IFLA50 SHARED WISDOM IN AN AGE OF CHANGE 2013 AOTEAROA NEW ZEALAND

HOSTED BY
Lincoln University in Christchurch

ORGANIZED BY NZILA
New Zealand Institute of Landscape Architects

2013 STUDENT LANDSCAPE ARCHITECTURE DESIGN COMPETITION PRIZE WINNERS

FIRST PRIZE *IFLA Group Han Prize for Student Landscape Architecture*	TITLE AUTHOR(S) INSTITUTION	*Blue Pray: restoration of Golbahar post-war zone by new water-centred planning mode* Lin Chensong, Jia Ying, Liu Jijao, Xiao Yao, Zhang Haitian School of Landscape Architecture, Beijing Forestry University, Beijing, China
SECOND PRIZE *IFLA Zvi Miller Prize*	TITLE AUTHOR(S) INSTITUTION	*Terra Nova Ayiti: a landscape between urbanization & agriculture - Port au Prince, Haiti* Florian Strauss TU Munich, Faculty of Architecture, Department of Landscape Architecture
THIRD PRIZE *Merit Award*	TITLE AUTHOR(S) INSTITUTION	*The Tidal Landscape of the Eemsdam* Roeland Meek University of Applied Sciences, Van Hall Larenstein, Tuin en landschapsinrichting, Wageningen UR, Netherlands
JURY AWARD	TITLE AUTHOR(S) INSTITUTION	*Bottoms Up: towards healthier people and landscapes through establishing autonomous sanitation in Dharavi, India* David Heymann, Chris Flawn, Sean Lont Master of Landscape Architecture, University of Melbourne, Australia
JURY AWARD	TITLE AUTHOR(S) INSTITUTION	*Sumner Village: between a rock and a wet place* Ksenia Aleksandrova School of Landscape Architecture, Lincoln University, New Zealand

FIRST PRIZE *IFLA Group Han Prize for Student Landscape Architecture*	TITLE AUTHOR(S) INSTITUTION	*Blue Pray: restoration of Golbahar post-war zone by new water-centred planning mode* Lin Chensong, Jia Ying, Liu Jijao, Xiao Yao, Zhang Haitian School of Landscape Architecture, Beijing Forestry University, Beijing, China

DESIGN OVERVIEW

CRISIS AND CURRENT SITUATION

Afghanistan is located at the junction of East Asia, South Asia and West Asia. On the border between the provinces of Kapisa and Parvan, Golbahar, a district constantly torn by war, has been the battlefield between different forces throughout the Afghan history. The average annual precipitation is 240mm, while the evaporation is 2000mm. The northern mountains hold abundant meltwater which will soak into the surface gravel layer, confining huge amount of water resources in the phreatic aquifer. However, confined aquifer in the region lies deep, making it difficult to dig wells. It is an ancient custom that Afghans use underground canals for water. The Afghan War has aused devastating effects on Golbahar and surrounding areas where were heavily bombarded, causing infrastructure largely destroyed, clean water in short supply, economic structure breakdown and lack of source of income. Diversified cultures in this region have also played as the hotbed of conflicts, many of which are derived from background differences and the lack of communication.

MAIN STRATEGY

Being deprived of available water is a major factor in limiting economic and ecological recovery. Therefore, the design combines the potential energy of the northern mountains of Golbahar and the affluent water resources in adjacent phreatic aquifer, establishes a new underground water supply system that makes use of natural tunnels, the irrigation canals and defense facilities abandoned after war, as well as the crater-scattered terrain. Connect them with the phreatic aquifer orderly to fulfill urban water demand. The new water system will not be affected by season, with low evaporation, steady flow and no other power equipment. The cool water vapour will reach the ground through the tunnel, improving the surrounding microclimate and creating new landscape.

JURY NOTES

This proposal has taken a very real and important issue and manifested a valid, well researched and very well resolved design proposal for a war-ravaged town in Afghanistan. The restoration and recovery of the subterranean aquifer system and the meshing of this with the war remains of bomb craters has produced a surprisingly elegant, appropriate and in some respects a delightful solution. Thoroughly researched, well-expressed through time, grounded in site, and expressed in a clear and accessible manner.

