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Authorship Plummer and Smith PO Box 204 Murwillumbah NSW 2484

www.plummerandsmith.com.au

Council Contact Byron Shire Council Claire McGarry

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OVERVIEW

This document is intended to guide future detailed streetscape works and programming for the Byron Bay town centre. It follows on from the Byron Bay Town Centre Master Plan and the Byron Bay Access and Movement Strategy. The intention of the proposals is to progress the broad thrust of these high level plans while also taking into account finer grain, on-ground issues and potential solutions.

PROJECT PRINCIPLES



- Improve surface finishes without creating a uniform treatment that runs counter to the 'free-wheeling' character of the place
- Avoid short term, low quality treatments
- Capitalise on and continue Council's recent garden maintenance and upgrade works
- Increase the number of trees and therefore provision of shade
- Provide additional natural shade in streets where urban heat is an issue

IMPROVE USER EXPERIENCE

- Improve accessibility and wayfinding
- Improve surface finishes to improve safety and amenity
- Provide comfortable environments for people through the addition of natural shade and amenity
- Improve linkages through and across the town centre
- Capitalise on existing assets including mature vegetation, public domain spaces, public open space linkages
- Capitalise on the community's willingness and desire to have social streets- places to connect with other people and the environment

RESPECT CHARACTER Proposals should at all times seek to maintain the essence of the existing atmosphere as a defining characteristic of place



2 SITE AUDIT & ANALYSIS

EXISTING VEGETATION

KEY OBSERVATIONS

- Large areas of Jonson Street and Lawson Street have minimal planting areas and street trees resulting in low amenity and high levels of sun exposure
- Fletcher Street, Byron Street and Marvel Street benefit from more mature vegetation
- Groundcover planting palette is not evident, species are inconsistent
- A number of feature trees have been consistently used including Paperbarks, Pandanus and Norfolk Island Pines.
- Public domain areas associated with mature vegetation have higher comfort levels and a sense of the natural environment rather than the dominance of urbanity



Car dominated streets with a lack of natural amenity and shade



Areas of amenity disconnected from public domain



Planting provides street amenity (Byron Street)



Mature tree providing shade to the footpath (Fletcher Street)



LEGEND

Existing trees

Existing garden bed



LEGEND

- Ficus microcarpa var. hillii.
- Araucaria heterophylla (Norfolk Island Pine)
- Pandanus tectorius (Screw Pine)
- Callistemon viminalis (Red Bottlebrush)
- Melaleuca quinquenervia (Broad-leaved Paperbark)
- Cupaniopsis anacardioides (Tuckeroo)
- Waterhousia floribunda (Weeping Lilly Pilly)
- Brachychiton acerifolius (Illawarra Flame Tree)
- Syzygium australe (Lilly Pilly)
- Palms Archontophoenix cunninghamiana (Bangalow Palm), Livistona australis (Cabbage Tree Palm), Dypsis lutescens (Golden Cane Palm)
- Other

USER EXPERIENCE

KEY OBSERVATIONS

- Tree canopies and building awnings provide shade and a human scale for streets
- Building awnings with posts and large mature trees in narrower streets both create a sense of intimacy
- Ad-hoc placement of furniture- often in areas of low amenity
- Streets that are narrower and cluttered feel enclosed
- The southern side of streets running east to west tend to feel exposed if amenity is not provided.
- Areas that lack shade tree plantings or planting areas feel exposed
- Limited integration of landscape treatments and street amenity



Building awnings and trees providing shade and human scale to streets (Fletcher Street)



Building awnings with posts create a sense of intimacy



Wide areas without planting or street trees result in exposed environments (Jonson Street)



