

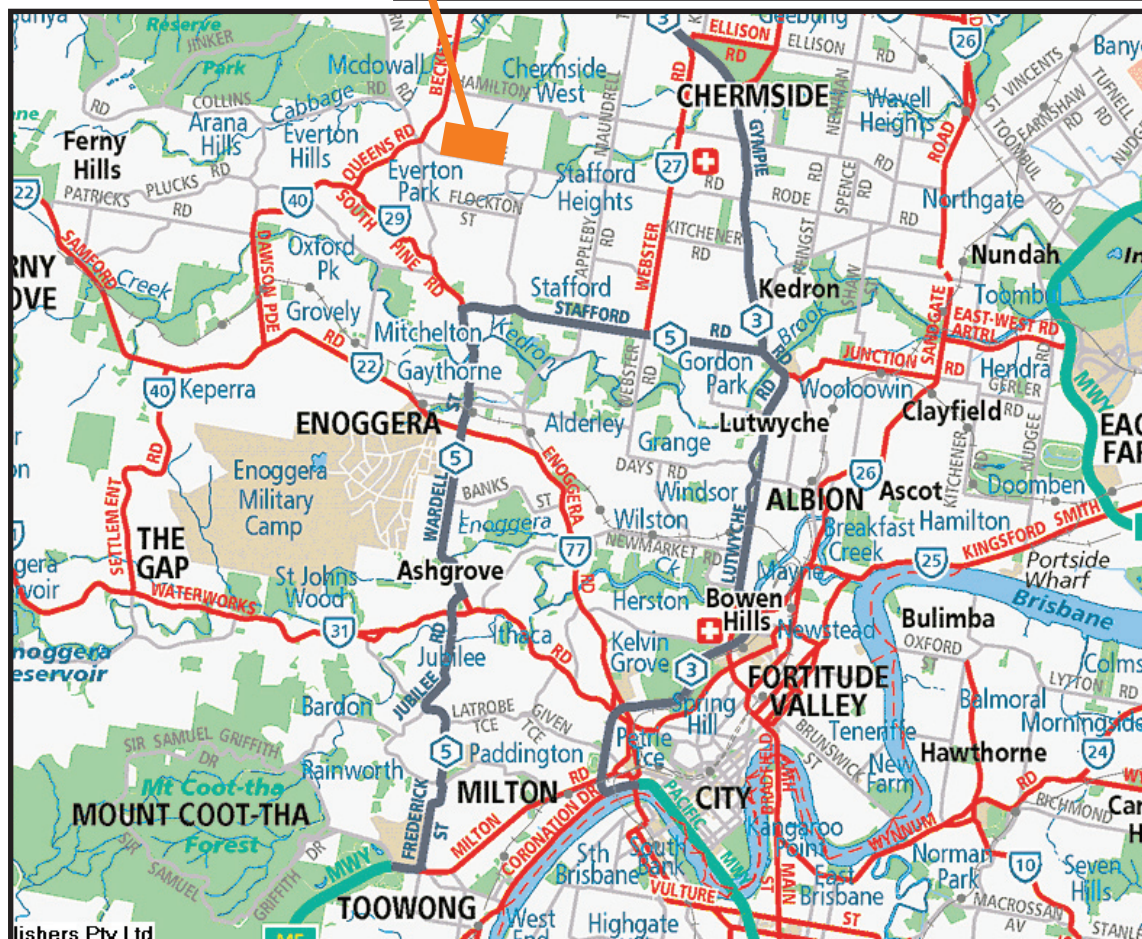
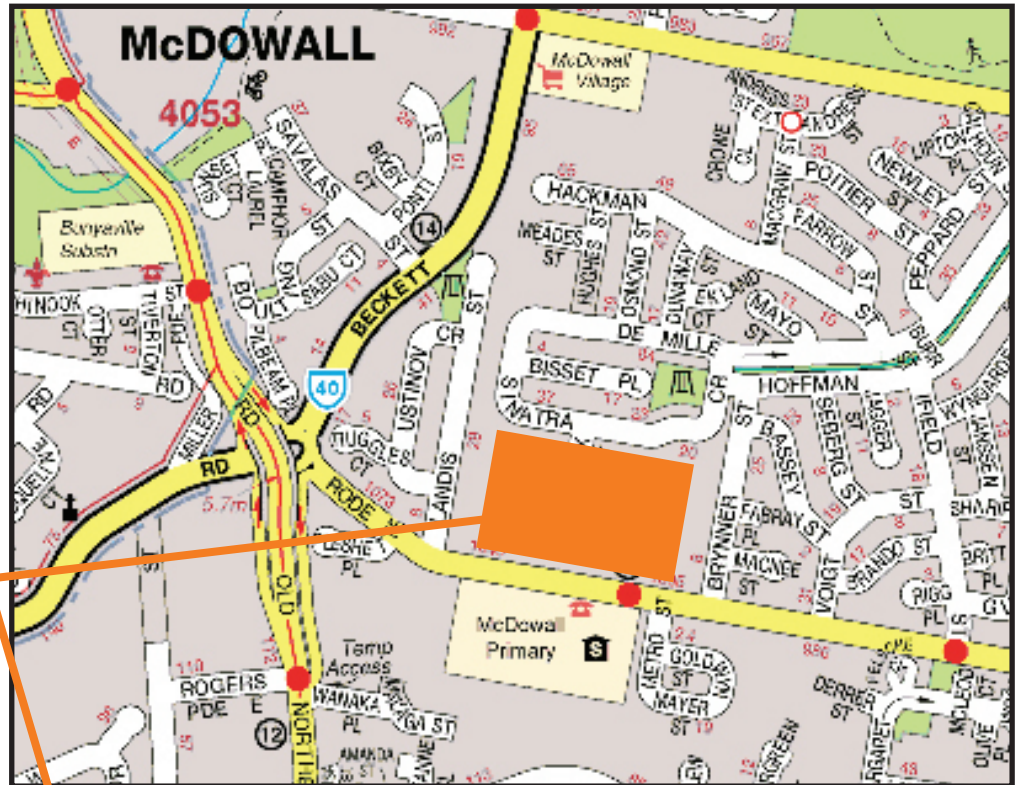
# Supplementary information

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# Supplementary item 1

## Site location

**GORDON OLIVE ESTATE**



# Supplementary item 2

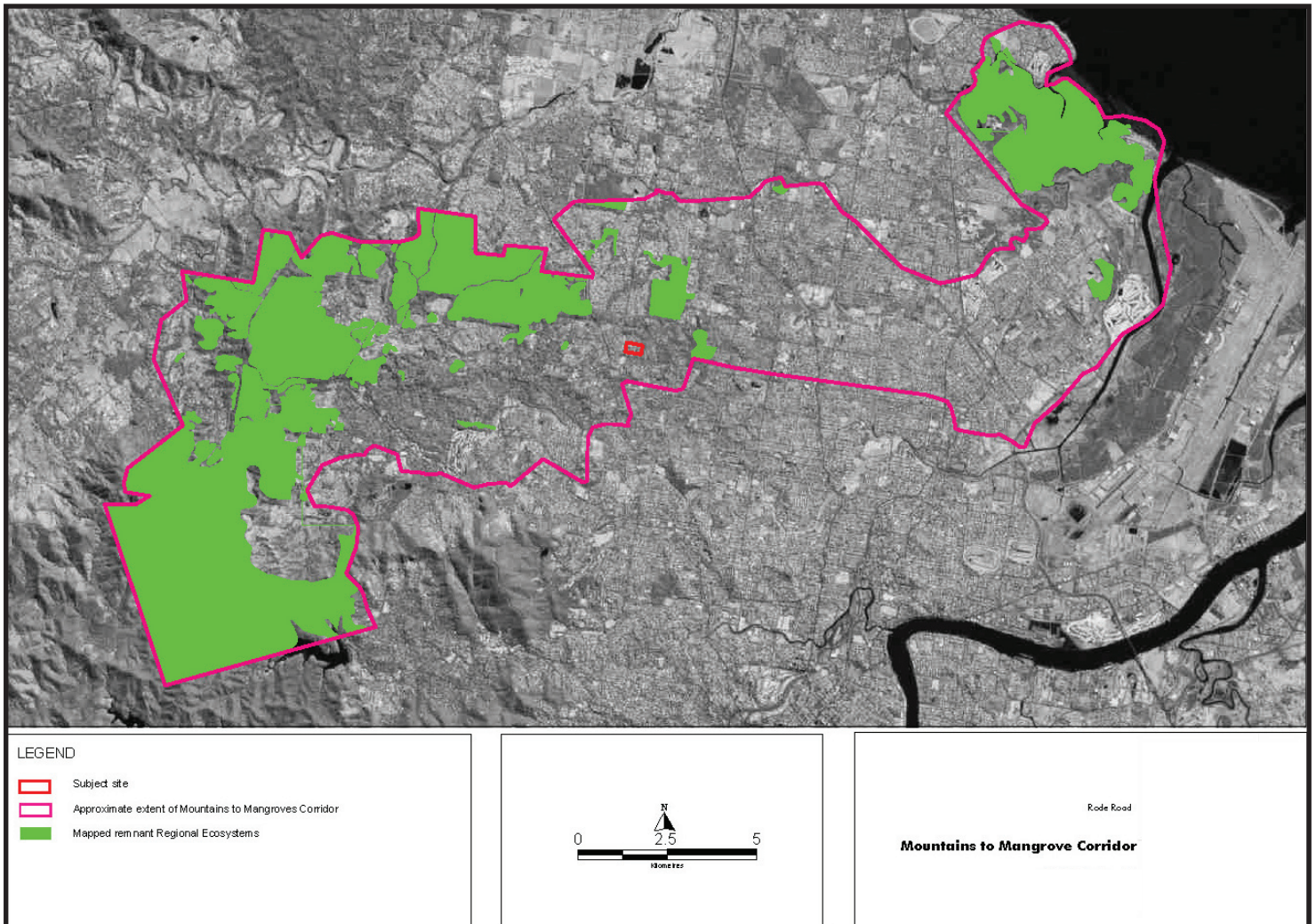
## Site master plan

### Master Plan



# Supplementary item 3

## Mountains to mangroves



# Supplementary item 4

## Letter from Director Relocations & Housing



**Australian Government**  
**Department of Defence**  
 Defence Support Group

Directorate of Relocations & Housing  
 Personnel Services  
 Campbell Park Offices (CP3-7-035)  
 CANBERRA ACT 2600  
 ☎: 02 6266 3543

Mr Neil Morris  
 General Manager Development & Construction  
 Defence Housing Australia  
 26 Brisbane Avenue  
 BARTON ACT 2600

RECEIVED  
 11 AUG 2009  
 BY D & C

Dear Mr Morris,

**Gordon Olive Estate, McDowell.**

In my capacity as Director of Relocations and Housing in the Department of Defence, I would like to offer my strong support for the proposal by Defence Housing Australia (DHA) to proceed with the development at Gordon Olive Estate, McDowell.

