer below to individual requirements as per the dwelling’s nominated access level. Ensure all Silver, Gold & Platinum level dwellings provide an accessible step-free threshold as per the LHDG Figure 1 at the main entry door.

Note: Step-free transition at all thresholds must have a max. vertical tolerance of 5mm between abutting surfaces provided the lip is rounded or bevelled or where the threshold at the entrance exceeds 5mm and is less than 56mm, a ramped threshold may be provided.

Additional requirements:

General and Silver Level
- For Class 1 buildings provide a min.1200mm x 1200mm level landing area externally of the main entry door.
- Provide an accessible ‘step free’ or ramped threshold as per the LHDG at the main entry door. (General Level exempt)

Silver and Gold Level
- For Class 1 buildings provide a min.1350mm x 1350mm level landing area externally of the main entry door.
- Provide an accessible ‘step free’ or ramped threshold as per the LHDG at the main entry door.

Platinum Level
- For Class 1 buildings a min. 1500mm x 1500mm level landing area must be provided externally of the main entry door.
- An accessible ‘step free’ or ramped threshold as per the LHDG Figure 1 at the main entry door.
- Circulation space must be provided at the main entry door in accordance with AS1428.1-2009 Figure 31 (f) or (h).
- Provision made for a possible future retrofit of automatic door closers to external hinged doors (i.e. sufficient space, power supply and switch point to both sides).

6.3 Internal Doors and Corridors
All door swings must not impede the doorway and circulation clearances or door swings of other doors, except for doors that are required to have automatic closers, or utility doors to pantries and linen cupboards. Ensure that the security screen door is hinged on the same jamb as the front door.

All doors & corridors must be designed to meet the size and clearance requirements as stipulated in Table 6.3. Note: Clear openings of doors must meet requirements when a doorway is measured from the face of the opened door to the butt-stop.

Table 6.3

<table>
<thead>
<tr>
<th>Level</th>
<th>Min. clear opening width of doorway (mm)</th>
<th>Min. corridor / passageway (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver level</td>
<td>820</td>
<td>1000</td>
</tr>
<tr>
<td>Gold level</td>
<td>850</td>
<td>1200</td>
</tr>
<tr>
<td>Platinum level</td>
<td>900*</td>
<td>1200</td>
</tr>
</tbody>
</table>

(Livable Housing Design Guidelines, Figure 2, p.26)

*Note: a standard 920 leaf is deemed to achieve the required doorway clearances to comply with AS1428.1:2009. Consideration must be given to the provision of natural light and ventilation to all corridors.

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
Additional requirements:

**Platinum Level**
- All Platinum level dwelling floor plans must demonstrate the appropriate circulation space diagram has been achieved at all doorways with swinging and sliding doors in accordance with AS1428.1-2009;
- Sliding doors to bedrooms and bathrooms are preferred and must be surface mounted (not cavity sliders). In addition, ensure where a surface-mounted sliding door intrudes into the required circulation space of another surface-mounted sliding door, the width of the hallway must be increased to meet the requirements of AS1428.1-2009, Clause 13.3.3.3.

For 4-5 bedroom dwellings, Platinum Level access requirements are not required to the 2nd bathroom, separate toilet, and from the corridor into the two-way bathroom / ensuite.

### 6.4 Living and Dining

All dwellings must be capable of functionally accommodating the requirements as noted in Appendix 2.

All living rooms must have minimum room width of 3.3m for 1-2 bed dwellings and 3.6m to dwellings designed for three or more people. Refer Appendix 2.

Ensure direct visual connection is achieved from the living space to the patio/balcony and no visual sight line to toilet in the bathroom. Ensure the minimum widths of travel as stipulated have been provided around furniture to ensure functional space has been achieved for all dwellings.

**1-5 bed dwellings**
The living and dining areas must be combined in 1-2 bed dwellings, and may be combined in 4-5 bed houses.

Additional requirements:

**General and Silver Level**
A min. 900mm width of travel must be provided in and around furniture to ensure functional space has been provided to all dwellings.

**Gold Level**
A min. 1000mm width of travel must be provided in and around furniture to ensure functional space has been provided to all dwellings.

**Platinum Level**
A min. 1000mm width of travel must be provided in and around furniture to ensure functional space has been provided to all dwellings.

The proposed furniture layout must not impede into door circulation space. Ensure the living room space proposed can accommodate a turning circle of min 2250mm in diameter to enable free movement clear of furniture.

Note: Alternative seating furniture may be considered for Platinum level which includes:

- **1 bed apartments**: Living space
  - 1 x 2 seat sofa; or
  - 2 x single armchairs.

- **2 bed apartments**: Living space
  - 1 x 2 seat sofa and 1 x single armchair; or
  - 1 x 3 seat sofa.

- **5-bed dwelling**: Separate dining
  - If the dining area is separate (4-5 bed dwellings) the 1000mm path past the furniture and through the space must be measured to the dining chairs (sitting 600mm out from the table)

### 6.5 Kitchens

All dwellings must be capable of functionally accommodating the required kitchen joinery, fitting, fixtures and clearance requirements for level of occupancy as per Appendix 2.

Provide adequate bench space for food preparation and set down beside appliances (including the wall oven and refrigerator). Bench space must be provided on each side of the cook top (min. 300mm).

All kitchens are to be positioned with an external window where achievable. Natural ventilation and day lighting is preferred. Mechanical exhausting and ducted rangehoods vented externally are provided to
supplement only if no viable alternative. Recirculating rangehoods are not acceptable.

- Hotplates are not to be installed under windows or within 300mm of a window.
- Hotplates are not to be installed in benches that are not against a wall unless a suitable upstand is provided to the back of the bench.
- Hotplates are not to be installed at the end of a cupboard, adjacent to doors, windows, areas of heavy traffic, internal corners, or against side walls of a pantry.
- Avoid fridge recess against return wall. This is to enable door swing sufficient to clear for shelf /drainer removal. If the fridge is in this location, the space should be 1050mm wide.

Additional requirements:

**General, Silver and Gold Level:**

**Kitchen fittings and fixtures:**
- sink and side drainer;
- mixer tap with swivel spout;
- fridge (alcove space only);
- wall oven (electric only);
- cooktop (electric only);
- benchtop min. 600 wide and clear bench space min. 800mm in length;
- microwave oven (alcove space only);
- pantry;
- min. 1 x bank of drawers required, but not under hotplates;
- overhead cupboards where achievable, but not above hotplates, 600mm (h) x 300mm (d) x 550mm off benchtop;
- lazy susans (if corner joinery cabinets provided);
- location for refuse;
- hand towel rail.

**Kitchen joinery:**
- Bench height to be 900mm above finished floor level;
- Provide a space for a microwave oven generally above the wall oven;
- Sink and cooktop must be located on the same, continuous bench.

**Dimensions and clearance requirements:**
- Min. 1200mm clearance in front of all fixed benches and appliances. (For dining table exclude chairs).

**Platinum Level:**

**Kitchen fittings and fixtures:**
- shallow sink (max 150mm deep) with side drainer;
- mixer tap with swivel spout and extended lever handle;
- fridge (alcove space only);
- wall oven (electric and side hinged door only);
- cooktop (electric and must have front located controls);
- benchtop min. 600 wide and clear bench space min. 800mm in length;
- microwave oven (alcove space only);
- pantry;
- min. 1 x bank of drawers required, but not under hotplates;
- overhead cupboards where achievable, but not above hotplates, 600mm (h) x 300mm (d) x 550mm off benchtop;
- lazy susans (if corner joinery cabinets provided);
- location for refuse;
- hand towel rail.

**Kitchen joinery:**
- Benches to be 850mm above finished floor level
- Cupboard and pantry doors must have 170° opening hinges (except for doors that are restricted by walls, other cabinets etc.)
- The cupboard doors, plinth and shelf under the sink must be removable to a minimum length of 820mm (refer to AS 4299-1995, Figure 4.8(b)). The under-sink space must provide the required knee space (refer to AS 4299-1995, Clause 4.5.6(d)).
- The cupboard doors, plinth and shelf under the cooktop must be removable to a minimum length of 820mm (refer to AS 4299-1995, Figure 4.8(b)). This section of removable cupboard is to form the work surface described in AS 4299-1995, Clause 4.5.5.
- Align cooktop in the centre of the removable section.
Dimensions and clearance requirements:

- Min. 1550mm clearance in front of all fixed cupboards and appliances as per LHDG.
- Allow a minimum clearance of 300mm between the cooktop and other appliances (i.e. wall oven, refrigerator) or other obstruction such as a wall;
- The top of the cabinet around the wall mounted convection oven must be 1150mm to 1200mm above floor level. If a combined convection / microwave oven is used (studio apartments only), the top of the cabinet must be 1150mm to 1200mm above floor level;
- Provide a space for a microwave oven between 750mm and 1200mm above floor level (generally above the wall oven) (refer AS 4299-1995, Clause 4.5.9);
- Locate the wall oven a minimum of 600 mm from the internal corner of the front edge of the bench;
- Provide a work surface 800mm minimum length beside the cooktop, wall oven and refrigerator (600mm if in corner);
- Two appliances may share a work surface. A sink drainer can form part of the work surface beside an appliance; the cooktop can form part of the work surface beside the refrigerator (refer to AS 42991995, Clause 4.5.5);
- The work surface for the refrigerator must be measured in a straight line along the front edge of the refrigerator (i.e. must not be in a ‘dead’ corner);
- Provide a continuous bench top between the wall oven and refrigerator (or adjacent to refrigerator for studio apartments). The sink and cooktop are to be considered part of the continuous bench top;
- Window sill at bench height permissible.

6.6 Bathrooms

All dwellings must be capable of functionally accommodating the required bathroom joinery, fitting, fixtures and clearance requirements for level of occupancy as per Appendix 2 and BAS “Typical Joinery Details”.

Ensure all Silver, Gold and Platinum level (step-free) bathroom floor gradients are designed to drain only in accordance with the BAS typical bathroom joinery details, and they are not required to comply with AS1428.1-2009.

Natural light and ventilation should be provided where possible. Mechanical ventilation must be provided to achieve 15 air changes per hour (ACH) to all bathrooms. Fan and light must be switched separately. Ensure there is no visual sight line to the living or kitchen area from the toilet in the bathroom.

General Level Requirements:

- wall hung vanity with bank of drawers with semi-recessed hand basin /or vanity top with basin to be integral with bank of drawers;
- basin mixer tap;
- mirror – min. height 2000mm AFFL;
- shower hob area min.1000mm x 1000mm (step free not required);
- glass shower screen enclosure with door;
- standard shower rose;
- wc – standard;
- recessed soap and shampoo holder/niche located in shower area at 900 - 1100 AFFL;
- toilet roll holder;
- towel rail.

Note: Slab set downs are not required for General level bathrooms.

Silver and Gold Level Requirements:

- hand basin - semi recessed;
- basin mixer tap;
- mirror – min. height 2000mm AFFL;
- vanity - wall hung with bank of drawers;
- step-free shower area (tiled hobless recess) min. 1000mm x 1000mm;
- recessed shower grate/channel min.90mm (w);
- single panel safety glass shower screen min.1200 (w) x 2000 (h) with horizontal wall bracket;
- standard shower rose;
- wc – standard;
- wall reinforcement (to be provided for future retro fit) as per LHDG level of occupancy;
- recessed soap and shampoo holder/niche located in shower area at 900 - 1100 AFFL;
- toilet roll holder;
- towel rail.

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
Silver and Gold Level Vanity
Provide a wall-hung vanity with a bank of drawers for storage.

Silver and Gold Level Shower
Provide a tiled 1000mm x 1000mm shower recess, reinforced to the full width of both shower walls to enable future installation of grab rails or shower equipment.

Silver and Gold Level bathroom and shower floor drainage
Bathroom floor gradients must be between (1:80 and 1:100) with the preferred location of a linear shower drain positioned against the shower wall, allowing the entire shower floor to slope towards the shower wall. The fall in the shower area must be between (1 in 60 and 1 in 80). Ensure a secondary floor waste drain is provided as a fail safe.

Provide 100mm setdown in the structural slab to achieve the required falls accordingly. Bathroom floors are to drain in accordance with the BAS typical bathroom joinery details. Ensure the bathroom layout and floor drainage allows for the fixed shower screen panel to be removed at a later date and replaced with a shower curtain if required.

Silver and Gold Level - Toilet
Locate toilet adjacent to a side wall that is a minimum of 1200mm long. Reinforce the side wall in accordance with LHDG. Reinforce the rear wall in accordance with AS 4299-1995, Figure 4.5. The clear floor area incorporating the toilet pan must be a minimum of 900mm wide and 1200mm in front of the pan.

Ensure Silver and Gold level bathroom slab set downs are min.100mm for falls to be achieved.

Platinum Level Requirements:
- hand basin - semi recessed;
- basin mixer tap with extended lever handle
- mirror – min. height 2000mm FFL;
- vanity – wall-hung with bank of drawers;
- step-free open shower area (tiled hobless recess) min. 1100 x 1160mm;
- shower curtain and curtain track (1200mm x 1200mm);
- adjustable shower rail with hand set;
- wc – to comply to AS1428.1-2009; excluding grabrails, backrest and lumiance contrast.
- wall reinforcement (to be provided for future retro fit) as per LHDG Platinum level of occupancy;
- recessed soap and shampoo holder/niche located in shower area at 900 FFL;
- semi recessed toilet roll holder;
- provide grab rail to act as towel rail.

Platinum Level Vanity
Provide a vanity with a bank of drawers and a semi-recessed basin; with adequate circulation space (refer to AS 1428.1-2009, Figure 46). Position the basin to the end of the vanity unit that is away from the corner of the room. Provide clearance under vanity (refer to AS4299-1995, Figure 4.4: washbasin clearances)

Platinum Level Shower
The shower recess must be open on two sides and the floor tiles in the shower area must be a different colour to the general floor tile (at least 30% lumiance contrast)

The shower configuration is to be in accordance with AS 1428.1-2009, Figure 47(a) or, if the wc is located adjacent to the open side of the shower, Figure 47(b). Note that actual disability equipment (e.g. shower seats, grab rails) is not required.

