

6

LANDSCAPING & SCREENING

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Position trees and plants to shade verandahs and protect your house from the summer sun.



INTRODUCTION

The Cairns regional landscape is largely defined by natural land form and land uses that include hillslopes, canefields, creeks, swamps and beaches. These elements contribute to the amenity and enhance the character and style of the region. Landscaped gardens in both the private and public realm and landscaping of the road verges contribute significantly to Cairns Style.

Landscaping and screening are important urban elements that can transform the streetscape and provide amenity, environmental and aesthetic benefits. Traditional landscaping themes can be considered when undertaking new works as measures to contribute to Cairns landscape. Throughout the region's history, outdoor environments of the urban areas have played a major role in contributing to the Cairns Style of different forms of development.

Gardens of the region's Queenslanders traditionally included a backyard of fruit trees, consisting of mangoes, avocados, lychee and bananas, with a front yard that usually featured exotic flowering shrubs and trees such as frangipanis and native palms such as Alexandria Palms. The influence of luxury resorts on multiple dwelling residential developments has created an expectation from residents that resort-style landscape, often with a focus on swimming pools, will be a component of new multi-unit developments.

The contribution to the Cairns streetscapes of spectacular flowering tropical trees, both native and exotic, leaves a memorable impression on the region's visitors and residents alike. The establishment of tree-lined streets with vibrant foliage will provide protection to pedestrians from sun and rain, and continue the unique Cairns Style.

Although most landscaping in the public realm is the responsibility of Council, planter boxes, under-awning baskets and footpath beautification are private initiatives that contribute to the style of the region. These initiatives improve the pedestrians' experience by adding visual interest and contribute to the aesthetic qualities of the streetscape.

Many opportunities exist to reinforce or introduce significant amounts of plantings throughout the region. Cairns Regional Council has strongly committed to improving streetscapes and landscape in the public realm through initiatives such as the Cairns CBD Streetscape MasterPlan, Douglas Landscaping Planning Scheme Policy and tree planting initiatives.



Why it is important

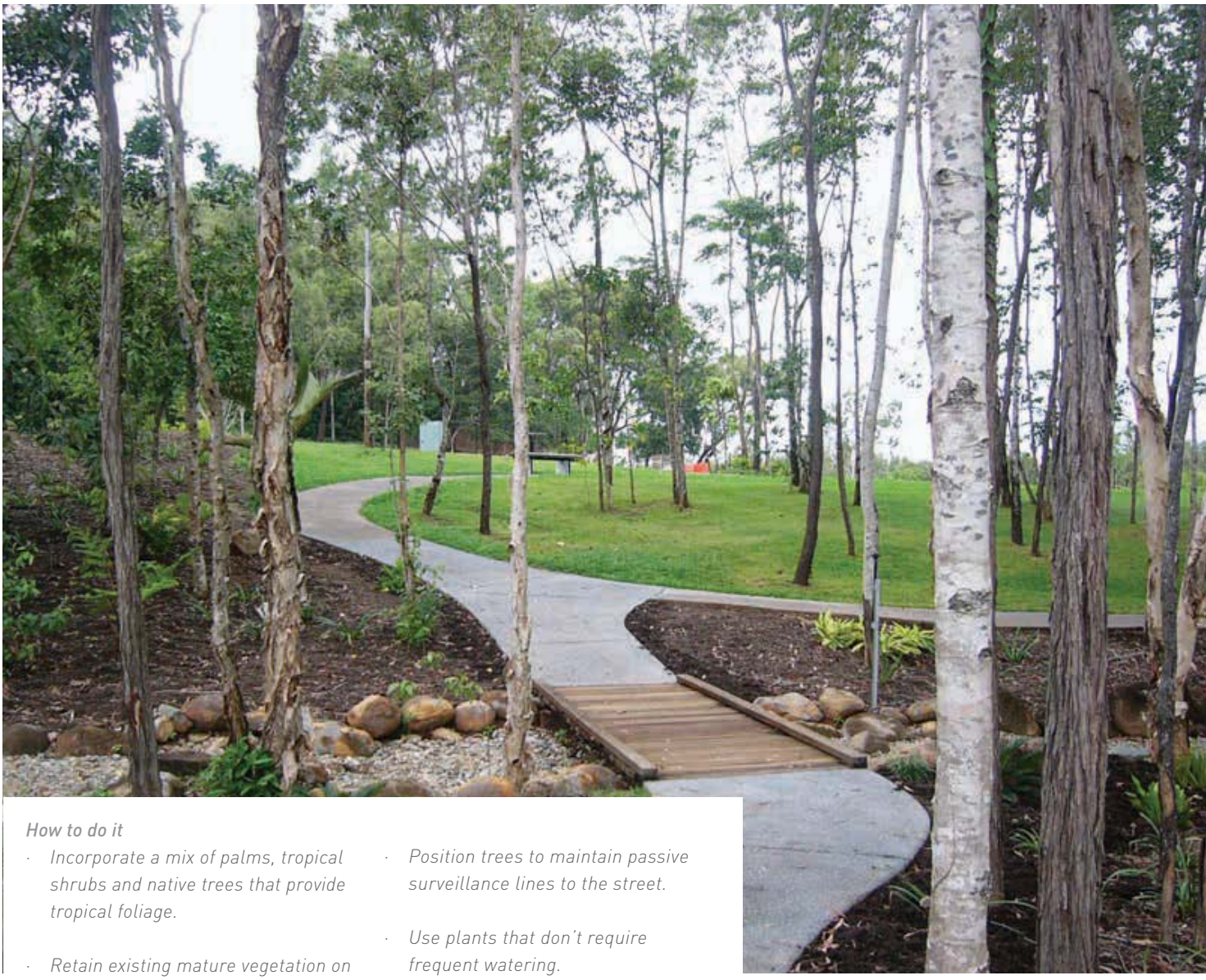
Effective planting arrangements provide colour to the streetscape, tropical fruits to the resident and much valued shade to the house and yard. In addition to increasing the visual appeal from the streetscape, effective landscaping and screening can protect the amenity of residents from both within and external to a site by providing a buffer for noise and other activity. Private landscaping plays an important role in contemporary streetscapes and is useful to delineate between public and private spaces.