Housing has become a critical issue in the Brisbane area, with a high proportion of members forced to rent houses through the private market when posted to Enoggera due to a shortage of stock. The planned expansion of Army Units in the Brisbane area over the next few years will place additional pressure on the availability of family housing.

The proposed development at Gordon Olive Estate will be ideally suited to house members in this posting location as it is a short commute to the base and has easy access to community facilities like schools, shops and public transport.

DHA propose to construct 51 Service Residences (30 free-standing and 21 duplexes) on this site, with the majority of the housing being 3 bedrooms and in the lower Rent Band range that make them suitable for couples and small families. Additionally, as part of the estate is suitable for higher density development, there is the possibility of some MWOD Choice Accommodation (MCA) apartment-style housing being provided in the future should this program be expanded further than Darwin.

I am confident that the accommodation DHA proposes to construct will be very popular with ADF Members and their families who work in the Brisbane area. It will greatly assist Defence meeting its obligations to provide community standard housing for Defence families

Yours sincerely



**Alan McClelland**  
 Director Relocations & Housing

10 August 2009

# Supplementary item 5

## Letter from Defence Families Australia



Nicole Quinn  
 National Convenor  
 Defence Families of Australia  
 CP2-1-11  
 Campbell Park Office  
 CANBERRA ACT 2600

15 August 2009

Mr Michael Del Gigante  
 Managing Director  
 Defence Housing Australia  
 26 Brisbane Avenue  
 BARTON ACT 2600

  
 Dear Mr Del Gigante

### **Development of Housing for Defence – Gordon Oliver Estate**

Defence Families of Australia (DFA) has received a briefing on the proposed housing development at Gordon Oliver Estate, Brisbane. This development will support Australian Defence Force (ADF) families posted to this location and more specifically, the Enoggera Barracks. There are many pleasing aspects to this development which DFA believes supports the unique working and lifestyle conditions of ADF members and their families.

#### **Location:**

Brisbane is a popular posting location for ADF families and is currently experiencing some shortages in the number of service residences available. DFA believes majority of ADF families prefer the security and support provided in Defence Housing verses renting in the private sector. Additional housing built in the Enoggera area will be a welcomed addition to Defence Housing availability.

The location of this new Estate provides a highly desirable location to ADF families. Its proximity to the Base, CBD, and other community facilities will make this a popular spot.


- Being able to live close to a Defence Base is preferred by many families when a member is 'absent from home' or deployed, as it enables Defence families to access and use on base facilities and support.
- Living close to work reduces work travel time and therefore increases time at home spent with the family. An important consideration within the current framework of high operational tempo.
- The ability to access established community facilities, including transport, schools, childcare services and shopping facilities are also important to ADF families. Gordon Oliver Estate is located near all of these important considerations.

**Housing:**

The proposed design features of the new homes support modern living including open plan, outdoor alfresco living and environmentally friendly features. It also meets (or exceeds) the new Defence minimum housing standard.

DFA strongly supports the proposed development of Defence Service residences located at the Gordon Oliver Estate.

Yours Sincerely




Nicole Quinn  
National Convenor  
Defence Families of Australia

# Supplementary item 6

## Aerial photograph of site



 Construction site  
Looking south-east towards Brisbane CBD



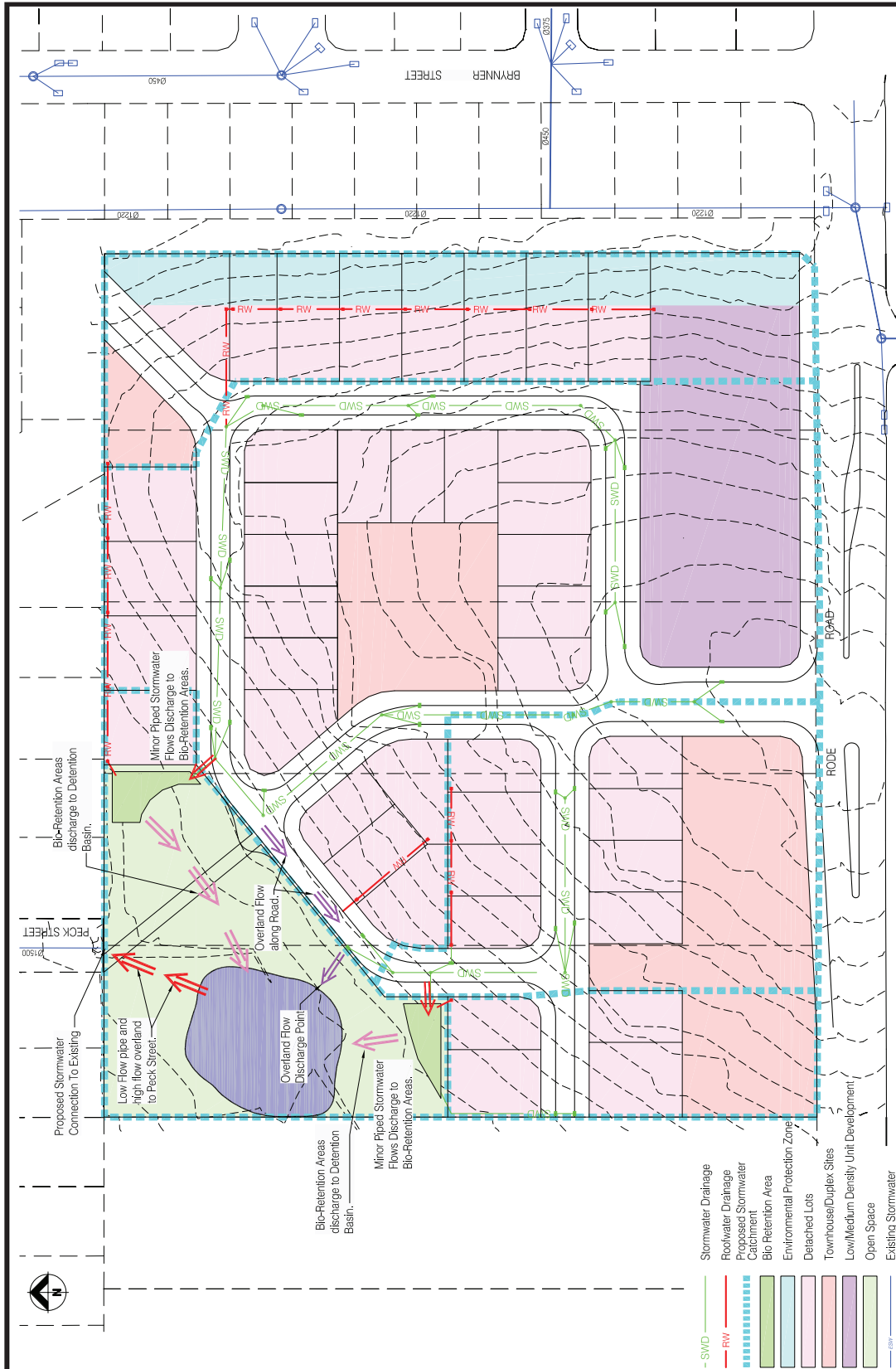
# Supplementary item 7

## Site analysis



# Supplementary item 8

## Drainage plans



# Drainage plans continued



Figure 2.1 Proposed Site Layout with Stormwater Drainage



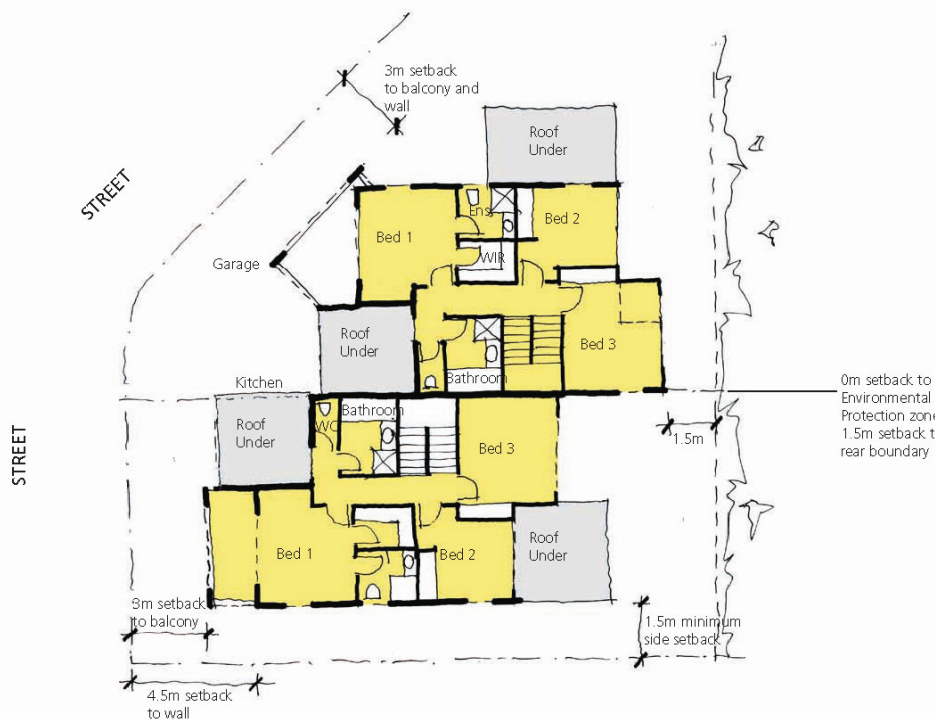
# Supplementary item 10

## Duplex layout

**Indicative Duplex Development**  
**Lot 8 & 9 - Duplex, building on two detached housing sites**  
**Lot 10 - Duplex, building on one redevelopment sites (mirrored)**



