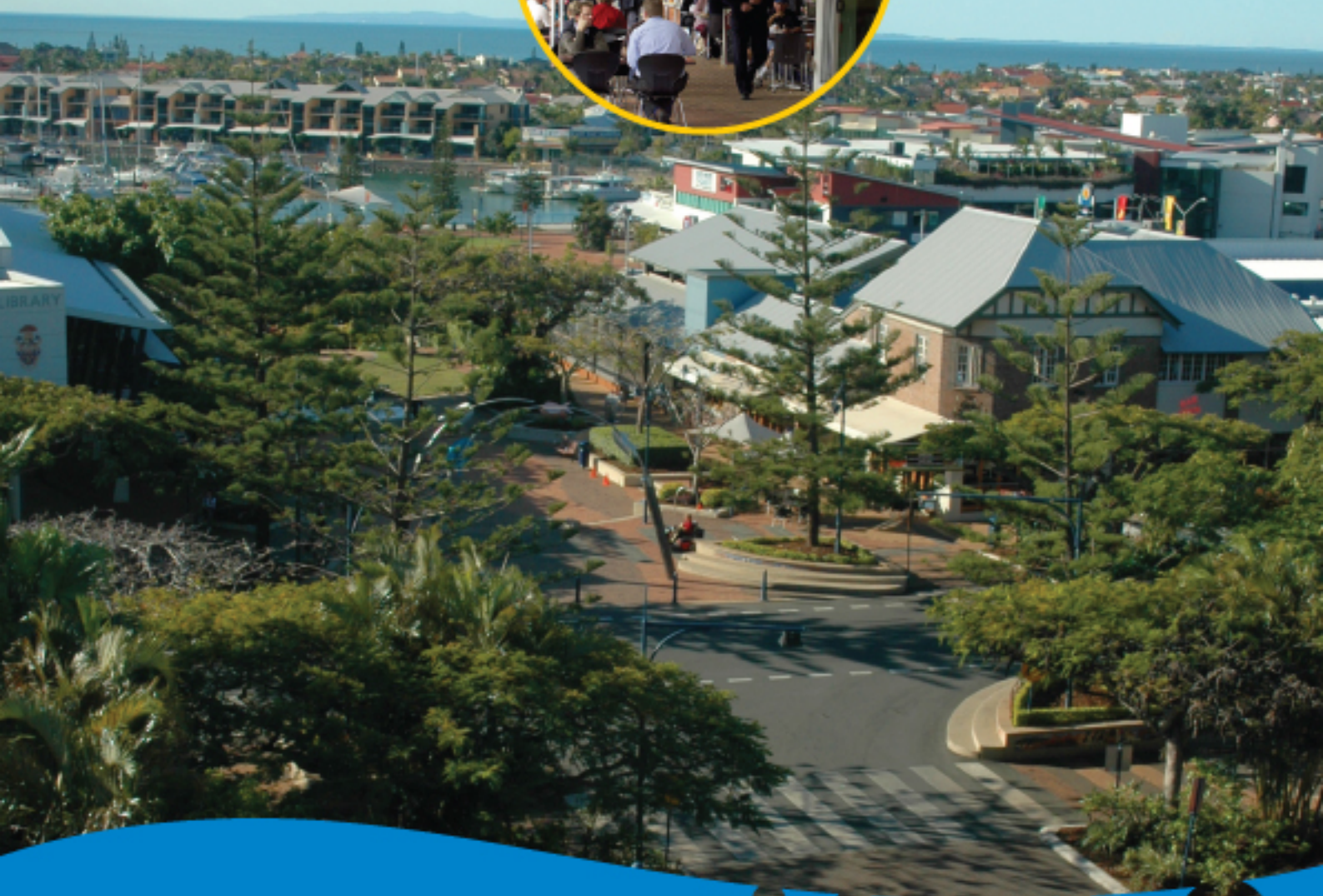


Cleveland Principal Activity Centre

Streetscape Design Manual



Redlands Planning Scheme



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Cleveland Principal Activity Centre Streetscape Design Manual
August 2007
Version 2

These design manuals are called up by the Redlands Planning Scheme Policy 17 – Streetscape Design Manuals.

These design manuals have been adopted by Redland Shire Council to ensure that the design integrity of Cleveland Principal Activity Centre is maintained. Should any elements contained within these design manuals require further information and/or detail, please contact Redland Shire Council Customer Service (07) 3829 8999 for assistance.

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01 Design Philosophy

1.1 Streetscape Design Philosophy

Cleveland Principal Activity Centre has evolved through the design of streetscape elements which reflect a specific theme. This theme is reflected in every physical component, including the surface treatment with its free-form tidal curves in three colours, custom made 'lighthouse' type bollards, street lights, town logo imprinted on furniture, banners and unique sea-shell street benches.

The Cleveland Principal Activity Centre includes a number of significant large-scale design components, including two major water features to bring the bay up into the town, and a forty-metre long street awning to provide shelter and streetscape continuity.

Located along Bloomfield Street between Middle and Queen Streets is the civic 'Town Square' of Cleveland Principal Activity Centre. The Town Square has been designed to allow for total closure to all through traffic to enable for the space to function as a civic space for particular events. When through traffic is permitted, the space functions as a 'shared zone' where pedestrians and through traffic have equal shared priority.

The design of Cleveland Principal Activity Centre ensures that persons with disabilities have equitable access and mobility. This is achieved through the use of tactile ground surface indicators to assist in the orientation of people with vision impairment, the creation of footpath level crossings, the provision of disabled access at grade and the use of a custom designed drinking fountain suitable for persons with disabilities.

The streetscape has been designed to remove the physical interface between private and public spaces and to reaffirm the significance of Bloomfield Street. Adjoining streets located within the 'Town Centre' have been defined to ensure their integration and reinforcement of the streetscape design.

1.2 Place Making

The Bloomfield Street Project (Stage One of the Cleveland Town Centre Project) used the process of cognitive and cultural mapping and public preference studies in order to embrace community values and the cultural rhythms of our local community.

Cleveland is a traditional coastal town near Brisbane in the heart of a varied landscape of islands, promontories and mangrove-fringed coastline and hinterland bushland. This project links the main street of Bloomfield Street to the harbour. Design features include a poetry trail by local poets and writers including the legendary Aboriginal poet, Oodgeroo Noonuccal (Kath Walker) and children's playground designed by a team of local sculptors from play ideas developed at children's workshops. Other unique features include locally made mosaic tiles, banners and windsocks by art students, street sculptures, a town map carved into street pavers and extensive planting of street trees, shrubs and flowers.

The main street development has prompted a sudden growth in the town, high quality private development, over twenty million dollars worth of new building construction and incremental improvement to the quality of life for local residents and people in the region.

For Redland Shire Council, the project inspired the formulation of a cultural policy, allocation of community arts budget and the appointment of community cultural development officers. There was extensive collaboration by the local community with designers, artists and crafts people involved at all stages of design and construction. The team included landscape architects, graphic designers, planners, sculptors, artists, poetry coordinator, community coordinator, as well as staff from Council's previous Engineering, Planning and Environment, Parks and Recreation and Redland Water.

The project gained an award for excellence in urban design from RAPI (Royal Australian Planning Institute) in 1993, an Australia Day award for cultural development and the 1994 CEAD Award for innovative approaches to environmental design.

Source: 'Places not Spaces - Placemaking in Australia', Australian Council for arts, 1995 pg. 41 & 42.

02 Policy Statement

2.1 Statement of Intent

These streetscape design manuals provide specifications and guidance to developers in satisfying the works requirements under the Redlands Planning Scheme and to achieve the creation of a high quality, unified and consistent streetscape adjacent to their developments. For details of specific requirements reference should be made to the–

- (a) relevant Zone Code(s);
- (b) relevant Use Code(s);
- (c) Access and Parking Code;
- (d) Centre Design Code;
- (e) Landscape Code;
- (f) *Capalaba Principal Activity Centre Streetscape Design Manual*;
- (g) *Point Lookout Headland Masterplan and Design Manual*;
- (h) Infrastructure Works Policy;
- (i) Outdoor Dining Policy;
- (j) Schedule 1 – Access and Parking;
- (k) Schedule 9 – Trees;
- (l) Schedule 10 – Vegetation Species List;
- (m) Vegetation Protection Local Law number 6;
- (n) Department of Main Roads Landscape Manual and Traffic Noise Management Code of Practice;

These manuals are applicable to all development applications which fall within the Cleveland Principal Activity Centre Parameters as defined in Figure 1.

Feature points on the street such as pedestrian thoroughfares (arcades), entries, corners and congregation areas should be treated with particular attention. The appropriate mix of street furniture and landscaping will ensure the implementation of the development principles and aims of the Redlands Planning Scheme. These manuals should be read in conjunction with this document and any other Council policy documents relating to the Cleveland Principal Activity Centre.

These design standards will assist in eliminating uncertainty about acceptable standards applicable to street scape and landscape requirements, and will alleviate possible delays in the development assessment process. This will apply in particular to the issuing of a development permit, or associated works approvals for landscape, civil works and planting plans applicable to development.

Adherence to these design manuals will help to achieve an acceptable standard. However, design innovation and quality will be highly regarded and encouraged in the assessment of development applications. Outcomes are performance assessed within the context of the Redlands Planning Scheme and this policy to provide for a recognisable statement to the building/developments facade, and a valuable contribution to the public realm of the Cleveland Principal Activity Centre.

The Applicant is advised to note that within The Cleveland Principal Activity Centre, three (3) precinct surface treatment areas have been designated, refer to Figure 2. The three precinct areas have specific requirements pertaining to each area as specified within this manual. Adjacent Medium Density Residential and Major Centre areas outside of the Cleveland Principal Activity Centre may be required to have “tertiary” surface treatment areas in order to complement the existing surrounding streetscape.

2.2 Use of Streetscape Design Manuals

Adherence to the design manuals will help to achieve an acceptable standard. These design standards will assist in eliminating uncertainty about acceptable standards applicable to streetscape and landscape requirements and to avoid possible delays in the development process and in particular the issuing of approvals for landscape and planting plans applicable to development approvals.

All materials, dimensions and workmanship shall comply with current published Australian Standards and Statutory Codes. Proprietary names and models are indicative of design and standard only. Alternative options that are consistent with the intent of those indicated may be substituted if approved.

The product specification and all other applicable detail of the proposed product is to be submitted to the Manger Assessment services for approval. The finished quality, design, expected product life and maintenance requirements will be assessed (in consultation with the Managers, Infrastructure Planning, Land Use Planning and Operations and Maintenance) in reaching a decision.

2.3 Relationship to the Redlands Planning Scheme

These design manuals provide specification for pedestrian priority components as detailed under the Redlands Planning Scheme – relevant zone and use codes, Centre Design Code, Infrastructure Works Code and Landscape Code. Streetscape and pedestrian priority component works are required to be carried out in accordance with the provisions mentioned above in association with development and the alteration or extension of existing uses.

It is intended to achieve a unified streetscape character throughout Cleveland Principal Activity Centre. In order to achieve this, Applicants are required to use specified forms of hard-stand and soft-scape materials as defined within these manuals for all streetscape frontage works which fall within the Cleveland Principal Activity Centre Parameters as defined in Figure 1.

2.4 Approval Process

2.4.1 Development Application

At the time of making an application for a development permit for a material change of use, the site layout and concept plans should provide indicative details of streetscape works to be carried out in accordance with the requirements of Chapter 2 – Documentation and General Conditions of the Infrastructure Works Policy of the Redlands Planning Scheme and this design manual.

The documentation should be prepared by a suitable qualified professional(s) and satisfy the requirements of Council's Redlands Planning Scheme. The determination of such application through the issue of a development permit or approval shall be finalised or as otherwise advised by Council prior to the issuing of a development permit for building, water supply and sewerage works.

2.4.2 Operational Works or Associated Development Works Approval

Full specification and detailed design drawings shall be required for approval. Approval will be issued by the Manager of Assessment Services.

2.4.3 Works External to the Above Application Process

Detailed specification and design drawings shall be provided to the Manager of Operations & Maintenance.

2.4.4 Consideration, Compliance & Conditions

The Applicant shall provide Council with at the time of lodging specifications, plans, samples and/or test result necessary to demonstrate compliance with the requirements of this document a statement of compliance confirming compliance with the requirements of this document and the requirements of the water supply and sewerage laws. Completion of approved works to an acceptable standard by Council's inspecting officer(s), in line with the conditions applied to a development approval, shall be a pre-requisite to the occupational commencement of use from the site subject to such an approval. As a condition of development approval, works will be bonded as a guarantee of performance and held for a period of twelve (12) months from date of notification by the applicant for a final inspection of completed works and acceptance to 'maintenance' period.

2.4.5 Service Authority Agreements

The Applicant shall be responsible for notifying all relevant public authorities of the proposed works in writing and bear the respective costs of resultant upgrading or alterations to utility services and services. Copies of relevant correspondence to and from service authorities shall be supplied as part of the application.

2.4.6 Permit to Undertake Works in a Public Road

Prior to works commencing, a permit to undertake works in a public road (Road Opening Permit) shall be obtained from the Manager of Assessment Services.

2.4.7 Plumbing & Drainage Approval

The Applicant shall provide hydraulic plans for approval to Council's Plumbing and Drainage Assessment Section prior to commencement of any plumbing and drainage works.

