

LANDSCAPE ARCHITECTURE NEW ZEALAND

SUMMER 2013/14

#20



CONTENTS^{LA}

ON THE COVER

A bright yellow pathway
abuts a boardwalk at Mapua
Waterfront Park. *p.22*
Photograph by Patrick Reynolds.



AGENDA 5-19

"Heaven above, Suzhou and Hangzhou below";
Ian Henderson revels in the earthly delights of
six Chinese heritage gardens. *p.10*

Chris Bentley explains the low-impact design
implemented at an eight-part Chinese park. *p.14*

New Urban Shores, thoughts on creating better
cities through adaptive urbanism. *p.16*



WORK 21-36

Mapua Waterfront Park, Nelson. *p.22*

Newtown Park Apartments, Wellington. *p.30*



REVIEW 37-48

Matthew Bradbury muses on the outcomes
of a new landscape architecture course. *p.38*

Legal: The premium for heritage protection. *p.40*

Planting guide: Capital punishment. *p.46*

Addendum: Signing off. *p.48*

New urban shores

Urban designer Bernd Gundermann summarises the key ideas of *New Urban Shores* – a manifesto of sorts, recently published in booklet form – that describes a new paradigm for adaptive urbanism based on the special characteristics of the land.

Words by Bernd Gundermann

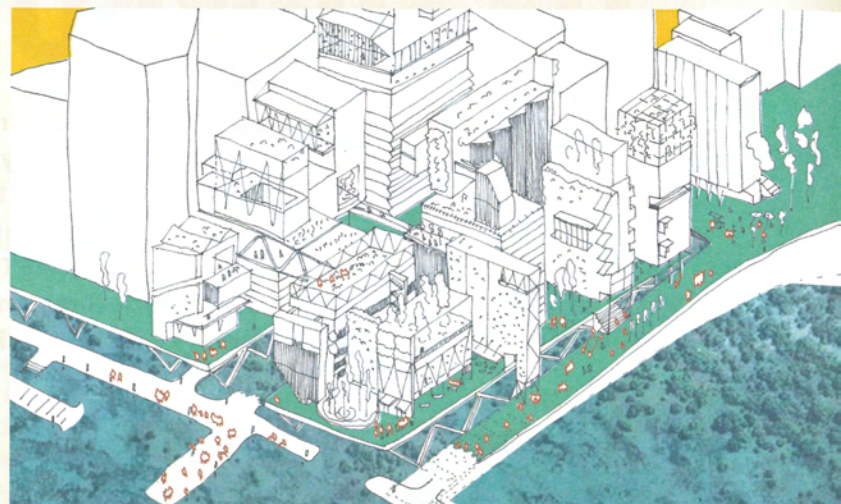
Ever since their establishment thousands of years ago, cities have been the built representation of their society's culture, values and economy. As a result of climate change we are becoming increasingly aware of the natural environment, and how we respond to this challenge will shape our cities for the future. As most urban metropolises are situated along the world's coasts, the new paradigm of 'Adaptive Urbanism' must begin with the shores.

Urban shores, like the cities they envelop, are dynamically shaped by historic and present conditions. Here is where city meets sea; a unique expression of the individuality and distinct character of a place. Since 2009, more than half of New Zealand's population is living in one of four main cities.

As an increasingly urbanised country, it is important that initiatives are applied to our cities in order to achieve significant change. We have one of the most beautiful countries in the world, but our cities are no complement to this natural benchmark; designed almost exclusively to meet basic functional requirements with minimal investment, they are an increasingly outdated representation of American models. Our city coasts are lined with tank farms, elevated roads, ports, and sea walls; in general, we have barricaded nature with concrete.

However, our youthfulness is an advantage; New Zealand cities don't have the same embedded urban structures and historical constraints typical of those in Europe. This gives us some manoeuvrability and opportunities to craft the future of our cities away from sterile concrete configurations towards more natural, sensory environments. In lieu of any innovative approaches of coping with sea level rise, cities around the world are continuing to construct hard-engineering defences. We suggest that by aligning with nature instead of fortressing against it, our urban design paradigm can shift to be far more integrated with the natural environment, taking advantage of nature's own adaptive resilience. As coasts are the most threatened by climate change they should lead a new way of thinking.

