



# Business Case for **Net Zero**

Dr.C.Velan

At CapitaLand, we place **sustainability at the core of everything** we do.

We are committed to growing in a responsible manner, delivering long-term economic value, and contributing to the environmental and social well-being of our communities.




CapitaLand has been at the forefront of shaping the built environment, touching the lives of millions of people every day.



# CapitaLand Focus areas and target 2021 - 2030

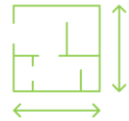


CapitaLand targets to **build resilience throughout our operations and future-proof our real estate portfolio** to guard against climate change risks and to avoid premature obsolescence.

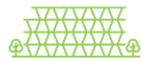
 <p><b>Low Carbon Transition</b></p> <p><b>Targets</b></p> <ul style="list-style-type: none"><li>• Further reduce carbon emissions intensity<sup>2</sup> to 78%, from the previous target of 30%.</li><li>• Further reduce energy consumption intensity<sup>2</sup> to 35%, from the previous target of 30%, in our day-to-day operations.</li><li>• Increase the proportion of total electricity consumption from renewable sources to 35%.</li></ul>	 <p><b>Water Conservation and Resilience</b></p> <p><b>Target</b></p> <ul style="list-style-type: none"><li>• Further reduce water consumption intensity<sup>2</sup> to 45%, from the previous target of 30%, in our day-to-day operations.</li></ul>	 <p><b>Waste Management and Circular Economy</b></p> <p><b>Targets</b></p> <ul style="list-style-type: none"><li>• Achieve 25% recycling rate in our day-to-day operations.</li><li>• Divert 75% of construction waste from landfill.</li><li>• Work towards setting an embodied carbon target.</li></ul>
---	---	--