Streets that are narrower and cluttered feel

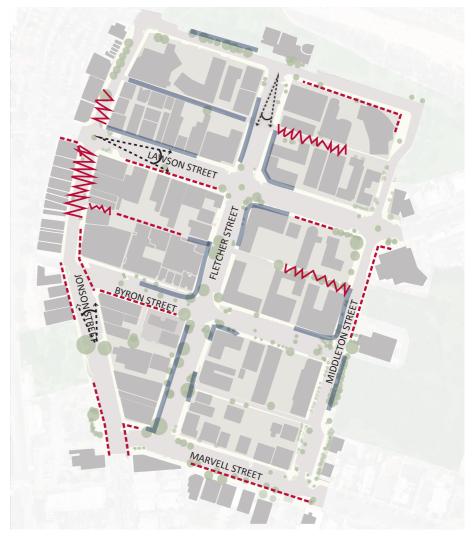


LEGEND

Building awning

Enclosed, intimate

Existing tree



LEGEND

Protected

Exposed

Narrow, cluttererd

いま。 Vista

ACCESS AND MOVEMENT

KEY OBSERVATIONS

- Vehicular movement and parking dominate the streetscape
- Poor and inconsistent pedestrian surfaces, footpath is often disrupted by crossings and driveways.
- Traffic congestion, particularly on Jonson Street and Lawson Street
- Cyclists have no obvious route through town
- Footpath widths often incompatible with use.
- Jonson Street is congested and cluttered narrow for pedestrians
- Lane ways are under utilised by pedestrians and cyclists
- Physical barriers have been installed to control pedestrian movementopportunities exist to combine this with amenity planting and seating



Vehicular movement and parking dominate the streetscape (Jonson Street)



Lane ways with shared zone / activation potential



Poor and inconsistent pedestrian surfaces



Physical barriers and features are ad-hoc and degrade street amenity (Jonson Street)



LEGEND

Bicycle connection

Primary pedestrian connection

Secondary pedestrian connection

Barrier



LEGEND

Primary vehicular connection

Secondary vehicular connection

Laneway

Car parking

---- Driveway crossover

ACTIVATION

2

KEY OBSERVATIONS

- Out of date kerb alignments resulting in 'left over' areas. These areas are located adjacent existing garden beds with some spaces having a direct connection to the adjacent footpath
- Limited space for impromptu socialising
- Mature shade tree and large pavement areas (usually on intersection corners) provide an activation opportunity



Out of date kerb alignments resulting in wasted



Mature shade trees areas provide an activation opportunity- furniture and edge improvements required



Vast, unecessary road surface where public domain improvements could provide people



Areas of large pavement provide an activation opportunity- increased natural shade will improve



LEGEND

- Opportunity for extension of pavement
- Opportunity to reclaim unused space



LEGEND

Opportunity for activation

STREET INFRASTRUCTURE

KEY OBSERVATIONS

- Lack of public seating in streets for resting and socialising
- Public furniture locations have been focused on Jonson Street and open space areas
- Short term solutions resulting in incompatible, messy finishes, and inconsistent furniture element design and style
- Furniture elements hard to locate and are not being used to their potential
- Majority of garden beds do not catch storm-water runoff and are disconnected from footpath
- Limited integration of storm-water



Example of existing street furniture



Example of existing street furniture



Example of existing street furniture



Island garden beds that does not catch stormwater and are disconnected from the footpath thereby limiting amenity potential



LEGEND



Bicycle parking

Rubbish bin

Public toliets

Water refill station

Street Lights



LEGEND

WSUD opportunity

Stormwater drainage



PROJECT VISION



DESIGN STRATEGIES

The Byron Bay Town Centre is currently car congested to a point that it is jeopardising the much loved relaxed coastal town experience.

Through the following strategies the landscape design aims to enhance the sub-tropical coastal town character and improve its community's experience by creating a flexible high quality vibrant network of streets that reflect the spirit of Byron Bay. A place that attracts people to visit, stay and connect.

