Façade Design in High Density Environment

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DLN Architets
Residential Facades in The Old Days
Introduction of Green Features
Concern for Building Bulk and Tightening of Controls
Since April 2010

Double Cove
in collaboration with Rogers Stirk Harbour + Partners
Today’s Residential Façade Constraints
axonometrics
Non-Residential
Case Studies

18 King Wah Road
In collaboration with Pelli Clarke Pelli Architects
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Office Project in Hong Kong
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According to US Bureau of Labor’s statistics, more than 90% of time an adult spends indoor, while in Hong Kong, average daily working hours is >9 hours, around 40%.
BIOPHILIC DESIGN

HEALTH & WELL-BEING

Well-Being
Well-Being
BIOPHILIC DESIGN

- Human-nature connection
- Improved experience, mood, and happiness for occupants
- Narrow footprint with enough daylight to enable tenant to install indoor greenery
- Tranquil urban space

Human-Nature Connection

NARROW FOOTPRINT TO MAXIMIZE DAYLIGHT INTAKE

12.2m

38.4m

INDOOR PLANTING

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Weather Responsive Facade
SOLAR HEAT REDUCTION

Irradiance
2.500e+001
1.875e+001
1.250e+001
6.250e+000
0.000e+000

7am
Weather Responsive Facade
SOLAR HEAT REDUCTION

Solar shading / Light shelf
Weather Responsive Facade
WIND CATCHER

ENE Wind* (24.9%)

E Wind (16.5%)

Wind Rose on Electric Road

ENE Wind 24.9% (Prevailing Wind)

E Wind 16.5%

NNE Wind 12.2%

>>50% of Wind Blowing Along Electric Road
Rotatable Opening of Wind Catcher to Control Natural Ventilation Operation and Prevent Air Leakage
Indoor Wind Environment with Wind Catcher Opened
Healthy Building
CIRCADIAN LIGHTING
Inform occupants when outdoor condition permits for NV, giving occupants the choice to enjoy the outdoor weather while saving energy.

Weather station to inform occupants.

Inform occupants if indoor pollutants exceed recommended level, prompt occupants to open windows.
THANK YOU