

From Risk To Reward: The Power Of Integrated Sustainability Strategies In Real Estate Value Creation

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Where do we stand globally today?

Key Global Trends[1]

1 Evolving geopolitics

US left the Paris Accord and temporarily froze US$3 trillion of federal funds including those tied to climate and energy programmes[2]. EU simplifying reporting burden of CSRD, CSDDD and EU taxonomy following pushback.

2 Big 6 US banks exit GFANZ

US banks, asset managers and insurers exit climate alliances such as GFANZ due to reporting compliance burden, including increased EU ESG compliance burden. However, such institutions remain committed to their decarbonisation roadmaps.

3 Nat cat insurance protection gap at 60%[3]

There is increasing need for physical climate risk resilience as insurers are hiking up prices and removing coverage for natural catastrophes, particularly for damages by flood and wildfire.

4 2025 to see ~US$1 trillion in sustainable bonds[4]

Despite US political pushback on ESG and global ESG funds recording lowest inflows since 2018 last year, Q4 ended on a US$16bn high note[5]. Climate-related venture flows have held up better than the wider VC market in 2024[6].

5 10:1 renewables to fossil investment[7]

2024 saw record adoption in, and significant drop in cost of renewable energy, with major progress in China and the Global South. Renewables may overtake coal as the leading power source in 2025.

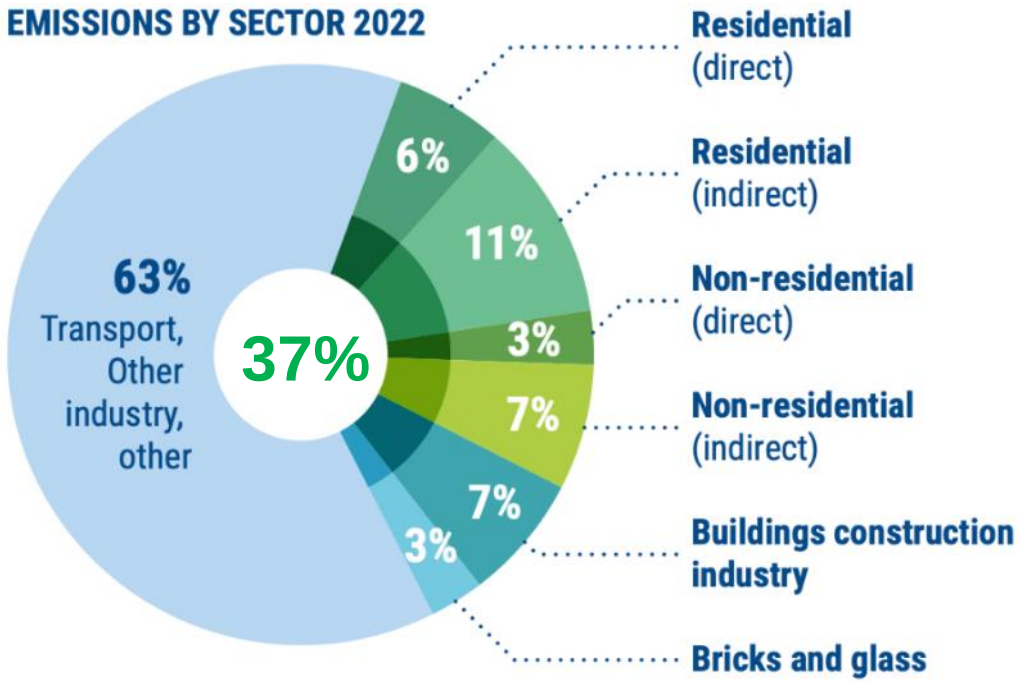
6 Advancing carbon markets

COP29 saw the finalisation of Article 6 rules on carbon market implementation, establishing a UN-backed framework for international carbon credit trading. This is anticipated to unlock substantial climate finance.

[1] Secondary Research [2] Reuters [3] WTW, The Natural Catastrophe Review (July-December 2024) [4] Moody's Ratings [5] Morningstar Sustainalytics, Global Sustainable Fund Flows report for Q4 2024 [6] Sightline Climate [7] IEA Electricity 2024 Report

Real estate is at the heart of the climate change crisis…

Buildings & Construction contribute to 37% of global energy-related CO_2 emissions, 2022



Source: IEA 2023a. Adapted from 'Tracking Clean Energy Progress'

Notes: Buildings construction industry refers to materials used in construction, including concrete, steel and aluminium. Other materials shown separately.

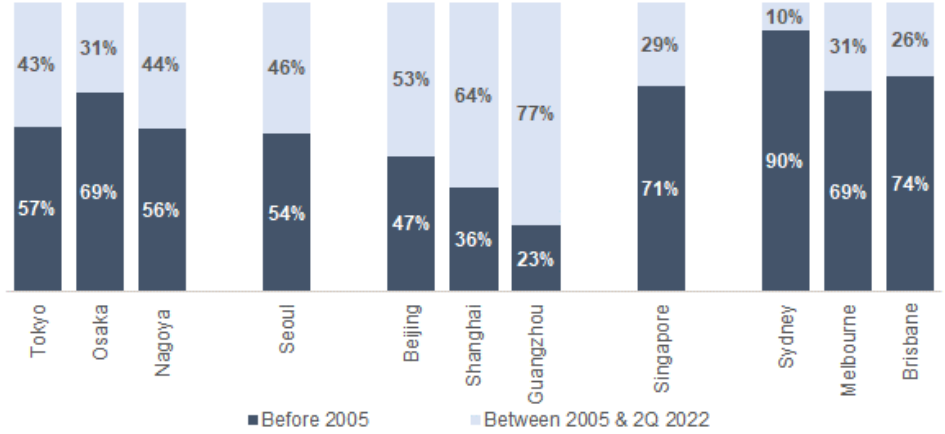
Global building floor area is expected to double by 2060…



