

Design and Construction Standards for Remote Housing.

August 2016



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Additional reference documentation

This document is to be read in conjunction with:

- All other relevant building codes, regulations and mandatory standards
- Relevant planning schemes and council policies
- Department of Housing and Public Works document: *Product Standards: Social Housing Dwellings*, which provides minimum standards for building products, fixtures, fittings and other items typically required in dwellings. This document is to be applied only to the extent that particular products are relevant to remote Indigenous housing
- *Livable Housing Design Guidelines* (LHDG) – as provided on the <http://livablehousingaustralia.org.au> website

For other design considerations refer to the Crime Prevention Through Environmental Design (CPTED) guidelines located on the Queensland Police website.

If there is an inconsistency between these Design Standards and the non-binding reference documents listed above, these design standards shall apply to the extent of the inconsistency.

Introduction

These standards apply to new construction in Indigenous communities, including remote communities, Cherbourg and Yarrabah. They aim to ensure that new dwellings are sustainable, meet service delivery and community requirements, provide appropriate amenity, and minimise ongoing maintenance.

Projects should look 'domestic', with design features and finishes avoiding any 'institutional' appearance. In principle, every dwelling should deliver a variety of qualities including:

- be comfortable, pleasant and safe to live in, and be designed to meet its residents' needs, both current and future
- use its site well and not waste built space or land
- 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
- respond sensitively and creatively to the characteristics of its site.

Some possible alternative solutions are described in this document as 'not preferred'. Adopting items described as 'not preferred' requires written approval from the State. Items described as 'preferred' or 'preferable' must be provided unless otherwise approved by the State.

Housing types

This design standard describes the following housing types:

Dwelling type	Bedroom number	Description
Bedrooms / bathroom additions	2	Freestanding, bedrooms and bathroom additions, located on the same site as an existing house and typically connected to the house via a covered walkway. Does not contain a kitchen, dining or living room.
Duplex	2	Two single storey houses separated by a common wall.
Attached	2	Two storey houses sharing common walls. Allows two or more houses to be attached side-by-side typically with bedrooms upstairs, living downstairs.
Dual occupancy	1,2	Two detached houses on one site.
Cluster	1,2	Three or more detached houses on one site.
Detached	3,4,5 +	Completely separate structure on its own site which does not share any facilities with neighbours.

Accessibility

Features for enhanced mobility are an important component of housing. The State identifies two levels of accessibility for remote Indigenous housing, categorised as:

Gold Level

Incorporates:

- *Livable Housing Design Guidelines* (LHDG) Gold Level (developed by Livable Housing Australia)
- additional requirements as outlined in this document.

Application:

- minimum standard for all dwelling types
- note: LHDG Gold Level requirements are *not* required to:
 - the upper level of highset houses
 - pathway to the front door of lowset (*not* slab on ground) dwellings. Lowset dwellings are required to be designed internally to minimum Gold Level, assuming the possible future installation of ramps for access
- only one bathroom containing at least a shower, vanity and toilet in each dwelling is required to incorporate LHDG Gold Level features. (The *additional* requirements outlined in this document are still applicable).

Platinum Level

Incorporates:

- *Livable Housing Design Guidelines* (LHDG) Platinum Level (developed by Livable Housing Australia)
- additional requirements as outlined in this document.

Application:

- in response to identified portfolio or client need
- design allows for a *future* Platinum Level bathroom at the ground floor of highset dwellings, where the ground floor is a habitable level (e.g. not subject to flooding, tidal inundation or otherwise inaccessible)
- only one bathroom containing at least a shower, vanity and toilet in each Platinum Level dwelling is required to incorporate LHDG Platinum Level requirements.

Town planning

The majority of Indigenous Councils have planning schemes in place (with the remainder likely to have planning schemes adopted by mid to late-2016). These planning schemes outline local planning requirements and policies.

Under the *Sustainable Planning Act 2009*, where a local government planning scheme is in place, the State rather than the local government is required to assess State-subsidised housing developments against the relevant planning scheme.

For communities not operating under local planning schemes, the State Planning Policy 1/09 (SPP) applies – *Reconfiguration of a Lot Code for Land in Indigenous Local Government Areas to which a Local Planning Scheme does not apply*. The SPP details performance and acceptable outcomes addressing key planning principles.

Design of projects should consider the objectives of the SPP and comply with local planning scheme requirements to the maximum extent possible.

Service delivery requirements may on occasion result in non-compliance with the planning scheme and must be justified on town planning grounds and supported by good design practice.

Projects should address relevant Council policy requirements for operational activities such as waste collection.

The design principles and considerations outlined in this document, combined with those in the SPP and local planning schemes, will assist planners in meeting program objectives, with best practice design considerations fundamental to the solution.

Design principles

These design principles are provided to assist the design process.

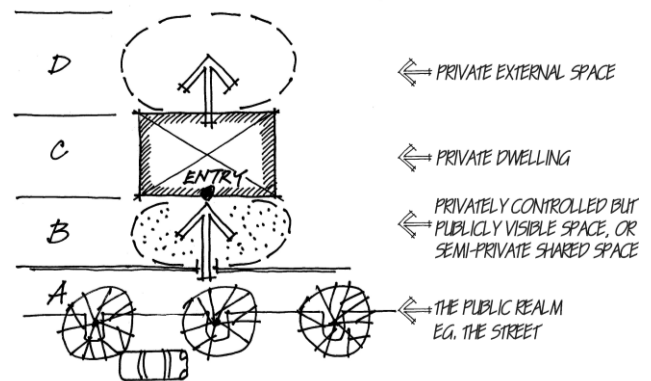
The order does not imply relative priorities and there are many points of overlap between the principles. If the pursuit of one principle compromises another, agreement with the State is required to determine the design priorities.

In all cases, the department is open to considering alternative solutions that achieve equivalent (or better) performance outcomes.

Basic approach

All housing must be consistent with the principles expressed in the diagram (see right).

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. It does not represent a site plan. For example, private external space need not necessarily be located in the backyard.

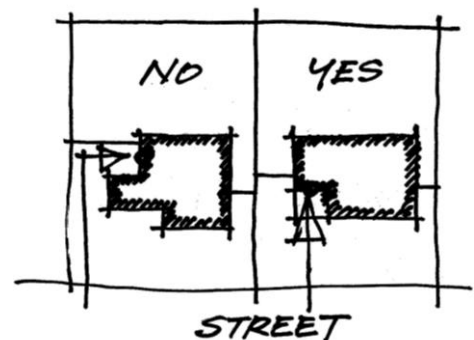


Facing the street or park

Houses on sites with a boundary to the street or public realm must face it both functionally (in terms of the location of the front door) and visually (such as the size and type of windows and treatment of the entry porch that face the street).

Houses adjacent to a park should overlook the park.

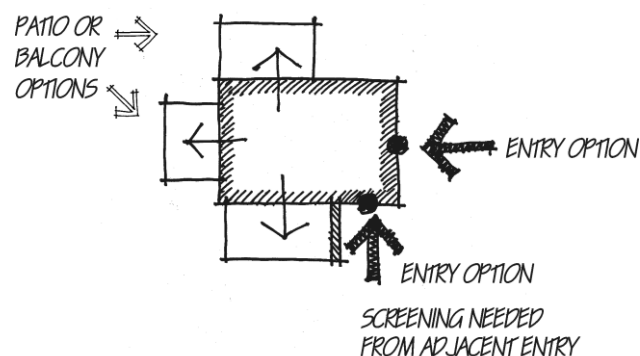
On a corner site, the housing must present well to both street frontages.



On 'cluster' housing sites with a shared internal driveway, houses that do not have a street frontage should face the driveway.

Visitors must have direct access to the front door without going through private outdoor space, the carport or the back yard first.

Only in extreme circumstances should housing present its side or back on the public realm, and then only as little as possible and with agreement from the State.



Fitting into the neighbourhood

Housing must 'fit in' to the community.

This is achieved through form, scale, variety, attention to detail, appearance, setbacks and relationship to the street.

This principle does not require imitation of adjoining houses, nor does it require deliberate assertion of a different style, particularly if it is just for the sake of difference.

It does require that the project avoid being set apart from neighbours in ways associated with lower quality outcomes.

Designs should meet the department's needs within the 'pattern' of the neighbourhood, where such a pattern is clear.

In new subdivisions or larger redevelopment sites, master planning of the area must be undertaken, identifying the lot yields and associated housing options in order to determine the intended 'pattern' of the new area.

Individuality, variety and scale within the streetscape

While new houses should 'fit in' with existing houses, they must also make a positive contribution to the character of remote communities and display variety and individuality.

Where multiple houses are constructed at about the same time and in close proximity (such as on adjoining or adjacent streets) designs must appear different.

While visual differences may be achieved in many ways, for the purpose of defining a minimum benchmark the department describes some possible points of difference. **At least two visible points of difference** (of which at least one is a *major* point of difference) are required between any two houses constructed at about the same time and in close proximity.

Major points of difference include:

- floor plans of the fronts of houses
- roof designs (such as gables, hips and Dutch gables)
- location of the car port relative to the house
- configuration of stairs, entry porch and front door placement
- external wall materials.

Other points of difference include:

- colour schemes
- front door designs
- window types and configurations
- window awnings, shade devices and privacy screen designs

- fence detailing and materials
- post/column design and/or materials.

Variation is also required between groups of houses. For example, a group of houses at one end of the street should not repeat the exact order of designs and colour schemes used for houses at the other end of the street.

The repeated use of a single design (unrelated to site conditions, neighbourhood context, orientation, group layout, etc.) is unacceptable.

Car parking and street presentation

The street design of housing must not be dominated by car parking.

Carports and garages must not dominate the street elevation and must be set back from the street with the house. On multi-dwelling sites entries to dwellings should not be hidden by parking structures.

Where cars and pedestrians share use of a space, careful design is essential to ensure access routes are clearly legible.

Privacy and the neighbours

The location and design of dwellings must not unreasonably impair the privacy of neighbouring properties.

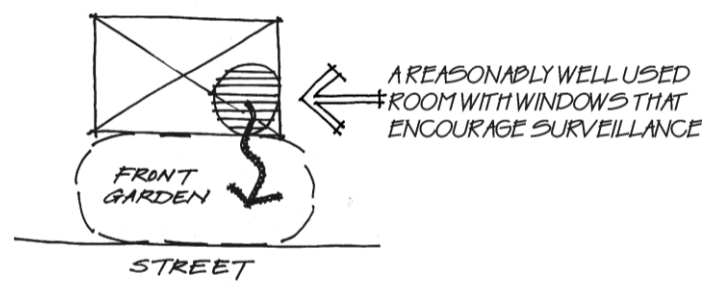
Outdoor living spaces of adjacent houses should be separated from each other.

Internal and external living areas should not overlook the private outdoor spaces of others.

Public spaces

On sites with multiple dwellings, access through the site by the general community should be discouraged, unless the path is designed and managed as a public space (such as a public street controlled by Council).

Facilities available for public use (such as parks, playgrounds or barbeque shelters) must not be provided on housing sites.



Crime prevention through environmental design

Housing must be designed to facilitate casual surveillance of the front garden, street, shared driveway or adjacent park as applicable.

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

Where planting is provided, species and locations must be thoughtfully chosen so that planting does not obstruct the view of the street or the internal pathways of the dwelling.

Equitable design

While it is accepted that designs may differ from site to site based on site constraints, priorities and identified need (such as need for accessible housing), the application of these standards must be equitable.

The design of one or more dwellings (including the amenity of outdoor spaces etc.) must not be unfairly compromised by the design of other dwellings.

Personalisation

Housing, especially in its detailing, should allow for the personal expression of tenants in ways that do not create long-term maintenance issues.

Examples include rooms that allow flexible furniture arrangements and front yards that provide opportunities for gardens.

Climatic design

Design of new subdivisions should support the correct orientation of housing for climate.

The detailed design of dwellings must respond to the microclimate of the site and its locality, acknowledging the different climatic regions of Queensland and local knowledge conveyed by Councils.

In ways that are consistent with other design principles, the climatic response must be reflected in:

- the plan, shape and orientation of the dwelling
- location of particular rooms
- materials used for construction
- location and shape of openings
- location of internal walls with respect to cross-ventilation

- roof form
- landscaping of adjacent ground to provide shading
- protection of openings against excessive solar access and rain penetration
- insulation.

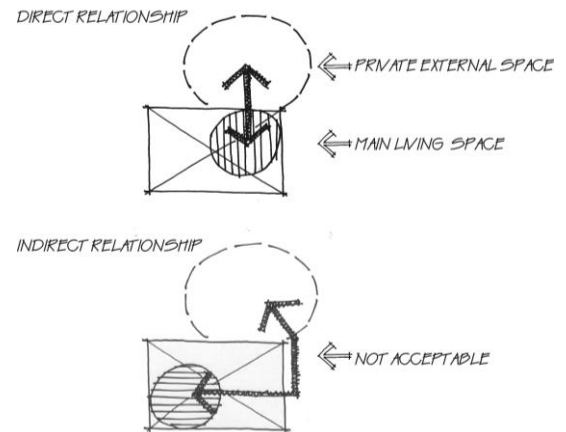
This principle does not require that all housing face north/south if this is at odds with other design principles. It does require that the design respond creatively and thoughtfully to the climatic context.

Indoor/outdoor living connection

A direct connection to outdoor living is important for living in the Queensland climate.

