



KATHERINE CBD REVITALISATION MASTERPLAN

FINAL MASTERPLAN REPORT
08 JUNE 2019

ASHFORD ARCHITECTS Conrad Gargett



PROJECT TEAM

Urban Place Designs

Landscape Architecture

Urban Place Designs
+61 419 749 187

irwinconsult

Hydraulic Engineering, Structural Engineering and Building Certification

IrwinConsult
82 Smith St, Darwin City NT
+61 8 8980 5900

Ashburner Francis consulting engineers

Electrical Engineering

Ashburner Francis
C102/19 Kitchener Dr, Darwin
Waterfront NT
+61 8 8942 0585

MASTERPLAN TOWN + COUNTRY PLANNERS

Town Planning

Masterplan
33/16 Charlton Ct, |
Woolner NT
+61 8 8942 2600

tonkin

Civil Engineering and Traffic Engineering

Tonkin Consulting
16 Charlton Ct, Woolner NT
+61 8 8981 7155

Public Arts

Jayne Nankivell
PO Box 2095 Katherine NT
+61 409 117 107

Quantity Surveyor

QSNT
PO Box 394,
KARAMA NT
+61 411 624 265

eMerge IT Solutions

IT / Communications

Emerge IT Solutions
52 Katherine Tce, Katherine,
NT
+61 8 8972 8888

| Revision | Description | Issue Date | Prepared By | Approved By |
|----------|-------------------------|------------|-----------------|----------------------------|
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This document was prepared by

ASHFORDARCHITECTS

Conrad
Gargett

Contact

24/90 Frances Bay Drive,
Tipperary Waters 0820
GPO BOX 2643, Darwin 0801
e: admin@ashfordarchitects.com.au
t: 08 8941 7552

Brisbane

Level 26 / 240 Queen Street,
Brisbane Qld 4000
t +61 7 3229 3555
f +61 7 3221 7878

Melbourne

Level 9, 2 Queen Street,
Melbourne Vic 3000
t +61 3 9081 3587

Townsville

Level 1 / 45 Eyre Street, North
Ward, Townsville Qld 4810
t +61 7 4795 0200
f +61 7 4724 1882

Sydney

Suite C3.18, 22-36 Mountain
Street, Ultimo NSW 2007
t +61 2 8218 9100
f +61 2 8218 9199

Newcastle

Level 1, 54 Union St, Cooks
Hill, Newcastle NSW 2300
f +61 2 8218 9100
f +61 2 8218 9199

Ethiopia

Africa Hall Project Office, Africa
Hall, Level 1, Room 14, Menelik
Avenue, Addis Ababa Ethiopia
t +251 11 544 4664

ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Jawoyn, Wardaman and Dagoman people and respect Aboriginal and Torres Strait Islanders across Australia as the traditional owners of our shared lands, waters and seas, their unique ability to care for country and deep spiritual connection to it. We honour elders, past, present and emerging, whose knowledge and wisdom has, and will, ensure the continuation of Aboriginal and Torres Strait Islander cultures and the values which uphold them.



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VISION STATEMENT

"Katherine is a river town with endless potential and a rich history; Our vision is to create an enriching community and sustainable environment, that is walkable, safe, engaging and and is functional for local residents, those who are visiting The Big Rivers Region, people considering relocating to a regional area and a place that attracts people from all over the world."





INTRODUCTION

Katherine is a remote town in Australia's Northern Territory that has seen growth over the years through transport, industry, mining, defence, and tourism.

The town is well established, with its CBD currently including an array of businesses to cater for the residents of Katherine, including visitors from remote towns and tourists.

However, the combination of climate, small population, and petty crime have prompted Katherine Town Council to commission a master plan to revitalise the town central business precinct.

The Katherine Town Council (KTC), Department of Infrastructure Planning & Logistics (DIPL) and the Chamber of Commerce hosted a public workshop with the Katherine community, who identified the enhancement and revitalisation of the township (and the priorities for the project) as key to the successful implementation of the Katherine CBD revitalisation master plan.

The Katherine Town Council revitalisation project is part of an overall plan by Council and DIPL (in partnership with DCM in full, and the Chamber of Commerce) to create an enriching community that is engaging and functional for local residents, those visiting from the Big Rivers region, those considering relocating to a regional area, and tourists alike.

A joint venture between Ashford Group Architects and Conrad Gargett, including a team of consultants, were selected from an expression of interest and tender to assist KTC to develop the overall masterplan with staged implementation phases, with the goal to document an agreed scope of works within a phase 1 budget of \$5M already procured by KTC.

The implementation for the other precinct phases of the master plan will be constructed when more funds are procured via grants and capital works funding.

The project brief lists principal objectives of the project as:

Revitalise the Katherine CBD so as to provide it with a beautiful, inviting and functional street presence for locals and visitors

Establish Katherine as one of the best township CBDs in Australia

Encompass the elements of social/ cultural embodiment, economic prosperity and environmental viability



FIG 0.1 Project team including; Art consultants Jayne Nankivell (centre front) and staff from Ashford Architects and Conrad Gargett.

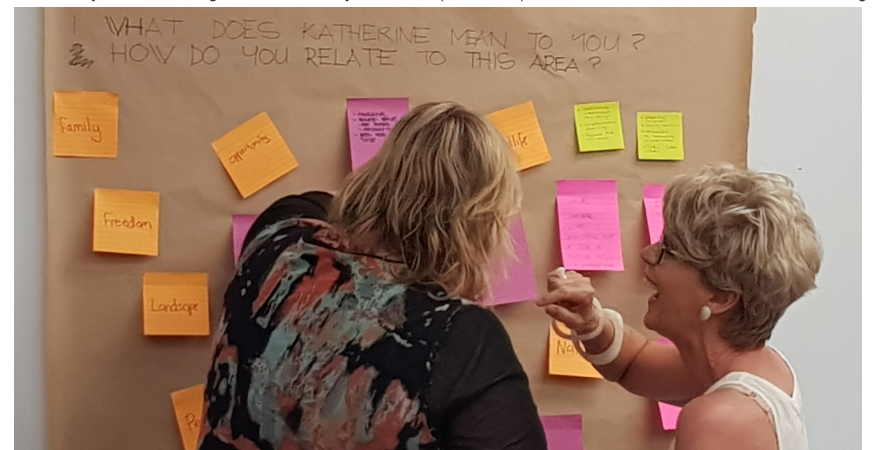


FIG 0.2 Community member and Katharina Nieberler-Walker of Conrad Gargett.



FIG 0.3 Project team and members of the Katherine community at a consultation evening.



FOREWORD BY KATHERINE TOWN COUNCIL



FIG 1.1 Fay Miller - Mayor of Katherine

Project Background

Summary of what this Masterplan means to Katherine:

- *Future direction*
- *Katherine 8*
- *Better city*
- *Consultation*
- *Council committees*
- *Delivery / Program*

Key considerations for the Katherine Master Plan

- *Great Eight projects in Katherine*
- *Connection to Katherine East*
- *Flooding*
- *Road safety and Bypass*
- *Funding by public/private*
- *Collaboration with commercial stakeholders*
- *Land tenure*
- *Connection to the River, cultural and visitor facilities*
- *Engagement with business owners including Woolworths*
- *Access and parking*
- *Collaborative partnerships*
- *Katherine as a regional centre*
- *Children and their families*
- *Safety and security*
- *Intergenerational approach*
- *Integration of arts and nature*
- *Natural and built shade*
- *Community engagement*

Quote Robert Jennings, CEO... 'the ultimate goal is to create a place you remember when you leave, a place that says Katherine, we want people to go wow'

BACKGROUND

SITE LOCATION



fig 2.1 Katherine Location Plan

Katherine is a town in the Northern Territory, Australia. It is situated on the Katherine River (after which it was named), 320 kilometres southeast of Darwin. It is the fourth largest settlement in the Territory.

Katherine is also the closest major town to RAAF Base Tindal, which is located 17 km southeast. Katherine provides education, health, local government services and employment opportunities for the families of Defence personnel stationed there.

Katherine had an urban population of 6,303, with the RAAF base having a residential population of approximately 25% of the population, on the 2016 Census night.

Beginning as an outpost established with the Australian Overland Telegraph Line on the North-South transport route between Darwin and Adelaide, Katherine has grown with the development of:

- Transport and local industries including mining – particularly gold mining
- A strategic military function with RAAF Base Tindal
- A tourism gateway to the attractions of nearby Nitmiluk National Park, particularly Katherine Gorge and its many ancient rock paintings.
- The region is known to experience heavy flooding during “the wet season”. (Information extracted from the Visit Katherine website)

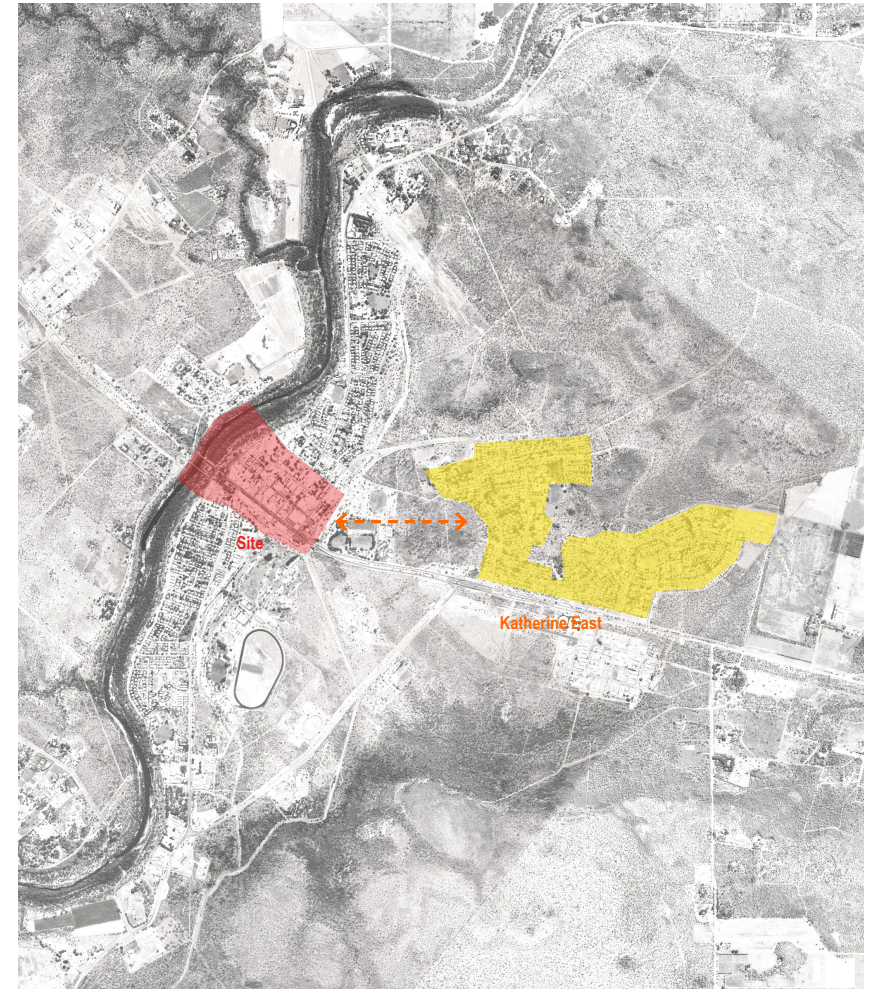


FIG 2.2 Katherine CBD and Katherine East



SITE INFORMATION

TRANSPORT NETWORKS AND CONNECTIVITY

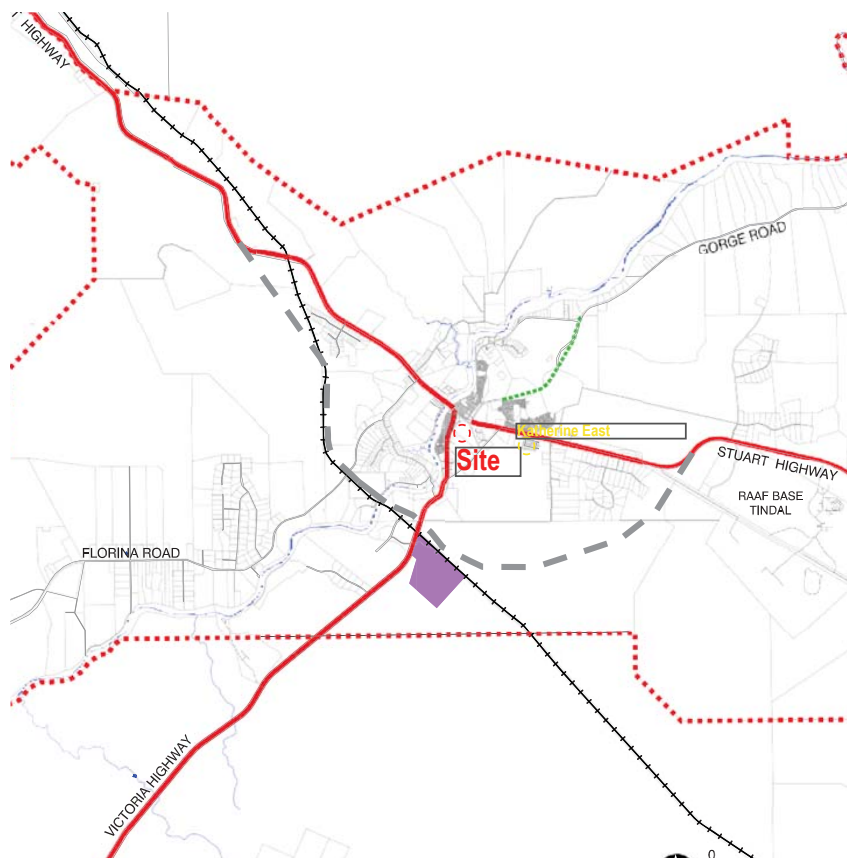


FIG 3.1 Transport and Network Plan.

