

CUGE Schemes for Landscape Industry Development A Strong Shade of Green

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Images as credited

It has been 50 years since Singapore's leaders embarked on a campaign to green the city. In 1963, then Prime Minister Lee Kuan Yew planted a Mempat tree (*Cratoxylum formosum*) in what was then a roundabout at the junction of Farrer Road and Holland Road. It marked the beginning of a tree-planting and greening campaign that would change the character of urbanised areas in Singapore and deeply impact the nation's economy.

Historically, the push for a "Garden City" or pervasive greenery (and now for "a City in a Garden") has been top-down in nature. The first annual tree-planting day was held in 1971. The Garden City Action Committee (GCAC) was assembled in the late 1960s and constituted high-level officials from various government agencies, who heard reports on greening efforts and issued directives to boost the greening cause. The Parks and Recreation Department (PRD)—the first agency devoted to greening-related matters—was formed in 1976. Merging with the PRD, National Parks Board (NParks) was formed in 1990, with a particular emphasis on parks.

The Industry Takes Root

Today, there is a clear indication that the idea of urban greening, although required and encouraged by regulation, has been firmly implanted in the Singaporean consciousness. About two-thirds of the Singapore landscape industry's yearly revenue in landscape construction and maintenance, of over S\$400 million, is currently attributable to the private sector. Explains Chong Whye Keet, Deputy Director of the Industry Development branch of the Centre for Urban Greenery and Ecology (CUGE), "It's not to say that the

government is spending less; it's just that the private sector may be growing faster. I think that will be the trend going forward."

He continues, "In the past, most of Singapore's greenery was invested by the government in the form of streetscapes and parks. But these days, look at any premium commercial development, even some industrial facilities. Trees, green walls, and green roofs are sprouting up. The Housing and Development Board has implemented greenery for a long time, but now the private sector housing developers are doing as much, if not more."

The Need to Improve Productivity Levels

The industry's revenue has been growing at a rate of around five percent per year since 2010, says Chong. Productivity levels, however, need to be raised in order for labour productivity growth to achieve greater parity with GDP growth. While improvements to productivity are being called for across the board in Singapore, Chong suggests that within the landscape industry, "it is very evident that we need to do something about productivity because some things are still being done in ways that could be improved".

Aiming to transform the landscape industry, the Landscape Productivity Roadmap (developed by CUGE together with the industry) has the goal of improving productivity by 2.5 percent per annum over the next 10 years. "We are looking at four different areas," says Chong. "First, we help the industry's managers and leaders to change their mindset about

productivity. We conduct productivity study trips overseas to illustrate the ways that things can be done. Second, we encourage increased mechanisation and innovation. For example, we ask, 'Can you use a ride-on mower that allows one person to do the job of four people using hand-held mowers?'"

Chong continues, "Third, we encourage best practices and high standards. We organised the GreenUrbanScape event in November to bring together the industry players from around the world to network and share best practices and latest trends. We've also released a set of guidelines for the productive maintenance and sustainability of landscape designs, and we've introduced a scheme for the accreditation of nurseries. And fourth, we encourage manpower development—a bottom-up approach to improving the industry via skills training."

CUGE's Industry Development branch and Manpower Development branch have initiated a number of programmes that target improved productivity and skills, as well as an elevated profile for the landscape industry and its workers. Among those handled by the former are the Landscape Productivity Grant Scheme and Nursery Accreditation Scheme. Among those handled by the latter are the Certified Practising Horticulturalist Programme and Landscape Excellence Assessment Framework (LEAF).

Landscape Productivity Grant Scheme

The Landscape Productivity Grant Scheme is a co-funding scheme that offers financial support to landscape companies in Singapore that wish to purchase new landscape equipment to achieve productivity benefits and better

operational efficiency. The equipment can be used for landscape design, construction, or maintenance. Subject to conditions, 50 percent of the purchase cost of the equipment can be provided. Says Chong, "Essentially we're saying that we will share the risk of purchasing this equipment with you, but the requirement is that you to use it. There's a certain benchmark of productivity improvement that we're looking for."

The scheme was introduced in September 2013 and will be effective until March 2016, or until the scheme's funds have been fully disbursed, whichever is earlier. It covers five major areas of productivity improvements: Mechanisation and Innovation (encouraging greater adoption of mechanisation for the improvement of workflow and processes); Nursery Innovation (for the adoption of nursery technologies to improve capabilities and maximise returns from the land); Operations Improvement (for automation systems that will improve resource allocation, reduce supervision requirements, and enhance quality and consistency); Weeds Control (for more effective control of weed growth and time management); and Human Resource Applications (for the adoption of HR solution packages and the reduction of time taken for manual tracking and documentation).

