

The background of the slide is a dynamic, high-speed photograph of water splashing. The water is captured in mid-air, creating a complex, crystalline structure of droplets and bubbles. The color of the water is a clear, light blue, and the overall effect is one of movement and energy.

**25th NATIONAL AWARD FOR
EXCELLENCE IN ENERGY
MANAGEMENT - 2024**



ITPP HINJEWADI, PUNE

10-12 Sep 2024

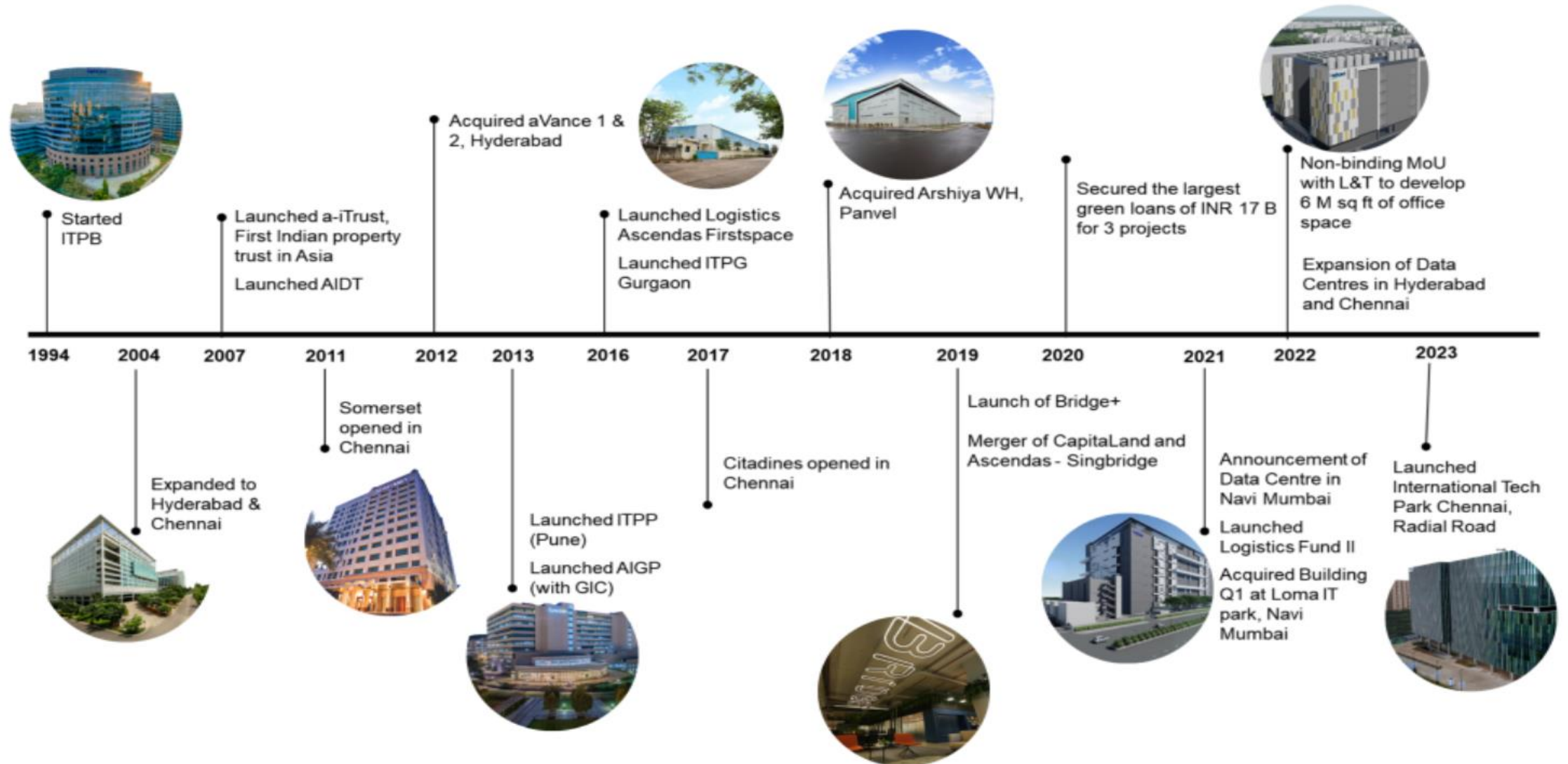
Presented By – Mr. Rajasekhar Potunuru,
AVP – Pune & Mumbai PMD Ops

Company Profile



- CapitaLand Group is one of Asia's largest diversified real estate groups.
- Headquartered and listed in Singapore, CapitaLand's portfolio spans across diversified real estate classes including commercial, retail, business parks, industrial and logistics facilities, integrated developments, urban developments and lodging.
- CapitaLand Group comprises of the listed real estate investment management business CapitaLand Investment, and the privately held property development arm CapitaLand Development.
 - CapitaLand Investment (CLI) owns and manages a global portfolio worth about S\$133 billion as at 31 March 2023. CLI's REITs and business trusts have expanded to include CapitaLand Ascendas REIT, CapitaLand Integrated Commercial Trust, CapitaLand Ascott Trust, CapitaLand China Trust, CapitaLand India Trust and CapitaLand Malaysia Trust.
 - CapitaLand Development (CLD) is the development arm with a portfolio worth about S\$21.8 billion as at 31 December 2022. CLD's strong expertise in master planning, land development and project execution has won numerous accolades including the Building and Construction Authority Quality Excellence Award and FIABCI Prix d'Excellence Award.
- Sustainability is at the core of what we do. As a responsible real estate company, CapitaLand contributes to the environmental and social well-being of the communities where it operates, as it delivers long-term economic value to stakeholders.

CapitaLand India



CapitaLand ESG Pillars

CapitaLand is committed to sustainability and incorporates the key principles of environment, social and governance (ESG) in setting its business strategies and operations



Environment (E)

- Energy/Low Carbon Transition
- Circular Economy/Waste Management
- Water Conservation & Climate Risk Mitigation



Social (S)

- Healthy, Safe Buildings & Occupants/Users
- Human Capital



Governance (G)

- Supply Chain Management
- Customer Relationship Management
- Other Activities
- Risk Management - Ethics %
- Compliance- Audit
- Board Appointments
- Key Leadership Appointments



Market Leadership

- Green Finance (Debt or Equity)
- Sustainability
- Solutions & Technology (Innovative & Scalable)
- Standards in Property Management & Maintenance

CapitaLand Sustainability Master Plan



Build
Portfolio Resilience & Resource Efficiency

- ✓ Low Carbon Transition
- ✓ Water Conservation & Resilience
- ✓ Waste Management & Circular Economy



Enable
Thriving & Future Adaptive Communities

- ✓ Dynamic Human Capital
- ✓ Health & Safe Building
- ✓ Proactive customer relationship management
- ✓ Robust Supply Chain Management



Accelerate
Sustainable Innovation & Collaboration

- ✓ Sustainable operational excellence
- ✓ Sustainable Finance
- ✓ Sustainable Innovation & Technology



Anchored by strong Governance & Sustainable Financial Performance

Key Pathways to 2030



Integrating Sustainability real estate life cycle



Strengthening innovation & collaboration to drive sustainability



Leveraging sustainability trends and data analytics



Monitoring & Reporting to ensure transparency



Increasing stakeholder engagement & communication

Sustainability Standards Adopted



CapitaLand is a signatory to the United Nations Global Compact's (UNGC4) commitment and adopted UNGC's universal principles on human rights, labour, the environment and anti-corruption, to create a positive impact aligned with the United Nations Sustainable Development Goals.