Transport

Heavy vehicle by-pass options for Katherine have been subject to investigation and consultation over the last few years to identify a solution that would be acceptable to all stakeholders. Concepts developed were short to medium term options where the main objective was to remove heavy vehicles from Katherine Terrace, while still retaining only one Katherine Riverbridge crossing.

Current Government policy is to minimise access points onto the Stuart Highway to maintain the function of this national highway. While service roads may be considered in some circumstances, design requirements to provide safe access to the highway will limit their use.

FLOODING 1% AEP EXTENT

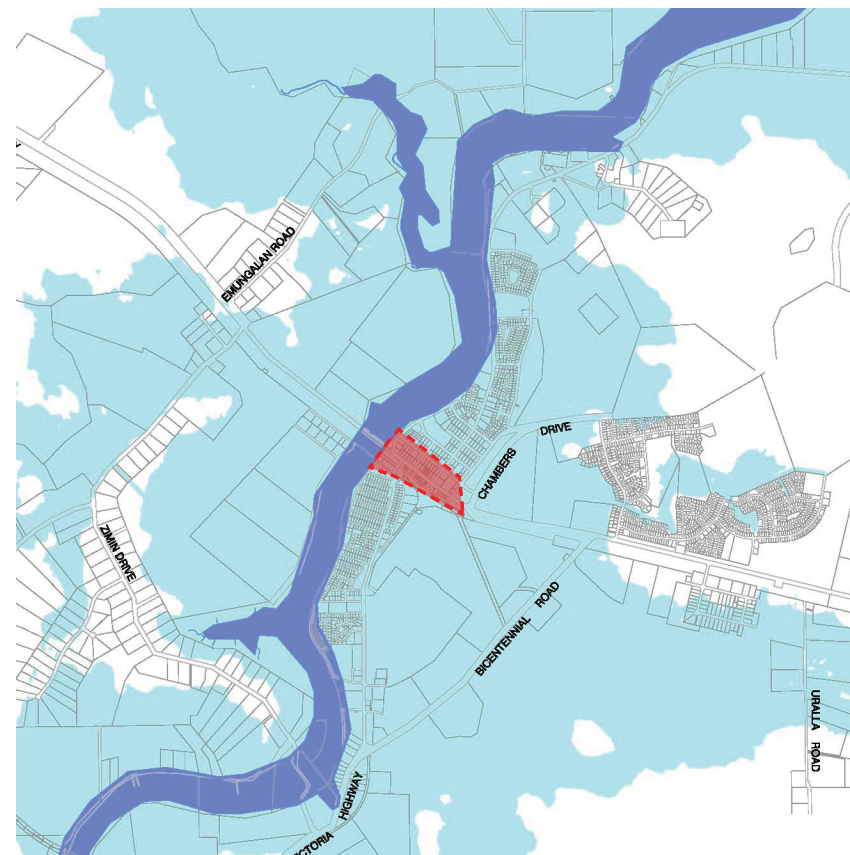


FIG 3.2 Flooding Plan

Weather

The climate of Katherine is monsoonal with a short 'Wet' season from December to April, and a long 'Dry' season from May to November. Annual temperatures are quite high, the average maximum being 34.2 degrees and average minimum 20.2 degrees.

Floods

Katherine, situated on the banks of the beautiful Katherine River has a history of flooding and suffered a flood in 1957 and flooding of the main street in 1974. The 1998 Australia Day flood devastated the town of Katherine and was declared a National Disaster. Cyclone Les produced between 300 and 400 millimetres of rainfall during a 48 hour period. The Katherine River rose to 21.3 metres causing the evacuation of two thirds of the community and major devastation to the business community.



STAKEHOLDER ENGAGEMENT

CONSULTATION

| CONSULTATION GROUP | MEETING DATE | COMPLETED |
|--|-------------------|-----------|
| General community (presentation) | 12-Mar | ✓ |
| Wurli-Wurlinjang - homeless needs | 26-Mar | ✓ |
| Jawoyn indigenous group | 3-Apr | ✓ |
| Mimi Arts | 4-Apr | ✓ |
| Mimi Arts (with Wardaman Indigenous group representatives) | 10-Apr | ✓ |
| Business / Shop owners & general community (presentation) | 17-Apr | ✓ |
| Dagoman indigenous group (unavailable for consultation) | 18/4 (tentative) | |
| Community Online Survey | 18/04/19 - 7/5/19 | ✓ |
| Katherine High School | 3-May | ✓ |
| Katherine Museum | 3-May | ✓ |
| YMCA Youth | 7-May | ✓ |
| Katherine Regional Arts | 8-May | ✓ |
| Senior Citizens | 8-May | ✓ |
| General community (presentation) | 9-May | ✓ |
| Defence | 10-May | ✓ |
| NT Police | 22-May | ✓ |

fig 4.1 Project Consultation groups and date of meeting held.

START UP

A start up presentation was conducted in Katherine on 12/3/19 with representatives from Katherine local community and the business community and including the master plan consultant team present.

After a brief introduction of the design team and discussion of the master plan process going forward with the master plan production (ie: community consultation, concept designs, interim presentations, etc).

Four brainstorming questions were presented to the community representatives present. Everyone broke up into small groups to prepare key word answers for each group of questions within a 3 minute timeframe for each question.

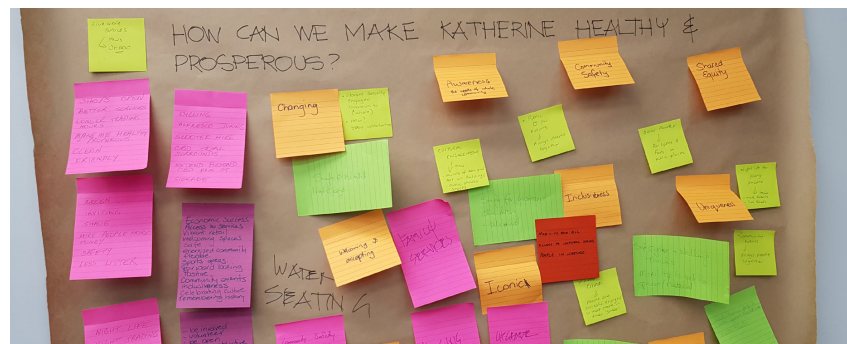


FIG 4.2 Community consultation exercise to obtain community ideas and values



FIG 4.3 Community groups broken into smaller groups to brainstorm their ideas.



STAKEHOLDER ENGAGEMENT

BUSINESS & SHOP OWNERS

A separate presentation of the master plan development was conducted for business and shop owners on 17/4/19. After the design team presented the current status of the developing master plan, feedback from the business and shop owner representatives included:

- Generally the presentation was well received
- *The draft content and strategies were generally supported, including improved safety at median strips*
- *Key areas of concern of the current CBD state were:*
 - Cleanliness
 - Maintenance
 - Safety
 - Homelessness, and
 - Antisocial behaviour
- *Concerns with the proposed design included:*
 - Ongoing maintenance
 - Alfresco dining (eg: unwelcome gathering spot)
 - Unattractive rear of buildings on Railway Terrace, and
 - New trees need to be more than 4m high so they don't block business signage
- *Further recommendations included:*
 - Replacing grass with bark chips at median strips to discourage sitting
 - CBD Building owners to assist in implementing master plan
 - Include bird watching included in the walking loop / trail, or near the new café
 - Consult with police regarding safety
 - Parallel parking on both sides of the road
 - Addition of a fence in the middle of the median strip in front of Woolworths to discourage road crossing



FIG 5.1 Current sidewalk outside Coffee Club on Katherine Terrace



FIG 5.1 Current sidewalk outside Red Cross on Katherine Terrace



STAKEHOLDER ENGAGEMENT

DIPL

A meeting with Phil Harris, Senior Director at DIPL, was held on 15/4 to discuss DIPL's master plan views, and to obtain insight into the current federally-funded black spot civil project being awarded to prevent right turns in and out of Giles Street from Main Street, by filling in the median strip at this intersection.

Feedback included:

- Tree selection is important. Size needs ideally 4m plus on planting to avoid blocking of business frontage.
- Maintain existing water outlets at every second property boundary (used by both shop owners and DIPL for cleaning)
- Widened verges should provide additional stormwater storage capacity
- Indicate areas of hardstand / paving (existing and new) for costing of long term maintenance
- CCTV camera locations are currently strategically placed. More cameras are being installed in May 2019.
- DIPL have pallets of pavers at their depot that are available for future works.
- All lights along Katherine Terrace where upgraded to LEZD in 2018.
- Consider alternate connections to bore water for reticulation (as opposed to mains water)
- Preliminary concept design has been discussed with, and is supported by, the General Manager of Transport & Civil Services



FIG 6.1 Katherine Tce at dusk, image taken from KTC.



FIG 6.2 DIPL supported solar farm near Katherine



STAKEHOLDER ENGAGEMENT

MIMI ARTS / JAWOYN & WARDAMAN INDIGENOUS GROUPS

Two separate consultations were undertaken with Mimi Arts on 4/4/19 and 10/4/19.

Representatives from the Jawoyn Indigenous group were present at the 4/4/19 meeting, with other Mimi Arts staff present, and Wardaman Indigenous group representative, at the 10/4/19 meeting.

An overview of the project was given identifying the possibility of 2 kinetic sculptures located at the northern entrance to O'Shea Park or Ryan Park and Town Square as suitable.

Mimi Arts and Katherine Regional Arts have worked in partnership to develop a theme for the walk to the VIC in full. Proposed along the walk there are 7 key themes with a public art work for each.

Each art work is to be made from iron. It was intended that each art work be accompanied by an interpretive information board and plants that highlight the story. In the long term it is proposed that each of these sculptures and the area around them be maintained by the separate cultural groups whose story is depicted. Mimi currently has limited funding to produce sculptures.

It is not clear if there are sufficient funds to produce all of the sculptures, including:

- Yam
- Dilly Bag
- Barramundi
- Long necked and short necked turtle

Mimi Arts anticipate being able to commence a rebuilding/upgrade project later this year, including an outdoor dance area, and would like to ensure that their plans for landscaping and exterior upgrades will tie in with what is happening along the walking track to the VIC.

They would also like to see representative from all the groups around the Katherine Region in the master plan artwork.

Themes / suggestions for the master plan include:

- Wind & water themes.
- Bolong or Gordondolmi (rainbow serpent) - an age-old story from the beginning of time that crosses all clans and country.
- Seasons – Aboriginal people have 6 seasons in their culture whilst in our culture we have 2 seasons the wet and dry. An interpretation of the seasons would be informative for tourists and locals.
- Animals - common to the Katherine region, including bats, turtles, and birds.
- Plants – bush food or plants used in weaving or bush tucker.
- Railway Terrace beautification – conceal backs of the shops along Railway Terrace with some feature panelling with cut images in them.

Generally, the master plan concept ideas were supported by Mimi Arts.

Other items raised for consideration in the master plan include:

- Seating & shade throughout the town
- Concern about the proposed function centre as this is a high user area for special events such as NAIDOC
- Special consideration to night images should include Bill Harney's astrology stories that have been celebrated world-wide. Bill is the senior Wardaman traditional owner and is an acclaimed artist.
- The meeting asked what is being developed at the Hot Springs to ensure that public art in each area is not duplicated
- A waterway should have live plants and sculptures showcasing plants and animals from the region, ie: water lilies, birds, frogs etc.
- Concern of security and vandalism



FIG 7.1 George Hairbrush Tjungurrayi - Mimi Arts (photo from Mimi Arts website)



STAKEHOLDER ENGAGEMENT

WURLI WURLINJANG (HOMELESSNESS)

A consultation meeting was held on 26/3/19 with representatives from Wurli Wurlinjang Health Service who provide health and support services to the homeless in Katherine.

The design team notes this was an issue identified in the consultation and presentation meetings and whilst we present a discussion over the issue the master plan has not addressed this issue as it is beyond the master plan scope of work.

Currently “homeless” and “long grassers” people congregate in parks, around the visitor centre, and the Katherine Terrace median strip as there is no / very little temporary accommodation available in Katherine. These people are attracted to these areas they consider safe with access to water, toilets, temporary shelter, and shade.

Homelessness and camping conditions are seasonal.

During the dry season, people tend to camp along the river. During the wet season they avoid camping along the river edge due to the rain and potential flooding, so tend to camp at shelters along O’Shea Terrace and Railway Terrace.

To attract persons away from these public and highly viewed spaces there needs to be amenities provided elsewhere, including facilities for:

- Water
- Showers
- Toilets
- Laundry
- Cooking facilities
- Shade

Potential sites have been identified, including:

- End of Fourth St, above markets
- North of Katherine Town Council
- South of Sports Precinct, on Stuart Highway

Different Family Groups tend to gather in areas:

- Ngukurr people – along O’Shea Tce
- Warawi people– along Railway Tce

Due to a lack of temporary accommodation, it is not unusual for family members to accompany a person who is in town to receive health/social services.

