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# Sky Garden at CapitaSpring, Singapore

# Sustainability Is At The Core Of Everything We Do

We will grow in a **responsible** manner, deliver **long term** economic value, and contribute to the **environmental** and **social well-being** of our communities.

#### **Core Values:**

Winning Mindset

Enterprising

Respect

Integrity

We create great customer value and experiences through high-quality products and services.



For our CUSTOMERS

COMMITMENT TO OUR STAKEHOLDERS

We develop high-performing people and teams through rewarding opportunities.



For our PEOPLE

We deliver sustainable shareholder returns and build a strong global network of capital partners.



For our INVESTORS

We care for and contribute to the economic, environmental and social development of communities.



For our COMMUNITIES

# **A Sustainability First Mover**

20 years from the formation of CapitaLand and counting...

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#### 2000

CapitaLand started environmental & philanthropic activities reporting

#### 2010

First Singapore listed company to publish a Global Sustainability Report (GSR) (FY2009) referencing Global Reporting Initiative (GRI)

#### 2013

External assurance elevated to AA1000 Assurance Standard

#### 2017

Pledged support for Task Force on Climate Related Financial Disclosures (TCFD), providing disclosures of 4 TCFD pillars in GSR (FY2016)

#### 2019

Appointed as member of ASEAN GRI Consortium

#### 2021

Implemented an internal carbon price

CapitaLand
Sustainability X
Challenge (CSXC)
- Piloted 6 selected
innovations at

innovations at
CapitaLand properties

Launched \$\$50 million CapitaLand Innovation Fund for sustainability & other high-tech solutions

Secured **S\$7** billion through sustainable financing

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#### 2006

CapitaLand Green
Committee
formed, which
spearheaded
Groupwide
initiatives globally
& established
environment &
social key
performance
indicators

#### 2011

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External assurance of annual GSR (FY2010)

#### 2015

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Became signatory to United Nations Global Compact

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#### 2018

Obtained 1<sup>st</sup> & largest Sustainability-Linked Loan in Asia

#### 2020

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Launched
CapitaLand 2030
Sustainability
Master Plan

Launched **CSXC** – 1<sup>st</sup> global sustainability innovation platform by a real estate company

Science-based targets approved

Integrated the
Environment,
Health, & Safety
Impact
Assessment for all
new investments

#### 2022

Committed to Net Zero by 2050

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Held 2<sup>nd</sup> edition, CSXC 2022

- Chosen 10 innovations for piloting at selected CapitaLand properties



## **Global Accolades**

#### **International Standards & Guidelines**



Annual CLI Global Sustainability Report adopts Global Reporting Initiative reporting framework & prepared in accordance with Standards: Core option



Applies guiding principles of International Integrated Reporting Framework, ISO 26000:2010 Guidance on Social Responsibility, & references UN Sustainable Development Goals (UN SDGs)



References real estate sector-specific standards



Signatory to **UN Global Compact** & committed to 10 principles



Participates in annual **CDP** (Carbon Disclosure Project) Climate Change Programme & carbon footprint calculated in accordance with Greenhouse Gas (**GHG**) Protocol<sup>1</sup> (operational control approach)



Aligned climate disclosures with Task Force on Climaterelated Financial Disclosures (**TCFD**) in four key areas of governance, strategy, risk management, & metric & targets.

# Dow Jones Sustainability Indices

Powered by the S&P Global CSA

- Dow Jones Sustainability World Index for 10<sup>th</sup> consecutive year
- Dow Jones Sustainability APAC Index for 13<sup>th</sup> consecutive year
- •1st and longest standing company in Singapore to be listed



- MSCI World ESG Leaders
   Index for 8<sup>th</sup> consecutive year
- MSCI World Socially Responsible Investment Index for 8<sup>th</sup> consecutive year

#### Sustainability Yearbook

#### S&P Global

- Constituent for 13<sup>th</sup> year
- 1<sup>st</sup> and longest standing company in Singapore to be listed

#### GLOBAL 100 by Corporate Knights

Constituent for 10<sup>th</sup> year



 "Global Sector Leader for Diversified - Listed" award, 1st real estate company in Singapore to win four years