CapitaLand was one of the first companies in Singapore to voluntarily publish its annual Sustainability Report and adopt the internationally recognized Global Reporting Initiative (GRI) reporting framework



CapitaLand also participates in the annual Carbon Disclosure Project (CDP) Climate Change Programme and its footprint is calculated in accordance with the Greenhouse Gas (GHG) Protocol

For its efforts on sustainability CapitaLand is listed on:



CL India Sustainability Goals

Environmental Indicator	Unit	2019	2025	2030
Green Certification (For Own & Managed Bldgs Only)	%	80%	-	100%
Renewable Electricity Consumption	%	35%	17.5%	35%
Operational Energy Intensity	kwh/Sqm	66.7	61.7	56.7
<u>Operational Water Intensity (incl. STP where applicable)</u>	<u>m3/sqm</u>	<u>1.02</u>	<u>0.94</u>	<u>0.87</u>
Operational Waste Intensity	kg/sqm	10	9	8
Absolute Carbon Emission	(Tonnes CO2e)	47,195	43,629	31,831
Carbon Intensity	kgCO2e	31.3	21.6	11.9

NA – Not Available

Sustainability and Digitalisation



Switch to renewable power

Solar power to the tune of **77 million kWh**
Approx. **38%** of parks' power consumption for 2022
54,000 metric tons CO2 reductions p.a. (*Energy consumed across 6,500 homes p.a.*)



Energy Efficiency

40% of Energy Usage Intensity reduction in 2022 from 2019. Partly through implementation of various energy efficient initiatives and partly due to Covid-19 impact



Water Efficiency

61% reduction in water consumption in 2022 from 2019. Partly through effective water management and partly due to Covid-19 impact
100% usage of treated water



Automation

Central Operations Command Centre-Could based IoT platform to monitor equipment health & performance and optimize operations for 70% of the business parks portfolio



Mobility

Electric Vehicle (EV) charging points
E-Bicycles electric buggies for commuting within the park
App based carpooling



Contactless Features

Contactless journey for employees & visitors Health & Safety



Certification

Green building certification for **95%** plus buildings through LEED / IGBC
All future building will be green certified



Zero Waste

*ITPC Taramani certified by CII-IGBC to be **Net Zero Waste-Operation Phase***
Introduced a Trashbot at ITPB to effectively segregate waste for recycling
*Under construction ITPC Radial Road certified by IGBC to be **Net Zero at design stage***



Health & Wellbeing

IAQ based monitoring & control with **UVGI** in AHUs pan India

Arial View – International Tech Park Pune, Hinjawadi



Juniper Building

Cypress Building

Angsana Building

Cedar Building

International Tech Park Pune, Hinjawadi



ITPP- Phase 1



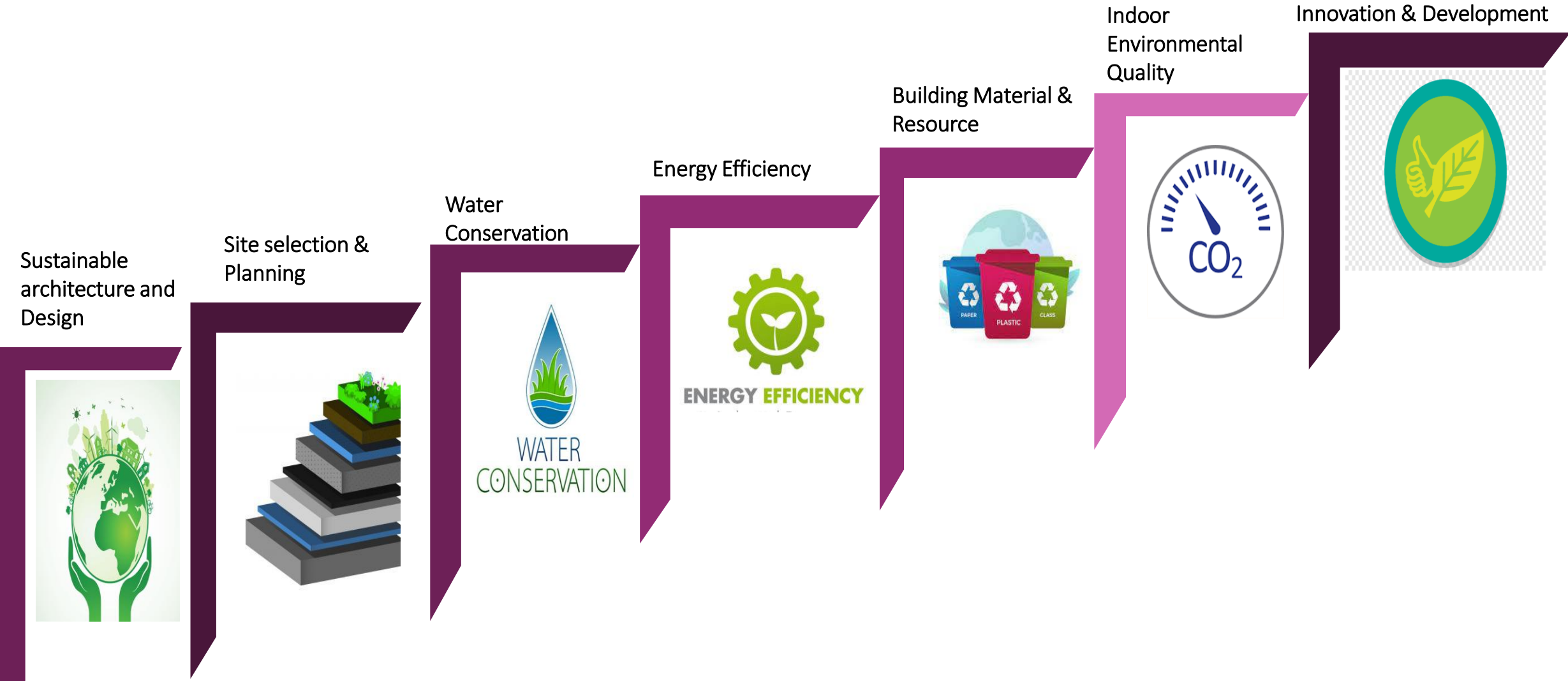
ITPP- Phase 2

- Area: **25 acres** of IT SEZ at Rajiv Gandhi Infotech Park Phase III
- **2.3 million sq ft** of fully leased office space
- Park population: **19700**

Key occupiers



Sustainable Design Features of ITPP



Sustainable architecture and Design at ITPP



Retained site contour to an extent of at least 50% of the site, including building footprint.

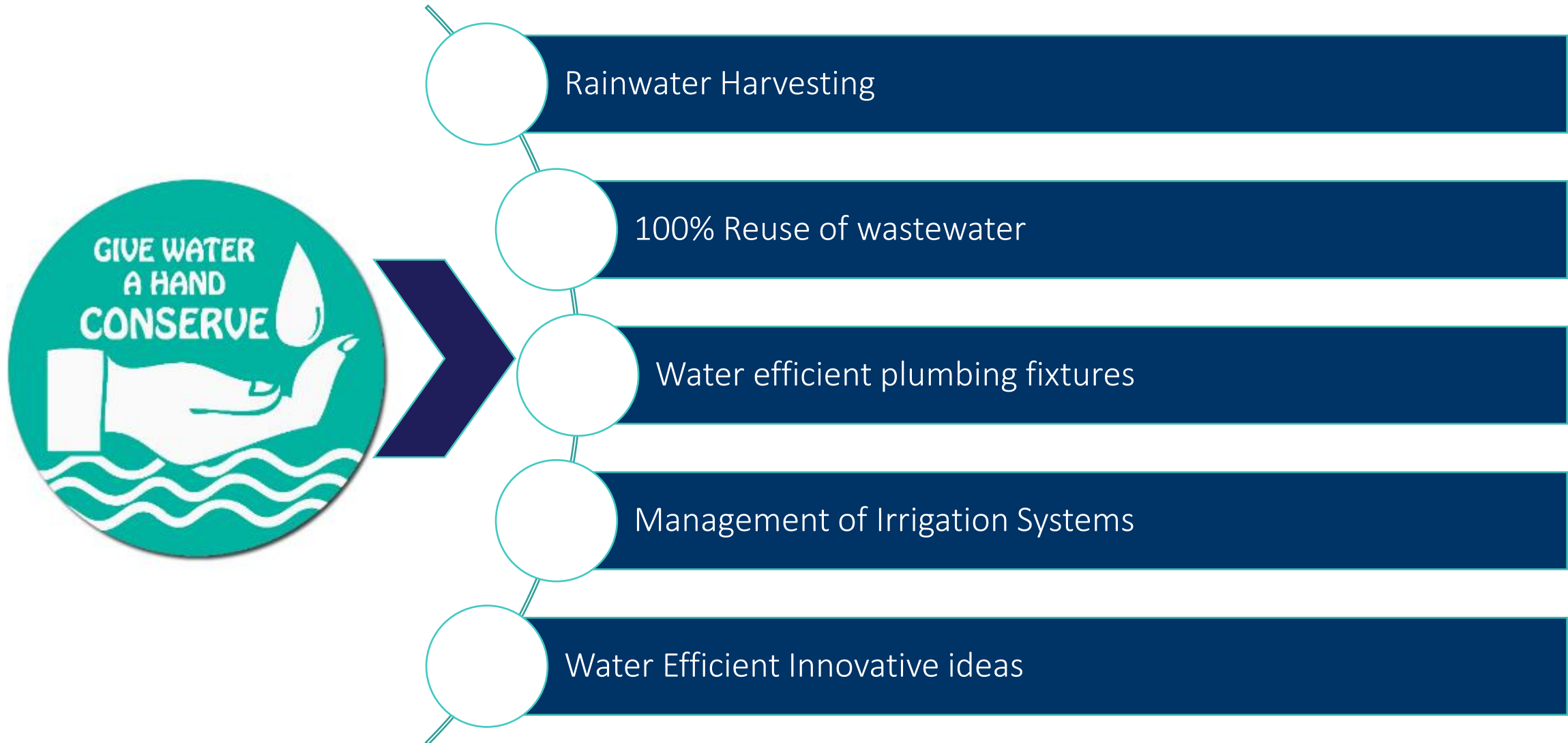
Passive Architecture: Adopted passive architectural design features to minimise negative environmental impacts.