Other items to address in the master plan include:

- Petty crime by youth – youth engagement is required.
- In dealing with homelessness, traditional owners request that their land / laws are respected.
- There are currently native title claims over Katherine and there is “angst” or “disagreement” between traditional owner mobs as to who are the rightful TO’s to area under claim.

INDIGENOUS CONSULTATION

Wardaman Indigenous Group
(Refer Mimi Arts consultation above)

Jawoyn Indigenous Group
(Refer Mimi Arts consultation above)

Dagoman Indigenous Group
Representatives from the Dagoman indigenous group have been contacted to request availability for consultation, but a meeting has unfortunately not resulted despite numerous attempts.



FIG 8.1 Potential Public Amenities



FIG 8.2 Wurli Wurlinjang provides a variety of health programs – image from Women & Children’s Health Program



STAKEHOLDER ENGAGEMENT

YMCA

Members of the design team also attended meetings at the YMCA with boys and girls groups on 07/05/19. As the groups were mainly comprised of Aboriginal children there was limited open discussion due to embarrassment, however, when asked to draw what they thought would make an enjoyable playground experience the groups enjoyed and actively participated.

Feedback included the following:

- Somewhere to kick a football
- 1/2 court Basketball
- Trampolines (flip out)
- Gym equipment that caters for younger youth as well as adults
- Flying fox
- Water play
- Paths for roller skating and bike riding
- A graffiti wall where people can put their tags
- A community garden on O'Shea Terrace
- Sculpture of a crocodile
- Shade trees
- Better toilets
- Shade and seating
- Drinking Water access

KATHERINE HIGH SCHOOL

Members of the design team met with representative of the student body at KHS. The students provided feedback on what they thought would attract youth to the Railway Terrace Park and identified the following:

- Half court basketball court
- A cross fit circuit with fitness stations
- Water play area
- Playground with climbing frame similar to that on the Esplanade in Darwin to cater for differing age groupings
- Large swings that can handle up to 3-5 persons similar to park play grounds in Sydney
- Shade structures and drinking fountains

KATHERINE HIGH SCHOOL (COURTESY OF THE KATHERINE TIMES)

An article published by the Katherine Times on 10/4/19 queried representatives from Katherine High School about their view on Stage 1 of the master plan (\$5M budget).

Feedback included:

- Transforming Katherine into an eco town, with solar power and recycling
- Less plastic in cafes and shops, especially Woolworths
- Clean up litter in streets and rivers
- Maintenance of any implemented strategies
- More youth engagement / activities (eg: sport)
- Cool reprieve from the heat (eg: public pool upgrade, crocodile management to create safe swimming areas)
- Public transport / bus loop
- Shaded car parks
- Public mural / artwork
- Cinema upgrade



FIG 9.2 Artists Impression of a potential water play on Railway Tce.



FIG 9.1 YOUTH WITH IDEAS: The Katherine Times caught up with Katherine High School students Charlotte Pickering (School Captain), Teri Millo and Jaimie Bryant to see how they would spend the \$5 million intended to improve the CBD.



STAKEHOLDER ENGAGEMENT

RAAF BASE TINDAL

As part of the community consultation process RAAF Base Tindal was also consulted. An on base meeting with Warrant Officer Jason Randell was conducted on 10/05/19.

Defence were supportive of the proposed master plan objectives. Of interest was the proposed development of the parks as Defence is certainly interested in the wellbeing of its large Defence family. The water play area was of interest. WO Jason also expressed concern over the lack of shade at the relocated cenotaph and encouraged the design team to consider the provision of permanent shade structures at this location so that no matter at what time of a day an event was proposed there is public shade available. Of concern was the lack of a night time up market wine bar or similar social gathering place for singles as Defence does have a large cohort of these people. As well disappointment and concern was expressed over the lack of a modern 4-5 star hotel motel with accommodation within the CBD district as Defence do patronise current accommodation establishments within the town which they consider do not provide the service or standard of accommodation they would like to offer their people.

KATHERINE POLICE

A phone conference was held on 22/05/19 with Michael Hebb, Daniel Shean and Brad Fox from Katherine Police Station. Feedback included the following:

Support for:

- Reducing the width of the median strip
- New vegetation, as long as it allows passive surveillance (ie: high canopy underside and low shrubs)
- Reducing the speed limit along Main Street to 40km/h
- Public facilities like toilets and BBQs, but need to consider homelessness measures to prevent congregation at these points for public safety
- Pedestrian bridge, as long as there is ease of access for use. Concern is that people will still use the road to cross.
- Gym equipment, but good lighting is required for safety at night.
- More lighting throughout
- Shade structures over crossings at Main Street, but needs to consider wide / large loads driving through town that sometimes require power lines to be lifted (ie: no other road paths are available)

Concern about:

- Median strip and people sitting within it. Suggestions included removing the grass to prevent people sitting in it, but also to prevent the need for council mowers to access it (ie: mower vs passing traffic issue).
- Providing grassed areas along Main Street – keep grassed areas for park spaces
- Some lots currently used as vehicle thoroughfares (eg: petrol station on Main Street used as through access to Railway Terrace).

Additional suggestions:

- Moving the Katherine Hotel taxi zone away from Main Street to prevent patrons from heading towards the main road
- Traffic calming measures as vehicles approach Main Street to encourage / remind people to slow down (eg: rumble strips / surface treatment)

KATHERINE MUSEUM

A meeting was also conducted on site at the Katherine Museum with museum staff and board members on 03/05/19. The overall feedback was the museum is supportive of the revitalisation project. Some concern was expressed that procured funding might better be spent or directed towards maintaining existing facilities and completing current works. Feedback included the following:

Support for:

- Railway Terrace upgrade (as priority) due to its use for marches and street parties.
- Screening the back of the shops on Railway Terrace with metal cutouts of local animals, such as the flying fox.
- Floodway along Railway Terrace used as a water feature
- Improvement of landscaping / vegetation
- Shading the Cenotaph area (Shade could take up the image of plane wings to fit with the war theme and reference to RAAF)
- Relocating the train back to Railway Terrace from Ryan Park
- Increased access to the Katherine River
- Inclusion of more Tamarind trees (provides good shade and don't attract flying foxes)

Concern about:

- Maintenance of new installations (eg: river loop interpretation boards are currently not maintained)
- Main street ramp access
- Ochre-coloured concrete on Main street (aesthetics)
- Shaded seating used by long grassers

Additional suggestions:

- Upgrade boat ramp
- Historical aspects of town are well covered at the museum – prefer to focus on displays that demonstrate character of the town



FIG 10.1 Historical Katherine Image (Image taken from Katherine Museum Website)

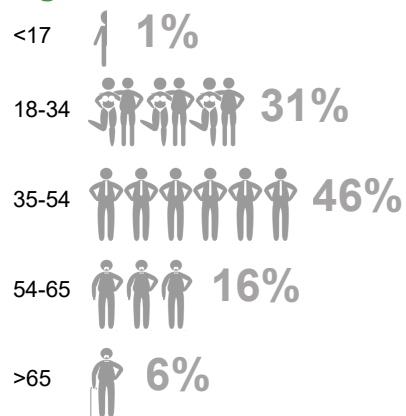
STAKEHOLDER ENGAGEMENT

ONLINE SURVEY

Gender



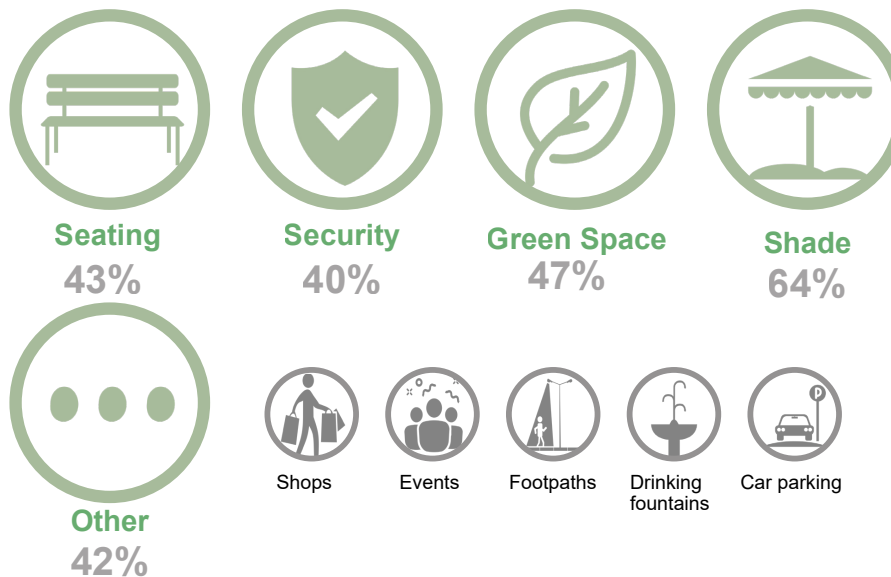
Age



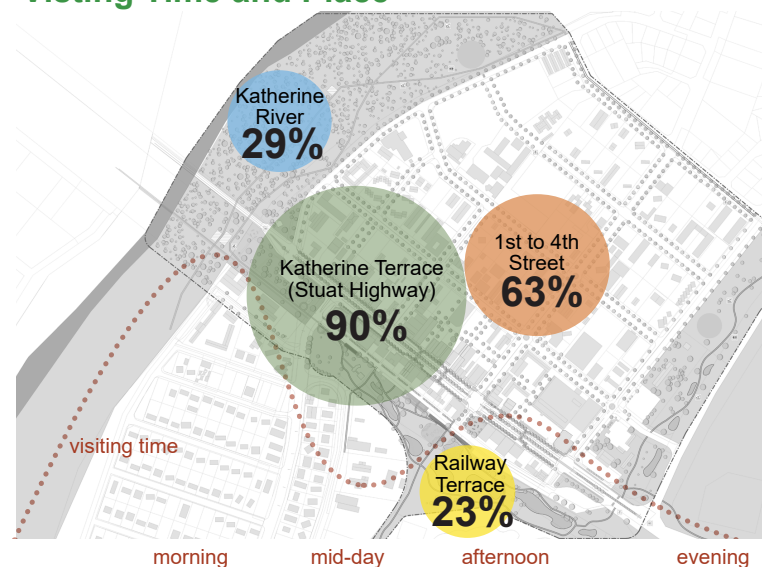
Reasons for Visiting



Key Elements



Visiting Time and Place



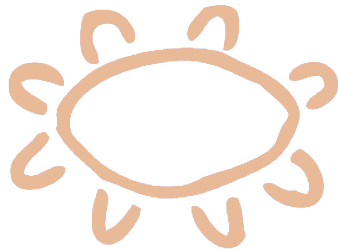


DEVELOPING THE MASTERPLAN FRAMEWORK

PRINCIPLES

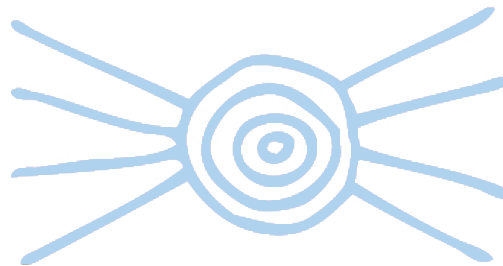
Katherine, a vibrant, prosperous and progressive town with strong social, cultural and community obligations; a renowned place for business opportunities, reconciliation and commitment to the health of its people and the natural environment.

AN ETHOS FOR COUNTRY



PEOPLE

People by providing places to live, be and recreate - individual health



COMMUNITY

Community by providing places to gather, perform and celebrate - social/cultural health



ENVIRONMENT

Environment by providing places for ecosystem services - biodiversity as an indicator or people and environmental health



DEVELOPING THE MASTERPLAN FRAMEWORK

VALUE STATEMENT & OBJECTIVES

PROJECT OBJECTIVES

01 TO SUBSTANTIALLY INCREASE NATURAL AND BUILT SHADE IN THE PUBLIC DOMAIN BY

- Planting new street trees in the Main Street and along Railway Terrace.
- Providing shade structures in the Main Street and the Town Square precinct to supplement proposed street trees.
- Transforming Railway Terrace Park into a green oasis so that Railway Terrace Park becomes the green lungs for Katherine.
- Initiating a street tree planting program for 1 to 4 street precinct.
- Strategically plant shade trees in the Katherine River precinct to improve visitor amenity.



FIG 11.1 POSSIBLE BUILT FORM SHADE STRUCTURE

02 TO ACCOMMODATE 'PLAY FOR ALL' BY

- Considering a multi-layered intergenerational design approach reflecting the needs of all the users.
- Offering nature based children's and water play in Railway Terrace Park.
- Prioritising an attractive streetscape as suitable shop frontage for business owners.
- Facilitating tourist needs such as information, walking and exploration trails featuring local culture, produce and products.
- Accommodating outdoor spaces for social interaction and active play.