BOOST VEGETATION TO
PROVIDE SHADE, STREET
AMENITY AND INCREASED
BIODIVERSITY

CREATE A PERMEABLE
AND CONNECTED TOWN
CENTRE (AND CONTEXT)

MAINTAIN THE BYRON

COASTAL TOWN

EXPERIENCE

IMPROVE
ENVIRONMENTAL
RESILIENCE AND
SUSTAINABILITY

Strategy 1

BOOST VEGETATION TO PROVIDE SHADE, STREET AMENITY AND INCREASED BIODIVERSITY

OPPORTUNITIES:

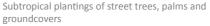
- Increase street tree planting to improve the visual quality of streets, improve environmental performance of streets, and to provide pedestrian amenity. The proposed tree plantings will build upon each street's existing vegetation character to enhance Byron Bay's subtropical coastal town character
- Create intergrated planting areas to define use zones, increase biodiversity, provide WSUD opportunities and enhance overall street amenity
- Upgrade existing planting areas to create consistent and high quality plantings. The use of a resilient and diverse understory palette of native and endemic species will unify the town centre and celebrate Byron's local character and environment
- Utilise the amenity of significant mature trees by integrating seating
- Potential to provide additional shade with green arbours as an extension to building awnings



LEGEND

- Proposed street tree
- Proposed garden bed
- Proposed green arbour
- Existing awnings







Street trees and planting defining seating zones



street trees and groundcover planting creating a green buffer between the footpath and road



Green arbour providing human scale ar protection from the elements



Consistent street tree planting increases visua quality and amenity

3 VISION & DESIGN STRATEGIES

Strategy 1

BOOST VEGETATION TO PROVIDE SHADE, STREET AMENITY AND INCREASED BIODIVERSITY

CREATING COOLER STREETS

As part of this project BMT Group provided heat mapping analysis of the town centre. This research identified temperature and urban heat issues across the town centre. This enables data driven understanding of heat issues within the town centre, allowing the verification of on the ground analysis.

Assessment identified Jonson Street and the western / north-western edge of the town centre as the most dominantly hot zones. It also highlighted Lawson Street and Lateen Lane as areas of higher temperatures.

BMT Group also ran several scenarios of potential treatment measures and what impact they may have on temperatures (see diagrams right). Scenarios include:

- tree planting
- · cool pavement adaptation
- cool roof adaptation

The research is valuable in verifying and highlighting areas of high temperatures. Future works can be part of the ongoing management of this increasing issue. Mapping suggests that particular thought should be given to treatments in the north west area of the town centre and the western fringe.

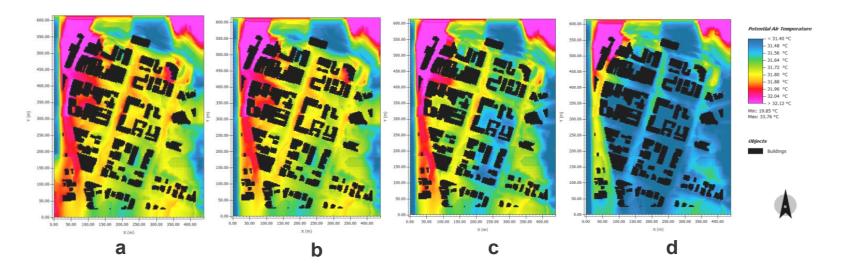


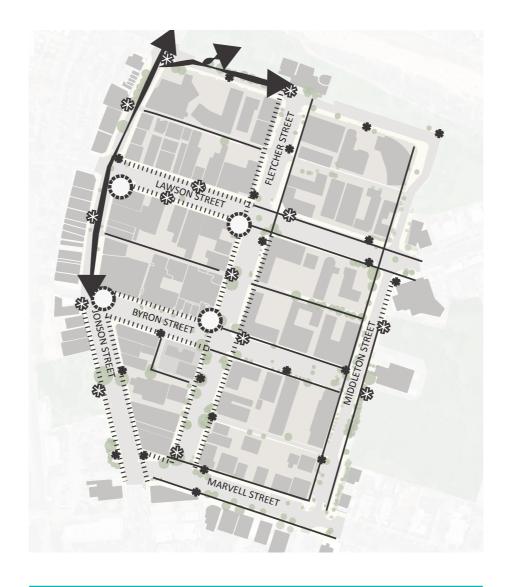
Figure 4-11 Comparison of modelling scenarios: a) reference summer scenario, b) mitigation scenario-1: tree only, c) mitigation scenario-2: tree plus cool pavement, e) mitigation scenario-3: tree plus cool pavement plus cool roof Adaptation strategy and recommendation

