

# **AVALON ESTATE**

**DA No. 2007/876**

## **BUILT FORM DESIGN PRINCIPLES & REQUIREMENTS**

## **1.0 INTRODUCTION**

This Document is referred to as the *“Built Form Design Principles and Requirements for Avalon Estate – Wollongbar Urban Expansion Area”*.

This document will be utilised by Council, developers, private certifiers and future/prospective landowners when contemplating or undertaking development within Avalon Estate.

It applies to the land that is the subject of Development Application No. 2007/876 and should be read in conjunction with the terms and conditions of the development consent.

The purpose of this document is to provide any additional guidelines or building requirements for the future housing development of Avalon Estate over and above those currently contained within Ballina Shire Council’s Local Environmental Plan (BLEP) and/or Combined Development Control Plan No.1 (CDCP#1), State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 and the NSW Housing Code – Guide to complying development for detached housing.

The aim of these documents is to achieve an integrated urban area containing a broad range of energy efficient housing styles of high quality that are sympathetic to the landscape and scenic qualities of the locality.

The principles and requirements contained in this document do not take precedence over any legislative requirements or planning instruments applicable to the land. Compliance with or adoption of the provisions of this guideline does not necessarily imply that Council will grant consent to an application. Council must, in relation to development applications, also take into consideration those matters listed under Section 79C of the EP & A Act 1979.

## **2.0 DEFINITIONS**

In this document:

- “BASIX” means the Building Sustainability Index that is a web-based planning tool designed by the State Government to assess the potential performance of new homes, against a range of sustainability indices: landscape, stormwater, water, thermal comfort and energy. BASIX aims to reduce the environmental impacts of these aspects of new development to produce homes that are more comfortable to live in and cheaper to run than most existing homes (CDCP#1).
- “dwelling”, “dwelling house”, “dual occupancy”, “duplex” and “medium density development” have the same meanings as provided for in BLEP and CDCP#1.
- “BCA” means the current edition of the Building Code of Australia.
- “Maximum Impervious Area” means the combined total area of rooves, paths, driveways and other non porous areas on an allotment.
- “SEDA” means the Sustainable Energy Development Authority that was created by the NSW Government to reduce the level of greenhouse gas emissions in NSW (CDCP#1).

### **3.0 HOUSING DESIGN PRINCIPLES**

This section identifies the range of design principles that form the basis of this document and guide the design of dwellings within the Avalon Estate.

The design principles for dwelling construction have been selected to ensure that the future development has a high level of residential amenity and attains the principles of energy efficiency and sustainability.

Energy smart homes are homes that, through their design and construction, maximise the use of renewable energy sources (such as sunshine and wind) and thus use less energy. They simultaneously assist to preserve scarce resources, reduce the level of greenhouse gas emissions and provide significant savings in on-going residential occupation.

Energy smart homes incorporate passive solar design principles to minimise household energy needs. These principles apply to services such as lighting, hot water, heating in winter and cooling in summer. Passive solar design principles minimise energy use by combining and balancing the effects of building design, orientation, shading, insulation, thermal mass, ventilation and landscaping to create comfortable internal living spaces.

Appropriate building design that is responsive to the natural environment will result in a home that is more comfortable and enjoyable to live in. By being aware of the characteristics of the site and by applying basic design and construction techniques homes can be made more energy efficient.

#### **3.1 Site Planning, Building Shape, Location and Orientation**

When designing and siting the building(s) on the land, consideration should be given to the path of the sun during different seasons of the year and particularly in summer and winter. The location and layout of the rooms, outdoor decks and courtyards, and the placement of windows should permit maximum solar access in winter and restricted solar access in summer.

It is desirable to prevent excessive amounts of direct sunlight from entering a house (and also heating up facades) during hot summer months (ie October – March). Dwelling design should be such that allows maximum direct sunlight into rooms during colder winter months (ie June – August).

Where reasonably practicable, residential buildings should be:

- generally rectangular in plan form
- sited such that the long axis of the rectangular plan is aligned to the east-west axis or within 15 degrees of east-west (ie the longest facades of the building should face north and south)
- set back from boundaries such that usable outdoor space (eg decks, verandahs and courtyards) can be located to the north of the building or in the range of north-east to north-west (NB: This also facilitates sunlight access into the dwelling during winter months)
- designed to avoid direct over-looking of neighbouring outdoor living areas such as patios, courtyards, pools, BBQ areas and the like (NB: This may not always be possible in areas with steeply sloping land). This can be achieved by appropriate building layout, window and verandah/balcony size and placement, screening devices and landscaping and

- sited to minimise earthworks.

