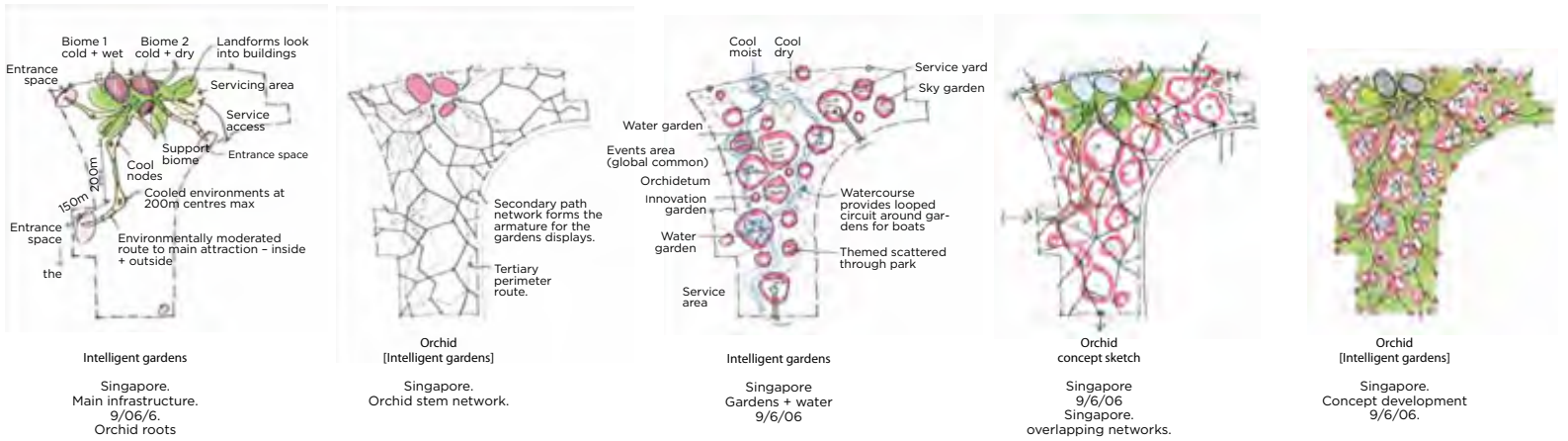


## LANDSCAPING AHEAD

# INTERVIEW WITH ANDREW GRANT

Text by Christine Liew  
Images courtesy of Grant Associates



The National Parks Board Singapore (NParks) has indicated a paradigm shift in Singapore's urban landscape design, from a "Garden City" to a "City in Garden". One of the latest efforts to cement that development is Gardens by the Bay, a mega garden project comprising Bay South, Bay East and Bay Central in 101 hectares of land around the Marina Bay area, slated for its first phase of completion in end-2011. UK-based landscape architect Andrew Grant and his firm Grant Associates are the landscape designers behind Bay South, the largest of the three gardens. Grant shares with us his insights on landscape architecture, Bay South, and other projects.

### BAY SOUTH

Part of Grant's motivation to take up this mega Bay South project was "a desire to explore landscape ideas in a context far removed from our normal work". Indeed, the Gardens by the Bay project is unusually massive in scale of production and ambition, with a goal to become one of the top Tropical Gardens and tourist destinations in the world. The project will also transform Singapore's urban landscape design and lead in state-of-the-art environmental technologies. This translates into a unique opportunity and professional challenge for Grant Associates, which is described on their website as a "once-in-a-lifetime dream project".

The firm's winning proposal was chosen by NParks in an international design competition. Inspired by the Singapore national flower, Vanda Miss Joaquim, the design concept uses the orchid plant as the simple unifying idea for the structure and image of the Bay South Garden. Thus, the 54-hectare site will be filled

with exquisite pockets of gardens and charming connecting paths that mirror the network of flowers and stems of an orchid. Its infrastructure, which enables the cultivation of plants that would otherwise not grow in Singapore, is also inspired by the efficient life support system of the epiphytic orchid. In time, the site will feature extensive rainforest trees and sub-canopy species alongside impressive horticultural displays and collections.