Strategy 2

MAINTAIN THE BYRON COASTAL TOWN **EXPERIENCE**

OPPORTUNITIES:

- Create a pedestrian prioritized beach axis along Jonson Street to provide an active connection between the town centre and Main Beach
- Provide wider footpaths where possible, shared zones and raised crossing to allow the pedestrian and cyclists to move freely through the town
- Use a consistent material palette that is resilient and low maintenance that responds to and reflects the local environmental conditions.
- Introduce a consistent furniture style that reflect the Byron's unique character by using select natural materials and simple detailing.
- Create 'service areas' with grouped street furniture elements to avoid cluttered streets
- Provide spaces for social interaction social streets make safe streets
- Place public seating nodes in key locations to create opportunity for activation and encourage social engagement
- Create a network of streets that are walkable and rideable by increasing street amenity and providing street furniture and access to amenity
- Redefine identified 'left over' spaces to extend the pedestrian pavement, creating additional space for activation opportunities including implementation of street furniture, additional areas for circulation or additional tree plantings
- Provide space for alfresco dinning, active buildings encourage pedestrian use and circulation
- Retain and celebrate existing key features including natural features and unique street elements



LEGEND

- Pedestrian prioritised beach axis (shared zone)
- Primary social streets
- Secondary social streets
- Proposed activation zone Primary 'service area'
- Secondary 'service area'







Vibrant and activated street which prioritises the



Flexible areas for alfresco dinning



Materiality that reflects Byron's unique characteruse highlight treatments sparingly



A traffic calmed street with raised crossing allowing the pedestrian and cyclists to move freely

Strategy 3

CREATE A PERMEABLE AND CONNECTED TOWN CENTRE

OPPORTUNITIES:

Ensure that town centre treatments and strategies align with contextual spaces and environmental and movement flows, including;

- cyclist and pedestrian
- open space and transport
- environmental- biodiveristy and water
- foreshore amenity





3 VISION & DESIGN STRATEGIES

Strategy 4

IMPROVE ENVIRONMENTAL RESILIENCE AND SUSTAINABILITY

OPPORTUNITIES:

- Implement long term design solutions instead of a band aid approach
- Intergrate WSUD devices where-ever possible to improve street amenity and storm-water / environmental performance
- Use permable paving in streets to allow infiltration where applicable
- Installing WSUD measures where possible provides for multiple uses and benefits- eg joining isolated planting islands to footpaths to provide WSUD treatments, increased street amenity, and gathering opportunities
- Promote sustainable initiatives native planting, locally sourced materials and recycled materials
- Create streets that are flexible and resilient allowing for change and growth
- Make appropriate changes now that enable the town centre, the community, and the environment to manage issues in a way that retains the atmosphere of the place

When deciding on materials for sustainability, the following should be considered:

- Is it made from recycled materials? Eg recycled concrete, recycled plastic, recycled glass
- Is it fabricated from re-used materials?
- Does it have a long lifespan with little maintenance?
- Is there an end of life market?
- Will it be damaged in weather events eg flood water?
- *Is it repairable?*
- What is the life cycle assessment of the material?



LEGEND

- High implementation area infrastructure, permeable paving, rain gardens
- Lower implementation area permable paving, rain gardens
- Opportunity for WSUD in existing garden beds







Paved channels with cut out in kerbs allow storm water to be collected in rain gardens