Ground Floor



First Floor

# Supplementary item 11

## Townhouse layout - Lot 29

Lot 29 - Car Court  
Indicative Development



Ground Floor



First Floor

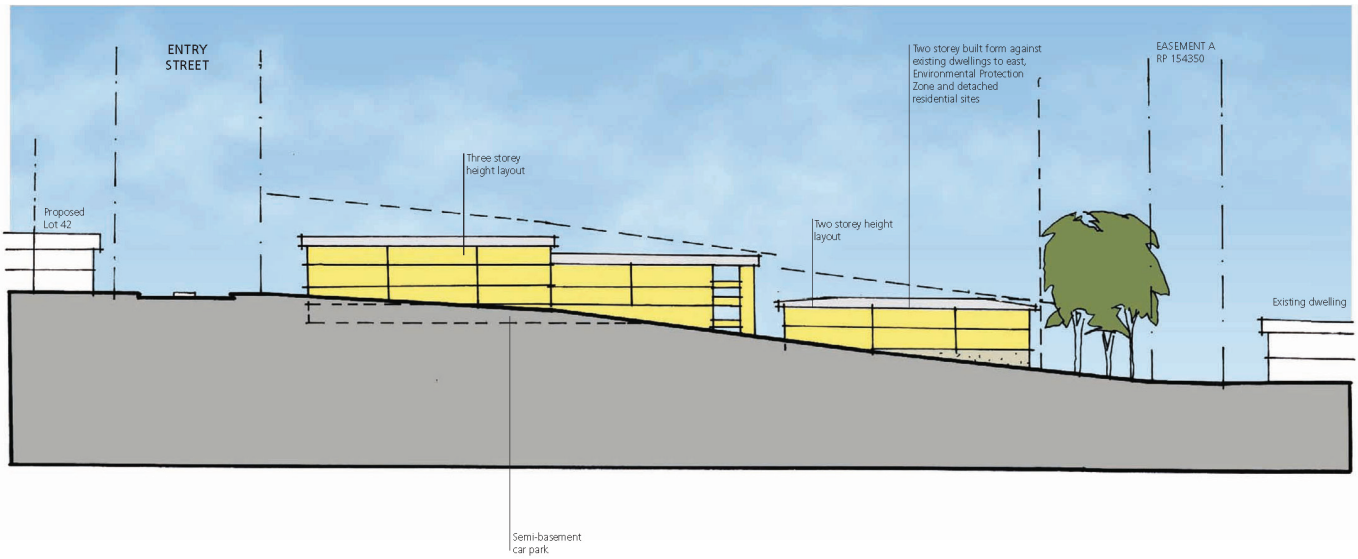
# Supplementary item 12

## Townhouse layout - Lot 42



# Supplementary item 13

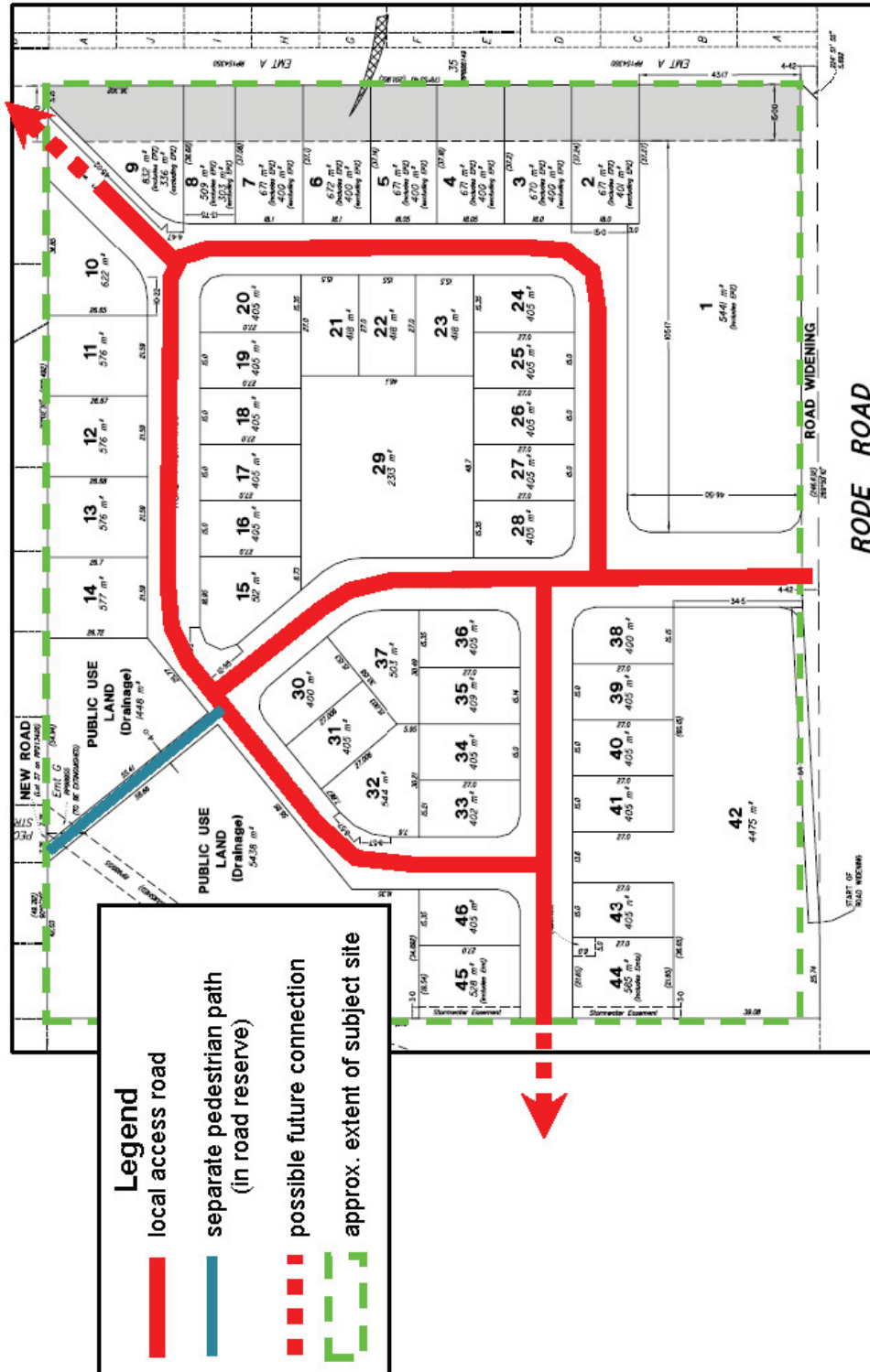
## Unit elevation drawing







# Traffic arrangements continued



# Supplementary item 15

## Plant palette

**STREET TREES**



Yellow Poinciana

Brush Box

Buckinghamia Tree

**PARK & TREES**



Silky Oak

Grey Gum

**SCREEN TREES**



Lillypilly

Bottlebrush

**REEDS & RUSHES**



Grey Rush

Juncus Rush

**UNDERSTOREY PLANTING**



Palm Lily

Dwarf foxtail grass

Gristle Fern

Code	Species Name	Common Name	Size	Local Native
<b>STREET TREES</b>				
BUC CEL	Buckinghamia celassima	Buckinghamia Tree	45l	
CUP ANA	Cupaniopsis anacardioides	Tuckeroo	45l	✓
LOP CON	Lophostemon confertus	Brush Box	45l	
PEL PTE	Peltophorum pterocarpum	Yellow Poinciana	45l	
<b>PARK TREES</b>				
ALL LIT	Allocasuarina littoralis	Black She-oak	180mm	✓
ALP EXC	Alphitonia excelsa	Red Ash	300mm	✓
ANG LEI	Angophora leiocarpa	Smooth Barked Apple	180mm	✓
COR INT	Corymbia intermedia	Pink bloodwood	200mm	✓
CRY GLA	cryptocarya glaucescens	Jackwood	180mm	✓
EUC PRO	Eucalyptus propinqua	Grey Gum	140mm	✓
EUC TER	Eucalyptus tereticornis	Forest Red Gum	140mm	✓
FIC OBL	Ficus obliqua	Small Leaved Fig	45l	✓
FLI AUS	Flindersia australis	Crows Ash	45l	✓
LIV AUS	Livistona Australis	Cabbage Palm	300mm	✓
LOP SUA	Lophostemon Suaveolens	Swamp Box	45l	✓
MEL QUI	Melaleuca Quinquervia	Paperbark	45l	✓
<b>PARK SCREEN TREES / SHRUBS</b>				
ELA PRI	Elaeocarpus reticulatus 'Prima Donna'	Pink Blueberry Ash	200mm	
CAL SAL	Callistemon salignus	White Bottlebrush	180mm	✓
CAL VIM	Callistemon Viminalis	Weeping Bottlebrush	180mm	
MEL LIN	Melaleuca linariifolia	Snow in summer	180mm	
PIT REV	Pittosporum revolutum	Hairy Pittosperm	180mm	✓
PIT RHO	Pittosporum rhombifolium	Diamond Leaf Laurel	300mm	
PIT UND	Pittosporum undulatum	Sweet Pittosperm	180mm	✓
SYZ AUS	Syzygium australe	Lillypilly	200mm	
SYZ LEU	Syzygium leuhmannii	Riberry Tree	45l	
<b>PARK UNDERSTORY SHRUBS / G'COVERS</b>				
ALP COE	Alpinia coerulea	Native Blue Ginger	300mm	
ASP AUS	Asplenium australasicum	Birdnest Fern	200mm	
AUS DUL	Austromyrtus dulcis	Midjim Berry	180mm	
BAC CIT	Backhousia citriodora	Lemon Scented Myrtle	25l	
CAL DUB	Calochlena (Culcita) dubia	Rainbow Fern	150mm	
COR CON	Cordyline congesta	Native Cordyline	200mm	
CRI PED	Cinnrum pedunculatum	Native Spider Lily	300mm	
DEN DAV	Dennstaedtia davallioides	Lacy Ground Fern	200mm	
CIA ATR	Dianella atraxis	Atherton Flax Lily	140mm	
DIA LONG	Dianella longifolia	Smooth Flax Lily	140mm	✓
DOO MED	Doodia media	Gristle Fern	140mm	
EPI AUR	Epipremnum aureum	Pothos Vine	140mm	
GAH ASP	Gahnia aspera	Saw Rush	180mm	

Code	Species Name	Common Name	Size	Local Native
<b>PARK UNDERSTORY SHRUBS / G'COVERS</b>				
LOM MUL	Lomandra multiflora	Matt Rush	140mm	✓
LOM LON	Lomandra longifolia	Matt Rush	140mm	✓
MOL CAP	Molineria capitulata	Palm Lily	200mm	
ORT PUR	Orthosiphon aristatus	Purple Cats Whiskers	140mm	
ORT WHI	Orthosiphon aristatus 'Albus'	White Cats Whiskers	140mm	
PEN NAF	Pennisetum alopecurioides 'Nafray'	Dwarf Foxtail Grass	140mm	
PLA BIF	Platycentrum bifurcatum	Staghorn Fern	mounted	✓
POA LAB	Poa labillardieri	Large Tussock Grass	140mm	
POR OLE	Portulaca oleracea	Native pigweed	100mm	✓
<b>REEDS AND RUSHES</b>				
JUN USI	Juncus ustatus	Juncus Rush	tube	✓
LEP ART	Lepironia articulata	Grey rush	tube	
NYM IND	Nymphoides indica	Water Snowflake	tube	✓
PHI LAN	Philydrum lanuginosum	Frog's mouth	tube	✓
<b>GARDEN TREES</b>				
ALE MOL	Aleurites mollucana	Tung Oil Tree	45l	
BRA ACE	Brachychiton acerifolium	Illawara Flame Tree	45l	
BUC CEL	Buckinghamia celassima	Buckinghamia Tree	45l	
GRE ROB	Grevillea robusta	Silky Oak	300mm	
HYM FLA	Hymenosporum flavum	Native Frangipani	25l	
LIV AUS	Livistona australis	Cabbage Tree Palm	300mm	
MAC TET	Macadamia tetraphylla	Macadamia nut tree	300mm	
POL ELE	Polycias elegans	Celerywood	200mm	
WAT FLO	Waterhousea floribunda	Creek Lillypilly	45l	

# Supplementary item 16

## Performance and design requirements



### PERFORMANCE & DESIGN REQUIREMENTS FOR CONSTRUCTION OF DHA RESIDENCES

**Version 3.0 April 2009**

#### **Introduction**

This document contains the guidelines and requirements for construction of houses in standard (low) and medium density developments. This document does not address project specific requirements, which are addressed in Tender documentation.