#### FTSE4Good

Constituent for 8<sup>th</sup> consecutive year

# Carbon Clean 200<sup>™</sup> by Corporate Knights & As You Sow

Constituent for 4<sup>th</sup> year

# CapitaLand's 2030 Sustainability Master Plan Framework is our strategic blueprint to guide our ESG efforts

**ENVIRONMENT** 





targets validated by SBTi



CO2

Water Conservation & Resilience



Waste Management & Circular Economy



**Green Certification** 

SOCIAL





**Healthy & Safe Buildings** 



**Robust Supply Chain Mgt** 



**Proactive Customer Relationship Management** 



**Dynamic Human Capital** 

**MARKET LEADERSHIP** 





Sustainable Operational Excellence



Sustainability Innovation & Technology



**Sustainable Finance** 



A multi-stakeholder measure of value generated from investing in sustainability



# Integrating Sustainability in CLI's Real Estate Life Cycle

Embedding targets for low carbon transition, waste management & circular economy, water conservation & resilience, accessible, healthy & safe building & supply chain management throughout the real estate life cycle



#### #1 Investment

- Align with 2030 Sustainability Master Plan (SMP)
- Conduct Environment, Health & Safety Impact Assessment (EHSIA) including an internal carbon price
- Quantify proprietary Return on Sustainability (ROS)

#### **#2 Design, Procurement, Construction and Redevelopment**

- Design in accordance with CapitaLand Sustainable Building Guidelines
- Testbed innovations
- Monitor & report performance

#### **#3 Operations**

- Align asset planning with 2030 SMP
- Sustainable operational excellence
- Innovate & collaborate
- Track & evaluate performance through Sustainability Implementation Committee

Training Of Staff
Stakeholder & Community Engagement



# **Carbon Mitigation Hierarchy**

Low Consumption Design	<ul> <li>Natural ventilation to reduce cooling demands</li> <li>Use of daylight / light shelves to reduce need for artificial lighting</li> <li>Use of low embodied carbon material in construction &amp; fit-outs</li> </ul>					
High Energy Efficiency	<ul> <li>More energy efficient HVAC &amp; lighting equipment</li> <li>Zoning of air-conditioning systems; zoned lighting systems</li> <li>High-efficiency boilers &amp; heat pumps</li> <li>District Cooling Systems in selected properties where feasible</li> </ul>					
Control, Metering & Monitoring	<ul> <li>Intelligent Building Platform (cloud-based; IOT driven) that enables centralised monitoring &amp; data analytics-based insights towards optimising equipment performance</li> <li>Sub-metering &amp; motion sensors for centralised monitoring, control &amp; predictive analysis</li> <li>Regular energy audits at properties to improve energy efficiency</li> </ul>					
On-site Renewables	<ul> <li>Solar PVs on building rooftops wherever feasible for on-site renewable energy generation</li> <li>Explore &amp; pilot new technologies &amp; innovations like micro-wind turbines, waste-to-energy solutions, BIPV etc.</li> </ul>					
Green Power Procurement	<ul> <li>Power Purchase Agreements with offsite solar &amp; wind farms in geographies where it is technically &amp; regulatory-wise feasible</li> </ul>					
Renewable Energy Certificates	Lower priority solution only in cases where no further on-site renewable or offsite green power procurement is feasible					
Carbon Offsets	Last-mile option to address any residual carbon after all direct carbon-abatement initiatives have been exhausted; Quality & governance control of projects to be extremely critical					

<sup>\*</sup>These measures are not exhaustive



## Strengthen innovation and collaboration: CSXC 2021





**CSXC 2021 Completed Pilot Project** 

- •Piloted at LogisTech, Singapore (Industrial/logistics building)
- •Patented ceramic net emitting infrared
- Lifespan of >20 years

#### Achieved

**↓** up to 51%

Fan consumption

**↓** up to 16%

Cooling load

Up to 153 kWh/day

Of energy savings across 2 AHUs

#### Timeline

- Sep Nov 2021
  Pre-pilot data collected
- Nov 2021
  50 CONTINEWM® nets installed on 2 AHUs
- Dec 2021 Mar 2022
  Piloting data collected