One of the reasons why NParks chose Grant's design was that it captured the essence of a garden in a downtown setting. Designed to extend the "contemporary and sophisticated urban qualities" of the Marina Bay area, Bay South will offer plenty of public facilities alongside its greens, including extensive walks, event spaces, themed gardens, indoor and outdoor displays, and a host of quality retail and dining options. It will also be fully connected with the transportation routes of the city, conveniently accessible from Mass Rapid Transport stations such as Marina Bay, Promenade and Bayfront, as well as expressways, such as the East Coast Parkway.

At the heart of the Bay South Garden are the two Conservatories, major cooled glasshouses housing precious plants that would not survive elsewhere in Singapore's tropical climate. This stunning initiative is the result of years of research and preparation by NParks, which led the effort in studying, sourcing, collecting and housing the plants in temporary holding nurseries. Both Conservatories follow precise internal temperature and humidity standards set by NParks. While the "Cool Dry" biome, or Flower Dome, features Mediterranean plants, the "Cool Moist" biome, or Cloud Forest Dome, showcases

tropical mountain plants. Inside, both Conservatories make use of vivid layered garden displays to enchant visitors and help them to better appreciate the exhibitions. For example, in the Cloud Forest Dome, a "mountain" will be fully covered in epiphytes alongside a dramatic indoor waterfall.

The most visible and iconic structures of the Garden are likely to be the Supertrees: massive tree-like structures, standing between 25 and 50 metres tall, covered with tropical flowering climbers, epiphytes and ferns. Grant elaborates that they were designed to become central landmarks of the Bay South Garden, and were thus aiming for dramatic impact, like the Valley of The Giants Tree Top Walk in Western Australia, where 60-metre high Eucalypts tower above the surrounding forest and the 40-metre high aerial walkway. He adds that the form and design of the Supertrees were also inspired by the charming fantasy images of Studio Ghibli films, such as Princess Mononoke. The tallest Supertree will even host a treetop bar, promising a surreal experience amidst lush canopies.

Other than the visual garden attractions, the Bay South Garden is designed to be environmentally sustainable and will be a pioneer in ecologically sustainable technologies. This includes an integrated heating and cooling strategy that employs liquid desiccant cooling and biomass boilers in order to maintain the Conservatories.

OPPOSITE Ecosystem behind Bay South.  
TOP Concept sketches of Bay South show how its image and infrastructure were based on the Orchid plant, inspired after Singapore's national flower.

“ AS WE UNDERGO MAJOR CLIMATE AND SOCIETAL CHANGES, THE SOLUTION TO OUR PROBLEMS POSSIBLY LIES IN THE WAY MANKIND DESIGNS, BUILDS AND MANAGES OUR BUILT ENVIRONMENT, WHICH STRESSES THE INCREASINGLY IMPORTANT ROLE OF LANDSCAPE ARCHITECTURE TODAY. ”

In addition, a major initiative building on the water management efforts by the Public Utilities Board and National Energy Agency in the area involves a continuous water network that encircles the gardens, collecting all water run-offs on the site instead of draining them into the Marina Bay. This will eventually be developed into an extensive water filter system that will draw water from the Marina Bay, improve the water as it runs through a system of lakes and channels, and then return it to the Bay.

The many achievements of Bay South have been reached by overcoming particular challenges, of which Grant expects “there are still many left to achieve”. One of the challenges faced is Singapore’s relatively humid, warm and rainy weather, which the design has to consider and which can literally dampen outdoor experiences. Thus, an integral part of Grant’s design is the important shading and shelter from both sun and rain along visitor paths. Preparation for the Conservatories was also a demanding and complex process. This includes sourcing for the plants and the practical demands of transporting and handling the delicate plants, which NParks has been effective in. The structural engineering of both the Supertrees and Conservatories, in order to achieve their elegant and slim structures and dynamic and organic forms, was a further challenge.

