

Cityscape Tower
The first
LEED Platinum Certified
Commercial Building
in Bangladesh



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This presentation is arranged as below:



DEFINITION

How do we Define
Sustainable Architecture or
Green Building?



METHODOLOGY

International Rating
System LEED



OUTCOME

An Example: The Cityscape Tower
LEED Platinum Certified
Green Building

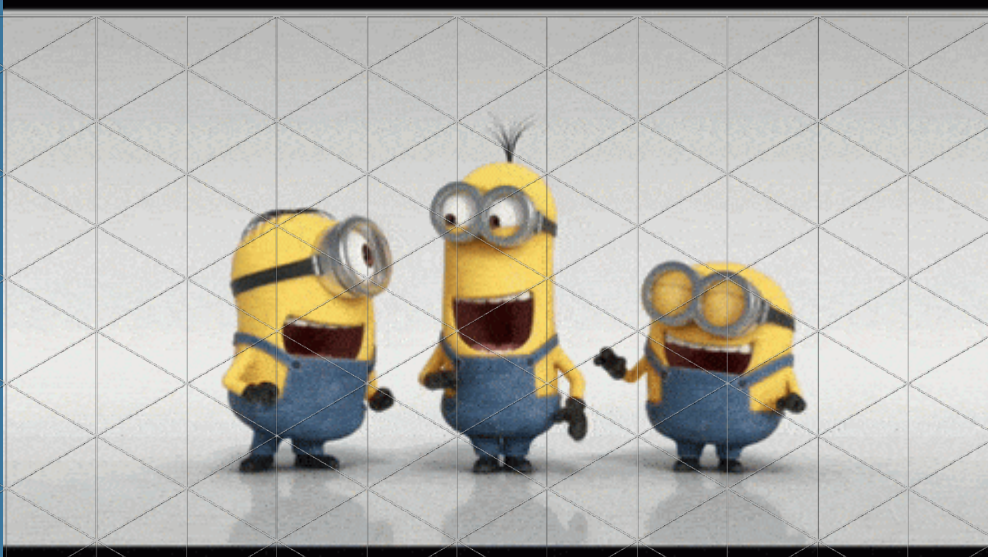


TO KEEP THINGS SIMPLE
WE WILL USE THE TERMS
“GREEN BUILDING”
&
“SUSTAINABLE ARCHITECTURE”
INTERCHANGEABLY
IN THIS PRESENTATION
TO MEAN THE SAME

WHILE THEORETICALLY
THEIR DEFINITIONS
MAY VARY



DISCLAIMER



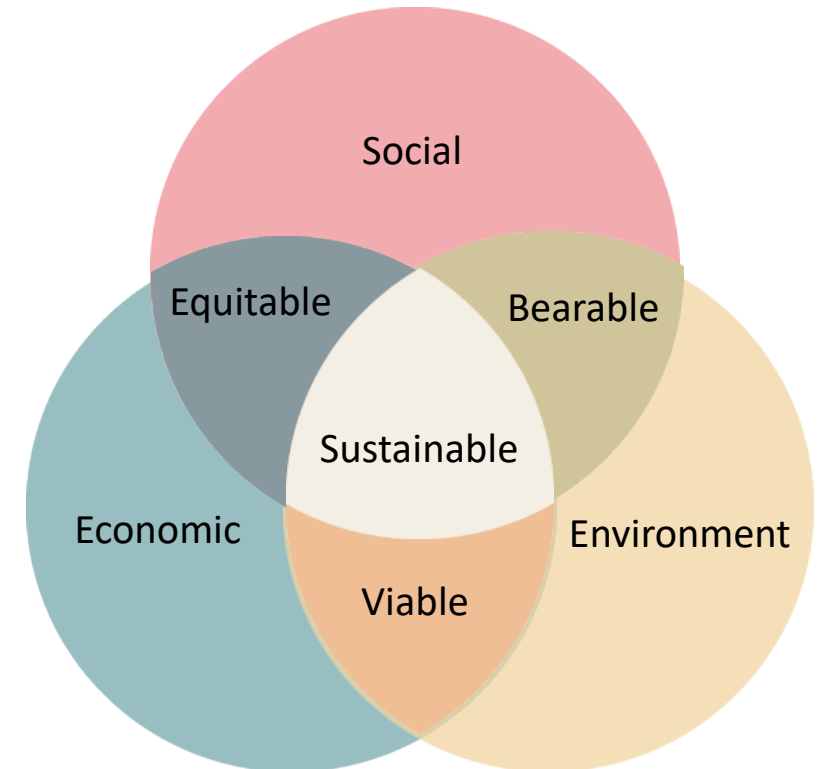
PART 01

DEFINITION

Sustainable development
meets the needs of the
present generation without
compromising the ability
of future generations to
meet their needs