MOST
INNOVATIVE
AWARD
Climatec Corp
(Singapore)

- Pilot at CapitaGreen, Singapore (Office Building)
- Unique process to treat cooling tower water without using chemicals



#### To test

**↓~3%** energy consumption

**↓** ~80%

blowdown water

HIGH IMPACT AWARD INOVUES Inc (USA)

- Pilot at Creekside 5, Portland, USA (Business Park)
- Insulating glass retrofit technology reduces heat gain in building during summer & heat loss during winter



#### To test

**↓** ~10%

of energy consumption (for cooling & heating buildings)

Aeroseal (USA)

- Pilot at Six Battery Road, Singapore (Office Building)
- Air duct sealing technology using airborne adhesive particles injected into HVAC ducts to seal leaks



To test

**↓~30%** 

AHU energy consumption

LumenAire (Singapore)

- Pilot at Citadines
   Rochor (Lodging) &
   Raffles City (Integrated Development),
   Singapore
- Indoor air disinfection solution



To test

**↓>90**%

virus survivability New
Generation
Bio Water
Saving Stick
(Austria)

- Pilot at Aperia, Singapore (Integrated Development)
- Irrigation via transfer of humidity from air to ground

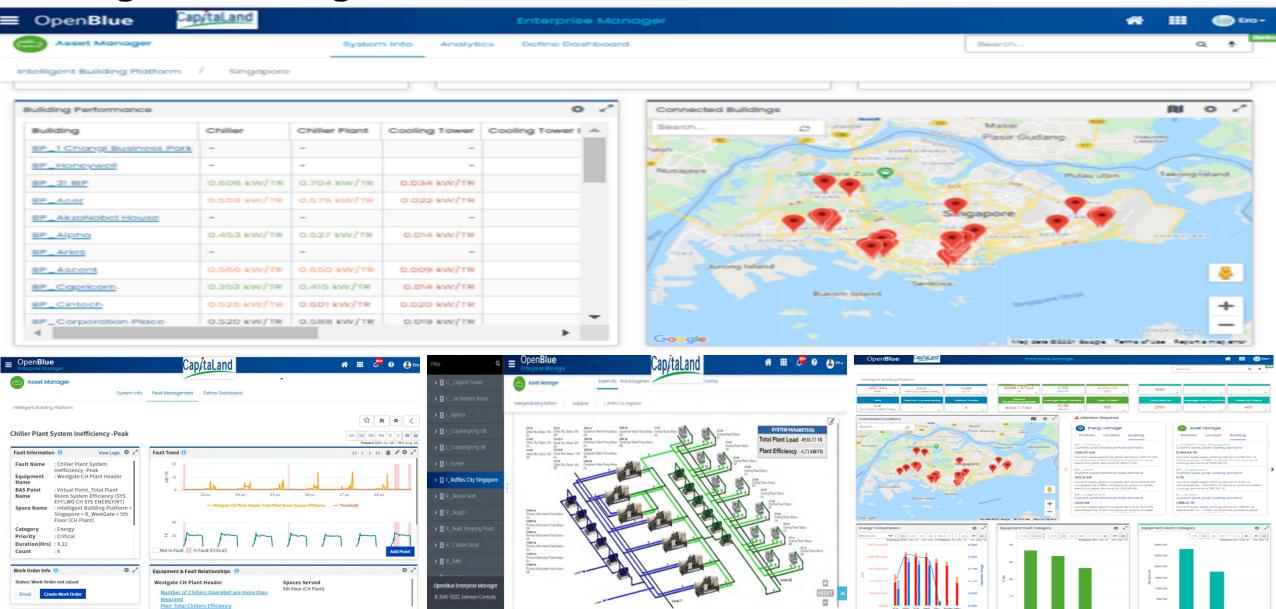


To test

>20% irrigation wat

irrigation water savings

# **Intelligent Building Platform**





# **Green Buildings**

CLI targets to green all its existing properties by 2030 with each property achieving a minimum certification level by a green rating system administered by a national government ministry/agency or a World Green Building Council.

