CONSERVATION AND RESILIENCE

Landscape as Middle Ground

- Prof Penny Allan, Lizzie Yarina, Prof Martin Bryant
- ICOMOS Culture: Conserving it Together Conference
- Suva, Fiji, October 2018
- Theme 4: Heritage at Risk: Climate Change and Disasters
A small village sits nestled between the ocean and lush greenery. The village appears to be partially submerged, with buildings and roads visible through the water. The image on the right shows a newspaper article titled "Washed Away." The article discusses how a village is losing its burial site and houses to rising sea levels. The image suggests a story of adaptation and survival in the face of climate change.
Places named in text are shown with historic names on a map of the Western Pacific.
Horrific devastation caused by Cyclone Winston tore through Fiji, wiping out villages and killing 17 people.

Source:
Resilience

...the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks.

Conservation

...all the processes of looking after a place so as to retain its cultural significance (Australia Burra Charter).

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups. (Australia Burra Charter)
San Francisco

'Hard edge soft centre'
LANDSCAPE ARCHITECTURE STUDIO

cultural identity, economic diversity, infrastructure
Multi-Scalar Mapping

Environmental Risks: Rebecca Freeman, Caitlin Lambert, Leocadie Pelbois

Day 1
- Cyclone Winston hit Ovalau and continued overnight.
- Communication off island was completely lost.
- Electricity and drinking water were cut.

Day 2
- The first fatality was laid to rest in Naukou village.
- Communication off island was completely lost.

Day 3
- The first aid team reached Nadi.
- Australian government announced initial $5Million aid.

Day 4
- First trip from Suva with passengers and soldiers.
- $5Million early recovery aid.
- NZ Defence force Hercules arrived in Fiji carrying 12 tonnes of relief equipment.
- Prepositioned aid equipment from NZ was deployed to the worst hit areas including Ovalau.

Day 5
- Australian defence team deployed to Fiji including medical assistants who travelled to Ovalau.

$2.1 Million for food, tents, medicine
$5 Million live saving relief
$10 Million early recovery
$20 Million recovery and reconstruction

New Zealand
$3.6 Million humanitarian relief aid
$1.5 Million further recovery aid

India
$2.1 Million for food, tents, medicine

Australia
$5 Million live saving relief
$10 Million early recovery
$20 Million recovery and reconstruction

Map of aid following cyclone Winston

0 275 550 1,100 Kilometers
Multi-Scalar Mapping

DAY 1
- Cyclone Winston hit Ovalau and continued over night.
- Communication off island was completely lost.
- Electricity and drinking water were cut.

DAY 2
- No possibility of communication outside of Ovalau.
- The first fatality was laid to rest in Naubou village.

DAY 3
- Australian government announced initial $5 million immediate humanitarian aid.

DAY 4
- First trip from Suva with passengers and soldiers.
- NZ Defence force Hercules arrived in Fiji carrying 17 tonnes of relief equipment.
- Prepositioned aid equipment from NZ was deployed to the worst hit areas including Ovalau.

DAY 5
- Australian defence team deployed to Fiji including medical assistance who travelled to Ovalau.

Environmental Risks: Rebecca Freeman, Caitlin Lambert, Leocadie Pelbois
DESIGN OUTCOMES
cultural life
Currently UNESCO recognises Levuka as a world heritage site for its colonial port town of 1820. This port town is unique as it has gone largely undisturbed since the capital of Fiji was moved to Suva in 1877[1]. What UNESCO fails to recognise is the cultural hybrid and strong cultural landscape existing in Levuka. Despite this, Levuka’s cultural landscape could be seen to fall under the 3 categories which UNESCO use to identify significant cultural landscapes.

The landscape has been clearly crafted by man, the colonial buildings and port in Levuka demonstrating this.

- A landscape which remains to have an active role in society, strongly related to the traditional way of life, therefore the evolution process is still in progress. This can simply be seen by the social and physical structures around the river and how they have adapted to crowding in the hills and growing their feed around them.

- The associative cultural landscape. A Landscape which has powerful virtue and associations rather than material cultural evidence. Displayed in the cultures strong reliance on the land and associations around the water for example in the passing of a chief or significant community member[2]

This design proposal speaks primarily to the second category in displaying and giving aid to the cultural landscape which still plays an active role in Levuka’s day to day life. The design aims to continue the recognized significance of Levuka from the colonial town into the cultural landscape. To tell a more accurate story of the place.

The Burra Charter is a document which sets guidelines for dealing with important places. Specifically also for significant places which are still apart of daily life.

The Burra Charter carries several main ideas which have highly contributed to this project.

[1] UNESCO “Levuka Historical Port Town”
- The place itself is important,
- Do as much as necessary, as little as possible
- Work to protect the fabric of the place
- Work to reveal and or explain the significance
- Work to make the place useful. [3]

This proposal aims to meet these five values doing so in a way which will benefit Levuka socially, functionally, in an everyday sense, and also economically. By expanding the recognized significance further into Levuka’s cultural landscape and the place itself. It begins to reveal the picturesque and singular qualities which draw travellers back to Ovalau and Levuka.
Levuka, Fiji

Levuka is the capital of the easternmost division of the Independent State of Fiji. Founded in 1807, it was designated as the capital by the British in 1854. The town is known for its beautiful colonial architecture and is a UNESCO World Heritage Site.