W. H. Brundage (1987)

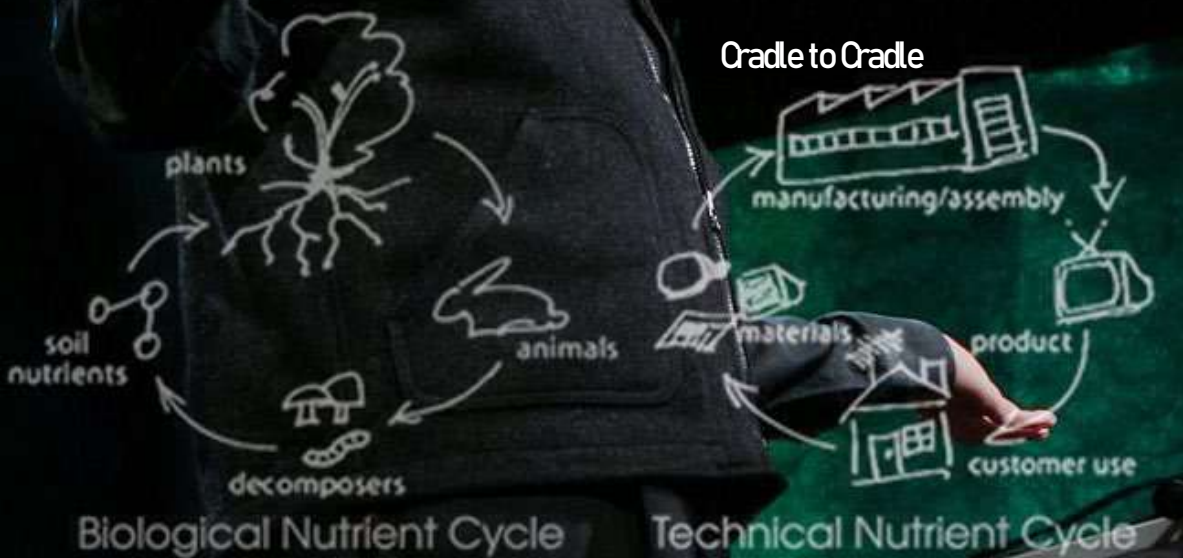
Our Common Future



“Consider this: Ants have been incredibly industrious for millions of years. Yet their productiveness nourishes plants, animals, and soil. Human industry has been in full swing for little over a century, yet it has brought about a decline in almost every ecosystem on the planet. **Nature doesn't have a design problem. People do.**”

—William McDonough, Michael Braungart

Cradle to Cradle



NUTRIENT METABOLISMS

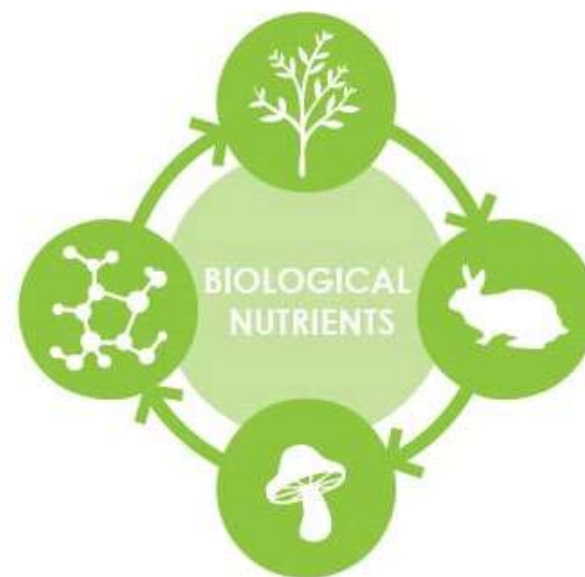
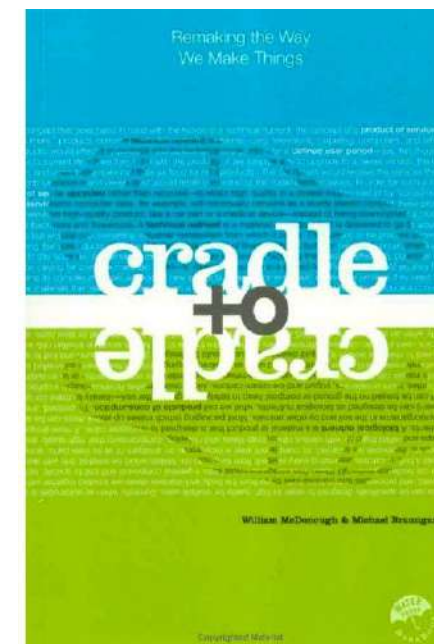
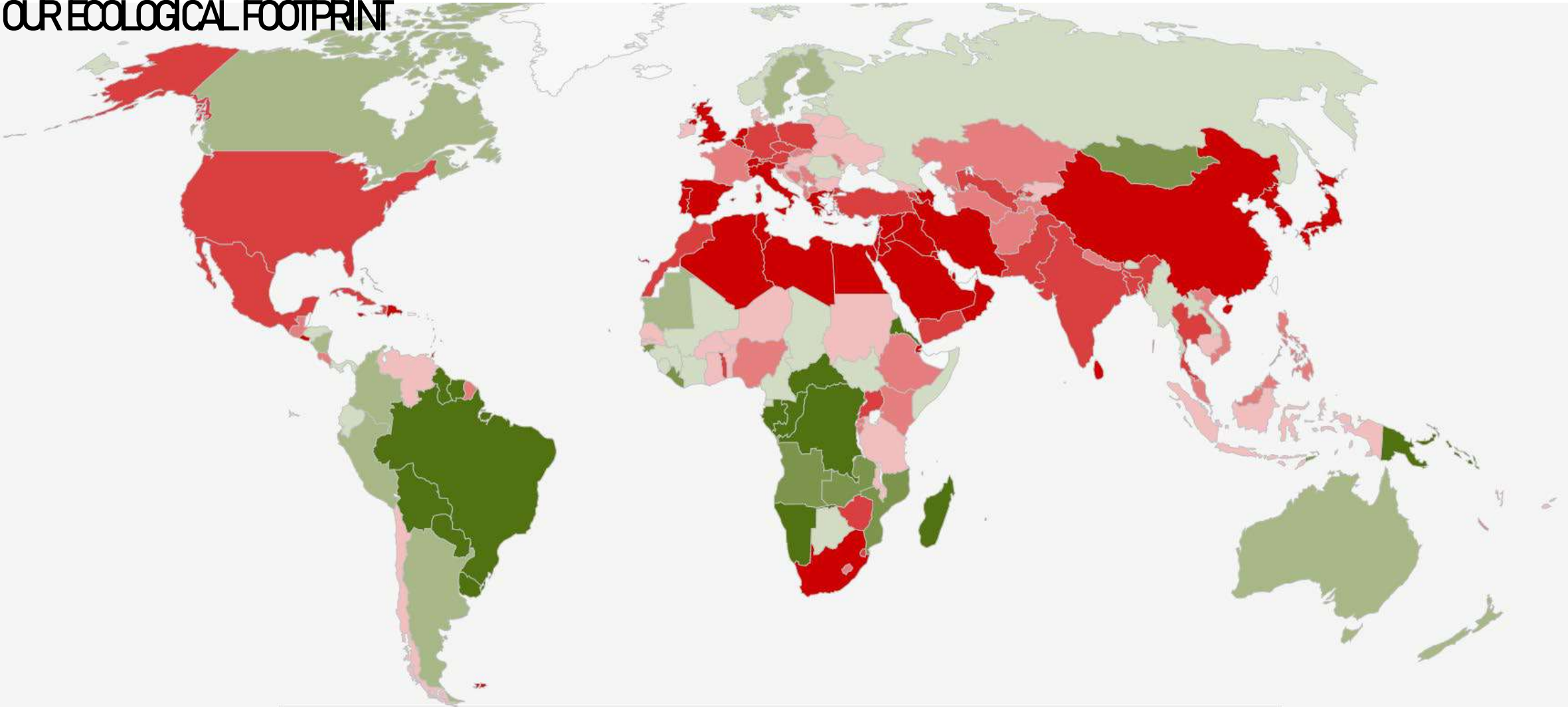