New Urban Shores defines "shore" as not merely the shoreline (where land and water meet) but rather the land along the edge of a sea. Our proposal is to soften the edge, blurring boundaries between land and sea, reintroducing natural landscape back into the city to enhance lifestyles, protect the coast, and place our cities among the most attractive in the world.



CHARGE the city with landscape

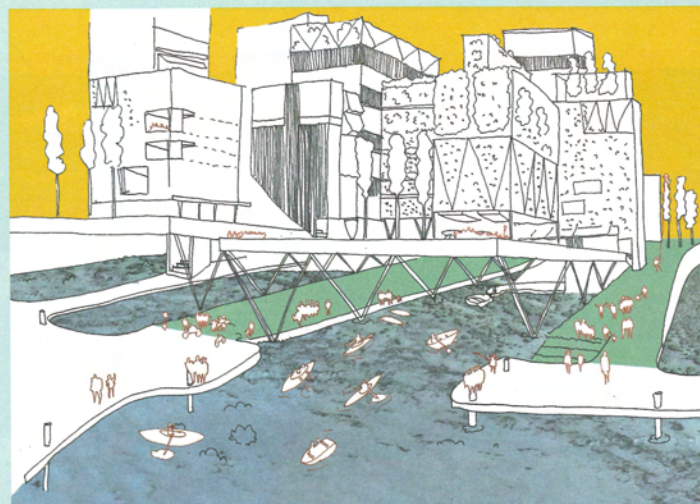
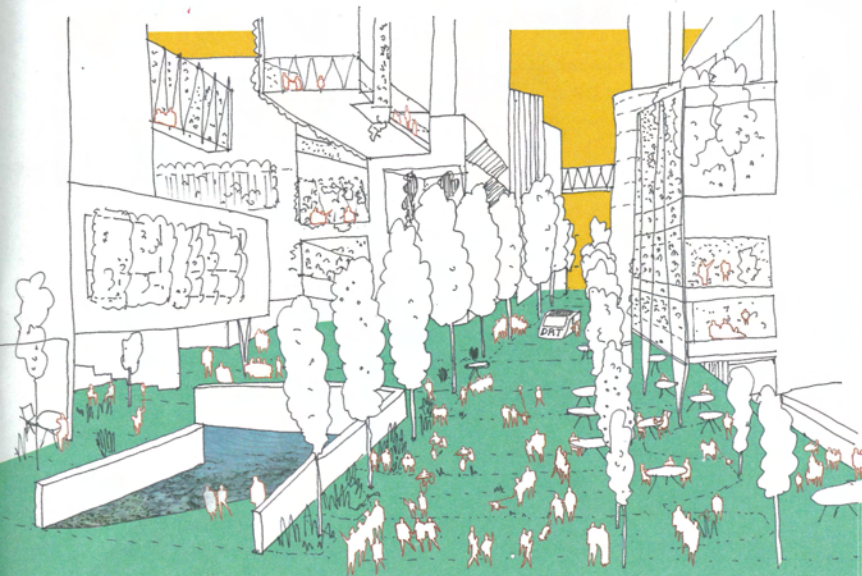
New Zealand cities nestle within a unique and diverse natural landscape, but these breathtakingly beautiful landscapes stop at our cities' edges, giving way to highly engineered, characterless, urban environments. The generic facades of the buildings are surrounded by concrete footpaths merging into asphalt roads, dividing the city in all directions. Single trees are boxed in and organised along a grid. The water, though just on our doorstep, is untouchable. As a result, many tourists make a fleeting visit to the city but quickly move on to natural attractions elsewhere. By bringing the appeal of New Zealand into the city, we can add a new dimension and sensual experience to a currently sterile urban environment.

Softening shore edges can play a fundamental role in introducing landscape into the city. Instead of hard engineering solid concrete walls that act as a barricade between sea and city, we can use permeable surfaces, introduce a substantial increase in plantings, and incorporate wetlands that will naturally absorb the power of tides and storm surges. Permeable paving, 100 per cent recyclable with high load-bearing capacity and easy to maintain, can replace most hard surfaces, absorbing and retaining rainwater and reducing pressure on infrastructure. A reduction of asphalt will allow more space for indigenous planting and mass plantings will stabilise the soil and slow water run-off, filtering pollutants before they reach the sea. Green roofs work in the same way, absorbing excess water and utilising space otherwise lost by the footprint of the building, while providing enjoyable outdoor spaces. This reintroduction of nature can mitigate the urban-heat-island effect (when warm air rises, creating clouds and increased rainfall downwind of the city), and such strategies will have a flow-on effect of increased bird and marine activity as a result of more food sources and habitats. Encouraging biodiversity will not just vitalise urban lifestyle, but will replace our currently artificial environments with the harmonising power of nature. By charging the city with landscape and eliminating the boundaries between the natural and built environments, we can establish measures and principles that can boost both the environment and the occupants' perceptions of it.