**Performance and design requirements for DHA residences**

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VERSION	RELEASE DATE	NOTES
Version 1.1	October 2007	Original
Version 2	January 2009	Corrections and revisions
Version 2.1	February 2009	Amended for clarification page 21 Garage and Storage
Version 2.2	February 2009	Amended for clarification (various clauses)
Version 3.0	April 2009	General review all clauses

**Performance and design requirements for DHA residences**

# 1. Design guidelines and mandatory requirements

In this section, both design guidelines and mandatory items appear. Design guidelines are items that are preferred by DHA, but not obligatory.

**A design review by DHA will form part of the tender assessment.**

## 1.1. Standards

Design guidelines: None

Mandatory requirements:

The builders must comply with all applicable national, state or local requirements. All designs and construction activities must comply with, but are not limited to, the requirements of:

- Building Code of Australia (BCA) and the Deemed to Satisfy provisions;
- Australian Standards (AS and ASNZ) relevant to the work;
- State or Territory, Local Authority and Statutory Requirements;
- House Building Certification Fund, owners and builders contributions;
- Utility companies – power, water, gas, telecommunications; and
- Specific estate design guidelines and covenants.

All houses must achieve a minimum 5 star Energy Efficiency Rating (EER) as certified by an independent accredited assessor, using NatHERS or other equivalent method (e.g. state systems such as BERS), or BCA Deemed to Satisfy Provisions.

## 1.2. House

### 1.2.1. General

Design guidelines:

Design considerations are important to DHA and houses must be designed to suit the local climate, be contemporary in style and in keeping with the architectural expression in the locality. Houses should reflect contemporary design that is suitable for the climate, responsive to the specific site, without use of faux, 'add-on' or 'period' features, and enhance the streetscape.

Mandatory Requirements: None

### 1.2.2. Orientation

Design guidelines:

The following orientation principles should be considered in relation to the house:

- the most efficient and functional use of the site for provision of required internal and external spaces;
- minimise earthworks (cut and fill) and avoiding cut to export soil; and
- minimise the need for active heating and cooling systems.

### Performance and design requirements for DHA residences

In particular:

#### South of Tropic of Capricorn

- main daytime living areas oriented towards the north to allow maximum sunshine penetration in winter and summer shade (Covered Outdoor Area [COA] should not compromise the living area);
- western walls are shaded and west facing windows are avoided or shaded; and
- private open space (POS) receives sun and or shade as necessary for optimum use throughout the year.

#### North of Tropic of Capricorn

- minimise sun into interiors and onto house walls with eaves, awnings, covered outdoor area and plants;
- maximise natural cross ventilation with design and placement of windows;
- ensure landscape treatments promote breezes into the house; and
- private open space (POS) to receive shade as necessary for optimum use throughout the year.

Mandatory requirements: None

#### **1.2.3. Streetscape**

Design guidelines:

The key streetscape elements that should be considered in creating the house design are:

- building scale and mass suitable to the street and neighbourhood;
- landscape setting to be dominant over the pavements or the garage; and
- trees to give shade and character.

Mandatory requirements: None

#### **1.2.4. Setbacks**

Guidelines:

Placement of the house on the site must ensure:

- harmony with existing street and locality setbacks;
- front entry forward of the garage wherever possible;
- privacy and adequate size of outdoor living areas;
- solar access internally and to outdoor living areas, with overshadowing of or by neighbouring development avoided where possible;
- plant root zones with sufficient space for trees.

Mandatory Requirements:

Setbacks from property boundaries must be in accordance with local Authority requirements as well as any estate covenants.

#### **1.2.5. Corner blocks**

Design guidelines:

Careful consideration should be given to houses on corner blocks so that both street frontages are considered and there is sufficient access to back yards.

Mandatory requirements: None

**Performance and design requirements for DHA residences****1.2.6. Views**

Design guidelines:

Internal spaces should take advantage of any views and vistas. The landscape should enhance any existing views and create outlooks from each daytime living room.

Mandatory requirements: None

**1.2.7. Existing Vegetation**

Design guidelines:

Healthy existing trees on the block that have been retained as part of the estate development should be retained wherever possible.

Mandatory requirements:

Any local Authority requirements as well as any estate covenants apply.

**1.2.8. Colours and Materials**

Design guidelines:

Houses should have variation in built form and diversity of exterior façade treatments with colours, textures and/or materials used to accentuate features and create visual interest.

Articulation of the front (street) facade may be achieved through expressed structures, feature windows, shading elements, front verandahs and entry porches.

Mandatory Requirements:

All external materials and finishes must be durable, robust and well constructed and not requiring regular maintenance such as painting. Façades must be consistent within the street but having diversity between each house.

**1.2.9. Window and window coverings**

Design guidelines: None

Mandatory requirements:

Windows fixed and opening to have powder coated aluminium frames. All opening windows must have insect screens.

All opening and fixed glazing (windows and glazed external doors) must have coverings for privacy and light control, with maximum light block for bedrooms. Where obscure glazing is used then coverings are not required except in the ensuite and bathroom.

## 1.3. Interiors

**1.3.1. General**

Design guidelines:

The pallet of interior colours, materials and finishes should be contemporary and timeless in style with an emphasis on neutral tones to accommodate the furnishings of tenants. Excessive use of grey tones should be avoided.



## Performance and design requirements for DHA residences

### Mandatory requirements:

Rooms, spaces and areas must be oriented and connected to allow their most functional and efficient use. The spatial arrangement of rooms and their fit-out must also ensure ease of furniture removal, particularly for large items (beds) in double storey houses.

Interior design schemes must be with materials and finishes that are robust to ensure reduced costs over the whole lifecycle of the house.

### 1.3.2. Heating and Cooling

#### Design guidelines:

All elements of the design and construction (siting, structure, interiors and landscape) should be integrated and suited to the site to minimise the need for active heating and cooling. If units are located externally they should be collocated and placed to minimise sound and visual impact to the household and neighbours.

Natural gas should be used where reticulated.

#### Mandatory requirements:

The requirements for active (powered) heating and cooling systems vary around Australia, and are defined in the section on regional requirements. All systems must be a minimum 5 star energy rating.

Where placement of the units and the enclosure is in a constructed housing or within wing walls, the location of units and the enclosure must be marked on the house plans. Concrete pads must be placed under the hot water system, water tanks, air conditioners and other utilities.

All products and systems must be selected to be robust, with minimum 5 year warranties, and have maintenance service (call out) available in that location.

If mechanical units are located within the roof space, the builder must provide a suitable platform/walkway and a light for ease of maintenance.

All units must comply with noise level restrictions applicable in the jurisdiction.

## 1.4. Exteriors

### 1.4.1. Covered Outdoor Area

#### Design guidelines:

Covered outdoor area design and materials should ensure:

- sunlight (light and heat) is not obscured from interiors;
- design / ventilation prevents heat build up under roofing;
- roof plumbing is connected to storm water; and
- lighting is adequate for cooking and dining.

Mandatory Requirements: None

### 1.4.2. Letterbox

#### Design guidelines:

The letterbox should suit the character of house, enhance the streetscape and where possible conceal services.

**Performance and design requirements for DHA residences****Mandatory requirements:**

The letterbox must be directly accessible on pavements from the front door and or driveway.

**1.4.3. Clothesline****Design guidelines:**

The clothes line should receive sunlight for most of the day, is not visible from the street and is near to the laundry door.

Mandatory requirements: None

**1.4.4. Fences and Gates****Design guidelines:**

Fencing should provide visual privacy and does not adversely impact solar access to adjacent properties. The visual impact of fences should be minimised with plants in beds beside fences.

**Mandatory requirements:**

The Back Yard must be fenced as a minimum to any requirements stated in the inclusions or other requirements that are nominated in either estate covenants or local Authority requirements.

Fences and gates must be designed and constructed to last at least 15 years with materials as per local conditions and practices. If timber is used, it must not be copper chrome arsenate (CCA) treated. Metal components must be galvanised or zinc and or powder coated e.g. steel posts, bracket fittings and nails. Posts and stays must have concrete footings designed to suit site specific conditions and functional requirements.

**1.4.5. Driveways**

Design guidelines: None

**Mandatory requirements:**

Driveways must be impermeable pavements constructed from unit pavers or reinforced, uncoloured concrete, unless otherwise required in specific estate covenants or local Authority regulations. Vehicular access over the verge to the kerb crossing, if installed as part of the building contract, must match the driveway and/or any local Authority requirements.

The size of a driveway must be the minimum area to enable safe access to the garage door(s) and must accommodate 1 (one) car parked on the driveway within the block. The driveway must stop at the property boundary so that the public footpath is continuous and not cut by the driveway.

A grated drain connected to the storm water system must be installed at the garage opening where the driveway slopes towards the garage.

**1.4.6. Slopes and Levels**

Design guidelines: None

**Mandatory requirements:**

The levels of the house and adjacent landscape surfaces must be designed to ensure that the house is not inundated in normal rain or storm

### Performance and design requirements for DHA residences

events and that the garage finished floor level (FFL) slopes from back to front (street) with a minimum fall of 1:100.

Sloping blocks must be terraced with retaining walls and associated steps. All external spaces and surfaces must meet the following different gradients (slopes):

- Private Open Space - 1:6 maximum to 1:50 minimum;
- plant (garden) beds - 1:4 maximum to 1:100 minimum;
- pavements (pedestrian) - 1:6 maximum (short runs only) to 1:100 minimum with crossfall 1:33 maximum

#### 1.4.7. Retaining Walls

Design guidelines: None

The use of natural stone (rocks) to form retaining walls is permitted.

Mandatory requirements:

Retaining walls must be included as part of the works where necessary to ensure outdoor spaces are functional and meet the slope requirements. Retaining walls are to be up to 1 metre high and must have steps incorporated. The maximum is 6 risers per flight. Walls over 1.0m height must be certified by structural engineers and are to have integrated child safety barriers or handrails.

Retaining wall materials must be robust masonry. The materials must last at least 20 years, as well as suiting the house in colours and finishes.