Demonstrate that the passive architecture measures implemented in the project has resulted in more than 2% energy savings of total annual energy consumption

Climate-responsive concepts and design features

(E.g.: orientation, skylights, courtyard, shaded corridors, shading devices, shading from trees horizontal and vertical landscaping)

Water Conservation Approach & Methodology at ITPP



Management of Irrigation Systems



Water Sprinkler System installed at Park campus



Drip Irrigation System installed at Park Campus

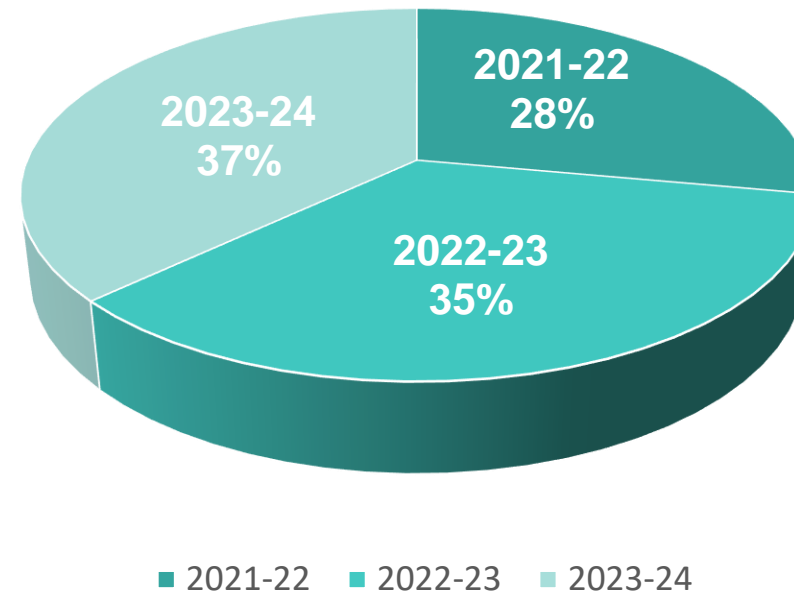
Equipment details

BUILDING DATA-M/S ASCENDAS IT PARK (Pune) PVT LTD.			
Sl. No.	Item	Value	
1	Connected Load(kW) or Contract Demand(kVA)	8500 KVA	
2	Installed capacity: DG/GG Sets (kVA or kW)	14000 KVA	
3	a) Annual Electricity Consumption, purchased from Grid (kWh)	13326930 kWh/yr	
	b) Annual Electricity Consumption, through Diesel Generating(DG)/Gas Generating(GG)Set (s)(kWh)	67779 kWh/yr	
	c) Total Annual Electricity Consumption, Utilities+ DG/GG Sets(kWh)	13394709 kWh/yr	
4	a) Annual Cost of Electricity, purchased from Grid (Rs)	Rs 117937633	
	b) Annual Cost of Electricity generated through DG/GG sets(Rs)	Rs 2882106	
	c)Total Annual Electricity cost, Utilities+ DG/GG Sets(Rs)	Rs 120819739	
5	Area of the Building (exclude parking, lawn, road etc)	a) Built Up Area floor wise (sqm) with No of rooms	182010 sqm
		Conditioned Area (in sqm)	172909 sqm
		Conditioned Area (As % of built up area)	95%
6	Working hours(e.g.day working/12 hour working)	20% of occupancy for 12hr/day	
	Working hours(e.g.day working/24 hour working)	80% of occupancy for 24hr/day	
7	Working days per week (e.g. 5/6/7 days per week)	24hr x 7 days per week & 12hr x 6 days per week	
8	a) BPO	Total no. of employees	10500
		Average.no of persons at any time in office during office hours	3200
9	a) Installed capacity of Air Conditioning System(TR)	4800 TR	
	b) No. of Window and Split ACs with capacity (TR)	51 TR	
	c) No. of Water coolers and Air Heaters	5 - Water Coolers	
10	Installed lighting load(kW) (if available)	856.2 kW	
11	HSD (or any other fuel used, specify)/Gas Consumption in DG/GG Sets (liters/cu. meters) in the year	27977 L	
12	Fuel (e.g. FO, LDO, PLG, NG) used for generating steam/water heating in the year (in appropriate units)	Nil	
13	Water Requirement (liters or cubic meters/day) if available	240 KL/day	

Location & Tonnage of Air Conditioned Equipments of M/S ASCENDAS IT PARK (Pune) PVT LTD			
Unit no.	Location		Capacity (TR)
Chiller-1	AC Plant Room	Trane	1200
Chiller-2	AC Plant Room	Trane	1200
Chiller-3	AC Plant Room	Carrier	800
Chiller-4	AC Plant Room	Carrier	800
Chiller-5	AC Plant Room	Carrier	800
Total			4800

Energy Consumption Data

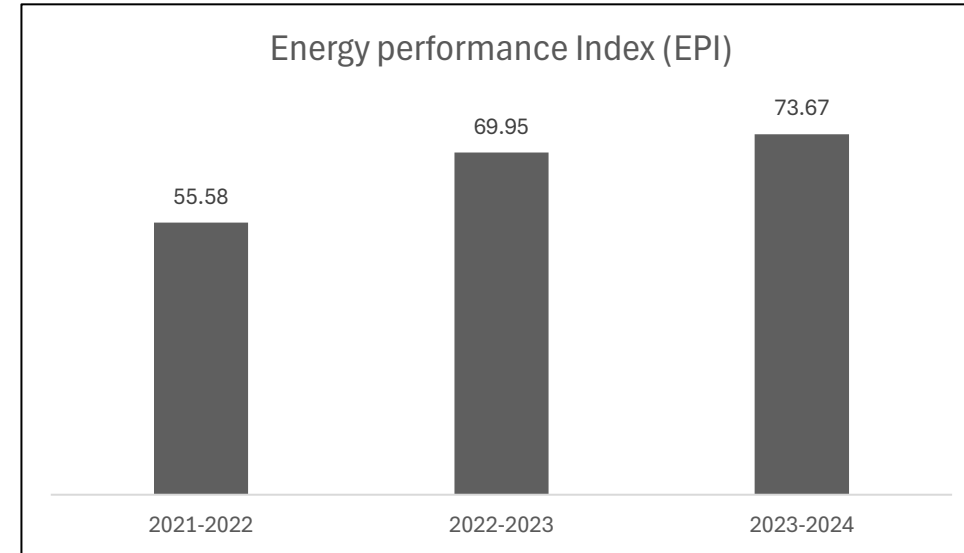
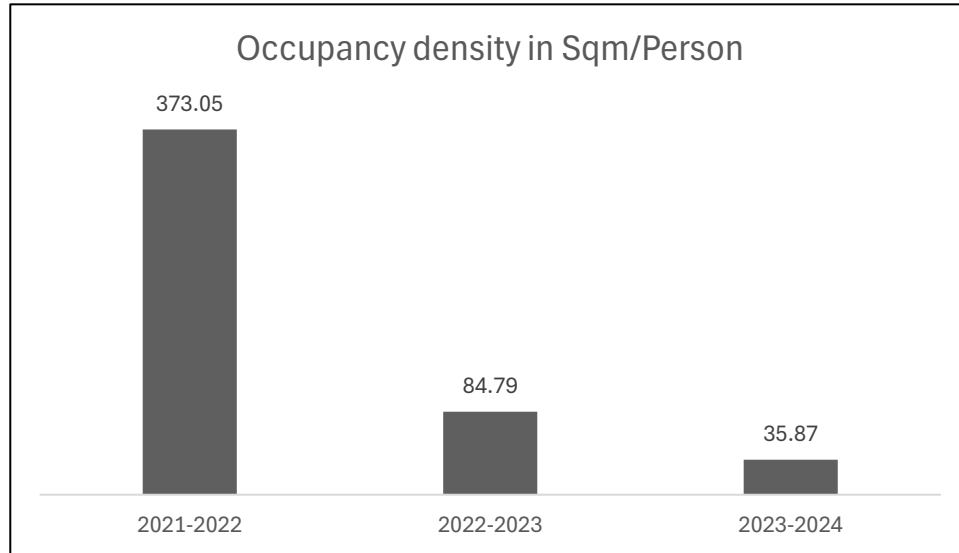
Year	Energy consumption in KWH
2021-22	1,03,67,754
2022-23	1,30,46,892
2023-24	1,37,41,317



Specific Energy Consumption

S.NO	Description	2021-2022	2022-2023	2023-2024
1	Built up area in Sqm	186,527	1,86,527	1,86,527
2	No of floors in the buildings	29+15 parking	29+15 parking	29+15 parking
3	Working hours per day	12	12	12
4	Working days / week	5	5	5
6	Total No.of Employees	10,500	19,231	19,231
7	No. of Employees coming to office	500	2200	5,200
8	Occupancy density in Sqm/Person	373.05	84.79	35.87
9	Energy consumed in KWH	10,367,754	13,046,892	13,741,317
10	Energy performance Index (EPI)	55.58	69.95	73.67

Specific Energy Consumption - Trend



Reason for Variations

Occupancy has increased due to offices are operational after Covid scenario.