Nursery Accreditation Scheme

Focusing on quality control as well as business-process control systems, the Nursery Accreditation Scheme aims to help nurseries to optimise land productivity, establish better daily work processes, and ensure a consistent supply of quality nursery products. NParks assessors evaluate each

applicant nursery based on factors such as its layout and design, environmental management system, quarantine areas, production systems, holding areas, hygiene, growing media, plant standards, water and waste management, and the skills and capacity of its staff. The assessment process is iterative, and begins with the provision of a preparation booklet. Once the nursery has readied itself for compliance, assessors will visit. Time will be provided for any final points of compliance before accreditation is granted. A list of accredited nurseries can be found on the CUGE website.

Only 15 to 20 percent of the plant material used in Singapore is produced locally. The rest is imported, mostly from Malaysia. In the interests of securing a high-quality, consistent, and disease-free supply chain, the Nursery Accreditation Scheme extends to Malaysian nurseries. Scheme assessors travel there to perform their evaluations, and, says Chong, Malaysian nurseries are typically receptive to the scheme. Currently, around 20 percent of Singaporean nurseries are accredited, along with three from Malaysia. "We'll try to reach 70 or 80 percent in the next five years or so," says Chong. "We want to ensure that nurseries are able to command a premium out of what they're doing. Profitability and revenue growth are important for the individual nurseries and the industry as a whole," he adds.

Certified Practising Horticulturalist Programme

"Despite the proactive greening that has happened in Singapore over the last 50 years, people have been practising in the landscape industry with a variety of approaches,"

says Shamril Jamil, Deputy Director of the Manpower Development branch at CUGE. He continues, "Also, we have had people practising with impressive skills and competencies but without recognition for them. We developed the Certified Practising Horticulturalist Programme, and other professional certification programmes, to make sure that the industry moves forward with skills of a certain standard, and also to raise the profile of the industry and its people."

Says Shamril, "There's an art and a science to horticulture and people who have completed the Certified Practising Horticulturalist Programme are recognised internationally for their skills and knowledge." Furthermore, with contracts from NParks and other agencies requiring professional certifications to be held by service providers, best-practice standards are being officially called for across Singapore.

The Certified Practising Horticulturalist Programme is an intensive 10-day refresher-cum-training course (with assessment) for practising horticulturalists that is accredited by the Australian Institute of Horticulture. It focuses on a number of subject areas: soils and media, water, plants, plant maintenance, irrigation, site implementation principles, project costings and implementation, project planning and supervision, and project implementation and construction. It also presents an overview of the landscape industry.

The programme was established in 2008, and as of June 2013, has produced 132 certified practising horticulturalists. The CUGE website features a list of certified

practising horticulturalists from NParks and Singapore's private industry. The course also attracts participants from the region—from as far as Hong Kong.

A View from Industry

Lilian Kwok, who is the Assistant Director of Nursery Management at NParks' Horticulture Standards and Nursery Management Branch, runs the Pasir Panjang Nursery where some 200,000 plants are produced per year for NParks and other agencies. Kwok has been practising horticulture for 33 years. Her own experience of the Certified Practising



1. Vertical Greenery in 158 Cecil Street offices (Photo: Alpha Investment Partners).



2. Vegetative swales in The Rainforest condominium filter pollutants from groundwater (Photo: City Developments Ltd).

Horticulturalist Programme provided a reinforcement of her own approach as well as an emphasis on new standards, such as the use of weed mat.

The soil module was of particular interest. She explains, "Everything starts with the soil. A lot of people might use the wrong soil, and then wonder why the plants don't do well. The Certified Practising Horticulturalist Programme reminds us of the need to plan ahead before selecting soils, as well as the implications of the different soils with regard to fertiliser application." In particular, says Kwok, the programme "encourages younger up-and-coming horticulturalists to embrace the standards we've always adhered to".

She has observed the emergence of positive outcomes from CUGE's training programmes. "Generally I would say that the skill level of the workers in our nursery—and those of our contractors—has gone up. I see an improvement in standards overall, as well as a lift in image for landscape technicians. They are no longer called gardeners or foremen. They feel proud to be called landscape technicians, and they have the option of progressing in their career path."

However, she comments, progression of study all the way to degree courses is lacking in Singapore. Kwok teaches in a diploma course, and finds that many of her graduating students are keen to further their studies. "They ask, 'What's next?' Unfortunately there's no degree course available to them. One channel open to them is the University of Queensland in Australia. They need to spend a year away, and not everyone can do that," she explains.

Landscape Excellence Assessment Framework

Building a stronger landscape industry and nurturing the idea of pervasive greenery is a multifaceted effort, and the value of recognition for outstanding greenery efforts has been formalised with NParks' Landscape Excellence Assessment Framework (LEAF). Launched in August 2013, LEAF is the only certification scheme in Singapore that recognises greenery excellence in developments. It recognises developers,

architects, landscape architects, and maintenance agents for excellence in the provision and management of urban greenery. New and existing projects are assessed and awarded by a broad team from NParks, and the winners receive recognition and publicity rather than a financial reward.