2.5 Cleveland Principal Activity Centre Parameters



Legend


 Cleveland Town Centre Parameters

Figure 1

2.6 Cleveland Principal Activity Centre Precinct Surface Treatments

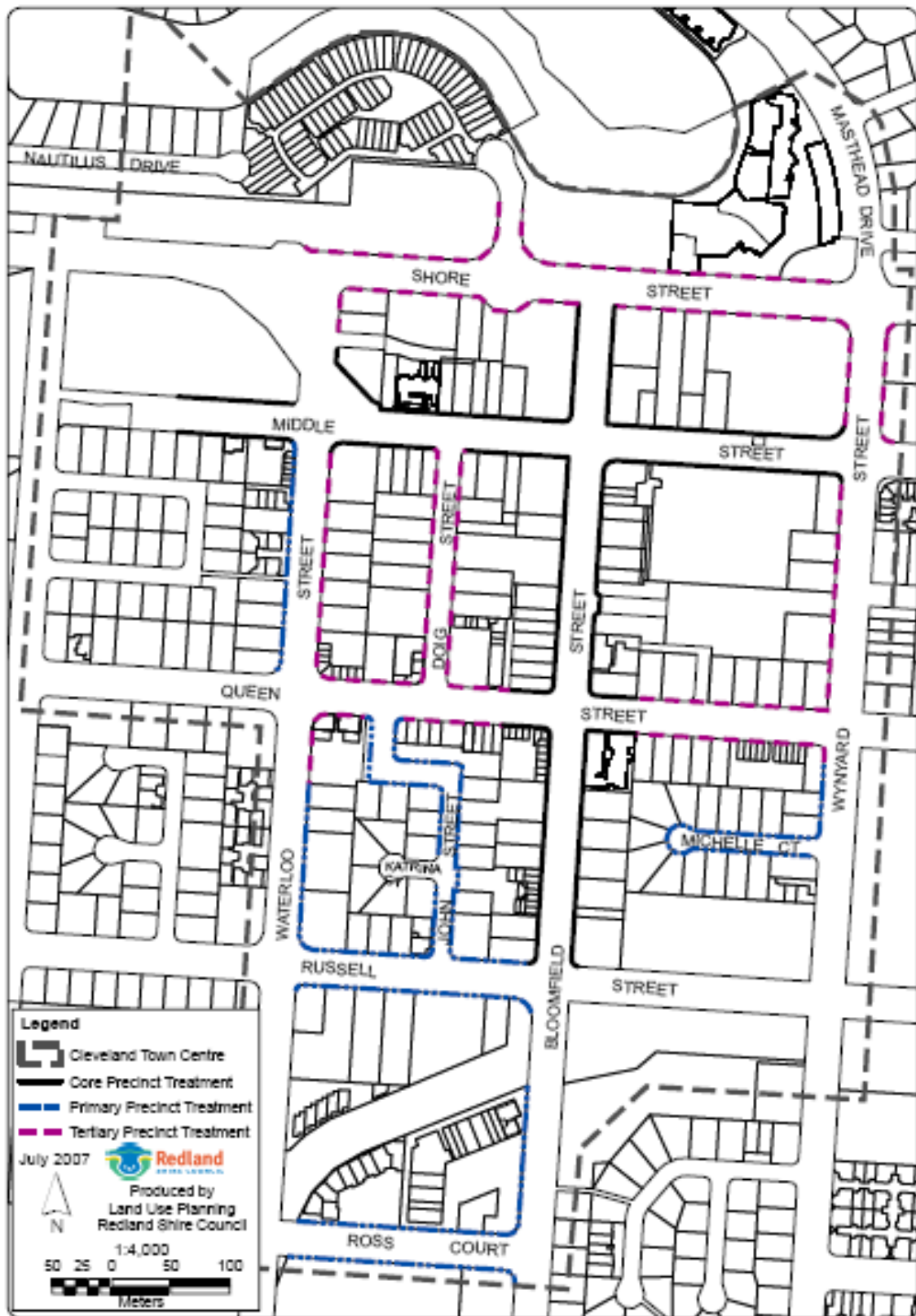


Figure 2

03 Policy & Standards Compliance

3.1 Policy & Standards Compliance

All approved development application works which constitute streetscape frontage works undertaken as part of the requirements defined within these streetscape design manuals are to conform to as a minimum standard with:

- Redland Shire Council Policies and Guidelines;
- Australian Standards;
- Building Code of Australia;
- Austroads;
- Manual of Uniform Traffic Control Devices (Qld);
- Water Supply Law and Sewerage Law;
- Water Services Association of Australia (WSAA); and
- Other relevant design and construction standards.

3.2 Policy Compliance

All approved development application works which constitute streetscape frontage works undertaken as part of the requirements defined within these streetscape design manuals are to conform to all standards as specified in Redland Shire Council Policy and Guidelines and the Redlands Planning Scheme.

Outlined below for your guidance only are examples of, but are not limited to, Council Policies and Codes (or as revised/reviewed), which will require compliance with:

- Erosion Prevention and Sediment Control Code
- Landscape Code
- Habitat Protection Overlay Code and Heritage Place and Character Precinct Overlay Code;
- Infrastructure Works Code and Policy;

3.3 Standards Compliance

All approved development application works which constitute streetscape frontage works undertaken as part of the requirements defined within these streetscape design manuals are to conform to as a minimum requirement with relevant Australian Standards. Use latest editions of compliance documents and refer to any amendments. Other editions or amendments required by statutory authorities will take precedence over compliance documents.

3.4 Development Conditions

Redland Shire Council's Chief Executive Officer or a delegated Officer must approve exceptions to any of the following conditions in writing.

3.4.1 Timing of Work for Construction

Work may only be performed between the hours of 7.00 am and 6.00 pm Monday to Friday and between the hours of 7.00 am and 1.00pm on Saturdays only.

3.4.2 Construction Program

A construction program is to be submitted to Redland Shire Council prior to commencement of work. The construction program will clearly indicate the following information on a weekly basis:

- Project Milestones
- Critical path of construction
- Tasks
- Progress
- Project Completion Date

The Applicant is to ensure the work is organised, sequenced, and implemented in a manner, which eliminates unreasonable disturbance to the site, property and disruption to surrounding property users.

3.4.3 Access

The Applicant shall accommodate the movement of vehicular traffic and pedestrian traffic through the area as far, as is practically possible to ensure the continued access to shops and business of surrounding properties.

Vehicular traffic flows are to be maintained at all times. If traffic conditions are to be altered, a professional traffic controller is to be engaged for the entire duration of the changed traffic conditions.

3.4.4 Workmanship

Workmanship shall be the best of its respective kind and conform to the best practices of that trade. Work is only to be performed by those suitably qualified, industry approved, industry registered and experienced in that relevant line of work.

3.4.5 Works Notice

Licensed plumber and drainers are required to supply Council's Plumbing Assessment Section with 'Commencement of Work Notice' prior to commencing work.

3.4.6 As Constructed Drawings

The Applicant is required to submit to Redland Shire Council within fourteen (14) working days after practical completion of streetscape frontage works, as-constructed electronic drawings compatible with Council's Infrastructure Development Engineering software and drawing standard requirements.

The drawings shall record accurately and to scale the following information:

- Hydraulic (including irrigation, water, sewerage and stormwater)
- Electrical Services (indicate depth and dimensions from boundaries)
- Telecommunication Services (indicate depth and dimensions from boundaries)
- Location of all hardstand and soft-scape works undertaken as prescribed within these design manuals.

3.4.7 Permanent Survey Markers (PSM)

If Permanent Survey Markers (PSM) and boundary offset markers fall within the scope of the works, the Applicant must take all necessary measures not to disturb them if possible. Should markers require removal to complete works, written approval must be obtained from Redland Shire Council's Chief Executive Officer or a delegated Officer prior to removal. The reinstatement of markers will be at the Applicants expense. Markers disturbed unnecessarily will be reinstated at the Applicants expense.

04 Street Furniture

4.1 Street Furniture Requirements

Generally, street furniture used within the Cleveland Principal Activity Centre is premanufactured and retro-fitting enabling the street furniture elements to be cost effective and easily installed whilst contributing to the urban image of Cleveland Principal Activity Centre. Outlined within this section are the required performance outcomes and standard requirements for nominated street furniture elements.

4.1.1 Substitute / Variation to Nominated Street Furniture

Applicants are able to submit alternate product suppliers for the specified street furniture elements. Approval for the use of alternate product suppliers will be granted if the product matches the specified street furniture with regards to materials, design, function, aesthetic qualities and workmanship.

The Applicant is advised not to proceed with ordering and/or the installation of variation/substitute street furniture elements until written approval for the variation/substitution has been given by Redland Shire Council's Chief Executive Officer or a delegated Officer.

4.2 Ordering of Nominated Street Furniture

Street furniture may take a pre-ordering period of approximately four (4) – six (6) weeks for small numbers and six (6) – eight (8) weeks for large numbers of elements. Applicants are advised to check availability and to place orders as soon as practical to avoid delays. The Applicant is advised to seek written direction from Redland Shire Council's Chief Executive Officer or a delegated Officer should a specified item of street furniture not be available at time of placing order.

4.3 Range of Elements

The range of nominated street furniture includes, but is not limited to:

- Drinking Fountains
- Bench Seats
- Decorative Pedestrian Footpath Lighting
- Litter Bins
- Regulated Parking Signs
- Cigarette Disposal Unit
- Bicycle Racks
- Garden Bed Seating
- Signs
- Bollards
- Balustrade/Guard Rails
- Skateboard Deterrent

4.4 General Installation Criteria for Street Furniture

4.4.1 Angled Parking

In footpath areas adjacent to angled parking, street furniture is not to be located within the minimum clearance distance from face of kerb (distance X) as specified in Austroads 'On Street Car Parking' manual and relevant Australian Standards for 'Off-Street Parking', refer to Figure 3.

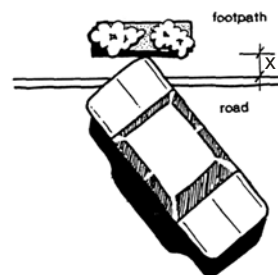


Figure 3

4.4.2 Parallel Parking

In footpath areas adjacent to parallel parking, street furniture is not to be located within the minimum clearance distance from face of kerb (distance X) as specified in Austroads 'On Street Car Parking' manual and relevant Australian Standards for 'Off Street Car Parking', refer to Figure 4.

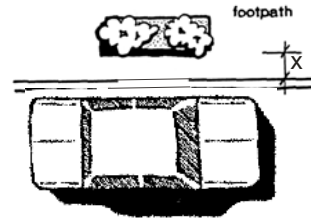


Figure 4

4.4.3 General Location of Street Furniture Elements

As indicated in Section 4.4.1 and 4.4.2, street furniture is not to be located within the minimum clearance distance from face of kerb as specified in Austroads 'On Street Car Parking' manual and relevant Australian Standards for 'Off Street Car Parking'. In situations where there is no designated car parking bays within the carriageway, street furniture is not to be located within the minimum clearance of 900 mm from face of kerb. Rubbish bins are not to be located within 1,200 mm of seating and eating areas.

Street furniture is not to be located within the pedestrian through access path. A minimum straight, uninterrupted width of 2,000 mm must be maintained at all times within Core and Tertiary Precinct Surface Treatment areas (refer to Figure 4). The Applicant is advised to note that approval for works will not be granted if the 2,000 mm wide clear pedestrian through access is achieved by serpentine and/or wave-finding around and through other furniture elements, services, building structures etc located within the footpath.

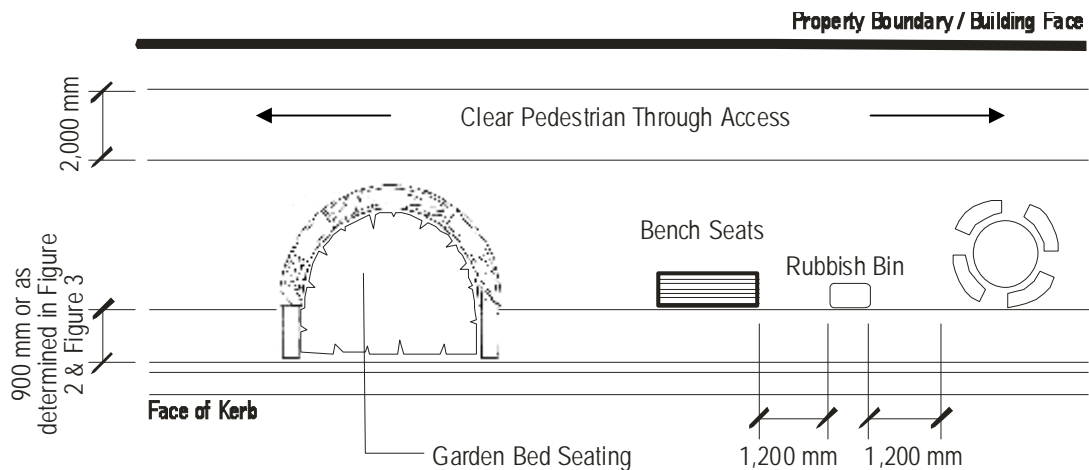


Figure 5
Schematic Street Furniture Layout

4.4.4 Furniture Located on Uneven/Sloping Surfaces

All street furniture installed on uneven/sloping ground surfaces is to remain perpendicular to the horizontal ground plane. The construction of concrete 'platform' to achieve a parallel surface will be required.

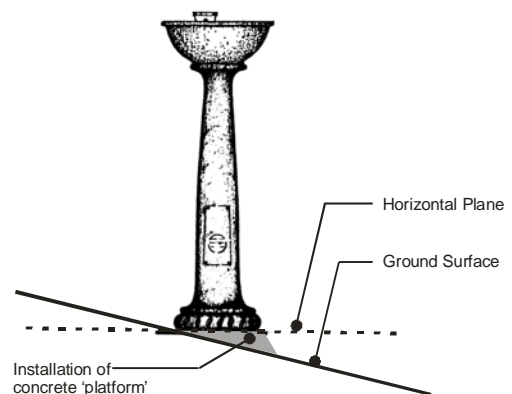


Figure 6
Schematic Illustration

4.5 Drinking Fountains

4.5.1 Use

The installation of drinking fountains is required throughout Cleveland Principal Activity Centre 'Core' & 'Tertiary' Precinct Surface Treatment areas. Drinking Fountains are to be installed at minimum of 50 metre intervals or at intervals as otherwise determined by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Applicants are advised to note that Drinking Fountains will be required to be installed at pedestrian thoroughfares and key corner areas in the defined 'Core' & 'Tertiary' Surface Treatment Areas. The Applicant will be required to install the Accessible Drinking Fountain (CR106) where this type of drinking fountain is not installed and located within 35 metres of the subject development.