- Provide circulation space as per LHDG Figure 5(b).
- Position the shower away from the door to minimise splashing into other spaces.

Reinforce shower walls as per LHDG, except:
- Extend reinforcing to full shower width (not just 900mm): and
- On wall without shower combination, extend reinforcement to within 200mm of the finished floor line (for possible future shower seat)
- The walls of the shower area to be tiled to 1900mm high minimum. (Refer BAS Typical Joinery Details).

Platinum Level bathroom and shower floor drainage
Required floor gradients must be between (1:60 and 1:80); or position the shower waste in the centre of the shower area and fall the entire bathroom floor to the shower waste. The fall at the shower must be
between 1 in 50 and 1 in 60. The fall in the bathroom must be between (1 in 70 and 1 in 80). Provide
100mm setdown in the structural slab to achieve the required falls accordingly. Bathroom floors to drain in
accordance with the BAS typical bathroom joinery
details.

**Platinum Level - Toilet**
Locate toilet adjacent to a side wall that is a minimum of 1200mm long. Reinforce the side wall in
accordance with LHDG Guidelines. Reinforce the rear wall in accordance with AS 4299-1995, Figure 4.5.
Set-out the WC in accordance with LHDG Figure 4. In addition, the minimum dimension from centreline of
the toilet to edge of shower area must be 500mm.
Circulation space is to be in accordance with AS 1428.1-2009, Figure 43. (It is accepted that a future
shower seat will encroach on circulation space when folded down.)

Platinum Level features are not required in the second
bathroom (and/or second toilet) of 4-5 bed Platinum
Level houses.

For the ensuite or two-way bathroom in a 4-5 bed
house, clearances must be provided for swing doors
or sliding doors in accordance with AS1428.1-2009,
from bedroom 1, and is desirable from the corridor.
Surface mounted sliding doors are preferred.

### 6.7 Laundry

All dwellings must be capable of functionally
accommodating the required laundry joinery, fitting,
fixtures and clearance requirements for level of
occupancy as per Appendix 2 and the department's
‘Typical Joinery Details.’

The laundry area must be designed to support ease of
movement and be provided with a window for natural
light and assist with cross ventilation where
achievable.

If a laundry recess is visible from the entry or living
area, doors must be provided. Doors must enable full
use of the laundry space when open and the laundry
tub must be compact in size.

For houses, ensure direct access is provided from the
laundry to the clothesline.

Additional requirements:

**General, Silver and Gold Level**
Provide adequate space for a laundry tub, washing
machine, clothes dryer (wall mounted acceptable) and
under bench and overhead cupboards for storage.

- Provide circulation space min. 1000mm (1200mm
  for Gold Level) clear width in front of fixed
  benches and appliances.
- Form to shape the slab towards a floor waste.
  Min. gradient of 1:100 fall and not greater than
  1:80, to ensure a step-free transition is achieved
  between floor finishes. (General level exempt)
- A wall mounted single lever mixer tap with swivel
  spout must be positioned at the side of the tub for
  ease of access;
- Provide tiled splashback to extend above bench
top to underside of overhead cupboards;

**Platinum Level**
Provide (min. 1750mm) space for a washing machine,
dryer, compact tub and under bench and overhead
cupboards for storage.

- Circulation space must be achieved of a min.
  1550mm clear width in front of fixed benches and
  appliances.
- Form to shape the slab towards a floor waste.
  Min. gradient of 1:100 fall and not greater than
  1:80, to ensure a step-free transition is achieved
  between floor finishes.
- A wall mounted single lever mixer tap with swivel
  spout must be positioned at the side of the tub for
  ease of access;
- Provide tiled splashback to extend above bench
top to underside of overhead cupboards. Refer
BAS typical joinery details.

### 6.8 Bedroom 1

All dwellings must be capable of functionally
accommodating the required bedroom furniture, door
and bed side clearance requirements for level of
occupancy. Refer to Appendix 2 for relevant
requirements. Built-in wardrobes shelves must not be
positioned in the corner of a room.

Provide a second window for cross ventilation where
possible. If windows are positioned above the
intended bed-head space the sill height must be a
min. 1500mm.

Additional requirements:

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**Note:** This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
**General and Silver Level**
Provide a min. 900mm clearance on all remaining sides of bed.

**Gold Level**
Provide a min. 1000mm clearance on all remaining sides of bed.

**Platinum Level**
Provide a min. 1000mm clearance on all remaining sides of bed and a space of at least 1540 (w) x 2070mm (in the direction of travel) on the side of the bed that is closest to the door approach. Refer to LHDG requirements.

Ensure bedroom furniture does not impede entry door circulation. Built-in robes must be positioned away from the head of the bed.

- Provide a surface-mounted sliding door hung inside the room where achievable.

6.9 **Bedrooms 2 - 5**
All dwellings must be capable of functionally accommodating the required bedroom furniture, door and bed side clearance requirements for level of occupancy. The minimum room area (excluding wardrobe) is 11m². Refer Appendix 2 for relevant requirements. Provide a second window for cross ventilation where possible. If windows are positioned above intended bed-head space the sill height must be min. 1500mm.

Additional requirements:

**General, Silver and Gold Level**
Apartments, duplexes and dual occupancies:
Bedroom 2 must accommodate two single beds, a desk and a bedside table positioned to provide 900mm access to the end and at least one side of the bed.

**Platinum Level**
2 bed dwellings:
Bedroom 2 must accommodate one single bed and 1 desk positioned to provide a min. 1540mm access to the end and at least one side of the bed.

4-bedroom and 5-bedroom houses:
Bedroom 2 must accommodate a queen-sized bed, and 2 bedside tables. Provide 900mm access to at least 2 sides of the bed. Nil additional requirements for Bedrooms 3, 4 & 5.

6.10 **Storage**
All dwellings must provide a broom and a linen cupboard. Minimum requirements refer to Appendix 2.

6.11 **Multi-purpose space**
Note the “multi-purpose space” is only provided in 1 - bed apartments. (unless designated a “High Yield” - 1 - bed apartment). A min. 1900mm x 2100mm space must be provided and must be flexible to accommodate possible uses such as storage of mobility equipment, using a desktop computer or sleepover for a carer or visitor. It must be a separate defined space, not inside the bedroom.

If positioned in the living area, kitchen or dining separation must be achieved through passive measures such as creating an alcove / nook or recessed area. Consider variations to the room’s width, ceiling height, lighting and materiality to create spatial interest where by defining a separate space.

The space must be situated to enable access to an external operable window to ensure adequate daylight and ventilation is provided. It must be treated as “habitable” for the purpose of addressing NCC provisions for lighting and ventilation.

6.12 **Covered Outdoor Space**

6.12.1 **Patios/Balconies and Outdoor Rooms**
For all dwellings, a covered private outdoor space must be provided, suitable for dining, which can be accessed directly off the living/dining area through sliding glass doors. All dwellings must be capable of functionally accommodating the requirements as noted in Appendix 2.

Note: Minimum dimensions stated must be measured clear of all items including the hot water system, fully extended clothesline, balustrades and mechanical cooling plants/condensers (if applicable) in each direction.

The roofs of covered outdoor living spaces must be insulated, and it is preferred that they are under the main roof space. For houses and ground floor apartments, the covered outdoor living area must be associated with the yard space.

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**Note:** This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.

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Upper level patios must be designed to discourage people from climbing onto them; i.e. there should not be any lower roofs or other climbable features adjacent.

For apartments, balconies/patios must be appropriately screened to provide privacy, whilst allowing casual surveillance of the street, park, etc. Where apartment balconies are visible from the street, balustrades must conceal tenant’s belongings. Only opaque (non-transparent) glass or powder coated battens or similar materials are considered acceptable. Ensure no more than 20% permeability (or min 25mm batten spacing is provided).

Weather protection of outdoor spaces must be considered. Balustrading may continue past the slab edge to provide weather protection to balconies/patios below or alternatively additional top screening for sun, rain and wind protection should be provided.

Clothes lines located on the patio/balcony must be appropriately screened from view.

**General and Silver Level requirements:**
Furniture must not be placed within door circulation spaces. Provide a minimum 900mm wide path past furniture through the space.

**Gold Level requirements:**
Furniture must not be placed within door circulation spaces. Provide a minimum 1000mm wide path past furniture through the space.

**Platinum Level requirements:**
Provide a min.1000mm wide path past furniture through the space. Sliding door circulation per AS1428.1-2009, clear of furniture.

**6.13 NBN and Internal Services**
All NBN equipment installed must be designed to be easily wheelchair accessible (min. 900 -1100 FFL) and provide a dedicated recess. Open wall locations are not acceptable. Min. size requirements: 100(d) x 325(h) x 565(w) mm with power supply.
7.0 Sustainable Initiatives

7.1 Building Thermal Performance
A 7 star or greater energy equivalence rating must be achieved for houses / town houses (Class 1) and at least 6 stars for each unit with an average of 7 stars across all units in multi-residential buildings (Class 2). This is to maximise comfort for tenants while minimising energy running costs.

7.2 Energy and CO2
To reduce greenhouse gas emissions associated with the use of energy in building operations and to ensure environmental targets are met, renewable energy for domestic hot water should be considered on all new social housing projects. (i.e. solar hot water). Early consultation with the Department is recommended on individual requirements. Gas is not to be provided.

7.3 Heat Island Effect
As sites are mostly covered by building roof or hard landscaping elements that significantly impact on the heat island effect, the following initiatives have been introduced and must be achieved for all new developments:

Cool Roofs
All roofing materials to be light in colour, and must have a high Solar Reflectance Index (SRI) within the below parameters:
- For roof pitches < 15° - a three year SRI > 64; or
- For roof pitch > 15° - a three year SRI > 34.

Shading Devices
Shading devices must be considered to large areas of hard-scaping. Consider entrance arbours with overhanging vegetation on roof structures or shading devices to the public/communal spaces where achievable.

7.4 Water
All sanitary fixtures provided should be within one star of the highest WELS rating available to reduce potable water usage.

7.5 Responsible Building Materials
With the aim of providing non-toxic, biodegradable materials and minimising waste through material selections the following sustainable initiatives must be provided:
- No or low VOC paints or sealants must be provided to lower harmful toxins in the air and reduce VOC emissions;
- All sheet flooring should be renewable or made from natural content, non-toxic and biodegradable and accredited for Green Star compliance;
- All carpet provided should be accredited for Green Star compliance by Australian Carpet Institute’s Environmental Certification Scheme (ECS). Alternatively have a third-party certification such as Ecospecifier, Global GreenTag or Good Environmental Choice Australia (GECA).
- PVC being highly toxic to manufacture, must be used to the minimum. Products that do not contain PVC such as permanent form work, downpipes, pipes, flooring and cables must be specified where practical.

7.6 Stormwater and Site Topology
The designer must approach the site with techniques to minimise the need for extensive earthworks and to preserve and enhance natural drainage lines and waterways. Building forms must be designed that respect and are responsive to the existing site topology. Significant ‘cutting and filling’ and retaining walls greater than 1.4m are to be avoided.

A diagrammatic stormwater design is required with the Schematic Design at (SD) stage. This must consider and include land-overflow to/from adjoining properties, land-overflow on and around the site, legal point of discharge and detention basins (if required), and based on advice from a RPEQ registered civil engineer / hydraulic sub-consultant.

7.7 Landscape and Ecology
A registered Landscape Architect must be engaged with a high focus on biodiversity conservation and specify native and endemic species to the project’s area. A xeriscape type garden must be specified, predominately providing native landscaping that does not require irrigation or watering after establishment. The landscape design must be designed to require minimal maintenance, and consider that care-taking of the public and private spaces are generally the sole responsibility of the occupants.

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
8.0 Technical Requirements

8.1 Architectural

8.1.1 Aluminum framed windows and sliding doors
Aluminium framed windows and sliding doors are required in all new construction and upgrade replacement work. Other materials are only acceptable in exceptional circumstances (e.g. to match existing windows or doors) and are subject to Department approval. Aluminium framed windows and doors must promote energy efficiency and sound reduction, whilst providing privacy, security and protection from the elements.

Performance Criteria
- Frames must be finished in a clear anodised or powder coated finish from the manufacturer’s standard colour range;
- The frames must have provision for security screens to all operable windows and doors (security screens required on openable windows and doors, unless precluded by the NCC);
- Sliding windows and doors used must include appropriate buffers/bumpers to the sections of frame that the window/doorb opens onto and shuts against;
- Handles and latches must be easy to use for older people and people with disabilities;
- Door hardware is to be at 900mm to 1100mm above floor level and must not interfere with the operation of security door hardware installed in the same height range;
- Remote operators in the form of winders or sliders are required for hard to reach windows or outward opening windows with friction stays;
- Appropriate low sill profiles are required for doors in Platinum Level housing.

Locking
- Locking snibs are to be a large lever type. All snibs and locks are to be positioned so as to allow adequate clearance from the door jamb;
- Entrance doors: Doors must be snib lockable from the inside and key lockable from the outside;
- Doors to balconies and outdoor areas must be snib lockable from the inside only;
- All locks must be keyed alike;

Specific Window Types
- Sliding windows must be fitted with rubber window stops;
- Casements, awnings and hoppers to be outward opening windows with friction stays. Outward opening windows must not open over pathways, outdoor living, yard spaces or the like, within 2000mm from the ground, path or floor level below the outside face of the window;
- Double hung windows are not preferred; however, if they are required to replace existing, they are to be easy sliding with friction or counter balance systems (not suited to LHDG Platinum Level housing given the operation requirements);
- Louvres to be a proprietary system with a handle type that is robust and easy to operate. Plastic handles are not acceptable.

8.1.2 Automated entry door operators
Applicable to new construction and home modifications, in response to identified, specific client requirements only.