\*2019 as the base reference

# CapitaLand India



**26.4** million sq ft  
Gross Floor Area



**20.9** million sq ft  
IT/business parks



**5.5** million sq ft  
Logistics/Warehouses



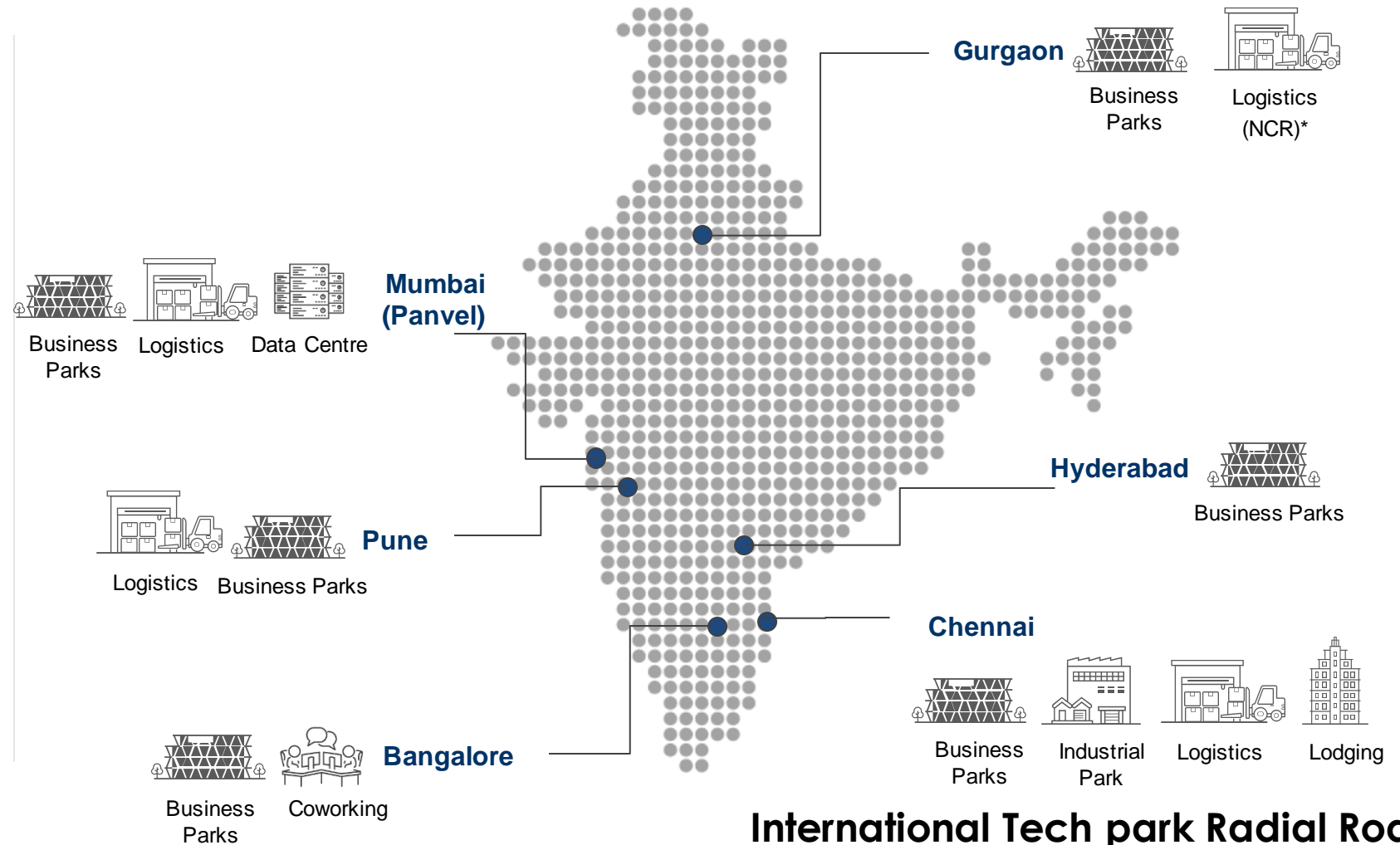
**S\$4** billion in AUM



**6** key cities



**4** Business trust &  
private equity funds



# Chennai சென்னை



San Thome Cathedral Basilica

Besant nagar beach

GUINDY கிண்டி

VELACHERY வேளச்சேரி

THARAMANI தரமணி

PERUNGUDI பெருங்குடி

OMR road

Kotivakkam கொட்டிவாக்கம்

Hidden Lake

VANUVAMPET வாணுவம்பேட்டை

MADIPAKKAM மடிப்பாக்கம்

KRC

KAMAKOTI NAGAR காமாகோடி நகர்

MMTC COLONY MMTC காலனி

SUBRAMANIAN NAGAR சுப்ரமணியன் நகர்

KEELKATTALAI கீழ்க்கட்டளை

BALAMURUGAN NAGAR பாலமுருகன் நகர்

KOVILAMBAKKAM கோவிலம்பாக்கம்

RAJIV GANDHI NAGAR ராஜிவ் காந்தி நகர்

PERUMAL NAGAR பெருமல் நகர்

VEERAMANI NAGAR வீரமணி நகர்

ABHINANDAN NAGAR அபிநந்தன் நகர்

Palken Tank

OLD PALLAVARAM ஒட்டு பல்லாவரம்

PERUMAL NAGAR EXTENSION பெருமல் நகர் கீஸ்டென்ஷன்

Site -01

Site -02

200 feet Radial Road

International Tech park Radial Road

Embassy

Sri Chaitanya Techno School Pallavaram 2

Featherlite

Stop & Play Badminton Academy ஸ்டாப் & பிளே...