Diagram ©MBDC. Used with permission.



Current State of Sustainability Measures

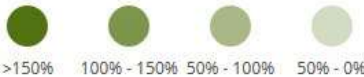
OUR ECOLOGICAL FOOTPRINT



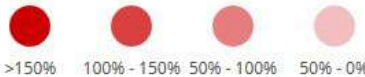
ECOLOGICAL DEFICIT/RESERVE

An ecological deficit occurs when the Ecological Footprint of a population exceeds the biocapacity of the area available to that population. A national ecological deficit means that the nation is importing biocapacity through trade, liquidating national ecological assets or emitting carbon dioxide waste into the atmosphere. An ecological reserve exists when the biocapacity of

BIOCAPACITY CREDITORS
BIOCAPACITY GREATER THAN FOOTPRINT



BIOCAPACITY DEBTORS
FOOTPRINT GREATER THAN BIOCAPACITY



3 TRADITIONAL DEFINITIONS TO GREEN BUILDING & SUSTAINABLE ARCHITECTURE BY ARCHITECTS

Green Building
or
Sustainable architecture
is...

to use commonsense,
intelligence & your own
humanity to extract the
maximum economic,
climatic and social
performance from the
most humble of
construction materials
and resources

– (1940 –50) Hassan
Fathy

Egyptian
Architect



01

Culture

Vernacular Revivalist



02

Nature

Critical Regionalist, Nature

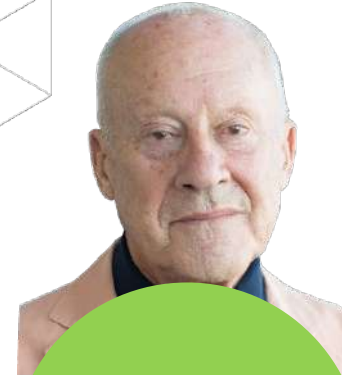
Green Building
Or
Sustainable architecture is...

Better use of space, improved
insulation, more daylight, less
energy consumption, good
internal air quality and
increased natural ventilation in
the mild seasons.

[Designing with Nature: the
Ecological Basis for
Architectural Design]

– (1971, 1995)
Ken Yeang

Malaysian
Architect



03

Technology

Technical Optimist

Green Building
Or
Sustainable
architecture...

Is doing the most with
the least means. The
Miesian maxim, 'Less is
more' is,
in ecological terms,
is Sustainable
architecture.