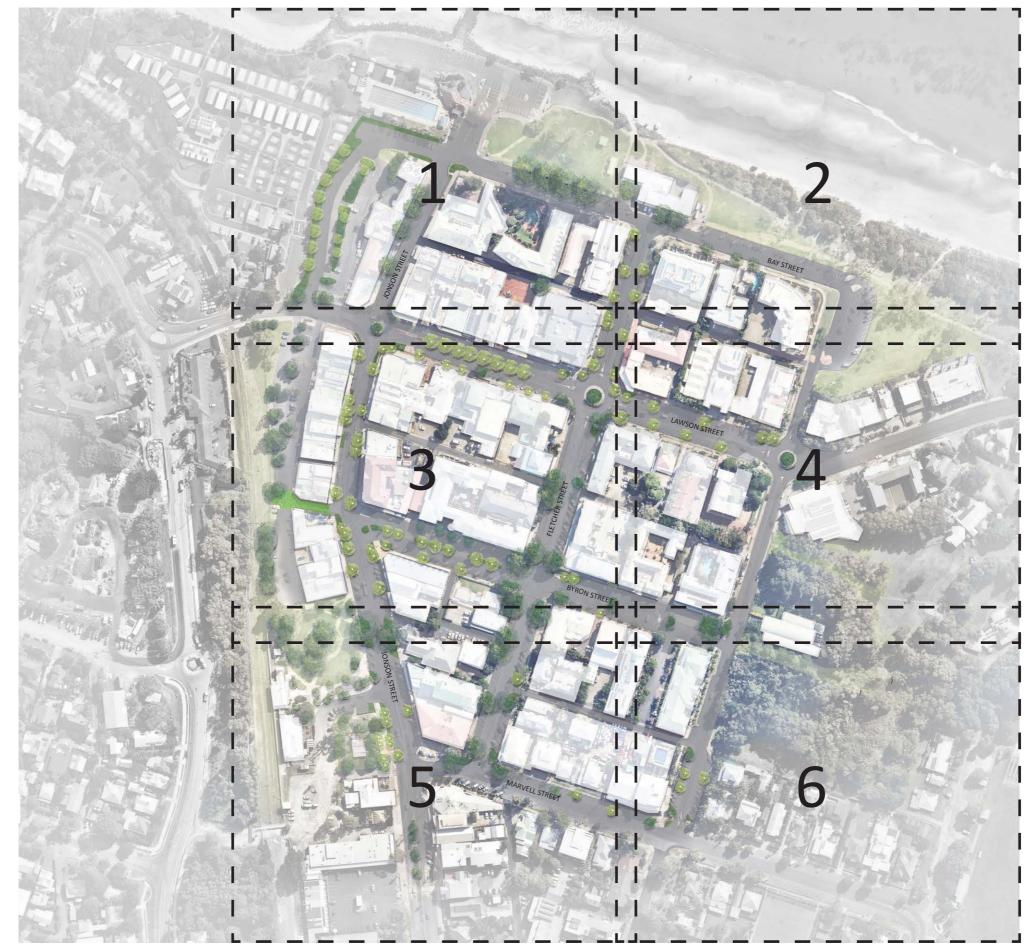
Permable paving used to allow trees to be watered by storm-wate



Rain gardens in streetscape



KEY PLAN- DETAIL PLAN LOCATIONS



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PROPOSALS 20

DETAIL PLAN 1







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Existing tree Proposed tree Proposed palm Planting area Open space Seat Bicycle racks Bins

WSUD opportunity

DRAFT







LEGEND



Existing tree



Proposed tree



Proposed palm



Planting area



Open space



Seat

Bins



Bicycle racks



WSUD opportunity



PLUMMER & SMITH

DRAFT



LEGEND



Existing tree



Proposed tree



Proposed palm



Planting area



Open space



Seat



Bicycle racks



WSUD opportunity

Bins



DRAFT PLUMMER & SMITH



LEGEND



Existing tree



Proposed tree



Proposed palm



Planting area



Open space



Seat

Bins



Bicycle racks



WSUD opportunity

PLUMMER & SMITH

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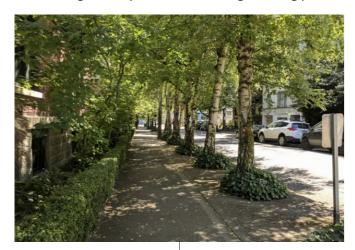
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4 PROPOSALS