Information on Competitors, National & Global Benchmark

Competitor AAhEPI Benchmark under BPO

Competitor Name	(AAhEPI): wh/hr./sqm
Infosys BPO Pune	10.77

National SEC Benchmark (BEE)

Benchmark for Office Buildings - AAhEPI

Climate Zone	For 95% AC area
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Warm and Humid	24.75
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- Ascendas IT park comes under BPO category with IT offices Combination of Office, Hub rooms, Food court with 95% Air-conditioned space
- Pune comes under Warm and Humid Climate Zone and our campus comes under the category of more than 95 % Airconditioned area. Hence AAhEPI Benchmark as per BEE 24.75 wh/hr./sqm
- Our AAhEPI FY 2023-24 – 10.7wh/hr./sqm.

List of Major Encon project planned in FY 2024-2025

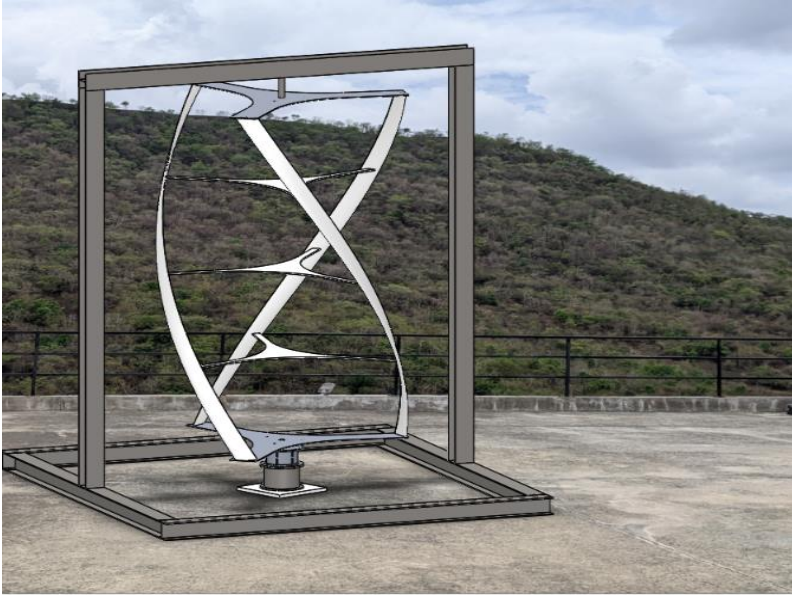
Installation of Vertical wind turbine of 5KWP at terrace
Light dimming solutions for common area lighting
EC fans for cooling tower
High SRI paint roof terrace

CapitaLand Investment

Channelling the energy and flexibility of water in our strategies to embrace new opportunities and create value with our Asian heritage

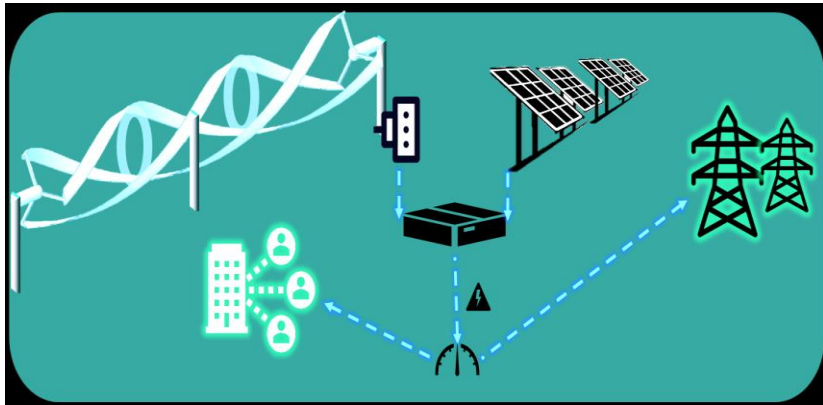
CapitaLand

ITPP – Vertical wind turbine

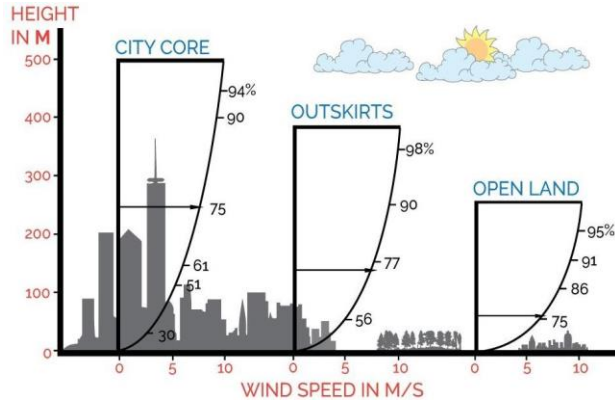


Vertical Axis Wind turbine

- The axis of rotation is perpendicular to flow
- Can be rotated to horizontal or vertical direction
- Lower efficiency in comparison
- Low RPM of turbines
- Lower Vibrations
- No effect on bird migration
- With increasing height, no change in RPM
- With height increase power output will increase
- Does not need to be rotated for flow reversal
- Lesser moving parts
- Height/Length can be varied according to the building requirements
- Generator is located at the lowest level
- Low Operations and Maintenance Cost



Vertical Axis Wind Turbines- VAWTS



- Wind is readily available at higher elevations
- Can work throughout the day or night
- Can be connected directly to the grid
- Renewable energy production
- Rotating the shaft to generate electricity

Criteria	Chakra5
Area Required	1m x 15m x 1 Turbine
Installed Capacity	5kW
Energy Per Year	@35% Capacity @7m/s average wind speed
In kWh	15,330
Cost Per 5kW Turbine/Panel	(Turbine only) SGD 1429
	(Full system) SGD 10913
ROI for full system	3.5 years

VAWTs can be placed at ground level or at rooftop level

According to local wind profile, turbine can be horizontal or vertical

No yawing mechanism is required

Generation is dependent on wind velocity

Energy Saving Projects Implemented

Year	No of Energy Saving Projects	Investments (INR Million)	Electrical Savings (Million kWh)	Savings (INR Million)	Impact on SEC
FY 2022-23	2	1.8	0.1	1.45	2%
FY 2023-24	2	3.2	0.2	2.9	4%

- FY 2022-2023, Project: 1. Energy Saving By providing VFD to Blower & Online DO analyzer for control – STP
- Energy Saving by providing VFD to Air Handling Units
- FY 2023-2024, Project: 1. Demand Based Ventilation system, All conditioned spaces were provided fresh air, based on CO2 demand and minimum ventilation rate required, at lower ambient temperature fresh air is utilized to the maximum through customized logic
- Sensor based lighting for common area-motion sensor for power optimization

Energy Saving Projects Implemented 2022-23 :Energy Saving By providing VFD to Blower & Online DO analyzer - STP

Phase-1 & Phase-2 STP (MBBR)