BLUE PRAY

RESTORATION OF GOLBAHAR POSTWAR ZONE BY NEW WATER-CENTERED PLANNING MODE

■ Types of ORIGINAL underground-constructions after the WAR

1 Abandoned Karez

2 Abandoned military caves for hiding

3 Abandoned military tunnel

4 Abandoned military blindage

5 Abandoned air-raid shelter for dwellers

■ Site of ORIGINAL underground-constructions

■ Planning area for plantproduction

■ Developing residential area for plantproduction

■ Destroyed region for transforming

■ Planning region

■ Planning area for animal husbandry

■ Planning residential area for animal owners

■ Old region for transforming

■ River Panjshir

■ Farming area

■ Key of legend

- Major crater-pool
- Minor crater-pool
- Main underground-canal
- Branch underground-canal
- Potential underground-canal
- Waste water
- Old region for transforming
- Planning region
- Area for ecological restoring around a major crater-pool
- Planning settlement area around a major crater-pool
- Planning area for possibly tertiary industry
- Planning area for primary industry (plantproduction and animal husbandry included)
- Planning residential area for industry(plantproduction and animal husbandry included)
- Planning area for ecological leading

Abandoned agricultutal underground-constructions
Abandoned military underground-constructions
Abandoned residential underground-constructions
(the numbers represente Types of underground-constructions in existence after the war.)
NEW underground-canals

■ Order of constructing NEW underground-canals system

Main underground-canals are firstly connected, the source of which is water of unconfined aquifer zone below the mountains. Water inside canals flows back torwards River Panjshir along Golbahar.
Branch underground-canals in the town are connected with original underground-constructions and major crater-pools, which ensures enough water to use in town.
Branch blind-drains around the town are connected then, assisting with the evolution and rehabilitation of Gulbahar Town.

N 0 50 100 200m 400m

MASTER PLAN (1:5000)

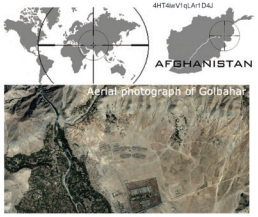
1 SITE

■ LOCATION

Afghanistan is located at the junction of East Asia, South Asia and West Asia. On the border between the provinces of Kapisa and Parvan, Golbahar, a district constantly torn by war, has been the battlefield between different forces throughout the Afghan history.

■ BASIC INFORMATION

The climate of Afghanistan is temperate continental, with great annual and daily temperature differences. Its average annual precipitation is 240mm, while the evaporation is 2000mm. So water supply in Afghanistan mostly comes from groundwater and meltwater.



The war caused devastating effects on Afghanistan, leaving many abandoned agricultural facilities, ravaged land form, and wartime underground constructions.

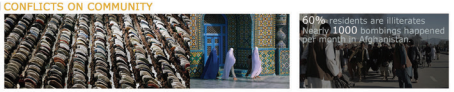
DISASTER

2 EXISTING PROBLEMS

	PRE-WAR	POST-WAR
■ DAMAGE OF ECO-SYSTEM		

■ ECOLOGIC DEPRESSION

■ CONFLICTS ON COMMUNITY



1 For security and defense purposes, the vegetation there was completely destroyed. As a result, the town lost it's vegetation layers. After the war, because of lack of water, it has been difficult to restore this vegetation

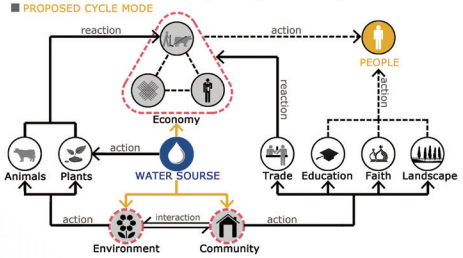
2 The war destroyed most of the infrastructure. There is no clean and convenient water souce. Soil turned out bad--the soil became contaminated after bombing, and could not be cultivated as a result. At the same time because of a lack of clean water and pasture shortage, large numbers of livestock died.