Dwellings should be designed to prevent excessive direct sunlight on facades (especially western facades) and windows in summer by utilising techniques such as (but not limited to):

- placement of garages/carports and utility areas (eg laundries and bathrooms) to the west of the main dwelling to help block living areas and bedrooms from direct heat loads on western facades
- placement of habitable rooms to face north (or within the range of north-east to north-west)
- incorporation of wide eaves, verandahs, pergolas, awnings, blinds and screens to shade facades and windows. It should be noted that awnings, blinds and screens do not have to be fixed but can be adjustable (eg sliding and/or moveable louvre panels) to take advantage of changes of season and temperature throughout the year and also assist with cross ventilation
- planting of evergreen trees to the west of the dwelling and semi-deciduous or deciduous trees to the north and east of the dwelling.

Note, some lots may have restrictions on driveway location as a consequence of service provision requirements. Access restrictions may apply to allotments, particularly from Rifle Range Road and parts of Lillian Way.

### **3.2 Roof design and pitch**

The form and design of roofs should have a residential character and be integral to the architecture of the dwelling.

To enhance energy efficiency and weather protection, eaves should be provided.

Eaves excluding gutters should not extend more than 1200mm within setback areas.

The roof design should ensure that it does not unduly restrict access to sunlight to any existing (or proposed) adjoining or adjacent dwelling.

## **4.0 SPECIFIC HOUSING DESIGN REQUIREMENTS**

This section lists the source of and/or specific controls and requirements applicable to housing development within the Avalon Estate. These provisions and requirements are to be read in conjunction with the relevant Building Control Plans for each stage of the development as attached to this document.

The provisions and requirements of Ballina Shire Council Combined Development Control Plan No.1 (CDCP#1) shall apply to Dual Occupancy, Duplex and Medium Density development within the Estate and more specifically Policy Statement 1 – Multiple dwellings.

For detached dwellings on allotments of area 600m<sup>2</sup> or greater, a Development application is required and the following controls apply:

<b>Item</b>	<b>Source</b>
Building Lines	CDCP#1 –Policy Statement 3 – Urban Building Lines
Rear setback	CDCP#1 –Policy Statement 1 – Multiple Dwellings & BCA - dependant on type of development
Side Setback	CDCP#1 –Policy Statement 1 – Multiple Dwellings & BCA - dependant on type of development
Building Heights	CDCP#1 –Policy Statement 7 – Building Height and BLEP
Car Parking (garages & carports)	CDCP#1 – Chapter 7 – Exempt & Complying Development and CDCP#1 –Policy Statement 2 – Carparking and Access
Garden sheds	CDCP#1 – Chapter 7 – Exempt & Complying Development
Rainwater storage tanks	See section 4.1 below
Geotechnical assessment	See section 4.2 below
Cut and fill	See section 4.2 below
Construction materials and finishes	See section 4.3 below
Landscaping	CDCP#1 –Policy Statement 6 – Landscaping Guidelines
Fencing	CDCP#1 – Chapter 15 – Wollongbar Urban Expansion Area and CDCP#1 – Chapter 7 – Exempt & Complying Development
Easements	As noted on Building Control Plans, Subdivision certificate and Section 88b Instrument
Access restrictions and driveways	CDCP#1 – Chapter 7 – Exempt & Complying Development , CDCP#1 –Policy Statement 2 – Carparking and Access and Section 88b Instrument
signs	CDCP#1 – Chapter 7 – Exempt & Complying Development and CDCP#1 – Chapter 14 – Advertising Signage
Air conditioning units	CDCP#1 – Chapter 7 – Exempt & Complying Development
Television, radio and satellite antennae/dishes	CDCP#1 – Chapter 7 – Exempt & Complying Development
Water heaters	CDCP#1 – Chapter 7 – Exempt & Complying Development
BASIX	CDCP#1 – Chapter 9 – BASIX (Energy and Water Smart)
SEDA- Solar Access	See section 4.4 below
Asset Protection Zones (Bushfire)	See section 4.5 below

Alternatively, for detached housing on allotments of area 600m<sup>2</sup> or greater, application for a complying development certificate may be made under the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, in which case all the provisions of the NSW Housing Code Guide to Complying Development for Detached Housing will need to be satisfied.

The development standards and controls for detached housing on allotments of area 599m<sup>2</sup> or less (small lots), are contained within the NSW Housing Code Guide to Complying Development for Detached Housing (Housing Code). In this regard, proponents may choose to:

- Lodge a development application with Council; or
- Lodge an application for a complying development certificate under the provisions of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, in which case all the provisions of the NSW Housing Code Guide to Complying Development for Detached Housing will need to be satisfied.

#### **4.1 Water storage tank requirements**

Water conservation and re-use through the installation of rainwater tanks is a requirement of any dwelling including dual occupancy, duplex or medium density unit constructed in Avalon Estate. A minimum 4000L rainwater tank is to be provided for each dwelling/unit (eg. 8000L is required for duplex development) within the subdivision as part of the overall stormwater management and treatment train adopted for the development. The tank is to be directly connected to the respective dwelling for re-use.

The 4000L tank size tank facilitates development having a Maximum Impervious Area not exceeding 300m<sup>2</sup> for the respective dwelling.