Today still marks just the beginning of this exciting site. Even after completion, the Gardens’ new ecosystem will take many years to mature and achieve its full cultural, spatial and sensory vision. Grant shares, “At the detailed level, this will be expressed by the establishment of a new generation of Heritage Trees clothed in the richness of tropical epiphytes and brought to life by the flowering and fruiting cycles and their inhabitation by birds and other animals. The Gardens will also only be fully effective when they are encir-

led by the new urban quarters of Singapore and they become the green heart for residents and visitors.”

### LANDSCAPE ARCHITECTURE AND ECOLOGICAL DESIGN

Grant graduated with a degree in Landscape Architecture at Edinburgh College of Art in Scotland in 1982, and subsequently set up Grant Associates in 1997. Today, Grant Associates specialises in the creative design of both rural and urban environments, and is involved in a diverse range of landscaping projects, from masterplanning and regeneration, to housing, education and offices, to parks and public spaces. But all of these projects share Grant’s approach to creative ecology, the pursuit of quality and innovation, an interest in the connection between people and nature, and a goal to solve complex problems.

One of the ways to understand landscape architecture is the design of natural and built environments, including its conservation and sustainability of development. Unlike in other types of architecture or design, landscape architects often work with unpredictable materials, such as plants, water and sky, which are part of the natural ecosystem. Grant reveals that there is no solution to control these phenomena, but solutions may be found in ways to optimise the effects of such climatic influences on the environment positively. For example, silhouettes or reflections are able to dramatise views of the sky, while swaying plants are able to capture breezes and winds.

In addition, when designing a landscape, as in Gardens by the Bay, it may take tens to hundreds of years for the design to achieve fruition, unlike typical architectural buildings, which may be considered completed once handed over to the client. The various factors

influencing the maturation of a landscape include climate, topography, management and use, as well as natural occurrences, such as pests, diseases and drought. In the case of Gardens by the Bay, its maturity is achieved with the “rich interweaving of nature and local culture.”

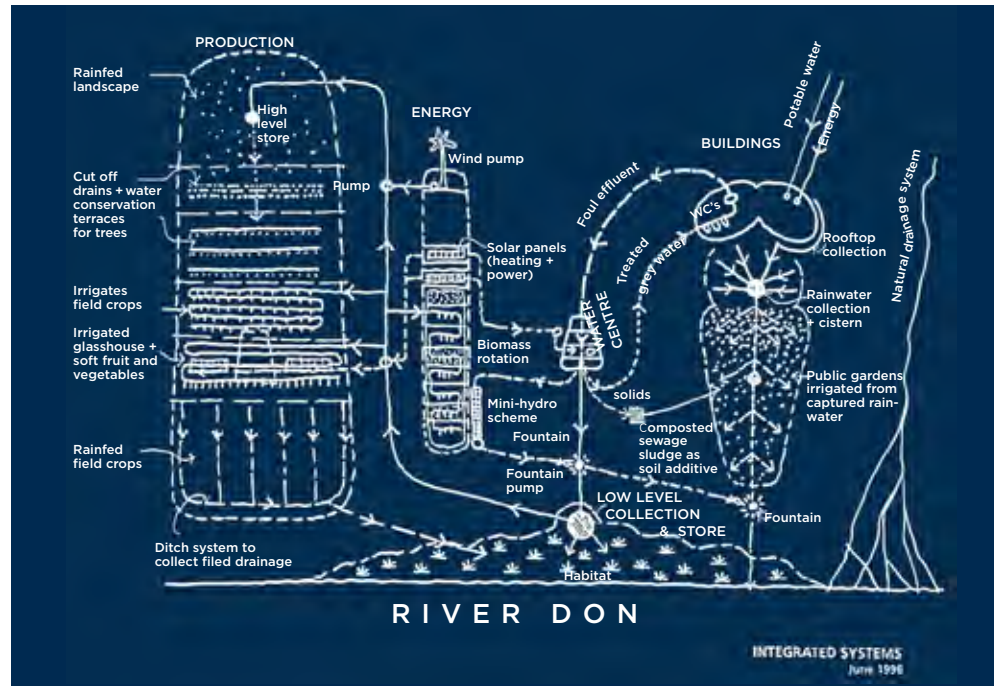
A typical landscape project demands an in-depth understanding of the ecology and geology of a site, including its drainage, soils and climate, and its local culture, including the function, scale, character and experience of the public spaces designed. Some projects also involve the strategic planning and design of green infrastructural networks for cities. Grant adds, “No single person, working internationally and across a range of scales of projects, can deliver the optimum landscape design for any given project without taking advice from specialists or having an extensive support network within their office.” Due to the mixed expertise and skills involved, landscape architects often work with other experts, such as civil and structural engineers, ecologists, soil scientists and artists, in order to achieve their goals.