There must be a direct visual and physical 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.



Covered outdoor spaces

Covered outdoor space at the front of houses (such as an entry porch incorporating space to sit) offers the opportunity for casual surveillance of the street, informal interaction with people in the street and supervision of children in the front yard. Uninvited visitors to a house would typically approach the front door at the entry porch.

Covered outdoor living spaces are ideally located to provide privacy for outdoor living for the family and invited/welcome visitors, and a safe place for children to play associated with a yard. The space should be orientated and/or screened to provide a comfortable place for outdoor living throughout the year.

The location of covered outdoor spaces (entry porch or private outdoor living) should be considered on a site-by-site basis and take into account orientation (for sun, weather and breezes), relationship of the house to the street, views, site topography, access, proximity to neighbours, privacy and community expectations as conveyed by Councils.

Carports may be designed and located to provide additional covered outdoor living space, particularly for times of the year or social occasions that the dedicated covered outdoor living area is not suitable.

Planting and turf

Trees and plants can:

- improve 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.

Healthy, significant trees should be retained and protected wherever possible.

Ideally, front and back yards should be turfed. However, it is acknowledged that establishing turfed yards in some locations may not be viable, particular where turf is not readily available, imported topsoil is required and/or water supply limitations apply.

Alternative considerations may include fruit bearing trees, shade trees, or culturally significant species. Species selection should be low maintenance and appropriate for the climate.

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 in under croft areas is not acceptable)
- allows adequate light into dwellings
- does not create maintenance issues for the dwelling
- is unlikely to cause health and safety issues .

The maximum gradient to garden areas is 1:4. The maximum gradient to turfed areas is 1:5.

The requirement for the provision of turf and/or other landscaping will be as instructed by the State and determined on a case by case basis in consultation with Councils and consider the cost and likelihood of successfully establishing and maintaining vegetation.

Innovation and Normality

The State seeks good housing design outcomes, and is open to innovation and change that may arise through different design approaches or the introduction of new products.

The State however, 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.

The development of innovations must consider cultural preferences, construction cost, maintenance requirements (including cleaning), running cost, and safety.

There are often judgements to be made about the right point of balance between innovation and normality. The State must be consulted when proposed alternative solutions conflict with these standards.

Building types

The choice of housing type should principally be in response to housing need and influenced by:

- cultural preferences
- regional housing styles
- local conditions
- availability of skilled trades
- availability of building materials and equipment.

Pre-fabricated, factory-built or 'flat-pack' houses must meet the standard of amenity, durability, maintainability and performance described by this document, and must not appear overtly transportable, temporary or inferior in any way to housing built conventionally on site.

Acceptable building styles

Slab on ground:

Particularly suitable in response to identified need for accessibility.

Low set:

Often suited to sloping sites and preferred for some types of prefabricated construction.

Lowset houses are required to be designed internally to minimum Gold Level, assuming the possible future installation of ramps for access.

High set:

Due to the increased cost of construction, and issues with accessibility, highset homes are generally not preferred; however, exceptions include:

- sites subject to flood, storm surges and/or tidal inundation (ideally, houses should not be built on sites subject to tidal inundation)
- sites where topography dictates high sets as the only suitable building style (for example, heavily sloping sites where it is not practical/possible to cut and fill).

The State must be consulted on proposals for highset (and two-storey) houses.

Considerations include:

- the state will typically not support 2 bedroom highset
- highset houses are limited to 3 to 4 bedrooms on the first floor
- identified current and future need for accessible houses and the capacity of the highset house design to cost-effectively provide accessible accommodation at the ground floor in the future
- site constraints
- efficient design and value for money.

The upper level of highset houses are not required to be designed to Gold Level or Platinum Level; however where the ground floor is a habitable level (e.g. not subject to flooding, tidal inundation or otherwise inaccessible) the design should allow for at least one future bedroom and a Platinum Level bathroom at the ground floor.

Target Floor Areas

The following table details the target floor areas for indoor and outdoor space. Note:

- Fully Enclosed Covered Area (FECA) is the indoor floor area measured to the inside face of all external walls. It excludes external wall widths but includes the floor area occupied by the thickness of internal walls.
- FECA does not include patios, carports or entry porches.
- Outdoor living area targets exclude carports and entry porches.
- With approval from the State, covered outdoor living areas may exceed the target areas where construction efficiencies are achieved (such as aligning the patio with the end of the house to remove a roof valley).
- Internal floor areas may be less or greater than the target areas provided all other design requirements are met and the floor-planning is practical and efficient in its use of space.
- The State may reject a design that it considers is not efficiently or practically planned.

Target floor areas for indoor and outdoor space (FECA m ²).			
House Type	(General and LHDG Gold Level)	(LHDG Platinum Level)	Covered Outdoor Living Area (patio)
Cluster House 1-bedroom	55	65	15
Duplex 2-bedroom	95	100	20
Bedroom / Bathroom additions ('Plug-ins') 2-bedroom	35	N/A	15
Attached House 2-bedroom	105	N/A	20
Detached or Cluster House 2-bedroom	90	95	20
Detached House 3-bedroom ^a	105	110	24 (highset: 12) ^b
Detached House 4-bedroom ^a	130	135	30 (highset: 15) ^b
Detached House 5-bedroom ^a	155	160	36 (highset: 18) ^b

^a. The above target floor areas apply to lowset and slab-on-ground houses, and highset houses with no provision at the ground floor for future rooms.

^b. The size of the covered outdoor living area located on the same level as the internal living area is reduced for highset houses that have an undercroft capable of contributing to covered outdoor living.

Site Design

Dwellings should be sited to deliver a cost-effective, balanced and culturally sensitive response to all aspects of best practice design described in the Design Principles section.

For the site and ground level of highset houses, apply Gold Level requirements only. Apply referenced Livable Housing Design Guidelines Gold or Platinum Level requirements only to the extent that the ground level is intended for modification/upgrade to Gold Level or Platinum Level.

Drainage and Stormwater

Stormwater must be discharged away from the house, adjacent buildings, paths and functional outdoor spaces. Water **must not** be directed to flow under lowset or highset houses.

Every effort must be made to discharge stormwater to a designated stormwater system, preferably the kerb and channel. If it is not possible to discharge to the kerb and channel, alternatives such as stormwater pits should be investigated.

Concrete splash pads are not preferred and may only be provided with prior approval from the State.

Prevent water ponding under all water sources e.g. yard taps, downpipes, hot water system overflows etc.

Guttering is preferred. Provide downpipes with securing clips at 900 maximum centres, if guttering is provided.

Concrete driveway and paths

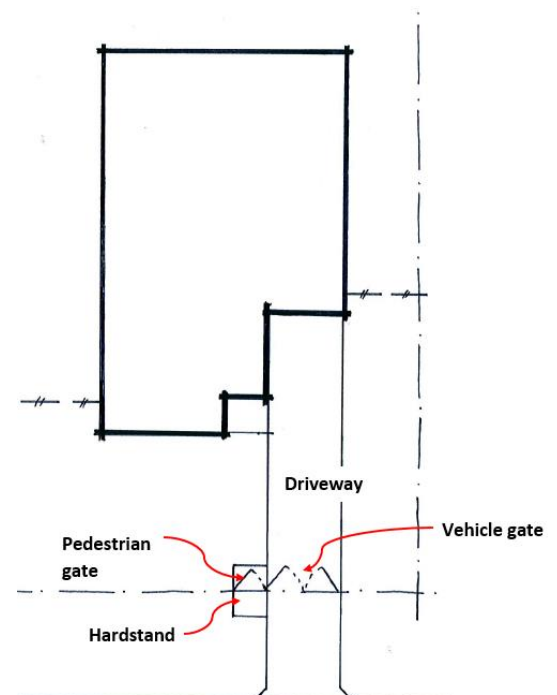
Gold Level Requirements:

Livable Housing Design Guidelines **Gold Level** requirements (Elements 1 and 2), plus:

- Driveway to be 3000mm wide with appropriate grade transitions and drainage. At least one visitor parking space on the driveway is required and can be shared with the pedestrian path to the house.
- A pedestrian path from the kerb or road to the front door of the house is preferred. The (examples illustrated, right and below)
- Driveways to extend to the kerb or roadway providing appropriate crossovers, including culvert crossings where necessary to prevent damming of overland flow, table drains and road gullies, in accordance with Council requirements and other relevant standards such as the Far North Queensland Regional Organisation of Councils standard drawings:

<http://www.fnqroc.qld.gov.au/regional-programs/regional-development-manual/version-4-2009/standard-drawings>).

- Car tracks are not acceptable.
- 1:15 maximum design gradient is required along the driveway linking the carport to the letterbox (where a letterbox is requested) and footpath or



Example of pedestrian path to house from street.

street. Steeper driveways are acceptable in response to site constraints subject to approval of the State.

- Hard pathways (concrete preferred) are to be provided linking carport, pedestrian entry, rubbish bin areas, meter box and clothesline.
- Handrails are typically not required along paths.

Platinum Level Requirements:

- above requirements, and *Livable Housing Design Guidelines* **Platinum Level** requirements (Elements 1 and 2).

Carport

Gold Level requirements:

Livable Housing Design Guidelines **Gold Level** requirements (Element 3),

except:

- Carport length is to be 6000mm, not 5400mm.
- For highset houses, a reduced vertical clearance of 2400mm is acceptable, provided that other accessible spaces are not being provided on the ground floor.

plus:

- Clear space of 6000mm x 3200mm clear space is to be measured between posts.
- Car accommodation that is attached to the house is preferred. Carports must have open sides. If not attached to the house, a path (preferably sheltered) of minimum width 1000mm is to be provided between the carport and the house.
- Where possible, car accommodation should be behind the front building line. In instances in which houses share a site (duplex, dual occupancy, attached houses or cluster development) provide each house on that site with a carport.
- The design of the carport should be in keeping with the design of the house.

Platinum Level requirements:

- above requirements, and *Livable Housing Design Guidelines* **Platinum Level** requirements (Element 3).

Letterbox

Gold Level requirements:

- Where mail delivery services are available or where council encourage provision of a letterbox, place the letterbox adjacent to the driveway aligned with the front boundary. It can be stand alone or incorporated into the fence.
- The access point of the letterbox (for mail retrieval) should be within the range of 900mm to 1200mm above the finished surface level of a level hardstand (maximum 1:40 cross-fall) on the retrieval side of the letterboxes.
- Letterboxes should have capacity to have a padlock attached (by the tenant).

Platinum Level requirements:

- Above requirements apply.
- Provide a level hardstand. Minimum 1540mm wide x 1540 long, and extend 400mm past the letterbox.

House numbering

House numbers are required for all properties.

Numbering must be clearly visible from the street in a contrasting, reflective colour, to the background.

Numbers must be a minimum size of 150mm, made from a durable material and securely screw or rivet fixed to the house.

Garden store

9m² minimum floor area, 1800mm minimum height, located away from the house (including highset houses) and on a concrete slab with recessed edge to prevent water penetration. A path is not required between the house and the garden store.

The garden store must have a high-strength frame and be of an appropriate strength for the design wind classification of the site.

Rubbish bin storage

Gold Level requirements:

- Locate on a hard standing area adjacent to each dwelling, undercover if possible (e.g. under eaves, extended carport, or in undercroft space for highset houses) away from doors and windows to bedrooms and living spaces.

- A post or chain is to be provided to secure the bin to prevent it being knocked over by animals. The number of bins catered for must be in accordance with local requirements.

Platinum Level requirements:

- Above requirements, and *Livable Housing Design Guidelines* Platinum Level requirements for accessible paths (Element 1) apply.
- Provide an accessible path to the bins, with circulation space at the level hardstand (maximum 1:40 cross fall) in front of the bins minimum 1540mm wide x 1540mm long.
- Provide an accessible path to the street where practical.

Clothes line

Gold Level requirements:

T-Bar height adjustable style which is located at the rear or side of the property, preferably not visible from the street, easily accessible from the laundry and in a position which does not intrude on open recreational space as illustrated below. Mounting height of lines to be 1800mm above ground level. Rotary clotheslines are not permitted.

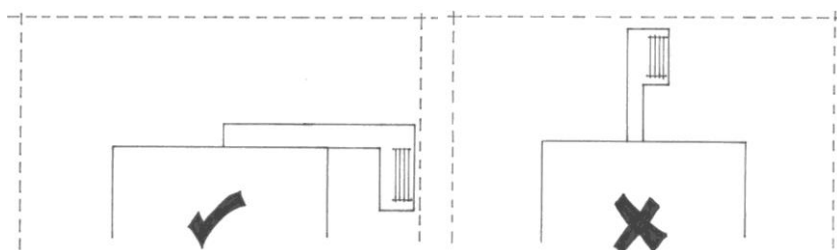
The clothesline must be constructed from hot-dipped galvanised steel. Aluminium (as noted in Product Standard) is not acceptable.

The clothesline base must be non-removable and secured in a concrete slab under the clothesline and extending 900mm along the length of the clothesline on one side. The length of clotheslines should be:

- 15 lineal metres for 2-bedroom duplexes
- 30 lineal metres for 3-bedroom houses
- 40 lineal metres for 4/5-bedroom houses

LHDG Platinum Level requirements:

As per General Level requirements, plus 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.



Position of clothesline does not intrude on main yard space

Yards

Unless otherwise approved by the State, yards must be fenced.