4.5.2 Construction/Material

The connection of and discharge outlet connection of drinking fountains is to be clearly demonstrated on hydraulic plans submitted for development application approval.

The installation of the drinking fountains is to meet the requirements of Standard Sewerage Law, Water Supply Law, AS 3500 National Plumbing & Drainage Code and SAAMP52.

Drinking fountains are to be installed as per manufacture instructions with vandal-proof fixtures.

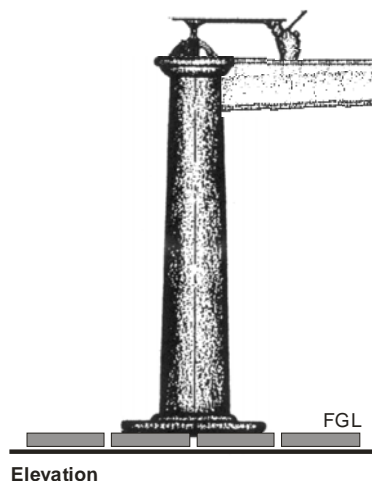
4.5.3 Colour

Exposed metal powdercoated to match Dulux Navy Gloss 50282, treated with anti graffiti finish.

4.5.4 Style

- Accessible Drinking Fountain CR106 by Street & Garden Furniture Company or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer; or
- Drinking Fountain FR015 by Street & Garden Furniture Company or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Accessible Fountain CR106



Drinking Fountain FR015

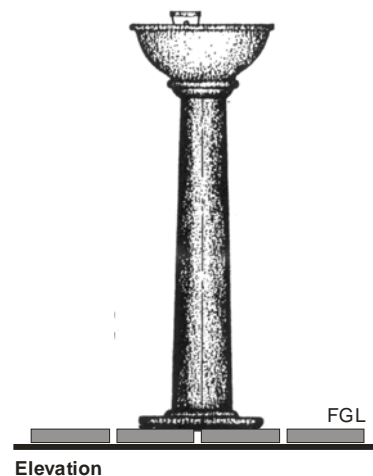


Figure 7

4.6 Bicycle Racks

4.6.1 Use

The installation of bicycle racks is required throughout Cleveland Principal Activity Centre 'Core', 'Tertiary', & 'Primary' Precinct Surface Treatment areas to maximise non-vehicular transport into the Cleveland Principal Activity Centre.

Bicycle Racks are to be installed at pedestrian thoroughfares and adjacent to rear parking areas accessing pedestrian thoroughfares, or at intervals as otherwise determined by Redland Shire Council's Chief Executive Officer or a delegated Officer.

The bicycle racks are to have a minimum clearance distance from bicycle rack face of 1,500 mm measured from its centre (refer to Figure 8A).

4.6.2 Construction/Material

Installation of bicycle racks as per manufacture instructions with surface mounted vandal-proof fixtures.

4.6.3 Colour

N/A - Stainless steel finish.

4.6.4 Style

- Cora Expo Series Model EXPO 2704 (Figure 8B) by, Cora Bike Rack Pty Ltd or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer

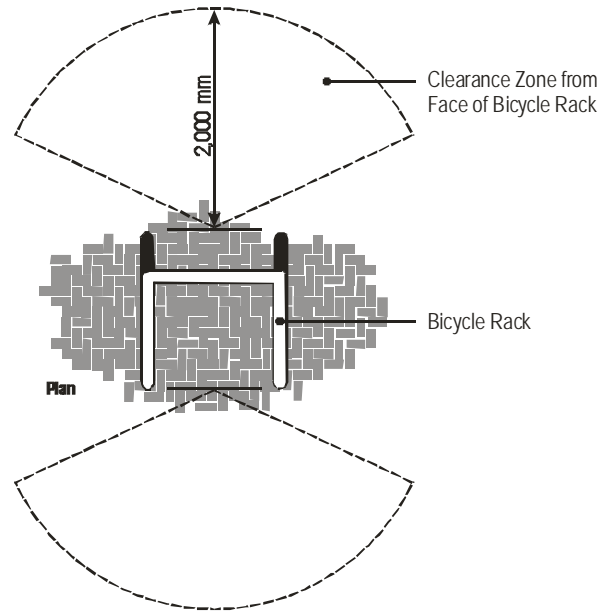


Figure 8A
Style: Cora Expo Series

Cora Expo Series

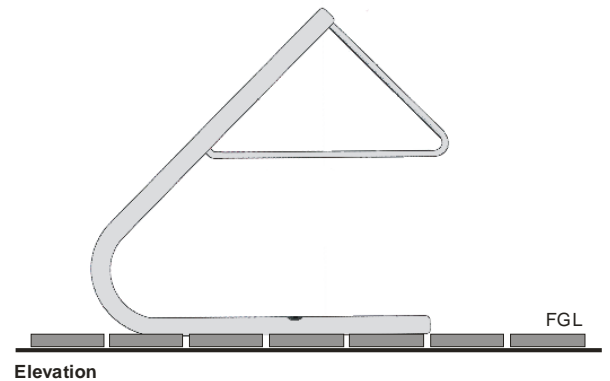


Figure 8B

4.7 Bench Seating

4.7.1 Use

The installation of bench seating is required throughout Cleveland Principal Activity Centre 'Core' and 'Tertiary' Precinct Surface Treatment areas. Bench seating will be located on a case by case basis or at intervals as otherwise determined by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Bench seats are to be located adjacent to walls and/or garden bed areas, facing activity areas and take advantage of shelter from awnings. Where clear of windows and level changes, seats may be located to adjacent to building walls to provide convenience, accessibility and compatibility with other street activity.

4.7.2 Construction/Material

Installation of bench seats as per manufacture instructions with surface mounted vandal-proof and skateboard-proof fixtures.

4.7.3 Colour

Exposed metal powdercoated to match Dulux Black Gloss 52694, treated with anti graffiti finish.

4.7.4 Timber Finish

Two coats of "Ezy Deck" linseed oil finish by Quick and Easy Limited or equivalent.

4.7.5 Style

CR110 with side arms by Street & Garden Furniture Company or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Park Bench CR110 (with arms)



Figure 9

4.8 Garden Bed Seating

4.8.1 Use

Garden bed seating (semi-circular sandstone/timber garden beds) will be located within the 'Core' Precinct Surface Treatment area at eight (8) metre intervals or at intervals as otherwise determined by Redland Shire Council's Chief Executive Officer or a delegated Officer.

4.8.2 Construction/Material

Refer to Figure 10A, 10B, 10C and 10D. Flat timber inserts to be constructed from dressed seasoned Jarrah of uniform thickness. The Applicant is requested to note that any staining caused as a result of leaching timber properties and/or timber stain are to be removed to the satisfactory approval of Redland Shire Council's Chief Executive Officer or a delegated Officer at the Applicants expense.

Applicants are advised to note that the length and width and height of garden beds may have to be varied to accommodate the retainment of existing street trees, placement of new street trees and to accommodate gradient changes and reverse-parking layout. Section A-A has two options for wingwalls depending on the location of any reverse parking layout. Ideally the car should be able to reverse park and have a rear clearance to the raised garden bed. In situations where this will occur Redland Shire Council's Chief Executive Officer or his delegated Officer will determine the adjusted dimensions for the garden bed seating. Should this be required, the Applicant can either alter the pre-cast garden bed seating to accommodate the new required dimensions, or undertake the construction of a poured in-situ garden bed seating. Irrespective of which options the Applicants chooses, samples of all alter/poured in-situ concrete planter walls are to be submitted to Redland Shire Council's Chief Executive Officer or a delegated Officer for written approval. Garden beds are to have plastic root barriers installed at a depth of 900mm.