Automated door operators are only to be provided in response to identified client need, in order to provide safe and effective means of opening doors and/or allowing easy access through doorways for people with limited mobility.

There are two types of automated door operators that are suitable for use:
- **Automatic door opening device**: An electric door opening device that enables the door to be opened and closed automatically. These devices may be operated by a switch (internal), radio (remote) control, sensor pad or similar mechanism;
- **Door release mechanism**: An electric door release, releases the door from the door catch to enable a client or visitor to manually open the door. These devices may be operated by a switch (internal), radio (remote) control, sensor pad, security code pad or similar mechanism.

Intercom systems (audio and visual) can be used with certain types of automatic door operators to allow a client with severely limited movement to be alerted to a visitor at the front door.

Automated doors and door operating systems must comply with applicable requirements described in AS5007 – 2007. Powered doors for pedestrian access and egress.

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**Note:** This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
**Power supply**
- Must be hardwired;
- In the event of power failure, the entrance door must automatically close and lock with access gained via keyed lever entry lockset, and egress gained via either free internal lever handle (hinged doors) or standard lock fitting (sliding doors);
- A secondary uninterrupted power supply unit (UPS) shall be installed. Minimum back up operation time for door release and/or driver mechanism shall be 12 hours.

**Functionality**
- Automatic or programmable closing speed, allowing time for a person with limited mobility to pass through;
- The door will have an automated sensor to reverse the opening in an emergency;
- Internal opening device shall be either or a combination of any two: key/snib mechanism (sliding doors), automated switch mounted on wall within standard reach of client;
- Automated systems must be able to be overridden by manual operation;
- All client and visitor activated controls shall be mounted in accordance with the clients' identified requirements.

8.1.3 Balustrades and Handrails

The Building Code of Australia specifies mandatory requirements for balustrades. The State has additional requirements for balustrades and handrails as follows:

**Design Considerations:**
- Barrier protection from falls of less than one metre must be provided where there is a risk of a fall, particularly where sharp level changes occur at the edge of pathways or outdoor spaces that may be occupied by people;
- Where a balustrade is required under the NCC (i.e. trafficable area is one metre or more above the surface beneath):
  - It must align with applicable NCC requirements, and
  - Any horizontal elements within the balustrade or other barrier between 150mm and 760mm above the floor must not facilitate climbing.
- Balcony top rails must be designed so that they do not encourage loose objects (such as pot plants) to be placed on top;
- Balustrades (including lightweight balustrades) must provide screening for occupants' privacy and to conceal belongings on patios, particularly where upper floor apartments face a street or public space;
- Bottom rail: A maximum of 50mm nominal clearance above finished floor level. (A maximum of 50mm has been chosen as this will reduce the chance of objects from fitting under the rail and potentially falling off the balcony).

**Other Requirements**
- Balustrades and hand rails must be free of sharp edges and rough welds;
- Aluminium handrails and balustrades: May be a proprietary system or custom design of welded or screwed and riveted construction;
- Steel balustrades and handrails must be fully welded and hot dip galvanised. Use site bolting to connect large sections. On-site welding of galvanised sections is not permitted. Avoid paint finishes over galvanising;
- Consideration must be given to heat retaining properties of materials where rails will be positioned in unshaded areas. Rails must not become too hot to use;
- Materials and finishes: To be low-maintenance and appropriate to the location and situation.
  - Posts: must be bolted to slab or attached to bolted post foot.
  - Solid infill: Designed to meet relevant Standards, e.g. Glazing Standards.
  - Submissions: Certified calculations for building approval, in compliance with the Building Code of Australia. Design details to indicate materials, sizes and construction.

8.1.4 Bathroom Sanitary Fixtures

Bathroom sanitary fixtures must have a minimum of 12 months manufacturer's warranty.

**Vanity basins (drop in and semi-recessed)**

Vanity basins must be:
- Silver, Gold and Platinum Level: Semi recessed;
  - One hole for a basin mixer, unless specified otherwise;
  - Nominal overall width: 500mm;
  - Nominal overall horizontal depth: 390 mm;
  - Minimum capacity: 7 litres

**Basin - wall mounted**

Wall mounted basins must be:
• General purpose vitreous china wall or corner basin with one or three tap holes;
• Size: Nominal overall width: 500 mm or 6 litre capacity. Smaller basins may be used in confined spaces (minimum 3 litre capacity).

**Double flap toilet seats**

Double flap toilet seats must be provided for Platinum Level dwellings and include:
- Closed front heavy duty moulded plastic seat with top flap (removable when specified for tenants with a disability);
- Buffers to be installed;
- Hinges: chromed metal or stainless steel;

**Toilet cisterns**

Toilet cisterns must comply with the following criteria:
- Low mounted wall cisterns of 4.5/3 litre capacity, dual flush;

**Toilet pans**

Toilet pans must comply with the following criteria:
- White vitreous china, floor mounted general-purpose pan;
- Secure floor mounting achieved, preferably through four stainless steel screws;
- Designed for 4.5/3 litre capacity, dual flush.

**Baths and shower baths**

- May be acrylic or pressed steel vitreous enamel;
- Must be in accordance with the AS2023-1995: Baths for Ablutionary Purposes, in particular, Section 1 and:
  - Section 3 (pressed steel vitreous enamelled baths) or
  - Section 6 (plastic and composite materials baths)
- White in colour;
- Size: to suit application. Generally, 1500 mm to 1700mm nominal length x 750mm nominal width x 300mm to 400mm depth;
- Slip-resistant base must be provided for baths that have a shower over;
- Acrylic baths must be 4mm sanitary grade acrylic, suitably reinforced;

**Baths must have integrated rim reinforcement.**

**Shower trays**

- Must be in accordance with AS 3588-1996: Shower Bases and Shower Modules;
- White in colour.

**8.1.5 Carports and garages**

Carports must provide an economical but attractive product of domestic appearance and low-maintenance. Carports and garages:
- For detached dwellings, single carports only are to be provided, regardless of the dwelling size;
- May be either custom built or proprietary items;
- Structural posts must be hot dipped galvanised steel;

Prefinished, metal roofing is preferred and must comply with:
- AS1562.1-1992 Design and installation of sheet roof and wall cladding;
- AS/NZS 2728-2013: Prefinished/prepainted sheet metal products for interior/exterior building applications;

Garage roller doors (one-piece tilt up doors or panel doors not acceptable) are required to garages, and must be provided for carports when:
- Open carports (with no garage door) are not typical in the street or neighbourhood; and/or
- Access to the backyard or under the house is through the carport;
- Screening must be considered for the sides of carports (on houses) that are open to the front yard;
- Carports must be installed on a self-draining concrete slab.

**Design Considerations:**
- The requirements of the Queensland Development Code must be considered in the positioning and screening of carports and garages;
- The carport or garage must complement the existing house or apartment building.

**8.1.6 Curtains, curtain rods and curtain brackets**

Requirements for curtain rods include
- Provide metal curtain rods (minimum 25mm diameter) with plain finials and 75mm curtain rod brackets. Bracket spacing not to exceed 1.35m.
Requirements for curtains include:

- Must be fire retardant (inherent to fabric, not a chemical treatment); and
- Must be washable (does not reduce fire retardant properties and does not have shrinkage of greater than 3%);
- Curtains style must be suitable for use on metal rods (e.g. pinch pleat curtains on rings, eyelet curtains);
- Fabric width must be at least 1.5 times the width of the window or door.

Curtains to windows:

- Curtain must finish below sill height, by approximately 100mm;
- Curtains must be mounted on metal rings;
- Curtains on windows over 600mm must be split in half with drop on each side of window (600mm or under to be a single drop);
- Curtains are to be installed to all windows in bedrooms, living/dining rooms, multi-purpose spaces, entries where applicable (not wet areas – i.e. kitchen, bathroom, laundry, toilet).

Curtains to sliding glass doors:

- Curtains to be provided to all glass sliding doors. Curtain drop to be 50mm above finished floor level;
- Where a middle bracket is required, curtain to be split in half with a drop on each side of the door;
- Where only end brackets are required, curtain to be continuous;
- Metal flick sticks to be included on each curtain drop for LHDG Platinum Level dwellings only.

8.1.7 Door Hardware

**External hinged door hardware**

Requirements for external hinged door hardware include:

- Must be satin chrome or stainless-steel finish, or to match existing for upgrade work.
- Must include a deadbolt with external key entry that can be locked manually from the inside with a large snib.(i.e. without the key)
- Must include an external quality lever passage set. Lever handles must have a minimum length of 95mm. Handles that return to the door face (D-shaped) are required in LHDG Platinum Level housing or in response to identified specific client requirements;
- Must be able to be held in the closed position without locking the door, so that doors do not accidently lock when occupant is outside;
- Must be keyed alike with all external doors (including glazed and security) for the same premises;
  - Alternative door hardware is acceptable in response to identified specific client requirements.

**Internal door hardware**

**Hinged Doors**

Door hardware for hinged doors must:

- Be satin chrome or stainless-steel finish, or to match existing for upgrade work;
- Have lever handles with a minimum length of 95mm, or to match existing handles. Handles that return to the door face (D-shaped) are required in LHDG Platinum Level housing or in response to identified specific client requirements;
- Have a metal latch tongue;
- Passage sets are required on all internal hinged doors, except bathrooms and separate toilet rooms;
- Privacy sets are required on hinged doors to bathrooms and toilets, or to replace existing privacy sets. Privacy sets must:
  - Have a snib or push button privacy lock. A large internal snib may be required in response to identified specific client requirements.
  - Have an emergency release on the outside which is coin or snib operated. (pin hole release not acceptable).

**Sliding doors**

Privacy sets for internal sliding doors (generally bathroom doors or some bedroom doors in LHDG Platinum Level housing) require the following:

- non-indicator, brass mortised privacy latch;
- Coin-operated emergency release on the outside with a turn snib on the inside. A large internal snib may be required in response to identified specific client requirements.
- Design: easy grip, free from sharp points and edges. Levers to return to the door face where available;
Note: Lightweight domestic latch with small recessed components are not acceptable.

**Other door hardware**
Door closers (fire rated)
If door closers are required, they must meet the following requirements:
- Satin-chrome or stainless-steel finish; and
- Minimum operating pressure required.

**Door seals**
A weatherproof door-seal must be fitted to the base of all external hinged doors. Requirements for door seals include:
- Any fixed sill sections must have a slip resistant finish;
- The seal must be likely to last the life of the door;
- Any complementary sill section is to be low profile (maximum 10mm in height).

**Door stops and retainers**
Door stops are required on all doors. Retainers are required on all doors except fire doors. Stops and retainers must be either:
- ‘Bumper’ type used in conjunction with a hook and eye retainer, or equal; or
- A ‘bumper’ type with an integral retainer.

Door stops must be of sufficient length to stop the door handle causing damage to the wall behind. Light nylon or plastic clip type retainers are not acceptable.

### 8.1.8 Electric cooking appliances
Cooking appliances should be of a durable finish (either white enamel or stainless steel).

**Ovens** (wall ovens, under bench ovens, ovens in upright and elevated ranges)
- Nominal 600mm wide;
- Wall ovens for Platinum Level must have vertically hinged door (i.e. side opening). The opening side of the oven must be on the bench side, with the middle oven shelf at the height of the benchtop;
- Oven door must have robust hinges and strong latching mechanisms;
- Oven light required;
- Timer required;
- Minimum 2 adjustable oven shelves;
- Direct front access to oven shell for gasket replacement;
- Wiring protection where necessary, to protect wiring and oven controls above oven door;
- Electric ovens: must be fan assisted.

**Cooktops** (separate cooktops, and cooktops in upright and elevated ranges)
- Four burners/cooking zones (two burners/cooking zones acceptable for studio dwellings);
- Nominal 600mm wide (except for 2 burner cooktops);
- Location of controls must be easy to access, without limiting access to cooking elements;
- Layout and markings must ensure ease of identifying the corresponding element;
- Residual heat indicators if available.

<table>
<thead>
<tr>
<th>Acceptable cooktop types</th>
<th>Type</th>
<th>Required features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric</td>
<td>Standard hotplates</td>
<td>Solid hotplates preferred; (coils are an option) Corrosion resistant; Tops must hold spillages of up to one litre.</td>
</tr>
<tr>
<td>Ceramic glass radiant cooktop</td>
<td>Enamel or stainless-steel trim to edge of glass preferred; Knob controls preferable (touch controls with child safety features only in response to identified need);</td>
<td></td>
</tr>
<tr>
<td>Ceramic glass induction cooktop</td>
<td>Touch controls with child safety features.</td>
<td></td>
</tr>
</tbody>
</table>

**Upright ranges – (General Level only)**
- Effective vermin proofing to underside and rear of range. Preferably, limited holes and protection around holes, to discourage vermin;
- Effective insulation to ensure that the sides of the oven are not hot to touch;
- Anti-tilt brackets that enable the range to be disengaged without unbolting or unscrewing, installed as per manufacturer’s specifications;
- Lift-off oven door with transparent glass panel;
- Rear splash back panel;

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Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.

Version 3.0. 2017 Social Housing Design Guide
- Nominal dimensions 900mm H (to hob) x 540mm W x 595mm D;
- Rear panel controls (front controls in response to identified need).

<table>
<thead>
<tr>
<th>Standard and Acceptable Cooking Appliance Types by Dwelling Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dwelling Type</strong></td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>LHDG Platinum Level &amp; Gold Level</td>
</tr>
<tr>
<td>Seniors' dwellings</td>
</tr>
<tr>
<td>General Level</td>
</tr>
</tbody>
</table>

8.1.9 Exhaust fans and exhaust fan control switches
In kitchens, natural ventilation is preferred over mechanical ventilation and rangehoods are not preferred if there is a viable alternative. In bathrooms, natural ventilation is also preferred. In new construction, this is supplemented by mechanical ventilation to provide appropriate airflow.