Equivalent of adding an entire New York City to the world, every month, for 40 years

…and a high share of older buildings magnify the issue

APAC Prime Office Building Age Profile – by City



Source: CBRE, CLI Research

…but the sector faces multiple key challenges

Not Exhaustive



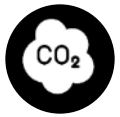
Tough Macro-economic Environment
Rising interest rates and high inflation are stressing real estate valuations, making it tougher to take green investment decisions



Balancing Environmental and Economic Goals
Greening assets to become future-proof can be costly and at times require heavy and chunky capital investments



Evolving Regulations and Standards
Different reporting standards and methodologies used by rating agencies make it tough to compare portfolios on a like-for-like basis



Tackling Indirect Emissions
Progress on Scope 3 emissions (mainly tenant's consumption, embodied carbon, supply chain) is proving to be far more challenging



Integrating Climate Risks and Impacts
Physical and Transition risks are estimated to erode asset values under different climate scenarios, and impacts are hard to quantify



Greenwashing
Reputation risk from the perceived false impression of providing misleading information about company's environmental achievements

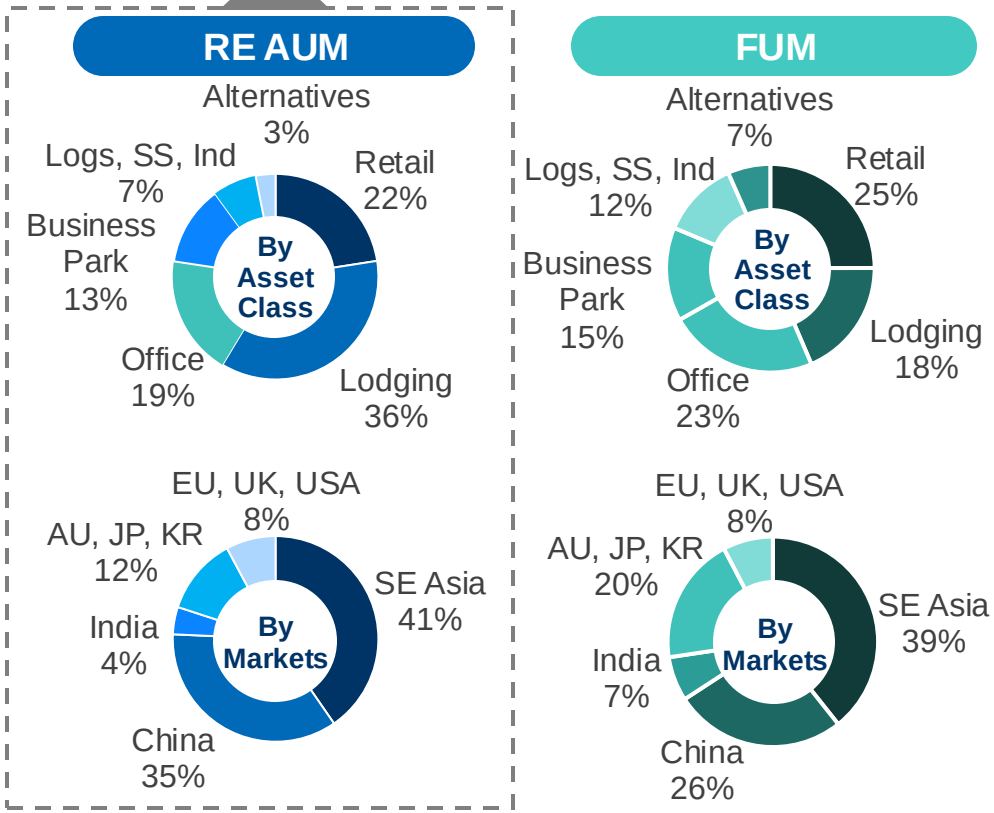


Limited Talent
Dearth of qualified and experienced sustainability professionals in the market

CapitaLand Investment has a well-diversified global portfolio with strong Asian presence

	Retail	Lodging[1]	Office	Business Park	Logs, SS, Ind[2]	Alterna-tives[3]
SE Asia incl. Singapore	●	●	●	●	●	●
China	●	●	●	●	●	●
India		●		●	●	●
Australia, Japan, Korea (AU, JP, KR)[4]		●	●	●	●	●
Europe, UK, USA		●	●	●	●	●

>90% of AUM in Asia



FY 2024

S$136B

(FY 2023: S$134B)

FY 2024[5]

S$117B

(FY 2023[6]: S$99B)

Notes:
1. Includes multifamily.
2. Refers to logistics, self storage and industrial.
3. Includes wellness, data centres, private credit and others (comprising 0.4% of FY 2024 total FUM).
4. Includes other markets (comprising 0.3% of FY 2024 total FUM).
5. Includes announced acquisitions/divestments from listed and private funds not yet completed, committed but undeployed capital for private funds on a leveraged basis and forward purchase contracts, as well as FUM of SCCP and Wingate, as at 31 Dec 2024.
6. Includes announced acquisitions/divestments from listed and private funds not yet completed, committed but undeployed capital for private funds on a leveraged basis and forward purchase contracts, as at 31 Dec 2023.