4.8.3 Style

Concrete Garden Bed with Sandstone and Timber Seating

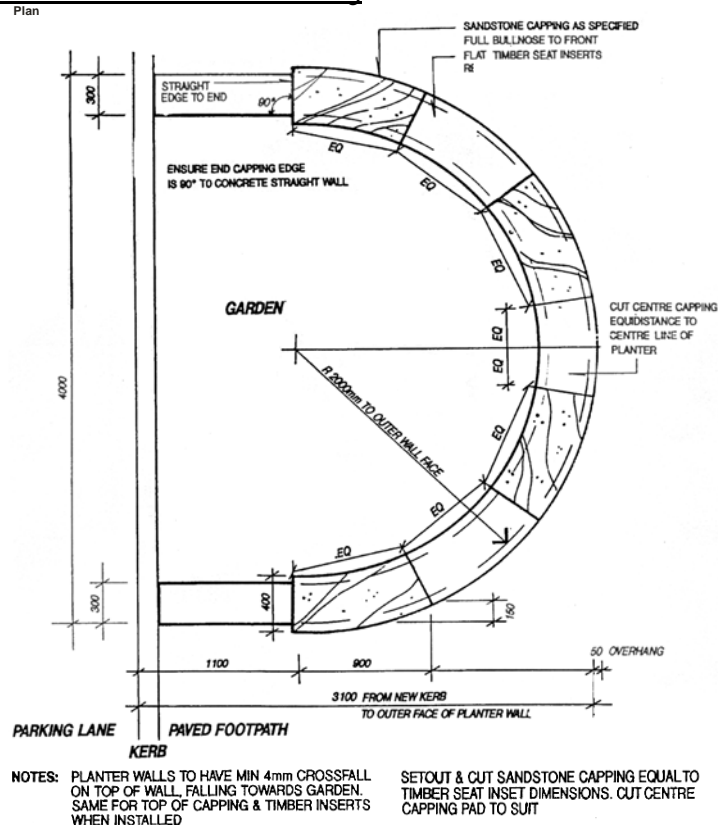


Figure 10A

Concrete Garden Bed with Sandstone and Timber Seating

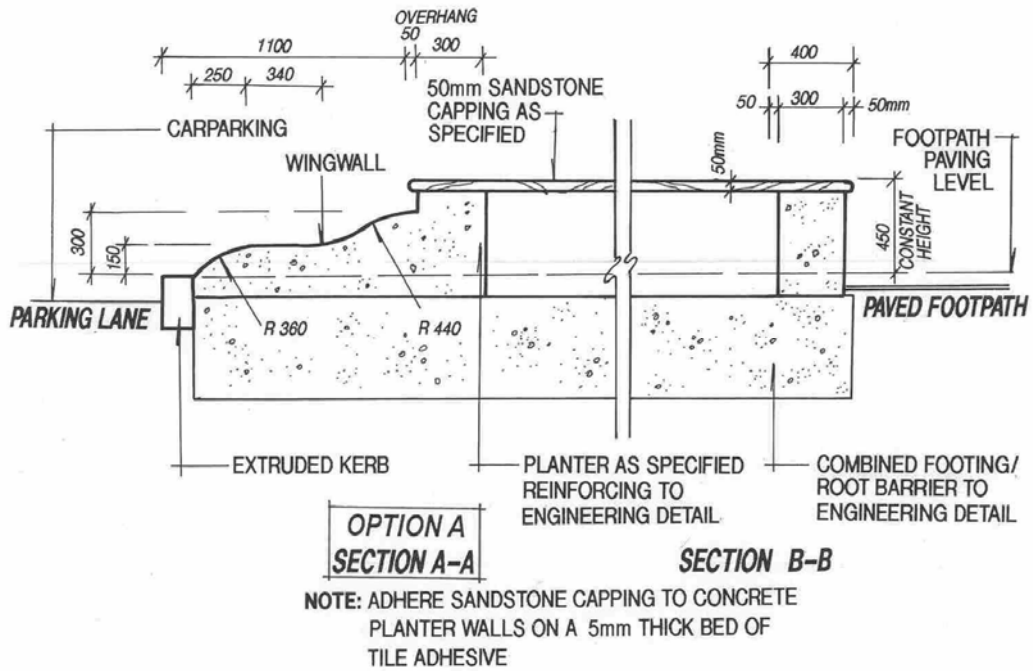


Figure 10B

Concrete Garden Bed with Sandstone and Timber Seating

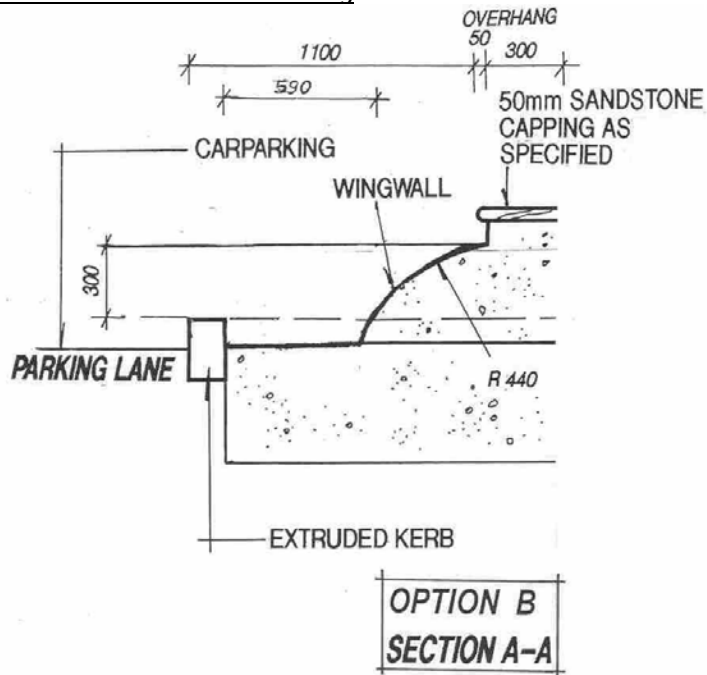


Figure 10C

Concrete Garden Bed with Sandstone and Timber Seating

Sections / Plan

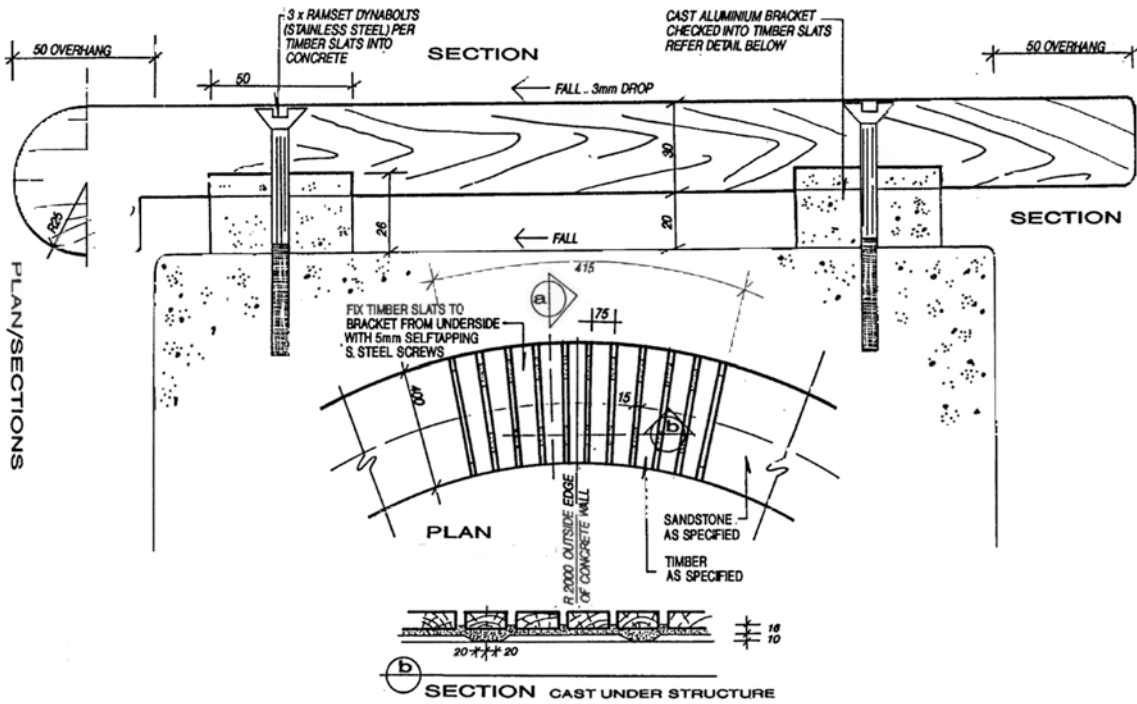


Figure 10D

4.9 Decorative Pedestrian Footpath Lighting

4.9.1 Use

Pedestrian scale footpath lighting will assist in safe and comfortable use of footpaths in the evening. The positioning of lighting is to consider dull spots, shadowing of street trees, resultant hazards for the vision impaired, pedestrian thoroughfares (Infrastructure Works Code in the Redlands Planning Scheme) and to ensure appropriate illumination of the footpath for pedestrian use.

Decorative Pedestrian Footpath Lighting is required throughout Cleveland Principal Activity Centre 'Core', 'Tertiary' and 'Primary' Precinct Surface Treatment areas.

4.9.2 Construction/Material

The lighting categories acceptable to Council are set out in the RPS – Part 11 – Planning Scheme Policy 9 – Infrastructure Works – Chapter 9 – Electrical Reticulation and Street Lighting – Table 1 – Lighting Categories. The lighting categories in Table 1 relate to Australian Standard 1158. Applicants are advised that all decorative pedestrian footpath lighting needs to be designed and submitted by a suitably qualified electrical lighting engineer who is a Registered Professional Engineer of Queensland (RPEQ). Applicants are advised that relevant category of lighting is determined by the classification of the road and may require Department of Main Roads approval and integration with existing road carriageway lighting.

Decorative light poles, surface mounted fixtures and footing as per manufactures specifications.

4.9.3 Colour

Exposed metal powdercoated to match Dulux Navy Gloss 50282, treated with anti graffiti finish.

4.9.4 Style

Light pole CR107 with twin light heads by Street & Garden Furniture Company or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Street Light CR107

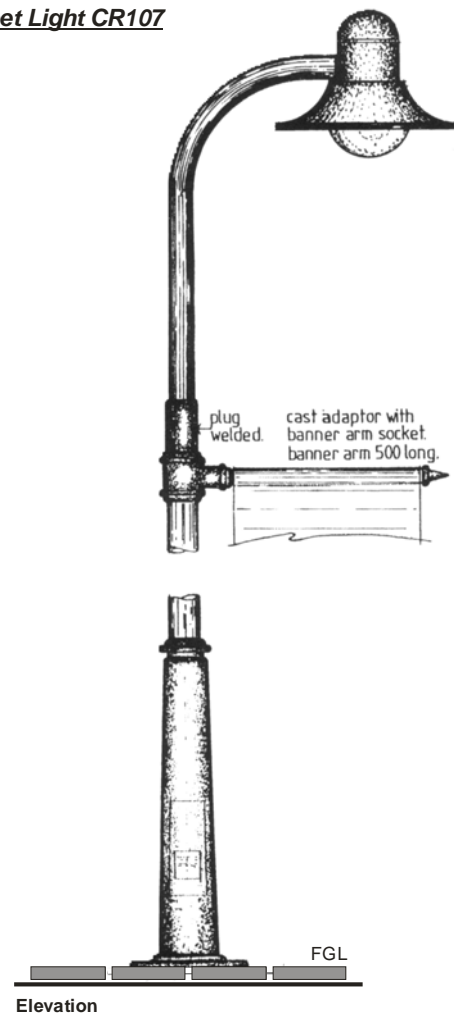


Figure 11

4.10 Direction / Information Signs

4.10.1 Use

A unique Cleveland style of directional / information signs have been developed for the Cleveland Principal Activity Centre. Direction and Information Signs are to be used as identified by the Applicant or as otherwise determined by Redland Shire Council's Chief Executive Officer or his delegated Officer within Cleveland Principal Activity Centre 'Core' and 'Tertiary' Precinct Surface Treatment areas.

Tenancy signage to be a standardised format developed for each site in accordance with the Advertising Devices Code in the Redlands Planning Scheme and Local Law 11 (Control of Signs).

4.10.2 Construction/Material

Surface mounted fixtures and footing as per manufactures specifications.

4.10.3 Colour

- Exposed metal powdercoated to match Dulux Navy Gloss 50282, treated with anti graffiti finish.
- Face of sign powdercoated to match Dulux Heritage Red Gloss with 'Optima' type face lettering in white reflective gloss finish.

4.10.4 Style

Direction / Information Signs CSS206 by Street & Garden Furniture Company or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Directional / Information Sign CSS206

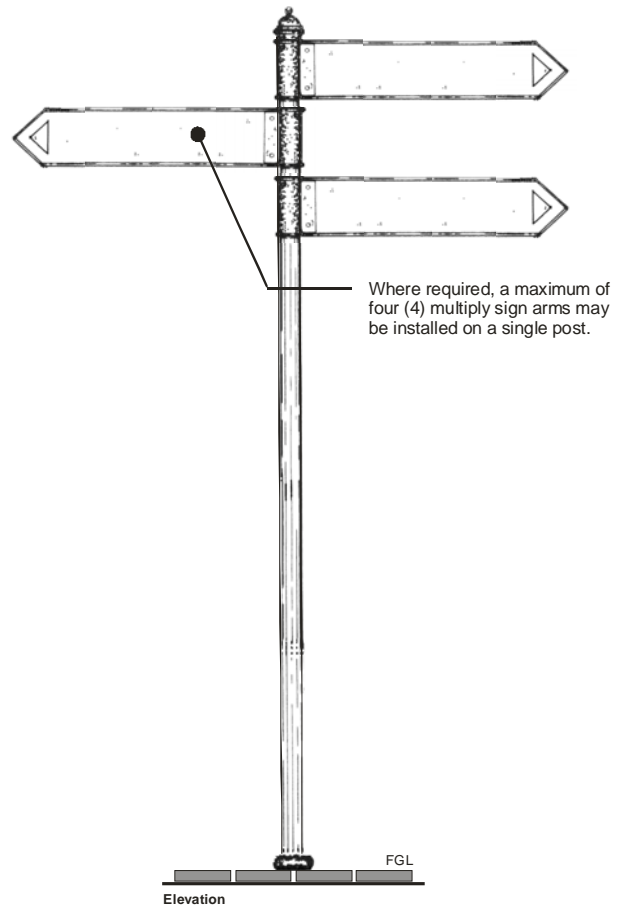


Figure 12

4.11 Regulated Parking Signs

4.11.1 Use

A unique Cleveland style of regulated parking signs have been developed for the Cleveland Principal Activity Centre. This regulated parking sign is to be used for all required regulated parking signs throughout Cleveland Principal Activity Centre 'Core', 'Tertiary' and 'Primary' Precinct Surface Treatment areas.

4.11.2 Construction/Material

Surface mounted fixtures and footing as per manufactures specifications.

4.11.3 Colour

- Exposed metal powdercoated to match Dulux Navy Gloss 50282, treated with anti graffiti finish.
- Face of regulated parking sign as per Austroads standards.

4.11.4 Style

Regulated Parking Sign Post CSS207 by Street & Garden Furniture Company or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Regulated Parking Sign CSS207

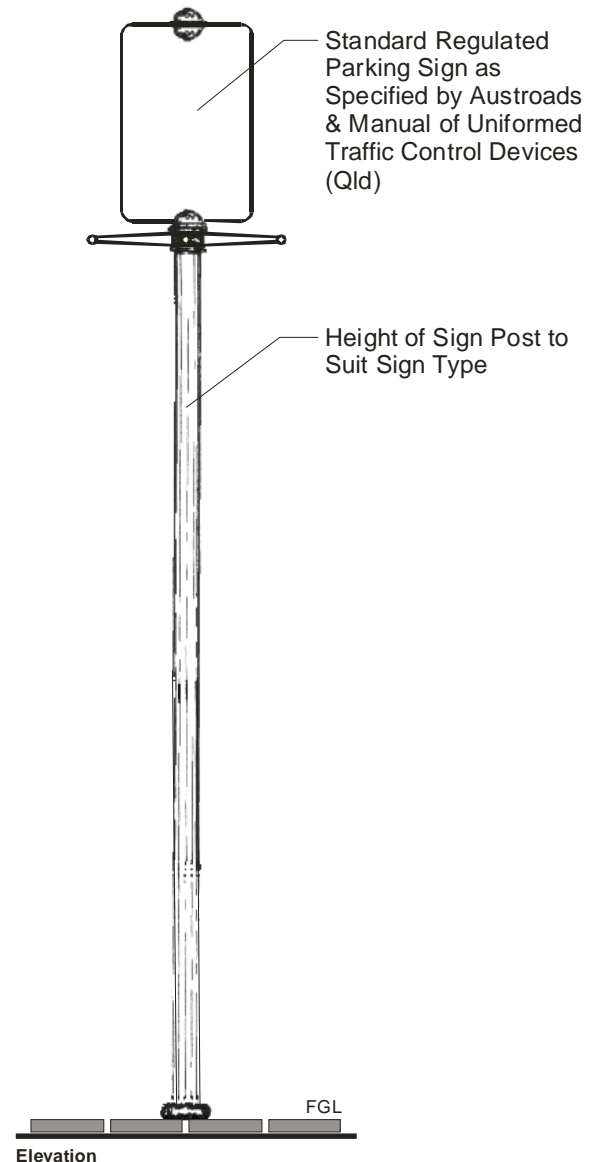


Figure 13

4.12 Rubbish Bins

4.12.1 Use

Rubbish bins will be placed at intervals and locations to be determined by Council and a minimum of 1200 mm away from fixed seating and designated outdoor dining areas (where required). Council may require monetary contributions in lieu of dedication of a public rubbish bin (see below for further details).

Rubbish bins are to be installed throughout Cleveland Principal Activity Centre 'Core', 'Tertiary' and 'Primary' Precinct Surface Treatment areas.

Council may require monetary contributions in lieu of dedication of a public rubbish bin in the following circumstances –

- (a) where the area of land to be dedicated for a public rubbish bin is of insufficient size or dimension or unsuitable due to physical site characteristics to meet the Council's needs and standards of provision; or
- (b) where Council determines there is no need for additional rubbish bins in the development site area.

A contribution in accordance with this design manual will be towards the cost of public rubbish bins as a condition of –

- (a) a development permit pursuant to the Integrated Planning Act 1997 in respect of a development application for –
 - (i) a material change of use that is assessable development; or
 - (ii) the reconfiguring of a lot that is assessable development.

Acceptance of monetary contributions by the Council does not imply that the contribution will be used immediately.

Applications for Outdoor Dining are required to have a Litter Management Plan in place. This Litter Management Plan will need to specify:

- how waste is going to be controlled;
- that the waste generated by the use will be collected daily and put into a commercial bin on the premises;
- a cleaning program to ensure that furniture used in the outdoor dining area is kept clean at all times to ensure that the character, amenity, streetscape setting and ambience of the surrounding area is maintained and enhanced..

In accordance with the Outdoor Dining Code and the Outdoor Dining Policy of the Redlands Planning Scheme, appropriate rubbish bins are to be provided for use by patrons, which are cleaned and emptied by the permit holder. Council footpath rubbish bins are not to be used in association with an outdoor dining area for disposing of food wastes and the like.

4.12.2 Construction/Material

Surface mounted fixtures and footing as per manufactures specifications. The rubbish bins are to be fixed to a concrete footing having a minimum dimension of 930mm x 710mm x 1360mm. The footing is to be constructed separate and directly below the surface treatment. Surface mounted masonry anchors must be used to fix the bin to the footing allowing the bin to be relocated if necessary.

4.12.3 Colour

Blue Night anodised cabinet with clear anodised hood.

4.12.4 Style

Gossi Park Bayside 240 litre wheelie bin enclosure with adjustable hood and smoker set by G. James Glass & Aluminium or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.