Phase -3 MBR

Hydraulic Design load @KLD	400	Hydraulic Design load @KLD	300
Hydraulic Actual load @KLD	100	Hydraulic Actual load @KLD	100
Connected load 5.6 KW X 2 at any point of time running (Stand by 2 Air blowers)	11	Connected load 11 KW X 1 at any point of time running (Stand by 1 Air blower)	11
Speed 100%	1	Speed 100%	1
Run Hours	24	Run Hours	24
Power Consumption KWH	264	Power Consumption KWH	264
MSEB Rate @ 9.5 per KWH	9.5	MSEB Rate @ 9.5 per KWH	9.5
Total Cost per day in INR	2508	Total Cost per day in INR	2508
Total Cost per month in INR	75240	Total Cost per month in INR	75240
Total Cost per year in INR	902880	Total Cost per year in INR	902880
After installing the VFD @Speed 75%	0.75	After installing the VFD @Speed 75%	0.75
Running Hours	24	Running Hours	24
Operating load in KW	8	Operating load in KW	8
Power Consumption KWH	192	Power Consumption KWH	192
Total Cost per day in INR	1824	Total Cost per day in INR	1824
Total Cost per month in INR	54720	Total Cost per month in INR	54720
Total Cost per year in INR	656640	Total Cost per year in INR	656640
Operational Saving per Year	246240	Operational Saving per Year	246240
Expected Maintenance Minimization Cost for 4 blowers	5000	Expected Maintenance Minimization Cost for 4 blowers	2500
Total Saving Per Year	251240	Total Saving Per Year	248740
Tentative amount for the installation of DO sensor based VFD's	768400	Tentative amount for the installation of DO sensor based VFD's	598490



Rosemount RDO Optical Dissolved Oxygen Meter

Total savings – 27%

Total savings – 27%

Contd., Energy Saving by providing VFD to AHUs

Air handling Unit Without VFD Vs With VFD

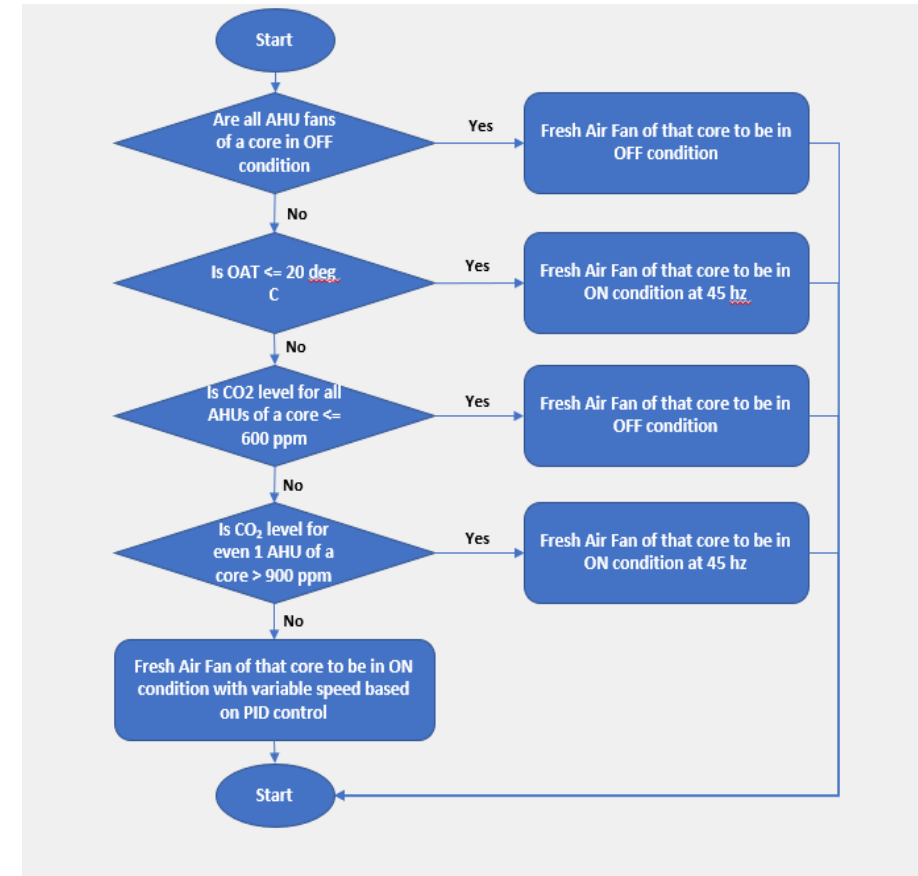
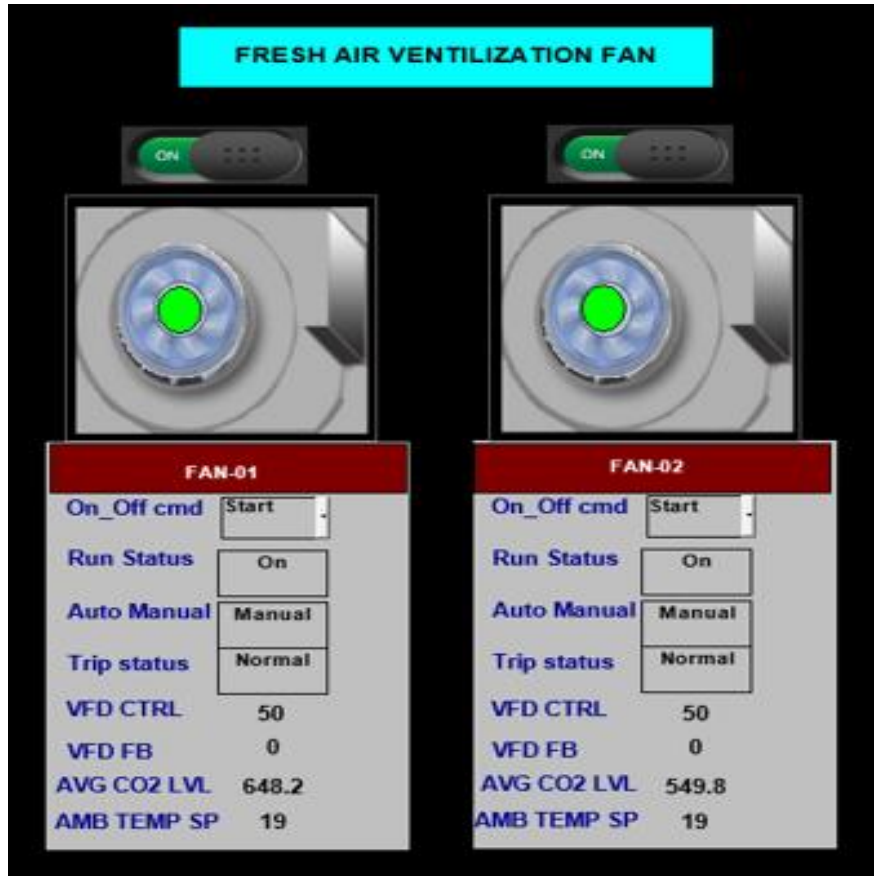


- Soft-start capability reduces the inrush current when motors start up, and thereby reduces the mechanical stress on the motor and improves the motor reliability.
- Step-less regulation for motor speed electrically.
- Reduces the motor power consumption significantly with proper controls.
- Improves the power factor of the entire drive system including VFD and motors.

AHU without VFD	
Connected load 9.3 KW X 1 at any point of time running	9.3 Per AHU
Run Hours	12
Speed	1
Power Consumption KWH	111
MSEB Rate @ 11.11 per KWH	11
Total Cost per day in INR	1239
Total Cost per month in INR	37196
Operating & maintenance cost	5000
Total Cost per year in INR	446355
Total Cost per year in INR	451355
AHU with VFD 35Hz	
AHU with VFD 35Hz	
Operating load in KW	8.56 per AHU
Running Hours	12
Speed	1
Power Consumption KWH	102.72
Total Cost per day in INR	1141.2192
Total Cost per month in INR	34236.576
Total Cost per year in INR	410838.91
	40516.448

KWH Saving – 16%

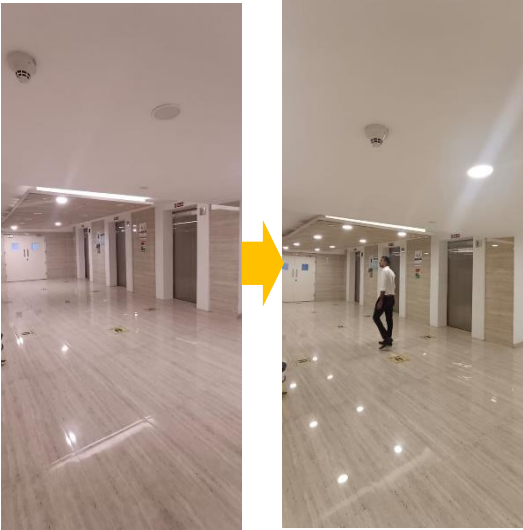
Energy Saving Projects Implemented 2023-2024: Demand based Ventilation



Contd..Sensor Based Lighting for Common Area

Description	UOM	Calculation
Actual Option		
No. of Light Fixture installed	Nos	150
Wattage of Light Fixture	Watt	18
Wattage Consumed	In Kwh.	2.16
Average operating hours per day	Hours	24
Total Energy consumed by operating the lights	kwh/day	51.84
Annual energy consumption by operating the lights @365days	kwh/year	18921.60
Proposed Option		
Installation of PID motion sensor	Nos	15
Average operating hours after installation of Motion Sensor per day	Hours	18
Total Energy consumed by operating the lights	kwh/day	38.88
Annual energy consumption by operating the lights @365days	kwh/year	14191.2
Savings		
Total energy reduction per day(Kwh)	kwh/day	12.96
Total energy reduction per annual(Kwh)	kwh/year	4730.4
Annual monetary saving cost per unit (Rs @ 9.5 / unit)	INR	44938.8
Investment cost per Sensor	INR	25500.0

- Motion sensor for power optimization at Cypress Common Area
- Switches 'On' the outputs only in human presence.
- Sensor based lighting helps to reduce and conserve energy.