Exhaust Fans
- For bathrooms, exhaust fans must provide a minimum of 15 air changes per hour;
- Must have a minimum International Protection rating of IP54;
- Wall or ceiling mounted type;
- Must be provided with wall ducting kit which includes a weatherproof fly-screened exterior wall grille;

Exhaust Fan Control Switches
- Light and exhaust fan must be separately switched;
- Should be designed so that the exhaust fan will continue to operate for an extended period after the switch has been turned to the off position. An adjustable electronic time delay should ensure the operation of the exhaust fan for a minimum period of up to 10 minutes;

8.1.10 Fencing
**Boundary Fences**
Generally, fencing must be provided to all boundaries, with side return fencing to each dwelling defining private yard space.
- Dividing fences must be high, private fencing, such as 1800mm high timber paling fencing;
- New and replacement dividing fences must be a “sufficient dividing fence” as defined by the Neighbourhood Disputes (Dividing Fences and Trees) Act 2011;
- Considerations when choosing fencing types include:
  - Treated pine should not be used in dry, arid areas (zone 3 as referenced in BCA Vol 2 Fig. 1.1.4, Climate Zones for Thermal Design). Colorbond or hardwood timber may be acceptable alternatives. Australian Building Codes Board. See BCA Climate Zones for thermal design:http://www.abcb.gov.au/work-program/energy-efficiency/climate-zone-maps.aspx;
  - Maintainability. In remote locations, or sites at high risk of damage or vandalism, Colorbond fencing is not preferred.
- All other legal, regulatory and covenant requirements for fencing must be met.

**Front fences**
- Generally, not provided to detached houses, except to corner or cul-de-sac sites;
- If front fencing is required, solid or semi-transparent materials must be limited to a maximum of 50 percent of the frontage width.
- Corner sites: Fencing may be provided on all boundaries, with consideration of road visibility at intersection;
- Fencing to detached and attached housing, duplexes and dual occupancies must provide a secure playing space for children, with access to at least one doorway of the dwelling;
- Facilities such as letterboxes and rubbish bin enclosures must be compatible with the overall fence design and must be incorporated into the fencing design where possible;
- The installation of fencing must not result in any breach of termite barriers on/to the building;
- Appropriate pedestrian gates, matching the fence, must be provided on the return portion of fence.

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
(Gates must not be provided in side or rear fencing). If possible, provide gates allowing access down both sides of the property – either two pedestrian gates or, if space allows, one pedestrian gate and one vehicle access gate;

- Side fences must extend the length of the boundary, and finish on the rake at a height of 1200-1500mm to meet the front fence height;
- Fencing must not be attached to exterior walls or components of the building. A 75mm clearance must be achieved to prevent any breach of termite barriers on the building;
- Fencing must finish between 50mm and 100mm above the finished ground level and 75mm above the finished level of concrete mowing strips and retaining walls;
- Side, return and back fences in new construction are generally to be 1800mm high timber paling fixed to hardwood rails, with the palings fixed on the side facing the property. Front and return fences must have the paling fixed on the side facing the street;
- Other fencing types may be used, considering community standards, longevity of the fence and visual privacy for outdoor recreation where appropriate.

8.1.11 Floor Coverings
The floor finishes most commonly used in new construction and refurbishments include floor tiles, sheet vinyl and carpet. Other floor finishes present in existing properties may also be acceptable, including polished floorboards and linoleum.

It is important that floor finishes are ‘domestic’ in appearance, and are of a colour and texture that is easy to maintain.

Floor Tiles
Performance Criteria
Slip resistance requirements of floor tiles will vary depending on the application. Performance criteria for both slip resistance levels are outlined below.

Tiles (R9 /P2)
Tiles for this application shall:

- Have a slip resistance rating of ‘R9’ (Oil-wet Inclining Platform Ramp Test Method – AS/NZS 4586: 2013) or P2 (Wet Pendulum Test Method – AS/NZS 4586: 2013);
- Be hardwearing and resistant to surface abrasion: Commercial or heavy domestic quality;
- Be non-porous, with an easily maintained, ‘mop over’ finish;
- Be domestic in appearance and of a neutral colour and design which will minimise the show of marks and stains. White, very light, or very dark tiles are not acceptable;
- Texture, profile and tile size must be used to achieve effective slip resistance and ease of cleaning.

Tiles (B/P3)
Tiles for this application shall meet the performance requirements listed above (except for slip resistance), along with the following criteria:

- Have a slip resistance rating of:
  - ‘P3’ (wet pendulum test method – AS/NZS 4586: 2013) or
  - B (Wet-Barefoot Inclining Platform Test Method – AS/NZS 4586: 2013);
- For bathrooms, floor tiles must be a maximum size of 200 x 200mm, to achieve sufficient falls. Typically, the minimum acceptable size is 50 x 50 mm;
- Hobless shower floor recess shall have a visual separation from the remainder of the bathroom floor area. Typically, a contrasting colour (30% minimum luminance contrast) and smaller tile size may be used (smaller tile in the shower recess may help to achieve tighter falls).

Installation and application
The following is to apply in the installation and finish of internal floor tiles:

- Be fixed to substrate with a manufacturer approved adhesive;
- Be thoroughly and neatly grouted with a manufacturer approved, flexible grout in a natural grey colour;
- Be thoroughly and neatly sealed, if required, with a manufacturer approved sealant.


Sheet Vinyl
General product requirements include:

- Must be of commercial or heavy domestic quality;
- Minimal maintenance finish that is easily mopped over and is resistant to damage and tearing;
• Preferably, neutral in colour, with a colour and pattern that will minimise the appearance of marks and stains;
• A slightly textured surface with suitably "domestic" pattern, and a non-absorbent surface;
• Product should facilitate easy, smooth operation use of mobility aids, such as walkers or wheelchairs;
• Heavily textured surfaces, raised profiles or densely located small studs are not acceptable;
• Preference is for heavy domestic / commercial quality sheet vinyl with the following features:
  - Polyurethane reinforced;
  - Homogenous (minimum 2mm gauge) or heterogeneous (minimum 2 mm gauge with minimum 0.7mm wear layer);
• Domestic quality vinyl, including loose laid vinyl, may be considered for existing dwellings, if a shorter-term solution is appropriate.

Slip resistance requirements of vinyl will vary depending on the application. The below table documents standard and acceptable vinyl requirements by room. Additional requirements for each slip resistance level are outlined below.

**Vinyl (R9/P2)**
In addition to general requirements, sheet vinyl for this application shall:
• Have a slip resistance rating of R9’ (oil-wet inclining platform ramp test method – AS/NZS 4586: 2013) or P2 (Wet Pendulum Test Method – AS/NZS 4586: 2013);
• Slip resistance must be guaranteed for the life of the product.

**Vinyl (B/P3)**
In addition to the general requirements, sheet vinyl for this application shall be suitable for use in wet areas, and meet the following criteria:
• Have one or more of the following slip resistance ratings:
  - ‘P3’ (wet pendulum test method – AS/NZS 4586: 2013);
  - B (Wet-Barefoot Inclining Platform Test Method – AS/NZS 4586: 2013);
• Slip resistance must be guaranteed for the life of the product.

Installation and application

Vinyl is to be installed in accordance with AS1884 – 2012. Floor coverings – Resilient sheet and tiles – Installation practices. The following is also to apply in the installation and finish of sheet vinyl flooring:
• Vinyl must be installed with a manufacturer-approved adhesive;
• Where a finished edge remains uncovered, the junction line shall be scribed to finish flush with abutting surfaces;
• Where changes in floor finishes occur at doorways, locate the junction centrally below the closed door;
• Where part floor covering replacement is required, junctions may occur where an existing floor finish meets the new covering. In this case, the new floor covering may differ in type and colour and can be squared off at a point such as a door way/opening or similar;
• Where junction cover strips are unavoidable, they are to be low-profile and securely fixed with no protrusions or sharp corners;
• Generally, finish external doorway openings with a protecting metal finishing angle and neatly seal between vinyl and edge strip; and edge strip and door sill;
• Where loose-laid sheet vinyl is specified, edges shall be sealed in accordance with manufacturers laying and finishing recommendations;
• Vinyl shall continue underneath fixtures such as laundry tubs, cupboards, benches, cookers and into alcoves such as fridge recess and pantry.

**Carpet**
The below table documents the standard and acceptable locations for carpet. The performance criteria for carpet are as follows:

**Carpet Type:**
• Short loop pile polypropylene; or
• Nylon flock filament pile on an impervious vinyl base.

Carpet shall:
• Comply with BCA requirements relating to fire resistance of floor linings and floor coverings;
• Shall be compliant with the following Australian Carpet Classification Scheme (ACCS) classification categories:
  - Residential Guide: Minimum of 5 stars (Extra Heavy Duty - lower to mid-range);

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**Note:** This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
Contract Guide: Minimum of 3 stars (heavy duty);
- Environmental Classification Scheme: Minimum of ECS level 1;
- Be of colours which provide reasonable light reflectance but do not highlight soiling;
- Have subtle colour variation through the carpet. Large, obvious patterns or block colours are not acceptable (block colours are more likely to show marks);
- Enable easy maintenance for domestic users to maintain a healthy environment; and
- Shall facilitate easy, smooth operation use of mobility aids, such as walkers or wheelchairs.

Installation and application
Carpet is to be installed in accordance with AS/NZS 2455.1:2007. Textile Floor Coverings – Installation.

Standard installation method to be direct stick method (no underlay) particularly if required to comply with BCA fire resistance requirements, or in LHDG Platinum Level dwellings. (See AS/NZS 2455.1:2007, Section 3.6)

Installation with a foam or rubber underlay may be acceptable if required to match existing, or if there are no fire resistance requirements. (See AS/NZS 2455:2007, Section 3.8)

Adhesive is to be low in volatile organic chemical content.

### Standard and Acceptable Floor Finishes by Room

<table>
<thead>
<tr>
<th>Room</th>
<th>Tiles</th>
<th>Vinyl</th>
<th>Carpet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedrooms</td>
<td>n/a</td>
<td>Standard (R9/P2)</td>
<td>Standard Southern Qld</td>
</tr>
<tr>
<td>Kitchen, living, dining and ancillary spaces</td>
<td>n/a</td>
<td>Standard (R9/P2)</td>
<td>n/a</td>
</tr>
<tr>
<td>Wet areas</td>
<td>Standard (B/P3)</td>
<td>Acceptable (B/P3)</td>
<td>n/a</td>
</tr>
</tbody>
</table>

### 8.1.12 Floor wastes

**General Requirements**

- Products must comply with all plumbing and drainage regulations;
- Penetrations must be small, to prevent children’s fingers being caught.

### 8.1.13 Folding doors and room dividers

Folding doors and room dividers provide temporary visual privacy to internal spaces, such as laundry facilities or infrequently used sleeping spaces, generally in one bedroom or studio accommodation.

**General Requirements:**

- Type: Domestic folding screen suspended on an overhead sliding track and fixed to the wall on one side. Provide operating handles or knobs on each side.
- Types to consider:
  - Vinyl or melamine faced MDF panels approximately 125mm wide, joined by flexible PVC strip continuous hinges;
  - Extruded plastic pre-coloured panels no more than 1500mm wide, joined by flexible continuous hinges; or
  - Vinyl fabric curtain on a folding frame;
- In the open position, the screen will be folded compactly occupying no more than 150mm in width. The folded door is to be held or clipped in the opening position;
- Colour: From manufacturer’s standard range to match existing colour scheme;
- Warranty: 12 months minimum.

### 8.1.14 Garden sheds

**General requirements:**

- Finish: Long life weather resistant finish to metal frames and wall cladding;
- Cladding material: Colorbond (or equivalent). Pre-painted to AS/NZS 2728:2013 Prefinished/pre-...
painted sheet metal products for interior/exterior building applications: Performance requirements;
- Colours: From manufacturer’s standard range;
- Door: Hinged or sliding as specified. Provide barrel bolt or hasp and staple type hardware for locking with padlock.

**Detached houses, duplexes and dual occupancy**
- 3.5m² minimum (or similar) x 1.8m high or as otherwise specified. A selection of dimensions is required to accommodate available sites.

**Apartments**
- Each ground level apartment: Small garden locker, no greater than 2100mm wide.

**Remote Housing**
- minimum area of 9m², including for highset houses.
Installation: Install on a self-draining concrete slab, with recessed edge to exclude rain and water penetration;
- Provide level or ramped entry for easy movement of wheeled garden machinery (e.g. mowers). A path is not required between the house and the garden shed;
- Garden shed must have an appropriate high strength frame, and be of an appropriate strength for the design and wind classification of the site.

**8.1.15 Hot water systems**
Gas hot water must not to be provided.
When selecting an appropriate new or replacement hot water system for an application, the relative operational energy and cost efficiency of suitable systems must be taken into consideration and balanced against the upfront cost supply and installation.
Generally, the replacement of hot water systems is 'like for like' with the exception of:
Unserviceable heat pumps systems. These must be replaced with electric storage systems.
A change to the correctly sized system to suit the bedroom count of the dwelling.

**General requirements:**
- When replacing an externally located hot water system, install the new system in the same location (space permitting);
- When replacing a hot water system that is located inside a laundry (located on the main level of a detached/cluster house, dual occupancy or duplex building). Considerations when positioning include:
  - minimise hot water draw-off losses;
  - locate central to the kitchen bathroom and laundry (preferably closest to kitchen);
- Tempering valves are required for new construction and when hot water systems are replaced or relocated, and must supply tempered water to all hot water outlets.

For older dwellings, where the electrical cable size will not sustain the load of the factory fitted element, exchange it for a lesser kW size in preference to renewing/replacing the water heater circuit.

| Recommended Hot Water System Sizes Electric (for connection to an economy tariff) |
|---------------------------------|-----------------|-----------------|
| Bedrooms | Minimum Storage | Heat Pump |
| 1-2      | 125 litres      | 270 litres     |
| 3        | 250 litres      | 270 litres     |
| 4        | 315 litres      | 340 litres     |
| 5        | min.400 litres  | 340 litres     |

**8.1.16 House numbers and signage**
House numbers and signage must:
- Be clearly visible and provide long lasting identification for houses and units;
- Provide clear directional signage and easily followed numbering in apartment and cluster developments for visitors and emergency vehicles;
- Be black or white to contrast with the background;
- Fixing: To be screw fixed or adhesive and screw fixed;
- Material and finish: Cast or laser cut aluminium or other non-corrosive metal with powder coated finish;
- Reflective numbers are preferred;
- Reflective vinyl, adhesive numbers and signage may be used in "out of reach" locations;
- Publicly visible signage must not refer to residents as 'tenants'.