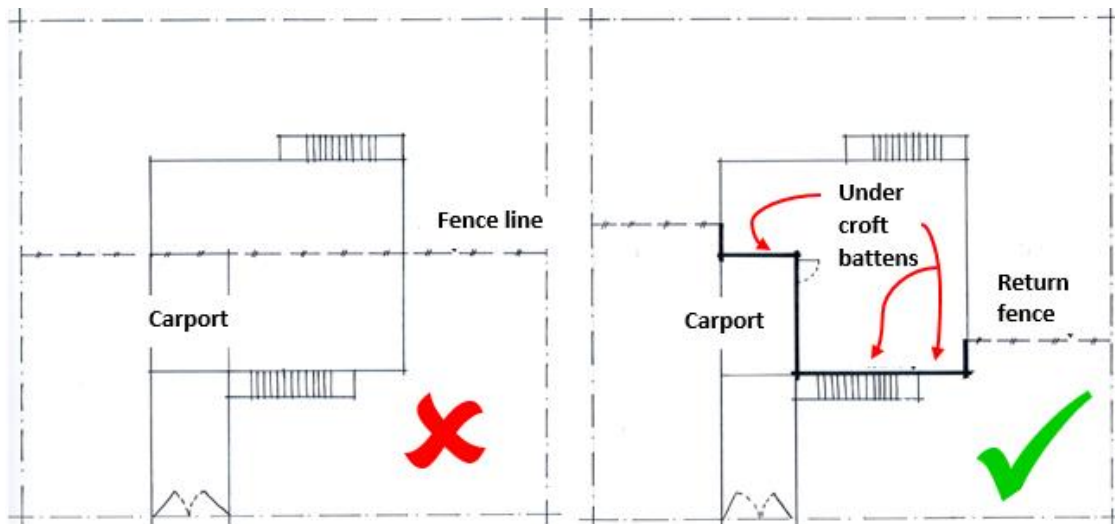
Private yard space (the yard that is suitable for children) should be accessible from the covered outdoor living area in low-set and slab-on-ground houses. The private yard need not necessarily be located to the rear of the house, particularly on battle-axe sites, corners, or at the ends of T-shaped cul-de-sacs. Provide access to private back yards from the front yard or driveway. This could typically be achieved through the use of gates or return fencing.

Front yards to have a maximum 1200mm high front fence with pedestrian gate (and vehicle gate where the fence extends across a driveway) allowing surveillance of the street.

Fencing

The following general requirements apply for fencing:

- Private yards must be fenced.
- Return fencing is to be provided between the side fencing and the house, other than for highset houses unless specifically required by the State.
- Gates must be provided in the return fencing on both sides of the house. One to be a pedestrian gate, one a vehicle gate (if possible).
- Where the State requires return fencing on highset houses, separation of the front yard from the back yard must be achieved, whilst maintaining the maximum amount of usable space under the house. The drawings below illustrate examples of an unacceptable and an acceptable solution for return fencing on highset houses.



- Front yards must be fenced, unless it is the Council's preference and common practice not to fence front yards in particular communities.
- 1200mm, 1500mm and 1800mm high chain wire for perimeter side and rear boundaries are acceptable, with raked sections if the front yard is fenced at a lower height. 1800mm high chain wire fencing requires a mid-rail.
- Incorporate lockable vehicle and pedestrian gates to the front of the property.

Fencing types should be suited to the climatic region and community and may be chain wire, timber or Colorbond (or similar). Wire fencing and gates to have galvanised posts, top rail and bottom rail. Gates in timber fencing to have galvanised steel frames.

Retaining walls

Retaining walls must be constructed of a suitably long-lasting material, requiring no ongoing treatment or maintenance to maintain its integrity and appearance. Timber is not permitted.

Retaining walls must be of a design, height and location that is safe for tenants, neighbours and the community. Retaining walls must not unduly restrict the light and/or views from the property or neighbours' properties.

The preferred maximum height for retaining walls is 1400mm.

Water tanks

The *Queensland Development Code* (QDC) Part MP 4.2 *Water Saving Targets*, which requires a supplementary water source (such as a water tank) for a class 1 building to be connected to a reticulated town water supply system, applies *only* when a Council has applied to and received approval from the minister to require the mandatory application of the Part.

Water tanks must be supplied in communities where this approval has been granted. Requests for provision of water tanks in communities where this approval has not been granted will be assessed on a case by case basis.

Tank capacities, number of tanks, their use and outlets to which they are connected should be generally consistent with local practices and in accordance with local government requirements.

Additional water tanks may be required for bedroom/bathroom additions.

Water tanks that may store untreated rainwater must not be connected to potable water fixtures.

Tank cocks must be lockable with all components secured against theft and damage.

Metal tanks are not acceptable in coastal or island areas.

Tanks must be fully sealed (as in the case of tanks that store town water only) or all tank openings screened to prevent mosquito infestation. Every effort must be made to discharge overflow from tanks away from the house, to a designated stormwater system, preferably the kerb and channel.

Pumps, if required, are to be submersible hardwired. Gravity fed pumps are preferred. If a continuous flow is desired (plumbed to the toilet) an automatic hardwired pump should be utilised.

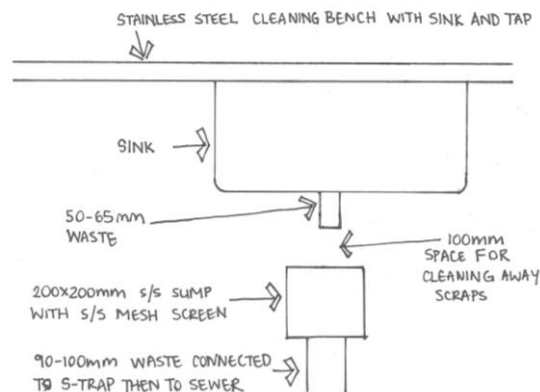
Rainwater tanks must not be able to be topped up from town water supply. Tanks fed from town water supply must not be topped up by rainwater.

The minimum height of a tank stand is to be 300mm above finished ground level. If two tanks are used and they flow into each other, then the base of the second shall be a minimum of 300mm above the base of the first.

Tank stands shall be either formed concrete; concrete slab; steel framed; or timber framed (treated to H5 standard or above) all with appropriate tie-down for tanks to stands.

Cleaning bench

A cleaning bench (for fish or game) may be installed (where approved by Councils) outside, away from outdoor and indoor living areas. It must be located under roof (such as carport or eaves) to shelter the sink from driving rain.



Internal Space

A furniture layout plan must be provided to demonstrate functional planning of spaces suitable for the maximum household population (refer to Appendix 1 for furniture sizes).

Unless noted otherwise, paths of travel past furniture must be a minimum of 900mm wide.

For the upper level of highset houses, apply the Gold requirements of this standard only. Referenced Livable Housing Design Guidelines Gold Level requirements do not apply.

Corridors, thresholds and doorways

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 2, 4, 12,13) requirements:

except:

- Sliding glass doors: If a deeper door sill is required due to cyclone rating requirements, a slightly higher threshold is acceptable, provided that the sill allows for a proprietary ramp system to be easily attached at a later date. (Ramps only to be installed in response to identified client need).

plus:

- With the exception of doors to pantries and linen cupboards, door swings must not impede on the doorway and circulation clearances or door swings of other doors.

Platinum Level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Element 2, 4,12, 13) requirements:

except:

- For 4 and 5 bedroom dwellings, Platinum Level access requirements are not required to the second bathroom or separate toilet.
- For hinged doors, provision of a 920mm door leaf is deemed acceptable in lieu of LHDG Platinum Level requirement for 900mm clear opening.

plus:

- Internal sliding doors are to be surface mounted (not cavity style).
- Provide circulation space at all doors in accordance with AS1428.1-2009. In addition, note that:
 - 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.
 - Provide a minimum of 1000mm path past furniture through the space (excluding dining chairs). Furniture must not be placed within door circulation spaces.
 - Refer to LHDG Element 13 for door furniture.
- Sliding glass doors must be 2100mm wide.

Entry porch and Foyer

(Not applicable to bedroom / bathroom additions – ‘plug-ins’)

The front door must be a swing door with a security screen door.

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 1, 2, 12, 13, 15, 16) requirements:

plus:

- Provide a covered entry porch at the front door.
- The porch must be visible from the street and contribute positively to the appearance of the house. The minimum size of the landing area is to be in accordance with LHDG, and may be up to 7.5 sq.m.
- Where the covered outdoor living area is located at the front of the house and incorporates the entry porch:
 - The path to the front swing door must be direct and the shortest possible distance across the porch or covered outdoor living.
 - The door from the living or dining room to the covered outdoor living area must not be the front door.
- A foyer may form part of the living/dining area (accounting for furniture layout) or be a separate space.
- The security swing door and front door should preferably open against walls allowing 90° (nominal) door swings.
- Unscreened glass (operable or fixed) beside the door latch is not permitted.
- Separate duplex entries and avoid creating paths of travel past entries of other dwellings.

Platinum Level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 1, 2, 12, 13, 15, 16) requirements:

plus:

- Ensure that the security screen is hinged on the same jamb as the front door.
- Only a latch-side approach or front approach is acceptable for entry doors (refer AS 1428.1-2009, Fig 31 (f), or (h)).

Living and Dining

Gold Level Requirements:

Livable Housing Design Guidelines **Gold Level** (Elements 12, 13, 14, 15, 16) requirements,

plus:

- Living and dining areas should have:
 - a direct visual and physical relationship with the kitchen and covered outdoor living space
 - visual remoteness and separation from private spaces (bedrooms and bathrooms)
 - easy access to a separate WC not associated with the bedrooms
 - at least one solid uninterrupted wall, to allow for the placement of entertainment units or other such furniture (without compromising natural ventilation).
- Living and dining areas may be separated to support separate activities (such as homework in the dining area and television viewing in the living area), particularly in 4 and 5 bedroom houses.
- In 1 and 2 bedroom houses, the living and dining spaces may be combined with the kitchen.
- A minimum clearance width of 1000mm for movement through the space is required without impeding on the functions of the space.
- Living and dining areas must facilitate the functional placement of furniture (refer Appendix 1 for furniture items and sizes).
- **Multi-purpose spaces** (one bedroom dwellings only):
 - An additional multi-purpose space (minimum dimensions 1900mm x 2100mm) must be provided.
 - The space 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.
 - Must facilitate the functional placement of furniture (refer Appendix 1 for furniture items and sizes).

Separation from the living area, kitchen or dining may be achieved through passive measures such as by creating a recess in the larger room and/or the use of nib walls, half-height walls and ceiling bulk heads.

Platinum level Requirements:

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 12, 13, 14, 15, 16) requirements,

plus:

- Circulation space past furniture, through the space and at doorways must be a minimum width of 1000mm without impeding on the functions of the space.
- Where separate dining *room* is designed, the path past the furniture and through the space must be a minimum width of 1000mm and measured to the dining chairs (not the dining table) with the chairs sitting 600mm out from the table.

Kitchen

The kitchen should have a direct physical relationship with the dining space and ideally with the covered outdoor living area, particularly when outdoor living is located at the back of the house.

The kitchen should not form part of the main thoroughfare through the dwelling. In four and five bedroom dwellings, the kitchen should be a separate, defined space, but not necessarily a separate room.

Natural and artificial lighting must be sufficient across bench tops for general food preparation.

Windows provided above bench to have sill 900mm above floor level.

Good natural ventilation is required. Range hoods are not preferred.

Provide exhaust fan, vented to the exterior of the house, with closing mechanism (when off), separately switched and ducted to the external wall in the kitchen, offset at least 500mm from the edge of the stove and 2000mm above floor level.

Cooking

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 9, 12, 13, 16) requirements, *plus:*

- Gas or electric cooking appliances are acceptable, to be determined in consultation with councils.
- Provide an upright range with four cooking elements located a minimum of 600mm from internal corner/s of the front edge of the bench. To facilitate cleaning, a 100mm gap must be provided between the joinery and each side of the range, with the bench overhanging to provide a 10mm gap each side of the range. Anti-tilt brackets are required.
- Hotplates are not to be installed under windows or within 300mm of a window.
- A microwave shelf must be provided. If necessary, it may be provided as a recess in the pantry space, creating two smaller pantry cupboards, one above and one below the microwave shelf. Microwave space must not be located under bench.

Note: In some instances the state may require provision of a wall oven and cooktop in lieu of an upright range. In these cases, unless specified otherwise, the wall oven and cooktop must be provided in accordance with the Platinum standard.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 9, 12, 13, 16) requirements,

except:

- A wall oven and separate hot plates are required.
- Hot plates 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. At least 300mm of bench space each side of a cooktop must be provided. (Refer AS4299-1995, Clauses 4.8.7: Cook tops, 4.5.8: Ovens, 4.5.9: Microwave Ovens).
- Provide for a microwave oven between 750mm and 1200mm above floor level (generally above the wall oven). (refer AS4299-1995, Clause 4.5.9) The top of the cabinet around the convection oven may serve as the microwave oven shelf.
- Hotplate controls may be located centre-front.

Bench space and clearances

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 9, 12, 13, 16) requirements,

plus:

- Provide adequate free bench space for food preparation and set down beside appliances (including the oven and refrigerator). Bench space should be provided on each side of the cook top.
- Space between benches (or to dining table in combined kitchen/dining) and to face of refrigerator) is to be 1200mm for one and two bedroom dwellings, and 1350mm for 3, 4 and 5 bedroom dwellings.
- Sink and cook top should be located on the same, continuous bench (does not apply to highset dwellings and continuous bench-top may include corners).