G. James Gossi Park Bayside 240 litre wheelie bin enclosure with top hood



Figure 14

Note: Council shall establish a program of bin replacement in locations where high refuge tenancies are located.

4.13 Cigarette Disposal Units

4.13.1 Use

The intent is to provide a means of safe disposal of cigarette butts and to minimise litter in the streetscape. The cigarette disposal units are to be located within rubbish bins, in association with rubbish bins or at intervals to be determined by Council.

4.13.2 Construction Material

Materials shall be robust. Fixing details must deter vandalism and the potential for detachment from the building wall or posts in the streetscape.

4.13.3 Style

Two cigarette disposal units such as Butt Out, Street Furniture Australia (Refer Figure 15A and 15B) or ECO Elegance products or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer are to be provided at entries and exits to the building at street level, and be free-standing or fixed to posts, columns or wall-mounted and to be easily accessible to patrons entering and exiting the building.

The units must be enclosed and capable of storing butt litter to minimise safe effective disposal. The units shall be polished stainless steel or power coated to match the preferred streetscape colour used for street furniture.

Butt Out Cigarette Disposal Unit



Figure 15A

ECO Elegance Cigarette Disposal Unit



Figure 15B

4.14 Skateboard Deterrents

4.14.1 Use

The intent of skateboard deterrents is to minimise the damage to street furniture and surfaces by skateboard riders. The location for deterrents shall be on all raised horizontal garden beds, on ramps, seats and/or other nominated surfaces as determined by the Council's designated officer.

Intervals shall generally be at one metre spacing or as determined by the Council's designated officer.

4.14.2 Construction Materials

Materials shall be stainless steel and be fixed to the adjoining surface as per manufacturer's specifications.

4.14.3 Style

The style shall be as shown in Figure 16A and 16B or as determined by the Council's designated officer.

Street & Garden Furniture Co. Piton Skateboard Stops

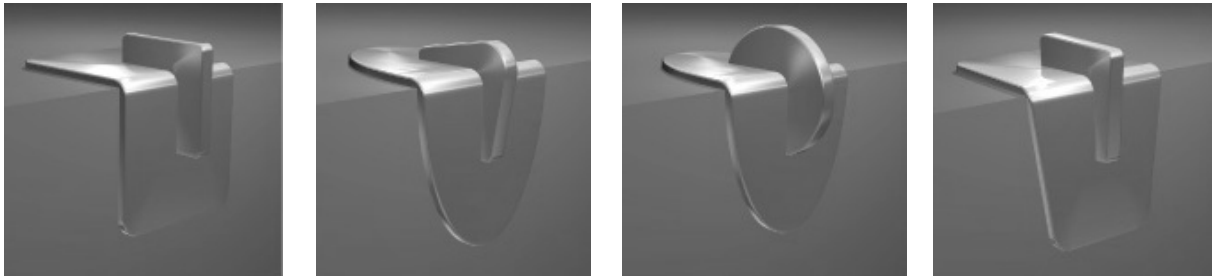
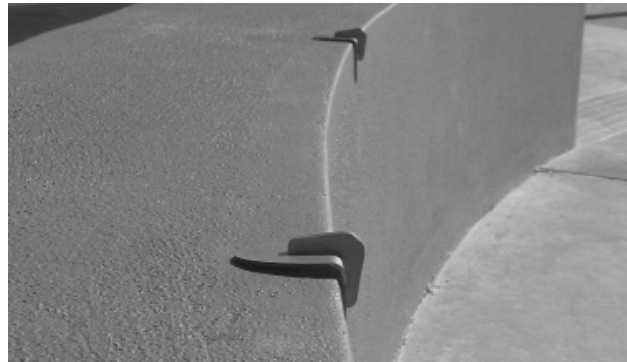


Figure 16A

Steve Routledge Fabrications Skateboard Deterrents



Figure 16B

4.15 Bollards

4.15.1 Use

Bollards are fixed vertical posts and barriers used to minimise vehicular entry and to assist the definition of pedestrian walkways. If bollards are to be used in a sequence, the spacing shall be a maximum of 5 metre intervals on the footpath, and a maximum of 2 metre intervals on vehicular/pedestrian pathways or at intervals as otherwise determined by Redland Shire Council's Chief Executive Officer or his delegated Officer.

The installation of bollards is required throughout Cleveland Principal Activity Centre 'Core' and 'Tertiary' Precinct Surface Treatment areas.

4.15.2 Construction/Material

Surface mounted fixtures and footing as per manufactures specifications. The Applicant is advised to note that in situations where deemed necessary, Redland Shire Council's Chief Executive Officer or his delegated Officer may specify for bollards to be removal in design. The Applicant is advised to confirm with Redland Shire Council's Chief Executive Officer or his delegated Officer if removal bollard(s) are required.

4.15.3 Colour

Exposed metal powdercoated to match Dulux Navy Gloss 50282, treated with anti graffiti finish.

4.15.4 Style

Bollards CR101 by Street & Garden Furniture Company or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Bollard CR101

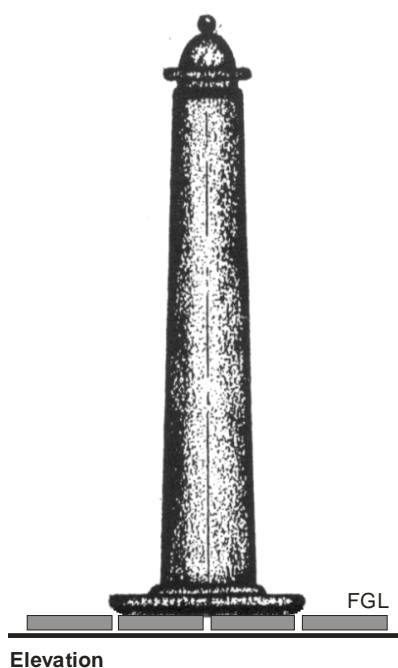


Figure 17

4.16 Hand Rail

4.16.1 Use

The installation of hand rails are required throughout Cleveland Principal Activity Centre to provide pedestrian safety as required and specified within relevant Australian Standards.

4.16.2 Construction/Material

Installation as per manufacture instructions with surface mounted vandal-proof fixtures.

4.16.3 Colour

Stainless steel polished to a matt finish.

4.16.4 Style

Rail: 316 stainless steel pipe 48mm O.D. with 3mm wall thickness. Rail is to be capped at both ends and all welds are to be invisible.

Rail Supports: Manufactured using 316 stainless steel plate 15mm in thickness for central vane and 6mm for side vanes.

Base Plate: 316 Stainless steel 15mm in thickness with 4 only 12mm holes for 10mm holding down bolts.

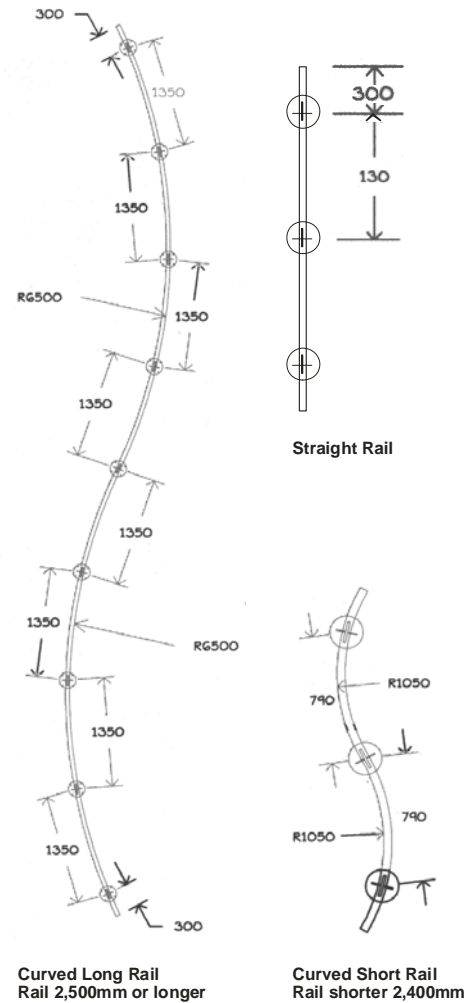


Figure 18A

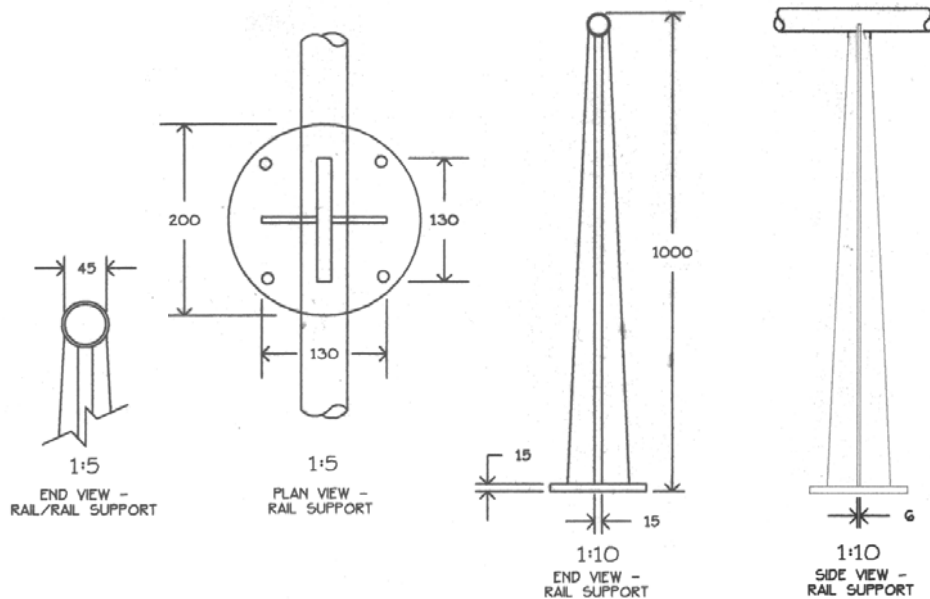


Figure 18B

05 Footpath Surface Treatments

5.1 Precinct Surface Treatments

The design intent behind the precinct surface treatment is to define the Cleveland Principal Activity Centre whilst providing a more useable space for the public within the Principal Activity Centre. The use of specified surface treatments for each of the precinct areas within Cleveland Principal Activity Centre removes the physical interface between private and public spaces and to ensure the integration and reinforcement of the streetscape design.

5.1.1 Three (3) Precinct Surface Treatments

Three (3) precinct surface treatments have been designed for use throughout the Cleveland Principal Activity Centre. Figure 19 illustrates the location of each surface treatment, while Figures 21, 22 and 23 provide specific surface design requirements for each of the three precinct areas.



Figure 19

5.2 General Installation of Footpath Surface Treatments

The design intent behind the precinct footpath surface treatment is to create an integrated and coordinated approach to the design of Cleveland Principal Activity Centre streets rather than having a patchwork effect of different footpath treatments. Outlined below are general installation requirements pertaining to each of the four precinct footpath surface treatment areas to ensure the consistent, unique and high quality footpath surface treatment.

If split level footpaths are required due to the gradient of the land, it must be ensured that the gradient of the footpath to the premises frontage is of a suitable gradient to minimise risk and injury to the public. The width of the footpath must ensure that it is accessible from both the higher and lower level of the footpath. To ensure that the character, amenity, streetscape setting and ambience of the surrounding area is enhanced and maintained, public artwork or street furniture should be located next to a retaining wall or structure.

5.2.1 Header Course

The header course (Type C: Boral Stylestone coloured concrete paving unities "Stradbroke" 400 x 198 x 50 mm) is to follow the alignment of kerb and channel, pram ramps, driveway and property boundaries and extend across public land to provide a guide for outdoor dining use.

5.2.2 Existing & New 'Elements' in Footpath

Where new or existing 'elements' occur within the footpath (eg. Infrastructure Service Pits, Permanent Survey Markers), continue footpath surfacing treatment to finish flush with 'element' edge.

Note: Telstra pits must be fitted with Telstra approved lifting lugs.

5.2.3 Retro-Fitting Furniture

Footpath surfacing treatment to continue, uninterrupted across footpath surface where retro-fitting furniture is required for installation. Refer to Figure 20A & 20B.

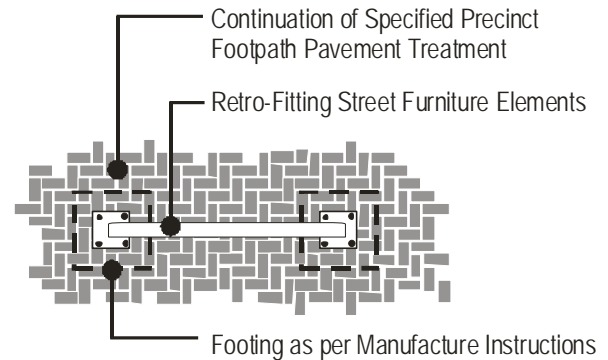


Figure 20A

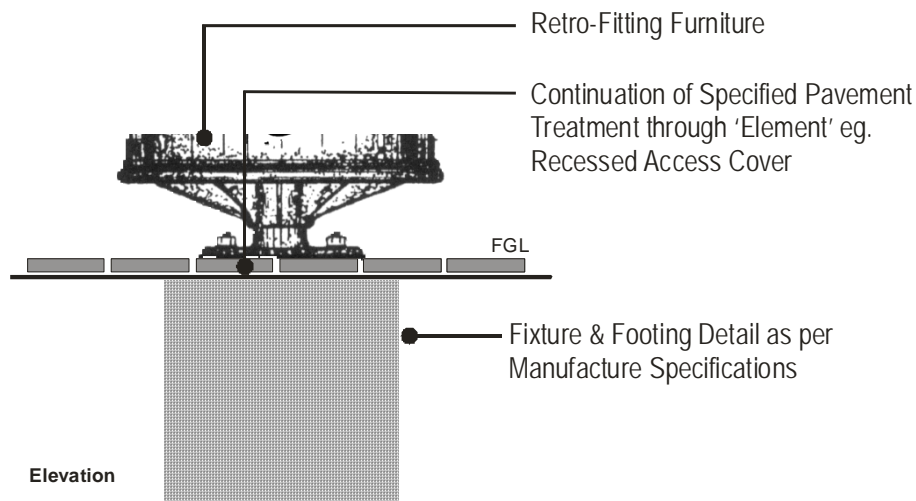


Figure 20B

5.3 Precinct Footpath Treatment – ‘Core’ Module A

5.3.1 Use

Used within the Cleveland Principal Activity Centre ‘Core’ Surface Treatment Area, the ‘Core’ surface design uses three (3) coloured concrete paving units to create a footpath treatment which reflects the gentle curved patterns of the beaches and waves of Moreton Bay.