2D

+

+



**Site -01**  
Current Development  
Approx 12.67 Acres

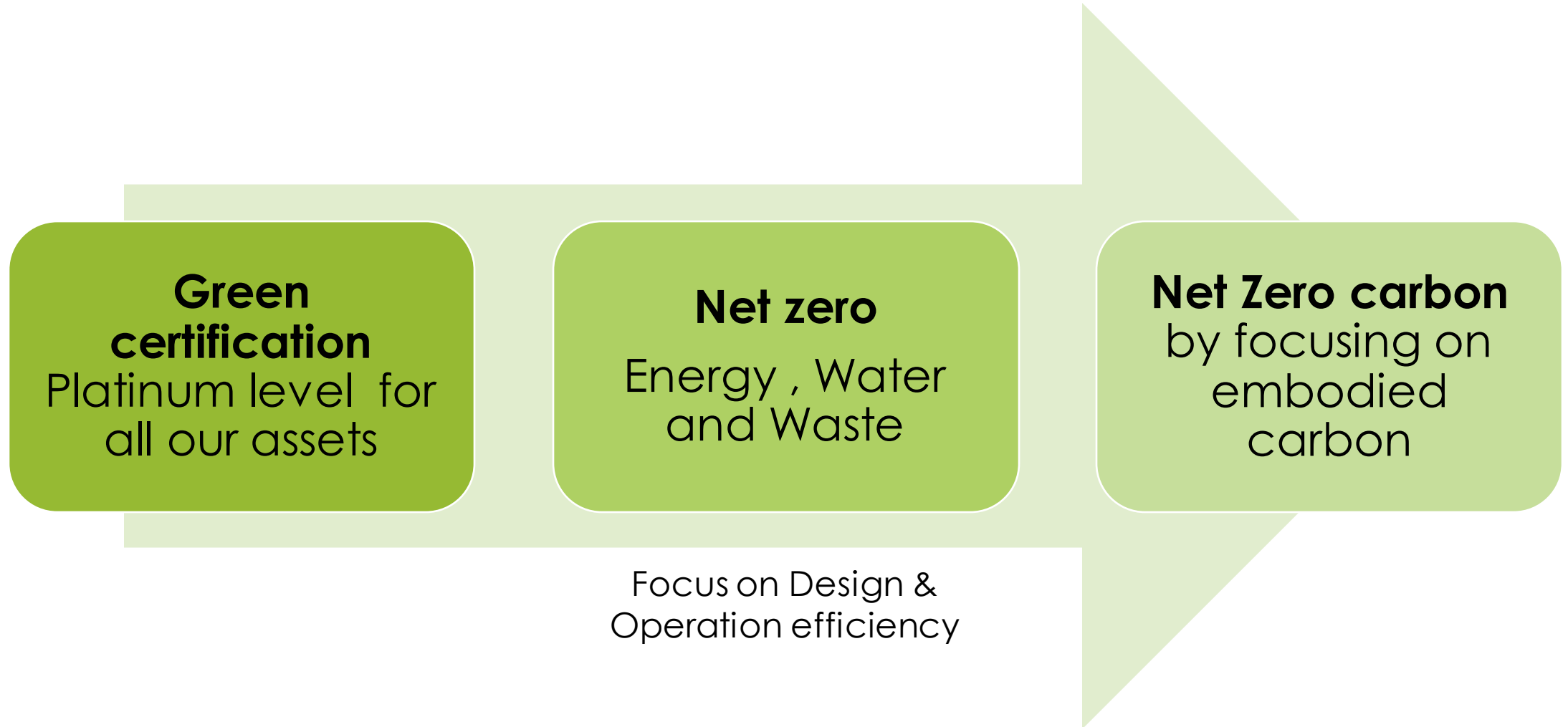


**Site -02**  
Future Development  
Approx 12.43 Acres

**200 feet Radial Road**



# Our plan towards carbon neutrality



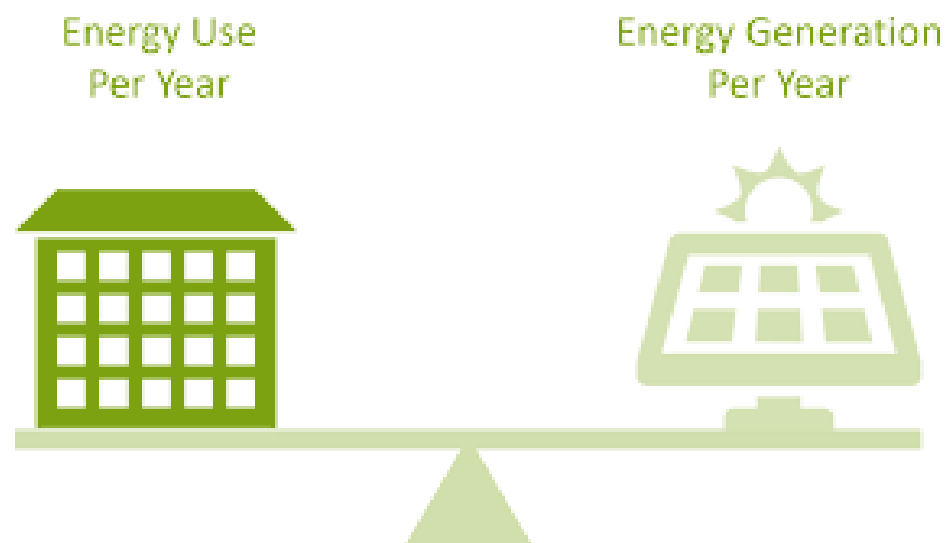
# Radial Road IT Park's path to Carbon Neutral

- 1) Certified for **IGBC NB Platinum** rating
- 2) Achieved **Net Zero rating** in Design, first of its kind in India for
  - **Energy**
  - **Water**
  - **Waste**
- 3) To achieve **Net Zero Carbon** – by reducing overall carbon during operations



# 1) Net Zero Energy Building

Zero energy buildings combine **energy efficiency** (*Active & Passive*) and **renewable energy generation** to consume only **as much energy as can be produced onsite/offsite** through renewable resources over a specified time period.



Definition

# Sustainability measures towards **Net Zero ENERGY** in ITPC RR



**Overall : 27% reduction in overall energy consumption from baseline (ECBC-2017) by adopting Passive and Active measures.**

## **Sustainable Architecture Design (Passive)**

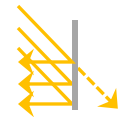
- Day Light Penetration 75% of Office space
- Shading devices-vertical fins reduces heat gain



>75% Daylit Floorplates

## **Energy Conservation (Active)**

- Water cool Chillers with higher coefficient of performance (COP)- 6.8