– Norman Foster

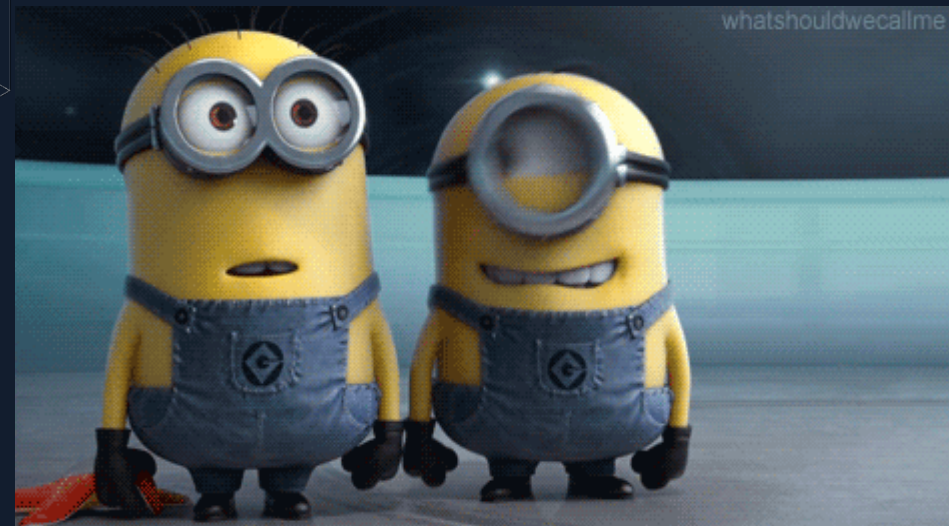
British
Architect

PART 02

HOW DO THESE IDEAS

WORK FOR

BUILDINGS?




1

DETERMINE
PRESENT
BASELINE



2

SET
IMPROVEMENT
TARGETS




3

SET POLICIES TO
ACHIEVE
TARGETS



4

GET HIGH
PERFORMANCE
BUILDINGS



"
Sustainable
Practice

"
Responsible
Practice

"
Green
Building

"
Environmentally
Responsible Building

How rating tools work



Medal if
Crime rate is
voluntarily
reduced to
01%-49%



Silver Medal
if Crime rate
is
voluntarily
reduced to
50%-59%



Gold Medal
if Crime
rate is
voluntarily
reduced to
60%-79%



Platinum
Medal if
Crime rate is
voluntarily
reduced to
80%-100%

Rewards for Green Buildings

Energy intensive,
Resource intensive
Unsustainable Buildings
=
Environmental
Crooks



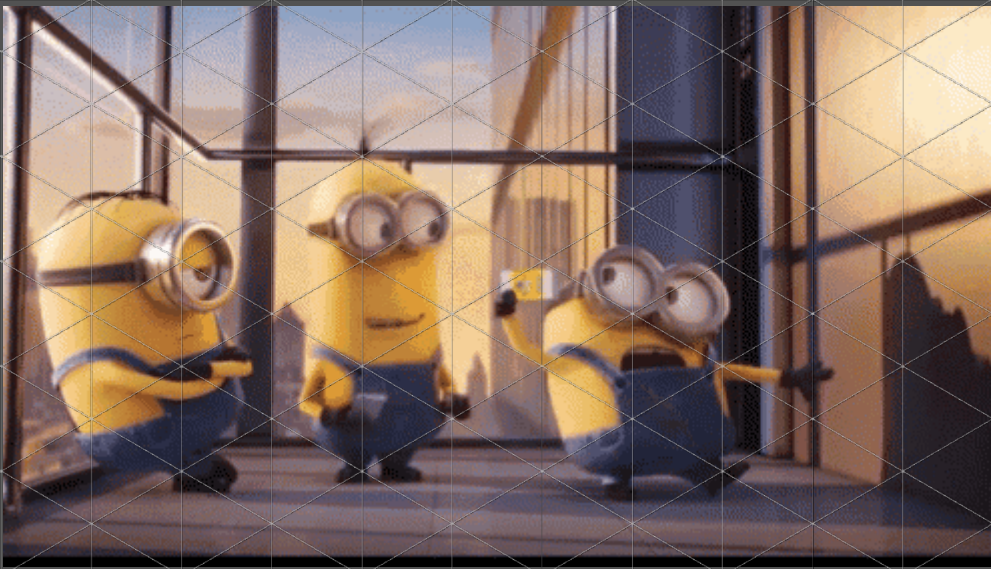
Simple Certification
01-49 points

Silver Certification
50-59
points

Gold Certification
60-79
points

Platinum Certification
80-100
points





PART 03

A PRACTICAL EXAMPLE - CITYSCAPE TOWER



Friday April 14,
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বাংলা

HABITAT

Eshadi Sharif

13 September, 2022, 10:25 am

Last modified: 13 September, 2022, 12:02
pm



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Cityscape Tower is one of Bangladesh's first commercial buildings to earn a Platinum LEED (Leadership in Energy and Environmental Design) certification, the highest tier of LEED's point-based system



Better Board
Better Interior



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**CITYSCAPE
TOWER
AN
EXAMPLE
OF
GREEN
BUILDING**





LEED Platinum

CITYSCAPE tower

Solar power: High efficiency panels producing 32 Kilo Watts on-grid power which is 5% renewable energy for the total building load.