3 The war destroyed public spaces and deprived education, made people are lack of communication and inclusiveness. People's faith was becoming ignored, and cultures were becoming trampled. Sometimes people fight for clean water.

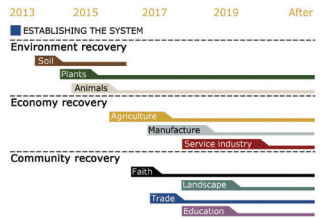
UNAVAILABLE WATER SOURCE is the key reason that limits the recovery of ecological environment and the recovery of first industry-based economic. **THE KEY**

3 MAIN STRATEGY(new cycle mode)

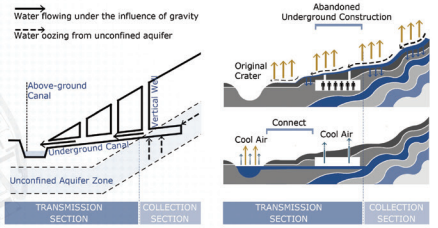
■ PROPOSED CYCLE MODE



■ PHASED EMPLEMENTATION



4 FUNDAMENTAL PRINCIPLE



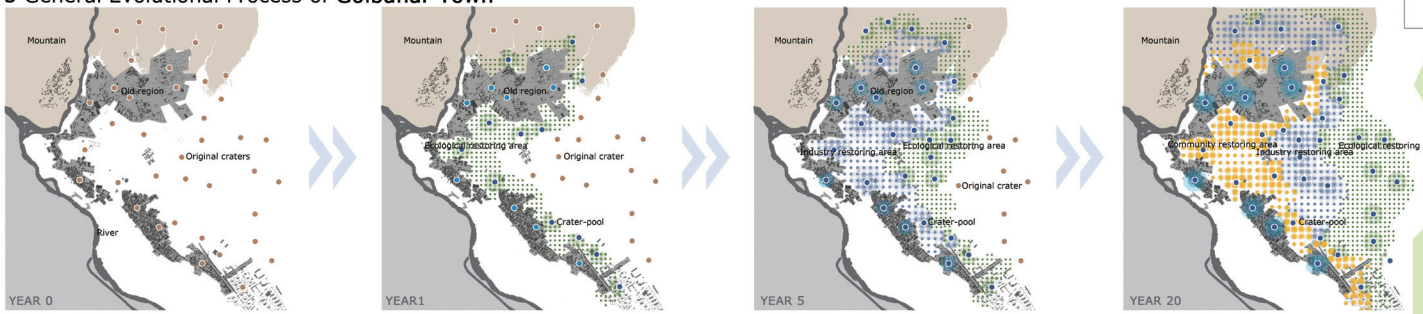
The new underground water system cannot be effected by weather, and have **less evaporation capacity, steady flow rate, gravity irrigation,** and **water fresh and clean.** Cool steam will rise from canals to the ground, **ameliorating microclimate of surroundings.**

- Water flowing direction
- Infiltration
- Evaporation
- Cool air from underground

- Sand and gravel zone
- Clay and consolidated gravel zone
- Unconfined aquifer zone
- Confining bed zone
- Confined aquifer zone
- Bedrock zone

PAGE 1

5 General Evolutional Process of **Golbahar Town**



After the war, the town and the surrounding land affected by bombing, leaving many **craters** and ruins. And vegetation was seriously damaged, the **water supply system facilities was destroyed**.

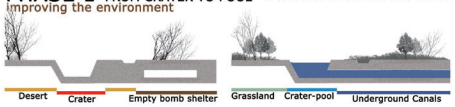
Step 1: Connect the underground canals. First **activate the crater-pools** around the town. It forms humid microclimate at the place near water, where restore ecosystem and vegetation.