CLI 2030 Sustainability Master Plan (SMP)

Build
Portfolio Resilience & Resource Efficiency

Low Carbon Transition

- Achieve Net Zero emissions by 2050 for Scope 1 and 2 greenhouse gas (GHG) emissions
- Reduce:
  - **Absolute Scope 1 & 2 GHG emissions by** 46%[1]
  - **Carbon emissions intensity by** 72%[1]
  - **Energy consumption intensity by** 15%[1]
- Achieve **45%** of electricity consumption from renewable sources
- Work towards setting new Scope 3 carbon emissions reduction target

Water Conservation & Resilience

Reduce water consumption intensity in our day-to-day operations by **15%**[1]

Waste Management & Circular Economy

- **Reduce waste intensity in our day-to-day operations by** 20%[1]
- **Achieve** 25% **recycling rate in our day-to-day operations**

Enable
Thriving & Future-Adaptive Communities

Social Impact

- Contribute to communities' social well-being through outreach initiatives by staff & CapitaLand Group's philanthropic arm, CapitaLand Hope Foundation (CHF)

Human Capital Development

- ≥ 40% — Female representation in senior management
- ≥ 80% — Staff engagement score[2]
- ≥ 85% — Staff to attend 1 ESG training

Health & Wellness

- Foster a safety culture with zero fatality, permanent disability, major injury
- Incorporate social integration design features in properties
- Implement wellness related initiatives & certifications for physical assets

Customer & Supplier Partnerships

- Green leases for new & renewal of leases; work with tenants to improve their sustainability performance
- Achieve high level of customer satisfaction
- Contractors & vendors to abide by CLI's Supply Chain Code of Conduct
- Zero tolerance to child labour/ forced labour

Steward
Responsible Business Conduct & Governance

Corporate Governance

- Ensure sustainability targets integrated into CLI Performance Share Plan & Balanced Scorecard framework to determine executive remuneration & KPIs
- At least **85%** staff to attend 1 compliance related training

Transparent Reporting

- ESG reporting aligned & externally assured to international standards

ESG Risk Management

- Identify, assess & manage sustainability risks & opportunities
- Ensure sustainability risks & opportunities are managed in line with overall risk appetite & strategy

Pathways

- Integrate sustainability in the entire fund management life cycle
- Source climate-technology solutions through CSXC
- Use data analytics & digitalisation for portfolio optimisation.
- Strengthen innovation & collaboration
- Raise capital through sustainable finance instruments

- Amplify the social impact of our contribution to the communities through CapitaLand Hope Foundation
- Build a culture of volunteerism
- Develop capability and build a culture of sustainability
- Cultivate stakeholder engagement

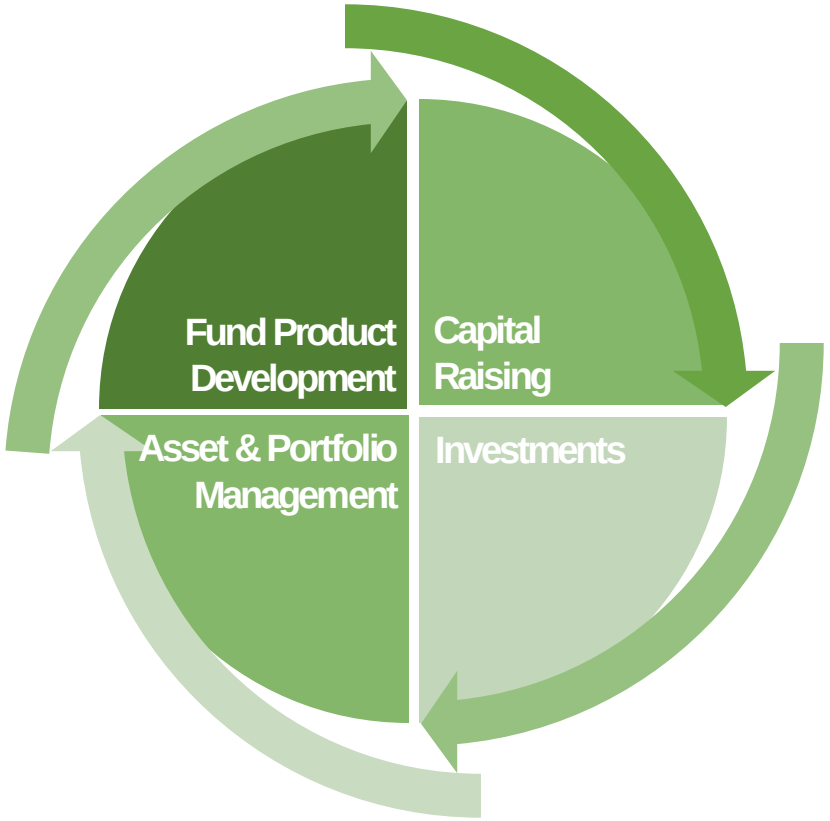
- Ensure robust ESG governance structure
- Monitor and report to ensure transparency of sustainability progress
- Integrate ESG into Balanced Scorecard Framework

Note that the Enable & Steward targets are intended to reflect the organisation-wide goals set by CLI on a group basis, and are intended to be implemented subject to and taking into account (i) fair & equitable employment practices and principles under applicable laws and market practice and (ii) the business & operational needs of the company & the organisation, as applicable.