- Electronically commutated Fans for Smart AHU's, reduces energy consumption 20% to 30%.
- VFD –Variable frequency drive for pumps and motors which provide energy saving.
- LED lighting with lighting controls
- Energy efficient elevators, pumps and motors



Minimized Heat Load

## **EPI –Energy performance Index**

Baseline (ECBC 2017) - 103.42 KWH/SQM/Year

Post Active and Passive measures - 75.90 KWH/SQM/Year

## **Renewable Energy – to meet overall demand post reduction in baseline**

- On Site – 2.5% (250 KW)
- Off Site – 97.5% of energy demand (Own Solar Farm)



## 2) Net Zero Water Building

Net Zero Water Buildings are those **that consume minimum raw water & produce alternate water to meet the balance requirement (and) give back such quantities to the original sources for use, so that the net annual water consumption is zero.**

**Total Raw Water\* consumption = Total Water consumption – Alternate water\*\*consumption ( e.g. Grey water)**

**Water given back to source \*\*\* > Total Raw water\* consumption**

Raw water\*

Municipal water , bore water , tanker water purchased

Alternative water\*\*

Rainwater (Recharge of captive use , Treated grey water, condensate water or purchased grey water

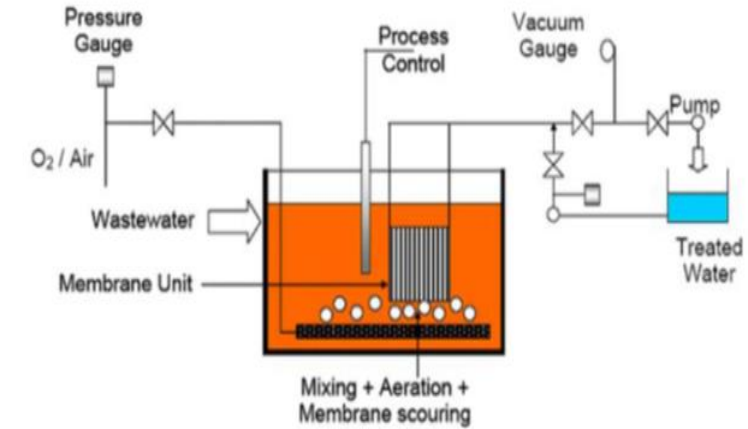
Water given back to source\*\*\*

Recharge of local aquifer by capturing rainwater and percolation water from landscape/pervious areas