HUMANISE the public space

It is no coincidence that waterfronts are often cut off from the cities which they surround. The boom of the private motorcar occurred after the establishment of New Zealand cities, leaving the waterfront as the only remaining Crown-owned land available to develop transport infrastructure. Today, these multi-lane roads are a wide and dangerous barrier between pedestrians and the water, discouraging any interaction. It is an uninviting welcome to the city to arrive from the water and be immediately confronted with loud, fast and polluting traffic – the experience for thousands of cruise passengers. New Urban Shores proposes a shift from vehicle-dominance to an environment that promotes pedestrian importance. Amending the road code to give pedestrians the right-of-way would be an almost cost-free measure towards this.

A complementary innovation is smart tolling for vehicles accessing the city centre. This concept was piloted in Stockholm in 2006, causing a reduction of road traffic by 25% and pollution by 14%. The trial was then implemented permanently. Demand Responsive Transit (DRT) and interconnected, multi-modal transport clusters can replace private transport over time. These systems are integral to fostering a pedestrian-orientated environment and will need to be developed to provide real-time updates ensuring that the system is appealing enough to lure people away from private vehicles. New shared streets can allow permitted vehicles, bicycles and pedestrian access with the majority of remaining vehicle traffic channelled into motorways circumventing the inner city. The reduction of private transportation that occupies approximately one third of our CBD (on roads, in car-parks, petrol stations and garages) will become development resources to shift towards nature-aligned cities. The removal of the majority of vehicles and infrastructure from the inner city would reintroduce a human scale and allow the urban space to be used by a greater number of people for beneficial activities.

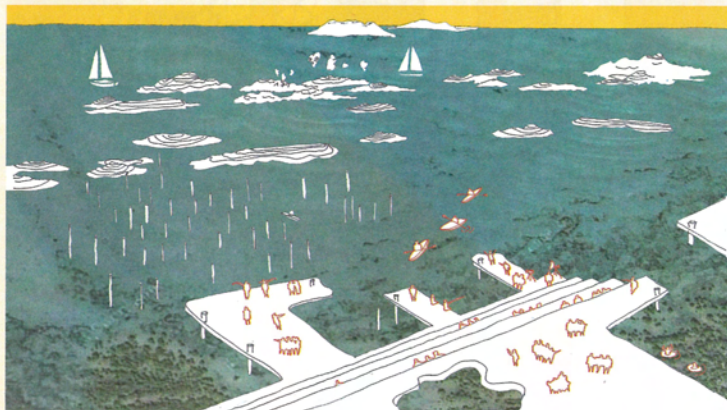


ALIGN with natural rhythms

As cities become more sophisticated, they lose touch with natural rhythms. Artificial lighting disconnects people from the time of day; inoperable windows and air conditioning create interior conditions isolated from the seasons. These mundane, uniform conditions result in a lifeless atmosphere, which leads to people suffering from Sick Building Syndrome, which costs the American economy \$60 billion annually. When leaving the office and stepping outside, we are shocked at light or climatic conditions of the real world after coming from an indoor environment with no consideration of this. It is impossible to be aware of the environmental crisis that we are currently facing when it is totally excluded from our day-to-day life.

All this has happened as a result of the 'Cartesian Split' that began centuries ago, focusing us on the solely economically measurable aspects of life to the neglect of everything else. Ultimately this is why our cities are about functionality rather than the quality of life. Breaking down this unnatural segregation through reverse engineering would help to align with the natural environment, opening buildings up to the outside and inviting citizens to enjoy simple connections with the outdoors.