The thoughtful positioning of trees and shrubs to shade the dwelling from the summer sun will reduce the need for mechanical cooling. Using vegetation to shade outdoor rooms is an excellent method for creating a tropical refuge in the suburbs. Tropical plantings act as buffers to adjoining properties and between car parking, dwellings and recreation areas in complexes.

Dense, thoughtfully positioned tropical foliage also softens the impact of large multi-unit developments on the streetscape, provides shade to buildings, outdoor rooms and recreation areas and creates a desirable tropical ambience.

Existing on-site vegetation can add established character to new developments and should be retained wherever possible. The planting of appropriate native species is encouraged to provide bird habitat and to assist in strengthening local character.

The location and screening of external air-conditioning units is a key element to consider in new developments to enhance the view of the development from the street along with reducing other associated impacts such as noise.



How to do it

- *Incorporate a mix of palms, tropical shrubs and native trees that provide tropical foliage.*
- *Retain existing mature vegetation on site. These contribute significantly to the character of traditional streetscapes.*
- *Position trees and plants to shade verandahs and protect your house from the summer sun.*
- *Use dense foliage to improve privacy between internal units.*
- *Use plants that provide colourful flowers to create a tropical ambience.*
- *Position trees to maintain passive surveillance lines to the street.*
- *Use plants that don't require frequent watering.*
- *Be aware of overhead services when planting trees and consider the fully grown size of the selected species.*
- *Consider native tree species where possible.*
- *Consider the location of external air-conditioning units along with screening measures should they front the streetscape.*



7

SUSTAINABLE BUILDING DESIGN

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INTRODUCTION

A sustainable house is a comfortable house. It responds to its climate and surrounding environment and uses water, electricity, and other resources efficiently. The result is a well designed home which is less expensive to run. 'Passive design' is design that does not require mechanical heating or cooling.

Passive design makes the most of natural resources and local conditions to make the house comfortable while reducing energy use. In the tropics, passive design maximises natural cooling design features including shading, natural ventilation and insulation.

Appropriate building materials and window placement also affect the energy efficiency of the building. Many older Cairns Style houses incorporate sustainable design features as modern technology was not available to provide artificial cooling.

Why it is important

Sustainable design results in a comfortable building with reduced electricity costs, reduced greenhouse gas emissions and environmental impacts associated with the production and disposal of building materials.