Security: 24 hours surveillance system.

Native Plant: Native species of plants and landscaping, more sustainable to local climate and requires little maintenance.

Green Roof: Roof gardening and landscape at lobby level to augment aesthetic quality and reduce heat island effect.

Low-E-Glass: 60% of visual light transmittance. Solar Gain coefficient of 25% ensures significantly less cooling load.

Rainwater harvesting: Roof and hard scape based rain water harvesting to supplement fresh water supply and reduce demand on water mains.

Lift: Efficient and self energy producing lifts and US Environmental Protection Act compliant Tier 4 diesel generator to reduce sound pollution and pollution by Nox gases.

Indoor environment: 30% more Fresh Air intake compared to conventional buildings. CO₂ and CO sensors to maintain indoor environment quality and occupant health.

Indoor environment: Operable window provides occupants fresh air and improves indoor air quality.

Daylight sensor switch: On/Off adjust electric lights when there is ample light.

Air conditioning: Efficient VRF cooling plants in every floor maximize the energy efficiency and improves indoor quality.

CO₂ and CO sensors maintain high quality indoor environment automatically and ensure continuous fresh air supply.

Parking: The building has 52 parking, 18 bicycle stands, dedicated electric car charging point 24 hours monitored by CO sensors to prevent the accumulation of this gas.

Water efficient plumbing and fixtures to support water saving.

Wall insulation to reduce external heat gain.



Sustainable Sites 26/28



Water Efficiency 10/10



Energy & Atmosphere 21/37



Material & Resources 06/13



Indoor Environment Quality 08/12



Innovation 6/6



Regional Priority 4/4

TOTAL: 81/110 = LEED PLATINUM



BUILDING BASIC FACTS

Legends

- Workplace
- Water Body
- Green-Vegetation
- Drive space
- Services (Stair & Lift)
- Services (Toilets)



CityScape Tower Floor Area

Ground Floor Area	5,820 sft
First Floor Level	5400 sft
2nd to 12th Floor Levels	5830 X 11 = 64130 sft
13th Floor Level	5810 sft
Total Gross Area	81160 sft

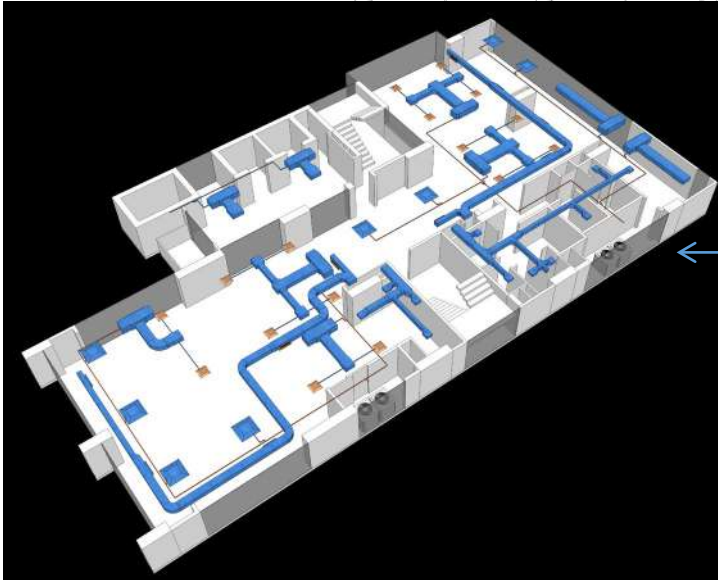
Number of Occupants

Considered calculation	225 Male
	225 Female
(male)	85 visitors
(female)	85 visitors
Total	620 people

Efficient HVAC System

Efficient VRF HVAC System

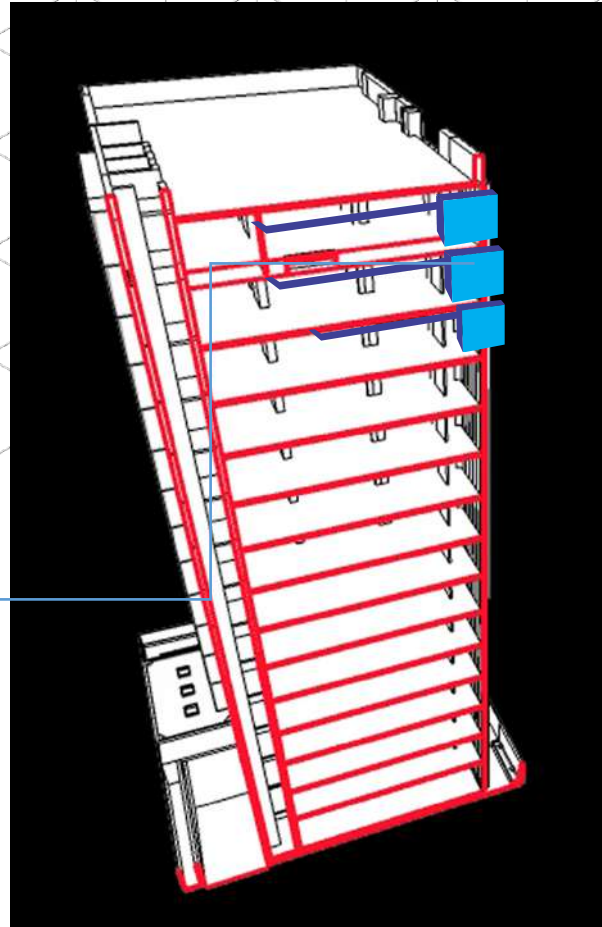
- High Efficiency VRF System
- CFC and Halon free
- 30% Fresh air intake
- Occupancy sensor based comfort control
- Low power consumption