Utilization of Renewable Energy sources (Onsite)

Year	Source (Solar, Wind, etc)	Installed Capacity MW	Capacity Addition (MW) after FY 2021	Total Generation million kWh	Share % w.r.t to over all energy
FY 2022-23	Solar	0.145	0.145	0.07	0.5
FY 2023-24	Solar	0.145	0.145	0.16	1.2



GHG Emissions

CapitaLand will transit to a low-carbon business that is aligned with climate science. In November 2020, we had our emissions reduction targets approved by the Science Based Targets initiative (SBTi) for a 'well-below 2°C' scenario. In May 2022, we elevated our scope 1 and 2 carbon emissions reduction targets which were validated by SBTi to be in line with a 1.5°C trajectory, currently the most ambitious designation available through the SBTi process.

CapitaLand's science-based targets are:

Reduce absolute scope 1 and 2 GHG emissions by 46% by 2030 from a 2019 base year

• Reduce scope 3 GHG emissions from capital goods by 22% per square metre by 2030 from a 2019 base year

2022 Performance Against Targets

TARGET:
46%

6.8% reduction achieved for scope 1 & 2 absolute GHG emissions

TARGET:
22%

48% reduction achieved for scope 3 (capital goods) GHG emissions intensity

GHG Emission – Scope 1 & Scope 2

Year	CO2 Emission Grid in Kg	CO2 Emission DG in Kg	Total CO2 in Kg
2021-22	8157770	36740	8194510
2022-23	10462630	58500	10521130
2023-24	11084980	69630	11154610

Reference for emission factors

Grid emission factor (without RES) for electricity purchased from the grid		
Source: CEA CO2 Baseline		
2020-21	0.79	Kg CO2/kWh
2021-22	0.79	Kg CO2/kWh
2022-23	0.81	Kg CO2/kWh
2023-24	0.82	Kg CO2/kWh

Grid emission factor for the fuels used		
Source: IPCC Database		
Diesel	2.68	Kg CO2/litre of diesel
Petrol	2.28	Kg CO2/litre of petrol
LPG	2.97	Kg CO2/Kg of LPG
Natural Gas	1.8	Kg CO2/Kg of natural gas
Furnace Oil	0.074	tCO2/GJ

Indoor Air Quality (Control)

Reduction in Particulate Matter (PM) in tenant spaces is a necessity for improved indoor air quality. However, for achieving the required levels of filtration, MERV 13 filters could be required in every AHU which is very costly on an ongoing basis.

Since fresh air entering the AHUs from the Terrace fresh air duct is the major source of PM, instead of using MERV 13 filters in all AHUs, MERV 13 filters can be used on the fresh air duct entry at the terrace.

Alternatively, special filters made of nano fibers claimed to have a low back pressure of 60 Pascal vs 200 Pascal for MERV 13 filters in view of higher density of fine pores per square feet, can be used.

IAQ Guidelines for existing buildings

	PM 2.5 ($\mu\text{m}/\text{m}^3$)	PM 10 ($\mu\text{m}/\text{m}^3$)
Excellent	< 25	< 50
Good	25 - 35	50 - 150
Poor	> 35	> 150

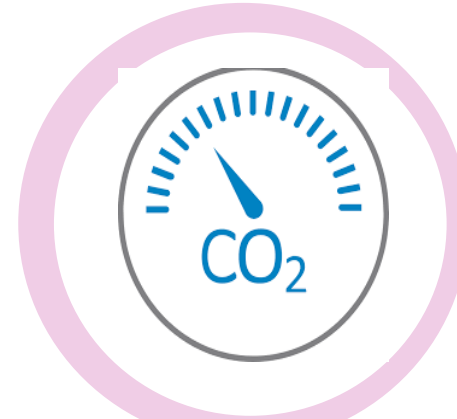


Indoor Environmental Quality



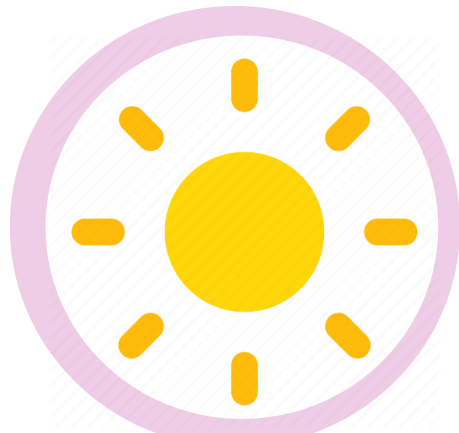
Tobacco smoke control

- Minimising exposure of non-smokers to the adverse health impacts arising due to passive smoking in the building.
- We having Outdoor Smoking Area
- located at a less than 7.6 meters from all outdoor air intakes with the regulations of Ministry of Health & Family Welfare, Government of India.



Co2 Monitoring

- Continuously monitoring and control carbon dioxide level in the building to ensure occupant comfort
- Installed CO2 sensors in return air ducts to maintain a differential CO2 level of maximum 530 ppm in all regularly occupied areas



Daylighting

- There is connectivity between the interior and the exterior environment, by providing adequate daylighting



Wellbeing facility

- Providing occupant well-being facilities, so as to enhance physical, emotional and spiritual well-being of building occupants.

BMS & Certification

Equipment	BMS
Chillers	Yes
AHUs	Yes
Water network	Yes
Common area Lighting	Yes
Ventilation Fans	Yes
Lifts	Yes
Fire Fighting	Yes

No.: BEE/Star-Rating/Certificates/BPO/23-24/310

It is certified that M/S. Ascendas IT Park (Pune) Pvt. Ltd. has been awarded a BEE 5-Star Label with the details below:

Name & address of the building	M/S. Ascendas IT Park (Pune) Pvt. Ltd.
Contract Demand	8500 kVA
Climatic zone	Warm & Humid
Building Type	BPO Building
Percentage Air Conditioning	95 %
Built up area (Excluding Basement Area)	1,82,010 sqmts.
Annual Energy Consumption	13394709 kWh/year
Energy Performance Index (EPI)	10.7 Wh/(hr.sqmts.year)
BEE Star Label Awarded	5-Star

The label would be valid for a period of 3 years from the date of issue.

Date: 13 February 2024


(Saurabh Diddi)
Director

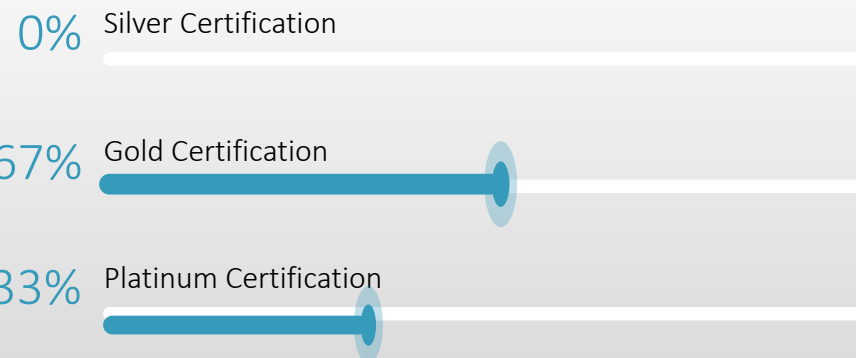
Green certification of ITPP Campus

Green Ratings Building

4
Buildings

2.3 M
Leasable Area

100%
Green Certified



Building Name- Cedar
IGBC LEED Gold (C&S)

Building Name-Juniper
USGB LEED Gold(C&S)