#### 1.4.8. Stormwater and Drainage

Design guidelines: None

Mandatory requirements:

The treatment of stormwater within the block must be designed to suit the climate, soils and local Authority requirements. Where it is required by local authorities, all roofs must have gutters which are connected to the stormwater system and/or to water tanks.

Surface flows must be diverted away from the house and off paved areas onto garden beds and lawn areas. Excess stormwater runoff must not be directed onto adjoining properties. Retaining walls must have suitably placed agricultural drains behind walls with geotextile fabric to back of wall.

On site temporary (i.e. two hours) ponding of rain is acceptable where it is a deliberate detention area with suitable disposal of overflow stormwater. Stormwater systems, soakage drains, grated pits and pipes must be adequately sized for purpose and local conditions.

#### 1.4.9. Pedestrian Pavements

Design guidelines: None

Mandatory requirements:

Impermeable pavements must be supplied for:

### Performance and design requirements for DHA residences

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#### 1.4.9. Pedestrian Pavements

Design guidelines: None

Mandatory requirements:

Impermeable pavements must be supplied for:

### Performance and design requirements for DHA residences

- pedestrian access linking front entry to driveway and letterbox;
- access from the laundry to the clothesline (a path to the clothes line as a continuous pavement with no steps).

Use of permeable pavements is preferred wherever practical in any other areas where necessary.

The path to the rotary hoist must extend 300 mm past the post. Wall attached lines and extended lines must have pavement underneath the lines and the pavement must extend 600 mm past the side furthest from the wall and the side adjacent to the path.

A concrete protective mowing strip must be provided around the house perimeter. No mowing strip is required in the sections adjacent to the house where footpaths or pavements occur.

#### **1.4.10. Irrigation**

Design guidelines: None

Mandatory requirements:

Irrigation systems will be installed only in locations where required in nominated in regional requirements or to meet estate covenants.

## 1.5. Landscape

### **1.5.1. General**

Design guidelines:

The landscape design should meet the following general requirements:

- compliment the architectural style of the house;
- enhance the front entry area;
- contribute to the streetscape;
- integrate with existing neighbouring properties;
- ensure clear lines of sight from the house entry to the street
- reduce overlooking into adjoining properties;
- screen fences with plants;
- screen utility areas;
- provide trees to give summer shade; and
- allow winter sun in southern climates to children's play/lawn area.

Mandatory requirements:

The landscape design documents must be prepared by a qualified landscape contractor. The builder must allow for the production of the landscape documents as part of the Lump Sum. The construction of the landscape works must be undertaken to meet industry standards by a landscape contractor.

Builder's rubble and debris must not be buried or covered over on the site.

### **1.5.2. Ground Preparation**

Design guidelines: None

Mandatory requirements:

### Performance and design requirements for DHA residences

Prior to undertaking any landscape works the block must be appropriately prepared for the intended surface treatments and plants. The builder must complete the following earthworks as part of the Lump Sum:

- All clearing and grubbing of the site; and
- All bulk earthworks required to achieve benching levels including landscaping levels (allowing for topsoil refilling);
- All bulk earthworks required to achieve benching levels including landscaping levels (allowing for topsoil refilling); and
- All detailed excavation associated with retaining walls and to achieve the nominated fall requirements.

The only earthworks to be undertaken for landscaping is the minor cutting/tilling associated with plants and gardens beds.

Where there is insufficient quality or quantity of stockpiled site topsoil, areas must have imported topsoil blended to make up quantities required. Prior to placement of soil additives or topsoil, all weeds must be sprayed or removed and the ground must then be ripped to achieve de-compaction.

#### **1.5.3. Surface Treatments**

##### **Grass**

Design guidelines: None

Mandatory requirements:

All lawn grass species must be low water use suited to the climatic area. Turf must be used so that grass areas will be fully established on completion of the 4 weeks establishment period.

##### **Mulch**

Design guidelines: None

Mandatory requirements:

All areas, except for lawns and pavements, must be mulched plant beds. Mulch must be placed as the finished surface treatment to all garden beds. Organic mulch products must be a weed free product. Inorganic mulches, such as washed gravel or pebbles may be used.

Weed mat or other geotextiles must not be used under mulch materials in any planted areas. However, where washed gravel or pebbles are used as a permeable pavement, weed mat or other geotextiles must be used.

##### **Edge Strips**

Design guidelines: None

Mandatory requirements:

Edge strips must be installed between lawn and plant beds, and between lawn and gravel pavements. All edge strips must be constructed to finish flush with surrounding surfaces and where adjacent to grass, must serve as a mowing edge and inhibitor of grass crossing into adjacent areas.

##### **Plants**

Design guidelines: None

### Performance and design requirements for DHA residences

#### Mandatory requirements:

Plants must be drought resistant, native to the area, suitable for the soil type, be vigorous, well established, hardened off, of good form consistent with species or variety, free from disease and insect pests, with large and healthy root systems and no evidence of having been restricted or damaged.

Plants that have a short life, less than 10 years, must be avoided or minimised. Climbing plants must not be used. Plant beds must not be placed against house walls.

Spacing of plants must achieve a 'semi-mature look', ie fully covered plant beds, after five years growth and 'established look' after 15 years growth. Plants that form hedges must be spaced to suit the natural growth habits of the plant and not rely on frequent clipping or shaping to form the hedge. There must be deep root zones (areas of unimpeded natural ground) for trees to grow.

Plant species if nominated on lists provided in estate or Council guidelines must be used.

## 1.6.Sustainability

#### Design guidelines:

Sustainable design is a holistic approach that aims to improve the quality of life both now and into the future and which encompasses environmental, social and economic issues. Builders are encouraged to adopt as many principles of sustainable design as possible in achieving the required energy rating.

The following methods are suggestions to assist in an energy efficient house:

#### **Insulation**

Insulation to wall and ceiling cavities and slab or sub-floor spaces are very effective, along with draught exclusion, in achieving high energy ratings and thermal comfort.

#### **Thermal mass**

In cool climate regions, select areas of floor and wall surfaces can act as thermal 'banks' to provide thermal stability and in cooler localities can absorb and re-radiate solar energy in the cooler months. The placement of windows and shading devices as well as the selection of interior materials and finishes can be designed to enable this effect.

#### **Shade**

The eaves overhang can be constructed to admit winter sun into the house while excluding summer sun. Other shading devices include pergola structures and landscape treatments e.g. pergolas or trees can reduce heat gain in summer but permit light all year round.

#### **Ventilation**

Maximise cross ventilation to ensure breezes flow through the house by locating operable windows to capture prevailing breezes. This is particularly important in the tropical regions.

### Performance and design requirements for DHA residences

#### Light

The location and size of windows is critical to maximise natural day light into the house and minimise the use of artificial lighting during the day. The layout and number of light fittings provided should be fit for purpose to suit the size and function of the rooms. In line with the national phasing out of incandescent light globes by 2010, compact fluorescent light fittings as well as compact fluorescent down lights can to be used.

#### Water

Sustainable use of water means reducing the use of potable water and facilitating water to soak into the ground (gardens and lawns) wherever possible.

#### Internal fittings and fixtures

All water fixtures and fittings should be AAA rated to comply with the Building Code of Australia (BCA), state and local Authority requirements, for example BASIX in NSW.

#### Water tanks

Provide water tanks and associated piping and pumps where required by local Authority. Install first flush system to tank inlet.

Mandatory requirements: None

## 2. Construction and completion

### 2.1. Commencement at Site

All preliminary tasks, such as site works and provision of temporary power or water, are to be undertaken without additional costs to DHA. The builder is expected to be familiar with the site physical conditions and subsurface conditions.

The builder must design all required footings. The depth and extent of all site works must be sufficient to prepare the house and driveway 'platform' to suit the site's geotechnical conditions and consequent design. Excess earthworks are to be avoided. The builder is expected to strip and stockpile, for later re-use, the existing site topsoil as part of the site works and remove vegetation prior to both earthworks and prior to re-use.

Prior to construction commencement, the property (work site) must be temporarily fenced for local Authority and occupational health & safety requirements. The work site is to be securely locked at all times when workers are not present. All activity and all materials storage must be within the fenced area.

Temporary fences must include the adjacent public land (verges) except where they have been developed (paths and landscape works) or they are required for public access.

The builder must not disturb or damage any land outside the block boundaries.



**Performance and design requirements for DHA residences**

## 2.2. Practical Completion

Following execution of site works, access to the site for all construction works is restricted to the location of the driveway, unless otherwise agreed by DHA and local authorities.

At the Practical Completion inspection, the builder must have:

- the house and site cleaned (inside and out) to a standard sufficient for tenants to move in;
- all temporary fencing removed;
- any damage of public and/or private land adjacent to the site repaired;
- any verge restoration (if required) completed;
- telephone connected and working; and
- all services including electricity, gas, water, sewer are to be connected, approved and tested ready for occupation.

Upon Practical Completion certification, the telephone, electricity and gas accounts must be terminated by the builder to allow connection by the tenant.

As part of the requirements for Practical Completion, the builder must provide to DHA the following documents and items:

- A 'folder' (to stay in the house) with appliance or fittings manuals and the telephone number.
- Two (2) complete sets of keys each on three (3) separate key rings that have labels for purpose plus the address (lot and house number):
  - Key ring 1 all external doors including security screens
  - Key ring 2 all windows
  - Key ring 3 garage, letterbox (and any others).
- A CD with all following documents (scanned images or PDF/ CAD files):
  - all certificates and documents outlined in the Practical Completion Documents Table.
  - all requisite appliance guarantees / warranties (paper or electronic), all filled in and nominating Defence Housing Australia as the beneficiary and dated as per day of installation (not purchase date).

### Practical Completion Documents Table

AUTHORITIES	1. Occupancy Certificate from relevant body or approved Private Certifier 2. Building Certificate from relevant body or approved Private Certifier 3. NatHERS (or equal) certificate
TRADES/ PROFESSIONALS	1. Termite treatment warranty and certificate 2. Truss manufacturer certificate

**Performance and design requirements for DHA residences**

	<ol style="list-style-type: none"> <li>3. Structural Design compliance and inspections, incl. retaining walls if required</li> <li>4. Plumbing and Gas certificate</li> <li>5. Electrical certificate</li> <li>6. Waterproofing certificate</li> <li>7. "As constructed" version of plans for site, house, electrical, landscape</li> <li>8. "As constructed" house survey ( house outline and block boundaries)</li> <li>9. glazing certificate</li> <li>10. insulation certificate</li> <li>11. clean fill certificate</li> </ol>
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Documents must be supplied in the handover folder and clearly labelled.

### 2.3. Defects liability

Within the Defects Liability Period, DHA will advise the builder of defects identified by the tenant as they arise.

Defects affecting health, safety or security must be rectified within 24 hours and all other defects must be rectified within 10 business days.