Levuka was settled by British traders in the early 19th century, and the town quickly became an important trading center. It was later incorporated into the protectorate of Fiji in 1874 and served as the capital of the colony until 1928.

Today, Levuka is a popular tourist destination, renowned for its picturesque colonial buildings and beautiful natural surroundings. Visitors can explore the town's many attractions, including the historic Governor's House, the Levuka Anglican Church, and the Levuka Historic Area, which is home to several significant colonial buildings.

The town is also known for its lively market, where locals sell a variety of fresh produce and handicrafts. In addition, Levuka is a gateway to the nearby islands, which offer a wide range of activities, including snorkeling, scuba diving, and yachting.

Levuka is located on the eastern coast of Viti Levu, the largest island of the Fijian archipelago. It is approximately 90 km (56 miles) east of the capital Suva and is accessible by road or air.
alternative economies
the peak of vanua
LEVUKA COOPERATIVE GARDEN
Merging Fijian traditional life and Tourism
Claire Choi

Living off the land is a traditional Fijian way of life. Today, more than half of the Fijian people work in the agriculture industry and Fiji's top exports are primarily sourced from their land. Meanwhile, tourism has been one of the largest foreign exchange earners over the years in Fiji and has become more resilient to natural disasters as opposed to agriculture.

Even though Fiji has a high level of agricultural production, more than 80% of the food products used for the tourism industry are imported from other countries such as Australia, China, India, and New Zealand [1]. Fiji received over 600,000 tourists in 2010 and the number of tourists grew over the years, which equates to 17 million meals consumed from the average stay of 9.4 days per tourist. The present context provides the potential in merging agriculture with tourism (i.e. agrotourism) that has the potential to strengthen the economic viability and protect their cultural significance [2].

The majority of the tourists visiting Levuka in fact indicate that the authentic food is a key aspect of their travel experience, as they believe that it is essential in understanding the culture of the region. It provides a basis for implementing the Cooperative Garden in Levuka to become more self-sufficient, which in turn brings the benefits for the local agriculture and tourism.

The Cooperative Garden, consisting of a range of agricultural plants, will supply the ingredients for local restaurants and shops as well as being used for cultural (e.g., local and educational events (e.g., school field trip)) [3]. Furthermore, the proposed model makes the site more resilient to sea level rise or flooding by promoting the convergence of stormwater at a slower and controlled rate as a filter medium.

The proposed design will reveal the potential of the site that can expand over time along the streets and ultimately shift the focus of the town from the coastline (i.e., foreign) to the centre of Levuka (i.e., local).
THE BEACH STREET MARKET
Levuka, Ovalau
Paige Boyd

The community of Levuka lost their market tree and much of their waterfront shade during Cyclone Winston in 2016, since then they gather under the verandahs of stores and set up a temporary marquee for the morning market. The community’s relationship with the water has been diminished by the barrier that is the sea wall and the lack of shade by the water.

This proposal for the main street of Levuka will create a gathering point for the community that gives them the ability to reconnect with the sea by guiding them over the sea wall and down towards the water’s surface. A permanent market structure will allow for a bigger market that, as it grows, will draw attention from villages around Ovalau and surrounding islands. The proposed wharf, along with bringing people down to the water, allows for people travelling from other islands in boats to also make that transition over the sea wall and be part of the market and community of Levuka, and the greater region. The increase in large plants suggested in this proposal will create more areas of shade and bring more people from under the verandahs over to a more natural surrounding, while still allowing a view of the shopfronts, directs their attention towards the sea through planting and the visual attraction of the wharf. Improving the planting and seating along the entire waterfront will attract the community to use the whole space. With more shaded seating available along the waterfront, the movement of people to and from these spaces along the sea wall will increase, the movement of people right next to the sea will draw people’s gaze in this direction.

The proposal creates an opportunity along Beach Street for larger community gatherings, it is about repairing what was lost in Cyclone Winston and adding something more that allows for the community of Levuka to enjoy themselves, each other and the water.
Travel times around Ovalau: with its logistics, Ovalau has many market gardens, providing a lot of food for people from the villages surrounding the island, in the market. This is a successful collaboration between small-scale farmers and the local community.
infrastructure
SALA SEED
A new path acting as a seed for Ovalau

Hannah Carson

The island of Ovalau, in heart of Fiji, is at risk due to sea level rise [01]. The main road follows the shoreline of the island and in parts has already begun to erode away presenting a problem when sea level rises. The loss of connection between villages will be a large issue therefore this proposal aims to provide a solution that will benefit for short term and long term effects.

The proposal includes a shift of ‘life’ from the waterfront to allowing a movement of the villages inland to adapt to the changing sea levels. This will be achieved through a walking cycle track that follows the form of the island but moves further inland [02]. The vision is over time the path will become more dominant and when the sea level begins to rise substantially, there is already a network in place to deal with any loss of connection that occurs between villages.