[1] Using 2019 as the base year.

[2] Staff engagement with at least 85% participation.

We integrate sustainability in the entire fund management life cycle



Fund Product Development
- Tailor ESG strategies to each portfolio, asset class & geographical fund mandate
- Align with investors' & LPs' ESG requirements & goals

Capital Raising
- Integrate investors' & LPs' ESG considerations & ensure thorough understanding of investors' & LPs' ESG queries & needs
- Transparent ESG risks & opportunities disclosures
- Foster trust & confidence in CLI's sustainability commitments

Investments
- Conduct Environmental, & Social Impact Assessment (ESIA) for new investments, including comparative analysis of asset environmental aspects with portfolio's ESG strategy, & assessment of physical risk, safety, & selected social impacts
- Shadow internal carbon price used to quantify future carbon value exposure of asset, & to calculate a Return on Sustainability for all green investments, where feasible

Asset & Portfolio Management
- Develop asset-level ESG plans leveraging operational & asset management expertise.
- Periodic climate risk analysis to determine green capital expenditure allocation strategy
- Regular fund reporting to key stakeholders
- Participate in internationally recognised ESG frameworks e.g. GRESB

Continuous ESG focus throughout the life cycle of our funds & portfolios through

Alignment with Leading Frameworks
Align our policies & practices to regional & international standards, surveys or indices

Reporting & Disclosures
Transparent disclosure of sustainability progress

ESG Performance Metrics
Integrate ESG into business frameworks and policies

Investor & Stakeholder Engagement
Influence & enable actions that can spur positive change through thought leadership & advocacy

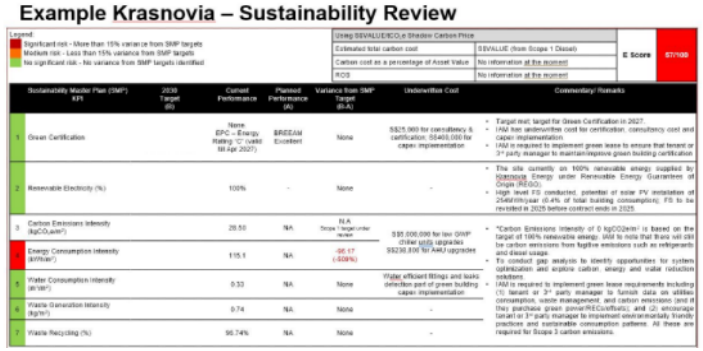
Capability Development
Build a culture of sustainability throughout the organisation

Our decarbonisation pathways reflect the operationalisation of our Carbon Mitigation Hierarchy



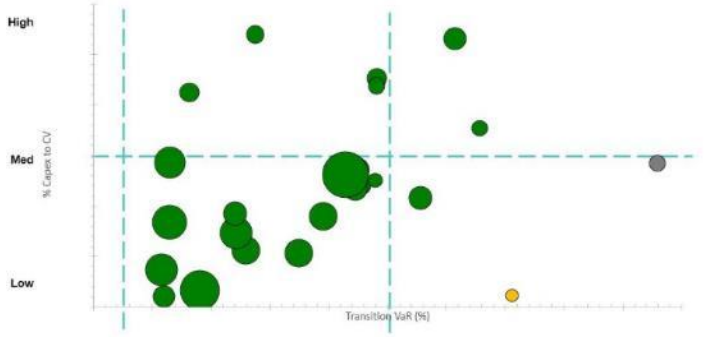
Focus on data analytics-driven portfolio management to facilitate informed decision-making

ESIA Review



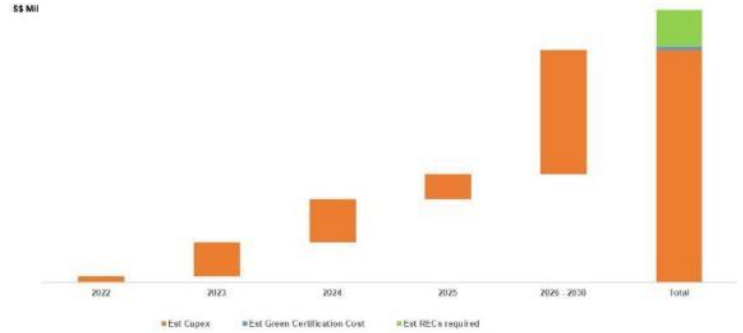
Expand Environmental & Social Impact Assessment (ESIA) to new product types, further integrate carbon price into underwriting, & enhance Return on Sustainability calculation