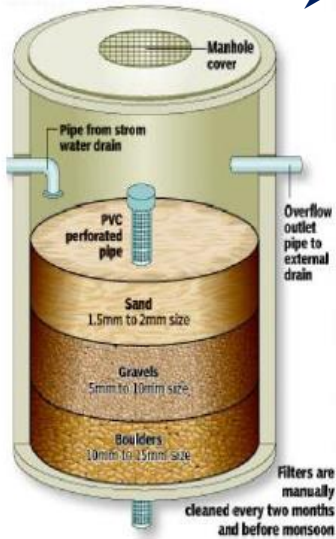
# Sustainability measures towards **Net Zero WATER** in ITPC RR



- **2 MLD capacity** per day Wastewater treated by Membrane Bioreactor (MBR) and reused for HVAC makeup water, flushing water and irrigation.



- **Rainwater harvesting sump of 1006 cum** is planned for reusing it for domestic purpose after treatment and percolating recharging the earth through rainwater harvesting pit of **26 nos**



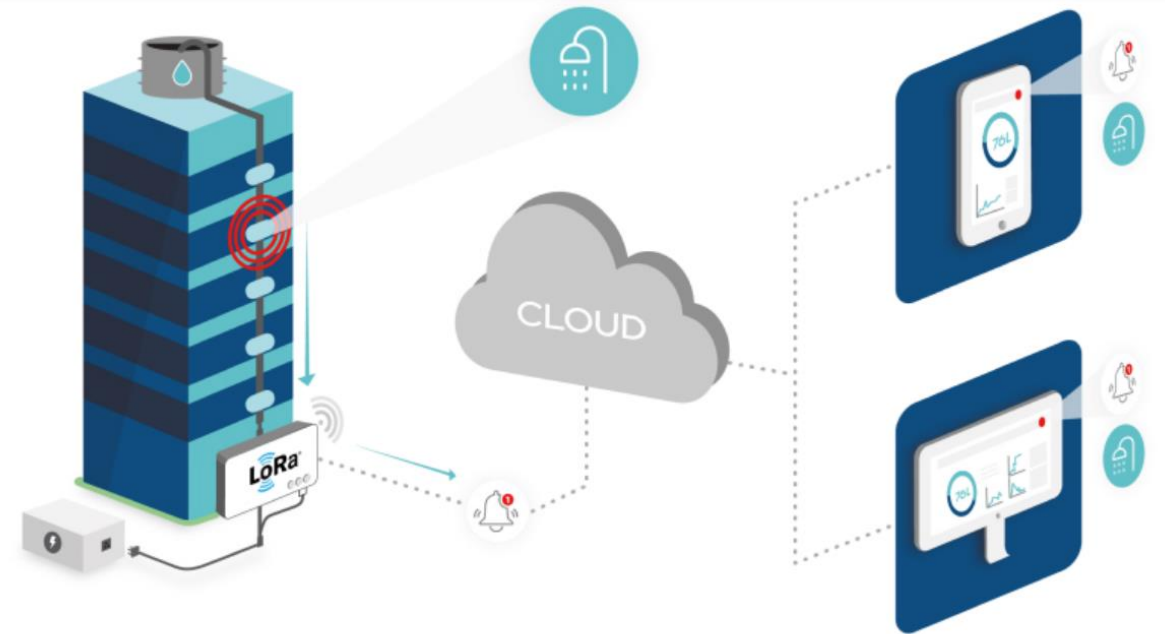
- By selecting **Water efficient plumbing fixtures**, the project is able to show **49%** of potable water reduction than the standard fixtures. Meters to monitor and control while operating facility

- Drought tolerant/native/adaptive species used in landscape along with efficient irrigation measures such as **drip irrigation, automated irrigation systems** etc.