**8.1.17 Kitchen sinks**
**General Requirements**
Kitchen sinks are to comply with the following criteria:
- Must be manufactured from 304 grade stainless steel, with a minimum thickness of 1.2mm;
• Depth must be approximately 150mm for LHDG Platinum Level dwellings;
• Single hole for mixer tap.

For dwelling units of less than three bedrooms:
• Single bowl with a single drainer on the left or right side;
• Minimum dimensions: 900mm long.

For dwelling units of three or more bedrooms:
• Double or 1 ¾ bowl with a single drainer on the left or right side (double drainer is also acceptable);
• Minimum dimensions: 1180mm long x 480mm wide.

Under sink protection must be provided in LHDG Platinum Level housing to prevent contact with the hot bowls by the legs of wheelchair users. This may be in the form of an attached insulation membrane supplied by the sink manufacturer or by physical protection built into the kitchen joinery.

Sink must have sound deadening material fixed to underside of drain section.

8.1.18 Kitchens

General Requirements

Cabinets
• All cupboards (except pantry and under sink) to have one fixed shelf, positioned midway, which is to be the full width and depth of the cupboard;
• A removable mid shelf may be provided under the sink, but waste pipes must not penetrate the shelf preventing its removal. All shelves to be edge stripped to colour match the interior of the cupboards;
• Overhead cupboards must be provided where possible (but not above hotplates). There must be at least 600mm clearance between the highest point of a gas burner, and any nearby overhead cupboards;
• Pantry to have a minimum of four shelves, a minimum of 300mm apart;
• Pantry and wall oven must be positioned at the ends of bench sections so that they do not interrupt the bench space;
• Provide a minimum of one bank of drawers. One top drawer is to incorporate a fixed cutlery tray (glue fixed);
• Vermin proof all penetrations into the carcass of the kitchen.

Finishes
• Cabinets: Laminated finish, with 2mm edge strips to all visible edges, coloured to match doors and factory applied using purpose made presses;
• Internal shelves: White melamine with matching edge strips;
• All board products: Highly Moisture Resistant (HMR) board;
• Kickboards: Laminated finish;
• Benchtops: Laminated finish with post formed outer edge and no sharp corners;

Hinges:
• Concealed and adjustable for height, side and depth location of doors;
• Nominal 170-180 degree opening and hold open function (unless opening against a wall, other cabinets etc.);
• Durable metal finish.

Runners:
• Must withstand 20kg loading capacity when in open position;
• Durable metal finish.

Fittings:
• ‘Lazy Susan storage units may be installed in corner base cabinets only (3/4 size, 360º turn);
• D” type handles to drawers and doors. Knob handles must not be used;
• All drawers and doors to be fitted with bump pads;
• A 450mm long, towel rail in a durable finish (not plastic) to be installed enabling convenient access from the sink.

Splashbacks:
• Must extend above kitchen bench top to underside of overhead cupboards;
• Must be suitable for use behind cooktop/range (heat/fire/shatter retardant);
• Must be easy to clean.

Cooking:
• If upright range installed, must have 100mm gap between joinery and sides of range, to facilitate cleaning with bench overhanging to provide a 10mm gap each side of the range;
• Hotplates or upright ranges must not be installed:
• Under windows;
• on benches that are not against a wall, unless a suitable up stand is provided at the back of the bench;
• at the end of a cupboard, adjacent to doors, windows, areas of heavy traffic, internal corners, or against side walls of a pantry. Note that at least
300mm bench either side of a cook top/range must be provided.

**Electrical / Socket outlets:**

- 1 x isolating switch for cooktops/stoves. (max 100mm above bench top, not behind hotplates, located at least 600mm from corners, preferably to right-hand side of hotplates);
- 1 x isolating switch for wall oven or under bench oven (if applicable);
- Minimum of two double SOs, conveniently located. Must be located at least 600mm from internal corners;
- A separate SO adjacent to, or below the microwave space. A 50mm diameter microwave cord hole (complete with grommet) to be provided as necessary;
- Single SO, 1800mm above floor, remotely switched (switch, with neon or LED indicator lamp, to be located preferably on return wall of fridge recess or on adjacent wall, maximum 1100mm off floor. refer to AS 4299-1995, Clause 4.5.11) If switch is located above a bench, locate within 300 mm of the front edge of the bench).

**Provide space for:**

- Refrigerator (may be a space or built into cabinetry, providing cupboards above);
- Rubbish bin (under sink acceptable);
- Microwave. Top of wall oven cabinet acceptable.

Ideally, hot water systems must not be in kitchen cupboards. If this is the only available solution, a separate ventilated space (cupboard has air vents to allow hot air to escape) for the HWU is to be provided inside the kitchen cupboards, allowing for easy access for maintenance and/or replacement.
### Table 8.1.18

<table>
<thead>
<tr>
<th>Item</th>
<th>LHDG Gold, Silver and General level dwellings</th>
<th>LHDG Platinum level dwellings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bench Height above finished floor level</td>
<td>900mm</td>
<td>850mm</td>
</tr>
<tr>
<td>Bench Depth</td>
<td>600mm</td>
<td></td>
</tr>
<tr>
<td>Minimum bench clearance space between hotplates and other appliances, obstructions and windows</td>
<td>300mm</td>
<td></td>
</tr>
<tr>
<td>Overhead cupboards (if installed)</td>
<td>600mm H x 300mm D, 500mm off bench top</td>
<td>600mm H x 300mm D, 550mm off bench top</td>
</tr>
<tr>
<td>Microwave storage space</td>
<td>900 – 1400mm FFL.</td>
<td>850mm-1200m off floor</td>
</tr>
<tr>
<td>Unobstructed refrigerator space</td>
<td>850mm W x 700mm D x 1900mm H (studios, 1,2 bed dwellings) 900mm W x 700mm D x 1900mm H. (3,4,5-bedroom dwellings)</td>
<td></td>
</tr>
<tr>
<td>Pantry (Studio, 1 bed, 2 bed dwellings – 1 door only)</td>
<td>600mm W x 600mm D x 2000mm H</td>
<td></td>
</tr>
<tr>
<td>Pantry (3-5 bedrooms – 2 door)</td>
<td>Up to 1200mm W x 600mm D x 2000mm H</td>
<td></td>
</tr>
<tr>
<td>Pantry Shelves</td>
<td>Top shelf 1650mm off floor. Other 3 shelves evenly placed.</td>
<td></td>
</tr>
<tr>
<td>Under bench cupboard doors – maximum single door width</td>
<td>500mm</td>
<td></td>
</tr>
<tr>
<td>Minimum clear width between benches (or to dining table in a combined kitchen/dining table in a combined kitchen/dining area as per figure 3)</td>
<td>1200mm (Studio, 1 bed, 2 bed) 1350mm (3,4,5 bedroom)</td>
<td>1550mm</td>
</tr>
<tr>
<td>Minimum bench space between the cook top and oven or refrigerator</td>
<td>800mm</td>
<td></td>
</tr>
<tr>
<td>Width required for wall oven or upright stove</td>
<td>600mm</td>
<td></td>
</tr>
<tr>
<td>Top of cabinet around a wall oven (May serve as microwave shelf)</td>
<td>1150mm to 1200mm</td>
<td></td>
</tr>
<tr>
<td>Minimum distance between wall oven and internal corner of the front edge of a bench</td>
<td>600mm</td>
<td></td>
</tr>
<tr>
<td>Minimum width of removable cabinets under or partly under sink</td>
<td>n/a</td>
<td>820mm W</td>
</tr>
<tr>
<td>Minimum width of removable cabinets under hotplates</td>
<td>n/a</td>
<td>820mm W</td>
</tr>
</tbody>
</table>

**Note:** This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
8.1.19 Laundry tubs
For tub size requirements refer Appendix 2. Additional requirements for laundry tubs to include:

- Laundry tubs to be stainless steel;
- Tub to be installed in a compact configuration (narrow side against rear wall);
- The tub must provide a suds bypass option on either side;
- Under bowl protection to be provided in LHDG Platinum Level dwellings to prevent contact with the tubs by the legs of wheelchair users. This may be in the form of an attached insulation membrane supplied by the sink manufacturer or by physical protection built into the laundry joinery.

8.1.20 Lifts
This standard applies to vertical elevator lifts only, intended for the communal use of tenants on the upper floors of apartment complexes. It does not outline requirements for other lift types (e.g. stair lifts and low rise platform lifts) which may be required for particular tenants, in response to identified need.

Design requirements for lifts include:
- Crime prevention through environmental design (CPTED) principles;
- Return to ground feature is required;
- Stretcher capacity is not required;
- The location of the site must be within a regular lift service area, to ensure reasonable access to maintenance and emergency call out services;
- The installation and aesthetic treatment of a lift must avoid stigmatising the complex/dwelling;
- More than one lift to be considered, depending on the lift capacity and the size and design of the complex.

Installation of lifts in existing dwellings
The general criteria for lift installations in existing dwellings (retrofits) include:
- The lift must be necessary to improve the quality of life, sustainability of tenancy, and safety and accessibility of tenants in that complex;
- The remaining useful life of the building must be compatible with the expected useful life of the lift (around 20 years);
- The lift installation must provide a cost effective solution, commensurate with the number of tenancies in the complex requiring the lift. Total costs must be considered, including demolition, modifications, capital, operating and maintenance costs over the life of the lift;
- These costs must be considered against other options such as relocation, or nonmechanical access alternatives;
- In retrofitting lifts, resulting (foot) traffic patterns require consideration to ensure that new paths of travel do not cause nuisance to tenants;
- Installation of lifts must allow continued access for tenants and emergency services to all individual, occupied dwellings during the construction and installation process;

Applicable Australian Standard:
(Not: Section 2: Lift car size, nominates minimum lift car internal dimensions of 1100mm x 1400mm. This is only acceptable for retrofit applications. Lift car minimum internal dimensions to be provided must be (1400mm wide x 1600mm deep) for all new construction.

8.1.21 Manholes, pits, covers and grates
Pits and manholes must:
- be designed to enable crossing by pedestrians, bicycles, wheelchairs, cars, furniture vans; trade vehicles and garbage trucks, to AS 3996-2006 Access covers and grates;
- Assist with controlled site drainage;
- Be concrete or PVC. Where PVC pits and surface drainage is used, cast in concrete in trafficable areas or install a 20MPa concrete collar surround.

Manhole covers must:
- Be installed with a matching steel frame. Covers are to have a slip-resistant, patterned finish.

Requirements for surface grates in pedestrian areas:
- Grate spacing and direction are to be designed to prevent the catching of wheels of wheelchairs, bicycles and prams in accordance with AS 1428.1-2001 Design for Access and Mobility Part 1: General Requirement for Access – New Building Work, Clause 12;
- Grates in paved areas to have a slip-resitant, charcoal finish;
• Grates in garden and lawn areas to be hot dip galvanised.

8.1.22 Mechanical cooling

Ceiling fans

Ceiling fans are to be provided to all bedrooms, multi-purpose spaces and living/dining areas. The minimum ceiling height in habitable rooms must be nominal 2700mm.

Minimum requirements for ceiling fans include:
• a minimum diameter of 1200mm;
• Heavy duty sealed bearings;
• Aluminium or stainless-steel blades;
• A reversible motor;
• Capacity to have a light installed;
• A minimum of a three-speed controller;
• A finish of either durable white enamel, or brushed chrome;
• J hook mounting method of installation.

8.1.23 National Broadband Network (NBN) Equipment

NBN Co. (www.nbnco.com.au) was established in 2009, to design, build and operate Australia’s new broadband network. It is a wholly-owned Commonwealth company (i.e. a Government Business Enterprise) and is represented by Shareholder Ministers.

Provision for NBN equipment is required for new construction projects, in accordance with the NBN Co. guideline documents:
- Residential Preparation and Installation Guide: SDUs and MDUs; or
- Preparing for your NBN Sky Muster Service (for regional and remote areas, not planned for NBN fibre optic cable infrastructure. NBN Co. can advise these locations)

Housing Services requirements for NBN equipment

Equipment and installation requirements (non remote):
Section 4 of the Residential Preparation Guide: SDUs and MDUs, outlines space and locational requirements for the installation of NBN equipment inside dwellings. Mounting locations (Section 4.4) may include:
• An Open Enclosure (refer to section 4.4.3 for design requirements); OR
• A Home Distributor (Refer 4.4.4 for design requirements, and Appendix C for ventilation requirements);

Note that Open Wall Locations (as described in Section 4.4.2) are not acceptable.

In addition to NBN Co requirements, the Open Enclosure or Home Distributor must include a small shelf, suitable for a router, and a double GPO (rather than the single GPO required by NBN Co).

Other requirements:
• For all dwelling types other than one-bedroom apartments, NBN equipment must be located in a common space, accessible by all residents (i.e. not in bedrooms or bedroom wardrobes);
• Location must be easily accessible, yet unobtrusive, and must not restrict furniture placement. Suitable locations could include hallway or dining area walls;
• Home Distributors (non-remote) should be thoughtfully designed and integrated into the interior space. Provided that other NBN Co. requirements can be met, preference is for Home Distributors to be recessed, with a door that that is similar in colour the surrounding wall;
• Space occupied by NBN equipment must not encroach on other spaces. Minimum dimension requirements for other spaces (e.g. broom cupboards, linen cupboards, wardrobes) must be met without including the space occupied by the NBN equipment;
• For Platinum Level and Gold level dwellings, the shelf and GPO must be located within 900mm to 1100mm of the finished floor level.