FIG 11.2 ACTIVE PLAY POSSIBILITIES

03 TO IMPROVE COMMUNITY CONNECTIONS AND ACCESS TO FACILITIES AND NATURAL ASSETS BY

- Linking the River to the Main Street, Railway Terrace Park and the CBD streets through looped walk ways, footpaths and laneways.
- Substantially upgrading Town Square as the heart of the town. This will include artwork, visitor facilities, planting and interpretation.
- Using green infrastructure ie parks and streetscapes to facilitate social interaction and recreation.
- Invest in facilities accommodating small and large community events and celebrations.
- Highlight cultural heritage and the significance of cultural heritage and its benefit to both the health of the town and the environment.



FIG 11.3 POSSIBLE COMMUNITY EVENTS



USERS AND THEIR STORIES



USER REQUIREMENTS:



- Access tourist facilities, businesses and government services
- Easy parking and space for caravans
- Safety and security
- Wayfinding and information
- Shops and produce
- Information for local community to access parks O'Shea Tce, Railway Tce
- Museum links to Mimi Arts



- Gathering space
- Space for social interaction, recreation and play
- Events space and facilities
- Cultural connections
- Sense of place and ownership
- Doing things together
- Involvement on many levels
- Public transportation



- Playground
- Places to kick a football
- Intimate space for various uses
- Culturally sensitive facilities and space
- Place for large and small groups
- Shade and shelter
- Exercise trails
- Selection of age appropriate play equipment
- Focus on cooling



- Attractive shopfront and main street
- Outdoor dining areas
- Ease parking and access
- Shaded main street
- Safety and security



CHALLENGES AND OPPORTUNITIES

KEY CHALLENGES:

1

Access & Traffic

Pedestrianizing

Rerouting heavy vehicles

2

Homelessness, poverty and petty crime

Education and employment opportunities

Amenities and Facilities

OPPORTUNITIES:

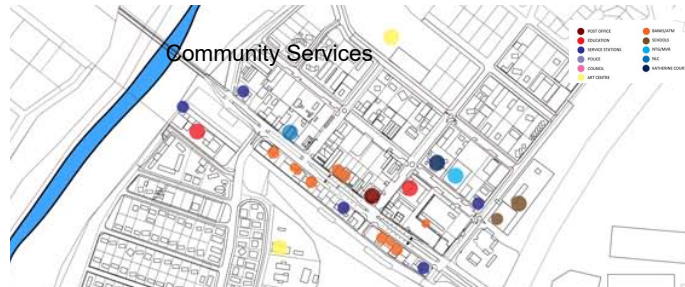


FIG 11.1 Shade covered streets



FIG 11.2 Road Trains that frequently use Katherine Terrace



FIG 11.3 Charles Darwin University Katherine



FIG 11.4 Example Tropical Climate Amenities Block



CHALLENGES AND OPPORTUNITIES

KEY CHALLENGES:



OPPORTUNITIES:

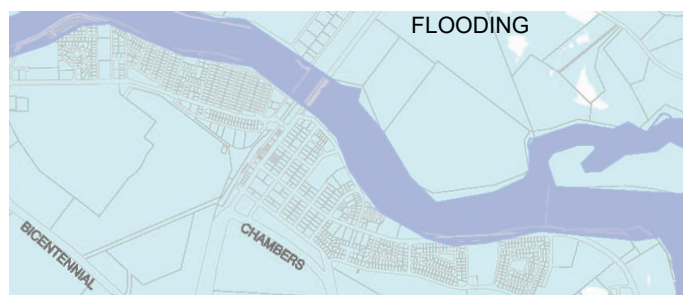


FIG 12.1 Katherine terrace flooding 2006

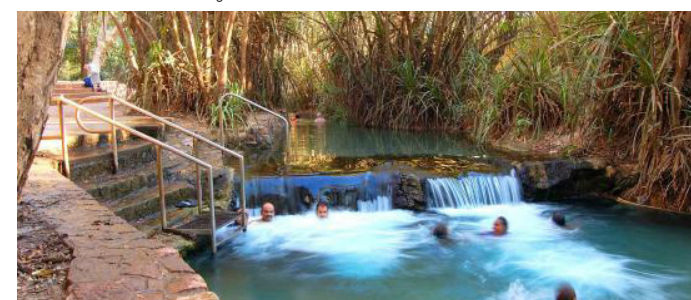
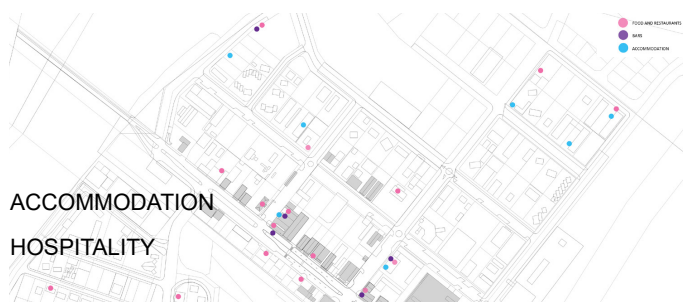


FIG 11.3 Tourist Attraction - Katherine Hot Springs



FIG 11.3 Popular Nitmiluk Gorge, Katherine

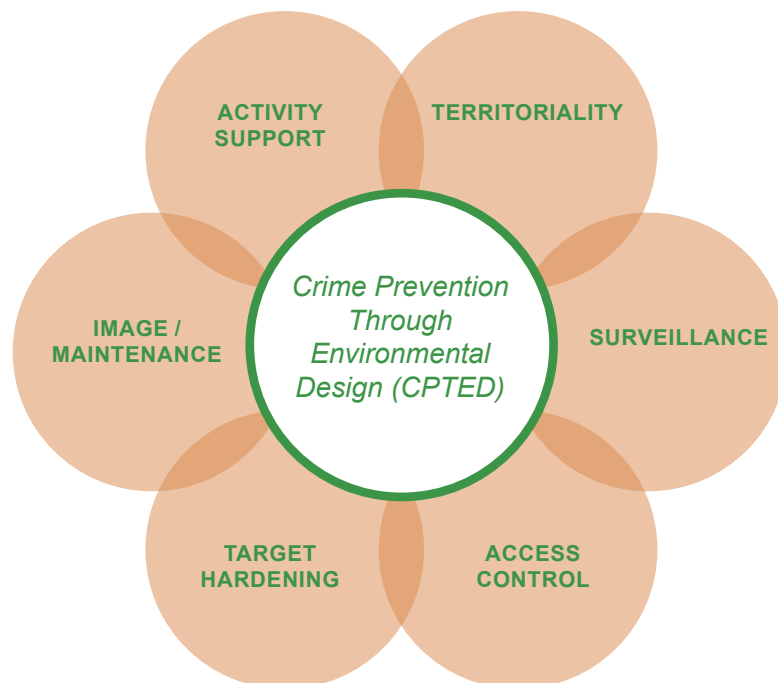
ATTRIBUTES OF KATHERINE



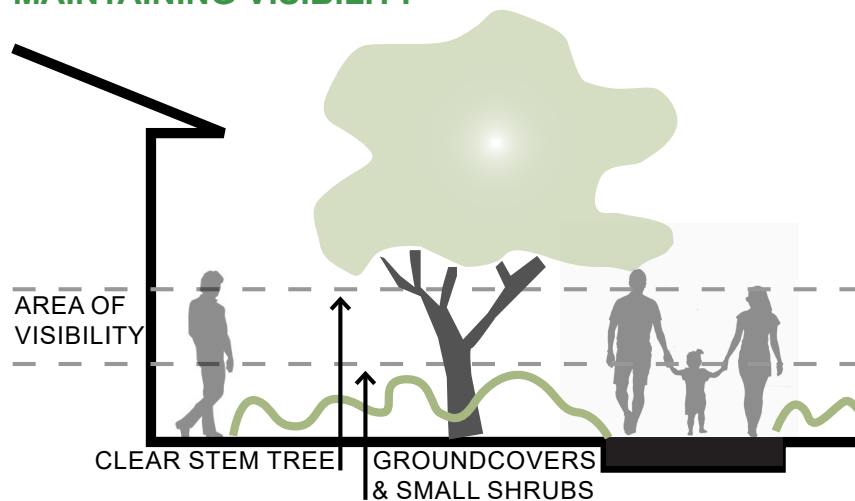


SAFETY AND SECURITY

CPTED STRATEGY



MAINTAINING VISIBILITY



LIGHTING STRATEGY

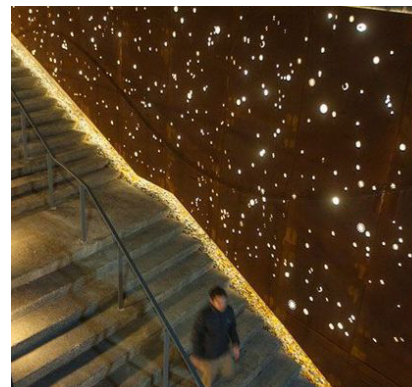


FIG 12.1 Architectural Features

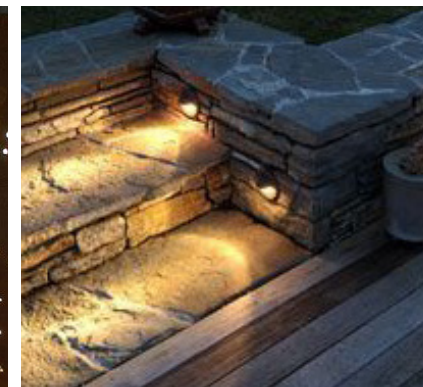


FIG 12.2 Highlight Textures



FIG 12.3 Identity

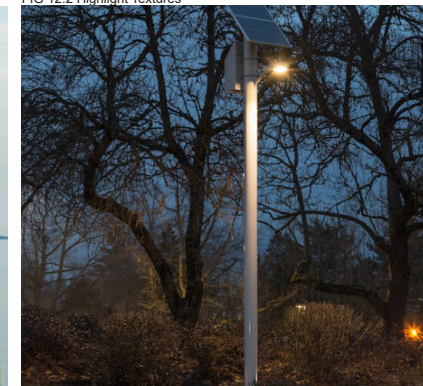


FIG 12.4 Security

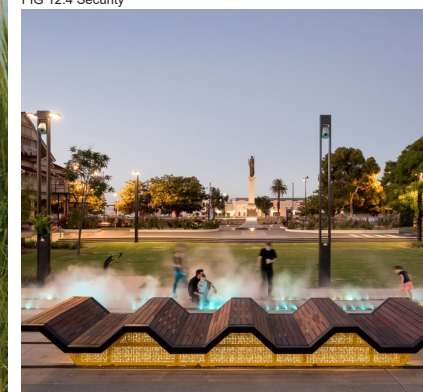


FIG 12.5 Interactive



ENGINEERING SERVICES

Electrical Engineering

A traffic study was undertaken by Tonkin Consulting, whereby the following key concepts were noted for consideration into the Master Plan:

- Implement the heavy vehicle bypasses as outlined by DIPL (Intermediate and Long Term)
- Interface with median modification at intersection Lindsay Street/Katherine Terrace (see Related Projects section below)
- Explore methods of reducing conflict between pedestrians and vehicles at intersection of Stuart Highway and Victoria Highway (consideration of signalisation, footbridge, crossing options)
- Reducing road width of Katherine Terrace
- Reduce the speed limit in the CBD
- Preventing uncontrolled movement and direct pedestrians to designated crossing points
- Providing TGSi on all pram crossings within CBD and realign ramps/crossings
- Accommodating and interconnecting pedestrian desire lines into existing footpath network
- Reducing the road width of Railway Terrace and making Railway Terrace one-way, incorporating crossing options for the street
- Ensure lighting provisions are sufficient, as well as security infrastructure (CCTV)
- Provide ramp facilities as required
- Liaise with Woolworths to provide designated pedestrian crossing point from footpath on First Street to footpath adjacent Woolworths building
- Providing increased disability access parking
- Formalisation of dump point facilities Providing overflow parking near dump point, and increase parking supply along Lindsay Street (per Tonkin 2017 design)



FIG 13.1 Public festival style lighting - Parrtjima 'Festival of Light', Alice Springs



FIG 13.2 Interactive sculptural light installation - Darwin Convention Centre

ENGINEERING SERVICES

Hydraulic Engineering

An assessment of hydraulic infrastructure and proposed works was undertaken by IrwinConsult, noting the following:

Further to our meeting with Power and Water Corporation and based on the current concepts for the Katherine CBD Revitalisation scope it is not envisaged that these works will trigger infrastructure upgrades apart from the existing water meter assemblies which service the existing landscape areas.

It has been identified that the existing water meters supplying irrigation water are not to current PWC requirements for backflow prevention and they will require upgrading.

As a general requirement building structures and large tree planting over Power and Water Corporation infrastructure is not permitted.

In regards to new public ablution blocks the service connections being sewer and water shall be in accordance with PWC servicing requirements, only one service connection point will be provided to each allotment.



FIG 14.2 Example of Hydraulic water playground



FIG 14.1 Artist Impression - Example of Hydraulic water playground



FIG 14.3 Public water drinking fountain.

