

The Epitome of Creative Architecture

GREEN ARCHITECTURE

Featured in a previous issue of Landscape Forum (issue 6), the recently completed 158 Cecil Street demonstrates the unique but seamless integration of how green-wall landscape and architecture can successfully complement each other.

The resulting phenomenon is a seamless integration of architecture, façade design with a Hanging Garden that is highly transparent and visible at night.

Extending spatial connectivity, 'Green Columns' are strategically placed to visually permeate the glass floors to link the 7-storey Hanging Garden to road and pavement levels below. A total of 350m² (13,000 potted plants) in the green walls and columns were achieved which is 135% of the Atrium floor plate area with another 70m² hanging plants in horizontal planter beds. Ease of access for maintenance is incorporated into the design to all plants and the Layered Glass Façade.

INTEGRATING HANGING GARDEN WITH FACADE

With no horizontal landscape area within the building but only for the existing half-round planters stretching across the 7-storey high atrium, the Architect conceived the idea of a Hanging Garden within the existing architectural void incorporating a Layered Glass Façade 900mm wide voids located between glass panels (clipped onto sides of the central I-Mullion) allows natural ventilation and rain to drizzle through.

This enables the plants to have some of the essential natural elements for growth. The same modules were extended to adjacent bays and staggered on every floor over the Atrium's façade to maximize any free area. There are two 7-storey high (from L3 - L10) Green Walls located on either ends of the Atrium with two intermediate Green Columns stretching from L2 - L10.

UNIQUE GREEN WALL SYSTEM

Affected by the Atrium's East facing, shaded portion of the walls/columns and the staggered layered-glass façade, plants were chosen for their growth habit, aesthetic qualities like foliage color, leaf size, texture and shape.



158 Cecil Street is designed by architectural firm, AgFacadesign. For more information, visit: www.agfacadesign.com

The layered glass façade also enabled natural convection upward airflow, which created a comfortable growing environment. The engineered light-frame for potted plants, neatly house all plumbing lines for irrigation and runoff from the drip irrigation system.

The vertical greening system comprises of modular individual planter pots, mesh frame, mounting brackets, irrigation and drainage system. The pots can be individually removed and assembled onto inter-connectable modular panels bolted onto steel structure. Hooks at the back of each pot allow it to be mounted and removed from the grid frame. The pots also have good resistance to petroleum-based chemicals and naturally occurring soil chemicals.

The thickness of the system is 130mm overall and weighs 15kg/sq .m (system only) and 65 kg/ sq .m (when saturated with vegetation). Part of the previous mesh-façade was also recycled to provide the continuous 200mm X 200mm ledge for the hanging garden.

IRRIGATION AND DRAINAGE SYSTEM

This is a multi-level drip system consisting of fertiliser mixing pump, computerised irrigation controller (timer), valve, main irrigation pipe, branch line, regulator and drip nozzles.

The vertical greenery system receives its irrigation water from two 1-cubic-meter water tanks located on Level 10. With a modular irrigation controller integrated, irrigation of plants is done on alternate days for indoor plants. U-shaped stainless steel catch tray fixed at the bottom of each greenery panel with outlets connected to drainage pipes neatly concealed within column metal cladding.

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Consis Engineering provides quality and innovative irrigation solutions to green walls and green columns installations. Committed to a sustainable environment, Consis Engineering also provides cost-effective maintenance of green walls and green columns. With OHSAS 18001:2007 Certification and a patented proprietary precision irrigation system for green walls and green columns, irrigation installations on these green walls and green columns will experience better plant growth and sustenance, giving green walls and green columns the vibrancy and fresh appeal - always!