LAWSON STREET

KEY STRATEGIES

- Extended footpath along southern side to allow for increased streetscape space and improved accessibility
- Provide more space and opportunity for social interactions
- Provide furniture and amenity planting
- Increase amenity and provision of natural shade through the planting of shade trees in the mediancreating cooler streets
- Improve footpath surface- paving
- Investigate the potential of undergrounding power for the main commercial block











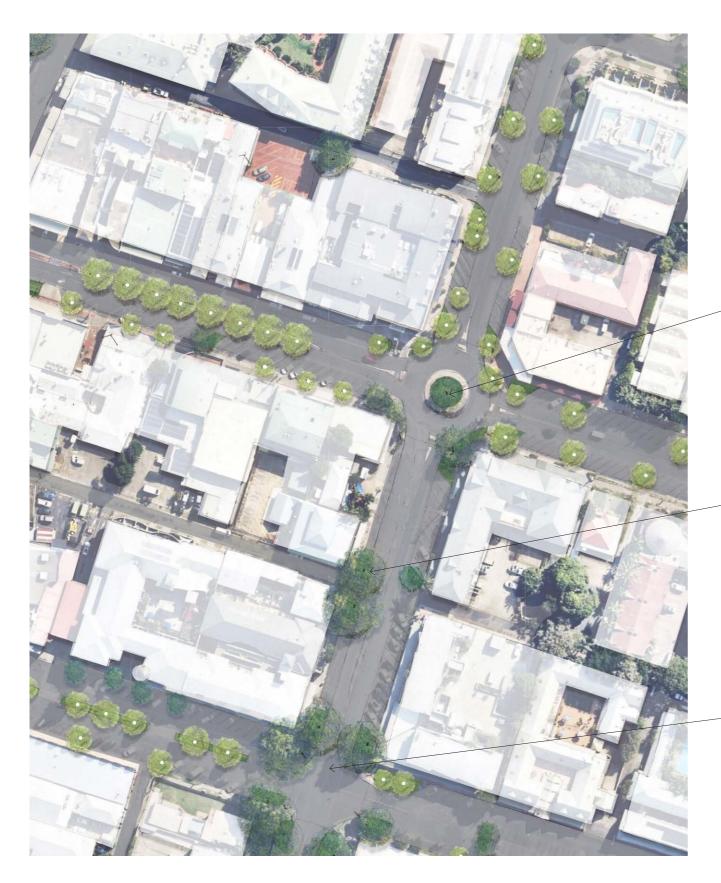
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4 PROPOSALS

FLETCHER STREET

KEY STRATEGIES

- Landscape amenity / increased shade in northern area
- Improved retaining / integrated seating edges around Melaleuca planting areas









DRAFT

4 PROPOSALS 28

PAVEMENT

Creating a guiding approach to pavement treatments across the town centre

LEGEND

Feature pavement streets- note that even in feature streets the use of segmental pavers shall be minimal to ensure manageable ongoing maintenance

Typical 'wave pattern' streets

Standard footpath streets





MATERIAL PALETTE

5

The proposed material palette and design elements aims to celebrate the natural environment through the use of select natural materials . The materials will be actualized in a loose and informal manner to maintain the existing coastal town character.

The material palette will work towards enhancing the Town Centre to reflect Byron's unique character. The proposed materials will endeavour to be cost effective where possible.

The proposed materials include:

- Concrete pavement
- Feature pavement
- Permeable pavers
- Locally sourced stone
- Sustainably sourced Australian hardwood timber

Concrete surfaces to be sealed to enable easy cleaning.

ON-GOING REVIEW

The material palette should be regularly reviewed to ensure it capitalises on any improved material options. This may include include new and improved products and suppliers. It will also enable the material selections for various projects to benefit from new sustainable products.

When deciding on materials for sustainability, the following should be considered:

- Is it made from recycled materials? Eg recycled concrete, recycled plastic, recycled glass
- Is it fabricated from re-used materials?
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- Is there an end of life market?
- Will it be damaged in weather events eg flood water?
- Is it repairable?
- What is the life cycle assessment of the material?