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 9, 12, 13, 16) requirements,

except:

- At least one 800mm work surface should be clear bench space.

plus:

- Allow a minimum clearance of 300mm between the hotplates and other appliances (i.e. wall oven, refrigerator) or other obstruction such as a wall.

- The top of the cabinet around the convection oven must be 1150mm to 1200mm above floor level.
- Locate the wall oven a minimum of 600mm from the internal corner of the front edge of the bench.
- Provide a work surface (800mm minimum length) beside the hotplates, wall oven and refrigerator. Two appliances may share a work surface. A sink drainer can form part of the work surface beside an appliance: hotplates can form part of the work surface beside the refrigerator (refer to AS 4299-1995, Clause 4.5.5).
- The work surface for the refrigerator must be measured in a straight line along the front edge of the bench. (i.e. must not be in a 'dead' corner).
- Provide a continuous bench-top between the wall oven and the refrigerator. The sink and hot plates are to be considered part of the continuous bench top (continuous bench-top may include corners).

Fridge space

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 9, 12, 13, 16) requirements, *plus:*

- 1 & 2 bed dwellings: 850mm wide x 700mm deep x 1900mm high
- 3+ bed dwellings: 1050mm wide x 700mm deep x 1900mm high

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 9, 12, 13, 16) requirements.

Cabinets

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 9, 12, 13, 16) requirements, *plus:*

- Benches are to be 600mm deep and 900mm above floor level.
- Pantry must be provided and is to be ventilated and vermin proof. Minimum width: 1000mm (with 2 x swing doors), depth: 450-600mm.
- Provide a minimum of one bank of drawers (locate remote from the hotplates).
- Benchtops are to be laminated with a post formed outer edge and no sharp corners. Plain colours are not preferred.
- Cupboards must have doors. Doors and drawers to be laminate/melamine finish with PVC edging, and metal D-handles.
- Seal junctions to benches, cupboards, walls, architraves etc.

Overhead Cupboards:

- Overhead cupboards are to be installed wherever kitchen layout permits (but not above hotplates).
- Locate overhead cupboards a minimum of 500mm above the kitchen bench.
- Maximum 350mm deep.
- Top of wall cupboards shall be no higher than 2100mm from the floor.
- One cupboard must have a secured, childproof lock to store medications and/or chemicals.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 9, 12, 13, 16) requirements,

except:

- Benches must be 850mm above the finished floor level.

plus:

- The cupboard doors, plinth and shelf under the sink must be removable to a minimum length of 820mm (refer to AS4299-1995, Figure 4.8(b)). The under-sink space must provide the required knee space (refer to AS4299-1995, Clause 4.5.6(d)).
- The cupboard doors, plinth and shelf under or partly under the hotplates 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.
- Cupboard and pantry doors must have 170 degree opening hinges (except for doors that are restricted by walls, other cabinets etc.).
- Align the centreline of the hotplate controls with the centreline of the removable section. Hotplate controls may be located centre-front of the cooktop.

Sink and taps**Gold Level Requirements**

Livable Housing Design Guidelines **Gold Level** (Elements 9, 12, 13, 16) requirements,

plus:

- single lever mixer tap. Chrome plated with swivel spout
- stainless steel sink. 1-2 bedroom: Single bowl with drainer. Minimum 900mm long. 3-5 bedroom: Double or 1 $\frac{3}{4}$ bowl with drainer.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 9, 12, 13, 16) requirements,

plus:

- The sink bowl must be to a maximum depth of 150mm (Refer AS4299-1995, Clause 4.5.6).
- Direct the waste(s) to a trap on the rear wall.
- Insulate exposed hot water pipes and metal surfaces under the sink in accordance with relevant Australian Standards.

Splashback

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 9, 12, 13, 16) requirements,

plus:

- Splashbacks are required, and should continue into window reveals if applicable.
- Provide a splashback behind a kitchen bench to a height of 500mm or to the underside of overhead cupboards or microwave enclosure.
- Splash backs shall be ceramic tiled or melamine surfaced high pressure laminated sheeting (a 'Lamipanel' type product).
- The splashback behind an upright stove shall be ceramic tiled or stainless steel and extend for the entire width of the stove space, from finished floor level to the same height as the top of the splashback above the kitchen bench.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 9, 12, 13, 16) requirements.

Bathrooms and toilets

Refer to **Appendix 2** for bathroom configurations.

Application of LHDG for bathrooms and toilets

Platinum Level dwellings: At least one bathroom and toilet is required to meet all Platinum Level requirements (including LHDG requirements). Additional bathrooms and toilets must meet *additional* Gold Level requirements and exceptions only (*not* LHDG Gold Level requirements).

Gold Level dwellings: At least one bathroom and toilet is required to meet all Gold Level requirements (including LHDG requirements). Additional bathrooms and toilets must meet *additional* Gold Level requirements and exceptions only (not LHDG Gold Level requirements).

Upper level of highset dwellings: LHDG Gold Level requirements to not apply, however *additional* Gold Level requirements and exceptions outlined below do apply.

Refer to *Accessibility* (page 8) for more detail about the application of Gold and Platinum Level requirements.

Design and clearance considerations

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 4, 5, 6, 7, 12, 13, 16) requirements,

plus:

- Bathrooms must be located on an external wall.
- Provide good natural lighting and ventilation, supplemented by mechanical ventilation in order to provide appropriate airflow. Mechanical ventilation must provide a minimum of 15 air changes per hour, and the fan and light must be switched separately.
- Bathrooms must not be accessed directly off bedrooms.
- Ensure visual privacy between the living areas (including kitchen) and the bathroom/s and toilet.
- At least one bathroom and toilet must be close to the bedrooms.
- Visitors should have easy access to a toilet and hand washing facility (a laundry tub near the WC is acceptable), separate from the main bathroom (except for 1 bedroom dwellings), and easily accessible from the living, dining and outdoor living space.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 4, 5, 6, 7, 12, 13, 16) requirements.

Shower

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 6, 7, 13, 16) requirements,

except:

- Provide a 1000mm x 1000mm shower recess, reinforced to the full width of the shower recess (not 900mm wide as described in LHDG) to enable *future* installation of shower equipment.

plus:

- A shower screen with a minimum 800mm pivot type glass door, or shower curtain must be provided.
- Position the shower away from bathroom door to minimise splashing into other rooms.
- Walls to a shower or shower/bath area shall be ceramic tiles or melamine surfaced high pressure sheeting (a 'Lamipanel' type product) to minimum 2100mm high or to the top of half height walls.
- Soap holder must be recessed.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 6, 7, 13, 16) requirements.

Reinforce shower walls as per LHDG, *except:*

- Extend the reinforcing to full shower width (not 900mm).
- On wall without shower combination, extend reinforcement to within 200mm of finished floor line (for possible *future* shower seat).

plus:

- Recess must be open on 2 sides.
- Floor tiles are to be a different colour to the general floor tile (minimum 30% luminance contrast).
- Shower configuration is to be in accordance with AS 1428.1-2009, Figure 47(a); or Figure 47(b) if WC is located adjacent to open side of the shower. Note that actual disability equipment (e.g. shower seats, grab rails) must only be provided if specified by the State.
- Provide circulation space in accordance with LHDG Figure 5(b).

- Position shower away from doors that lead to other rooms (to minimise splashing).
- Walls of shower area are to be tiled to 1900mm minimum.
- Provide a shower curtain rail 1800mm above floor level, ensuring that it does not intrude on toilet circulation space. Provide weighted shower curtain.

Bathroom and shower floor drainage and membrane

Gold Level Requirements

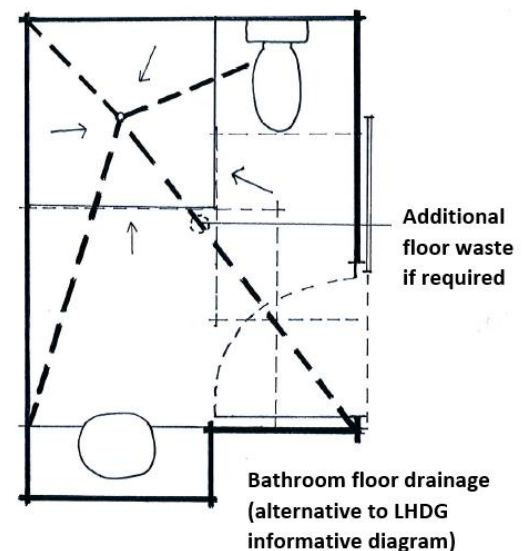
Livable Housing Design Guidelines **Gold Level** (Element 6, 7,16) requirements,

plus:

- A full seamless waterproof membrane shall be installed extended 300mm minimum up the wall.
- Bathroom floors are to drain in accordance with the method described in the LHDG Informative Diagram for bathrooms (floor gradients are to be between 1:60 and 1:80)

or

position shower waste in the centre of the shower area and fall entire bathroom floor to shower waste (as illustrated right). The fall at the shower shall be between 1 in 50 and 1 in 60. The fall in the bathroom shall be between 1 in 70 and 1 in 80. If this option is used, water must not be obstructed where a shower screen is provided. An additional 'back-up' floor waste may be provided outside the shower area.



Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Element 6, 7, 16) requirements.

Vanity

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 5, 6, 7, 12, 13) requirements,

plus:

- Minimum 1200mm long x 350mm deep (1050 long in additional bathrooms) x 800mm high. Vanity to include drawers.
- Allow 1000mm clear space in front of vanity.

- Vanity shall be 300mm clear of the finished floor level, fixed securely to the wall or on legs and fixed to the wall.
- Provide splashback to vanity.
- Minimum 750mm wide mirror behind vanity, from the top of splashback to joinery height. Mirror may be installed off centre if required due to window location.
- Vanity top and basin to be integral, one piece polymer.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 5, 6, 7, 12, 13) requirements,

except:

- Provide vanity with a bank of drawers and semi-recessed type basin with adequate circulation space (AS1428.1-2009, Figure 46).

plus:

- Position the basin to the end of the vanity unit that is away from the corner.
- Provide clearance under the vanity in accordance with AS4299-1995 (Figure 4.4: washbasin clearances).

Storage

Gold Level Requirements:

- Provide adequate storage in the bathroom through either wall shelves or under-vanity.
- Provide one lockable cupboard for storage of medicines.

Platinum level Requirements

No additional requirements

Toilet

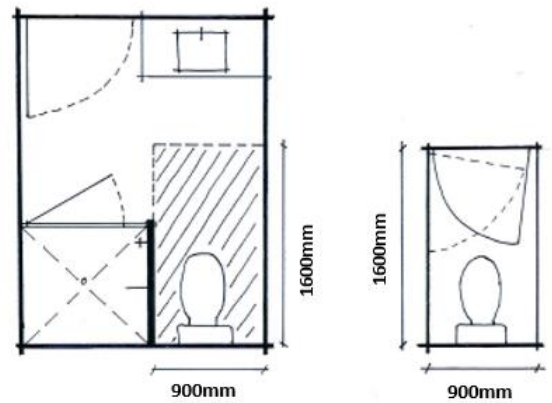
Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Element 5,7) requirements,

plus:

- Provide a ceramic bowl, a plastic or ceramic cistern, and a seat with a lid.
- Provide standard right-angled chrome plated cistern tap and chrome plated supply pipe.

- Provide chrome plated or stainless steel toilet roll holder. For toilets in the upper level of highset houses, and additional toilets in other dwellings, the clear area incorporating the toilet, must be a minimum of 900mm wide and 1600mm long (as illustrated right).
- Separate toilet rooms:
 - Natural light and ventilation is required.
 - Provide direct access to hand washing facilities in, or immediately adjacent to the toilet room.
 - Provide 100mm diameter dry floor waste with 25mm minimum falls (graded from perimeter of walls to floor waste. The floor may drain directly to an external doorway).



Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Element 5,7) requirements,

except:

- Reinforce the side wall as per LHDG, but reinforce rear wall as per AS4299-1995, Figure 4.5.
- Circulation space is to be in accordance with AS 1428.1-2009 (Figure 43). It is accepted that a future shower seat may encroach on circulation space when folded down.

plus:

- Locate adjacent to a side wall that is a minimum of 1200mm long.
- Set out WC as per LHDG Figure 4. In addition, minimum dimension from centre of toilet to edge of shower must be 500mm.

Bath

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Element 7) requirements,

plus:

- Minimum size 1500mm long x 720mm wide.
- Pressed steel, enamelled finish (acrylic, as noted in Product Standard, is not acceptable)
- Use either tiles or melamine surfaced high pressure laminated sheet (a 'Lamipanel' type product) to walls behind bath, from rim of bath to 1200mm above finished floor level, and to front and sides (if exposed) from finished floor level to bath rim.
- Provide a recessed soap holder.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Element 7) requirements.

Tapware

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Element 13) requirements,

plus:

- Tapware is to be chrome plated with a fixed spout.
- Minimum heights: shower rose outlet: 1800mm, shower taps: 1000mm.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Element 13) requirements.

Towel rails and accessories

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Element 7) requirements,

plus:

- Provide accessories (e.g. towel rails, toilet roll holders etc. as applicable).
- Finish: Stainless steel or chrome plated.
- Provide minimum 600mm long towel rails providing minimum 1200mm aggregate length of towel rail.
- Reinforce walls behind towel rails. Must be suitable for use as a grab rail.