Value at Risk Analysis



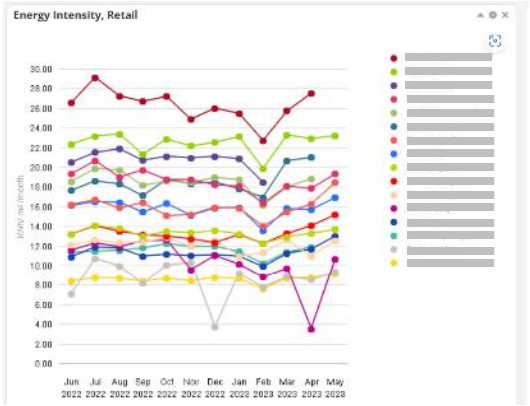
Calculate Physical & Transition value at risks for different business units & map against capex plans to formulate asset level strategies

Portfolio Capex Tracking



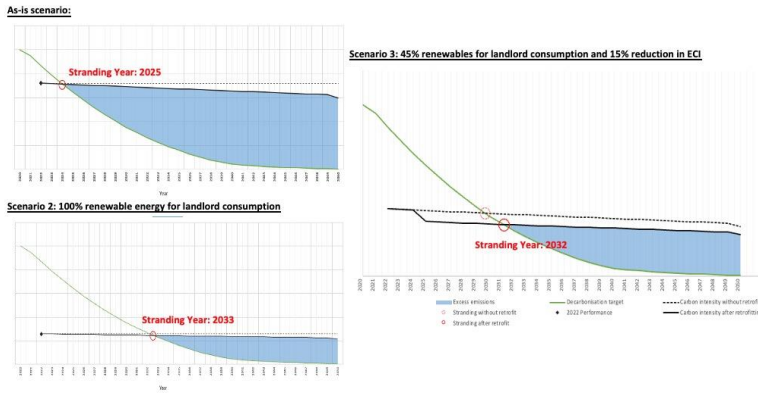
Track green capex by business units that is needed every year in order to meet CLI SMP 2030 targets

Portfolio Dashboards



Analyse energy, water & waste dashboards by geographies & business units for real-time operational decision making

Net Zero Pathway Tracking



Plot assets against CRREM net zero pathways to better understand risks & accordingly engage investors & stakeholders on NZ plans

We carefully study our climate risks & their portfolio impact

1 Physical Risks

Assesses the costs of potential physical climate change risks (asset damage) for:

- Fluvial (River) flooding
- Coastal flooding
- Tropical cyclones
- Wildfire
- Extreme heat
- Extreme cold

Using software platform, geocoordinates, asset typology, valuation

2 Transition Risks

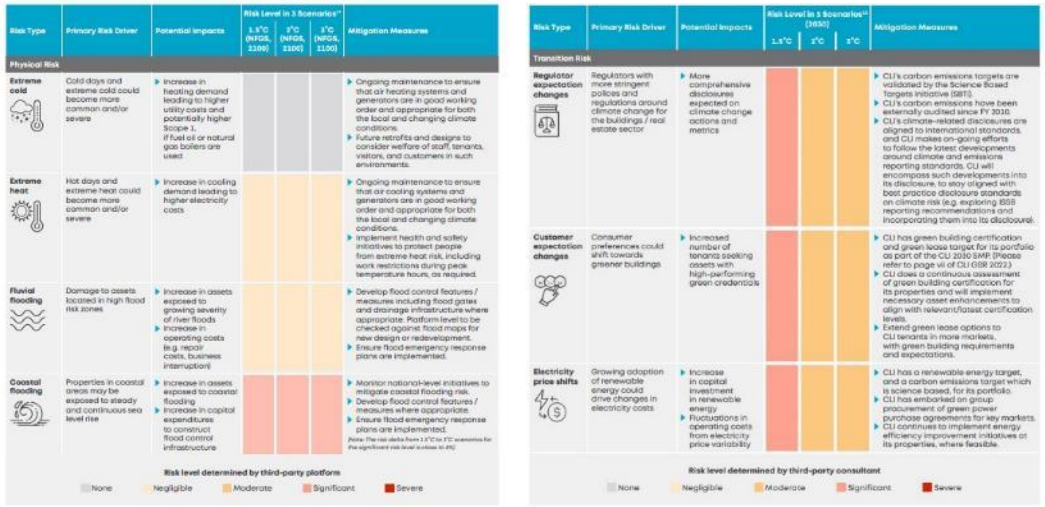
Assesses potential cost impact from transitioning to a low - carbon economy.

Uses assumed carbon prices to reflect :

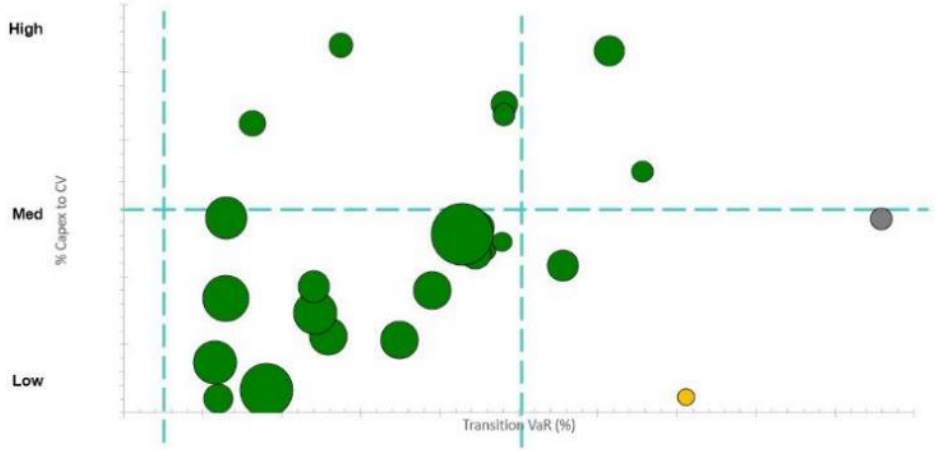
- Changes in regulator expectations
- Changes in customer expectations
- Electricity price shifts