### 2.4. Establishment period

Following achievement of Practical Completion, an establishment period (Period) will commence for plants and lawn. The builder must undertake all work during this Period to ensure the plants and lawn's healthy and continued growth.

This work may include, but is not limited to: replacement of dead/dying or stolen plants or lawn, topdressing, weeding, staking, pruning/ tying, mowing, fertilising and watering, all activities as relevant to the season. The builder must supply and apply at their cost adequate water to plants and lawns during the Period. All local water restrictions apply.

The Period continues for duration of four (4) weeks. If more than 20% of either the plants or the lawn is replaced within the first two (2) weeks of the Period, the Period will extend. The Period will extend until:

- 80% of either the plants or the lawn areas have been in place for four (4) weeks; and
- any replaced items have been in place for two (2) weeks.

### Performance and design requirements for DHA residences

No additional payment is due for any costs incurred by the builder for the extension of the Period.

## 3. Construction and completion

This section sets out the DHA mandatory requirements and inclusions, in a format that is similar to in the Tender documents.

### 3.1. General and definitions

The definitions of rooms, spaces or areas are listed in the chart below. Requirements that vary by regional location are noted; refer section 3.4 for mandatory regional requirements.

<b>BEDROOMS</b>	
Bedroom 1 (main or master)	largest bedroom, with ensuite adjacent, with walk in robe (WIR) or built in robe (BIR)
Other Bedrooms	bedrooms numbered 2, 3, etc, with built in wardrobes (BIR)
<b>LIVING</b>	
Kitchen	separate room, can be open plan with Dining or with Meals
Meals	open plan area adjacent to Kitchen
Family	for informal family activities, usually open plan with meals area, separate from Dining and Lounge rooms
Dining	separate room, can be open plan with Kitchen and Lounge, to fit a table and seating, for at least 6 people, plus a sideboard
Lounge	separate room, can be open plan with Dining, to fit seating for at least 5 people, plus entertainment unit and coffee table
Entry	entry space from front door, usually with coat cupboard, a separate room
Hallway	internal access and circulation space, usually where linen cupboard is located
Study	separate room or alcove, without a wardrobe, to fit a (computer) desk, chair and bookshelf
Rumpus (Games)	separate room, in addition to other living areas
<b>WET AREAS</b>	
Bathroom	separate room with bath and separate shower recess, hand wash basin in vanity unit, close to bedrooms
Ensuite	separate room directly accessible from Bedroom 1, with toilet and shower recess, hand wash basin in vanity unit
Powder Room	separate room with a toilet and wash basin provided in two storey houses, on the floor without the Toilet.
Toilet	separate room for toilet only, adjacent to bathroom
Laundry	space for washing machine, tub, dryer and broom cupboard
<b>STORAGE</b>	
Garage	fully enclosed secure area for car parking
Carport	under cover area for car parking, may be secured, may be partially enclosed
Shed	waterproof, lockable, located in secured Back Yard

**Performance and design requirements for DHA residences**

Storage	secure area within Garage where a Garage is included, or secured area adjacent to Garage, or secured area adjacent to Carport where a Carport is included
<b>OUTDOORS</b>	
Front Yard	area facing the address or side street(s), with main pedestrian and vehicular entries and driveway, with letterbox and plant beds (garden)
Back Yard	areas secured behind fences and gates, with POS and COA, location for utilities, with plant beds (garden)
Private Open Space (POS)	contiguous area, secured behind fences, includes children’s play area but excludes COA and utilities
Covered Outdoor Area (COA)	paved area accessible from daytime living areas, behind fences, adjacent to POS, to fit table and chairs for 4-6 people plus BBQ

### 3.2.Sizes of rooms, areas and spaces

The rooms, areas and spaces or their components that have mandatory minimum sizes are listed below. Any items not applicable are marked 'N/A'. **All dimensions in this section are measured internal plate to plate unless otherwise stated.**

**Mandatory Spatial Requirements low density**

NAME	FUNCTION(S)	MIN DIMENSION (mm)	MIN AREA (m2)
<b>BEDROOMS</b>			
Bedroom 1 in a 4BR house	to accommodate a queen size bed & side tables (area is exclusive of BIR or WIR)	N/A	16
Bedroom 1 in a 3BR house	to accommodate a queen size bed & side tables (area is exclusive of BIR or WIR)	N/A	15
Wardrobe Bedroom 1	hanging depth hanging length	700 3000	N/A
Other Bedrooms	to accommodate single bed & side table (area is exclusive of BIR)	N/A	9
Wardrobe Other Bedrooms	hanging depth hanging length	700 1500	N/A
<b>LIVING</b>			
Kitchen	refrigerator space clear of all obstructions e.g. skirtings	W 900 H 2000	N/A
<b>STORAGE</b>			
Linen	Cupboard with min four adjustable shelves	W 1600	N/A
Coat *	Cupboard located in living areas preferably near front door with hanging rail, plus shelf over	W 700 D 600	N/A
Broom *	Cupboard, as a joinery item, located in laundry, plus a high shelf	W 600	N/A
Garage single	1 car space plus Storage (defined below)	N/A	21

**Performance and design requirements for DHA residences**

Garage double	2 car space inclusive of Storage (defined below)	N/A	36
Carport single (Darwin only)	1 car space (single) plus Storage (defined below)	N/A	21
Storage ‡	-where single garage provided, area at rear of garage; or -where single garage provided, shed in Rear Yard; or -where double garage provided, no additional storage; or -where carport provided, lockup shed under roof of carport or separate shed in Rear Yard.	N/A	9
<b>OUTDOORS</b>			
Private open space (POS)	measured from house wall to boundary line, excludes sheds and services smaller area in Sydney metro area	2000 2000	35 25
Covered Outdoor Area (COA) ‡	in locations south of Tropic Capricorn in locations north of Tropic of Capricorn	N/A	15 20

\* This requirement is replaced by a Utility cupboard in medium density.

‡ This requirement is different in medium density.

**Mandatory Spatial Requirements in Medium Density**

NAME	FUNCTIONS	MIN DIMENSION (mm)	MIN AREA (m2)
<b>OUTDOORS medium density</b>			
Covered Outdoor Area (COA)	To fit table and chairs for 4 people plus BBQ	N/A	10
<b>STORAGE medium density</b>			
Utility Cupboard(s)	Cupboard(s) with multiple uses (coats, brooms) with high shelf	W 800	N/A
Storage near car accommodation	Shed in secured Back Yard or area in Garage or Carport (as per standard density) or fully secured, waterproof area with lighting and lockable gate	N/A	9

### 3.3. Inclusions

This section lists the items and description of requirements for the house, interior, exterior and landscape that must be supplied by the builder. Refer also to section 3.4 for mandatory regional requirements.

Performance and design requirements for DHA residences

3.3.1. House

ITEM	HOUSE REQUIREMENT
Termite treatment	A physical barrier system in addition to BCA requirements, compliant with relevant Australian standards Liquid chemical treatments prohibited unless mandated by local Authority.
Footings	Builder to nominate.
Floors	Builder to nominate.
Walls	Builder to nominate type of construction. Internal ceiling height must be a minimum 2400mm <b>Refer to regional requirements for this item.</b>
Insulation	Insulating sheet materials and or batts as required to achieve statutory energy rating requirements.
Roof	Sheet colour bonded metal or tile.
Fascias & gutters	Sheet colour bonded metal, colour to coordinate with, or match, roof and or walls.
Downpipes	Sheet colour bonded metal or PVC, colour to coordinate with, or match, roof and or walls.
Eaves (Soffit)	Eaves minimum width 450mm, to meet local Authority and estate requirements, materials, finishes and colour to coordinate with walls.
External Painting	External high quality domestic systems fit for purpose, with primer/undercoat plus 2 coats. Walls – matt or low sheen; doors and trim – gloss.
Windows	Windows fixed and opening to have powder coated aluminium frames. All opening windows to have insect screens to match. Glazing - above Tropic of Capricorn to meet WERS 2 stars cooling rating Obscure glazing – to all laundries, front door side panels.
Window Security	All opening windows to have either security screens with powder coated aluminium frames with interior expanded aluminium mesh, or window locks (all keyed alike). <b>Refer to regional requirements as to which option applies.</b>
Louvre Windows	Above Tropic of Capricorn, windows can be louvre style with built in insect screen and security bars, a proportion of powder coated aluminium louvres can be considered in lieu of glazing for privacy.
External Doors	Solid core for all doors including door between garage and house. Fully painted on sides, top and bottom minimum primed only plus draft excluders to top and sides. Where door to Back Yard is glazed sliding doors: – powder coated aluminium frame.

**Performance and design requirements for DHA residences**

Security Doors	Combined security / insect screens to all external doors, including sliding doors, with powder coated aluminium frames fitted with interior expanded mesh.
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ITEM	HOUSE REQUIREMENT
External Door Hardware	Solid doors fitted with double cylinder deadlocks, all keyed alike. Garage door to house interior is a solid door. Screen doors fitted with door closers, all locks keyed alike. Sliding doors, latch and double cylinder deadlock; or patio bolt. All doors with stops or hold open devices.
Garage	Same materials as house; fully enclosed and secured. Where common walls to house is not brick or block, install plasterboard sheeting. Roller or panel lift doors are powder coated sheet metal colour coordinated with and visually recessive to house, walls, and roof. Doors: Access to street: Minimum requirement is single roller door (not automated). If double or panel lift doors are used, automate and provide two handsets. Access to Back Yard from Garage: external door. Access to house from Garage: internal door.
Carport	Attached to house and open and unsecured or fully secured from street with roller doors. All materials same as house.
Storage Shed	Shed to be powder coated sheet metal, waterproof, with access door, located in secured Back Yard. Where shed is located in high wind areas, it must be fixed down to a rebated concrete slab or footings to local requirements. <b>Refer regional requirements for when a shed is required.</b>
External Lighting	Lights suitable for external use (e.g. bunker style), with all components and switches, eaves or soffit mounted to provide adequate light levels to following minimum areas: 1x front door, 1x front entry pavement, 1x laundry door. COA to have fluorescent lights.
Other	Builder nominates other inclusions.

**3.3.2. Interiors**

ITEM	INTERIOR REQUIREMENT
Walls	Ordinary stud to stud walls to be plasterboard with paint systems. For solid brick construction, rendered and set wall linings with paint systems. For all internal wet areas minimum water resistant plasterboard with paint system.