Platinum level Requirements

No additional requirements.

Wall coverings, skirtings, splashbacks

Gold Level Requirements

- Ceramic tiles or melamine surfaced high pressure laminated sheeting is acceptable.

Platinum level Requirements

No additional requirements.

Laundry

Laundry requirements are applicable whether the laundry is provided as a separate room, in the bathroom, or as a recess off a larger space (e.g. accessed from a foyer)

Access and ventilation

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Element 4, 10) requirements,

plus:

- If the laundry provides access to a WC from both the outdoor and indoor living spaces through separate doors, provide an entry set to the door between the laundry and the house.
- If the laundry is provided as a recess along a corridor or similar (1 and 2 bedroom houses only) and is visible from entry or living area, doors must be provided that enable full use of the laundry space when open.
- For houses, provide direct access from the laundry to the clothesline, where possible.
- Where possible, provide natural ventilation to the laundry space.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Element 4,10) requirements.

Laundry tub and tapware

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Element 4, 10, 13) requirements,

plus:

- **Tapware** to be chrome plated with swivel spout.
- **Laundry tub:** Stainless steel with powder coated stainless steel cabinet, installed in 'compact configuration' (door must open to front) minimum capacity:
 - 35 litres (1 bedroom dwellings)
 - 45 litres (2 bedroom dwellings)
 - 70 litres (3+ bedroom dwellings)

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 4, 10, 13) requirements,

plus:

- Provide a 150mm swivel spout and mixer on the side wall at the laundry tub.
- The washing machine combination shall be 1300mm above finished floor level.

Appliance space

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 4,10) requirements,

plus:

- Provide a 900mm wide space for a **small deep freezer** (may be beside the washing machine).
- Provide 650mm deep space for **washing machine** beside the tub:
 - 700mm wide (1 and 2 bedroom dwellings)
 - 900mm wide (3, 4 and 5 bedroom dwellings).
- Provide a 12mm thick, 600mm wide, 900mm high, painted, marine grade plywood surface mounted wall reinforcing, 1300mm to 2200mm above finished floor level behind washing machine position for **wall mounting clothes dryer**.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 4,10) requirements,

except:

- Provide spaces for **washing machine and clothes dryer** beside the tub (1250mm long x 650mm deep)

Circulation space

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** (Elements 4, 10) requirements.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** (Elements 4,10) requirements,

plus:

Circulation space at the appliances and tub may be achieved in two ways, depending on the location of the laundry:

- As noted in LHDG, provide minimum clear area of 1550mm in front of tub and appliances (AS 4299-1995, Clause 4.8). This applies if laundry is provided in a separate room, within bathroom, or as a recess (e.g. accessed from a foyer).

or

- Provide clearances at doorways as per Figures 31 and 32 in AS1428.1-2009. Figure 32(b) may be particularly instructive in calculating clearances. This applies if laundry is provided as a recess in a hallway.

Note: if front of appliances and/or tub is recessed more than 300mm behind line of hallway wall, circulation clearances must increase by the same dimension (refer AS 1428.1-2009, Clause 13.3.3.3).

Storage

Gold Level Requirements

- Provide secure storage for chemicals.
- Fit two wall mounted shelves (minimum 1700mm above floor level). Minimum 600mm long x 300mm deep. 15mm laminated marine grade plywood.

Platinum level Requirements

- No additional requirements.

Floor waste

Gold Level Requirements

- Provide 100mm diameter dry floor waste with 25mm minimum falls (graded from perimeter of walls to floor waste). The floor may drain directly to an external doorway.

Platinum level Requirements

- No additional requirements.

Skirting and splashback

Gold Level Requirements

- Skirting: Ceramic tiles or coved vinyl. Minimum 200mm high.
- Splashback: Minimum 450mm above the tub, continuing as 450mm band in the appliance space, and on return wall.

Platinum level Requirements

- No additional requirements.

Bedrooms

Separate the sleeping areas from the living areas where possible (full separation may not be achievable in smaller houses), and position bedrooms close to bathroom facilities. Isolate sleeping areas from noise (coming from both within and outside the house).

Bedrooms should typically be grouped together. Four and five bedroom houses may have bedrooms in two separate 'wings', each supported by a bathroom and toilet. Entries to hallways that provide access to bedrooms should be visible from living areas.

Bedroom 1

Furniture requirements:

Must accommodate:

- 1 x Queen sized bed (with bedhead against a wall)
- 2 x bedside tables

Gold Level Requirements

Livable Housing Design Guidelines **Gold Level** requirements,

except:

- Minimum floor areas (excluding wardrobe), which override LHDG requirements, are:
 - 11m² (1 and 2 bedroom dwellings)
 - 12m² (3+ bedroom dwellings, and bedroom/bathroom additions).

plus:

- Provide a second window for cross ventilation where possible. Windows above intended bed-head space to have minimum 1500mm sill height.
- Provide built in wardrobe, with sliding doors, top shelf, hanging rail and 3 x 600mm wide shelves (not in the corner). Minimum length: 1800mm.
- Minimum clearance of 900mm around remaining sides of the bed.
- Minimum room width is 3000mm.
- Clearance around bed in accordance with LHDG, with the additional requirement for a minimum clearance of 900mm on the remaining side of the bed.

Platinum level Requirements

Above requirements, and *Livable Housing Design Guidelines* **Platinum Level** requirements.

plus:

- Provide a surface mounted sliding door hung inside the room wherever possible.
- Built in robes should be positioned away from the head of the bed.
- If the linen store is provided in Bedroom 1 (1-2 bedroom dwellings only), it may be located on the wall adjacent to the bed head.

Bedroom 2

Note: Livable Housing Design Guideline requirements (Element 11) do not apply to bedroom 2.

- Bedroom 2 must accommodate the following furniture:
 - **3 x single beds** (bedheads against the wall). In this bedroom only, beds may be as little as 500mm apart.
(Note: provision for three beds is to ensure the room is big enough and flexible to accommodate a range of configurations. It is not expected that three people would permanently occupy one bedroom)
 - **A Drawer unit** against a wall. The end of a drawer unit must be a minimum of 600mm from the front of a robe space.
- Minimum floor area (excluding building in wardrobe) to be 12 sq.m.
- Provide a second window for cross ventilation where possible.
- Windows above likely bed-head space to have 1500mm minimum sill height. Provide built in wardrobe, with sliding doors, top shelf, hanging rail and 3 x 600mm wide shelves (not in the corner). Minimum length: 1800mm.

Bedrooms 3,4 and 5+

Note: Livable Housing Design Guideline requirements (Element 11) do not apply to bedrooms 3, 4 and 5+.

- Bedrooms 3,4 and 5+ must each accommodate the following furniture:
 - **2 x single beds** – positioned to provide access to a minimum of two edges of each bed. Minimum distance between beds: 1000mm.
 - **Drawer unit against a wall.** The end of the drawer unit must be a minimum of 600mm from the front of the robe space.
- Provide a second window for cross ventilation where possible .
- Windows above intended bed-head space to have 1500mm minimum sill height.
- Provide built in wardrobe, with sliding doors, top shelf, hanging rail and 3 x 600mm wide shelves (not in the corner). Minimum length: 1800mm.
- Minimum floor area (excluding building in wardrobe): 10sq.m.

Linen cupboard and broom storage

Linen cupboard

In 1 and 2-bedroom dwellings, the linen cupboard may be located in a bedroom.

Provide a 600mm deep linen store inside the dwelling, preferably not accessed from the kitchen or bathroom. Minimum widths:

- 1 bedroom dwellings: 600mm
- 2 bedroom dwellings: 900mm
- 3 bedroom dwellings: 1200mm wide
- 4+ bedroom dwellings: 1200mm wide

Broom storage:

Provide a 500mm wide broom cupboard (this may be a dedicated cupboard, or may be incorporated as additional dedicated space in a laundry recess).

Covered outdoor living space

Provide a covered outdoor living space (refer to *Target Floor Areas* table), ideally located to provide private outdoor living and a safe place for children to play associated with a yard. The space should be located and/or screened to provide a comfortable place for outdoor living for as much of the year as possible.

The roofs of covered outdoor living spaces must be insulated, and it is preferred that they are under the main roof space.

Screening should be carefully considered in the context of privacy, the locality, sun paths and prevailing breezes (both welcome and unwelcome); and ability to provide control of the space to moderate breezes and sun penetration.

Where covered outdoor living and the entry porch are located together, visitors' paths to the front door should be the shortest possible distance across the porch or covered outdoor living area and not pass through the centre of the outdoor living area. Access from the house to the covered outdoor living area should be by a separate door, other than the front door.

If the covered outdoor living area and carport are connected, ensure cars are prevented from driving through (a gate is acceptable).

Covered outdoor living areas that are more than one step, but less than 1000mm to the adjacent surface (e.g. ground, car port, path) require a balustrade with a minimum of a top and mid rail.

If a gate is required at the top of stairs to an external outdoor living space, ensure that a threshold landing is provided.

For both Gold Level and Platinum level dwellings, where a useable, level yard is practically accessible from a covered outdoor space, provide a pathway in accordance with LHDG Element 1.

Bedroom/bathroom additions

A bedroom/bathroom addition may be identified as a suitable, cost effective method of addressing overcrowding and the undersupply of larger family houses.

Where a bedroom/bathroom addition is provided as a separate building (typically located in the backyard of an existing house with a covered link to the house), separation of the addition from the primary dwelling limits the use of the building to older children and independent adults. Lowset additions may not be suitable for people with a disability.

Bedroom / bathroom additions provided as a separate building must contain the following:

- a front door (may be a sliding glass door)
- 2 x bedrooms
- 1 x bathroom (toilet may be incorporated or separate)
- 1 x covered outdoor area (may also serve as the entry porch)
- 1 x 1100mm wide (minimum) covered pathway to the primary dwelling. Provide 300mm (minimum) roof overhang each side of path).

Internally, the additions must meet **LHDG Gold Level** requirements (with additional requirements) as outlined throughout this document.

Bedroom/bathroom additions must comply with all other requirements (e.g. electrical and stormwater management requirements) outlined throughout this document to the extent that they are relevant. Depending on the location of the addition, this may require the provision of separate items such as hot water systems and television antennas/satellite dishes.

General construction (all house dwelling types)

All construction and associated works must comply with all relevant building codes, regulations and mandatory standards.

Alternative construction must meet or exceed the performance outcomes of this standard and be approved by the department.

Energy efficiency

In addition to mandatory requirements, the design of houses must respond to site conditions and local climate.

Orientation

In order of priority, living areas (indoor and outdoor) then bedrooms should be orientated and / or designed to avoid the western sun and maximise exposure to the prevailing breezes. If possible, the narrow side of the building or the side that contains bathrooms and toilets should face west.

Shading

Houses with hip or gable roofs must have minimum 600mm eaves overhang.

Overhangs must be increased or additional sun and weather protection provided to external walls, windows and covered outdoor living spaces in the case of:

- roof pitch is less than 20 degrees
- roof pitching height is greater than 2700mm
- fascia gutters are not provided
- windows in gable end walls or under the top edge of a skillion roof.

External doors must have minimum 1200mm wide roof or eaves projection that also extends at least 450mm past the outside edges of the doorway along the line of the wall.

All windows exposed to direct western sun require additional sun shading without unduly restricting air movement.

Air Movement and ceiling fans

House design must facilitate good cross-ventilation.

Typically, habitable rooms with two or more external walls shall be provided with openable windows in both walls.

Window openings are to be in accordance with BCA energy efficiency minimum requirements for rooms without ceiling fans, even though ceiling fans (or an alternative method of creating equivalent air movement) are to be provided.

Ceiling fans (minimum 1300mm diameter) or an alternative method of creating equivalent air movement, are to be provided to all habitable rooms. Fan controllers with robust switches are to be provided if available.

The minimum height to the underside of exposed ceiling fan blades must be 2400mm (refer AS 4226-2008. Section 12.5.3). The clearance between the ceiling fan and the ceiling must be not less than 200mm (300mm preferred).

Ideally, warm air within the house should be vented at ceiling level or near the highest point in a raked ceiling.

Provide passive cross ventilation of the roof space. Ventilation openings are to be vermin proof and non-moving.

Bathrooms must have good passive ventilation and openable windows.

Air conditioning

Air conditioners are not supplied by the department.

An easily identifiable knockout panel and power outlet must be provided in all habitable rooms for future installation of air conditioners by tenants. Nominal size of knockout panels: 800mm wide x 500mm high (living areas), 700mm wide x 450mm high (bedrooms).

Thermal insulation

Thermal insulation is required to the entire roof, and/or over ceiling linings of all indoor and outdoor living spaces, and to attached carports.

For more information on ceiling insulation, refer to Product Standards.

Use of timber

Timber must not make contact with the ground.

Framing timber (other than prefabricated roof trusses) and external trim timbers shall be treated to a rating of H3 or above.

Timber should not be used as external wall cladding.

Avoid designs and detailing in which structural timber is unnecessarily exposed to the elements. Floor joists or bearers that continue out from buildings or decks are not acceptable.

External walls/cladding

External wall cladding shall be of an external grade, and must be water resistant and termite proof. Metal roof sheeting profiles (or similar) must not be used as the only cladding material on a house.

Cladding products of a composition that ignites or melts easily with a naked flame must not be used.

Sub floor screening (highset and lowset houses)

Sub floor screening, with lockable access panel, is to be provided on lowset houses. Sub floor screening is to be provided to the street elevations of highset houses.