Overlaid with Physical Risks to generate total asset Value-at-Risk

Scenario Analysis



Value-at-Risk Analysis





About CSXC

The CapitaLand Sustainability X Challenge (CSXC) is **Asia's premier** global platform to advance innovation and collaboration in sustainability within the urban environment. Through the CSXC, CapitaLand aims to source for emerging solutions/technologies globally to solve sustainability challenges impacting **urban development**.

CSXC at a glance

>1,300 entries (⬆238% since 2021) from 79 countries (⬆219%)

- 30 innovations piloted or planned at 46 sites within CapitaLand properties in 7 countries*. Potential to scale up across > 260 cities in over 40 countries.
- Challenge statements covering low carbon transition, water conservation & resilience, waste management & circular economy, and health, safety, & wellness in buildings.
- [CSXC 2023] 4 Special Recognition Awards with additional funding – High Impact Award; Most Innovative Award; Most Scalable Award; and Enterprise Singapore's Emerging Startup Award.
- [CSXC 2023] Tenant challenge statements and sandbox partners in collaboration with tenants – DBS, DFI Retail Group, KPMG in Singapore.

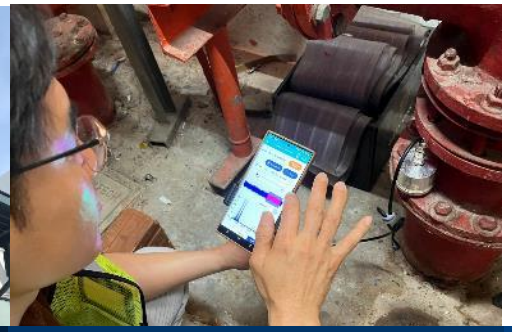
Selected pilot highlights



SlideLuvre

Smart voltaic louvres

Trialled in Singapore
Achieved:
- 22.9% average cooling load reduction
- 3.1% average increase in lighting energy use
- Overall 6.8% electrical energy savings
- Imperceptible glare (≤0.35) 100% of the time
- Lower average surface temperature on internal glazing with a maximum difference of 1.2°C
- Good thermal comfort 99.6% of the time
- Simulated solar energy yield of 235 to 253kWhe/m^2 slat/year



WI.Plat

Custom high-precision acoustic IoT sensor technology that detect leaks with a machine learning algorithm

Trialled in Singapore
Achieved:
- 4 detection and repair of pipe leakages



Magorium

Technology that converts contaminated and unsorted plastic waste into a sustainable construction material that can potentially be used for the construction of roads within CapitaLand's business parks

Trialling in Singapore
Testing:
- Collection of approximately 200kg/month of contaminated unsorted plastic to be recycled into NEWBitumen
- To pave at least 1 eco-road within CapitaLand property



AI Powered Video Analytics

AI-powered video analytics tool to provide granular insights that enhance safety, productivity and compliance with environmental standards at the workplace

Trialled in Singapore
Achieved:
- IMM AEI pilot under review: 94-100% accuracy rate for different AI Detection Module
- <30s trigger time for 81% of detected alerts
- Online dashboard access via any device connected to internet



Blade Air Pro Filter

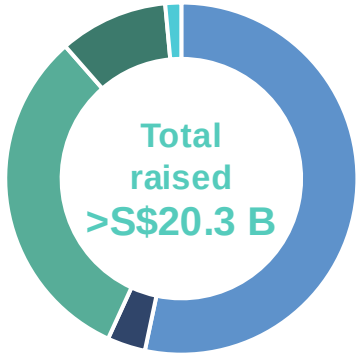
Sensors & active polarisation provide buildings with HEPA-class air quality

Trialling in USA
Achieved:
- 48% improvement in IAQ
- Up to 890 kWh energy savings per AHU a year

Leveraging sustainable finance for decarbonisation

Since 2018, over S$20.3 billion in sustainable finance has been raised by CLI, including its listed REITs & business trusts

Diverse product types…



Sustainability-linked Loan	53%
Sustainability-linked Bond	4%
Green Loan	32%
Green Bond	10%
Green Perpetual Securities	1%

**As at 31 December 2024*

…pegged to specific targets

- Performance ratings on global ESG indices like GRESB & DJSI
- Minimum green building certification level of the underlying portfolio
- Specific targets for reduction in carbon, energy & water intensities as per CLI SMP 2030

Benefits of Sustainable Financing

- Interest rate savings from SLLs that can be channelled back into decarbonisation investments
- Expanding and deepening the pool of financing partners across geographies
- Demonstrate CLI's sustainability leadership in the industry



Commercial

Asset Enhancement

TOP 1984

AEI 2010 - 2013

6 Battery Road

First operating office building in Singapore to win
2010 BCA Green Mark Platinum award*