FOOTPATH - CONCRETE PAVEMENT Colour A: Belongil White Colour B: Woody Head Brown (Coomera) Finish: Lightly Exposed Pattern: 'wave' to match existing





PERMEABLE PAVEMENT - PRE-CAST CONCRETE PAY
Type: EcoTrihex
Dimensions: 188L x 92D x 60H
Colour: Natural, Charcoal
Finish: Shotblast, Honed
Supplier: Adbri Masonry



FEATURE TREATMENTS - CONCRETE PAVEMENT
Potential to pattern feature concrete areas to highlight local creative talent- sandblast treatments or similar



PEDESTRIAN THRESHOLD TREATMENT

Note: the use of segmental pavers shall be minimal to ensure manageable on-going maintenance



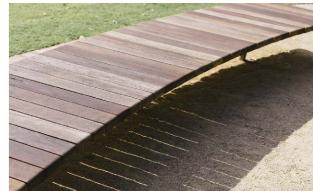
PLACED BOULDER Stone: Locally sourced basalt bush rock



CONCRETE SEATING WALL Colour: Natural Grey Finish: Off form Height: 450mm Width: Varies



BASALT ROCK SEATING WALL Stone: Locally sourced basalt bush rock Joints: Coloured mortar joints Height: 450mm Width: 450mm



CUSTOM ARCED TIMBER SEAT Finish: Australian HW- eg spotted gum Height: 450mm Width: Varies

FURNITURE PALETTE

ON-GOING REVIEW

The material palette should be regularly reviewed to ensure it capitalises on any improved material options. This may include include new and improved products and suppliers. It will also enable the material selections for various projects to benefit from new sustainable products.

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- Is it fabricated from re-used materials?
- Does it have a long lifespan with little maintenance?
- Is there an end of life market?
- Will it be damaged in weather events eg flood water?
- Is it repairable?
- What is the life cycle assessment of the material?



TIMBER SEAT WITH BACKREST
Name: Classic Plaza Seat
Material: Jarrah hardwood slats
Finish: Medium Textures finish (steel components)
Colour: Textura Woodland Grey
Supplier: Street Furniture Australia



BACKLESS TIMBER BENCH SEAT
Name: Classic Plaza Bench
Material: Jarrah hardwood slats
Finish: Medium Textures finish (steel components)
Colour: Textura Woodland Grey
Supplier: Street Furniture Australia



BICYCLE PARKING
Name: Semi-Hoop
Code: BST03
Dimensions: 845L x 120W x 850H
Fixing: Surface mounted
Material: Stainless 316
Finish: No.4 Finish (brushed)
Supplier: Street Furniture Australia



BICYCLE PARKING FEATURE Name: Happy Hoops (4 options) Code: varies Fixing: Surface mounted Material: Stainless 316 Finish: Painted (4 options) Supplier: Larc Collective



BOLLARD
Name: Slim Bollard
Code: SLIM
Dimensions: 115 Ø x 875H
Head Type: Dome
Fixing: Surface mounted
Material: Stainless 316
Finish: No.4 Finish (brushed)
Supplier: Street Furniture Australia



TIMBER BOLLARD
Name: Heavy Duty Traffic Barrier timber bollard
Material: Hardwood
Supplier: Outdoor Structures Australia



STONE BOLLARD AND STOOL SEAT Name: Scoop - Round Code: SCP02- R2 Dimensions: 500L x 520D x 450 H Material: Granite Supplier: UAP Company (Supply)



DUAL RUBBISH AND RECYCLE BINS Name: Macquarie Bin Enclosures Finish: Byron Shire Custom Design Supplier: Gossi Park



WATER BOTTLE REFILL STATION
Name: Aquafil Flexifountain
Code: AQ-FF2100BF
Material: Stainless Steel and Aluminum
Finish: Anodised
Dimension: 2109 H 600 L 310 W
Supplier: Civiq

MATERIAL, FURNITURE & PLANT PALETTE

STREET TREE MASTER PLAN

5

Species and locations a guide only- case by case assessment required as potential works progress. Council to also continue their on-going review of species across the town centre to hone the planting palette insitu, ensuring plantings are utilising species with a track record of success and health.