Detailed requirements include:

- For highset houses, screening is required to the street frontage, returning to the first column on each side.
- For highset houses on corner blocks, screening is to be provided to both frontages and returned to the first column on the two adjacent sides. Battening that extends to over one metre in height must not be climbable. Where car parking is provided under the house, provide an opening nominal 3m wide x 2.3m high, with no gates.

Roofing

Minimise valleys. Box gutters are **not** acceptable.

The main body of the roof shall have a minimum pitch of 15 degrees and a maximum of 26 degrees. Other roofs can have a minimum pitch of 5 degrees.

Roofing material shall be light-coloured Colorbond or similar metal profile roof sheeting. Roofs to be ventilated through passive, non-moving roof ventilators (may include roof ridge vents) and must be in accordance with Section 3.12.1.2 (b) (i) of the NCC (Energy Efficiency, Roofs)

Roof vents must be colour matched to the roof sheeting.

Locate roof vents as far apart as possible. Gable ventilation can be used instead of, or in addition to roof ventilation. Gable vents must be located as close as possible to the top of the roof and be weather proof.

Vermin proof all possible means of entry into roof/ceiling cavity.

Fascias and gutters, should be Colorbond or similar. Gutter leaf barrier systems may be installed.

All roofs, including roofs over outdoor living areas, and gable ends and the like must be insulated in contact with the roof sheeting or cladding.

Floor Construction

Internal

Floors shall be reinforced concrete, suspended timber and/or steel framed. Framed floors shall be sheeted with 19mm plywood treated to H3 or above, or 18mm compressed fibre cement sheeting; or similar.

Bathroom and laundry

Reinforced concrete or compressed fibre cement sheet subflooring.

Bathroom subfloor must be set down so that the finished floor incorporating falls is level with the house finished floor at the door.

Floor finishes

Internal

Requirements in addition to NCC 2016 slip resistance requirements for internal and external floor finishes (Volume 2, Section 3.9.1.4) are outlined in the DHPW Product Standards document. In summary, requirements for floor finishes include:

- bedrooms: Sheet vinyl or ceramic tiles
- wet areas: Slip resistant, tiles preferred
- living, dining, kitchen and corridor: Sheet vinyl or tiles (vinyl only for Platinum Level). If providing vinyl, a row of tiles is required at external door thresholds (including sliding doors)
- laundry or laundry recess: Slip resistant sheet vinyl or tiles

External

Floors shall be either concrete slab on ground or suspended timber/steel framed. Suspended floors for landings, verandas or covered outdoor areas will be minimum 19mm shot edge hardwood or 23mm composite strip flooring with a 3mm gap between boards.

For lowset dwellings, ensure a clearance between the ground surface and the underside of the lowest horizontal members of the subfloor of at least 400mm.

Floor finishes for covered outdoor areas must have a slip resistant finish. Pavers are not acceptable in any outdoor areas, including paths.

Steelwork - external

All exposed steelwork including stumps, stringers, brackets, plates etc. must be hot dipped galvanised after fabrication.

In marine environments, steel treatment must meet relevant standards for the protection of structural steel against atmospheric corrosion for a minimum maintenance period of not less than 10 years.

Fasteners

All bolts, washers, nuts, nails, screws, nail plates, tie down brackets and any other fastener shall be galvanised to standard.

External Stairs

All stringers shall be galvanised steel. All treads must be 250mm x 50mm (dressed all round) hardwood or precast reinforced concrete. Handrails and balustrade can be galvanised steel or powder coated aluminium. Provide handrails to both sides of stairs.

Internal Ceiling Linings

Internal ceiling linings must be:

- 6.0mm recessed edge, flush jointed, fibre cement
- or**
- 10mm (minimum) impact-resistant plasterboard
- or**
- similar resilient finish

Provide a minimum 600mm x 600mm framed access opening in the ceiling for each roof space.

Internal Wall Linings and skirting boards

Internal wall linings on timber or metal studs must be:

- 9.0mm recessed edge, flush jointed, fibre cement sheeting
- or**
- 10mm (minimum) plasterboard that is recognised as being impact resistant
- or**
- Similar resilient finish.

Skirting boards may be hardwood or pine.

Doors

All doors to have cushioned combination stops/catches.

Provide weather strips to external doors where appropriate.

External swing doors shall be solid core, waterproof plywood sheeted, with 3 x 100mm hinges and must swing inwards.

Internal doors shall be hollow core construction with 3 x 100mm stainless steel hinges. Unless otherwise specified in this document or recommended by an occupational therapist, sliding doors are not acceptable.

Steel door frames may not be suitable in coastal locations. Stainless or galvanised steel may be required. External grade timber door frames are also acceptable.

Aluminium framed sliding glass doors

Aluminium framed doors shall have a powder coated or anodised finish.

Sliding glass doors must not be used as a front entry door (with the exception of bedroom/bathroom additions).

Circulation space applies to the sliding leaf in Platinum Level dwellings.

External door thresholds

Thresholds at all external doors shall be as per LHDG, Element 2 (however, 10mm maximum vertical threshold is acceptable). Door seals must be provided.

Door hardware

External swing door: lever type entrance locksets with external key and internal lockable snib. Deadlocks are required.

Bedroom: lever type privacy lockset (*not* passage set as noted in product standard)

Bathrooms and WC: lever type privacy lockset.

Aluminium framed sliding glass doors: keyed lock and 'D' handle.

All keyed locksets and deadlocks in a house shall be keyed alike.

For more information about door hardware, refer to *Product Standards: Social Housing Dwellings (Door Furniture)*.

Windows

It is expected that glazed windows will typically have powder coated or anodised aluminium frames.

Double hung, hopper and casement windows may be used provided that they are security screened. Standard louvre windows without security screening are not appropriate. Fixed glass may be used where cross ventilation is provided by other openable windows.

Alternative and composite systems or a combination of window types may be provided that provide improved outcomes for ventilation, natural daylight, safety, security, privacy, heat gain, maintainability, robustness, dust exclusion and suitability for use with air conditioning may be provided.

Alternative systems that comprise materials other than glass and aluminium should be suitably robust and consistent with community expectations.

For Platinum Level dwellings, window sills are generally to be no higher than 900mm above floor level (typical exceptions include bathroom and kitchen windows, and the second window in the bedroom).

Glazing

Glazing used in windows shall be laminated or toughened glass.

Use obscure glass in bathrooms and toilets and clear glass elsewhere.

Polycarbonate 'glazing' should not be used due to the potential issues of increased scratching and discolouration. In addition, community Bushfire Management Plans may exclude the use of polycarbonate glazing by reference to AS 3959-2009: Construction of Buildings in Bushfire Prone Areas. Any identified need for polycarbonate windows on particular dwellings requires prior approval from the State.

Window coverings

Provide curtain brackets, curtain rods, and curtains, to all glazed windows and sliding glass doors, other than in wet areas, kitchens or where alternative methods of maintaining privacy are provided.

Curtains are to be fire retardant and washable without reducing fire retardant properties.

Security and insect screening

All external swing doors and openable sections of windows and sliding glass doors must provide both insect screening, and security screening. In coastal areas, only products suitable for corrosive salt environments are acceptable.

Acceptable screen types include:

- woven stainless steel security mesh
- aluminium diamond grille security screens, with fly mesh, that prevent a 50mm x 25mm x 15mm probe from passing through. Nylon or aluminium fly mesh is acceptable.

For further information about security screens, refer to *Product Standards: Social Housing Dwellings (P54: Security and insect screens for doors and windows)*.

In dwellings that require increased security, security screening may be applied to the fixed glass side of sliding windows and doors.

If security screens are applied to the fixed side of sliding glass windows and doors, then one bedroom in each group of bedrooms must include an openable security screen.

Where openable window security screens are required, preference is for top/horizontally hung screens.

Openable security screens must comply with Section 3.9.2.5 of the NCC (requirements for the protection of openable windows).

For further detail on security screen requirements, refer to *Product Standards: Social housing dwellings (Security and insect screens for doors and windows)*.

Paint and protectant finishes

All paints must be Australian Paint Approval Scheme (APAS) approved.

Anti-mould additive to be added to internal and external paint.

Prepare all surfaces using a trade approved method.

Galvanised metal surfaces to remain unpainted.

Painting to include a minimum of two finish coats.

Internal walls

Internal walls and ceilings should be painted using a three coat acrylic system, typically:

- walls: easy to clean semi-gloss or low sheen
- ceilings: low sheen
- Doors, architraves and skirtings: gloss enamel

External walls and soffits

External walls should be painted using a three coat acrylic or oil based system.

Colours

Community preference should be considered in the selection of colours.

Generally, internal colours, other than feature colours, should be light in tone.

External colour schemes can affect the thermal performance of a house. Light colours can reflect thermal radiation while dark colours will increase heat gain. To the extent that the energy efficiency rating of a house (as required by the National Construction Code (NCC) and Queensland Development Code (QDC) Mandatory Part 4.1) is negatively impacted, dark colours (particularly on roofs) should not be used (refer to solar absorbance guide in NCC Volume 2 Part 3.12.1.2).

Other considerations when selecting external colours include:

- Avoid glare caused by sunlight reflected off very light colours, particularly when overlooked by neighbouring properties and when looking out to bright sunlight from inside.
- In areas with red soil, earthy medium tones on external walls can be useful to disguise dust and mud staining.
- It may be possible to use dark colours on external feature walls or architectural details where they are well shaded.
- Light colour tones experience less fading over time.

Natural Timber Decking

Decks should be coated using two coat timber decking finishing system.

Electrical

Refer to **Appendix 3** for room requirements.

Electricity supply must conform to the electricity distributor's requirements and all relevant standards.

Overhead lines must be clear of trees.

All lights to be energy efficient and readily accessible for replacement.

Fluorescent lights to be provided with diffuser covers.

Kitchen GPOs must be on a separate circuit.

Residual current devices (RCDs) or safety switches, are required for all circuits within individual dwellings. For dwellings other than detached houses, RCDs must be able to be reset from the sub board within individual dwellings.

If deemed a requirement, a single phase generator inlet socket and manual changeover switch to connect a single phase portable generator to residence may be provided. This generator will be for powering the general power circuits (excluding air-conditioning) and light circuit only (wire and mark circuits accordingly)

Install 'surge diverter' in the main switch board, on the television power circuit.

Gas

Provision for LPG gas to dwellings for cooking is to be determined in consultation with councils and must include provision for both large (45kg) and small (9kg) LPG gas

bottles, to be securely attached to the outside of the house, on hardwearing, weatherproof brackets.

Television and internet reception

Television

Provide appropriate digital television antenna or satellite dish for free-to-air television reception, connected to antenna outlets (refer Appendix 3).

New houses entitled to receive Viewer Access Satellite Television (VAST) should be provided with one VAST certified set-top box (not installed).

Where antennas are provided in cyclonic regions provide additional metal stays.

Internet

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 areas not planned for NBN fibre optic cable infrastructure)

Refer www.nbnco.com.au and *Product Standards: Social Housing Dwellings (NBN Equipment)* for more information.

Meter box

Meter box is to be of robust, metal construction. Provide 30mA Residual Current Device (RCD) to all electrical circuits. Provide a socket outlet, circuit breakers and provision for two additional circuits inside the meter box.

Locate the meter box in an accessible (but not visually obvious) location, not adjacent to public spaces or visitor paths of travel.

Where dwellings share a meter box (such as for duplex or dual occupancy dwellings) locate the meter box in a common area with sub-boards in each dwelling.

Separate metering is not required to bedroom/bathroom additions.

Facilities for meter cards should only be provided in consultation with Councils.

Sewerage

General

Household sewerage systems shall be appropriate to the site conditions and community sewerage infrastructure, typically either:

- directly connected to a town sewerage system via a main line jump-up
or
- connected to a home sewer system.

Home sewer system

Home sewer systems shall be a proprietary brand sized according to household population.

Locate trenches away from areas of potential damage from vehicles, stormwater and earth inundation. If vehicle traffic will be a problem, consider fencing off area.

Water Supply

General

All pipes and fittings (including taps) should be suited to local conditions, such as using appropriate PVC or polybutylene pipes where there is acidic water or corrosive soils; or copper pipes where PVC or polybutylene is likely to be damaged. Stainless steel fixings and combinations are to be used where PH levels cause corrosion.

Water Isolating Valve

For town supply where no meter is supplied, provide a water isolating valve at the front of the property which is suited to local water quality, protected from mowers and cars, and positioned 300mm above the ground.

Garden Taps

Provide 2 standard garden taps with vacuum breakers, one at the front of the house and the second at the rear of the house.

Water Heating

Hot water systems must be energy efficient, and the type of system informed by local experience and water conditions.

Hot water system capacities.		
Dwelling size	Solar	Heat Pump
1 Bedroom	Minimum 125 litre	Minimum 125 litre
Bedroom/bathroom additions	Minimum 125 litre	Minimum 125 litre

2 - 4 Bedroom	300 litre	270 litre
5 Bedroom	400 litre	340 litre

Note: Bedroom/bathroom additions located away from the main dwelling are to be provided with a separate hot water system if required (although not separately metered).

Solar Hot Water Systems

Roof mounted, thermosiphon, solar hot water systems are preferred.

Solar hot water units shall be located on the roof in accordance with the manufacturer's specification, ideally facing north. It may be necessary to mount the solar hot water unit on a galvanised steel frame in order to achieve the correct orientation of the unit. Install anti-cyclone brackets where applicable.