Brown-to-Green Transition Features

1. **Efficient chiller plant** achieves **~30% efficiency improvement**
2. Self-sustainable iconic 184m^2 **green wall irrigated by harvested rainwater**
3. **Wind turbine** powered by exhaust air to **generate renewable energy** to power green wall irrigation pumps, lighting, etc.
4. **Solar light tubes** brings natural daylight to basement carpark & reduce use of artificial lighting
5. Real time energy & water savings display to educate & create conservation awareness among tenants & vendors

**Highest Green Mark accolade given to a building at that time (previously won Green Mark Gold award in 2008)*
 # Forecast value creation is based on Asset Manager's estimates, ~6.9% increase vs 2009 valuation

IMPACT

S$82.9m#
increase in value
(net of investment cost)

~30%
efficiency improvement



Retail

Asset Enhancement

Year of purchase 2010

AEI 2022 - 2024

CQ @ Clarke Quay

BCA Green Mark certification elevated to

BCA Green Mark GoldPLUS*

Brown-to-Green Transition Features

1. **Improving daytime thermal comfort** of inner streets with ethylene tetrafluoroethylene (ETFE) membrane canopies, which can reduce solar heat gain by ~70%
2. **~50% energy reduction** with new omni-directional fans to enhance air circulation compared to current single-directional fan. New fans are equipped with nozzles to release evaporative mist cooling, **lowering ambient temperatures by ~2°C**
3. Upgrading of chiller to make it **30%** more efficient, achieving industry best practice of better than 0.6kW/RT
4. **~1,000 tonnes of embodied carbon potentially avoided** by retaining existing steel & concrete structures in canopies
5. Upgraded steps that double up as seats & an accessibility ramp with lookout points added to the landing of Read Bridge