5.3.2 Construction/Material

Coloured concrete paving units are to be laid on a 100mm reinforced concrete base with mortar bed. Coloured concrete paving units shall be laid to achieve footpath pattern and grade as shown and to the approval of Redland Shire Council’s Chief Executive Officer or a delegated Officer.

5.3.3 Colour / Specifications

Paving Type A: Boral Styestone coloured concrete paving units ‘Cleveland’ 400 x 400 x 50 mm

Paving Type B: Boral Styestone coloured concrete paving units ‘Redland’ 400 x 400 x 50 mm

Paving Type C: Boral Styestone coloured concrete paving units ‘Stradbroke’ 400 x 198 x 50 mm

All concrete units to be finished with light shot-blast surface to be supplied by Boral Stylestone or other approved in writing by Redland Shire Council’s Chief Executive Officer or a delegated Officer.

5.3.4 Surface Treatment Design

The footpath surface design is to be in accordance with the layout as shown in Figure 21.

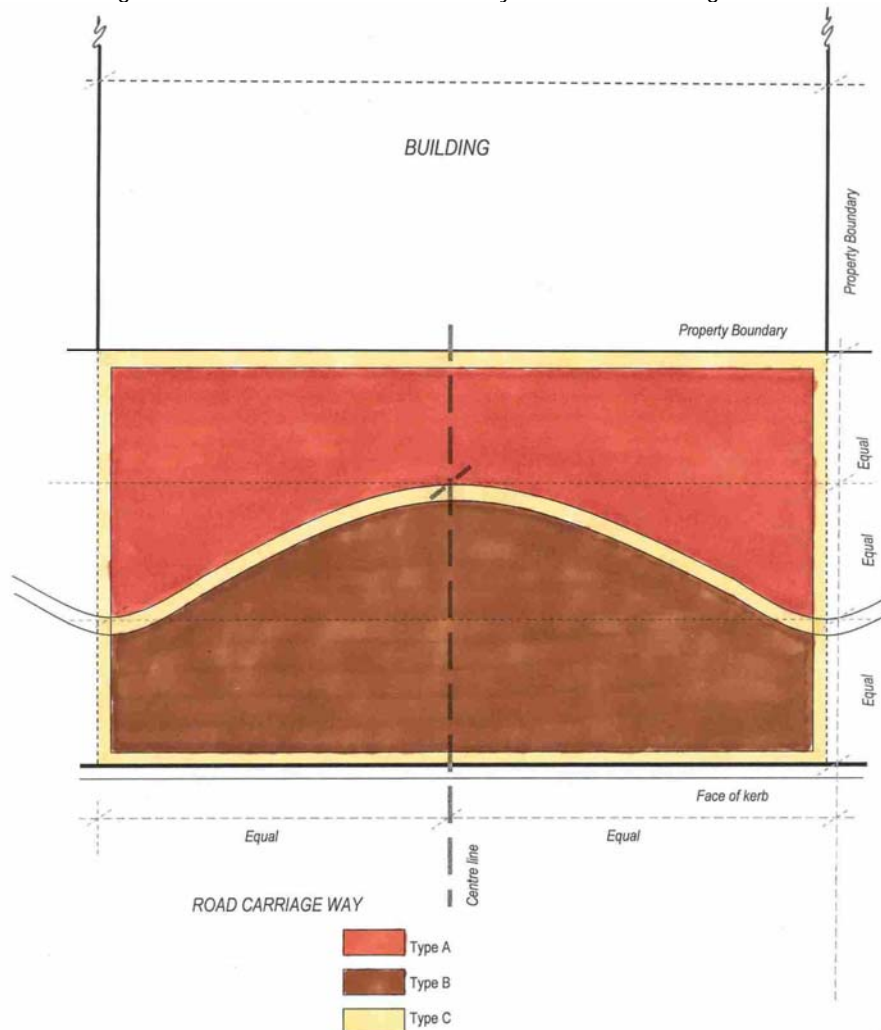


Figure 21

5.4 Precinct Footpath Treatment – ‘Core’ Corner Treatment

5.4.1 Use

Used within the Cleveland Principal Activity Centre ‘Core’ Surface Treatment Area, the ‘Core’ surface design uses three (3) coloured concrete paving units to create a footpath treatment which reflects the gentle curved patterns of the beaches and waves of Moreton Bay.

5.4.2 Construction/Material

Coloured concrete paving units are to be laid on a 100mm reinforced concrete base with mortar bed. Coloured concrete paving units shall be laid to achieve footpath pattern and grade as shown and to the approval of Redland Shire Council’s Chief Executive Officer or a delegated Officer.

5.4.3 Colour

Paving Type A: Boral Styestone coloured concrete paving units ‘Cleveland’ 400 x 400 x 50 mm

Paving Type B: Boral Styestone coloured concrete paving units ‘Redland’ 400 x 400 x 50 mm

Paving Type C: Boral Styestone coloured concrete paving units ‘Stradbroke’ 400 x 198 x 50 mm

All concrete units to be finished with light shot-blast surface and to be supplied by Boral Stylestone or other approved in writing by Redland Shire Council’s Chief Executive Officer or a delegated Officer.

5.4.4 Surface Treatment Design

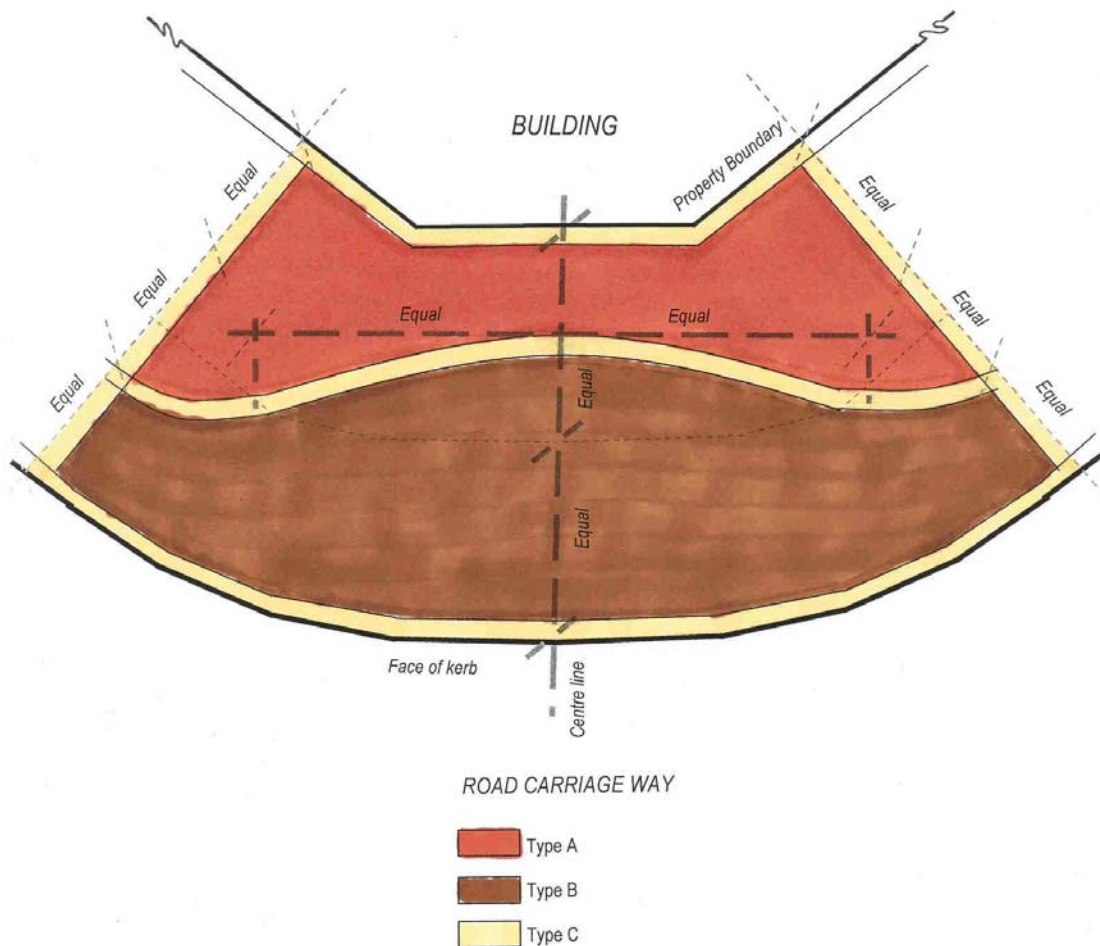


Figure 22

5.5 Precinct Footpath Treatment – ‘Tertiary’

5.5.1 Use

Used within the Cleveland Principal Activity Centre ‘Tertiary’ Surface Treatment Area, the ‘Tertiary’ surface treatment design uses two (2) coloured concrete paving units to create a footpath treatment which reflects the gentle curved patterns of the beaches and waves of Moreton Bay.

5.5.2 Construction/Material

Coloured concrete paving units are to be laid on a 100mm reinforced concrete base with mortar bed. Coloured concrete paving units shall be laid to achieve footpath pattern and grade as shown and to the approval of Redland Shire Council’s Chief Executive Officer or a delegated Officer.

5.5.3 Colour / Specifications

Paving Type A: Boral Styestone coloured concrete paving units ‘Cleveland’ 400 x 400 x 50 mm

Paving Type B: Boral Styestone coloured concrete paving units ‘Redland’ 400 x 400 x 50 mm

All concrete units to be finished with light shot-blast surface and to be supplied by Boral Stylestone or other approved in writing by Redland Shire Council’s Chief Executive Officer or a delegated Officer.

5.5.4 Surface Treatment Design



Figure 23

5.6 Precinct Footpath Treatment – ‘Primary’

5.6.1 Use

Used within the Cleveland Principal Activity Centre ‘Primary’ Surface Treatment Area, the ‘Primary’ surface treatment design uses two (2) concrete paving units to create a footpath treatment which reflects the gentle curved patterns of the beaches and waves of Moreton Bay.

5.6.2 Construction/Material

Coloured concrete paving units are to be laid on a 100mm reinforced concrete base with mortar bed. Coloured concrete paving units shall be laid to achieve footpath pattern and grade as shown and to the approval of Redland Shire Council’s Chief Executive Officer or a delegated Officer.

5.6.3 Colour / Specifications

Paving Type B: Boral Styestone coloured concrete paving units ‘Redland’ 400 x 400 x 50 mm and header course Stylestone coloured concrete paving unit ‘Stradbroke’ 400 x 198 x 50 mm

All concrete units to be finished with light shot-blast surface and to be supplied by Boral Stylestone or other approved in writing by Redland Shire Council’s Chief Executive Officer or a delegated Officer.

5.7 Driveway / Vehicular Access Crossovers

5.7.1 Use

All driveway/vehicular access crossovers will be constructed using the surface treatment design as specified for that particular surface treatment precinct design eg. ‘Core’, ‘Tertiary’ or ‘Primary’ precinct surface design or stamped reinforced concrete. Edges to all driveways / vehicular access crossovers will be delineated with ground surface indicator surface treatments in accordance with equitable access and Australian Standards requirements.

5.7.2 Construction/Material

Coloured concrete paving units are to be laid on a 100mm reinforced concrete base with mortar bed. Surface treatment units shall be laid to achieve footpath pattern and grade as shown and to the approval of Redland Shire Council’s Chief Executive Officer or a delegated Officer. The grades of the driveway are to be in accordance with Redland Shire Council Standard Drawing R-RSC-3.

5.7.3 Colour / Specifications

*Type D: Boral Masonry Classic Paver ‘Charcoal’ 230 x 115 x 80 mm or other approved in writing by Redland Shire Council’s Chief Executive Officer or a delegated Officer.

*Type E: Boral Masonry Classic Paver ‘Terracotta’ 230 x 115 x 80 mm or other approved in writing by Redland Shire Council’s Chief Executive Officer or a delegated Officer.

*Type F: Boral Masonry Classic Paver ‘Sahara’ 230 x 115 x 80 mm or other approved in writing by Redland Shire Council’s Chief Executive Officer or a delegated Officer.

* To replace specified pavers for that particular pavement precinct design (eg. ‘Core’, ‘Tertiary’ or ‘Primary’) within driveway/vehicular access crossover areas only.

Ground Surface Indicator Pavers: Tactile Industries Stikcrete Tile 300 X 300mm applied using Pac Pave cement
Cast in situ

5.8 Infrastructure Service Access Pit Lids

5.8.1 Use

All infrastructure service access pits located within streetscape frontage works shall be replaced with polymer concrete pits with galvanised steel recessed access covers.

5.8.2 Construction/Material

The frame of the infrastructure service pit is required to be positioned parallel to face of kerb. The roof of the infrastructure service pit is required to finish below finished ground level to accommodate specified surface treatment.

All costs associated with the realignment, lowering and/or replacement of existing infrastructure service access pits and lids will be at the expense of the Applicant.

5.8.3 Colour/Specifications

Polymer concrete pit with galvanised steel recessed access cover supplied by ACO Polycrete Pty Ltd or other approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.

Steel recessed access covers to be filled with precinct surface treatment as specified.