The following species lists have been established in coordination with Byron Shire Council's on-going species trials and assessments.

Araucaria heterophylla, Casuarina equisetifolia Araucaria heterophylla, Elaeocarpus reticulatus Acmena hemilampra, Cupaniopsis anacardioides Cupaniopsis anacardioides, Elaeocarpus reticulatus Flindersia schottiana, Archontophoenix cunninghamiana, Livistona australis, Tristainiopsis laurina Luscious Melaleuca quinquenervia, Archontophoenix cunninghamiana Waterhousia floribunda, Randia fitzilani, Archontophoenix cunninghamiana Acmena smithii, Livistona australis, Waterhousia floridunda Waterhousia floribunda, Cupaniopsis anacardioides

ON-GOING REVIEW

The species outlined above and in the following pages should form the basis for a 'live' species list. This will enable the species list to be adjusted as required based on the performance of species in-situ.



STREET TREE MASTER PLAN

TREES & PALMS

| Botanical Name | | Mature Spread |
|--------------------------------|---------------------|---------------|
| ARAUCARIA heterophylla | Norfolk Island Pine | |
| ARCHONTOPHOENIX cunninghamiana | Bangalow Palm | |
| ACMENA hemilampra | Lilli Pilli | |
| ACMENA smithii | Lilli Pilli | |
| BACKHOUSIA myrtifolia | Grey Myrtle | |
| BANKSIA integrifolia | Coast Banksia | |
| CALLISTEMON viminalis | Weeping Bottlebrush | |
| CASUARINA equisetifolia | Coastal Sheoak | |
| CUPANIOPSIS anacardioides | Tuckeroo | |
| ELAEOCARPUS eumundi | Eumundi Quandong | |
| ELAEOCARPUS obovatus | Hard Quandong | |
| ELAEOCARPUS reticulatus | Blueberry Ash | |
| FICUS microcarpa hillii | Hills Weeping Fig | |
| FLINDERSIA bennettiana | Bennetts Ash | |
| FLINDERSIA schottiana | Cudgerie | |
| HIBISCUS tiliaceus | Cottonwood | |
| LIVISTONA australis | Cabbage Tree Palm | |
| LOPHOSTEMON confertus | Brush Box | |
| LOPHOSTEMON suaveolens | Swamp Box | |
| MELALEUCA quinquenervia | Paperbark | |
| PANDANUS tectorius | Screw Pine | |
| STENOCARPUS sinuatus | Firewheel | |
| SYZYGIUM leuhmanii | Riberry | |
| TRISTANIOPSIS laurina | Water Gum | |
| WATERHOUSIA floribunda | Weeping Lilly Pilly | |
| | | |







ARCHONTOPHOENIX cunninghamiana



LOPHOSTEMON confertus



HIBISCUS tiliaceus



BANKSIA integrifolia



CALLISTEMON viminalis



CUPANIOPSIS anacardioides



CASUARINA equisetifolia



MELALEUCA quinquenervia



PANDANUS tectorius



FLINDERSIA bennettiana



ELAEOCARPUS reticulatus

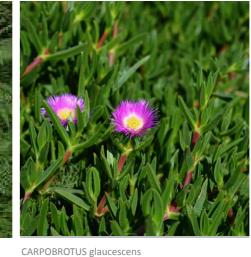
PLANTING PALETTE

GROUNDCOVERS, GRASSES & CLIMBERS



























HOYA australis LOMANDRA hystrix

MYOPORUM parvifolium Yareena

VIOLA hederaecea

SHRUBS & FEATURE PLANTS



Disclaimer

This palette encourages the use of species that retain and enhance Byron's specific character. This list may be expanded upon during detailed design. This list should be periodically reviewed and amended as species are trialled.













BANKSIA collina Little Eric

OZOTHAMNUS diomifolius





ASPLENIUM australasicum











SYZYGIUM Pink Cascade

WESTRINGIA fruiticosa