Renewable Energy

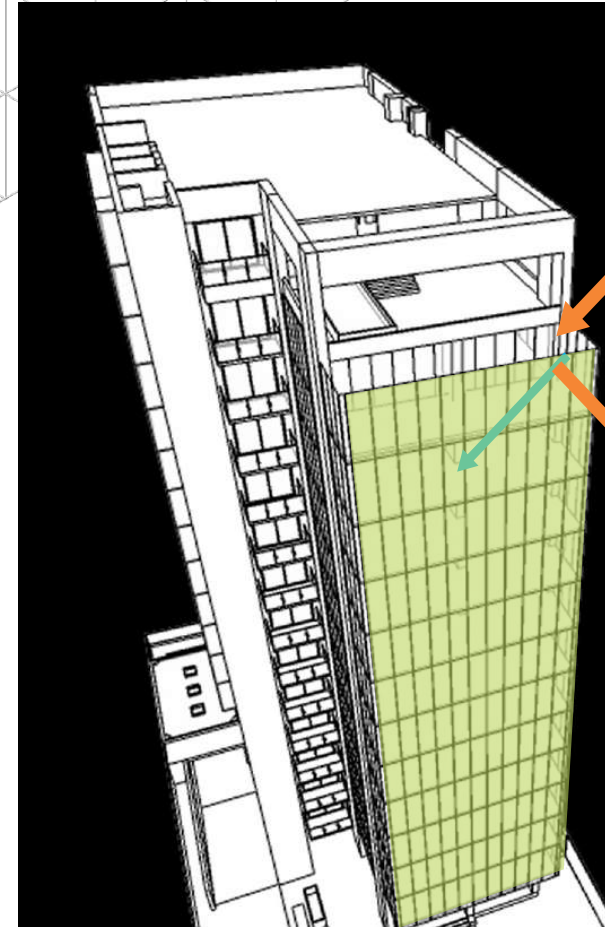
- Solar Panels

Total Energy saving 44%

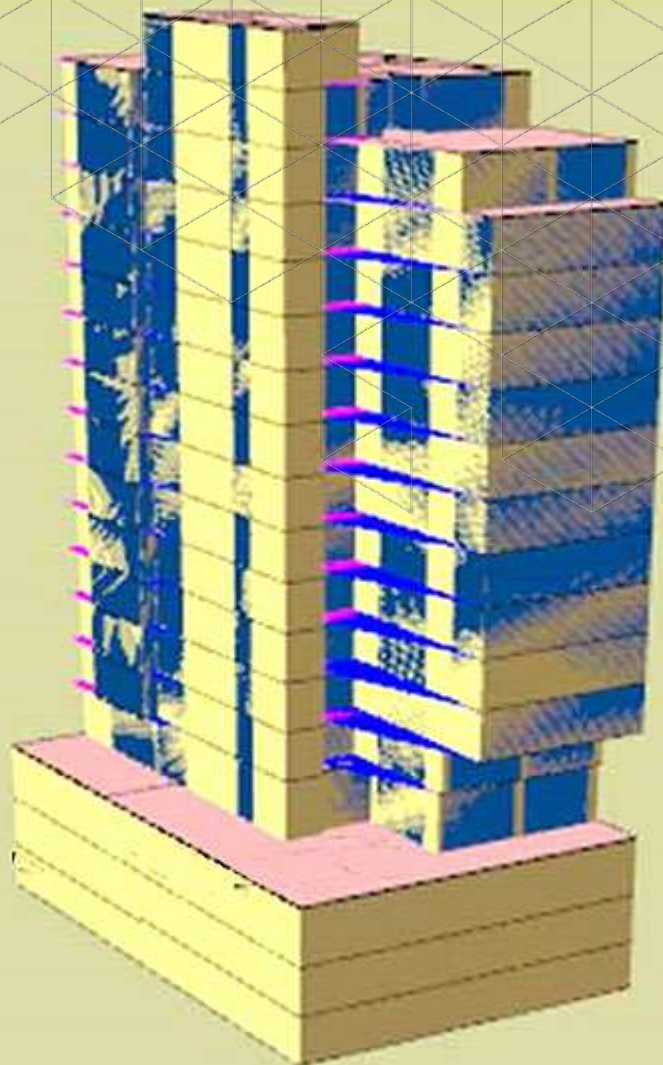


Energy Efficient Glass

- Energy Efficient Glass
- Double Glazing 6mm Glass- 12mm Air - 6mm Glass
- Day light sensor
- Occupancy sensor
- LED lighting