This route will also provide new social spaces for communal and recreational use through interventions along the path located at the ‘back’ of the villages using the topography and moving up into the hills. The structures will be seating, shelters, recreational activities and for domestic use. As the inland topography get steeper the further inland you go, these structures will aim to be designed with the landscape therefore making use of the steep topography creating levels, shelter and recreation to use the space without changing the landform.

[03] The materiality of these spaces will use local materials such as bamboo and timber. To construct the forms that make up and define these areas a single joining element will be used to connect the materials. This element will essentially be the only thing required to allow construction of the interventions using local materials, acting as a small seed element that will work in conjunction with the path to allow adaptation of the islands access route and its people.

This new route will act as a catalyst for potential changes that will be necessary with the current situation in Ovalau providing a resilience within the community through forward thinking and adaptation.
Perspectives
Relationship between existing road and proposed routes with focus on Waikrea Community.

Site Plan
Relationship between existing road and proposed routes with a zoom on focus site Waikrea Community.

Typology One
Simple structures with the ability to be added to and evolve to create different space typologies, for example beginning with a simple shelter or sitting structure.

Typology Two
Recreational elements can be formed through the series of structures.

Typology Three
Structures can be added to and developed to create networks of public space along the new route with the potential for more concrete structures for bus stops in the future.
SHORELINE SYNERGY
Enhancing the waters edge | Levuka, Fiji

Caitlin Lambert

Many islands within the Pacific are severely affected by coastal erosion and environmental issues. In the Fijian Island of Ovalau, specifically Levuka, the increased urban infra structural developments have left the coasts vulnerable to significant damage such as coastal erosion, flooding and damage to road infrastructure.

Through the combination of infra structural and social functions, this project proposes an approach aiming to address the increasing problem of coastal destruction. This will happen by playing with the current sea walls form and function whilst also considering both current and future problems such as the predicted sea level rise of 44cm by 2070.

Focusing on the central role of the coastline, by strengthening the current sea wall to deal with the current issues around water. Implementing a second wall would improve the current attempts at preventing coastal erosion that can then act as a social catalyst.

Following this alteration to the sea wall, encourages new social activities by creating flexible spaces that may be interpreted into new and innovative uses will occur. Embracing the current successful spaces along the waterfront whilst implementing new social spaces that would then make the waterfront a place for the locals to further enjoy.

Through implementing the second wall there is extra support to the current wall which would lessen the physical impact and therefore have less damage through repetitive waves and tidal change. Although sea level rise is not preventable, the creation of a second wall will slow the impacts and damage that would occur.

As the wall strengthens road infrastructure and connections within Levuka and the town as a whole it can then in future, provide better access to boost the town and encourage future tourism strengthening the town itself.
CYCLONE & COMMUNITY SHELTERS
Strengthening Ovalau and Levuka

Adam Jepson

This design project deals with issues of making the community more resilient within Ovalau & Levuka in Fiji. It will help the resilience of the people on the island in two ways, the first for community & culture and the second, natural events like tsunami and flooding.

This design project looks into designing interventions for Ovalau & Levuka, it first of all will provide two strengthening qualities for the people of the island. The first being a design that will help build up community interaction to help with social & mental resilience. The second being a design that will allow protection from natural events, mainly cyclones. This will be done through a network design of individual interventions over the island, starting in the Levuka town. But then to expand out to other sites all over the whole Ovalau Island through to steps.

The design will be a multi-functional seating-shelter that can be articulated by the users to become a safe structure to bunker down in. The intervention will act as a seating space most of the time and allow people to meet up and interact through an activity. Thus helping bring the community closer and more connected to each other. Plus the structure can be transformed into a closed shelter that can be used to protect a small group of people and also have space for emergency & survival equipment inside too. The design shape will be formed to provide protection from the weather elements and withstand it as well, it is done with the use of triangular forms to allow the wind to pass over it and not pick it up off the ground.

The interventions will be paired with the schools for them to use for learning about Fijian cultural activities. The location of the interventions over the island have been chosen initially in the first to steps of application, but the others will be chosen by the settlements and villages for which of the 4 typologies they would need in their location.
Crop Shelter Typology

Site Plan for Shelter Typology 2

The shelter typology is focused on providing a communal space for people renting a space to prepare for sporting games.

Assessment of Crop Shelter Typology

2

Assessment of Crop Shelter Typology

The shelter typology is focused on providing a communal space that can be used for production and cultivation with access to power.

Assessment of Crop Shelter Typology

Everyday Situation

Everyday Situation

Assessment of Crop Shelter Typology

2

Assessment of Crop Shelter Typology

Everyday Situation

Everyday Situation

Assessment of Crop Shelter Typology

2

Assessment of Crop Shelter Typology

Everyday Situation

Everyday Situation
LARGER IMPLICATIONS
• Design as a methodology to negotiate complexity
• Enlarge the area of focus using multiscalar mapping
• Landscape is a useful site for alternative adaptation
• Accommodate quick and slow adaptive cycles
Questions ?