06 Equitable Access

6.1 Achieving Equitable Access

This policy is to be read in conjunction with the provisions of the Redlands Planning Scheme, specific policies which optimise the accessibility of the Cleveland Principal Activity Centre to all people, accessibility requirements as specified under the Building Code of Australia 1990, Australian Standard 1428, Disability Discrimination Act 1992 and Anti-Discrimination Act 1991.

The Applicant is required to ensure that sufficient information illustrating the achievement of equitable access is illustrated on application drawings.

The Applicant is required to ensure that there is a minimum of 1.3 meters of footpath around 'elements' and street furniture located within the Cleveland Principal Activity Centre to allow for ease of access as per standards.

6.2 Tactile Ground Surface Indicators

The use of tactile ground surface indicators for the orientation of people with vision impairment will be required within the Cleveland Principal Activity Centre 'Core', 'Tertiary' and 'Primary' Precinct Treatment Areas. The use of tactile ground surface indicators for any other use than intended for will not be permitted.

The use of both cautional and directional tactile ground surface indicators is to be used to achieve minimum standards requirements as determined by Australian Standard 1428 – Design for Access & Mobility. The extensive and inappropriate use of tactile ground surface indicators will not be permitted.

6.2.1 Cautional Tactile Ground Surface indicators

Size

300 mm x 300 mm

Colour/Specification

Tactile Industries Stikcrete Tile applied using Pac Pave cement or other approved in writing by Redland Shire Council Chief Executive Officer or a delegated Officer.

6.2.2 Directional Tactile Ground Surface indicators

Size

300 mm x 300 mm

Colour /Specification

Tactile Industries Stikcrete Tile applied using Pac Pave cement or other approved in writing by Redland Shire Council Chief Executive Officer or a delegated Officer.

07 Landscape Treatment

7.1 Landscape Works

All works pertaining to landscaping including; street trees, garden beds and turf areas (including sub-contracting work) shall be performed by persons licensed, experienced and suitably qualified in this type of work.

All works pertaining to street trees will be coordinated and supervised by a suitably qualified and Council preferred Arborists. All works pertaining to landscaping including garden beds and turf areas will be coordinated and supervised by a suitably qualified and Council preferred Horticulturist.

7.1.1 Consultation with Council

The Applicant is to note that the appointed coordinating and supervising Arborist and Horticulturist is required to consult with Council's Senior Urban Landscape Advisor throughout the during of landscape works.

7.2 Street Trees

Street trees provide shade and shelter and are an integral part of the Cleveland Principal Activity Centre and Redland Shire Council's Street Tree Planting Program. The program is a five year rolling plan and will endeavour to create a diversity of tree-lined avenues of exquisite colour and greenery. Street trees are encouraged to be planted throughout Cleveland Principal Activity Centre to enhance the visual and overall character.

Street trees are to be supplied by industry recognised suppliers, hardened off (acclimatised to full sunlight), have a minimum trunk height of 1.7 metres (clear to 1.2 metres) and a minimum canopy spread of 3 metres. Palms will not be accepted as an alternative to street trees since they offer inadequate shade. Palms may be used only as an additional street planting type and to visually frame areas and focal points. Cocos palms (*Cocos plumorous*) will not be accepted.

7.2.1 Existing Street Trees

All existing trees on the footpath in sound health and of good form will be retained unless approval has been granted for a replacement or relocation. Excavation within 3 metres of an existing street tree should not occur without prior arboricultural advice being obtained and the recommendations being adopted in carrying out the works.

7.2.2 Priority Planting Area

Located within the Cleveland Principal Activity Centre Precinct Surface Treatment Parameters are priority planting areas, refer to Section 7.7 - Figure 29. Within these defined habitat planting areas, the Applicant is required to plant street trees as prescribed within section 7.6.1 Street Tree Schedule – Priority Planting Areas. The Applicant is advised to note that the planting setout and quantities of plant material required within these defined areas will require integration with adjoining landscape planting on private property. The Applicant will be required to obtain written approval by Redland Shire Council's Chief Executive Officer or a delegated Officer for the planting setout and quantities of plant material within these defined areas. The Applicant is advised to refer to Department of Main Roads Roadside Landscape Manual for design criteria specifications where applicable.

7.2.3 'Core' Precinct Street Tree Requirements

One (1) tree per every 15 metres of footpath to be planted at 1100mm setback from the back of kerb. Street trees are to be located within raised garden beds as illustrated in Section 5.6, except at intersections where they are to be at grade to minimise conflict with vehicular sight lines (refer to Department of Main Roads Roadside Landscape Manual for design criteria specifications where applicable).

7.2.4 'Tertiary' Precinct Street Tree Requirements

One (1) tree per every 15 metres of footpath, where awning protection is not afforded to the pedestrian (refer to Department of Main Roads Roadside Landscape Manual for design criteria specifications where applicable).

7.2.5 'Primary' Precinct Street Tree Requirements

One (1) tree per every 25 metres of footpath, where awning protection is not afforded to the pedestrian (refer to Department of Main Roads Roadside Landscape Manual for design criteria specifications where applicable).

7.3 Planters & Garden Beds

7.3.1 'Core' Precinct Planting Requirements

Raised garden beds are to be constructed as illustrated in Section 5.6, except at intersections where they are to be at grade to minimise conflict with vehicular sight lines (refer to Department of Main Roads Roadside Landscape Manual for design criteria specifications).

7.3.2 'Tertiary' Precinct Footpath Treatment Area

Raised garden beds are to be constructed as illustrated in Section 5.6, except at intersections where they are to be at grade to minimise conflict with vehicular sight lines (refer to Department of Main Roads Roadside Landscape Manual for design criteria specifications).

7.3.3 'Primary' Precinct Footpath Treatment Area

Garden beds at grade with adjoining footpath will be a minimum area of 2m². Garden beds are to be designed and appropriately located to maintain pedestrian movement. Generally, pedestrian access should be provided for at every five metres.

The length of garden beds will generally be between 1.5m and 2.5m along the footpath, but may be limited to ensure sufficient access into buildings.

7.4 Turfed Areas

The use of turf within 'Core' or 'Tertiary' precinct areas is not permitted. Turf is permitted within 'Primary' precinct areas where pedestrian movement is not likely to occur. Turf will not be an acceptable substitute for paved footpath treatment and in areas to where pedestrian movement is likely to occur.

7.5 Watering of Plants, Garden Beds and Turfed Areas

All plant material including street trees, garden beds and turf areas is to be watered in accordance with Council's watering restrictions to promote health, viability and growth.

The Applicant is to provide a Management Plan to demonstrate how plant material including turf on public land is to be kept alive during the "On Maintenance" period of 12 months.

Terms of reference for the Management Plan should include:

1. Provision of rainwater from on-site storage tanks for plant material on private land
2. Use of water- saving products and materials for the whole site such as soil-wetting agents and aeration products that
 - have the ability to store water and absorb soluble fertiliser;
 - have the potential to reduce the amount of water required by up to 50%;
 - reduce the amount of fertiliser lost to leaching;
 - enable soils and potting mixes to be easily re-wet;

- gradually release easily available water to the root;
 - increase soil aeration & improving clay soils;
 - increase the water holding ability of sandy loams by up to 70;and
 - enhance the self-restoring ability of turfed areas.
3. Plant material including street trees, planted areas and turfed areas on public land will be maintained by Council as soon as the site is deemed "On Maintenance".

7.6 Planting Schedule

Outlined below is the specified plant material to be used within the defined precinct areas of the Cleveland Principal Activity Centre Precinct Surface Treatments. Variations to the planting schedule as prescribed in Section 7.6.1 must be submitted in writing for approval and is subject to the Applicant receiving written approval by Redland Shire Council's Chief Executive Officer or a delegated Officer.

7.6.1 Street Tree Schedule

Street Trees - Priority Planting Area (refer to Figure 25)				
BOTANICAL NAME	COMMON NAME	POT SIZE	HEIGHT	SPREAD
<i>Eucalyptus microcorys</i>	Tallowwood	100 litre	1,700 mm	3,000 mm
<i>Eucalyptus seeana</i>	Narrow Leaf Grey Gum	100 litre	1,700 mm	3,000 mm
<i>Lophostemon confertus</i>	Brush box	100 litre	1,700 mm	3,000mm
<i>Lophostemon suaveolinens</i>	Swamp box	100 litre	1,700mm	3,000mm
<i>Melaleuca quinquenervia</i>	Broad Leaf Paperbark	100 litre	1,700 mm	3,000 mm

Street Trees - 'Core' Precinct				
BOTANICAL NAME	COMMON NAME	POT SIZE	HEIGHT	SPREAD
<i>Delonix regia</i>	Red Poinciana	100 litre	1,700 mm	3,000 mm

Street Trees - 'Tertiary' Precinct				
BOTANICAL NAME	COMMON NAME	POT SIZE	HEIGHT	SPREAD
<i>Peltophorum inerme</i>	Yellow Poinciana	100 litre	1,700 mm	3,000 mm
Plus one other street tree as prescribed below and approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.				
<i>Elaeocarpus reticulatus</i>	Blue Berry Ash	100 litre	1,700 mm	3,000 mm
<i>Harpullia pendula</i>	Tulipwood	100 litre	1,700 mm	3,000 mm
<i>Lagerstroemia indica</i>	Chinese Crepe Myrtle	100 litre	1,700 mm	3,000 mm
<i>Toona australia</i>	Native cedar	100 litre	1,700mm	3000mm
<i>Melaleuca leucadendron</i>	Weeping Paperbark	100 litre	1,700 mm	3,000 mm
<i>Waterhousia floribunda</i>	Weeping Lillypilly	100 litre	1,700 mm	3,000 mm

Street Trees - 'Primary' Precinct				
BOTANICAL NAME	COMMON NAME	POT SIZE	HEIGHT	SPREAD
<i>Peltophorum inerme</i>	Yellow Poinciana	100 litre	1,700 mm	3,000 mm
Plus one other street tree as prescribed below and approved in writing by Redland Shire Council's Chief Executive Officer or a delegated Officer.				
<i>Elaeocarpus reticulatus</i>	Blue Berry Ash	100 litre	1,700 mm	3,000 mm
<i>Harpullia pendula</i>	Tulipwood	100 litre	1,700 mm	3,000 mm
<i>Lagerstroemia indica</i>	Chinese Crepe Myrtle	100 litre	1,700 mm	3,000 mm
<i>Melaleuca leucadendron</i>	Weeping Paperbark	100 litre	1,700 mm	3,000 mm
<i>Waterhousia floribunda</i>	Weeping Lillypilly	100 litre	1,700 mm	3,000 mm

7.6.2 Large Shrub Schedule

Large Shrubs				
BOTANICAL NAME	COMMON NAME	POT SIZE	HEIGHT	SPREAD
<i>Acalypha compacta</i>		300 mm	500 mm	700 mm
<i>Acmena paniculatum 'minor'</i>		300 mm	500 mm	700 mm
<i>Aphanopetalum resinolim</i>	Gum Vine	300 mm		
<i>Cordyline terminalis</i>	Palm Lily	300 mm	500 mm	700 mm
<i>Cordyline stricta</i>	Slender Palm Lily	300 mm	400 mm	500 mm
<i>Culcita dubia</i>		300 mm	800 mm	1,000 mm
<i>Ixora chinensis</i>	Prince of Orange	300 mm	800 mm	1,000 mm
<i>Lepidozamia peroffscyna</i>	Shinning Burrawang	300 mm	800 mm	1,000 mm
<i>Leptospermum</i>	Cardwell	300 mm		
<i>Syzygium australe minipilly</i>	Lillipilly	300 mm	3,200 mm	200 mm

7.6.3 Small Shrub & Ground Cover Schedule

Small Shrubs & Ground Covers & Creepers				
BOTANICAL NAME	COMMON NAME	POT SIZE	HEIGHT	SPREAD
<i>Agapanthus africanus 'blue'</i>		200 mm	300 mm	500 mm
<i>Agapanthus orientalis 'alba'</i>		200 mm	300 mm	500 mm
<i>Bromiliades species</i>	(red/purple foliage)	200 mm	200 mm	300 mm
<i>Crinum pedunculatum</i>	Swamp Lily	200 mm	200 mm	300 mm
<i>Dianella revoluta</i>		200 mm	200 mm	300 mm
<i>Hibbertia dentata</i>		200 mm	300 mm	500 mm
<i>Lonicera japonica</i>		200 mm	300 mm	300 mm
<i>Nandina domestica 'nana'</i>		200 mm	150 mm	200 mm
<i>Pandorea 'snow bells'</i>	(Vine)	200 mm	200 mm	400 mm
<i>Philodendron xanadu</i>		200 mm	300 mm	500 mm
<i>Plectanthurus australis</i>		200 mm	200 mm	300 mm
<i>Scaevola aemula</i>	Soft wooded herb	200 mm	140 mm	300 mm
<i>Trachleospermum jasminoides</i>	Jasmine	200 mm	300 mm	400 mm