8.1.24 Pressed steel door frames

General requirements for pressed steel door frames include:
• Must be resistant to impact damage from moving wheelchairs, etc;
• A high level of corrosion resistance to external frames in marine and corrosive environments, and to internal frames in wet or steamy bathrooms;
• Material: Coated steel sheet, hot-dipped zinc-coated or aluminium/zinc-coated;
• Type: Pressed zinc coated steel sections including necessary accessories such as buffers,
strike plates, spreaders, mortar guards, fixing ties or brackets, and cavity flashing with suitable provision for fixing hardware, pre-finished with protective coatings, built in or fixed to prepared openings;
- Door clear opening widths (clear of the door leaf, with door open) as per Livable Housing Design Guidelines:
  - General Level: 820mm
  - Gold Level: 850mm
  - Platinum Level: 900mm.

**External door frames:**
- Minimum steel thickness: 1.4mm;
- Design: Where external security screens are required to external doors, frames are to be provided with double rebates to suit 40mm door (opening in) and 20mm nominal security door (opening out). Doors to finish flush with the face of the frame when in the closed position.

**Internal door frames:**
- Minimum steel thickness: 1.1mm and dimensioned to suit wall construction;
- Rebated for internal hinged door where required;
- Sliding door frames may also be specified.

8.1.25 **Ramp systems**
Ramp systems must only be installed in response to identified client need (see “Expert Advice’), to improve access for a resident with mobility issues, including those who cannot use stairs, utilise wheeled equipment, or who mobilise in a wheelchair. Refer to AS 1428.1-2009 Design for access and mobility General requirements for access – New building work as a guide when designing a ramp for a new property, or as a home modification.

**External Ramps:**
- Modular ramps can be used as a short term interim measure (up to three months) whilst a client awaits construction of a permanent ramp; however due to the cost of hiring ramps, this should only be considered where there are excessive costs or waiting times for building services.
- Permanent concrete or timber ramps are considered appropriate long-term solutions and offer an opportunity to landscape around the ramp.
- Location: Ramps can be stigmatising to a property, so careful consideration must be taken with the location. The ramp must also be constructed so as to not create a trip hazard or obstruct access for other people accessing the property.
- Materials: Consideration must be given to the longevity, potential glare problems, heat retention of the ramp and handrail materials, and noise (both in material heat contraction and expansion and walking);
- The materials and colour of ramp and handrails must complement the external materials and colours of the house.

**General considerations:**
- Ramp edges, which can be thin, must not crumble or deteriorate quickly;
- The risk of tripping on the edge of the threshold ramp must be minimised;
- Slip resistant materials must be used;
- Recommended for use only where it is difficult or impractical to raise the external pavement to within 10mm below the inside floor level;
- External threshold ramps must be made of aluminium. Rubber or rubber composite is to be used only if deemed appropriate for the client’s specific needs. Timber is not recommended;
- The finished surface of threshold ramps must be slip-resistant;
- Width of travel: Minimum width as necessary to 450mm maximum. It is preferred to restrict the width of travel to a minimum, so the threshold ramp does not intrude unnecessarily into a cross path of travel.

8.1.26 **Roof Vents (Vented soffits and gable vents)**
Roof vents must:
- maintain weather proofing;
- maintain vermin control;
- ensure bird proofing, in particular to avoid lice infestations.

Requirements for soffit linings include:
- Proprietary or manufactured linings, with controlled and simple patterned vent penetrations which are to be distributed evenly around the roof perimeter;
- Finish: 6mm perforated FC lining ready for painting, or prefinished, low maintenance lining.
Gable vents may be custom manufactured or off-the-shelf items and must be:
- Of total accumulative clear area per roof to match soffit lining ventilation unless supplementary roof mounted vents are used in conjunction;
- Weather proof against rain penetration;
- UV resistant;
- Low maintenance; and
- Bird proof and vermin proof;
- Low maintenance materials must be provided such as powder coated aluminium.

8.1.27 Roofing
Design Guidelines:
- Simple roof shapes are preferred. Avoid short ridges, ‘bastard’ hips, and complicated roof plumbing;
- Box gutters and concealed guttering are not acceptable;
- Avoid large skillion roofs;
- Maximum roof pitch 26 degrees;
- The roof design and installation must prevent birds/possums/vermin from entering the roof/ceiling space.

Requirements for roofing include:
- Contractors are required to submit any installation certification required under the Building Act 1975, where roof cladding type is changed (e.g. tiles to metal sheet);
- Provide passive roof vents;
- Corrugated pre-coated metal roofing (e.g. Colorbond or equivalent) complying with AS/NZS 2728:2013 Prefinished/pre-painted sheet metal products for interior/exterior building applications: Performance requirements.
- Colour range from manufacturer’s standard light reflective colour range;
- Steel roofing for dwellings within 200 metres of breaking surf must be deemed by the manufacturer as suitable for use within the intended coastal location;
- 150 mm quad gutters, front lower than back to allow front overflow (Slotted overflows are unacceptable), or 150 mm square gutter with provision for overflow (e.g. Colorbond or equivalent);
- Full gutter leaf guard to be fitted only if required due to high volume of tree debris is evident. Nylon leaf guards are not to be used.

Roof plumbing and accessories:
- Generally, should be pre-coated metal roofing Colorbond (or equivalent) pre-coated finish;
- Materials must be compatible to avoid deterioration or corrosion between reactive materials;
- Avoid rainwater running from inert finishes (including Zincalume or equivalent) on to galvanised surfaces;
- Gutters, downpipes and accessories to complete the waterproofing system.

8.1.28 Security and insect screens for doors and windows
Security screens must be installed to operable sections of external doors and windows for all existing and new dwellings, including all floor levels for multi-level dwellings, except to doorways that are required by the National Construction Code or other legislation to have a fire door with self-closing or automatically closing mechanism.

General requirements for security screens include:
- When installed to windows in habitable rooms (i.e. living areas and bedrooms), egress from the room in the event of a fire must be considered;
- Must be keyed alike for an individual property;
- Security bars are not acceptable;

Security screens to doors must:
- have a door seal / bug strip at the bottom of the door;
- have a triple lock;
- not have door closers, unless required due to a tenant’s identified specific needs;
- If in an area where a hinged security door would present a safety hazard (e.g. onto a narrow landing) a solid core entrance door with an operable panel for ventilation must be considered;
- Powder coated aluminium jamb adaptors, to be used to strengthen door jambs less than 30mm thick when 30mm screws to hinges and striker plates do not penetrate studs or equivalent full height reinforcing.
Security screens to windows must:
- Typically, be fixed;
- Houses only: provide a means of escape from bedrooms in the case of a fire. Acceptable methods of escape through a window could include:
  - Breaking a fixed glass panel, provided that:
  - The glass is breakable (i.e. not polycarbonate or other non-breakable glass) and/or;
  - The fixed panel is not covered by fixed security screens or bars.
Or
- Through an operable security screen, consistent with the requirements for the protection of openable windows in accordance with the National Construction Code. Where bedrooms are grouped together provide one operable security screen, preferably in a bedroom furthest from the living areas;
- If an external window hood or fixed shade screen is installed, it must not restrict the opening of the screen;
- For operable screens, have a locking mechanism. Ensure the latches and locks are visible in poor light conditions;
- Use concealed, tamper resistant fixings. Pop riveting is not acceptable.

There are two different security screen types which may be acceptable, depending on the application. Features and performance criteria requirements for each type are outlined below.

**Stainless steel security mesh screens**
Requirements for stainless steel security mesh screens include:
- Must be constructed of stainless steel security mesh secured in an aluminium frame.
- Must require only normal cleaning with readily available cleaning products, in order to maintain the manufacturer's warranty.
- Frame to be an anodised or powder coated finish as specified, in a plain colour (not wood grain finish). Stainless steel mesh to be powder coated black. Stainless steel mesh must be secured to the frame in such a way that the powder coated finish is not compromised.
- Hinged security screen doors must include a lock with external key entry that can be locked manually from the inside with a large snib (i.e. without the key). Snib must lock the entire lock system.

**Aluminium diamond grille screens**
Security screens of this type must:
- Have an expanded aluminium (diamond) grille, preventing a probe of 50mm x 25mm x 15mm from passing through.
- Be an anodised or powder coated finish as specified. For retrofit applications, screens to be powder coated to match existing, unless specified otherwise. Grille may be black for mechanically fixed grilles;
- Have replaceable, integral, black fibreglass or aluminium insect mesh. Small mesh is acceptable for areas that are affected by midges or sand flies; however small mesh will reduce ventilation;
- Have a polycarbonate lock guard on the inside of the door;
- Hinged security screen doors must include a lock with external key entry that can be locked manually from the inside with a large snib (i.e. without the key). Snib must lock the entire lock system.

<table>
<thead>
<tr>
<th>Acceptable security screens</th>
<th>Security screen type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Stainless steel security mesh</td>
</tr>
<tr>
<td>Multi-unit construction</td>
<td>required</td>
</tr>
<tr>
<td>Detached houses and duplexes</td>
<td>acceptable</td>
</tr>
</tbody>
</table>

**8.1.29 Sliding wardrobe doors**
General requirements:
- Operation to be smooth and must require minimum effort for use by persons with a disability.
- Handles or pulls to be large enough for easy use by persons with reduced hand power.
- Shelving to be located away from room corner (or position of bed head).

**Wardrobe suites – medium density fibreboard (MDF) sliding doors:**
- Powder coated aluminium framed doors, pelmet and tracks.
- Colour: White or to match existing.
- Doors fitted with rollers at base on floor track.
• Infill material: 6mm to 7.5mm medium density fibreboard faced with selected vinyl sheeting.
• Inside face of doors to be similarly finished or painted to seal the inside face.

Wardrobe suites - hollow core doors:
• Tracks and rollers: Powder coated aluminium tracks.
• Proprietary items designed for the applicable door loadings.
• Doors: Standard interior flush panel hollow core doors with hardboard facings
• Finish: Painted.
• Pulls: Full height timber moulds to vertical edges.

8.1.30 Smoke alarms
Hard wired, auditory smoke alarms are provided to all public housing dwellings in order to comply with legislated requirements. Selection and installation of smoke alarms must be in accordance with all applicable legislated requirements and codes.

Smoke alarms must be hard-wired to the electricity supply, with a rechargeable, non-removable backup battery. The battery must have a ten-year warranty.

Photoelectric smoke alarms should normally be used. However, using a photoelectric alarm may pose a significant risk of false alarms in some locations (e.g. outside a bathroom or laundry entrance where steam is generated). If the only suitable location for the alarm poses such a risk, an ionisation type alarm may be considered for installation.

Warning devices for tenants with impaired hearing
In response to identified need, tenants with impaired hearing may require visual and/or vibrating warning devices to alert them to danger in the event of a fire.

Smoke alarm subsidy scheme
The Smoke Alarm Subsidy Scheme is funded by Queensland Fire and Emergency Services and administered by Deaf Services Queensland. Under the scheme, eligible hearing-impaired tenants receive a fully wireless smoke alarm, complete with auditory and visual alarm, and vibrating pad, at minimal cost to them.

Public housing tenants are eligible to apply for this scheme. Existing, auditory smoke alarms in the dwelling can remain in place, with the subsidised wireless device/s installed by the tenant as an additional system.

Hard wired visual warning devices
If a tenant with impaired hearing is unable to access the Smoke Alarm Subsidy Scheme, or if additional devices are required, visual warning devices should be installed. Requirements include:
• A minimum 15 Watt (4.2 Joules) white strobe light with a 90 per minute flash rate;
• Hard wired;
• A power on indicator;
• A test button;
• The ability to be interconnected to existing smoke alarms;
• The ability to operate in conjunction with a vibrating pad (to alert tenant to fire when sleeping);
• A rechargeable battery backup system.

Reference documents and websites:
• AS1603.11-2010: Automatic Fire Detection and Alarm Systems. Part 11: Visual Warning Devices. (Sections 2.5, 2.6.2);
• HB123-1999: Guidelines for selection, location and installation of visual warning devices in buildings. (Chapter 2: Strobe-type visual warning devices);
• Queensland Fire and Emergency Services: (https://www.qfes.qld.gov.au/)
• Deaf Services Queensland: (www.deafservicesqld.org.au)

8.1.31 Television antennas
Appropriate digital antennas must be provided:
• In all new construction
• To vacant properties intended for reletting, where no antenna exists.

Antennas in either single or multiple dwellings must ensure adequate reception (for the area) of available free to air channels. To the extent possible, antennas must be located out of sight from the street and appropriately fixed for the site’s design wind speed.

Where a faulty existing antenna is unserviceable or not cost effective to repair it must be replaced with an appropriate digital antenna. Where necessary, cabling to the internal television socket/s must also be replaced.

Note: This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
8.1.32 Termite barriers and controls
Acceptable types of termite barriers and controls include:

- Physical barriers: required for all new construction projects. Chemical barriers are not to be provided where there is a viable physical barrier option.
- Physical or chemical barriers are acceptable to be used for retrofit works. Chemical termite barrier systems may be appropriate in circumstances of termite infestation in existing dwellings.

Applicable Australian Standards:

- AS 3660.1 - 2014: Termite management – New building work
- AS 3660.2 - 2000: Termite management – In and around existing buildings and structures - Guidelines.

Termite barriers and controls must comply with the following criteria:

- Provide a safe, low environmental impact product, eliminating the use of chemical treatments wherever possible;
- Provide a continuous physical barrier to subterranean termites and subsequent termite attack on the structure, fit out and contents of the building, for the life of the building.
- Physical barriers and ancillary materials are to provide movement flexibility in the barrier and the jointing systems to maintain the integrity of the barrier.
- Installers must be appropriately trained and licensed to perform termite control systems and provide an appropriate warranty, covering:
  - Reinstallation necessitated by termite attack;
  - Replacement of timber attacked by termites; and/or
  - Removal and reinstatement of building contents, whether built-in or not, as necessary to replace affected timber.