ENGINEERING SERVICES

Traffic Engineering

A traffic study was undertaken by Tonkin Consulting, whereby the following key concepts were noted for consideration into the Master Plan:

- Implement the heavy vehicle bypasses as outlined by DIPL (Intermediate and Long Term)
- Interface with median modification at intersection Lindsay Street/Katherine Terrace (see Related Projects section below)
- Explore methods of reducing conflict between pedestrians and vehicles at intersection of Stuart Highway and Victoria Highway (consideration of signalisation, footbridge, crossing options)
- Reducing road width of Katherine Terrace
- Reduce the speed limit in the CBD
- Preventing uncontrolled movement and direct pedestrians to designated crossing points
- Providing TGSi on all pram crossings within CBD and realign ramps/crossings
- Accommodating and interconnecting pedestrian desire lines into existing footpath network
- Reducing the road width of Railway Terrace and making Railway Terrace one-way, incorporating crossing options for the street
- Ensure lighting provisions are sufficient, as well as security infrastructure (CCTV)
- Provide ramp facilities as required
- Liaise with Woolworths to provide designated pedestrian crossing point from footpath on First Street to footpath adjacent Woolworths building
- Providing increased disability access parking
- Formalisation of dump point facilities Providing overflow parking near dump point, and increase parking supply along Lindsay Street (per Tonkin 2017 design)



FIG 15.1 Road Train using Katherine Terrace

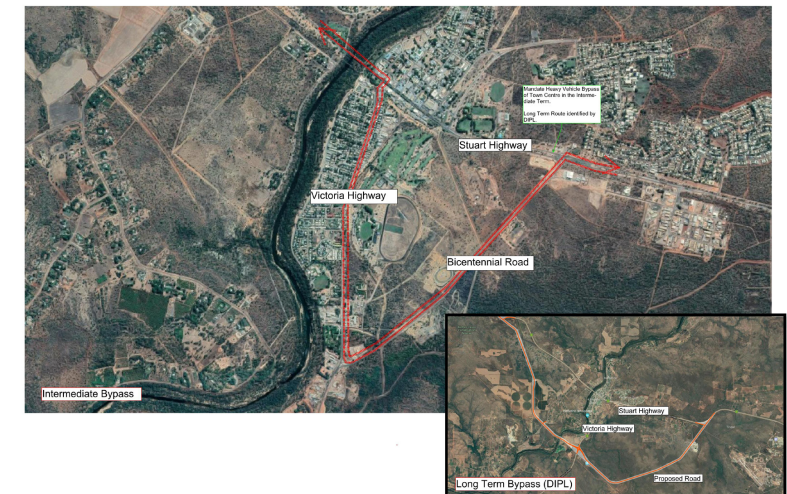


FIG 14.1 Intermediate and Long Term Bypass concepts.



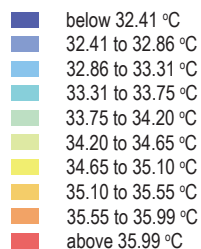
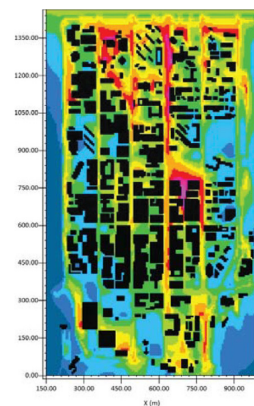
URBAN HEAT ISLAND

Darwin Summer 14:00:00

Reference Model - Wind: 5m/s (NW)

Min: 31.96 °C

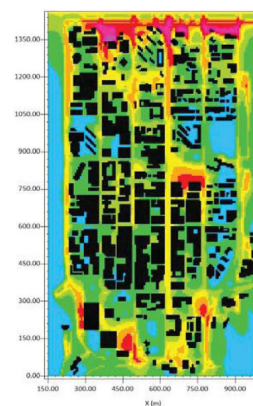
Max: 36.44 °C



Reference Model - Wind: 1m/s (NW)

Min: 32.84 °C

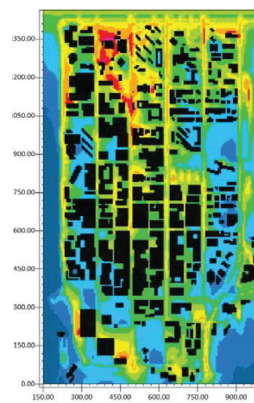
Max: 36.08 °C



Greenery 20 - Wind: 5m/s (NW)

Min: 31.95 °C

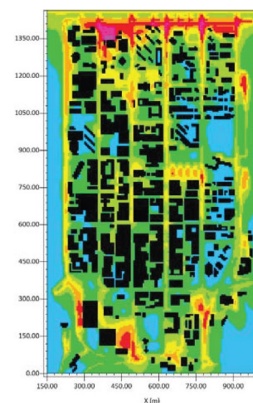
Max: 35.81 °C



Greenery 20 - Wind: 1m/s (NW)

Min: 32.83 °C

Max: 36.05 °C



Estimated average summer 10PM, urban heat island intensity for clear sky conditions, using the park lands average temperature as a reference.

Areas under trees are significantly cooler than roads, footpath and build elements.

The thermal images of Katherine Main Street were taken on 9 May at 11 am following a cool, overcast morning.

Both images demonstrate that the air temperature is more than 10 degrees cooler under trees.



9 May 2019, 11am

Katherine Terrace – adjacent Chiropractor and Laser Clinic



9 May 2019, 11am

Katherine Terrace – adjacent Finch Café and Territory Pharmacy



GREEN PUBLIC SPACE



“Well-designed and maintained parks, streets and landscapes are integral features of a liveable urban environment, improving the wellbeing of local communities through engagement with enriching, diverse and stimulating public spaces.”

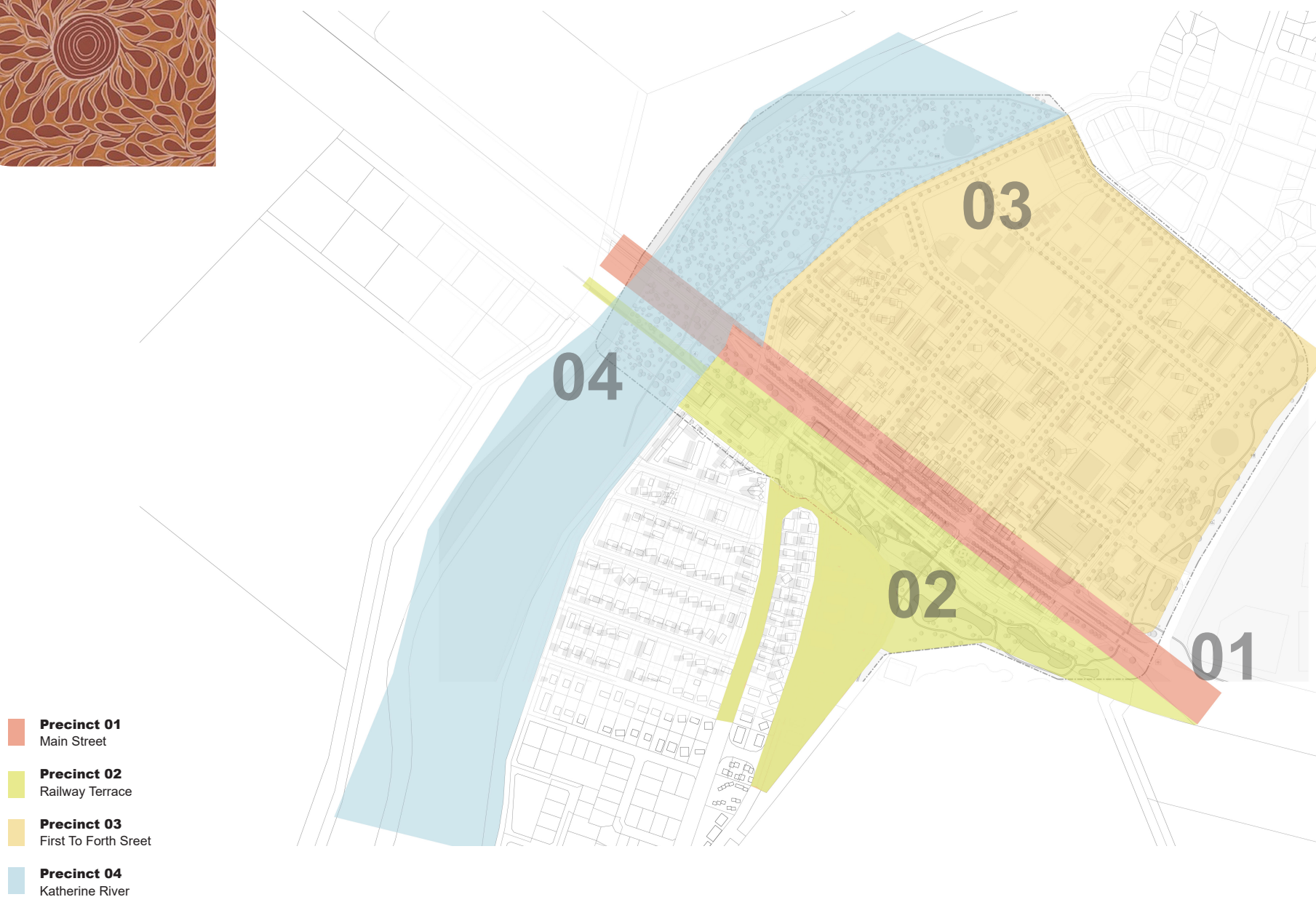
Ben Willsmore, Chapter President,
The Australian Institute of Landscape Architects (South Australian Chapter)
[SOURCE: Creating Greener Places for Healthy and Sustainable Communities]



[SOURCE: Adapted from NSW Greener Places Establishing an urban Green infrastructure policy for New South Wales (2017).]



KATHERINE CBD REVITALISATION - KEY CHARACTER PRECINCTS





OVERALL MASTER PLAN

- 1 Main Street
- 2 Railway Terrace Park
- 3 First to fourth Streets
- 4 Katherine River Trails
- 5 Entry Sculpture
- 6 Katherine Cafe / Kiosk
- 7 Train
- 8 Carpark





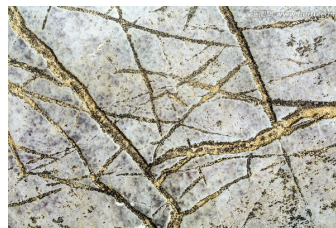
IDEATION - LIMESTONE, GARRAK

LIMESTONE COUNTRY



Limestone Cave

Detail



Erosive Pattern

Abstract



Footpath Pattern

Subsequent to stakeholder engagement 5 key design drivers were identified to underpin the Masterplan design.

They are:

- Limestone Country
- Water
- Wind
- Garrak (Red-tailed Black Cockatoo)
- Long-neck Turtle

GARRAK



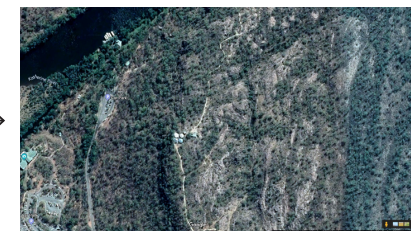
Red-Tailed Black Cockatoo

Habitat



Katherine Gorge

Plan



Tree Plan

Informal Tree Pattern





IDEATION - WATER ,WIND

WATER

Ink Drop Into Flowing Water - Record Every Second



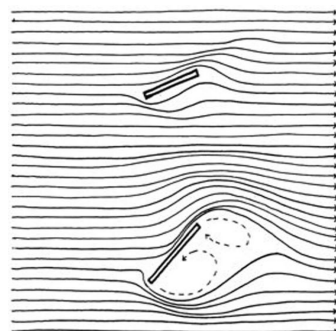
Ponds Shape From Water Flows



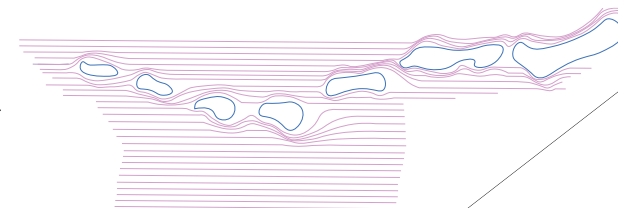
WIND



Wind Rose Diagram in Katherine



Wind Pattern With Pond



Planting Pattern On Railway Terrace





IDEATION - LONG NECK TURTLE, GARRAK

LONG NECK TURTLE



Long Neck Turtle

Detail →



Pattern on Shell

Site Overlay →



Town Square

GARRAK



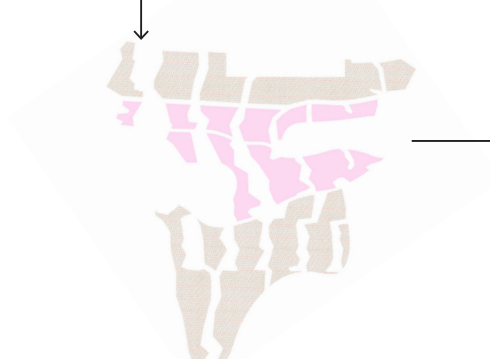
Red-Tailed Black Cockatoo

Detail →



Red Pattern On Tails

Abstract ↓



Abstract Pattern

Site Overlay →





PRECINCT 01 - MAIN STREET

Main Street - A place to see and be seen

Objectives:

- *Shaded places to walk and sit*
- *Alfresco dining and outdoor cafes*
- *Green buffer to traffic*
- *Improved microclimate*
- *Shop front for commercial opportunities*
- *Desirable place to be - seen and to be seen*
- *Good vibe*
- *Laneway to provide connection to CBD streets*
- *Easy parking and access*
- *Function centre location?*

Character:

- *Shady and green*
- *Inviting and comfortable*
- *Safe*
- *Engaging*

Opportunities:

- *Social activation*
- *Cooler temperatures*
- *Safety*
- *Business activation*



PRECINCT 01 - MAIN STREET - SITE PLAN AND PHOTOS



The provision of shade can lower outdoor open temperatures. Heat maps of both Cavenagh Street and of Katherine Terrace show that outside temperatures where there is no shade can be in the mid forty degree Celcius range, whereas under shaded trees and grassed areas the heat maps show temperatures drop to around the mid twenties, a significant difference in temperature and comfort conditions.