# Sustainability measures towards **Net Zero WATER** in ITPC RR

- **Centralized Water Management System** - Digital water metering system with BMS support has been given for various applications to measure the water consumption of the project.



### 3) Net Zero Waste Building

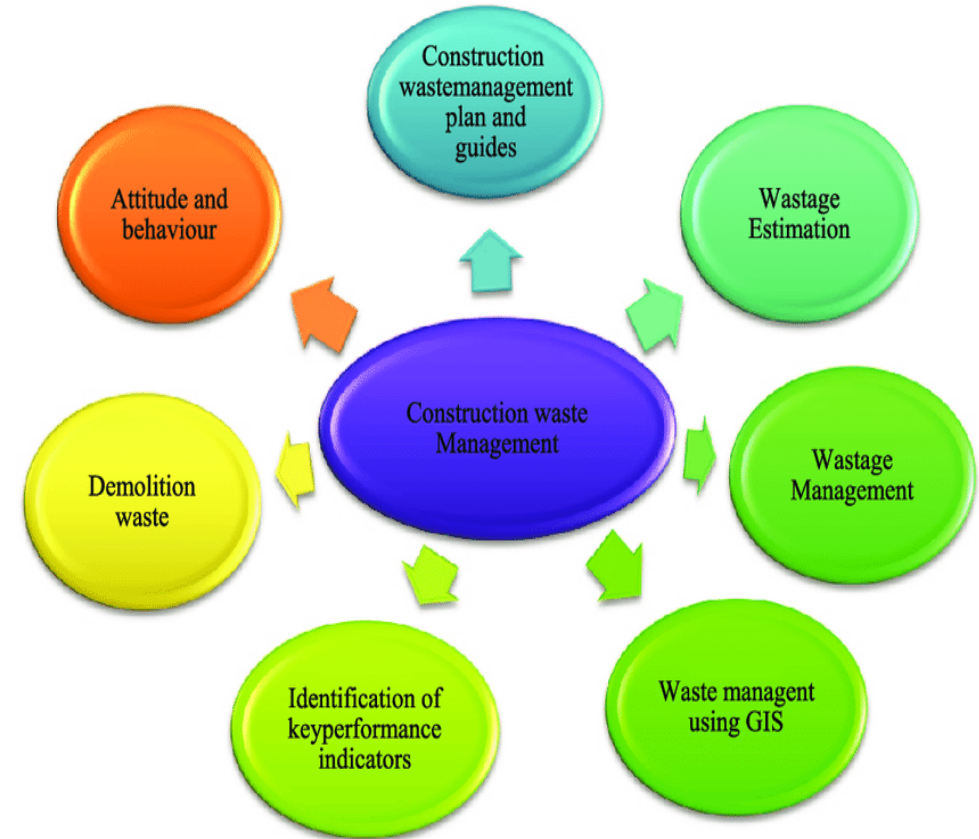
A **Net Zero Waste for Buildings & Built Environment** is one which eliminates the diversion of waste being sent to landfills, by a multi-pronged approach - **nature-centric** design, **reducing** debris during construction, **responsibly handling waste** during operation, **reusing the waste** as much as possible and **recycling the remaining waste**.