Development Applications for dwellings with Maximum Impervious Areas in excess of 300m<sup>2</sup> are not precluded. However, proponents will be required to demonstrate compliance with CDCP#1 Chapter 13 Stormwater Management provisions which amongst other things may require the installation of larger rainwater tank capacity prior to approval being granted.

A rainwater tank may also be required to satisfy the BASIX requirements for all new dwellings.

Water storage tanks should:

- be located behind the building line and in the rear or side yard area and appropriately screened from view of any public place
- generally have a maximum of 10,000 litres capacity – larger tanks may be allowed provided that they are appropriately screened from view (eg incorporated under buildings, decks or driveways)
- not be interconnected with Council's water supply
- have overflows connected to stormwater drainage system
- be designed and installed in accordance with manufacturer's or structural engineer's details and in accordance with relevant Australian Standards
- incorporate first flush diversion systems to divert dust and litter from roof areas from the water supply

The installation of water pumps in association with water storage tanks has the potential to cause offensive noise to neighbours. Care should be taken with the location of pump units to minimise potential noise nuisance. If it is proposed to install a rainwater tank with a pressurization pump, the pressurization unit is to be located such that the pump motor does not create offensive noise at the boundary of the nearest affected residence. Generally these units are unsuitable for location between the building and the side boundary with another residential lot.

Systems should also be maintained to ensure proper functioning. Ideally, the noise level at the boundary should not exceed 5dbA above the background level. Manufacturers should be able to provide advice on noise levels.

Details of the installation of the water storage tanks and acoustic design for the pump enclosure should be provided to Council with Development Applications for dwellings.

Ballina Shire Council will be responsible for ensuring appropriate conditions of consent are issued with dwelling approvals requiring the tank installation as outlined above.

#### **4.2 Geotech, foundations, earthworks and retaining wall requirements**

Much of Avalon Estate has been identified as having very low likelihood of slope instability during the Subdivision Development Application process. These areas were identified in geotechnical terms as having no specific geotechnical constraints other than good engineering and construction practice.

Designated areas within Avalon Estate may include areas that require specific geotechnical assessment of the allotment for any proposed building. These allotments will be identified by way of notation on the Building Control Plan as appropriate for each staged land release.

Notwithstanding the above, it is recommended that all dwelling foundations, earthworks and retaining walls be designed by suitably qualified Civil/Structural Engineers.

All building designs must ensure that the maximum height for cut and fill is 1.2m below or above natural ground respectively, except where a swimming pool design is accompanied by detailed geotechnical investigation and Engineering design documentation.

Earthworks involved in the construction of any dwellings that are visible from the street or any public place are to be limited to the following:

- maximum cut of 1.2m
- maximum fill of 1.2m

All areas containing cut and fill will have to be drained, stabilised and landscaped to prevent run-off and surface erosion. Cut or fill must be approved by Council or the Private Certifier in conjunction with the development application. Full details of the proposed earthworks should be clearly indicated on the development plans and section drawings and in accordance with the requirements of any geotechnical investigation where appropriate.

Retaining walls should utilise materials that complement the natural environment (ie rock, timber sleepers, etc). However retaining walls for dwellings and driveways and

any retaining wall along a common boundary should be made of robust durable materials that will not be at risk from termite attack.

Retaining walls that are constructed along side boundaries and protrude forward of the adjacent front building setback should be tapered to meet the profile of the finished ground line.

All retaining walls must comply with AS4678 (Earth Retaining Structures).

Masonry walls will need to comply with AS3700 (Masonry Code), AS3600 (Loading Code) and AS1170 (Loading Code). Timber walls will need to comply with AS1720 (Timber Structures) and AS1170 (Loading Code).

#### **4.3 Construction materials and finishes**

On allotments subject to any notation shown on Building Control Plans, dwelling construction and finishes shall be of light-weight construction.

“light-weight construction” means flexible structured buildings that are pole framed or on stumps and that are clad with light-weight cladding. It does not include slab on ground, brick veneer, concrete or masonry walls or the like.

#### **4.4 Solar access requirements**

The subdivision design and layout has been undertaken in consideration of the need for solar access in accordance with the provisions of “SEDA” - The Sustainable Energy Development Authority that was created by the NSW Government to reduce the level of greenhouse gas emissions in NSW. .

A solar access zone must be provided on each allotment.

This entails the provision of an area which receives adequate sunlight in order for certain areas of a dwelling to receive the sun’s energy i.e. private outdoor open spaces, solar hot water heater panels, glazing to living areas and outdoor clothes drying areas. The solar access zone will be determined as a part of the dwelling design process and must be clearly shown on plans accompanying a Development Application.

#### **4.5 Asset Protection Zones - Bushfire**

On allotments subject to notation on Building Control Plans Asset Protection Zones are required to be established and maintained to protect dwellings from bushfire risk in accordance with a Fire Management Plan approved by Council, prepared in accordance with the requirements of Planning for Bush Fire Protection 2006 and as required by a Section 88b Instrument.