The solar hot water system selected must be appropriate for the quality and harshness of the community's water supply.

Provide an electric 'one push' booster connected to a thermostat that automatically switches off when the hot water has reached the appropriate temperature. Labelled (engraved) booster switch to be located inside the house and have a neon indicator and timer controller. Mounting height: 1500mm.

Heater elements shall suit supply authority regulations for remote community areas.

Ensure that roof framing is able to support the additional weight of a solar hot water unit.

Collector panel protection grilles may be provided where there is an identified need.

Heat pumps

Electric heat pump hot water units shall be located externally, to the side or rear of the house away from bedrooms and living areas, as central as possible to the fixtures that they supply.

Units shall sit on a concrete base.

Gas Hot Water Systems

Gas hot water systems are not preferred.

APPENDIX 1: Furniture requirements and sizes

Minimum furniture sizes to be shown in developed design drawings (Note: Furniture not usually provided as part of the construction contract – refer to the brief for details)		
Room	Furniture piece	Dimensions
Bedroom	Single bed	1870mm long x 920mm wide
	Double bed	1870mm long x 1370mm wide
	Queen bed	2030mm long x 1530mm wide
	Bedside table	600mm wide x 400mm deep
Living room	Lounge seating (Single armchair)	900mm long x 900mm wide
	Lounge seating (2 seat sofa)	1500mm wide x 900mm deep
	Lounge seating (3 seat sofa)	2100mm wide x 900mm deep
	Coffee table	900mm long x 600mm deep
	Desk (1 bedroom dwellings - multi-purpose space)	1800mm wide x 600mm deep
	Entertainment unit (1-2 bed dwellings)	900mm wide x 400mm deep
	Entertainment unit (3-5 bed dwellings)	1200mm wide x 400mm deep
	Bookcase / storage (1-2 bed dwellings)	1200mm wide x 400mm deep
	Book case / storage (3-5 bed dwellings)	1800mm wide x 400mm deep
Dining room	Dining table (4 setting)	1200mm long x 900mm wide
	Dining table (6 setting)	1500mm long x 900mm wide (1800mm long if short side against wall)
	Dining table (8 setting)	1800mm long x 900mm wide (placed in the open)
	Dining table (10 setting)	2100mm long x 900mm wide (placed in open)
	Sideboard / buffet	1200mm wide x 400mm deep

Living room furniture requirements by dwelling size (For space planning purposes only. Furniture not to be supplied)					
Furniture item	Dwelling bedroom number				
	1 bedroom	2 bedroom	3 bedroom	4 bedroom	5+ bedroom
Coffee table	✓	✓	✓	✓	✓
Entertainment unit	✓	✓	✓	✓	✓
Storage cabinet / bookcase	✓	✓	✓	✓	✓
Four setting dining suite	✓				
Lounge seating for three people <i>(or two people acceptable for LHDG Platinum Level dwellings)</i>	✓				
Six setting dining suite		✓	✓		
Lounge seating for four people <i>(or three people acceptable for LHDG Platinum Level dwellings)</i>		✓			
Side board			✓	✓	✓
Lounge seating for six people			✓	✓	
Eight setting dining suite			✓	✓	
Ten setting dining suite					✓
1 x 1800mm desk and 1 x desk chair (multi-purpose space)	✓				
Lounge setting for eight people					✓
Bedroom 1: Queen sized bed and 2 x bedside tables	✓	✓	✓	✓	✓
Bedroom 2: Three single beds, drawer unit against the wall		✓	✓	✓	✓
Bedrooms 3, 4 and 5+: 2 x single beds, drawer unit against the wall.			✓	✓✓	✓✓✓

APPENDIX 2: Bathroom configurations

Applicable bathroom fittings by bathroom type.				
Bathroom type	Toilet	Shower	Bath tub	Vanity
Bathroom with toilet	✓	✓	✓	✓
Standard bathroom	n/a	✓	✓	✓
Compact bathroom	✓	✓	n/a	✓
Separate toilet	✓	n/a	n/a	✓ (Compact basin may be provided where not associated with the laundry)

Applicable bathroom types by dwelling type.				
Dwelling type	Bathroom type			
	Bathroom with toilet	Standard bathroom	Compact bathroom	Separate toilet
1 bedroom (cluster house)	n/a	n/a	✓	n/a
2 bedroom (duplex)	✓	n/a	n/a	✓
Bedroom/bathroom addition	✓	n/a	✓	✓
2 bedroom (attached house)	✓ (upstairs)	n/a	n/a	✓ (downstairs)
2 bedroom (cluster House)	✓	n/a	n/a	✓
3 bedroom (detached house)	✓	n/a	n/a	✓
4 bedroom (detached house)	n/a	✓	✓	✓
5 bedroom (detached house)	n/a	✓	✓	✓

APPENDIX 3: Electrical requirements

These documented electrical requirements are in addition to Livable Housing Design Guidelines Gold Level or Platinum level requirements (Elements 9, 10 and 12).

Note: Each light fitting must:

- Be compatible with compact fluorescent bulbs and have replaceable B22 bayonet or E27 Edison LED 'corn' bulb/s installed.
- Have a robust, polycarbonate diffuser cover that is easily removable for replacing bulbs.
- Be positioned to provide even lighting to the room (with the exception of task lighting) and be located at least one metre away from ceiling fans.
- Be ceiling mounted to provide even lighting to the room.
- Be located at least one metre away from ceiling fan blades.

Electrical requirements.					
Room	Electrical Item				
	Socket Outlet (SO)	Light & Switch (minimum requirements)	Ceiling Fan & Switch	TV Point	Phone Point
Internal Space					
Foyer	n/a	1 x oyster fitting (with 1 bulb) (Switch located indoors near front door)	n/a	n/a	n/a
Living	2 x double (1 additional required if phone installed in this room rather than dining room) 1 x A/C provision.	2 x oyster fittings (each with 2 bulbs) (switched together)	1 x ceiling fan and controller	1 x point (located near a SO)	1 x point (near a SO and away from TV point)
Dining	1 x double (1 additional required if phone installed in this room rather than dining room)	1 x oyster fitting (with 2 bulbs) (Switch to be located in appropriate position)	1 x ceiling fan and controller	n/a	1 x point (near a SO)

Electrical requirements.					
Room	Electrical Item				
	Socket Outlet (SO)	Light & Switch (minimum requirements)	Ceiling Fan & Switch	TV Point	Phone Point
Bedroom corridor	1 x double	1 x oyster fitting (with 1 bulb) with 2-way switch. (One switch located on either end of the hall space)	n/a	n/a	n/a
Kitchen	1 x isolating switch for cooktops/stoves. (max 100mm above benchtop, not behind hotplates, located at least 600mm from corners, preferably to the right-hand side of hotplates). 2 x double at kitchen bench level (minimum 600mm from corner. One of these to be with one within 300mm of front edge of bench). 1 x single (fridge space), 1800mm above the floor, remotely switched (switch, with neon or LED indicator lamp, to be located preferably on the return wall of fridge recess or on adjacent wall 1 x single (microwave space).	1 x oyster fitting (with 2 bulbs) (Switch to be located in appropriate position)	n/a	n/a	n/a
Laundry	3 x waterproof (washing machine and possible drier and freezer). Must be located 1500mm above floor level on wall behind appliance space	1 x oyster fitting (with 2 bulbs) (Switch located in appropriate position) 1 x light switch for external light	n/a	n/a	n/a
Bedroom 1	2 x double (max 500mm above floor level, and min	1 x oyster fitting (with 2 bulbs)	1 x ceiling	1 x point (located	1 x point (located

Electrical requirements.					
Room	Electrical Item				
	Socket Outlet (SO)	Light & Switch (minimum requirements)	Ceiling Fan & Switch	TV Point	Phone Point
	600mm from corner walls, adjacent to edges of likely bedhead location) 1 x double (wall opposite bed location, approximately 1200mm above floor level 1 x A/C provision.	(switch located in appropriate position)	fan and controller	near SO opposite bedhead location. Approx. 1200mm above floor level).	near SO next to bed head)
Bedrooms 2-5+ (including bedroom / bathroom additions	2 x double located in appropriate position for furniture placement 1 x A/C provision.	1 x oyster fitting (with 2 bulbs) (switch located in appropriate position)	1 x ceiling fan and controller	1 x point (located near a SO)	n/a
Bathrooms	1 x waterproof double. (600mm from corner and 100mm above bench on side wall of vanity in accordance with relevant codes/rules).	1 x oyster fitting (with 2 bulbs) (switch located in appropriate position)	n/a	n/a	n/a
Separate WC	n/a	1 x oyster fitting (with 1 bulb)	n/a	n/a	n/a
External Space					
External entry space (porch)	n/a	1 x external grade oyster fitting (with 2 bulbs) (with vandal proof diffuser. May be ceiling or wall mounted. Switch located indoors near front door)	n/a	n/a	n/a
Patio / veranda	1 x waterproof double	1 x external grade oyster fitting (with 2 bulbs) for up to 12 m ² , OR 2 x external grade oyster (each with	n/a	n/a	n/a

Electrical requirements.					
Room	Electrical Item				
	Socket Outlet (SO)	Light & Switch (minimum requirements)	Ceiling Fan & Switch	TV Point	Phone Point
		2 bulbs) greater than 12 m ² (switched together) Provide vandal proof diffusers. 3000mm maximum centre spacing.			
Carport	1 x waterproof double (attached to house)	1 x external grade oyster fitting (with 2 bulbs) (with vandal proof diffuser attached to the house or to carport ceiling attached to the house. Switch located inside door that leads to carport) Two way switch. House and Carport.	n/a	n/a	n/a

APPENDIX 4: Version control

Section	Sub section	Amendments to June 2016 version of RIH standards.
Site Design	Drainage and stormwater	Explicitly stated that guttering is preferred. Removed specification of downpipe size (had changed in June 2016 version to 100mm from 90mm)
	Concrete driveways and paths	Changed wording from 'sealed' pathways to 'hard' pathways (concrete preferred)
	Letterbox	Changed requirement for mail access point, to 900mm – 1200mm range (standard previously stated 700mm to 1200mm), to align with Australia Post guidelines.
	Clothesline	Added requirement for clothesline to be hot-dipped galvanised steel. Added additional word that clothesline <i>base</i> must be non-removable. Noted that aluminium (as noted in the product standard) is not acceptable.
Internal Space	Bathrooms and toilets – Baths	Noted that acrylic baths are included in the product standard, but are not acceptable.
General Construction (all dwelling types)	Energy Efficiency – thermal insulation	New section.
	Meter box	Removed statement about meter box being located 'behind side fence if possible'
	Use of timber	Deleted wording 'natural or composite' from description of framing timber, and requirement for roof trusses to be H3 treated.
	Roofing	Removed option for Zinalume roofing material.
	Door hardware	Acknowledged that requirement for privacy set differs from products standard

Section	Sub section	Notable changes since May 2014 version of RIH standards
Changes applicable throughout the document		Reference to specific LHDG elements in applicable sections, for clarity

Section	Sub section	Notable changes since May 2014 version of RIH standards
Additional Reference documentation		Reference to Product Standards document
Introduction		Swapped some content with beginning of Design Principles section. Moved accessibility information and reference to LHDG to new section.
Accessibility		New section, incorporating information previously in the introduction. Also, added more detail to this section about application of Gold and Platinum Level.
Town planning		Minor changes to reflect status of Councils' planning schemes. Changed position of this section in the document.
Design Principles		Swapped some content with Introduction.
	Facing the street or park	Additional paragraph added to the end (to align with non-remote design standards)
	Climatic Design	Changed position in document. Added an additional new paragraph to beginning of section re orientation and designing for particular lots.
	Indoor/outdoor living connection	Added additional first sentence
	Planting and turf	Changed title (from just 'Planting'). Added maximum gradients to garden and turfed areas. Also included information about mature height of planting (aligning with non-remote design standards)
	Innovation and normality	Slight change to wording. Stated importance of addressing local cultural requirements.
Building types		Noted that building types should be influenced by local cultural needs.
	Acceptable building styles	Reinforced requirements that are stated later in the standard i.e. that lowset houses are to be designed to Gold Level , and that upper level of high set houses are not (but make provision for Platinum Level bathroom at ground level)
Site design		At start of section noted that site and ground level only required application of Gold level requirements. LHDG Gold and Platinum only apply to the extent that the ground level is intended for modification.
	Drainage and stormwater	Stronger wording regarding stormwater discharge, including water not being directed under houses. Changed downpipes from 90mm to 100mm.
	Concrete driveway and paths	Specified sealed pathways (not gravel). New requirement that there should be a pathway to the meter box. Also, more detail provided about crossovers, including requirement for culvert crossings, table drains, road gullies etc. Included link to FNQ Regional organisation of Councils standard drawings