The landscaped city will help orientate us to the rhythms of nature. Large bodies of water encroaching up the shore will create a healthy micro-climate beneath the city to create a temperate heat sink at an urban scale. Furthermore, this water will create adiabatic cooling in the naturally ventilated surrounding buildings. Seasonal change becomes apparent through planting and harvesting, along with the migration of birds and the fluctuation of tides as the softened shoreline invites the sea further inland; all will contribute to the temporal awareness which is part of our intrinsic being. High tide will render some areas of the city inaccessible at certain times of the day, while public activities will be determined by seasonal variation. Daily commuters will witness and experience seasonal changes that align them with place and time.



ADAPT to climate change

A century ago, Frederic Law Olmsted introduced the interconnected park-system (termed the 'emerald necklace') throughout the USA. We can further his idea of public and recreational enhancement by adding an extra layer of both social and environmental resilience. Social resilience requires a community-orientated approach. Connections and relationships between people create networks that lead to faster responses and improved outcomes.

As climate change advances, the frequency and intensity of extreme weather events will add to increased erosion by sea-level rise and storm surges. Our coasts need greater levels of resilience. Without intervention, flooding and inundation of low-lying areas will become a regular occurrence; significant amounts of valuable land will be washed away, and coastal infrastructure and architecture will be under threat. Our current mode of storm water systems will not be able to cope with the intensity of such events, so another system is required. Copenhagen recently approved its Cloudburst Management Plan – designed to use the overflow of water for recreational and beautifying purposes. Rain water and black sewage water are separated – with most rain water handled on the surface via pervious surfaces, which slow the flow rate of water to drainage systems. If overflow occurs, then canals and basins, also new leisure spaces, have additional capacity.

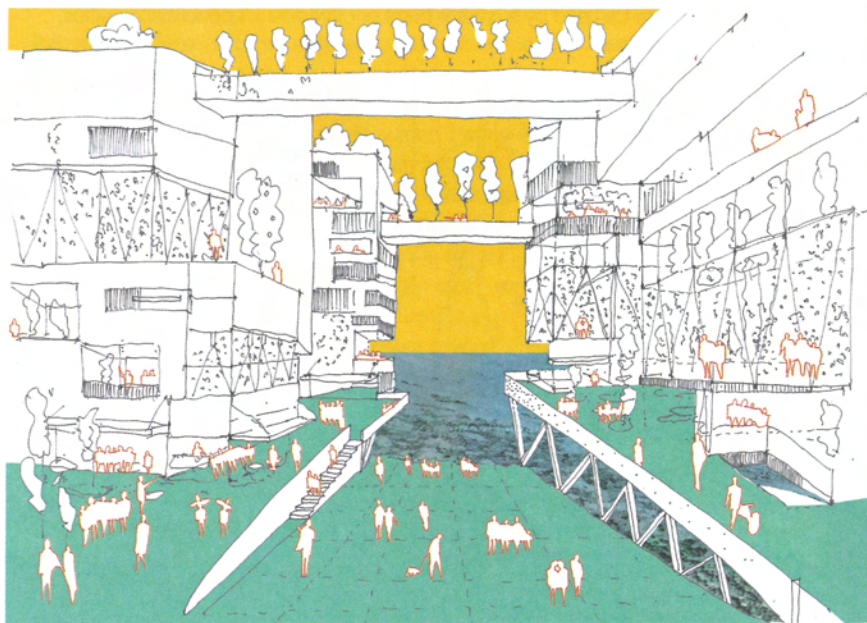
Although we instinctively want to respond to these challenges with hard engineering, the natural environment has a greater capacity for resilience. Adaptive urbanism favours integrating soft-engineering and natural methods to respond to the changing natural environment. Mangroves and wetlands, for instance, can be a natural buffer system. Their ability to absorb and retain water can reduce the chance of flooding and root systems can help defend the city against coastal erosion. Not only are they more effective than concrete sea-walls, they are cheaper and require less maintenance. Other less intrusive measures such as oyster reefs, pile fields and archipelagos can also be used to break up wave energy and interrupt wave paths.

VITALISE the urban culture

New Urban Shores is a viable alternative to waterfront urban design that focuses on the culture and quality of life of the community. It overcomes the outdated requirement for a grand master plan, concentrating instead on historical and cultural aspects that tie people to a place. With the size of our population and economy we cannot compete with the 'starchitecture' of cities such as Dubai, Hong Kong or even Sydney. However our natural environments can certainly compete with the world, and thus we should invest in transforming our urban shores into a continuous and holistic landscape that is widely accessible to the public and provides attractive destinations which results in a unique integration of city and sea.