The master plan proposes a selection of main street shade trees that are locally found in and around Katherine to provide a distinct and iconic Katherine identity to the main street and for the secondary streets within the Katherine CBD study area.

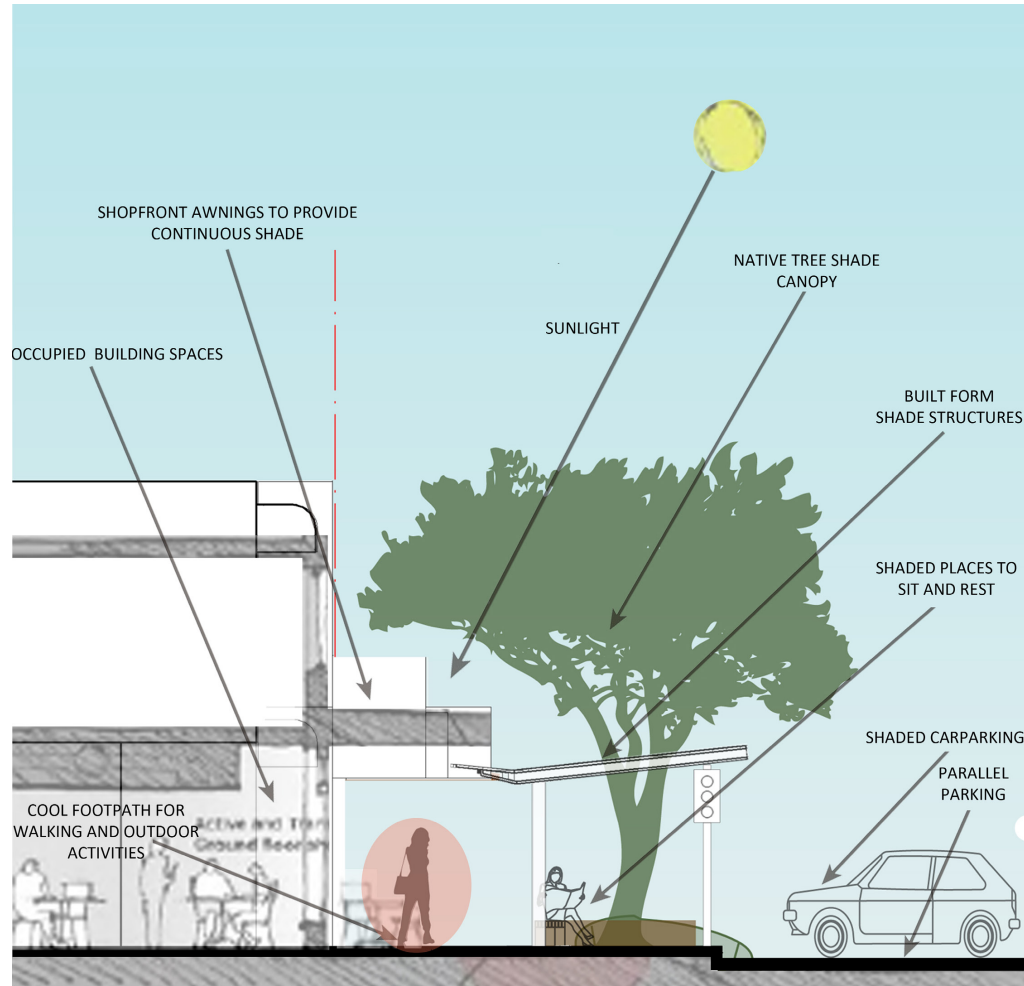




PRECINCT 01 - MAIN STREET - EXAMPLES

Tamworth and Dubbo are comparable regional Australian towns with recent successful streetscape improvements.

Both demonstrate improved pedestrian and bicycle pathways, car parking and street tree planting.



PEEL ST, TAMWORTH



MACQUARIE ST, DUBBO





PRECINCT 01 - MAIN STREET - EXAMPLES

CAVENAGH ST, DARWIN



FIG 16.1 Cavenagh Street, Redevelopment

Cavenagh Street Redevelopment in Darwin is a current proposal including street tree planting, shade structure and varied pedestrian paving to highlight pedestrian amenity and safety. To date, about 80% of these works have been constructed.

SPAIN

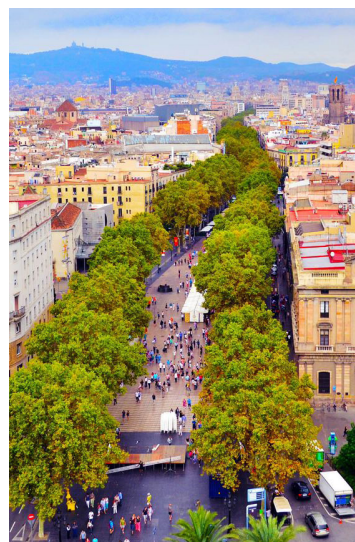


FIG 16.3 Aerial of La Rambla Street, Barcelona



FIG 16.4 Shaded Street, Santa Cruz

LISBON, PORTUGAL



FIG 16.2 Shaded Street, Lisbon

The shaded street scenes in Spain and Portugal creates a vibrant, walkable city. The businesses in proximity to the shade benefit from having access to foot traffic.

Cairns have also implemented shaded walkways into their town as a means of combating warm tropical temperatures and beter connecting public spaces.

CAIRNS



FIG 16.5 Shaded walkways Cairns, Australia



PRECINCT 01 - MAIN STREET - CONCEPT PLAN

FIG 17.1 Artist Impression - Katherine Tourist Kiosk



FIG 17.2 Alfresco Spaces



FIG 17.3 Improved walking and cycling paths



- 1 Shaded places to walk and sit
- 2 Alfresco dining and outdoor cafes
- 3 Multifunctional Community Centre
- 4 Pedestrian Bridge
- 5 Shaded cycleway to Katherine East
- 6 Green buffer to traffic

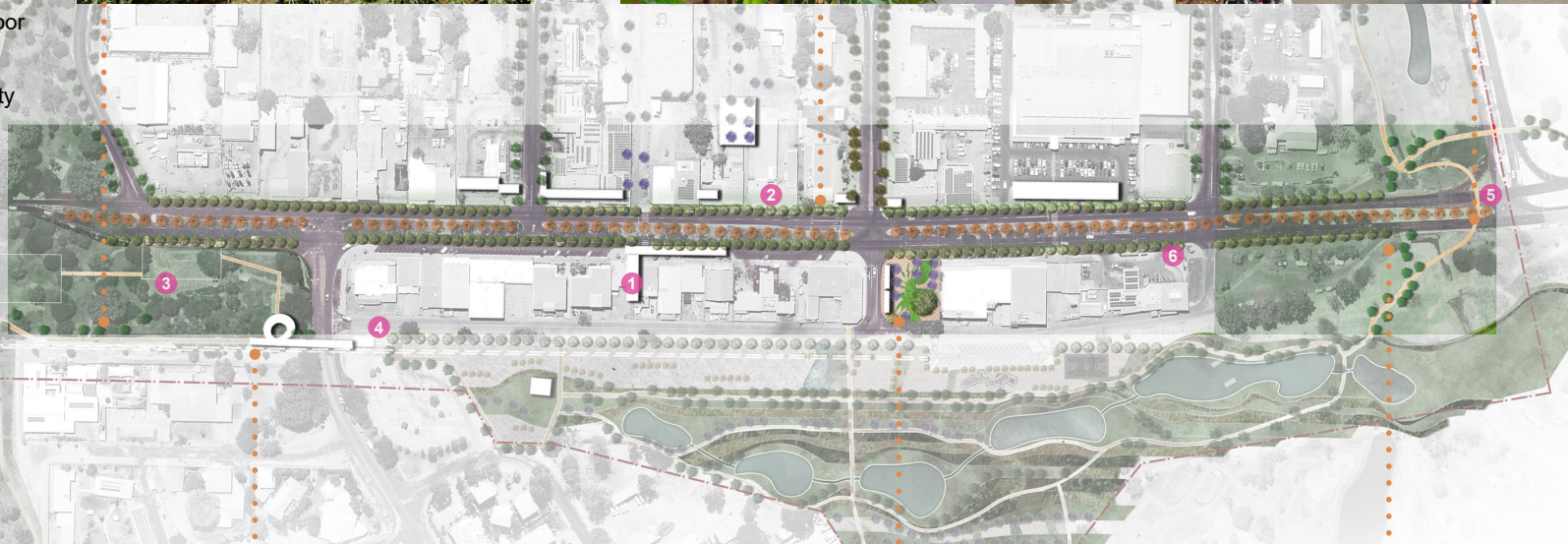


FIG 17.5 Artist Impression - Pedestrian Overpass



FIG 17.5 Artist Impression - Town Square Festival Lighting

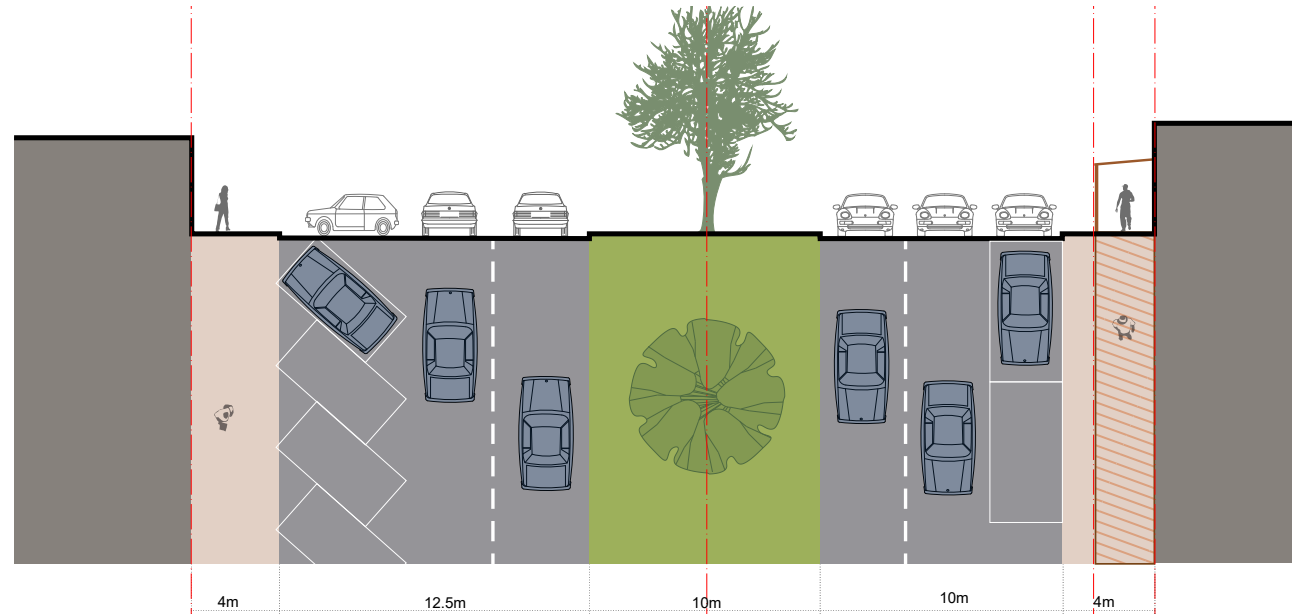


FIG 17.6 Bike Stations



PRECINCT 01 - MAIN STREET - SECTION AND DETAIL

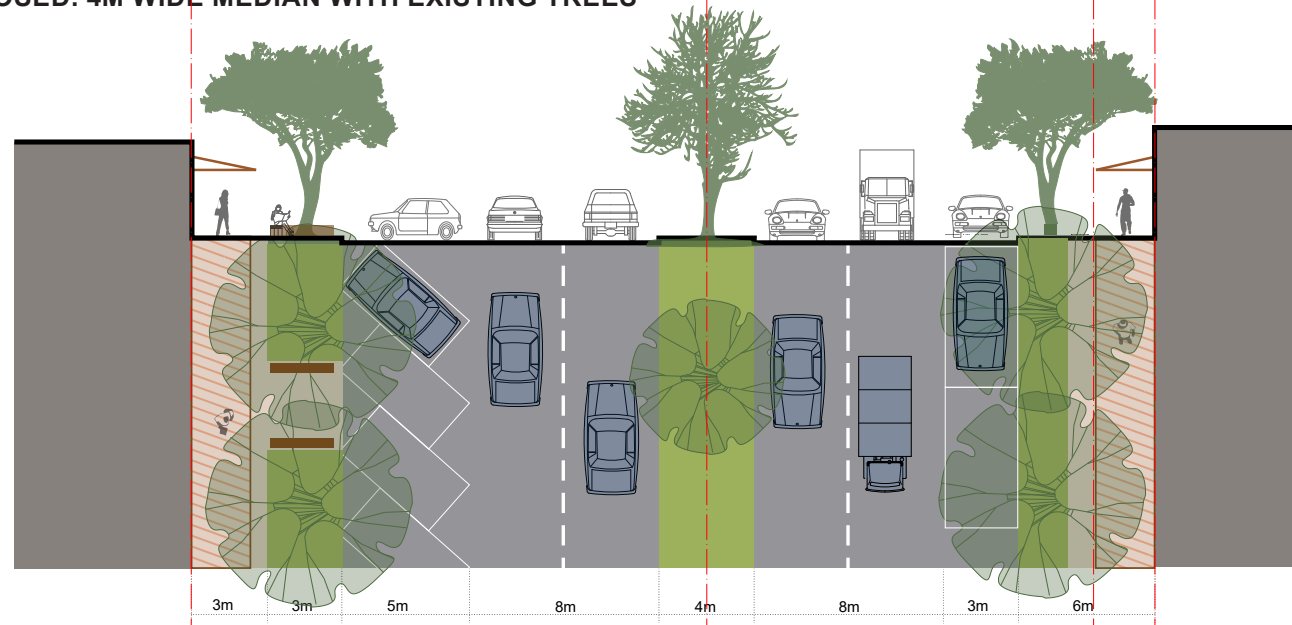
EXISTING: 10M WIDE MEDIAN



Feature:

- 4m wide median with existing trees
- Increased footpath on one side
- Awning on each side
- Reduced vehicle lane to 4m
- Big shade tree with seating below along footpath

PROPOSED: 4M WIDE MEDIAN WITH EXISTING TREES





PRECINCT 01 - MAIN SREET - PEDESTRIAN CROSSING SHADE



PRECINCT 01 - MAIN STREET - TRAFFIC LIGHT SHADE STRUCTURES



PRECINCT 01 - MAIN SREET - TOWN SQUARE



FIG 18.1 Artist Impression - Town Square Kinetic



FIG 18.2 Artist Impression - Town Square Festival Lighting



NORTHERN TERRITORY TREES - KATHERINE REGION



Maranthes corymbosa
Sea Bean
8 x 15 m



Allosyncapta ternata
An-binik
10 x 25 m



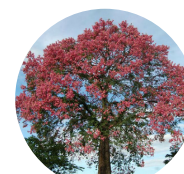
Acmena hemilampra
Blush Satinash
25 x 10 m



Erythrina vespertilio
Bat's Wing Coral Tree
10 x 6 m



Calophyllum inophyllum
Beauty Leaf
20 x 15 m



Bombax ceiba
Red Silk Cotton Tree
25 x 15 m



Eucalyptus camaldulensis
River Red Gum
50 x 35 m



Eucalyptus orbifolia
Round Leaf Mallee
6 x 8 m



Brachychiton diversifolius
Northern Kurrajong
6 x 10 m



Mimosa elengi
Spanish cherry
8 x 10 m



Ficus virens
White fig



Ficus racemosa
Cluster Fig
30 x 15 m Deciduous



Melicope elleryana
Pink Flowered Corkwood
20 x 20 m



Eucalyptus pruinosa
Silver Box
6 x 5 m



Terminalia catappa
Tropical Almond
35 x 20 m



Mimosa elengi
Spanish cherry
8 x 10 m



ILLUSTRATION BUSH FOODS



Exocarpos latifolius
Native Cherry



Capparis umbonata
Bush Orange



Buchania obovata
Green Plum



Banksia dentata
Banksia



Terminalia ferdinandiana
Billy Goat Plum



Crinum angustifolium
Bush Onion



Ficus scobina
Sandpaper Fig



Colocasia esculenta
Taro



Brachychiton diversifolius
Kurrajong



Passiflora foetida
Wild Passionfruit



Cycas calcicola
Silver Cycad



Planchonia careya
Cocky Apple



Solanum chippendalei
Bush Tomato



Cochlospermum fraseri
Yellow Kapok



BUSH FOODS



Ampelocissus acetosa
Wild Grape



Amyema bifurcata
Mistletoe



Antidesma ghaesembilla
Black Currant



Curculigo ensifolia
Grass Yam



Vigna lanceolata
Bush Carrot



Carissa lanceolata
Conkerberry



Hibiscus meraukensis
Hibiscus



Erythroxylum ellipticum
Kerosene Wood



Cymbopogon procerus
Lemongrass



Ficus brachypoda
Rock Fig



Grewia retusifolia
Emu Berry, Dog's Ball



Persoonia falcata
Milky Plum



Themeda triandra
Kangaroo Grass



Ocimum tenuiflorum
Bush Tea-leaf



Amorphophallus paeoniifolius
Bush Pumpkin



PRECINCT 02 - RAILWAY TERRACE PARK - PRECINCT PLAN

Railway Terrace - Lungs of the city



Objectives:

- Variety of recreation opportunities including play and activities for young and old
- Railway history and artifacts
- Pool and riffle system for recreation, amenity and increased biodiversity
- Green and blue infrastructure for people and environmental health
- Living cities agenda - events program and activities
- Arts trail and looped bicycle track
- Railway bridge café
- Kinetic artwork

Character:

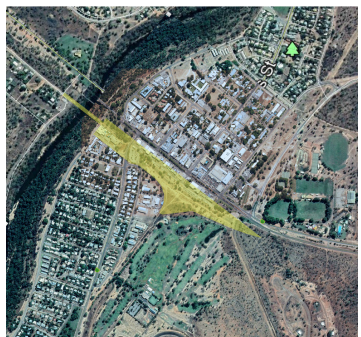
- Multifunctional and multiuse
- Water, green, cool
- Active
- Restful
- Community gathering space

Opportunities:

- Social activation
- Passive surveillance
- Community pride
- Recreation

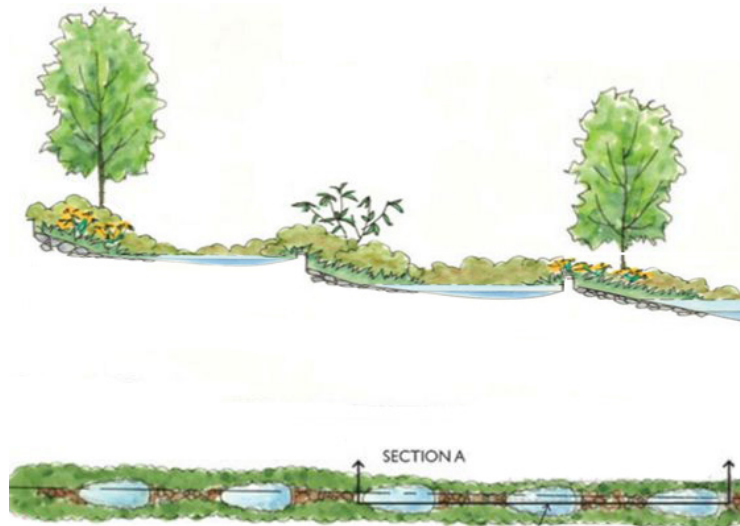


PRECINCT 02 - RAILWAY TERRACE PARK - SITE PLAN AND PHOTOS





PRECINCT 02 - RAILWAY TERRACE PARK - POOL AND RIFFLE SYSTEM



PRECINCT 02 - RAILWAY TERRACE PARK - PROGRAM

NATURE PLAY



WATER PLAY





PRECINCT 02 - RAILWAY TERRACE PARK - CONCEPT PLAN

- 1 Pool And Riffle System
- 2 Water Play
- 3 Historical Railway
- 4 Bush Tucker Trail
- 5 Cycling And Jogging Track
- 6 Nature Play
- 7 Event Space
- 8 Town Square With Feature Shade Trees ,Shade Shelters, And Wind Sculpture.
- 9 Multi-Purpose Court
- 10 Skate Park

1:1000@A1



fig 19.1 Melbourne Hospital Playground, Vic, Australia



fig 19.2 HeritageTrain, Railway Terrace.



fig 19.3 Example of water play, Australia



PRECINCT 02 - RAILWAY TERRACE PARK



fig 17.5 Artist Impression - Pool and Riffle System - Dry Season



fig 17.6 Artist Impression - Pool and Riffle System - Wet Season



PRECINCT 02 - RAILWAY TCE - PEDESTRIAN OVERPASS



PRECINCT 03 - FIRST TO FOURTH STREET

Secondary Streets - Improving and enhancing everyday access and connections

Objectives:

- *Street trees for shaded streets, amenity and increased biodiversity and health*
- *Shaded outdoor spaces for commercial and social opportunities including cafes, shopfronts and pocket parks*
- *Safe and easy access to parking*
- *Improved pedestrian and cycle pathways*
- *Water Sensitive Urban Design (WSUD) where possible*
- *Shaded communal gathering spaces*
- *Laneways as cross connections*

Character:

- *Shady and green*
- *Safe*
- *Inviting*

Opportunities:

- *Business activation*
- *Social activation*
- *Passive surveillance*
- *Improved traffic flow*



PRECINCT 03 - FIRST TO FOURTH - CONCEPT PLAN



- 1 Street Trees
- 2 Shaded Outdoor Spaces
- 3 Safe And Easy Access To Parking
- 4 Improved Pedestrian And Cycle Pathways
- 5 Potential Space For Play Ground

1:2000@A1



fig 19.1 Major Way Finding Signage

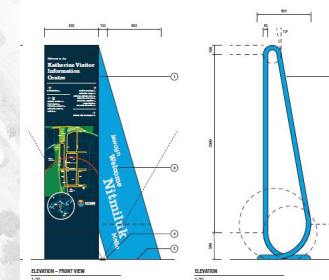


fig 19.2 wayfinding example taken from Katherine Visual Communications & Wayfinding Strategy

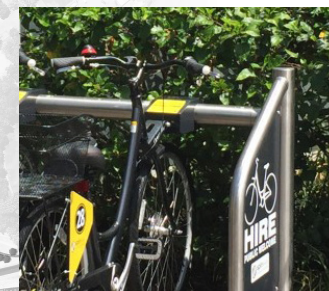


fig 19.3 Improved bike trails for visitors and locals





PRECINCT 04 - KATHERINE RIVER - PRECINCT PLAN

Embrace the natural beauty



Objectives:

- Defines western town entry
- Defining landscape feature
- Improved access and recreation opportunities to include circular track, picnic and barbecue facilities
- Interpretation of natural system - wet/dry seasons, flora and fauna, geology and water systems, indigenous stories and songlines

Character:

- Entry statement
- Welcoming
- Encourage people to stop and visit
- Shady and green
- Walkable
- Informative infrastructure

Opportunities:

- Social activation
- Passive surveillance
- Community pride
- Recreation



- 1 Shaded Places for Picnic and Barbecue
- 2 Western Town Entry with Trees
- 3 Landscape View Point
- 4 Circular Track for Pedstrian and Cycle
- 5 Potential Space for Play Ground

1:1500 @A1

The northern entry into Katherine from the Stuart Highway provides an opportunity to make an entry statement into the CBD.

The outskirts of Katherine are shaded with large well established trees and the grass verges in between are well maintained.

The setting provides a welcoming, shaded and relaxed entry experience into the town. This landscape character needs to be further enhanced and developed to encourage people to stop and take in the community and tourist opportunities the town provides.

Development of safe and comfortable walking paths with interpretive signage of the tees, plants and flowers, animals birds etc will encourage both the community and tourist to take advantage of the natural landscape and river assets.

Defining the tree species mainly melaleucas (paper barks) that are found along the river edge, together with the pandanus and livistonia palms.