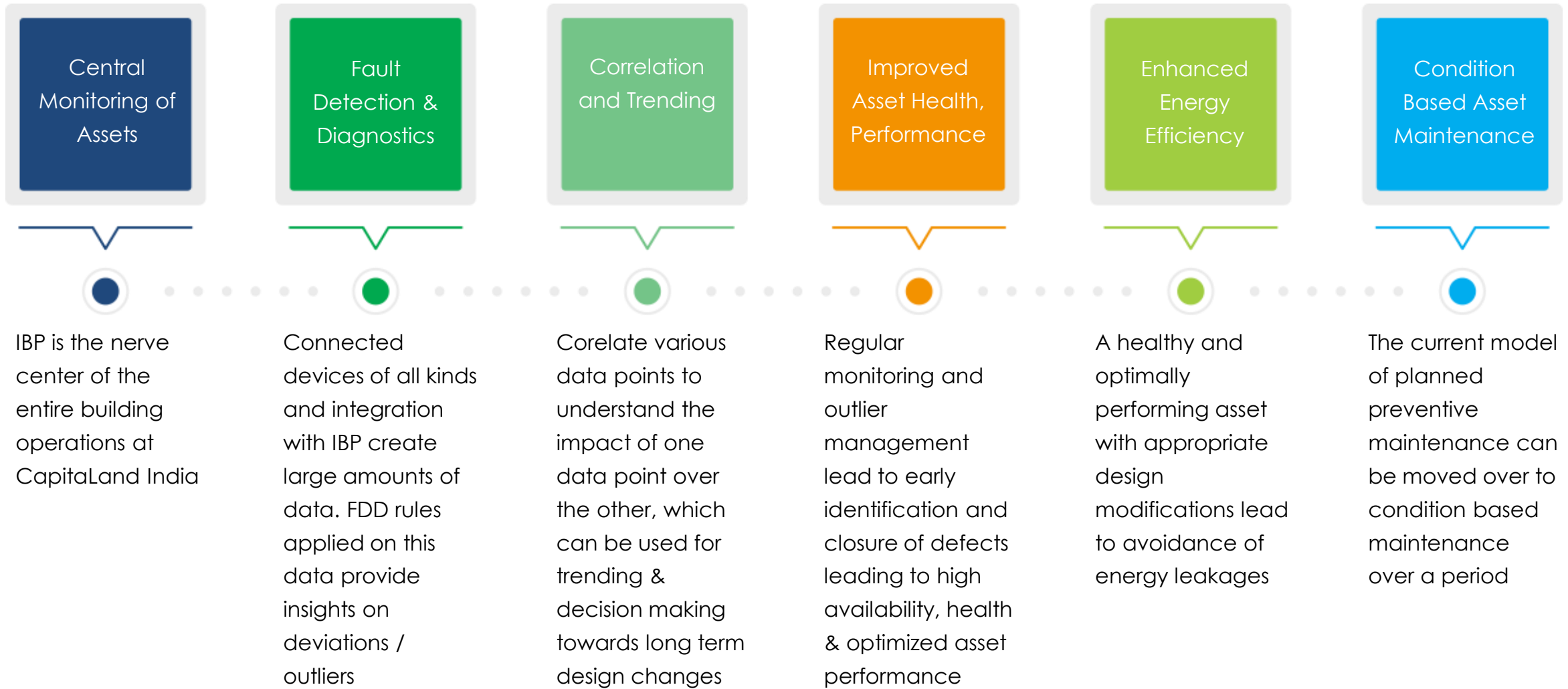
Building Name-Cypress
USGB LEED Gold(C&S)

ITPP Campus Landscape
IGBC Gold (Campus)

ITPP Campus
IGBC Platinum(E&B)

Building-Angsana
USGB Gold (C&S)

IoT Based Intelligent Building Platform



Chiller Plant Manager

WebCTRL Graphics Properties Schedules Alarms Trends Logic Reports

Chiller Manager

ASCENDAS_ITPP
 PSM
 ITPP-PHASE 3
 DDC Controllers
 Integration
 CHILLERS MAPPING
 VFD
 Energy Meters
 SEC PLC
 Operator Console
 M&V
Chiller Manager
 HT PRI PUMP MANAGER
 LT PRI PUMP MANAGER
 HT COND PUMP MANAGER
 LT COND PUMP MANAGER
 CT MANAGER
 OUTSIDE AIR CONDITIONS
 M&V_OLD

OA Temp : 59.8 °C / °F
 OA RH : 29.8 %
 Date : 8/27/2024
 Time : 4:32 PM

ascendas SINGBRIDGE
 Carrier
 United Technologies

Manager Enabler
 Off
 On auto

Emergency shutdown Normal Rotation Method via Remote S/S

Manager Status

Chiller	Order	Enabled	Status	Failure	Clear	failure	Out of Service Maintenance
Ch-5 LT	3	Off	Off	Normal	Off	Off	Maintenance
Ch-3 LT	1	On	On	Normal	Off	Off	Normal
Ch-4 LT	2	Off	Off	Failed	Off	Off	Normal
Ch-1 HT	4	Off	Off	Normal	Off	Off	Maintenance
Ch-2 HT	5	Off	Off	Normal	Off	Off	Maintenance
CHWP-1 HT	1	Off	Off	Normal	Off	Off	Maintenance
CHWP-2 HT	2	Off	Off	Normal	Off	Off	Maintenance
CHWP-3 HT	3	Off	Off	Normal	Off	Off	Maintenance
CHWP-4 LT	2	On	On	Normal	Off	Off	Normal
CHWP-5 LT	3	Off	Off	Normal	Off	Off	Maintenance
CHWP-6 LT	1	On	On	Normal	Off	Off	Normal
CDWP-1 HT	1	Off	Off	Normal	Off	Off	Maintenance
CDWP-2 HT	3	Off	Off	Normal	Off	Off	Maintenance
CDWP-3 HT	2	Off	Off	Normal	Off	Off	Maintenance
CDWP-4 LT	2	On	On	Normal	Off	Off	Normal
CDWP-5 LT	1	On	On	Normal	Off	Off	Normal
CDWP-6 LT	3	Off	Off	Normal	Off	Off	Maintenance
Cl-1 HT	3	Off	Off	Normal	Off	Off	Maintenance
Cl-2 HT	4	Off	Off	Normal	Off	Off	Maintenance
Cl-3 LT	2	On	On	Normal	Off	Off	Normal
Cl-4 LT	5	Off	Off	Normal	Off	Off	Maintenance
Cl-5 LT	1	On	On	Normal	Off	Off	Normal

current stage 5 Rotation Sequence Daily

Chiller	Manual Order	Lock	Start Up Delay (mm:ss)	Restore Power (mm:ss)	Delay OFF (mm:ss)
Ch-5 LT	3	Off	0 : 15	0 : 30	0 : 10
Ch-3 LT	1	Off	0 : 15	0 : 30	0 : 10
Ch-4 LT	2	Off	0 : 15	0 : 30	0 : 10
Ch-1 HT	4	Off	0 : 15	0 : 30	0 : 10
Ch-2 HT	5	Off	0 : 15	0 : 30	0 : 10

Rotation Selection Manual Order Plant Load 312 Tr

Staging of Chillers

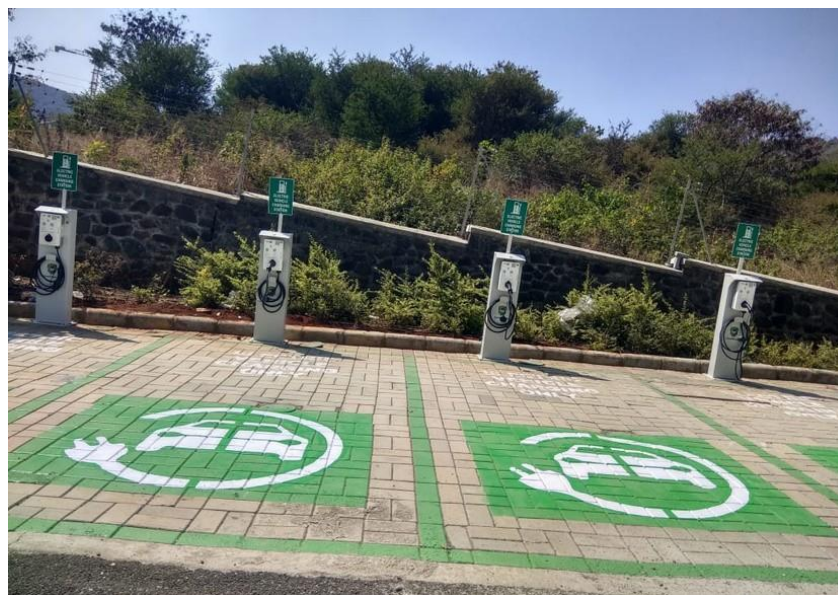
Stage	delay ON (mm:ss)	delay OFF (mm:ss)	Enable if load > Tr	or if chws temp > hyst °C	min ON (mm:ss)	min OFF (mm:ss)
1					1 : 00	1 : 00
2	10 : 00	5 : 00	680	200	5 : 00	5 : 00
3	10 : 00	5 : 00	1360	400	5 : 00	5 : 00
4	10 : 00	5 : 00	2040	600	5 : 00	5 : 00
4	10 : 00	5 : 00	3060	900	5 : 00	5 : 00

Net Zero Commitment

CapitaLand Investment Limited (CLI) has elevated its commitment to sustainability by aiming to achieve Net Zero emissions by 2050. To realise this commitment, CLI aims to reduce its absolute scope 1 and 2 greenhouse gas emissions by 46%, up from 28%, by 2030 from a 2019 base year. These new targets to reduce greenhouse gas emissions are validated by the Science Based Targets initiative^[1] (SBTi) to limit global warming to 1.5°C, in accordance with the goals of the Paris Agreement^[2]. CapitaLand is one of the few Singapore-based companies to have SBTi-approved carbon targets aligned to the 1.5°C scenario for its extensive global operations.