**Performance and design requirements for DHA residences**

Paint System	Internal high quality domestic systems fit for purpose, with primer/undercoat plus 2 coats. Ceilings – white, flat. Walls – wash and wear low sheen. Trims & architraves – gloss or semi gloss. Doors – gloss or semi gloss (to sides, top & base). Wet areas (incl. ceilings) – wash and wear semi gloss.
Doors	Swing doors hollow core. Sliding doors internal cavity sliders with jump proof roller track.
Door Hardware	Passage sets to all internal doors (no ceramic or sharp pointed handles). Privacy sets to bathroom, toilet and ensuite. All doors with stoppers or hold open devices.
Wall Tiles	Kitchen splashback (from bench to underside of over head cupboards) – ceramic or glass tiles or stainless steel. Ceramic wall tiles to all other wet areas: Bathroom & ensuite - skirting 150mm and or wall 1200mm over bath, shower recess 2000mm minimum. Toilet - skirting 150mm minimum. Laundry - skirting 150mm over tub 450mm minimum.
Floor coverings <b>Sth of Tropic Capricorn</b>	Ceramic floor tiles to whole house except carpet to bedrooms and separated Dining, Lounge. Ceramic Tiles - non porous, non slip+ coloured sealant as necessary to joints with kickboards and skirtings + metal join strips to adjoining surfaces if levels are not flush. Carpets to be nylon heavy duty domestic with 5 year warranty.
Floor Coverings <b>Nth of Tropic Capricorn</b>	Ceramic floor tiles - non porous, non slip+ coloured sealant as necessary to joints with kickboards and skirtings + metal join strips to adjoining surfaces if levels are not flush.
Water proofing	Waterproofing - all wet areas, in accordance with BCA, 7 year warranty on products and workmanship. An accredited waterproofing contractor must be used.
Window Coverings	All external glazing (except side windows to front door) to have blinds in light, neutral colours for privacy and light control, mounted internal to window reveals where possible. If garage windows fitted, provide obscure glazing. Vertical blinds – polyester, rated at 100% block out, child safe chords and chainless bottom, with weights sewn into each blade. Wet areas: slim line (mini) Venetians, fixed at base.



**Performance and design requirements for DHA residences**

Kitchen Joinery	<p>Maximise storage and bench space, include cupboards overhead and under bench, 3 x cutlery drawer, bulkhead to overhead cupboards. Separate pantry (cupboard) in or immediately adjacent to kitchen. Cavities - with power points for dishwasher, microwave (over bench), refrigerator (vented). Bench tops – minimum standard laminate with edges pencil round or post formed. Cupboard doors and drawers – minimum standard laminate with rigid thermoplastic (ABS) 1-2mm edge.</p>
Kitchen Appliances	<p>Appliances with 2 year warranty.          Cooktop - 4x positions, mandatory gas where reticulated.          Overhead range hood with exhaust fan and light that is directly externally vented.          Electric oven with integrated grill - 60 L capacity, fan forced, with timer or separate grill.</p>
Kitchen Plumbing	<p>Tapware – 3 star <i>WELS</i> rating with 2 year warranty          Sink - stainless steel 1200 nominal length, one and half bowls, single side drainer, plug, single flick mixer tap.          Cold water connection to dishwasher, include capped perforations to carcass panel to facilitate service connections.</p>
Laundry Joinery and Plumbing	<p>Tapware – 3 star <i>WELS</i> rating with 2 year warranty, swivel spout, separate hot and cold water outlets to wash tub and separate connections for washing machine.          Wash tub in a cabinet – 70 L (or 45L medium density) capacity, washing machine by-pass drain, plug.          Dryer support board, W 800mm x H 800mm x D 19mm, high moisture resistant board sheeting screw fixed to wall, painted to match wall.          Broom cupboard – joinery unit.          Floor graded to floor waste with grate to meet BCA requirements</p>
Bathroom Joinery, Plumbing and fittings	<p>Tapware – all 3 star <i>WELS</i> rating with 2 year warranty          Bath – min. 1500mm long with soap holder/recess.          Shower - separate recess min. 900 x 900mm, with soap holder/recess, screen frame chrome / powder coated metal, pivot door.          Vanity unit - nominal 1200 length, with hand basin with plug, drawers and storage cupboards under (vanity unit with integrated basin is acceptable), high moisture resistant sheeting/materials.          Mirror – placed above vanity, sized to be full width vanity and height aligned with top of shower screen.          Towel rail(s) – double, chrome or powder coated metal, min. 900mm length (to fit 2 large towels).          Floor graded to floor waste with grate to BCA requirements.</p>
Ensuite	<p>All inclusions as for Bathroom EXCEPT no bath, toilet dual flush 6/3L cistern in room, vanity nominal L 900mm</p>
Toilet (WC)	<p>Toilet – dual flush 6/3L cistern with 2 year warranty          Toilet roll holder – chrome / powder coated metal to match bathroom fittings.</p>

**Performance and design requirements for DHA residences**

Powder Room	<p>Tapware – all 3 star <i>WELS</i> rating with 2 year warranty</p> <p>Hand basin with plug, mirror over (vanity unit with integrated basin is acceptable).</p> <p>Toilet – dual flush 6/3L cistern with 2 year warranty</p> <p>Towel ring and toilet roll holder – chrome or powder coated metal.</p>
Bedroom 1 Fit-out	<p>Wardrobe built-in (BIR) with sliding doors or walk-in (WIR) with either swing or sliding doors. Dimensions: hanging depth 700mm x hanging length 3000 min x full height. Include shelf over head, plus minimum 2 x 4 shelves located in wardrobe.</p> <p>1 x mirror located in room minimum width 400mm x height 1200mm.</p>
Other Bedroom Fit-out	<p>Wardrobe built-in (BIR) with sliding doors, hanging depth 700 x L 1500 min. full height and dimensions clear of all obstructions, with shelf over head, plus minimum 1 x 4 shelves.</p>
Hot Water System (HWS)	<p>One of the following:</p> <p>Instantaneous gas – 26L / minute with integrated cover (for areas with reticulated gas)</p> <p>Gas –min storage 135L (locations with reticulated gas); or</p> <p>Gas – solar hybrid min storage 180L (locations with reticulated gas);</p> <p>Solar –min storage 300L with electric booster (locations without reticulated gas); or</p> <p>Solar – heat pump, min storage 250L.</p>
Electrical – lighting and fans	<p>All fixtures, fittings, levels of illumination and colour rendering to be fit for purpose for the size and function(s) of the room.</p> <p>Provide two-way switching where appropriate (hallways and living areas).</p> <p>Ventilation - 1x exhaust fan for Bathroom</p> <p>Use only down lights (2 x) where ceiling fans to be installed (to avoid strobe effect).</p> <p>All ceiling fans to have variable speed control.</p>
Electrical – power outlets	<p>General purpose outlets (GPO) to be installed a min. of 1 per room or as listed below:</p> <p>Living – kitchen x2 plus kitchen island bench x1, dining x1, lounge x2, entry x1, hall x1, study x1, meals x1, rumpus x2, family x2;</p> <p>Bedrooms – main bedroom x2, other bedrooms x2;</p> <p>Wet Areas – Bathroom x1, Ensuite x1, Laundry x1, Powder room x1</p> <p>External – ‘weather proof’, COA x1.</p> <p>All GPOs to be double, except appliances hardwired or requiring a dedicated GPO, including refrigerator, dishwasher, microwave, air conditioning, HWS and heating units.</p>

**Performance and design requirements for DHA residences**

Electrical Comm's	Provide all electrical works necessary for installation by certified installer. Telephone – builder to connect telephone and pay all fees associated with connection, and minimum 3 phone outlets, provided adjacent to GPOs, to Kitchen, Bedroom 1, Study or Bedroom 4 Television – minimum 3 outlets provided adjacent to GPOs in Lounge, Bedroom 1, Family, located to suit indicative furniture layout. TV aerial (antennae) – installed and located to achieve good quality reception for all free air TV stations to suit both analogue and digital reception (gutter mounted aerials not permitted).
Active Ventilation	All exhaust fans separately switched from lights unless required by BCA.
Heating	<b>Refer to regional requirements as to which option applies.</b>
Cooling	<b>Refer to regional requirements as to which option applies.</b>
Smoke detectors	Installed to meet Australian standards.
Other	Builder nominates other inclusions.

**3.3.3. Exteriors**

ITEM	EXTERIOR REQUIREMENT
COA	Design and materials integrated with house and SW drainage and impermeable pavement. Finished surface pavement is impermeable with 1:100 slope away from the house (minimum standard is in-situ concrete with light broom finish). Where COA requires a circulation fan, the ceiling and mounting height is to be min. 2700mm. <b>Refer regional requirements for when a fan is included.</b>
Letter box	Australia Post approved type and position of letter box (located on the street address side of the house and just inside property boundary), sturdy construction with integrated lock (not additional padlock) and have large metal number(s) fixed to street face.
Retaining Walls	Retaining to ensure required grades and levels around the house, masonry systems preferred. Nominate location, construction details and top and bottom levels of walls and slopes Walls over 1m in height to be certified by structural engineer.
Storm Water & Drainage	SW system with grated pits, soakage drains or other piped SW system to ensure no flooding of house, quantity and sizes to suit local conditions. Retaining walls to have suitably placed agricultural drains behind walls with geotextile fabric to back of wall. <b>Refer to regional requirements for additional details.</b>

**Performance and design requirements for DHA residences**

Pavements	<p>Pavement surfaces with subsurface preparation and base course as required for:</p> <ul style="list-style-type: none"> <li>-pedestrian access linking front entry to driveway and letterbox (impermeable)</li> <li>-under HWS, water tanks and other utilities</li> <li>-path to clothesline (impermeable)</li> <li>-other pedestrian paving (permeable and /or impermeable).</li> </ul> <p>Concrete protective mowing strip must be 150 mm minimum width and provided around the house perimeter. Generally, the acceptable minimum is an in-situ plain concrete footpath with broom finish. If concrete is used it is to be a minimum of 100mm thick, 25 MPa and reinforced with SL72 mesh.</p>
Clothes line	<p>Minimum 33 lineal metres of unobstructed hanging length, nominate type of line (rotary hoist preferred where space allows). Clothes line to have minimum 1 metre clearance to any obstruction.</p>
Fences & gates	<p>Back Yard must be fenced, to meet the following requirements, unless other requirements are nominated in estate covenants:</p> <ul style="list-style-type: none"> <li>-minimum one pedestrian gate</li> <li>-all gates constructed to swing open to a minimum of 90 degrees;</li> <li>-no side boundary fence forward of the wing fences, or the front building line (refer clause on Corner Blocks);</li> <li>- wing fences and gates located behind meter boxes;</li> <li>-completed height 1.8m maximum (1.5m minimum) when measured from the adjacent finished ground levels;</li> <li>-base of the fence clear of ground surfaces, including mulch materials, for its entire extent, with a bottom gap no greater than 50mm.</li> </ul>
Hosecocks	<p>Wall mounted taps (hosecocks) minimum 2, with 1x per yard area or additional as required to reach all garden beds and lawn with a 15m hose.</p>
Water Tanks	<p>Where required by Authorities, water tank(s) on concrete slab tank(s) sized for capacity and area of roof captured. and 1 upturned stopcock sized for hose fittings. Tank to be secured on slab or stopcock to be a minimum of 500 mm from base of tank. Pump with guard supplied, located on concrete slab, pump connected to tank and with fitting to connect to hose.</p>
Irrigation	<p><b>Refer regional requirements for irrigation systems.</b></p>
Other	<p>Builder nominates other inclusions</p>