It is not a coincidence that the majority of the world's population lives in close proximity to the water. It is becoming increasingly understood that water provides calming, harmonising, healthy and vitalising energy. New Zealand has strong ties to the coast and sea, with childhoods spent at the beach and the majority participating in water sports such as swimming, sailing, kayaking, and endless others. Historically, Maori culture is intrinsically linked with the ocean. Settlements were situated by the coast for defence, transportation and food, creating dependence and respect for the sea.

All aspects of life will become revitalised: plant life, natural building materials, and ready access to the outdoors will bring a new energy to workspaces, social meetings will become an invigorating outdoor experience and urban farming will harvest produce on facades and rooftops which will then supply street stalls or small markets located in building lobbies for ease of convenience. We need to shift the focus, stop pursuing the American dream and instead live our own dreams by reuniting our cities with the landscape and enjoying all the opportunities this can bring.



BOOST the economy

In order for economies to be successful they must be able to withstand the volatile and unpredictable nature of business. This can only be achieved by aligning to new standards, integrating innovative technologies, adapting to environmental conditions and endorsing people-centred values. By investing now and shifting the focus from short-term gain to considering the longer term and multiple life cycles, the economy will become more resilient in face of financial, social and environmental change.

In 2009, *The Boston Globe's* Jonah Lehrer wrote an article called 'How the city hurts your brain', which studied the relationship between cognitive functions and inner-city living. He concludes that, "Just being in an urban environment ... impairs our basic mental processes. After spending a few minutes on a crowded city street, the brain is less able to hold things in memory, and suffers from reduced self-control... The mind needs nature, and even a little bit can be a big help... When a park is properly designed, it can improve the function of the brain within minutes."

As we compete for brain gain, we cannot offer the largest salaries or career opportunities, thus our economy needs to leverage our biggest selling point, the lifestyle that comes with working in New Zealand. By creating coastal life and work styles unprecedented in the world, amalgamating our economy with an ecologically charged spirit, New Zealand will appeal to even the most successful individuals, luring them here to provide intellectual property and products to the world.

In the same article, Lehrer states that, "The crowded streets, the crushing density of people – also correlates with measures of innovation, as strangers interact with one another in unpredictable ways. It is the 'concentration of social interactions' that is largely responsible for urban creativity, according to the scientists." These are the conditions in which the sought after, high-performers of an advanced economy thrive. The New Urban Shores concept provides countless opportunities for social interactions. Communal spaces will be designed to encourage engaging contact, to stimulate discussion and the exchange of ideas which will have a profound effect on communities and individuals. Cities will become centred on their citizens rather than on their CBDs.

The value of biodiversity remains totally disconnected from the world's economies. Pavan Sukhdev, international banker for Deutsche Bank for 14 years, estimates the cost of business activities by the world's 3,000 largest corporations in loss or damage to nature and the environment at approximately USD2.2trillion annually. Currently, there are few repercussions for businesses, but as carbon emissions begin to cost corporations more, and laws become more strict, being environmentally conscious will be a fundamental part of business.

There is also the cost of not investing in protection from the effects of climate change. In the last 10 years, natural disasters have caused USD1.6 trillion in damage worldwide. Recent studies estimate that by 2050, the cost of climate change could climb as high as USD1 trillion annually. A recent



study conducted by the European Union compares the cost of hard-engineering such as sea walls with natural methods, in this case the preservation of a natural reef in the Maldives. The case study offsets the cost of maintaining the reef with the money generated from the local tourism and fishery industries and concludes that the reef is more than 200 times more cost effective than a hard sea-wall. However, in the last century and a half, over 85% of wetlands in New Zealand have been destroyed. This is approximately 600,000ha and causes an economic loss of \$295m annually. With continued destruction of wetlands and only 100,000 hectares remaining throughout New Zealand our shores are particularly vulnerable to coastal erosion and our economy is suffering from the ongoing losses.

REFLECTION

New Urban Shores can be a visible, life-enhancing new vision for New Zealand. At the present we are continuously trying to catch up with trends created elsewhere. By rethinking our approach to cities we can supersede an outdated typology and pioneer a new future for our urban spaces. The removal of shore 'lines' and abrupt demarcation between city and sea will change to a total fusion between the built and natural environments, resulting in reinvigorated, resilient cities. ①