7.7 Priority Planting Areas

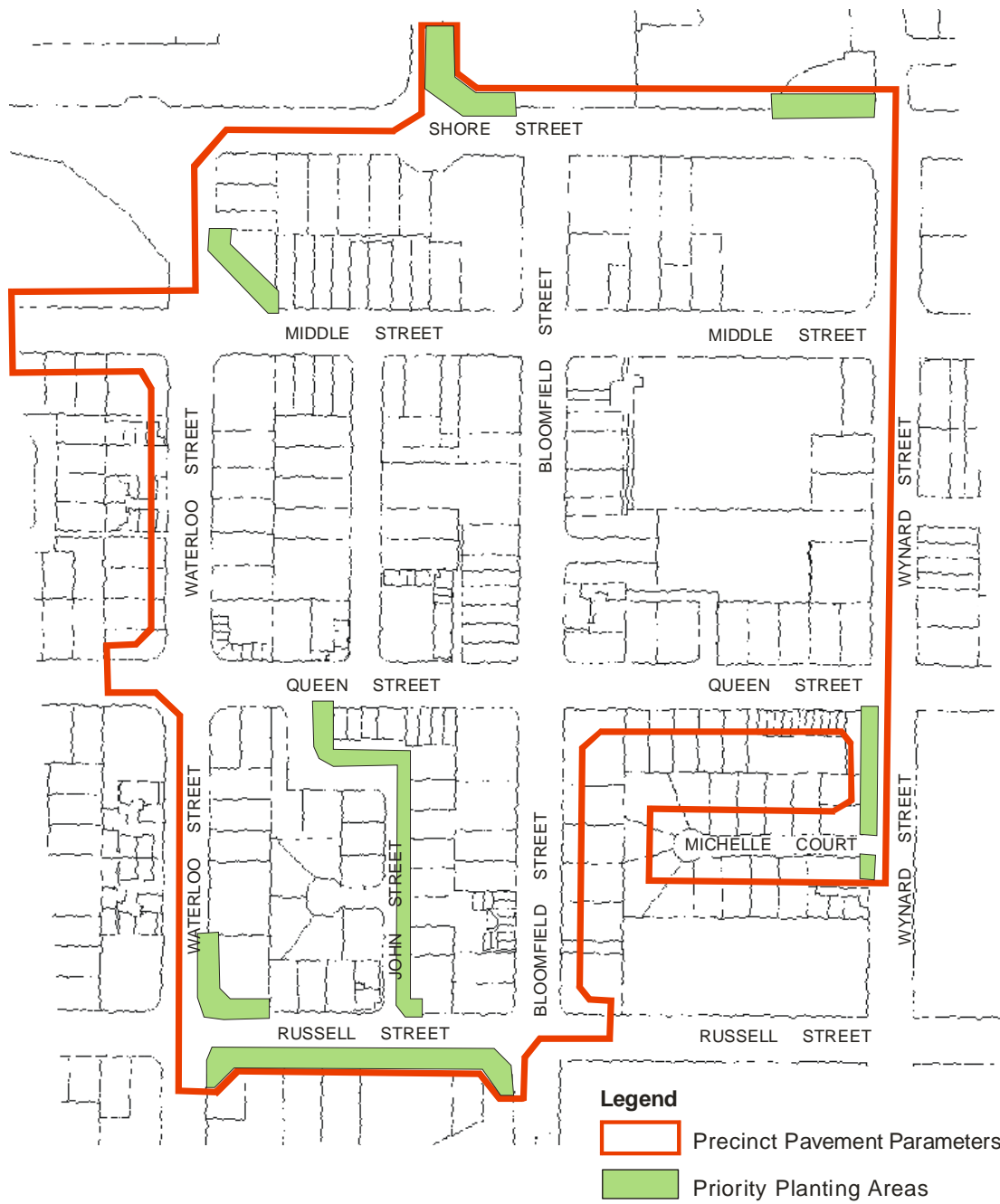


Figure 25

08 Maintenance

8.1 General Maintenance Requirements

All the streetscape frontage elements constructed as part of a development permit (ie. both public and private spaces) will be maintained by the applicant, including but not limited to street furniture, street trees and gardens, turf, signage and surface treatment during the maintenance period.

Performance securities pertaining to streetscape frontage works upon application to Council and following the "Off Maintenance" inspection will be released after the satisfactory completion of the maintenance/establishment period. Performance securities will not be released until the completion of any required reinstatement works as determined and directed by Redland Shire Council's Chief Executive Officer or a delegated Officer.

All planting areas shall be kept to the best industry standard of horticultural practice to ensure a consistent vigorous growth rate and good plant health.

8.2 Maintenance Period

The maintenance period is twelve (12) months from Council acceptance of "On Maintenance" inspection or as otherwise determined in the Conditions of the Development Permit.

8.3 Scope of Works

The works to be carried out as conditions of the maintenance component of these manuals include but are not limited to the following:

8.3.1 Site Works (Surface Treatment/ Street Furniture)

- Removals & Repair
- Graffiti & Vandalism Removal/Repair

8.3.2 Turf Works

- Mowing
- Edging & Trimming
- Watering
- Dethatching
- Aerating
- Topdressing
- Fertilising
- Weed Control
- Pest & Disease Control

8.3.3 Planting & Garden Beds

- Watering
- Fertilising
- Weed Control
- Pruning
- Pest & Disease Control
- Planting & Staking
- Removal & Replacement of stressed, damaged &/or dying/dead plant material

8.3.4 Street Tree Works

The following works are only to be carried out by licensed, experienced and suitably qualified Arborist.

- Pruning
- Removal & Replacement of stressed, damaged &/or dying/dead plant material
- Disturbance of Ground Under Trees
- Damage Treatment and/or Replacement
- Fertilising

8.4 Safety Procedures

The Applicant is to ensure that all maintenance duties are carried out with themselves, fellow colleagues and the general public in mind. The safety of people using the area is of prime importance. It is strongly recommended that all maintenance procedures, especially those listed below be undertaken outside the areas prime usage times as specified in Section 3.4.1 Timing of Work for Construction.

The Applicant is advised to note that all maintenance works are to be undertaken in accordance with relevant safety requirements, procedures and legislation.

8.5 Maintenance Requirements

8.5.1 Weed Control

The application of herbicides is to occur outside of peak usage periods and adhere to all relevant pesticide safety procedures and legislation. Damage caused by misuse shall be rectified at the Applicants expense.

Record all chemical usage including details of herbicide used, rates of application, date of application and method of application. This information is to be forwarded to Redland Shire Council's Chief Executive Officer or a delegated Officer at the end of the maintenance period.

Hardstand Areas

Eradicate weeds in hardstand areas such as footpaths, walkways and with appropriate herbicide. Once weed has died, remove remaining debris. Treat areas of persistent weed infestation with a residual industry approved herbicide. All hardstand surfaces shall be free from weeds at all times.

Turf Areas

Within turf areas eliminate all broad leaf and grass weeds by application of approved herbicides or other appropriate methods such as manual removal to maintain the turf in a weed free condition at all times.

Landscape Areas

Eradicate weeds within the planting areas through manual removal or herbicide control methods, depending upon the extent of infestation, to maintain all gardens in a weed free state at all times. Weeds that have died as a result of herbicide control shall be removed and replaced with same species and plant material size at the Applicants expense.

8.5.2 Turf Areas

Turf areas are to be maintained as a premium quality lawn of even, green colour and appearance. Turf is to be maintained to a height of approximately 30 mm above the soil surface and to finish flush with adjoining hard surfaces. Mowing regime to be forwarded to Redland Shire Council's Chief Executive Officer or delegated Officer at the commencement of the maintenance period for approval.

Turf clippings are to be removed immediately from public and pedestrian areas following mowing. Ensure that grass clippings are not spread over planting areas, footpaths, roadways and the like.

Replacement of Grass

Any areas of turf that has died or in the opinion of Council is in a state of ill health or damage due to the actions or neglect of the Applicant shall be removed and replaced as directed by Redland Shire Council's Chief Executive Officer or delegated Officer. The Applicant is responsible for all costs associated with such works.

Edging & Trimming

Trim edges of turf which surround any light poles, service posts, guideposts, service pits, ground markers, bollards and the like. Trim edges of turf along walls, guard rails and fence lines to the height of the adjacent turf. All turf trimmings are to be removed immediately from site.

Turf is not to invade planting areas, obscure edging or mowing strips, grow under fences or the like, and around trees. Lawn is to be maintained at a clearance distance of 150 mm radius around the base of any trees or shrubs planted in lawn areas. Removal of lawn, which has invaded this clearance zone, is to be removed by hand. The use of line trimmers or similar gardening implements is not to be used to prevent damage to plant material. Any damage to plant material as a result of maintaining this clearance zone will be rectified at the expense of the Applicant as seen fit by Redland Shire Council Chief Executive Officer or delegated Officer.

Topdressing

Topdress all lawn areas as required to fill depressions and form a level surface over the entire area. Spread sharp pit sand, free of weeds at a maximum depth of 10 mm per application and rake in to ensure grass is visible through the sand layer.

Water top dressed lawns immediately and keep uniformly moist for the following seven days.

When more than a single application is required throughout the maintenance period, ensure that the grass has grown through the previous layer of sand before applying another.

8.5.3 Fertilising

Turf Areas

Apply fertiliser with a mechanical spreader as per manufacturer's recommended rates. If applying a granular fertiliser manually, mix equal amounts of fertiliser and bedding sand together, then spread evenly over the area. Fertilising regime to be forwarded to Redland Shire Council's Chief Executive Officer or delegated Officer at the commencement of the maintenance period for approval. Ensure that fertiliser is watered in after spreading and sweep any fertiliser from paths and roadways.

Landscape Areas

Apply as per manufacturer's recommendations slow release formulation fertiliser suitable for plant material. Water thoroughly following application.

8.5.4 Pest & Disease Control

Turf Areas

Control the impact of turf pests in lawn areas with registered insecticides applied at the manufacturer's recommended rate. Apply pesticides outside of peak terminal usage periods and adhere to all relevant pesticide safety procedures and legislation.

Landscape Areas

Chemical control of pests should be considered as a last resort only. Remove diseased portions of plants, dead foliage and maintain good plant vigour to diseased portions of plants, to reduce the likelihood of infection or infestation. Once an infestation has been identified, notify the Council immediately and respond to the directions of Redland Shire Council Chief Executive Officer or delegated Officer.

Should chemical control become necessary apply pesticides or fungicide outside of peak terminal usage periods and adhere to all relevant pesticide or fungicide safety procedures and legislation. Damage caused by misuse shall be rectified at the Applicants expense.

8.5.5 Pruning

Pruning may need to be carried out for a number of reasons:

- Promote flowering
- Maintain or reduce height of plant material
- Maintain a desired shape of plant material
- Remove damaged or diseased of plants/sections of plant material
- Clear pathways and remove obstructions to pedestrians.

Pruning is generally to be carried out as required (preferably during growing period of the plant material) and after plant material has flowered.

When pruning plant material, use pruning tools appropriate to the job and size of branches or stems, ensuring a clean smooth cut which will heal quickly. Do not snap or break off branches. Branches 50 mm or larger in diameter which in the Applicants opinion require pruning are to be approved in writing by Redland Shire Council's Park Supervisor and specific directions followed. For aesthetic reasons white paint is not to be used. An acrylic paint of appropriate colour (eg. Pinewood Green or shades of grey) are less obstructive to the eye.

Remove dead and diseased foliage from shrubs and ground cover species. Prune shrubs and vines to maintain clear access along paths and roads. Ground cover species may be allowed to grow over edges, kerbs and to fence lines, however, the edge should not be allowed to intrude onto pedestrian footpaths.

Remove old stems or sections of branches carrying only thin twiggy growth or an excess of dead twigs, cutting close to where a younger, more robust stem emerges.

Pruning of plant material should be carried out to maintain the general form of the plant unless a desired effect is required (eg. a hedge, visual barriers). Ensure that the pruning of the plant material does not significantly alter the desired plant form so as to reduce its intended use.

All pruning cuttings are to be removed from site. Pruning cuttings can be mulched off site and used elsewhere. Either method of disposing of pruning cuttings will be at the Applicants expense.

8.5.6 Plant Reinstatement

Any plant dying, diseased or dead, or in the opinion of Redland Shire Council's Park Supervisor is in a state of ill health due to the actions or neglect of the Applicant, shall be removed and replaced as specified with the same species of the same size or a size agreed upon by the by Redland Shire Council's Park Supervisor. The Applicant is responsible for all costs associated with such works.

Ensure that the replacement of plant material is a form true to that species nomenclature and not soft or forced nursery stock. Plant stock will be free of weeds, diseases and insect attack.

8.5.7 Staking

During the maintenance period, allowance to be provided to maintain staking as required. The Applicant is required to replace damaged or misshapen stakes. Remove stakes and ties as required and / or directed by Redland Shire Council's Park Supervisor if they are no longer required to support the plant.

8.5.8 Mulch

Mulch is to be kept clear of all surface treatments and paths. Garden beds to be top up using mulch to a minimum depth of 100 mm.

8.5.9 Protection of Existing Trees

All existing trees shall be adequately protected from damage by the Applicant and shall be maintained in a healthy, vigorous condition to the best Australian arboricultural industry standard.

8.5.10 Litter Collection & Removal

The Applicant is required to collect and remove all litter from within the scope of works. Collected litter is not to be deposited in rubbish bins located on site. Litter shall include but not be limited to the following:

- Fallen branches and/or leaves from existing trees
- Discarded food items, leaves, containers & papers
- Broken glass, including windscreen and vehicle debris
- Plastic packaging, bottles and cans.

8.6 Plant Replacement / Reinstatement

Any plant material (existing and new) which shows signs of stress or decline during the maintenance period will be inspected by Redland Shire Council's Park Supervisor. If in the opinion of Council the plant is stressed failed or deteriorating, the Applicant will be required to replace that plant immediately with the same species and of an equivalent size to that of the specified plant size and equivalent to normal growth rate prior to its removal. Redland Shire Council's Park Supervisor will determine this size.

The Applicant shall be held responsible for damage to or destruction of any new or existing trees as a result of their actions. Partial damage to any tree shall be rectified immediately damage occurs at the Applicant's expense, as specified previously and under the direction of Redland Shire Council Chief Executive Officer or delegated Officer.

If repair work is considered impractical or is attempted and fails, if so directed, remove the damage tree and root system, make good as necessary, and either replace the tree or pay damages as specified by Redland Shire Council Chief Executive Officer or delegated Officer. The Applicant is advised to note that damages will be deducted from development bonds and/or rates levy.

The Applicant shall meet associated fees for damages, assessment and supervision of rectification works.

8.7 Replacement / Reinstatement

The Applicant is required to 'make good' any elements within the streetscape frontage works requiring replacement, irrespective of cause, within thirty (30) days from the element requiring replacement.

All costs associated with the replacement/reinstatement of elements shall be that of the Applicant. Failure of the Applicant to replace/reinstate any elements within the streetscape frontage works will result in the cost associated with the replacement/reinstatement being deducted from Council held bank guarantees.