

**12th
SIA
Architectural
Design Awards
2012**

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CATEGORY

B

COMMERCIAL PROJECTS

B1: Office Buildings



HANGING GARDEN IN CBD: A FUSION OF 'ARCHI-NATURE'
AgFacadesign



OUE BAYFRONT
DP Architects Pte Ltd

B2: Shopping Centres



NEX SHOPPING MALL
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MYVILLAGE @ SERANGOON GARDEN
DP Architects Pte Ltd



I12 KATONG
DP Architects Pte Ltd

CATEGORY

E

SPECIAL CATEGORIES

E2: Retrofitting

H O N O U R A B L E M E N T I O N

HANGING GARDEN IN CBD:
A FUSION OF
"ARCHI-NATURE"

ARCHITECT

AgFacadesign

COLLABORATING ARCHITECT

Tierra Singapore

CLIENT

East Coast Cecil Investment

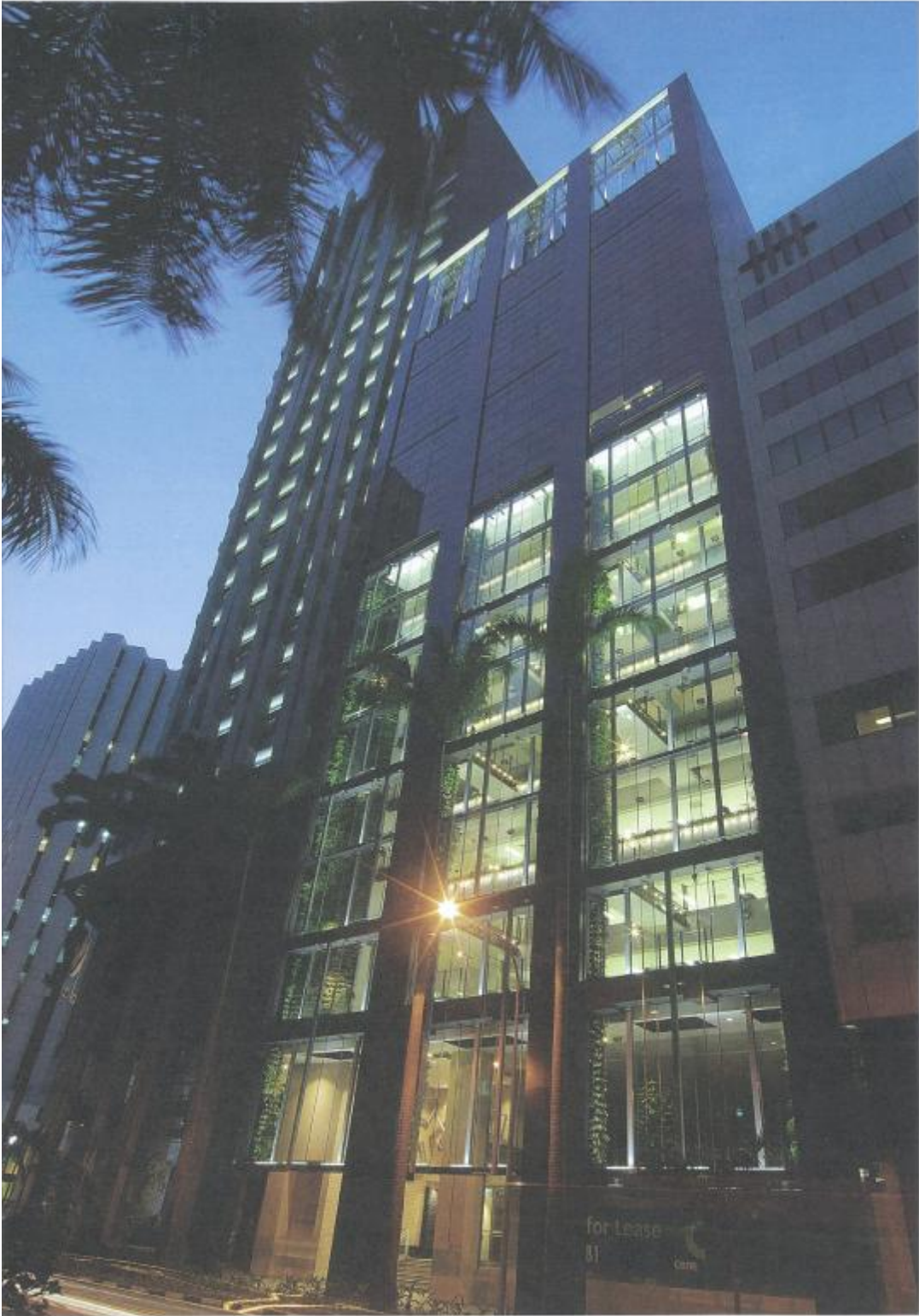


JURY CITATION

The architect created an elevated green atrium, which thoroughly transformed the quality of spaces in this old office building in the city. This is an intelligent effort with sustainability in mind. The architect identified a great opportunity in the existing structural framework to create a matrix of vertical greenery and planters. The façade was also modified to bring ventilation into the space, while modernising the building's façade.

The green atrium within adds a new dimension to the fabric of the city street front, and animates the façade especially when lit at night. This project contributed positively to the urbanscape of downtown Singapore by creating a pleasant and sustainable environment to benefit workers in the CBD.





ARCHITECT'S STATEMENT

Project Synopsis

An existing 14-storey addition and alteration project within the CBD, the task was to provide an attractive façade and create a lively and inviting atrium space overlooked internally by most office floors. The space is transformed into a "Hanging Garden" by integrating all surfaces and camouflaging existing structural elements. A "Layered Façade" developed for natural ventilation and smoke to disperse resulted in a seamless integration of architecture, façade design, and a "Hanging Garden" that is highly transparent and visible at night. Extending spatial connectivity, "Green Columns" are strategically placed to visually link the seven-storey atrium to road and pavement levels below. A total of 350 square metres (13,000 potted plants) in the "Green Walls/Columns" is achieved, which is 135 percent of the atrium floor plate area with another 70 square metres of hanging plants in horizontal planters.

Integrating "Hanging Garden" with Façade Design