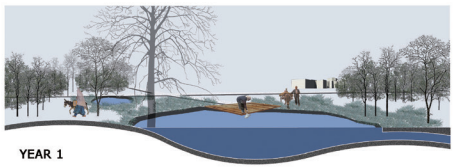
Step 2: When the peri-urban ecological restoration reach to some extent, the soil turns into arable land that can farm. **Primary industry develops** along the peri-urban and **canals** are used to **irrigation.** Then activate the peripheral crater-pools, restore peripheral ecology.

Step 3: The original crater-pool turns into **public space** in the city. Primary industry areas and ecological restoration areas expand to outside with the activation of peripheral crater-pools.

6 Evolutional Process of **A CRATER-POOL**

PHASE 1 FROM CRATER TO POOL
improving the environment

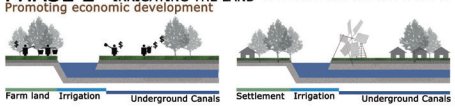


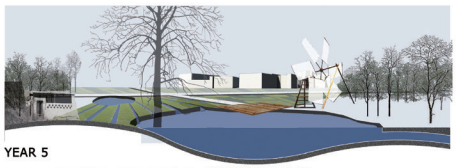


Botanical Strategy for
ECOLOGICAL RESTORATION
Sabina chinensis, Populus afghanica, Saussurea, Tamarix hispida

After "underground water system" formed, craters and underground cavities are full of water, which makes topsoil **moist**. There will be plenty of **green spot** appearance around the crater. Water gushing from craters is clear and economical.

PHASE 2 IRRIGATING THE LAND
Promoting economic development

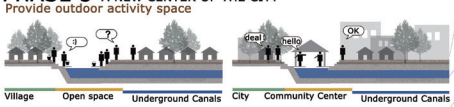


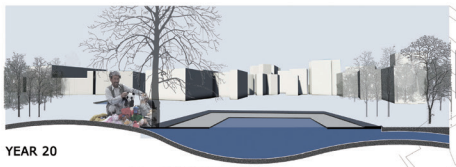


Botanical Strategy for
FARM PRODUCTION
Sorghum, Vitis, Gossypium, Triticum, Punica granatum, Zea mays

As the further nourish of water and humus from life cycle of plants, the soil quality near crater improve, productivity is regained. **Farming fields** appear which will bring economic benefits to craters' areas. Then residents begin to settling in, meanwhile the craters chang on forms to **irrigation**.

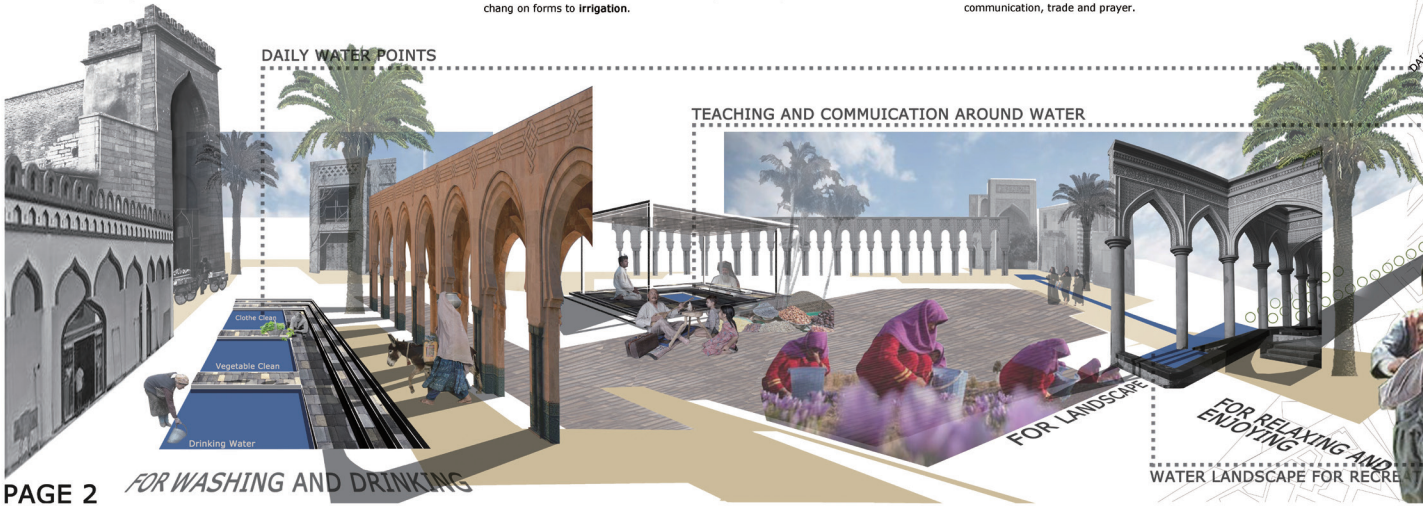
PHASE 3 A NEW CENTER OF THE CITY
Provide outdoor activity space