48% of global portfolio achieved green rating<sup>1</sup>

Global Lodging

35%

green rated

China 34% green rated India **72%** green rated 18 business park buildings LEED Platinum or Indian Green **Building Council Platinum** Singapore 67% green rated

20 buildings Building & Construction Authority (BCA) Green Mark Platinum (including 1 building BCA Green Mark Super Low Energy)

<sup>1</sup>This refers to CLI's owned and managed properties by m<sup>2</sup>



# **On-site and Other Renewable Energy Solutions**

#### India

#### Europe

 Ascott's serviced residences in UK and Belgium source 100% of their electricity from renewable energy  Ascott's serviced residences source 100% of their electricity from an off-site wind farm



- On-site generated & purchased solar energy accounted for ~50% of the total electricity consumption by business parks
- Rooftop solar panels totalling 3.1 MW in capacity installed across seven business parks

**Carbon avoidance:** 

19,300 tonnes



### Singapore

 >46,000m<sup>2</sup> of rooftop solar panels generating ~11,460 MWh of energy on 11 properties\*

Carbon avoidance:

**4,450 tonnes** 



 CLI's corporate office has been powered by 100% renewable energy since 2020

Carbon avoidance:

406 tonnes



\* Installation of rooftop solar panels on seven of these properties are in a partnership with Sembcorp Industries



# **Accelerating through Sustainable Finance**

Over S\$10 B raised in sustainable finance since 2018 by CLI and its listed REITs and business trusts

and largest sustainability linked loan in Asia's real estate sector (2018)

loan facility agreement referencing Singapore Overnight Rate Average (SORA) in Singapore (2020)

	Sustainability-linked Loan with DBS	S\$300M
Cap/taLand Investment	Sustainability-linked Loans with Credit Agricole, Natixis and Société Générale	S\$300M
	Sustainability-linked Loan with UOB	S\$500M
	Sustainability-linked Loan with OCBC (S\$150M referencing SORA)	S\$300M
	Sustainability-linked Loan with MUFG	S\$400M
	Sustainability-linked Loan with HSBC	S\$400M











Maiden Sustainability-linked Loan with UOB	S\$150M	
(Leading REIT in Singapore to pioneer a		
sustainability-linked loan for a China portfolio	0)	
Green Loan with OCBC	S\$200M	
Sustainability-linked Loan with UOB	S\$200M	
Green Bond (Sole lead manager/bookrunner: HSBC)	JPY10Bn	
Green Loans with HSBC, UOB & OCBC	S\$600M	
1st hospitality trust in Singapore to obtain a green loan.	S\$50M	
Green Bond (Sole lead manager/bookrunner: OCBC)	S\$100M	
Green Perpetual Securities (Sole lead manager/bookrunner: OCBC)	S\$300M	
Maiden Sustainability-linked Loan with UOB	S\$100M	

Sustainability-linked Loan with UOB



S\$150M



# Green Opportunities from Retrofitting Existing Buildings: 21 Collyer Quay, Singapore BCA's Green Mark Platinum (April 2020)

Asset Enhancement Initiative (AEI) included

- refurbishment of essential equipment
- upgrading of common areas
- Improved energy & water performance through installation of an energy-efficient chiller plant with an adaptive control algorithm
- 2 Efficient lighting system with motion sensor & water-efficient fittings
- New features such as monitoring systems to improve indoor air quality (on each floor) & to achieve a more efficient energy monitoring plan with submetering systems









Case Study #2

Improving Operating Efficiency through Continual Enhancement Initiatives: International Tech Park Bangalore\* and CyberPearl Hyderabad, India\*

LEED Platinum or Indian Green Building Council (IGBC) Platinum

- Improved energy efficiency from upgrading to more efficient airconditioning equipment & lighting
- Implementation of an IoT platform in ITPB to opitimise HVAC equipment performance through advanced data analytics
- Improved water efficiency through adoption of low flow water fixtures in restrooms; Discoverer at ITPB also test-bedded non-chemical and non-intrusive radio frequency based solution for chiller condenser water system descaling
- Tenant's health & safety enhanced through Ultraviolet Germicidal Irradiation (UVGI) lamps installed in Air Handling Units (AHUs) of the buildings

\*The buildings include Discoverer, Creator & Innovator in International Tech Park Bangalore (ITPB); & Block I & Block II in CyberPearl Hyderabad.