ENERGY
SIMULATION



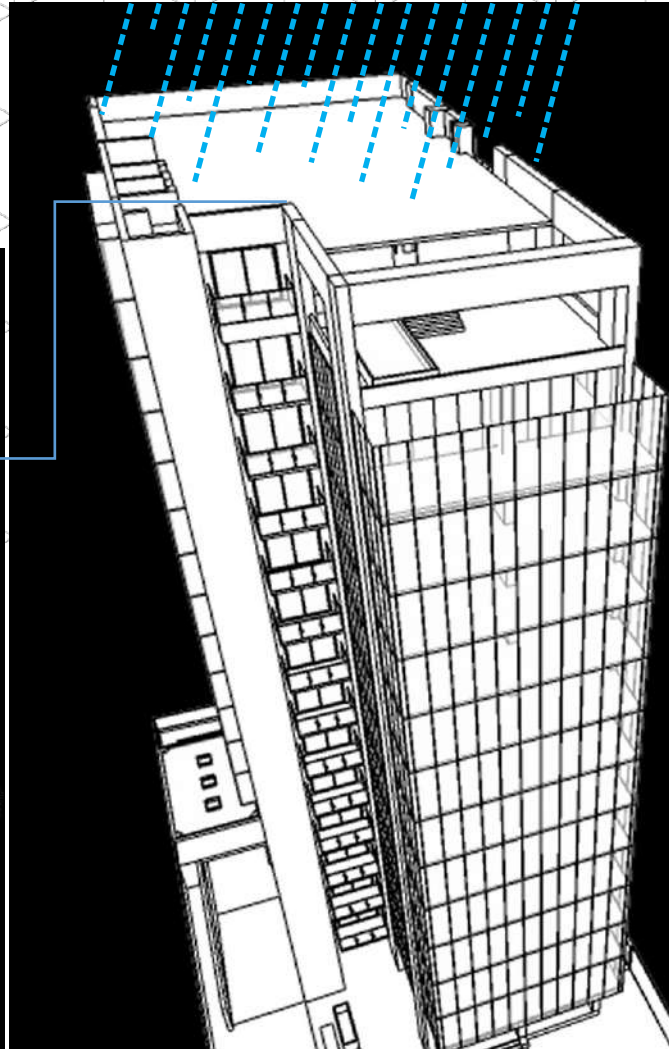
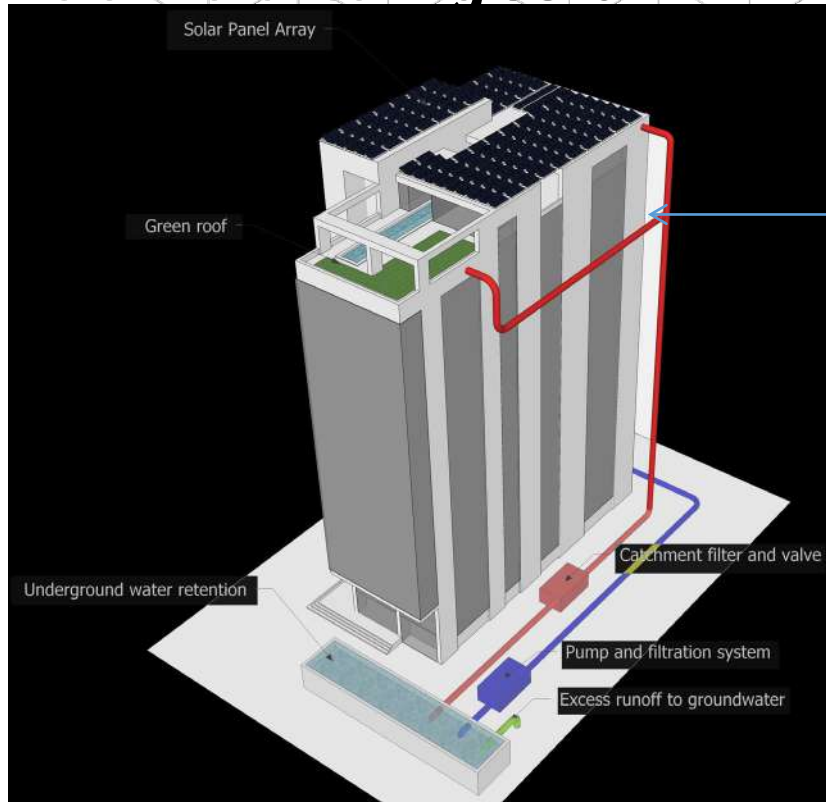
LOW
POWER
CONSUMPTION
REDUCE TOTAL POWER
CONSUMPTION BY **44%**