Physical barriers which also contain a chemical impregnation (composite products) may be used for new construction projects providing that the products Material Safety Data Sheet declares that it is not classified as hazardous according to the criteria of Safe Work Australia and not a dangerous good according to the Australian Dangerous Goods code.

8.1.33 Thermal insulation

Performance Criteria

- Insulation will be of a batt or blanket material type only
- Loose fill material, temporarily bonded material or foil insulation is not acceptable.

Installation / Application

- The entire ceiling area is to be insulated with the exception of eaves, awnings, ceilings to outbuildings, and open carports.
- Where roofs are stepped on different levels ensure externally exposed walls enclosing roof space are insulated to the same degree as the roof.
- Where insulation is being retrofitted, roofs with a low pitch or raked ceilings may prohibit installation. Where this occurs, the provision of insulation must be deferred until the ceiling/roof is replaced.
- Wall areas are to be insulated only where noted in project documentation.

8.1.34 Time delay switches

All switches must be robust and tamper resistant.

Photoelectric switch requirements:

- Suitable for connection to single phase supply.
- Inbuilt surge protection from lightning.
- Suitable for installation in locations exposed to the weather.
- Inbuilt time delay operation.
- Constructed of UV stabilized material.

Time delay switch requirements:

- Standard pattern in size;
- Pneumatic push button type operation;
- Minimum adjustable time operation period of up to 10 minutes;
- Minimum International Protection rating of IP23;
- White in colour.

Time switch requirements:

- Analogue/electromechanical type;
- Quartz movement;
- 24-hour program to control communal lighting.
- Weekly program to control evaporative cooling units;
• Programmable by captive segments;
• Internal reserve system providing a minimum supply failure reserve of 150 hours;
• Minimum switching time of 15 minutes for the 24-hour model and 2 hours for the weekly model.
• Manual override;
• Suitable for din rail or surface mounting. (The din rail is a standardised 35mm wide metal rail that is used for mounting electrical equipment).

8.1.35 Vanity units and wall cabinets

Storage is required in the bathroom for personal care equipment and medication. It may be provided by way of storage under the vanity bench, or by a wall hung cabinet. The location of storage must be informed by the abilities of the residents and the risks associated with the storage of medication.

Wall hung vanity units (i.e. not touching the floor) are required for new construction, and are required for upgrades and modifications (if plumbing allows), enabling future replacement without affecting floor tiling.

Materials: vanity units
• General Level: Drop-in, or integral with moulded polymer benchtop;
• Silver, Gold and Platinum Level: Semi-recessed;
• Basin colour: White;
• Carcase: Coloured melamine board, MDF, MR or fully sheeted with high-pressure melamine laminated sheet;
• Handles: Preferably D-pulls with satin chrome finish;
• For wall hung vanity units, provide legs for extra strength.

Platinum level dwellings: Provide a vanity with a bank of drawers and a semi-recessed basin; with adequate circulation space (refer to AS 1428.1-2009, Figure 46). Position the basin to the end of the vanity unit that is away from the corner. Provide clearance under vanity. (refer to AS4299-1995, Figure 4.4: washbasin clearances)

Materials: wall cabinets
• Prefabricated proprietary cabinets are preferred for upgrade work;
• Metal construction finish; powder coated or baked enamel white;
• Cabinets may be surface mounted, recessed or semi-recessed;
• Doors may be single or double, swinging or sliding.

8.1.36 Tapware

Tap ware must:
• Be free from sharp edges and points;
• Be free of gaps and voids (to avoid catching fingers) and be easily gripped;
• Solid brass construction, with a chrome or satin chrome finish. Secondary components such as coloured indicators, caps and knobs, may be of plastic or similar;
• Have temperature indicators which are easily visible and universally recognisable;
• In the case of a shower over a bath, have separate shower and bath tap sets. Diverters are not permitted;
• Have ceramic discs, enabling easy use with minimal pressure.

Shower heads
• Hand-held shower equipment, and shower heads (including arm and rose) must be water efficient, long-lasting and low maintenance;
• General requirements include:
  • Finish: chrome on metal for body and arm. Secondary components such as coloured indicators, caps and hoses may be either chrome or wear-resistant, long-lasting plastic;
  • No loose or easily-removable parts;
  • Water saving shower products shall be a complete unit. Retrofitted flow control valves are not acceptable.

Platinum Level dwellings:
• Shower kit sliding cradle on vertical stainless-steel rail or an L-shaped grab rail;
• Grab rails to AS 1428.1 (2009) Design for access and mobility requirements;
• Hose: 1500mm long reinforced PVC. Ensure that the shower head does not reach to the rim of the toilet at the full extension of the hose;
• Ancillary components: Chrome on metal;
• Adjustable shower head must be installed on the shower head holder support rail;
• Have a sliding handpiece cradle with friction stay.
• Allow the shower head to be positioned at various angles and heights (between 1000mm and 1800mm above the floor).

Other dwellings:
   Wall-fixed shower rose with a fixed arm.
May have adjustable swivel head but no adjustable arm.

<table>
<thead>
<tr>
<th></th>
<th>General, Silver and Gold Level dwellings</th>
<th>Platinum Level dwellings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basin</td>
<td>Single lever, basin mounted mixer.</td>
<td>Single lever, basin mounted mixer with extended, accessible lever.</td>
</tr>
<tr>
<td></td>
<td>Optional (for replacements): Basin mounted tap set with fixed spout (separate hot and cold taps)</td>
<td></td>
</tr>
<tr>
<td>Shower</td>
<td>Single lever wall mounted mixer with wall mounted shower rose on fixed arm. Optional (for replacements): wall mounted shower set (separate hot and cold taps)</td>
<td>Single lever mixer. Combination grab bar/shower rail with friction fitting for hand held shower. 1500mm flexible hose must not reach the rim of the toilet when fully extended.</td>
</tr>
<tr>
<td>Bath</td>
<td>Single lever wall mounted mixer, with fixed bath spout. Optional (replacements): wall mounted bath set with fixed bath spout. (separate hot and cold taps)</td>
<td>n/a</td>
</tr>
<tr>
<td>Kitchen sink</td>
<td>Single lever, sink mounted kitchen mixer tap with swivel spout</td>
<td>Single lever, sink mounted kitchen mixer tap with extended lever and swivel spout.</td>
</tr>
<tr>
<td>Laundry sink</td>
<td>Single lever mixer tap with swivel spout, mounted on tub or wall.</td>
<td>Single lever mixer tap with swivel spout, mounted on wall</td>
</tr>
</tbody>
</table>

8.1.37 Water tempering

The Australian Standard for hot water systems, AS/NZS 3500.4 requires water to be delivered to sanitary fixtures at a maximum temperature of 50 degrees Celsius to minimise the risk of scalding.

Standard industry practice has been to locate the tempering device as close as practical to the hot water storage tank. AS/NZS 3500.4: Plumbing and drainage, Part 4: Heated water services, requires that tempering valves shall be ‘readily accessible.’ The standard does not define readily accessible and as such, there is inconsistency in the location of tempering valves.

Additional requirements to the Australian Standards regarding water tempering, include:

- **Hot water tempering valves** are to be located at the hot water system, regulating temperature to all hot water outlets, including the kitchen and laundry. Hot water tempering valves must be provided:

  In all new construction:

  - When hot water systems are replaced or relocated (except in cases where a continuous flow hot water unit that is factory set to deliver hot water at a maximum temperature of 50 degrees is being installed). If installing upon replacement of a hot water system, ensure that any other tempering devices and thermostatic mixing valves (i.e. to bathrooms), have been removed.

  When bathrooms or ensuites are upgraded:

    - Thermostatic mixing valves:
      - Are identified by the stop valves located on the cold and hot water inlet pipes. They feature a rapid shutdown capability should the temperature exceed the set temperature.
      - Must only be installed when they are identified as a requirement to meet the physical requirements of persons with a disability (where a tempering valve is not sufficient) as they must be inspected and serviced annually by a licensed plumber with mixing valve accreditation, and have a life expectancy of between five and ten years (depending on water quality)
      - The valve is generally located under a vanity basin or behind a removable panel in the room or close by.

In response to risks of Legionnaires’ Disease, warning stickers must be installed on all gas and electric storage hot water system, providing advice on safe usage. Continuous flow gas hot water systems do not store water and therefore do not concentrate legionella.

8.1.38 Materials

**Internal Colour Schemes**

Colour contrast between building elements:
Where possible, provide neutral calming colours with a luminance contrast between the following adjacent surfaces: (Refer requirements as per AS1428.1-2009 Appendix B. (minimum 30% luminance contrast).

- Wall and floor covering;
- Door leaf and adjacent wall;
- Bench top and splashbacks;
- Bench top and floor;
- Shower floor tile;
- Bathroom floor tile;
- Bathroom wall tile;

Floor finishes

General floor covering requirements:
- Living, dining, kitchen and corridor: Sheet vinyl (R9/P2) or tiles (R9/P2) (Note: sheet vinyl flooring to be provided only for Platinum Level). If vinyl is provided, a row of tiles is required and must be provided at all external door thresholds (including sliding doors);
- Bedrooms: Sheet vinyl (R9/P2) or carpet only, depending on project and location. Note: Carpet to be provided only in climate zone 5 and the part of climate zone 2 from Fraser Coast and south. Refer BCA Vol 2. Fig. 1.1.4. for a map of Climate Zones;
- Wet areas: Provide tiles (B/P3) only;
- Laundry or laundry recess: Provide tiles (B/P3) or vinyl (B/P3) only;
- Covered outdoor living areas: Slip resistant concrete finish only;
- Pavers not to be provided in any outdoor areas.

All proposed external and internal colour schemes are to be submitted and approved by the Department.

8.2 Civil

8.2.1 Stormwater Drainage
- Provide a drainage system to suit the fully developed upstream catchment taking account of overland flows from adjacent properties;
- Provide a drainage system to all buildings, road works and car parking within the site, design to eliminate ponding or standing water;
- Design of the stormwater drainage system shall be based on methods outlined in in the relevant Australian Standards;
- Collect all roof water from buildings, covered areas and discharge to the stormwater system;
- Discharge stormwater to the Local Authority legal point of discharge;
- Field drains where crossed by paths or near assembly areas or covered links shall be fitted with flush grates suitable for foot “heel guard” and wheelchair traffic;
- All stormwater civil designs are to be checked by a registered professional engineer of Queensland and the registration number is to be shown on the drawings.

8.3 Electrical

8.3.1 Internal Lighting Requirements:
- Provide energy efficient lighting to all internal areas (including the entry/foyer, corridors and multi-purpose area in 1-bedroom apartments), carports/garages, covered outdoor living areas and outside external doors;
- Spaces that may be combined in some dwellings such as living, dining, kitchen and multi-purpose area must have separately switched individual lighting that reflects likely furniture arrangements;
- Provide an additional separately switched light where the lit floor area exceeds 12m²;
- Lighting to provide uniform luminance and be located so that light emitted is not affected by the moving blades of a ceiling fan. Provide an additional fluorescent light on the wall above the mirror in bathrooms and task lighting above the kitchen sink;

8.3.2 Communal Lighting
Communal lighting is required on multi-unit sites to car parking areas, pedestrian pathways, building entrances, communal spaces (including outdoor communal landscaped areas) shared stairways and access balconies.

Requirements for communal lighting include:
- Photoelectric sensors are required in order to turn lights on at sunset. High level (bright) lighting (e.g. near car ports) should include a timer to turn lights off at midnight. Low level lighting that is contained so as not to ‘spill’ into dwellings (including neighbours’ dwellings), or is located close the ground (such as bollard lighting along pathways) should be capable of being left on until dawn.
• Lights to individual landings outside entry doors to apartments must be individually switched with time delay function. These lights are not considered communal lighting. If communal lighting is required near apartments for safety, then this should be provided.
• Must be separately metered at the main switchboard and have a connection to the electrical distributor metering equipment.
• For testing purposes, all communal lighting and power is to be controlled by a single switch that can override the time switch and PE switch.
• Non-glare light fittings or an appropriate glare shield must be used when residents in the unit complex or neighbouring properties are inconvenienced by glare.
• Fittings must be cost effective, durable and support readily available, cost effective, energy efficient globes.
• Each lighting and power circuit must be protected by a separate, combined residual current device (RCD).
• Photoelectric sensors should not be mounted on top of meter boxes, and should be mounted in a position that discourages tampering with the sensors.

Requirements for communal lighting placement include:
• Must be sufficient to illuminate paths of travel and landscaping areas immediately adjacent to paths;
• Must facilitate safe cleaning, maintenance and globe replacement;
• Must be fitted over landings and never over stairs, whether wall or ceiling mounted;
• Ceiling lights must be not more than 2700mm above the level of the landing;
• Wall lights must not be more than 2100mm above the level of the landing;

8.3.3 Power and Antenna Outlets

Television antennas
Antennas in either single or multiple dwellings must ensure adequate reception (for the area) of available free to air channels. To the extent possible, antennas must be located out of sight for the street and appropriately fixed for the site’s design wind speed.

8.4 Fire

8.4.1 Water Supply for Fire Services
Investigate the adequacy of the Local Water Authority water supply, noting the flow rates at maximum and minimum pressures as established by the Authority. Where required, request a hydraulic model from the Water Authority.

8.4.2 All ancillary services such as shielding structures must be not be obtrusive. Providing a single shielding wall is not an acceptable outcome. A Fire rated booster enclosure must be provided that complies with Australian standards and QFRS’s requirements. It shall be submitted for approval and included in the design scope.

8.5 Hydraulics

General requirements
Existing site services shall be utilised and extended where possible. Consult with Local Water Authority to determine location and type of service connections required for compliance.