IMPACT

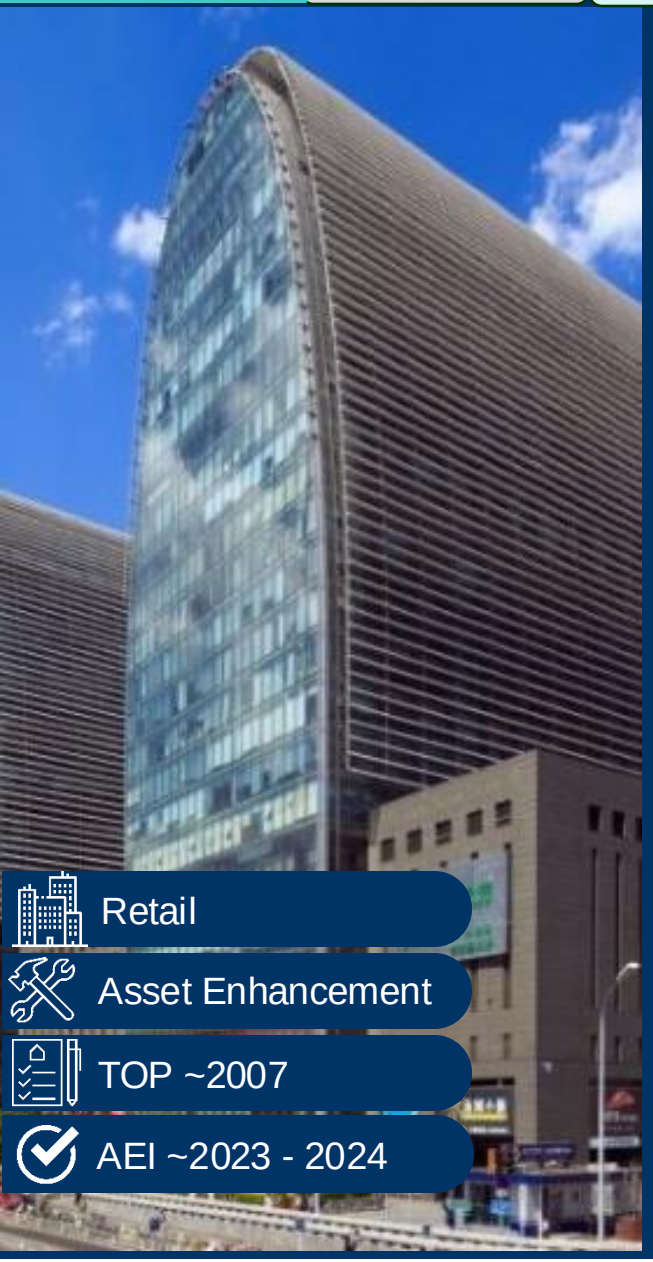
S$120,000
cost avoidance annually

1,030,000
kWh/year of energy savings

~70%
reduction of solar heat gain

~50%
energy reduction

30%
more efficient chillers



CapitaMall Xizhimen, Beijing

US Green Building Council LEED v4 O+M Gold Certification

Brown-to-Green Transition Features

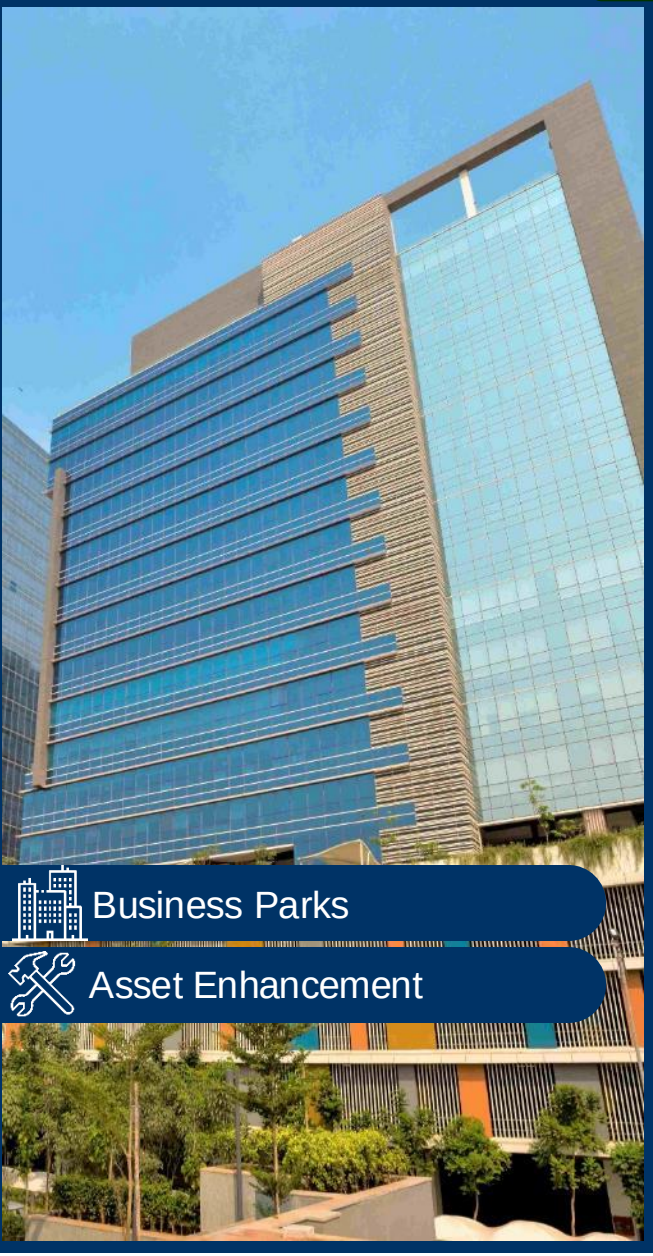
1. Designed to achieve a **63.9% reduction in energy consumption** due to higher performance VRF units, 100% LED lights, & connection to district cooling system
2. **BMS system** includes air conditioning control system, security monitoring system, temperature & humidity control system, ventilation system, lighting management system, & elevator system
3. High-efficiency flush fixtures and smart water sensor taps will help achieve a **46.9% reduction in water consumption** (based on design)
4. CO_2 monitoring system controls fresh air supply

IMPACT

S$1,465,302
cost avoidance annually

10,215,135
kWh/year of energy savings

12,216
m^3/year of water savings



Aurum Q Parc & International Tech Park Hyderabad/Bangalore/Chennai

US Green Building Council LEED Platinum – *Aurum Q Parc & ITP Hyderabad*
IGBC Platinum – *ITP Bangalore/Chennai*

Brown-to-Green Transition Features

1. Electricity generated onsite & procured from offsite renewable sources**. >90% of ITPB annual energy consumption** from **rooftop solar PV & offsite renewable energy**
2. Water consumption reduced across 4 buildings in ITPB & ITPC with water efficient fixtures. **~40 – 50% rainwater harvested** for recharging ground water or other use. 100% of wastewater generated is treated onsite
3. "Trash Bot" – fully-automated waste segregation system segregates waste into biodegradable & non-biodegradable for recycling in ITPB. **Organic waste converter turns biodegradable waste into compost** for landscaping, while external certified vendors recycle non-biodegradable waste

IMPACT

S$144,000
cost avoidance annually

1,245,000
kWh/year of energy savings

24,000
m^3/year of water savings

Our learnings so far..

1 There Is No Silver Bullet, and Boring Can Be Beautiful

- ✓ Keep experimenting with multiple decarbonisation solutions and approaches in parallel; Be mindful of bias towards ground-breaking ideas vs. proven low-risk solutions that can be scaled up
- ✓ Show consistent and tangible progress, demonstrating flexibility over multiple pathways to reach your sustainability targets in a VUCA world

2 Take a Portfolio Management Approach

- ✓ Identifying, quantifying and managing climate risks and opportunities should be treated like a portfolio management exercise, where each component may have a different pathway driven by the local context
- ✓ This approach should drive green capital allocation decisions throughout the business, with flexibility to adapt in the future as local contexts evolve

3 It's Not a Zero-Sum Game

- ✓ Balancing sustainability and profitability is not a zero-sum game and the two are not mutually exclusive; however, at different times the pendulum may swing differently
- ✓ Having a holistic view on financial feasibility will generate greater buy-in from within the organisation

Find Out More About Our Sustainability Initiatives



Scan here for CLI Global Sustainability Report 2023

https://bit.ly/GSR_2023



Scan here for CLI Climate Resilience Report

https://bit.ly/CLI_CRR



Scan here for CLI's Journey to Net Zero

https://bit.ly/CLnetzerojourney



Scan here for CLI's 2030 SMP

https://bit.ly/cli2030smp



The End

CapitaLand | 25 YEARS