Botanical Strategy for
URBAN LANDSCAPE
Olea europaea, Tamarix chinensis, Phoenix spp, Hallimodendron halodendron, Morus alba

Driven by development of economic, settlements convert to village then to city. Craters transform to a **public space** that conbines function and **landscape**. Craters not only provide daily use water but also offer a cool and humid space for leisure, recreation, communication, trade and prayer.



PAGE 2

SECOND PRIZE *IFLA Zvi Miller Prize*	TITLE	*Terra Nova Ayiti: a landscape between urbanization & agriculture - Port au Prince, Haiti*
	AUTHOR(S)	Florian Strauss
	INSTITUTION	TU Munich, Faculty of Architecture, Department of Landscape Architecture

DESIGN OVERVIEW

THE SITUATION

Haiti is in deep crisis. The country's society, ecology, economy and infrastructure is at a critical state. Haiti is the poorest country on the northern hemisphere and according to the actual HDI also one of the 30 less developed of the world. The reasons therefore are manifold. Frequent severe flood events, devastating earthquakes, a dysfunctional government and administration, as well as the country's nearly totally deforested landscape is making Haiti in many ways vulnerable. While the population of Haiti is rapidly growing, the country's infrastructure and ecosystem services are highly overburdened. Due to the fast urban growth and the many homeless after the crucial earthquake of 2010, Haiti experiences rising pressure for new urban development. Today in Port-au-Prince (PaP) about 1.000.000 homes are needed. But in the mountainous country, only a few plains offer suitable areas for further settlement. At present, these plains are very fertile and play an important role in feeding the growing population. Additionally, the plains are highly exposed to flood events, further theatening the new settlements. No matter what development will take place, people in the plain will live in areas with high flood risk. They will be exposed to soil liquefaction during earthquakes and their income possibilities decrease by a shrinking soil productivity caused by further soil salinization. But also the biodiversity will further decrease, with all well known effects on people and environment.

THE PROJECT

In close collaboration with the Haitian regional planning commission (CIAT) and Haiti specialists of an American university, different possible scenarios for the plains' future were developed. After spending two weeks in Haiti, and presenting the results to the CIAT the first conceptual ideas were reflected and the scenario's common problems could be identified. Simple, cheap and practice approved techniques were developed to address these core problems through all scenarios. Reforestation, Irrigation, Aquaculture and Biodrainage Plantings are the key to a landscape of reduced risk and productive livability. The elements are either lifelines of an agricultural landscape or they are shading alleys, a bio-sewage system or common ground for inner urban recreation and innerurban agriculture. All scenarios ensure a buffered risk of flooding and earthquake damage. They further increase farmers' income, reduce salinization and improve biodiversity. Through the creation of a framework of landscape infrastructures, based on traditional Haitian measures and inspired by the lakou, a Haitian living form of courtyard communities, the landscape becomes flexible, resilient and productive and can finally accommodate every possible development in the future plain.

JURY NOTES

Addressing an earthquake ravaged and poor neighbourhood in Port au Prince, Haiti, this proposal is a thoroughly researched and well resolved design evocation of landscape opportunities. It is grounded in broad-based and comprehensive research and the developmental opportunity has been clearly articulated. It has been well developed through time, to produce a fulsome and potentially viable structure for the redevelopment of this quake-ravaged community. The presentation is particularly effective for the analytical diagrams, and the clear and expressive illustrations.