**3.3.4. Landscape**

ITEM	LANDSCAPE REQUIREMENT
Preparation	<p>Prior to undertaking any landscape works the block must be appropriately prepared for the intended surface treatments and plants. <b>The builder must complete the following earthworks as part of the Lump Sum:</b></p> <ul style="list-style-type: none"> <li>• All clearing and grubbing of the site;</li> </ul>

**Performance and design requirements for DHA residences**

	<ul style="list-style-type: none"> <li>All bulk earthworks required to achieve benching levels including landscaping levels (allowing for topsoil refilling);</li> <li>All bulk earthworks required to achieve benching levels including landscaping levels (allowing for topsoil refilling); and</li> <li>All detailed excavation associated with retaining walls and to achieve the nominated fall requirements.</li> </ul> <p>All contaminants, debris and rubble to be removed prior to site shaping and other works.</p>
Grading and Shaping	<p>Grade to levels to ensure water drains away from house sufficient to avoid flooding in storm events.</p> <p>Shaping to be undertaken prior to other exterior and landscape works, with placement of SW systems and retaining walls/steps.</p>
Preparation for grass	<p>Remove or kill weeds and grasses on site prior to cultivation.</p> <p>Areas to be grassed to be ripped to minimum 150mm depth and rock picked.</p> <p>Topsoil for grass - minimum 100mm depth, comprised of stockpiled site topsoil spread to 50mm depth if available, plus imported topsoil</p> <p>Final shaping and cultivating to minimum 100mm depth with addition of soil additives prior to turfing, seeding or stolon sprigging.</p>
Preparation for plants	<p>Areas to be planted to be ripped to minimum 150mm depth and rock picked.</p> <p>Stockpiled site topsoil or imported topsoil to be respread to minimum 300mm depth.</p>
Site Topsoil	<p>Remove or kill weeds and grasses prior to respreading of stockpiled site topsoil to areas to be grassed and or planted.</p>
Imported topsoil and additives	<p>Topsoil - Certification of imported topsoils is required for supply source, composition Fertilisers - type and quantity of soil additives to suit site specific conditions and plants proposed, nominate specific fertilisers plus additives such as water absorbing crystals, soil wetters and minerals.</p>
Grass	<p>Turf lawn - area of watered grass to be minimised, generally 20-60m<sup>2</sup>, nominate species and cultivar and provide certification for supply source. Species must be low water use suited to the climatic area.</p> <p>Grass - species and cultivar plus method (turf, seed, stolons) to be nominated, provide certification for supply source.</p>
Mulch	<p>Areas to be mulched to be minimum 100mm thickness. Certification is required as to type, supply source, composition.</p>
Edge Strips	<p>Edge strips - timber (not CCA treated) 50mm width x 75mm depth and or masonry (in-situ concrete or unit pavers on a mortar bed) 75mm width x 100mm depth. Edge strips to be constructed to finish flush with surrounding surfaces.</p>
Plants and Planting	<p>Plants - nominate size and species in Landscape Plan, substitutions may be considered.</p> <p>Planting - includes excavation of plant holes, placement of soil additives, staking and tying as required and construction of watering basins as part of backfilling.</p>
Other	<p>Builder nominates other inclusions</p>

Performance and design requirements for DHA residences

### 3.4.Regional requirements

Refer to definitions for what rooms are heated and or cooled.

#### 3.4.1. South Australia

ITEM	REQUIREMENT
<b>Adelaide</b>	
Heating	Ducted heating. RC split system air conditioning may be provided as an equivalent alternative. For Bathrooms and ensuites, heating to be supplemented via infrared lamps embedded within ceiling fans.
Cooling	Minimum ducted evaporative cooling. RC split system air conditioning may be provided as an equivalent alternative.
Security	Locks to all opening windows.
<b>Adelaide Hills</b>	
Heating and Cooling	Reverse cycle split system bedroom 1 and living rooms plus ceiling fans to bedrooms and other living rooms. For Bathrooms and ensuites, heating to be supplemented via infrared lamps embedded within ceiling fans.
Security	Locks to all opening windows.

#### 3.4.2. Victoria and Tasmania

ITEM	REQUIREMENT
<b>Melbourne, Sale, Frankston, Queenscliff</b>	
Heating	Ducted heating. RC split system air conditioning may be provided as an equivalent alternative. For Bathrooms and ensuites, heating to be supplemented via infrared lamps embedded within ceiling fans.
Cooling	Ceiling fans to bedrooms and living rooms. Ducted evaporative cooling may be substituted in place of ceiling fans to all bedrooms and living areas.
Security	Locks to all opening windows.
<b>Puckapunyal</b>	
Heating	Ducted heating. RC split system air conditioning may be provided as an equivalent alternative. For Bathrooms and ensuites, heating to be supplemented via infrared lamps embedded within ceiling fans.
Cooling	Ducted evaporative cooling. RC split system air conditioning may be provided as an equivalent alternative
Security	Locks to all opening windows.
<b>Tasmania</b>	
Heating and Cooling	Minimum reverse cycle split system to living rooms plus panel heating to bedrooms.
Security	Locks to all opening windows.

**Performance and design requirements for DHA residences**
**3.4.3. ACT**

ITEM	REQUIREMENT
<b>Canberra &amp; Queanbeyan</b>	
Heating	Ducted heating. RC split system air conditioning may be provided as an equivalent alternative. For Bathrooms and ensuites, heating to be supplemented via infrared lamps embedded within ceiling fans.
Cooling	Minimum ducted evaporative cooling. RC split system air conditioning may be provided as an equivalent alternative.
Security	Security screens to all opening windows.

**3.4.4. NSW**

ITEM	REQUIREMENT
<b>Armidale &amp; Tamworth</b>	
Heating	Ducted heating. RC split system air conditioning may be provided as an equivalent alternative. For Bathrooms and ensuites, heating to be supplemented via infrared lamps embedded within ceiling fans.
Cooling	Minimum ducted evaporative cooling. RC split system air conditioning may be provided as an equivalent alternative.
Security	Security screens to all opening windows.
<b>Hunter &amp; Northern NSW</b>	
Heating/Cooling	Reverse cycle split system bedroom 1 and living room plus ceiling fans to bedrooms and other living rooms.
Security	Security screens to all opening windows.
<b>Nowra</b>	
Heating	1x relocatable 25mj gas heater with bayonet connections to living rooms (incl. associated GPO).
Cooling	Ceiling fans to bedrooms and living rooms.
Security	Locks to all opening windows.
<b>Riverina</b>	
Heating	Ducted heating. RC split system air conditioning may be provided as an equivalent alternative. For Bathrooms and ensuites, heating to be supplemented via infrared lamps embedded within ceiling fans.
Cooling	Minimum ducted evaporative cooling. RC split system air conditioning may be provided as an equivalent alternative.
Security	Locks to all opening windows.
<b>Sydney &amp; Blue Mountains</b>	
Heating/Cooling	Reverse cycle split system bedroom 1 and living rooms plus ceiling fans to bedrooms and living rooms.
Security	Security screens to all opening windows.

**3.4.5. South East Queensland**

ITEM	REQUIREMENT
<b>Brisbane &amp; Ipswich</b>	
Heating/Cooling	Reverse cycle split system bedroom 1 and living rooms plus ceiling fans to bedrooms and living rooms.
Security	Security screens to all opening windows.

**Performance and design requirements for DHA residences**

<b>Toowoomba</b>	
Heating/Cooling	Reverse cycle split system bedroom 1 and living rooms plus ceiling fans to bedrooms and living rooms.
Security	Locks to all opening windows.

**3.4.6. North Queensland**

<b>ITEM</b>	<b>REQUIREMENT</b>
<b>Townsville &amp; Cairns</b>	
Ceilings	Internal ceiling height must be a minimum 2700mm.
Drainage	All down pipes to be fitted with 2 x 45 degree elbows at the bottom to ensure SW is discharged over top of grated pits with minimum 75mm clearance between elbow and top of grates.
Cooling	Refrigerated air conditioning (central or split system) plus ceiling fans to bedrooms and living room.
Security	Security screens to all opening windows.
COA	Circulation fan required.
Eaves (Soffit)	Eaves width minimum 900mm, plus to meet DHA shade expectations plus local Authority and estate requirements, with materials, finishes and colour to coordinate with walls.

**3.4.7. Western Australia**

<b>ITEM</b>	<b>REQUIREMENT</b>
<b>Perth &amp; Geraldton</b>	
Heating	1x relocatable 25mj gas heater with bayonet connections to living rooms (incl. associated GPO).
Cooling	Minimum ducted evaporative cooling. RC split system air conditioning may be provided as an equivalent alternative.
Security	Supply and fix security screens to all opening windows.
<b>Karratha &amp; NW Region</b>	
Cooling	Refrigerated air conditioning (central or split system) plus ceiling fans to all bedrooms and living rooms.
Security	Security screens to all opening windows.
COA	Circulation fan required.
Eaves (Soffit)	Eaves width minimum 900mm, plus to meet DHA shade expectations plus local Authority and estate requirements, with materials, finishes and colour to coordinate with walls.

**3.4.8. Northern Territory**

<b>ITEM</b>	<b>REQUIREMENT</b>
<b>Darwin</b>	
Ceilings	Internal ceiling height must be a minimum 2700mm.
Drainage	Roof guttering over entry ways, with associated SW management. Any down pipes to be fitted with 2 x 45 degree elbows at the bottom to ensure SW is discharged with minimum 75mm clearance between elbow and surface of gravel filled soakage pits
Cooling	Refrigerated air conditioning (central or split system) plus ceiling fans to bedrooms and living rooms.
COA	Circulation fan required.



**Performance and design requirements for DHA residences**

Security	Security screens to all opening windows.
Carport and Storage OR Garage	Either carport with secured storage shed or a garage- provided that the garage sufficient ventilation to ensure temperature inside is not greater than ambient external temperature; with natural light including secure storage area.
<b>Katherine</b>	
Drainage	Roof guttering over entry ways, with associated downpipes. All down pipes to be fitted with 2 x 45 degree elbows at the bottom to ensure SW is discharged with minimum 75mm clearance between elbow and surface of gravel filled soakage pits.
Cooling	Refrigerated air conditioning (central or split system) plus ceiling fans to all bedrooms and living rooms.
COA	Circulation fan required.
Security	Security screens to all opening windows.
<b>Tindal requirements as for Katherine except</b>	
Security	Insect screens to all opening windows.
<b>Alice Springs</b>	
Cooling	RC split system air conditioning bedroom 1 and living plus ceiling fans to all bedrooms and living rooms.
Security	Security screens to all opening windows.