Grant has been involved in several significant residential projects in the UK, such as Accordia and Icon. He shares with us that in the UK, the planning and design of residential areas has been inclined towards the reuse of derelict or run-down urban areas, rather than the development of green sites. Thus, the challenge for the growing number of higher density development schemes is in designing for adequate and quality public open spaces and applying more rigorous environmental design measures. This includes a future goal of making all new housing schemes fully efficient in energy use with zero carbon emissions.

Accordia was redeveloped from a former government campus into a high value and density residential neighbourhood in Cambridge. Grant's design for Accordia cleverly fulfills the above goals of high density housing through the idea of "living in a garden", where each home was designed into a framework of private and public open spaces. The landscape in the design serves as a space for various outdoor activities, including private gardens and balconies, large open areas for informal sports and a shared "Street Garden" that reduces the dominance of vehicles and contributes to a friendlier environment in the street. The design has won many awards, including the 2008 RIBA Stirling Prize for Architecture and at the Housing Design Awards 2006.

The Icon project in Somerset is similar to Accordia, in the use of private and public spaces and "shared space" design principles. However, it goes beyond Accordia in certain environmental ideas; without much existing natural features to work with, Grant's design created a distinct network of water courses for Icon that complemented the project's innovative drainage and instantly added a landscape character to the district.

While landscape architects design environments primarily for people, Grant explains that they increasingly need to consider the habitats of other species as well, often within the same project. In this vein, "ecological design" to Grant and his team is the "creative process informed by the science of ecology and the discipline of sustainability", referring to how design engages or enhances the relationships between living creatures and their environments. Thus, such design sometimes involves designing for the coexistence of species from the same habitat, and at other times involves the innovative and responsible use of resources. Two of Grant's



past projects, Osprey Quay and Earth Centre, best illustrate the goals of ecological design.

The 2005 Osprey Quay project in Dorset, UK, is an award-winning mixed-use regeneration project. In the design of a 1-kilometre-long flood bund within a sensitive ecological and geological site at Chesil Beach, Grant Associates commendably used the natural materials of the place, enhancing the original qualities of the site. After finding a source of local limestone, which formed the principal soil type of the area, the team collected and nurtured seeds from local wildflowers, and then planted them along the length of the bund. Today, Osprey Quay is both a place for public enjoyment and a significant local ecological resource.

The Earth Centre is a landmark ecological parkland that opened in 1999 in South Yorkshire, UK. Part of the eco-concept behind the project was how to reuse the neglected site, which was a former colliery with extensive areas of coal spoil and derelict land. Another major emphasis of the project was the recycling of materials, which posed the challenge of creating a viable soil from the existing material that could sustain the new woodlands, grasslands and exhibition gardens. This was eventually achieved through the amelioration of the spoil using various combinations of additives, including composted sewage, green waste, green manures and spent mushroom compost, among others.