THIRD PRIZE *Merit Award*	TITLE AUTHOR(S) INSTITUTION	*The Tidal Landscape of the Eemsdam* Roeland Meek University of Applied Sciences, Van Hall Larenstein, Tuin en landschapsinrichting, Wageningen UR, Netherlands

DESIGN OVERVIEW

The Eems-Dollard estuary is located in the north-eastern part of the Netherlands at the boundary with Germany. With a surface of approximately 290 km^2 it is one of the four major estuaries of the Dutch delta region and one of the two remaining ones with a free outflowing river. Besides being an important natural area, the Eems-Dollard estuary provides an entrance to important harbours. Human interventions such as land reclamation and diking have led to a gradual reduction in the size of the estuarine area. The current economic developments around these harbours continuously require interventions in the estuary in order to keep the shipping lane at depth. Caused by dredging of the fairway and the disproportional form of the estuary that resulted from land reclamation in the past, the characteristic gully system is silting up, the water gets murky and oxygen concentrations diminish, thus hampering the development of aquatic plants, marine animals and soil biota. Over the years most life in the Eems-Dollard estuary has gradually disappeared, resulting in an invisible ecological disaster. Environmental care organizations and harbour industries are constantly arguing, as a result the landscape development stagnates and neither can realize their ambitions.

The “Eemsdam” plan tries to breach this stalemate situation by placing a 33 km long dam in the Eems river, starting in Germany next to the town of Ditsum and ending in the Wadden Sea. The dam divides the estuary in two distinct systems. North of the dam, at the ‘German side’ , a “fast landscape” will develop, with a predominantly industrial character. Harbour industries may be extended and intensified here and in addition the dam will provide opportunities for harvesting wind energy and seaweed cultivation. South of the dam, at the Dutch side, a “slow landscape” will develop, existing of meandering creeks and tidal marshes, with salt meadows and mud plates. At the east side of the estuary, new salt meadows will form a natural coastal defence, leading to reduced tidal amplitudes, thereby defending the land from the sea.

By building a single dam the project “Eemsdam” gives an enormous boost to the ecological value of the estuary and will improve the protection of Germany and of the Netherlands against the rising sea. At the same time new, attractive and inspiring living environments for humans are created, combined with stimulation and extension of economic functions in the region and increased human profits from nature, thus offering important new incentives for developing landscape quality for the region as a whole.

JURY NOTES

A very real project exploring opportunities for ecological restoration along the edge of the North Sea. This Netherlands-based project proposes the restoration of an ecologically significant wetland and the creation of recreational opportunities and wind farms to create a deeply grounded and potentially viable design proposal in northern Europe. The presentation is very well supported by excellent diagrams and sketches, clear and well expressed diagrams, and illustrates a deep understanding of not only the ecology but also the coastal geomorphology and hydrology of this region. A thoroughly believable proposal, appropriately vested in site and the opportunities and issues thereof.

JURY AWARD	TITLE	*Bottoms Up: towards healthier people and landscapes through establishing autonomous sanitation in Dharavi, India*
	AUTHOR(S)	David Heymann, Chris Flawn, Sean Lont
	INSTITUTION	Master of Landscape Architecture, University of Melbourne, Australia

DESIGN OVERVIEW

BOTTOMS UP is a localised and autonomous suite of potential solutions to the endemic ongoing disaster of sanitation in Dharavi, India. This is a problem that profoundly affects the health of people and landscapes. Insufficient sanitation facilities and infrastructure leave residents with nowhere 'to go' and in many cases this leads to human defecation being deposited directly into the landscape on a daily basis. The western paradigm of an infrastructure rich sewerage sanitation system does not, and cannot physically translate to the context of informal settlements such as Dharavi. This situation is not new, and whilst many overarching plans attempt to remedy the situation, their top down, plan based approach, proves ineffective in providing a formidable outcome that addresses the local contexts and needs of people and place.

BOTTOMS UP is a sanitation system designed specifically within the framework of Dharavi and three chosen test communities (Nagars). The industry and demographics of these neighborhoods are carefully integrated into a suite of landscape solutions.