Section	Sub section	Notable changes since May 2014 version of RIH standards
		Addition of sketch for clarity
	Carport	<p>Specified minimum dimensions (missing from previous version)</p> <p>Noted that for highset houses, reduced vertical clearance of 2400mm acceptable.</p> <p>Noted minimum length and width dimensions are to be measured between posts</p> <p>Noted that the design of the car port must be in keeping with the design of the house.</p>
	Letterbox	Included access and height requirements. Also added requirement for capacity to be locked with tenant-supplied lock.
	House numbering	Included requirement for numbers to be reflective, and to be screw or rivet fixed to the house.
	Garden store	Added requirement for high strength frame appropriate for wind classification of site. Also added requirement for recessed edge to prevent water penetration. Clarified that sheds are required for high set houses.
	Rubbish bin storage	Expanded on preference for rubbish bin store to be undercover by providing examples (e.g. under eaves)
	Clothes line	<p>For 1-2 bedroom properties, changed minimum line requirements from 20 to 15 metres, to align with non-remote standard and product standard.</p> <p>Included requirement for the clothesline to be at the rear or side of the property, and also the required mounting height of 1800mm above ground level. Also included more detail about the requirements for the slab under the clothesline.</p>
	Fencing	<p>Clarification that return fencing is required for highset houses if specifically required by the State. Addition of diagram for clarity</p> <p>Noted that 1800mm high chain wire fencing requires a mid-rail and that gates require galvanised steel frames.</p>
	Retaining walls	New section to align with non-remote standards
	Water tanks	<p>Added statement that requests for tanks in communities where approval has not been granted will be assessed on a case by case basis. Added statement that additional tanks may be required for bedroom/bathroom additions.</p> <p>Also added clarification that water tanks which include rainwater storage must not be connected to potable water fixtures, and that rainwater tanks are not to be topped up with town water (and vice versa).</p> <p>Noted that tank overflow should discharge to designated stormwater system.</p>
Internal space	Changed layout of these sections, stating 'General' level as the exception for highset houses,	

Section	Sub section	Notable changes since May 2014 version of RIH standards
		rather than having additional requirements for Gold Level.
	Corridors, thresholds and doorways	<p>New section (aligning with non-remote standard).</p> <p>Note that a 920mm door is deemed acceptable in lieu of LHDG Platinum Level requirement for 900mm clear opening (yet to be updated in non-remote standard)</p>
	Entry porch and foyer	<p>Clarified that front door must be a swing door with a security door.</p> <p>Deleted requirement for entry porch to be around 7.5sq.m. Added that minimum area should align with LHDG, and be up to 7.5sq.m.</p> <p>Added requirement that where outdoor living is at the front and incorporates the entry porch, path to the front swing door must be direct, and door from living to outdoor living must not be the front door.</p>
	Living and dining	<p>Noted that requirement for uninterrupted wall must not compromise natural ventilation.</p> <p>Added information regarding multi-purpose space (only applicable to one bedroom dwellings) to align with non-remote standard</p>
	Kitchen	<p>Noted that kitchen should not form part of the main thoroughfare through the house and that exhaust fans should be vented to the exterior of the house.</p> <p>Cooking:</p> <ul style="list-style-type: none"> – Noted that wall ovens in Gold Level for remote housing are by exception. Upright ranges to be standard in Gold Level, with 100mm side gaps for cleaning. – Microwave shelf may be provided as a recess in the pantry space. Noted that microwave space must not be located under bench. – Platinum level: Specified distances and clearances around cooktop. For platinum dwellings, hotplate controls maybe located centre-front <p>Bench space and clearances: Sink and cooktop to be on same, continuous bench. Locate wall oven a minimum 600mm from internal corners of front edge of bench.</p> <p>Fridge space: Increase from minimum 900mm wide to minimum 1050mm wide for 3+ bedroom dwellings.</p> <p>Cabinets: Benchtops: post formed with no sharp edges. More detail about requirement for laminate finish with PVC edging and metal D-handles. Added requirement that plain benchtop colours are not preferred.</p> <p>Platinum: Added reference to sections of AS 4299-1995, and requirement for 170 degree opening hinges.</p> <p>Taps: Added requirement for single lever mixer</p> <p>Splashback: specified that a splashback is required and should continue into reveal if required. Splashback to extend the entire width of the stove space.</p>
	Bathroom and toilets	<u>Application of LHDG for bathrooms and toilets</u>

Section	Sub section	Notable changes since May 2014 version of RIH standards
		<ul style="list-style-type: none"> – New heading, expanding on existing information, for clarity. <p><u>Design and clearance considerations:</u></p> <ul style="list-style-type: none"> – More detail about ventilation and added requirement for mechanical ventilation – Added requirement that bathrooms should not be accessed of bedrooms. For platinum Level, added door clearance requirements. <p><u>Shower:</u></p> <ul style="list-style-type: none"> – Clarified that shower screen or shower curtain may be provided for Gold Level – Clarified that disability equipment, including grab rails, are not required. – Noted for Platinum dwellings that walls are to be tiled to 1900mm high minimum. <p><u>Bathroom and shower floor drainage and membrane:</u></p> <ul style="list-style-type: none"> – Emphasised that falls must not be obstructed by the shower screen (if shower screen is provided) – Included new sketch of alternative floor drainage to LHDG informative diagram, for clarity. <p><u>Vanity:</u></p> <ul style="list-style-type: none"> – Noted that vanity mirror may be installed off centre if required due to window location. – Noted mirror to be <i>minimum</i> 750mm wide (previously stated 750mm wide). – Clarified that vanity top and basin to be integral, one piece polymer. <p><u>Storage</u></p> <ul style="list-style-type: none"> – Noted one lockable (rather than secure) cupboard required. <p><u>Toilet:</u></p> <ul style="list-style-type: none"> – Removed requirement for close coupled toilet, and clarified that plastic or ceramic cistern is acceptable. – Noted minimum dimension requirement (1600mm, previously 1500mm) for bathrooms at the upper level of highset houses (and additional toilets in other dwellings), including sketch for clarity. – Separate toilet rooms: clarified that natural light and ventilation required. Clarified that dry floor waste acceptable. – Platinum level requirements: Clarified circulation requirements for toilets, referencing As1428.1-2009 (figure 43) and noted that it is acceptable for future shower seat to encroach. <p><u>Wall coverings, skirtings and splashback:</u></p> <ul style="list-style-type: none"> – Removed requirement for minimum tiling height of 1200mm in areas outside the shower. – For skirtings, removed requirement for 45 degree cover strip tile to all wall and floor junctions.
	Laundry	<p>Houses: require direct access from the laundry to the clothesline, where possible.</p> <p>Noted to provide natural ventilation to the laundry space where possible.</p> <p>Changed requirement from plastic cabinet to powder coated stainless steel cabinet, due to availability issues.</p>

Section	Sub section	Notable changes since May 2014 version of RIH standards
		<p>Specified 900mm width required for small deep freezer (previously did not specify a width)</p> <p>Specified marine grade (rather than waterproof) ply for clothes drier wall reinforcement, and for wall shelves.</p> <p>Clarified that splashback required on return wall in appliance space.</p> <p>Changed tub capacity from 45 litres to 35 litres for one bedroom dwellings only (aligned with product standards)</p>
	Bedrooms	<p>Bedroom 1: Clarification regarding clearances around the bed and minimum room widths. Also, for Platinum Level, noted that built in robes to be positioned away from the head of the bed and that surface mounted sliding door preferred. Also, if the linen store is provided in bedroom 1 (1-2 bed dwellings only) it may be located on the wall adjacent to the bedhead.</p> <p>Changed minimum floor area (excluding wardrobe) to 12 sq.m (from 10 sq.m)</p> <p>Built in robes: Changed length of all robes to 1800mm (previous requirements were: Bedroom 1: 2100mm, Bedroom 2: 1800mm, Bedroom 3: 1500mm), aligning with non-remote design standard. Some more detail regarding shelving requirements.</p>
	Study nook	Removed requirement for study nook.
	Linen cupboard and broom storage	<p>Linen cupboard: Slight change to wording. Also, reduced size of linen cupboard in 4-5 bedroom dwellings, aligning with non-remote standard.</p> <p>Broom storage: Slight change to wording.</p>
Covered outdoor living		<p>Noted that roofs of covered outdoor living spaces must be insulated, and that it is preferred that they are under the main roof space.</p> <p>Noted that if a gate is required at the top of stairs to an external outdoor living space, ensure that a landing is provided at the top of the stairs.</p> <p>Noted that if covered outdoor living and the entry porch are located together, the path to the front door should be the shortest possible distance, and not pass through the centre of the outdoor living area.</p>
Bedroom/bathroom additions		<p>Clarified that the front door may be a sliding glass door.</p> <p>Clarified that depending on the location of the addition, compliance with all design standard requirements, may necessitate the provision of separate items such as hot water systems etc.</p> <p>Removed requirement for a study nook to the bedroom/bathroom addition.</p>

Section	Sub section	Notable changes since May 2014 version of RIH standards
General construction (all dwelling types)	Air movement and ceiling fans	<p>Specified ceiling fan diameter (1300mm)</p> <p>Reference to AS 4226-2008 (justifying existing requirement for 2400mm height to underside of fan blades.</p> <p>Noted fan controllers to have robust switches if available.</p>
	Air conditioning	<p>Knockout panels: noted that they must be easily identifiable, and noted nominal sizes.</p>
	Roofing	<p>Clarified that light colours must be used.</p> <p>More detail regarding roof ventilators (may include roof ridge vents and must be in accordance with Section 3.12.1.2 (b) (i) of the NCC (Energy Efficiency, Roofs)</p>
	Floor finishes	<p>Created a separate section. Content similar, with slight wording changes. Reference to Product Standards for more detail. Clarified slip resistance required to outdoor paths etc. and that pavers are not acceptable.</p> <p>For lowset dwellings, ensure clearance between the ground surface and the underside of the lowest horizontal members of the subfloor of at least 400mm.</p> <p>More detail regarding thickness of shot edge hardwood. Previously stated 20mm. Have updated to state 19mm shot edge hardwood OR 23mm composite strip flooring.</p>
	Internal wall linings and skirting boards	<p>Noted that skirting boards may be hardwood or pine.</p>
	Doors	<p>Emphasised that external doors must be solid core</p> <p>Noted requirement for stainless steel hinges.</p> <p>Alternatives to steel door frames, particularly for coastal locations.</p>
	Aluminium framed sliding glass doors	<p>Noted that anodised finish acceptable (to align with windows)</p> <p>Clarified that sliding glass doors may be used as the entry door for bedroom/bathroom additions.</p>
	Windows	<p>Platinum Level dwellings: added details that window sills are generally to be no higher than 900mm above floor level.</p> <p>Glazing: Emphasised that polycarbonate is not preferred.</p>
	Security and insect screening	<p>Changed requirements to allow expanded aluminium grille.</p> <p>Reduced amount of detail, making reference to the Product Standards document.</p> <p>Changed requirements for escape screens:</p> <ul style="list-style-type: none"> – Previous requirement: required two paths of escape from the internal doorway of a bedroom to separate external exits (an escape could be

Section	Sub section	Notable changes since May 2014 version of RIH standards
		<p>an external door or openable screen and operable screen could be in another room).</p> <ul style="list-style-type: none"> – New requirements: If security screens are applied to the fixed side of the sliding glass windows and doors, then one bedroom in each group of bedrooms must include an openable screen. <p>Noted that where openable security screens are required, preference is for top-hung screens. Also, openable screens must comply with Section 3.9.2.5 of the NCC</p>
	Paint and protectant finishes	<p>Added requirement for doors architraves and skirtings to be gloss enamel (previously no requirement stated)</p> <p>Natural timber decking: Rather than specifying decking oil, have stated requirement for deck finishing system</p> <p>Colours: Made statement that community preference should be considered in the selection of internal colours.</p>
	Electrical	<p>Specified that kitchen GPOs must be on a separate circuit.</p> <p>Specified that RCDs are required on all circuits within individual dwellings, and that for dwellings other than detached houses, RCDs must be able to be reset from the sub board within individual dwellings.</p> <p>Included requirement to install 'surge diverter' in the main switch board, on the television power circuit.</p>
	Gas	<p>More detail provided about securing gas bottles. Have added requirement to be securely attached to the outside of the house on hardwearing, weatherproof brackets.</p>
	Television and internet reception	<p>Included information about requirement for provision of NBN equipment</p>
	Water heating	<p>Added detail about possible requirements for separate hot water systems in bedroom/bathroom additions, noting a minimum size of 125 litres.</p> <p>Changed hot water system size requirements for one bedroom dwellings to 125 litre (previously stated 'minimum size available')</p> <p>Solar hot water systems: More detail about booster requirement and mounting height. Also, added preference for roof mounted, thermosiphon systems, and clarified that the system selected must be appropriate for the quality and harshness of the water in supply in the community</p> <p>Removed allowance for heat pumps to be located on a paved base (must be concrete)</p>
Appendix 1	Furniture requirements and sizes	<p>The table containing minimum furniture sizes: Existing. Just added minimum desk size (for desks in multi-purpose spaces).</p> <p>Table of living room furniture requirements by dwelling size is a new table, included to align with non-remote design standard.</p>
Appendix 2	Bathroom configurations	<p>Added applicable bathroom types for bedroom/bathroom additions.</p>

Section	Sub section	Notable changes since May 2014 version of RIH standards
Appendix 3	Electrical requirements	<p>Addition of oyster fittings that take either compact fluoroos or LED bulbs.</p> <p>Specific reference to LHDG requirements (Elements 9, 10,12)</p> <p>Kitchen requirements: More detail regarding isolating switch. Also provided more detail regarding GPO for fridge. Now require to be 1800mm above floor, remotely switched.</p> <p>Bedroom 1: heights and locations for SOs specified. Also specified height and location of TV point.</p> <p>Entry: specified that sensor lights required.</p>