PRECINCT 04 - KATHERINE RIVER - CONCEPT PLAN





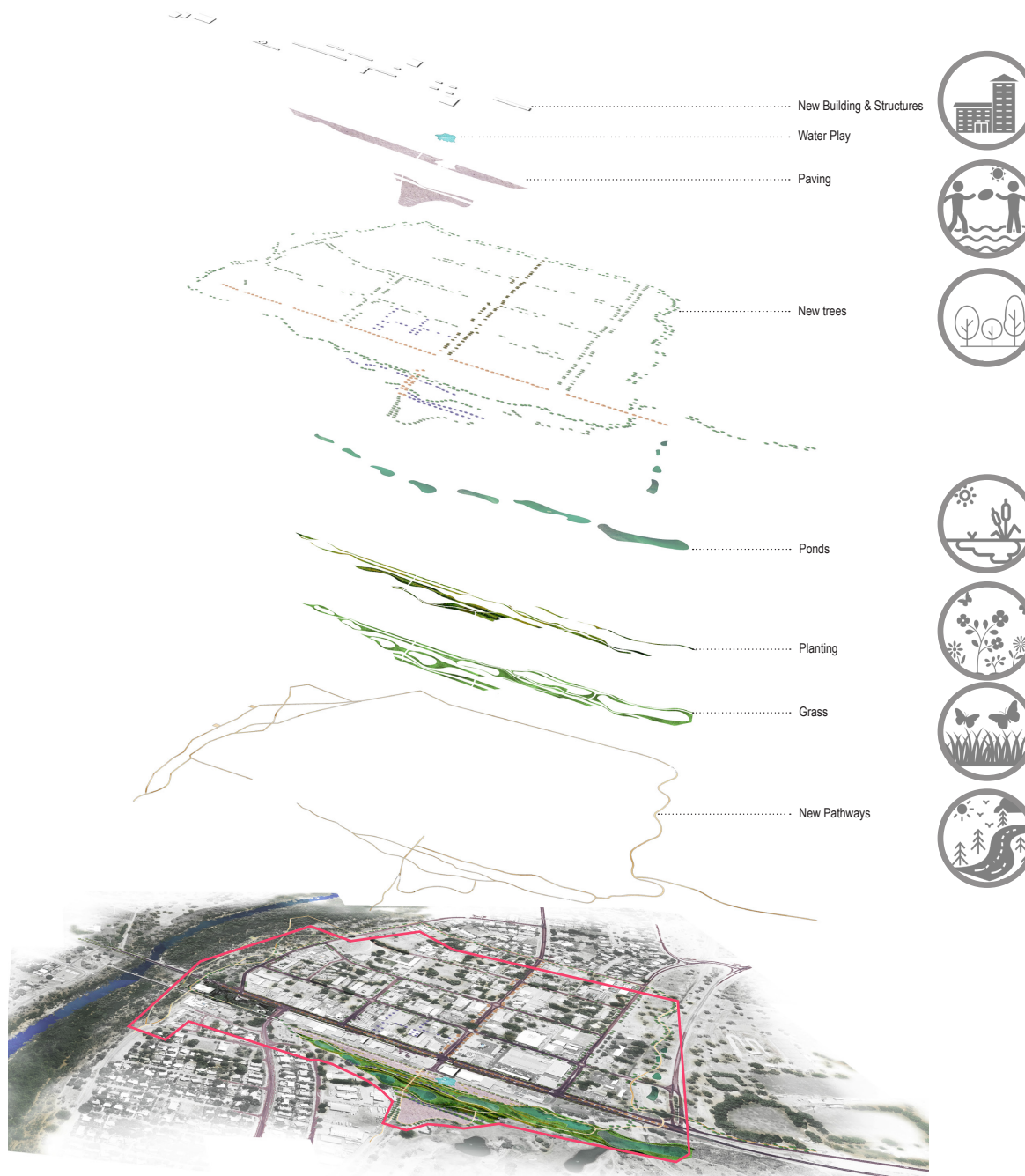
PRECINCT 04 - KATHERINE RIVER - TOURIST KIOSK



PRECINCT 04 - KATHERINE RIVER - KIOSK FROM RIVER

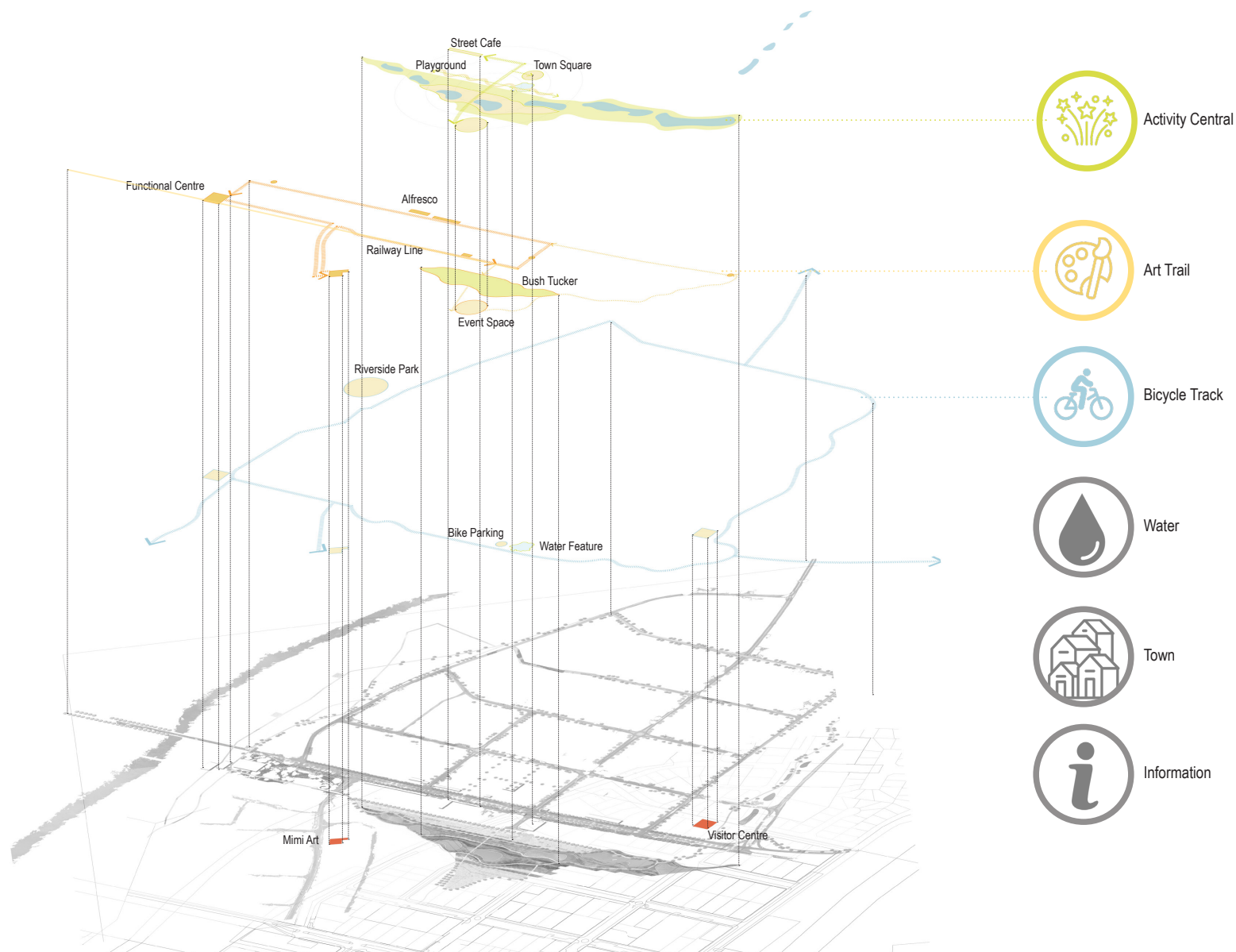


MASTERPLAN - LAYERS





MASTERPLAN TRAIL NETWORK





ART TRAIL COLLAGE

Key words:

- Garrak
- Visual Art
- Dark Emu
- Limestone Country
- Weaving
- Dreamtime Stories
- Rainbow Serpent
- Martpiyin
- Marayn
- Performing Art
- Art's Trail

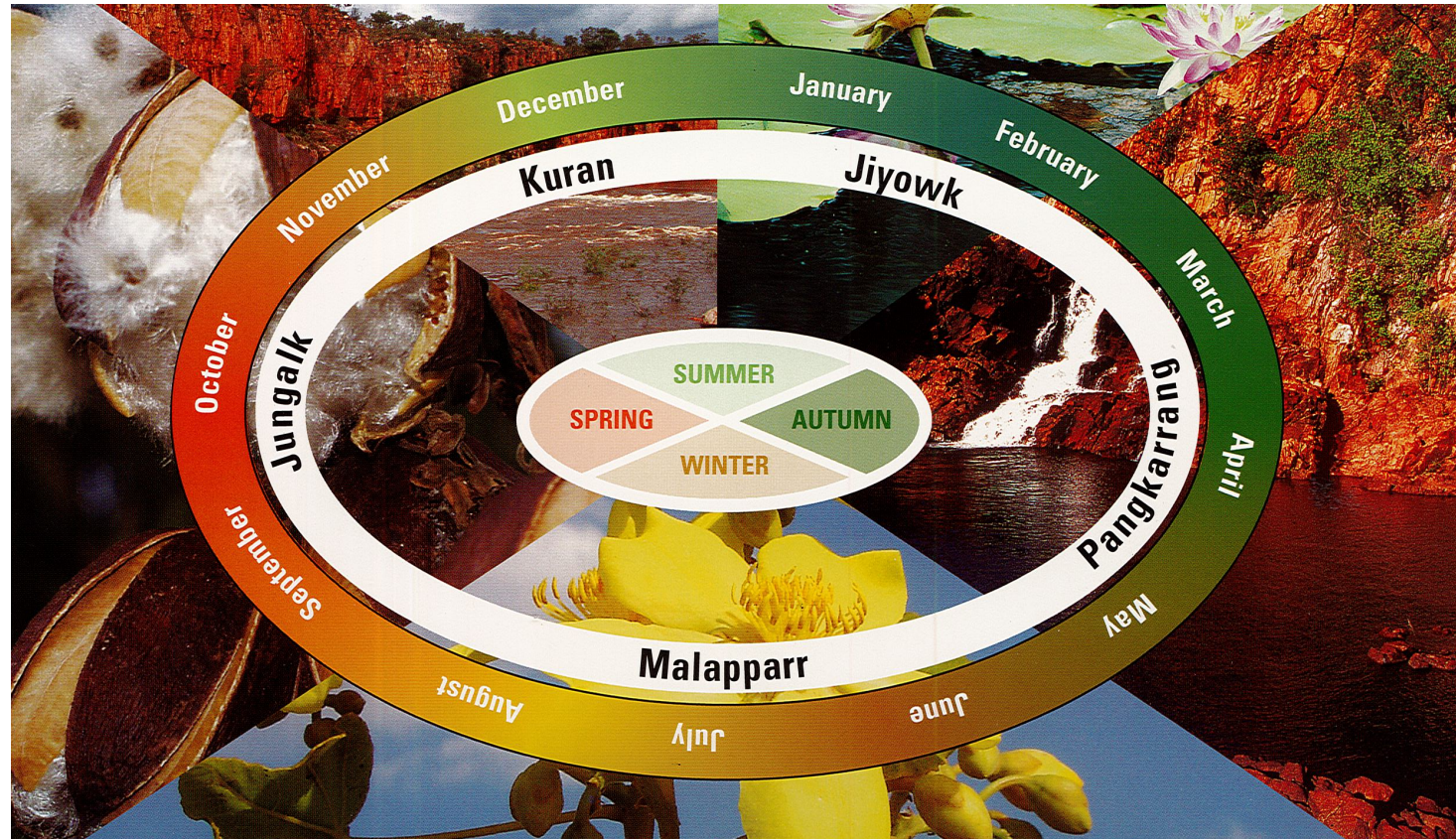




JAWOYN SEASONS

The Jawoyn do not simply refer to the 'wet' and the 'dry' but recognise five major seasons in the annual climate cycle. Within each of these major seasons a range of minor weather changes are also recognised. The major seasons are defined by particular weather patterns and environmental events, such as plants flowering or fruiting or animals displaying annual behavioural patterns.

The figure shows how the Jawoyn seasons relate to the widely accepted western (Gregorian) calendar system of 12 months for each year. The important weather conditions, environmental indicators and bush foods available during each season are shown above. However, it is emphasised that onset and duration of the seasons vary significantly from year to year.



Artist Impression - Pool and Riffle System - Dry Season



Artist Impression - Pool and Riffle System - Wet Season

PHASE ONE



NORTH WEST OF KATHERINE TCE & PART RAILWAY TCE/PRECINCT 1 & 2

ADVANTAGES

- +MAJORITY OF PRECINCT ONE AND PART OF PRECINCT TWO
- +HIGH VISUAL IMPACT TO PEOPLE VISITING CBD - (TOURISTS) ESPECIALLY COMING OR GOING NORTH.
- +SENSE OF CHANGE ACHIEVED ON MAIN STREET
- +COOLING OF CBD AND SHADE TO MAJORITY OF STREET
- +SOME CHANGE AND ACTIVATION OF RAILWAY TCE. INCLUDING ACTIVATION OF THE TOWN SQUARE





NEXT STEPS

| | | | |
|----------|--------------------------------------|---|--------|
| 1 | FINAL MASTERPLAN REPORT | CIRCULATE KATHERINE CBD REVITALISATION MASTERPLAN TO KATHERINE TOWN COUNCIL AND DEPARTMENT OF INFRASTRUCTURE, PLANNING AND LOGISTICS REPRESENTATIVES FOR ENDORSEMENT. | KTC |
| 2 | FINAL MASTERPLAN VIDEO | ENDORSE THE VIDEO/FLY THROUGH FOR PROMOTIONAL PURPOSES | KTC |
| 3 | MASTERPLAN PRESENTATION | PRESENT THE MASTERPLAN TO STAKEHOLDERS AND MAKE KEY FINDINGS PUBLICLY AVAILABLE | KTC |
| 4 | COMMENCEMENT OF PHASE 1 | CONFIRM PHASE 1 AS THE PREFERRED OPTION FOR IMPLEMENTATION - SCOPE - BUDGET - PROGRAM - STAKEHOLDERS | KTC |
| 5 | PHASE 1 LOGISTICS FOR IMPLEMENTATION | ARRANGE DETAILED BRIEFING/WORKSHOP TO COMMENCE PHASE 1 - PHASE 1 SITE BOUNDARY - KNOWLEDGE GAPS - LAND TENURE - APPROVALS - CHALLENGES | AA/KTC |
| 6 | PHASE 1 STAKEHOLDER ENGAGEMENT | PREPARE COMMUNICATION PLAN INCLUDING STAKEHOLDER ENGAGEMENT FOR PHASE 1 | AA/KTC |
| 7 | MASTERPLAN IMPLEMENTATION | PROMOTE THE MASTERPLAN AND DEVELOP FUNDING STRATEGY FOR FULL IMPLEMENTATION. | KTC |