# Collaboration in Developing Green Building Certification: Somerset Kuala Lumpur, Malaysia

Excellence in Design for Greater Efficiencies (EDGE) Certification



Further optimise operational efficiency & reduce energy consumption by retrofitting centralised air-conditioning plant chilled water pumps with variable speed drives



26% more energy-efficient

Optimised operational efficiency and achieved energy savings of 26% (698 MWh/year) with the installation of energy-saving light bulbs, and retrofitting centralised air-conditioning plant's chilled water pumps with variable speed drives



Reduced water consumption by 28% (3,300 m³/year) by adopting water-efficient fixtures, such as low-flow faucets & dual flush closets in guest rooms & water-efficient kitchen faucets





# **Green commercial buildings: CapitaGreen, Singapore**

BCA Green Mark Platinum

- Extensive greenery found throughout façade perimeter helping to diffuse strong sunlight, providing comfortable indoor working environment
- Double Skin Façade helps reduce solar heat gain and diffuse strong sunlight penetrating the building. Expected to cut heat gain by up to 26% which translates to energy savings
- Innovative central circulatory system known as **Cool Void** channels **higher-altitude**, **2º cooler air** to air handling units & **reduces energy** to cool the building, resulting in energy cost savings
- Rainwater Harvesting system reduces stormwater drainage & autodrip irrigation system uses rainwater to water greenery





# Community & sustainability in a retail mall: Funan, Singapore

1<sup>st</sup> retail mall to deploy a low global warming potential refrigerant chilled-water system

#### **Low Energy & Energy Efficient Design**

- Energy efficient façade designed to minimise solar heat transmission
- LED light fittings designed with intelligent scene control system

#### Renewable Energy

Tenant's solar panels to power urban farm

#### **Extensive Greenery & Rainwater Harvesting**

largest area for *urban agriculture* in the city with 18,000-sq-ft food garden & 5,000-sq-ft urban farm

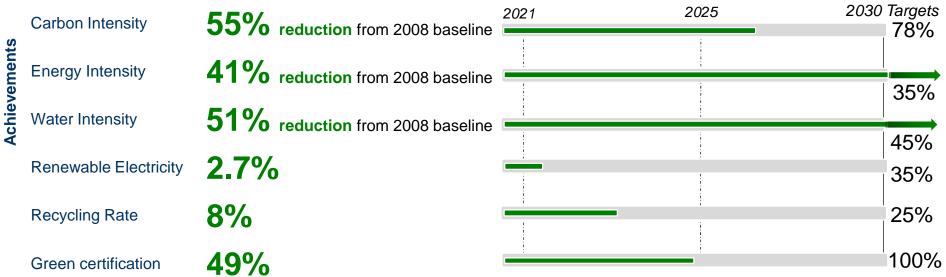
Singapore's first commercial building allowing cycling through the building with indoor cycling path taking cyclists straight to Bicycle Hub, where end-of-trip amenities are provided





# 1H 2022 Sustainability Highlights for CLI

Continuing to build a resilient and resource-efficient real estate portfolio



Note: Performance might be uncharacteristic due to impact of COVID-19 resulting in lower building occupancy/retail footfall. Figures are for 1H 2022.

#### Net Zero by 2050



Global 2030 target validated by Science Based Targets initiative (SBTi) for 1.5°C scenario

#### **Investing in our Sustainability Leadership Pipeline**



Vinamra Srivastava
Chief Sustainability Officer, CLI



Lynette Leong
CEO, ESG Funds & Stewardship, CLI





# **CSXC 2022 Highlights**

Launched in 2020, 1st global platform by a Singapore real estate company to crowdsource the world for innovation & collaboration in sustainability within the built environment.