TOP Ecosystem Sketch of Earth Centre.  
OPPOSITE Grant's design for a 1-kilometre-long flood bund for Osprey Quay at Chesil Beach commendably uses the natural materials of the place, including a source of local limestone and collected and nurtured seeds from local wildflowers.





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### LOOKING AHEAD

Landscape architecture has traditionally (and often unfairly) been seen as a cosmetic add-on to development projects, where the job of landscape architects is often reduced to specifying plant types and paving materials. To this end, one of the biggest challenges Grant experiences as a landscape architect is not being taken seriously as a professional and designer on par with any other art or profession. To overcome this, he proposes that landscape architects earn the respect of their clients, architects, engineers and critics, by rising to the challenge of their job and contributing meaningful and innovative ecologically robust solutions to society.

Today, as current climate problems are a growing global imperative, more and more heads are turned to landscape architects, who have the opportunity to demonstrate their professional creative and artistic capabilities in solving these problems. On the importance of ecological and sustainable design for society, Grant views both as “less about being important and more about being essential to society”. As we undergo major climate and societal changes, the solution to our problems possibly lies in the way Mankind designs, builds and manages our built environment, which stresses the increasingly important role of landscape architecture today.

One evolving trend in landscape architecture includes the philosophy of “EcoUrbanism”, which Grant explains seeks to establish new agendas for cities and regional planning, and to promote design through an enlightened and rigorous approach that could transform tradi-

tional perceptions of cities. While there are few definitive examples of the emerging discipline, Grant shares that projects such as Dongtan City in China and the HighLine in the USA represent the two extremes of EcoUrbanism intervention; while Dongtan City illustrates the possible comprehensive ecological planning of a new city using sustainable principles, the Highline shows the “surgical regeneration of an existing redundant urban structure into a new and vibrant piece of the city”.

In the UK, Grant Associates is currently working on a number of masterplanning projects, including an upcoming new Sports Academy in Scunthorpe and a Town Hall and urban square in Corby. Beyond the UK, the firm has also been busy with several important residential schemes for developers in Hong Kong, Shenzhen and Kuala Lumpur. It is also currently working with Rogers Stirk Harbour Partnership for a big competition in Valencia, Spain, on the design of a new urban quarter linked to the train station. Grant also lets us know that in Singapore, the firm is looking to apply its experience from Gardens by the Bay to other exciting projects, including an ecotourism planning study and a new College Campus.

On the international scene, Singapore is certainly ahead with its various commitments to urban landscape planning and energy sustainability. However, Grant suggests that the next step for us would be towards a more ecological rather than indiscriminate greening approach that blindly accepts all greens as good. Thus, the “real test” of our green initiatives and of others around the world, lies in their measurable benefits to the country and its people, in terms of better quality of life, increased biodiversity, and reduced pollution, among others. Indeed, these benefits will go a long way in paving the way for greener approaches and efforts by landscape architects everywhere.

For more information, visit <http://www.grant-associates.uk.com>.

PREVIOUS SPREAD  
Aerial view of Gardens by the bay  
OPPOSITE, LEFT & RIGHT “Street Gardens”  
of Accordia: Designed based on the idea of  
“living in a garden”, Accordia is an award-  
winning redevelopment project of a former  
government campus in Cambridge, UK.



Andrew Grant is the Director of Grant Associates. He studied Landscape Architecture at Heriot-Watt University/ Edinburgh College of Art (1977-1982) and graduated with BA (Hons), CMLi. In 1997, Andrew formed Grant Associates to explore the emerging frontiers of landscape architecture within sustainable development. His approach is driven by a fascination with creative ecology and the promotion of quality and innovation in project work. He has built up experience in all scales and types of projects, from sub-regional planning to the detailing of the smallest piece of new landscapes. He is also a member of CABA Space and the South West Regional Design Panel. He was recently made an Honorary Fellow of the Royal Institute of British Architects.



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