# Sustainability measures towards **Net Zero WASTE** in ITPC RR

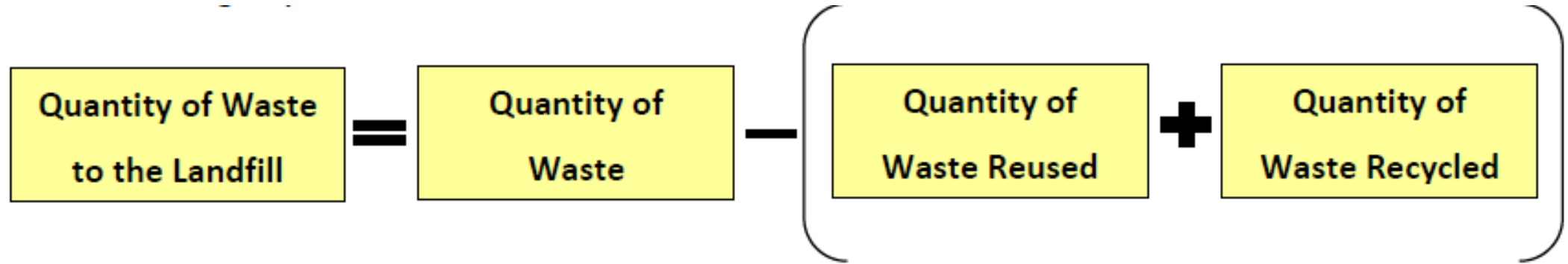
## During Design & Construction

- Procurement of Sustainable **Eco-labelled Building materials – 46%**
- More than **90%** of Construction waste diverted from Landfill
- More than **10%** of materials with **Pre-fabricated structures**
- Procurement of materials with **Recycled content & Locally sourced materials**
- Adopted strategies to **reduce waste generation at source**



# Sustainability measures towards **Net Zero WASTE** in ITPC RR

During Operation



- Develop a **green procurement policy**
- Facilitate **segregation of waste** -encourage reuse or recycling of materials.
- Allocate **centralized facility to store, segregate and handover collected waste** to the **identified recycle vendors**.
- Encourage practices that **reduce waste generation** during operation so as to avoid waste being sent to landfills.
- Initiate a **sense of awareness** amongst occupants and stakeholders on the need for responsible handling of waste.



## NZ Energy

## NZ Water

## NZ Waste



Confederation of Indian Industry

### Indian Green Building Council (IGBC)

hereby certifies that

## International Tech Park Chennai, Radial Road

Chennai, Tamil Nadu

(IGBC Registration No: NZ 22 0022)

*The project has demonstrated an intent to design and build  
a Net Zero Energy Building in accordance with*

### IGBC Net Zero Energy Buildings Rating System

## Provisionally Certified - Net Zero Energy

August 2022

*(This certification is valid for next 1 year)*

*Ashish Rakheja*

Ashish Rakheja

Chair, Net Zero Energy Buildings

*Gurmit Singh Arora*

Gurmit Singh Arora

Chairman, IGBC

*K S Venkatagiri*

K S Venkatagiri

Executive Director, CII-Godrej GBC



Confederation of Indian Industry

### Indian Green Building Council (IGBC)

hereby certifies that

## International Tech Park Chennai, Radial Road

Chennai, Tamil Nadu

(IGBC Registration No: NZWTR 22 0006)

*The project has demonstrated an intent to design and build  
a Net Zero Water Building in accordance with*

### IGBC Net Zero Water Rating System

## Provisionally Certified - Near Net Zero Water

August 2022

*(This certification is valid for next 1 year)*

*Ashish Rakheja*

Ashish Rakheja

Chair, Net Zero Energy Buildings

*Gurmit Singh Arora*

Gurmit Singh Arora

Chairman, IGBC

*K S Venkatagiri*

K S Venkatagiri

Executive Director, CII-Godrej GBC



Confederation of Indian Industry

### Indian Green Building Council (IGBC)

hereby certifies that

## International Tech Park Chennai, Radial Road

Chennai, Tamil Nadu

(IGBC Registration No: NZWA 22 0003)

*The project has demonstrated an intent to design and build  
a Net Zero Waste in accordance with*

### IGBC Net Zero Waste Rating System

for Buildings & Built-Environment

## Provisionally Certified - Near Net Zero Waste

August 2022

*(This certification is valid for next 1 year)*

*Anup Mathew*

Anup Mathew

Chair, Net Zero Waste

*Gurmit Singh Arora*

Gurmit Singh Arora

Chairman, IGBC

*K S Venkatagiri*

K S Venkatagiri

Executive Director, CII-Godrej GBC



Thank you