In Koliwada, Dharavi's oldest fishing Nagar, BOTTOMS UP turns waste into composting floating gardens. Recycled barrels catch waste from existing canal side drop toilets, preventing sewage from entering the waterways and canals.

At Compound 13, Dharavi's major recycling hub, we take excess materials and utilise them as roof top garden defecation zones, convert an elevated water pipeline into a high line garden and easy access drop toilet Point of Defecation (POD) and create a floating canal garden system for the Nagar's many workers.

In Kumbharwada, Dharavi's largest pottery district, we use human waste as fuel to create 'poopots,' tackle road side defecation by introducing roadside poopots, harness biogas, create safe space for women to defecate, and transform a central railway corridor into an urban farm land with defecate as its major productive source.

JURY NOTES

This project excitingly takes the problem of sanitation and grounds it firmly in the discipline of landscape architecture. It develops appropriate techniques to ameliorate the reality that 2.6 billion people do not have access to a toilet, by proposing systems for effluent management and reuse in a way that will be ecologically beneficial and contributes significantly to health and other outcomes. The work was well developed through analysis and well and clearly expressed in a series of diagrams and illustrations. This team is to be commended for making accessible a topic that would not ordinarily be considered by landscape architecture, and for the witty and entirely appropriate way in which they presented this project.

JURY AWARD	TITLE	*Sumner Village: between a rock and a wet place*
	AUTHOR(S)	Ksenia Aleksandrova
	INSTITUTION	School of Landscape Architecture, Lincoln University, New Zealand

DESIGN OVERVIEW

Sumner Village lays South-east of Christchurch, New Zealand, located in a seaside valley amidst the rolling Port Hills. Set on a striking interface of hills, cliffs and ocean, Sumner has long been dubbed Christchurch's playground, offering a range of recreational outdoor activities and a boutique village center. However, almost isolated by its geographic constraints, Sumner is currently facing threats from natural disasters, along with a long recovery process following the recent earthquakes of 2010-2011.

The long-term effects of the earthquakes include continuing seismic activity and liquefaction due to Sumner's naturally high water table, and the continuing danger of rockfall on the hillsides that surround Sumner. Sea-level rise is another long-term issue that will alter much of Christchurch and Sumner in the coming years. With the current rate of rising, the main access into Sumner will be under water by 2090, while the effects of storm waves on the village will become more pronounced. The sea level will also increase Sumner's water table, meaning any seismic activity will be followed by liquefaction.

Sumner's recovery will be dependent on the building of future resilience at multiple scales. On the larger scale, linking Sumner back into the wider recreational network of Christchurch will be one of the major steps towards recovery. Raising the main road to Sumner several meters will protect the main access from the rising tides on the North and from rockfall on the South front. An extended jetty and breakwater at Scarborough Beach will allow for access from sea in case of an emergency to drop off any supplies or pick up waste.

Almost all of the red-zoned land around rockfall areas will be converted to Geotech-engineered protective earth bunds, which will act as a barrier to large rocks in the case of future seismic activity. On the inner sides of these bunds ecological regeneration will take place, improving Sumner's biodiversity and serving as yet another tourist attraction. The creation of a new sea wall structure along east beach will protect adjacent residential areas from increasing storm surges and higher water levels. It will also create a new dual-leveled network of open spaces and nodes of activity, each accommodating different uses. Activities ingrained in Sumner's culture such as surfing, skating, cycling, fishing and public art will be well accommodated within this man-made landform. This recreational celebration of the coastline will counteract the current loss of open space due to rockfall, increasing tourist numbers and becoming a vital part of long-term recovery and resilience for the village.

JURY NOTES

A lovely design proposal for a quake-damaged coastal suburb of Christchurch, New Zealand. This design makes full use of clear analysis to develop an exciting and innovative design proposal. The project very aptly explores approaches to mitigating and managing rising sea level, expressing memory through earthquake-based memorials, and through redevelopment of a village centre badly damaged through recent earthquakes suffered by the community.