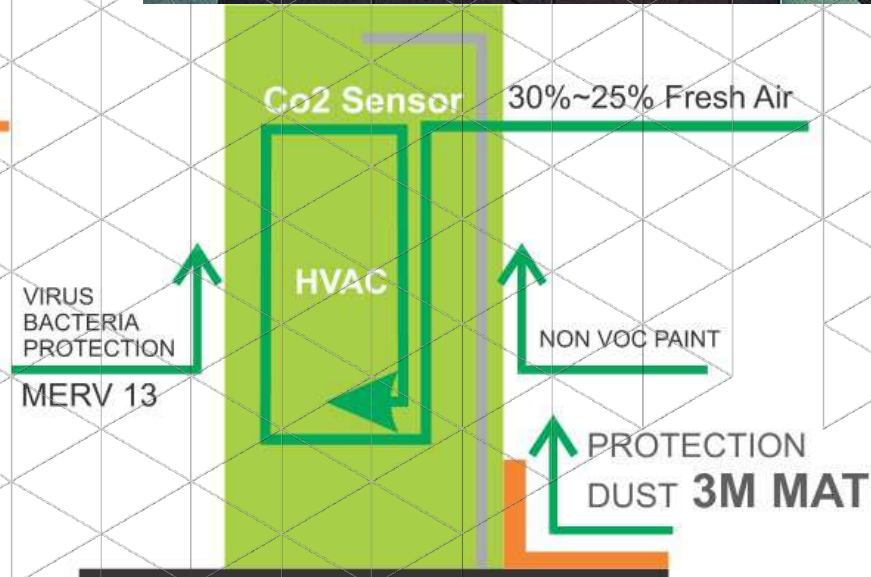
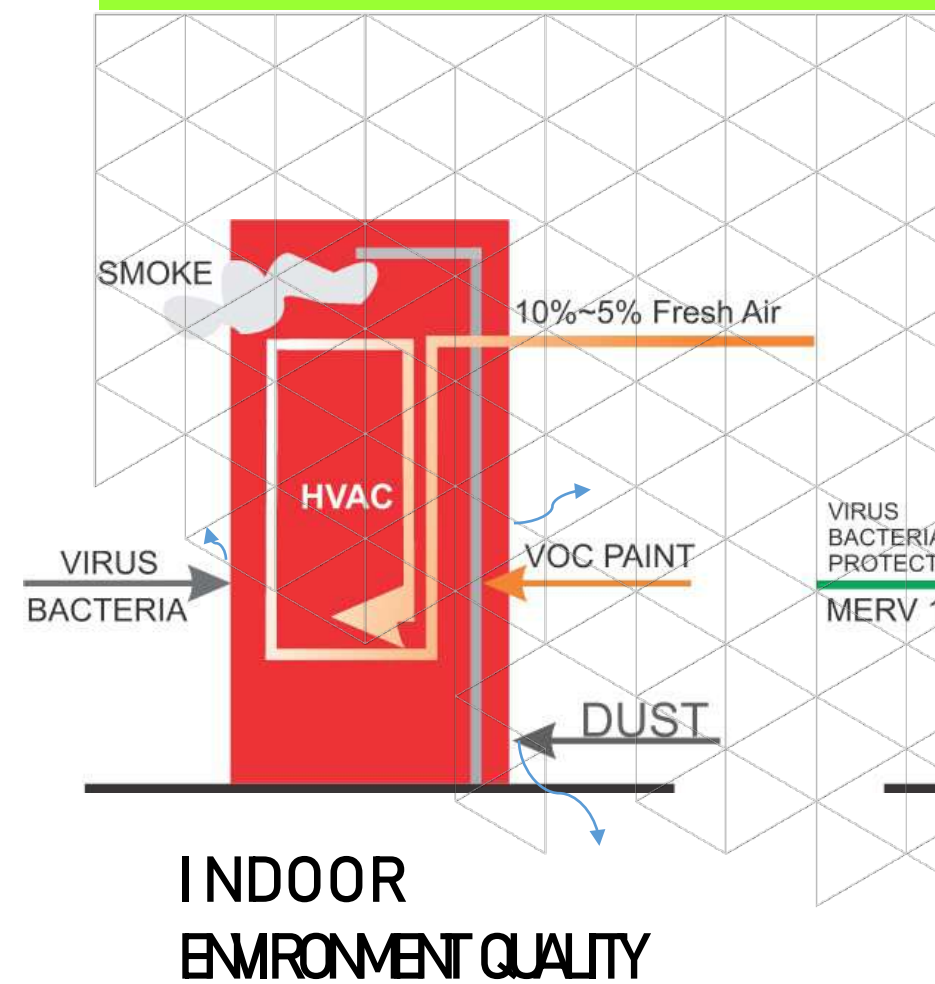
Water Efficiency

- Rain water Harvesting
- Grey water treatment and Recycling
- Lowflow Water efficient fixtures
- Sensor based water fixtures

Total Water saving 60%



**BE
RESPONSIBLE
GO
GREEN**



**BE
ECO-CONSCIOUS
LIVE GREEN**

SOME GREEN STRATEGIES

Reduced Soil
Erosion

Construction
Pollution
Prevention

Urban Heat
Island Effect
Reduction

Water Efficient
Fixtures

Grey Water
Recycling

Rain Water
Harvesting

Whole Building
Energy
Modeling

Energy Efficient
VRF HVAC
System

Occupancy
Sensor Light &
HVAC

Solar Panels

LED Light

Heat Proof
Double Layer
Glass

30% Fresh Air
Supply

Low VOC Paint

Certified Wood

Regional
Material

Light Pollution
Reduction

Green
Education

Day Lighting

View to
Exterior

Hang On
its not over yet
VIDEOS
are about to start



https://www.youtube.com/watch?v=kcyntw_UIK8

https://www.youtube.com/watch?v=Tsm_J7Nj4YU