"LEAF recognises everyone who was involved in a project," says Shamril. "It celebrates innovative solutions created by professionals in the industry. The beauty of the LEAF scheme is that it's not prescriptive; it doesn't specify the kind of space, the size, the type of plants, and so on. It's flexible in terms of simply recognising innovative or creative ways of incorporating greenery into developments. We see many kinds of approaches," he says. The inaugural LEAF winners in the category of "new developments" were the condominiums Corals at Keppel Bay and The Interlace; Senja Parc View HDB estate; and executive condominium The Rainforest. In the "existing developments" category, LEAF awards were issued to 158 Cecil Street (office building), Khoo Teck Puat Hospital, Newton Suites (condominium), Pangshan Grove (HDB estate), and Siloso Beach Resort (hotel).

Growing History

"One of my first projects with NParks [then the PRD]," recalls Kwok, "was the walkway planting along Shenton Way. Previously there were no plants. In those days we used to work late, even on Saturdays, just to finish our projects. We had a tight timeline for Shenton Way. Once the Public Works people had finished the walkways and the pipes were in, we did the soil work followed by the planting. Come Monday, wow, you could see the change. The entire street was done. All the walkways you see now are the result of that initiative to beautify the central business district."

Continuing the story of Singapore's greening requires the continual growth of its landscape workforce. Attracting people to the industry, however, can be challenging. In Kwok's words, "You have to feel something for the plants. You have to be happy to come to work every morning, in spite of the rain and the sun."




3. View inside Siloso Beach Resort, where architecture and nature are blended (Photo: Siloso Beach Resort).



4. Set amidst verdant landscapes, Khoo Teck Puat Hospital embodies both a "hospital in a garden" and "garden in a hospital" (Photo: Khoo Teck Puat Hospital).

On 7 September 2013, the annual Green Thumbs event was held at ITE College East. At the event, a memorandum of understanding was signed by NParks, Institute of Technical Education (ITE), and Landscape Industry Association (Singapore) (LIAS) to award 50 scholarships to help develop a pool of highly trained students for careers in the landscape industry. The scholarships are worth S\$600,000 over five years and funded by NParks' Garden City Fund and LIAS. They will assist students studying ITE's two-year NITEC (National Institute of Technical Education Certification) in Facility Technology (Landscaping Services) course. To aid curriculum development, NParks and LIAS will share expertise in landscape services and related disciplines.

Combined with measures to increase productivity and recognise innovation, the development of landscape-focused courses catering to groups ranging from school leavers to practising professionals indicates effective steps toward a strong and healthy landscape industry. "Perhaps one day there could be a tie-up with a university to offer a degree course in Singapore," suggests Kwok, to continue the progression already underway in the industry.

More information on the programmes discussed in this article can be found at cuge.com.sg. 

Inaugural LEAF-Certified Developments 2013

New Developments

Corals at Keppel Bay

Developer: Keppel Bay Pte Ltd

Team members: Keppel Land International Ltd, Studio Daniel Libeskind, DCA Architects Pte Ltd, ICN Design International Pte Ltd, T.Y. Lin International Pte Ltd, Beca Carter Hollings & Ferner (SEA) Pte Ltd, Langdon & Seah Singapore Pte Ltd, RA Heintges & Associates, The Lightbox Pte Ltd, and Suying Metropolitan Design

Senja Parc View

Developer: Housing and Development Board

Team members: 3PA International, DE Consultants (S) Pte Ltd, Alpha Consulting Engineers Pte Ltd, WT Partnership (S) Pte Ltd, Tulin Designs Pte Ltd, and Vigcon Construction Pte Ltd

The Interlace

Developer: A consortium led by CapitaLand, Hotel Properties, and a third shareholder

Team members: RSP Architects Planners & Engineers (Pte) Ltd, ICN Design International Pte Ltd, Woh Hup (Private) Limited, and Blooms & Greens Pte Ltd

The Rainforest

Developer: City Developments Limited and TID Pte Ltd

Team members: ADDP Architects LLP, ONG&ONG Pte Ltd, and Nakano Singapore (Pte) Ltd

Existing Developments

158 Cecil Street

Developer: Alpha Investment Partners Ltd, Singapore

Team members: AgFacadesign, Tierra Design (S) Pte Ltd, Northcroft Lim Consultants Pte Ltd, KK Lim & Associates Pte Ltd, Emplus Consulting Engineers Pte Ltd, Lai Yew Seng Pte Ltd, Consis Engineering Pte Ltd, and Illum-tec Pte Ltd

Khoo Teck Puat Hospital

Developer: Alexandra Health Pte Ltd

Team members: PM Link Pte Ltd, CPG Consultants, Peridian Asia Pte Ltd, Hyundai Engineering & Construction Co. Ltd, and Tropical Environment Pte Ltd

Newton Suites

Developer: UOL Group Limited

Team member: WOHA Architects Pte Ltd

Pangshan Grove

Developer: Housing and Development Board

Team member: Town Council

Siloso Beach Resort

Developer: Siloso Beach Resort

Team member: Tan + Tsakonas Architects