With no horizontal landscape area within the building except for the existing half-round planters stretching across the atrium, the architect conceived the idea of a "Hanging Garden" within the existing architectural void. Incorporating a layered-glass façade with 900-millimetre-wide voids between glass panels to allow natural ventilation and rain to drizzle through, the design enables the plants to have some of the essential natural growth elements. The same modules are extended to adjacent bays and staggered on every floor of the façade to maximise "free area." Two seven-storey-high (from L3 to L10) green walls are located on either ends of the atrium with two intermediate "Green Columns" stretching from L2 to L10. Existing RC "fly-beams" are converted into maintenance walkways with hanging planters. With the added planters, they widened the width of the walkway from 600 to 1,000

millimetres. Day and night lightings are strategically concealed within openable gratings on either side of walkway to provide easy access for maintenance of plants and lighting fixtures.

Integrated Landscape

With strategically located "growth" lightings, plants are able to grow efficiently within the once dark and dingy atrium. These landscapes not only help to remove carbon dioxide from the atmosphere through photosynthesis but also provide tenants with an inviting and pleasant view and work environment.

Daylighting

Since the atrium faces east, it has limited sunlight and needs to rely on artificial "growth" lights strategically mounted to simulate "daylight." Combinations of 150W ceramic discharge metal halide lamps with full colour spectrum and 18W fluorescent lamps of mostly blue and red spectrum are used to provide optimum growth. The metal halide lamps are housed within highly efficient floodlights to deliver an average lighting level of 1,000 LUX to the plants. At the planter walkways, fluorescent lamps are placed next to openable gratings for the plants.

Night Lighting

By night, accent lights transform the atrium into a glowing lantern of "Hanging Garden" clearly visible through the transparent layered glass façade. "Mood lighting" is provided to the vertical green walls and columns. Horizontal hanging-garden plants are backlit via LED lights reflected off the curved RC planters, providing an interesting silhouette of the plants. Through the L3 glass floors, a seven-storey high "cathedral spatial" quality of greenery is visible from pavement level.