The new Net Zero commitment builds on existing sustainability targets outlined in CapitaLand's 2030 Sustainability Master Plan^[3] unveiled in October 2020. This includes accelerating the transition to a low-carbon business, improving water conservation and resilience, and enabling a circular economy. CLI announced its Net Zero commitment today in tandem with the publication of its 13th Global Sustainability Report which covers its 2021 sustainability performance. CLI is on track to attain its Net Zero commitment as well as its 2030 Sustainability Master Plan targets.

Sustainable Mobility @ITPPH



INTERNATIONAL TECH PARK
PUNE HINJAWADI
AN ASCENDAS IT PARK

E-Buggy Service Launch

Introducing E-buggy services at the ITPP-H campus for all employees. Specially-abled individuals will be given priority to avail the services.



Eco friendly
Zero CO2
Emission



Ease of access
& comfort

Fast Electric
Charging



Convenient &
Seamless
Mobility

7 Seating
Capacity



Please join us for the Inauguration of the e-buggy service at ITPP-H



Monday, 5th August, 11:15 AM



CapitaLand Office

Pick up and drop off is available near the main gate and building receptions. Book park tours or special visits with 24hr notice. Contact Reception / Helpdesk at 020 66836611.

Wastewater Treatment and Reuse

- ITPP is having 700 KLD sewage treatment plant inside the premises.
- Bifurcation based on technology adopted (MBBR based 400 KLD + MBR based 300 KLD)
 - Digital Flow meters are installed to quantify the inlet & outlet water to estimate the efficiency of the plant.
 - Online Parameters of STP treated water quality is monitored in IOT platform.



Water Efficient Plumbing Fixtures



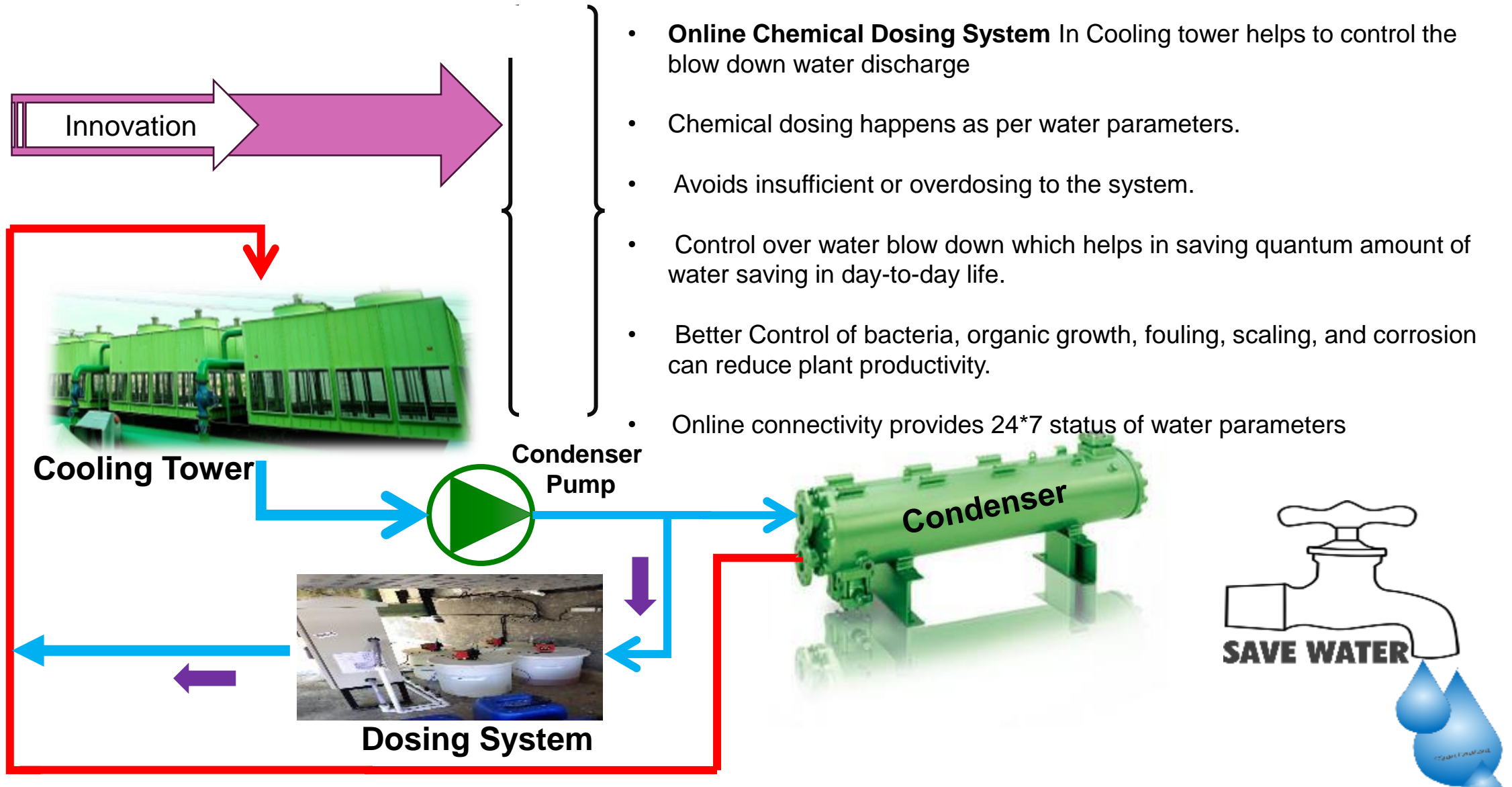
Water Saving Toilet & Plumbing Fixtures

Water Meter installation for various utilities



- Water is sourced from MIDC
- It is measured through an installed water meter
- Supplied to various outlets such as domestic use, flushing, bathing etc.
- Use of water efficient aerators throughout the toilets in the Park for water conservation

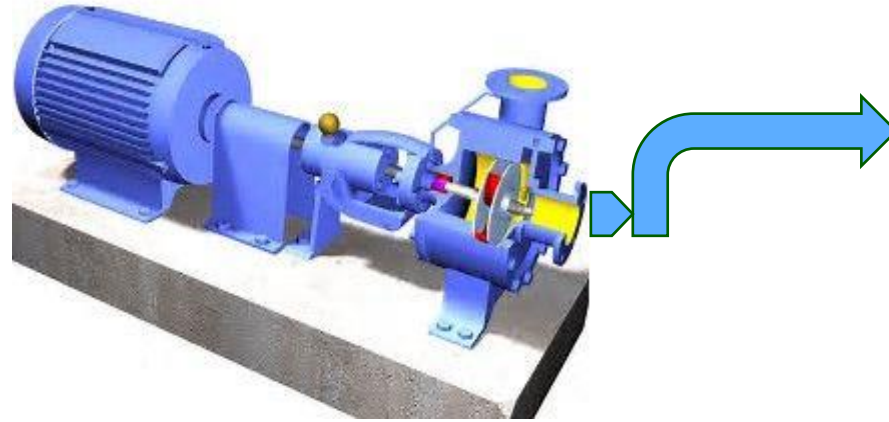
Online Chemical Dosing System



Hydro pneumatic Pumping System



Old centrifugal Pumps



Automatic hydro pneumatic system



- Replacing of old centrifugal pumps with Automatic hydro pneumatic system.
- These pumps ensures that **no overflow of water shall happens or wastage of water** as it works in pressure boosting system.
- Heavy-duty system, 3 vertical stainless steel high-pressure multistage centrifugal pumps switched in parallel.
- High-efficiency pump hydraulics.
- Pressure-loss optimised entire system.

Sustainability Awareness Campaigns World environmental day



Contd..Earth Hour campaign – FY 2024





Thank You



Cap/taLand