8.5.1 Water Supply
• Hot and cold-water supply shall comply with all relevant Australian Standards except where noted in these design requirements. Velocity up to a maximum of 2 m/s and static pressure of between 350 and 500 kPa;
• Provide Local Authority acceptance of water connection when submitting documentation for plumbing and drainage approval;
• Electric hot water units are to be provided only;
• Hot water supply to all unit hot water outlets is to be designed with tempering valves, limiting the temperature to below 50ºC;
• Thermostatic mixing valves are not to be installed and are only provided when supported by an Occupational Therapist’s recommendation;
• Platinum Level unit hot water supply pipework is not to exceed 10 metres.

8.5.3 External Taps
• Ground floor units are to be provided with a hose tap adjacent to the patio, within approx.1 metre mounted to a wall or post for ease of access;
• Hose taps are not to be installed within the patio area. Valves and devices shall not be located higher than 1.5 metres from finished floor levels;
• Note: no garden irrigation system is to be provided.

8.5.4 Roof-Water, Run-Off and Collection Gutters
• Eaves gutters shall be provided to all roofs unless specifically briefed otherwise and designed to the relevant Australian Standard;
• Overflow relief shall be provided at the front of the gutter to prevent overflow at the back of the gutter;
• Box gutters shall be avoided unless specifically approved otherwise;
• Where the location, type and height of trees indicate that there is likelihood that leaves may clog gutters, provide metal leaf guards to all gutters;
• Leaf guards shall be removable for gutter cleaning.

8.5.5 Downpipes
• Downpipes shall be designed (sufficient number, spacing and size) for rainfall and storm events of Average Recurrence Interval (ARI) 20 year, in accordance with the Australian Standards.
• The designer when requested is to provide all calculations for the sizing and spacing’s of the gutters and downpipes.
• All downpipes shall discharge into the stormwater drainage system.

8.5.6 Storage and Detention Tanks
• The piped rain water system connecting to the storage tanks holding water (Wet System) is to be designed for vermin control;
• A First Flush Device is not to be used as a method of draining pipes that are designed to hold water (Wet System);
• Above ground tank intakes shall be screened with fine stainless-steel wire mesh against entry of foliage, insects and vermin;
• Screen intakes shall be designed to effectively shed leaf debris so as not to hold material in the intake that could breed insects and allow eggs and larvae to penetrate the screen and enter the tank;
• Intakes shall be securely fixed with vandal resistant fixings, to prevent unauthorised access;
• Below ground tanks may use screened inlets if they are suitably sized;
• Overflow outlets shall be piped to the stormwater system and to discharge through Frog Flaps into grated stormwater pits;
• 1mm mesh gauze normally provided in the tank outlet is to be removed;
• Plans are to indicate the vermin control measures;
• Wet system downpipes shall automatically drain after a rain event;
• Wet system downpipes shall have inspection openings located for easy access for maintenance.

8.5.7 Sewerage Drainage
• Provide Local Water Authority acceptance of connection when submitting documentation for plumbing and drainage approval;
• Provide an overflow relief gully for each site;
• Each building is to have a disconnector gully, the grate level is to achieve the maximum height separation from the lowest fixture grate within that building;
• Provide all grate, floor level and surface levels at the grate location;
• Reflux valves are not to be installed unless permission has been provided by the BAS, Hydraulic Section;
• Floor waste gullies which receive the discharge from washing machines are to be installed with anti-foaming devices;
• All drainage inspection openings are to be brought to the surface.

8.6 Structural
8.6.1 Allow for concrete and steel-framed buildings at least 60% Structural and Reinforcing Steel is sourced from an environmentally responsible Steel Maker. Which requires a steel fabricator/steel contractor accredited and a member of ASI’s Environmental Sustainability Charter of the Australian Steel Institute.

8.6.2 Allow for at least 95% of all timber used in the building and construction works to be certified by a forest certification scheme that meets the GBCA’s ‘essential criteria’ for forest certification, which must
be accompanied with a relevant Chain of Custody (CoC) certificate to be recognised as certified timber. Note, new formwork must be made with certified timber also.
## Site Risk Assessment

To be verified at commencement of project.

<table>
<thead>
<tr>
<th>Project Checklist</th>
<th>Actioned</th>
<th>Identified Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Overview</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Initiation Brief received identifying the client’s requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of procurement – identified.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Pre-Release Feasibility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is yield required deemed achievable with expected site constraints?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Town Planning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native Title</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Koala Self-Assessment and Management Plan. (Koala SPP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Checklist and Project Environmental Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Issues identified</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Max. Site Yield / recommendations:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Max Site Cover:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Public notification required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Site within a Transport Noise Corridor - Acoustic report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Site within a Queensland Rail Corridor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Other:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project Specific Issues</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;D survey (completed and adequate information supplied)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Confirm if lots require reconfiguration/subdivision.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Geotechnical Report</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Geo report suitable for proposed construction?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Acid sulfate soils identified.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Stormwater Management Report. (Preliminary Investigation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Flood report (if required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Existing sewer line located Build Over Sewer application required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sewer pipe size adequate (100mm diameter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Legal point of water discharge identified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Water connection size adequate (20mm diameter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Fire services flow and pressure test (Preliminary Investigation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Gas - (Note: not to be provided)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Energex or Ergon Supply and location to site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• NBN / Telstra availability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Required bin nos. and on-site collection identified.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Preliminary fire services flow and pressure testing received</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Neighbouring site encroachments identified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Significant trees identified, and photos supplied</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• State of existing boundary fencing and retaining walls identified</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
## 2 Furniture Schedule – Table

<table>
<thead>
<tr>
<th>Room Type</th>
<th>Furniture Schedule</th>
<th>Furniture Sizes</th>
<th>Dwelling Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Plan (mm)</td>
<td>Studio Apart</td>
</tr>
<tr>
<td>Living Space</td>
<td>armchair - 1 seat</td>
<td>900 x 900</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>sofa - 2 seat</td>
<td>900 x 1500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sofa - 3 seat</td>
<td>900 x 2100</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>coffee table</td>
<td>600 x 900</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>book case / storage</td>
<td>400 x 900</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tv / entertainment unit (1-2 bed dwellings)</td>
<td>400 x 900</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>tv / entertainment unit (3-5 bed dwellings)</td>
<td>400 x 1200</td>
<td></td>
</tr>
<tr>
<td>Dining Space</td>
<td>dining table (2-setting)</td>
<td>900 x 900</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>dining table (4-setting)</td>
<td>900 x 1200</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>dining table (8 setting)</td>
<td>900 x 1800</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>dining table (10 setting)</td>
<td>900 x 2100</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>sideboard / buffet</td>
<td>400 x 1200</td>
<td></td>
</tr>
<tr>
<td>Patios and balconies</td>
<td>min. area required. (Note: clear of ancillary items including fully extended clothesline, balustrades and services)</td>
<td>8m²</td>
<td>9m²</td>
</tr>
<tr>
<td>Covered Outdoor Space</td>
<td>min. depth of outdoor space (mm)</td>
<td>2600</td>
<td>2600</td>
</tr>
<tr>
<td></td>
<td>clothes line (min. linear metres)</td>
<td>7.5Lm</td>
<td>15Lm</td>
</tr>
<tr>
<td></td>
<td>dining table (2 setting)</td>
<td>900 x 900</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>dining table (4 setting)</td>
<td>900 x 1200</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>dining table (8 setting)</td>
<td>900 x 1800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>dining table (10 setting)</td>
<td>900 x 2100</td>
<td>1</td>
</tr>
<tr>
<td>Multi-purpose Space</td>
<td>min. dimensions of space</td>
<td>1900 x 2100</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>large desk for pc / laptop</td>
<td>900 x 1800</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>desk chair</td>
<td>700 x 700</td>
<td>1</td>
</tr>
<tr>
<td>Kitchen</td>
<td>sink - single bowl with 1 drainer</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sink - single bowl with 1 drainer</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>sink - double bowl with 1 drainer</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cooktop - 2 hotplates</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cooktop - 4 hotplates</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>wall oven</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>microwave oven placement shelf (allocated space only)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>fridge/freezer cavity (allocated space only)</td>
<td>850(w) x 700(d) x 1900(h)</td>
<td>900(w) x 700(d) x 1900(h)</td>
</tr>
<tr>
<td></td>
<td>pantry cupboard (600(w) x 600(d) x 2000(h))</td>
<td>1200(w) x 600(d) x 2000(h)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pantry shelves (adjustable)</td>
<td>Top shelf 1650mm off floor. Other 3 shelves evenly placed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lazy susans (required where internal corner unit joinery is provided)</td>
<td>¾ size &amp; 360°</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>bank of drawers (note: not to be provided under hotplates)</td>
<td>min. 600 w</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>under bench storage unit</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>benchtop - work surface min length</td>
<td>800mm</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>overhead cupboard joinery</td>
<td>min.300 d</td>
<td>1</td>
</tr>
<tr>
<td>Bedroom 1</td>
<td>min. floor area (excludes wardrobe area)</td>
<td>-</td>
<td>11m²</td>
</tr>
<tr>
<td></td>
<td>queen bed</td>
<td>1520 x 2030</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>bedside table</td>
<td>400 x 600</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>built-in wardrobe to incl. 600w shelves</td>
<td>600 x 1800</td>
<td>1</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Room Type</th>
<th>Furniture Schedule</th>
<th>Furnishing Sizes</th>
<th>Dwelling Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Studio Apart</td>
</tr>
<tr>
<td></td>
<td>Plan (mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bed 2, 3, 4</td>
<td>single bed</td>
<td>920 x 1870</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>bedside table</td>
<td>400 x 600</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>small desk</td>
<td>600 x 1200</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>built-in wardrobe to incl.</td>
<td>600 x 1800 (l)</td>
<td>1</td>
</tr>
<tr>
<td>Bed 4, 5</td>
<td>optional layout: bunk bed (2 stacked singles)</td>
<td>920 x 1870</td>
<td>1↑</td>
</tr>
<tr>
<td></td>
<td>bedside table</td>
<td>400 x 600</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>small desk</td>
<td>600 x 1200</td>
<td>1↑</td>
</tr>
<tr>
<td></td>
<td>built-in wardrobe to incl.</td>
<td>600 x 1800</td>
<td>1</td>
</tr>
<tr>
<td>Bathroom</td>
<td>toilet</td>
<td>500 x 700</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Hobless shower recess (General level exempt)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(Size determined on level of occupancy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>bath tub</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>hand basin + wall hung vanity</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>with bank of drawers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separate Toilet</td>
<td>toilet &amp; cistern</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>compact wall hand basin</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Laundry</td>
<td>laundry tub min. capacity size</td>
<td></td>
<td>35L</td>
</tr>
<tr>
<td></td>
<td>washing machine and/or dryer</td>
<td></td>
<td>650(d) x 700(w)</td>
</tr>
<tr>
<td></td>
<td>(space allocated only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>laundry storage shelf or joinery cupboard</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Storage</td>
<td>linen cupboard</td>
<td>600 x 600</td>
<td>600 x 900</td>
</tr>
<tr>
<td></td>
<td>broom cupboard</td>
<td>500 (d) x 500 (w) min</td>
<td>1</td>
</tr>
<tr>
<td>Outdoor Storage</td>
<td>external garden store/shed min. 1800 (h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ancillary items</td>
<td>hot water system</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>distribution board (DB)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>NBN - designated location</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

† Denotes optional furniture layout may be provided.
3  Furniture Schedule – Diagrams

The following schedule of furniture to be shown on floor plans to demonstrate Requirement 6.1.

### Living Space Furniture Schedule

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Furniture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200 x 600</td>
<td>Sideboard</td>
</tr>
<tr>
<td>1200 x 600</td>
<td>TV Bench</td>
</tr>
<tr>
<td>900 x 900</td>
<td>Coffee Table</td>
</tr>
<tr>
<td>900 x 900</td>
<td>Armchair</td>
</tr>
<tr>
<td>2100 x 1500</td>
<td>2 P - Lounge</td>
</tr>
<tr>
<td>2000 x 1500</td>
<td>3 P - Lounge</td>
</tr>
</tbody>
</table>

### Dining Space Furniture Schedule

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Furniture</th>
</tr>
</thead>
<tbody>
<tr>
<td>900 x 900</td>
<td>2 P - Table (Studio Apartments)</td>
</tr>
<tr>
<td>1200 x 900</td>
<td>4 P - Table (1-2 Bed Dwellings)</td>
</tr>
<tr>
<td>1800 x 1200</td>
<td>8 P - Table (4 Bed House)</td>
</tr>
<tr>
<td>2100 x 1800</td>
<td>10 P - Table (5 Bed House)</td>
</tr>
</tbody>
</table>

### Bedroom 1 Furniture Schedule

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Furniture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500 x 2000</td>
<td>General &amp; Silver Level Clearance Requirements</td>
</tr>
<tr>
<td>1500 x 2000</td>
<td>Gold Level Clearance Requirements</td>
</tr>
<tr>
<td>1500 x 2000</td>
<td>Platinum Level Clearance Requirements</td>
</tr>
</tbody>
</table>

### Bedroom 2 Furniture Requirements

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Furniture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800 x 900</td>
<td>Single Size Bed - 2nd Bedroom Clearance Requirements</td>
</tr>
<tr>
<td>900 x 600</td>
<td>Built in Wardrobe</td>
</tr>
</tbody>
</table>

### Multi-purpose Furniture Schedule

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Furniture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200 x 900</td>
<td>Small Desk (2nd Bedroom)</td>
</tr>
<tr>
<td>1800 x 900</td>
<td>Large Desk (Multi-purpose Space)</td>
</tr>
</tbody>
</table>

**Note:** This document is to be read in conjunction with the: “Livable Housing Design Guidelines” (LHDG) and “Crime Prevention Through Environmental Design” (CPTED) and/or any other document referenced in this document.
Kitchen Space Furniture Schedule

Key to Kitchen items:
C - CUPBOARD
D - DRAWERS
F - FRIDGE
HP - HOT PLATES
M - MICROWAVE OVEN
P - PANTRY
S - SINK
WO - WALL OVEN

Laundry Space Furniture Schedule

Bathroom Space Furniture Schedule

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