How to do it

Key elements to consider when designing a new home, building or renovation include the following:

- *Orientation – Orientation should aim to exclude the sun year-round and maximise exposure to cooling breezes.*
- *Glazing and Shading – Consider specialised glazing and window treatments to control heat loss and heat gain (e.g. double glazing, louvres etc).*



- *Ventilation – Consider cross ventilation and the location of external openings for intake and exhaust, use of windows which are lockable in a partly open position, use of convection air flows, use of external vegetation to cool incoming air and provide ventilation to the roof space.*
- *Thermal mass and building materials – Use materials with high thermal mass such as concrete floors, masonry walls, stone, ceramic surfaces etc to assist with the overall thermal efficiency of the building.*
- *Insulation – Provide roof and ceiling insulation to minimise the consumption of energy to reduce cooling and heating costs.*
- *Landscaping – Landscaping should enhance the operation and use of the building, while promoting biodiversity and providing habitat for native species.*
- *Outdoor Living – Create liveable outdoor rooms that do not rely on mechanical cooling by maximising cross ventilation and natural breezes.*

A sustainable house responds to its climate and surrounding environment and uses water, electricity and other resources efficiently.



SHADING

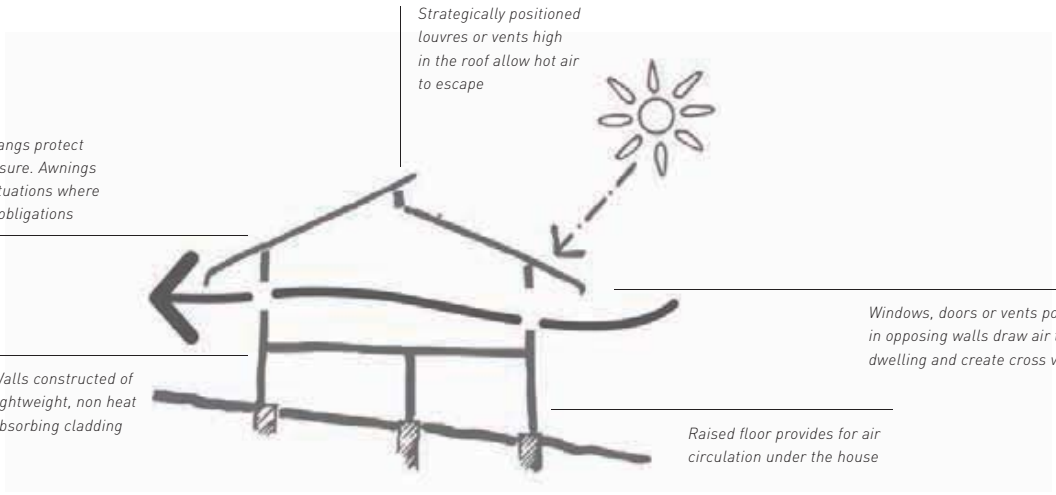
The path of the sun changes throughout the year between summer and winter. The sun path diagram for Cairns illustrates the sun to the south in winter and north in summer.

Designing for the sun and its angles will assist in determining the width of roof overhangs and structures for shading windows and thermal mass.

INSULATION

Insulation is an important factor in keeping a house cool. There are generally two types of insulation, bulk and reflective. Bulk insulation works by trapping small pockets of air, reflective insulation works by reflecting radiant heat away from its shiny surface.

The primary concern in the tropics is keeping heat out of living spaces. If a home is air conditioned, insulation can also help to keep the cool air in. Areas to insulate include the roof, ceiling and walls. Verandah roofs should also be insulated in hot climates where outdoor living spaces are used extensively. Heat build up under verandahs not only affects the space below but can increase temperatures inside the house.





ORIENTATION

Choosing the right location on a block for home placement is sometimes restricted by the aspect of land chosen, however it is an important element to consider. Orientation can reduce the heat load of a house, reducing the need for costly artificial cooling.

The most fundamental rule is to restrict direct sun light from entering the house all year round and increase access to prevailing breezes.

If possible, position a house to face north with the long axis running on an east-west axis. This minimises the surface area of the house exposed to the east and west morning and afternoon sun.

Due to the sun passing overhead in the southern part of the sky in the summer months and in the northern part of the sky in the winter months, it is important to shade the long sides of the house facing north and south. Prevailing breezes in this area tend to come from the south-east so it is important to orientate openings to receive these. Another consideration is obstructions to airflow such as internal walls. Try to direct airflow to maximise the breeze either around, over, or through them.