- Up to S\$650,000 for top 10 sustainability innovations to be piloted at selected CapitaLand properties globally
- > 340 entries (**1**~20%) from > 50 countries (**1**~40%)

#### **SPECIAL RECOGNITION AWARDS FOR CSXC 2022**

#### **High Impact Award**

**CleanAir.ai**'s (Canada) ALVI CleanAir Safety System<sup>™</sup> uses sensors & active polarisation to provide buildings with HEPA-class air quality

#### **Most Innovative Award**

**Enexor BioEnergy**'s (USA) renewable energy system can convert any combination of organic, biomass, or plastic waste into onsite renewable electricity & thermal power while offsetting significant volumes of carbon dioxide

#### **Carbon Action Hero Award**

**Sunman Energy** (China) has created the world's first glassfree, lightweight & flexible solar panel which can be used on roofs that are unable to support glass modules for structural reasons CSXC 2022 Finalists chosen to be piloted

Startup Name	Country	Project Title	
Maini Renewables	India	Efficient micro wind turbine	
Slide Luvre	South Africa	Smart voltaic louvres	
Loh and Sons Paint Co (in partnership with SolCold)	Singapore, Israel	Nanoparticle material using sunlight for active cooling.	
Passive Edge Tech	China	Phase-change material for thermal control and storage	
Ecoflow	Singapore	Air-compression valve to improve water meter accuracy	
WI.Plat	South Korea	Intelligent building leak monitoring system	
Hydroleap	Singapore	Chemical-free system to reduce cooling tower water blowdown	





# 2021 Performance Highlights





Energy and Water intensity reduction of

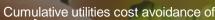
43%

and **52%** 

(per m² from base year 2008) respectively



carbon emissions intensity reduction since 2008



S\$320 million



since 2008

48%

of CLIs global portfolio achieved green building certification

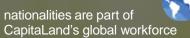


Implemented internal carbon price



for new investments and acquisitions

85



40%

of senior management were

women



>410,000

training hours



>88%

of staff attended a new e-learning course on fraud, bribery and corruption



Supply Chain Code of Conduct

100%

contractors & vendors committed to abide



## S\$7 billion



raised in sustainable finance by CLI & its listed REITs & business trusts

# S\$50 million



CapitaLand Innovation Fund to support the testbedding of sustainability and other hightech innovations

Inaugural CapitaLand Sustainability X Challenge received

>270

innovations from over



countries



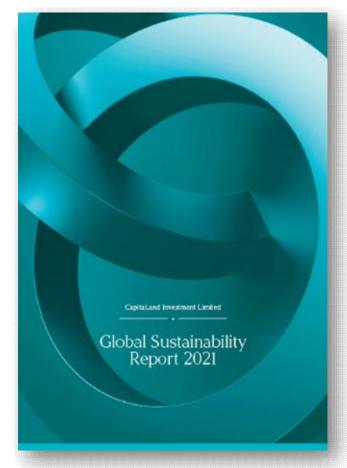
	2030 Target	2021	Performance	2020 Performance
Low-carbon Transition	Reduce carbon emissions intensity by 78% <sup>1</sup>	O	54% reduction in carbon emissions intensity <sup>1</sup>	54%
	Reduce energy consumption intensity by 35% <sup>1</sup>	•	43% reduction in energy consumption intensity <sup>1</sup>	44%
	35% of total electricity consumption from renewable sources	O	4.3%	3.2%
	100% of existing buildings <sup>2</sup> to achieve a minimum green rating	Ō	48% of CLI's global portfolio (by area) has achieved a green rating	52%
Water Conservation & Resilience	Reduce water consumption intensity by 45% <sup>1</sup>	•	52% reduction in water consumption intensity <sup>1</sup>	53%
Waste Management & Circular Economy	Achieve 25% recycling rate in day-to-day operations	0	8.1%	5.2%
	Annual Target			
Sustainable Operational Excellence	ISO 14001 certification for its Environmental Management System (EMS)	•	Retained ISO 14001 certification in 15 countries	
	Manage risks of environmental impact		EMS is externally audited annually, provided top management & external investors on alignment to best practices	•

- 1 Using 2008 as baseline
- 2 Refers to CLI's owned & managed properties & includes all its real estate classes such as retail, office, lodging, business parks, industrial, & logistics

#### Notes:

- Achieved significant reduction in energy, water & carbon emissions intensities in 2021 & 2020 as compared to baseline year of 2008 likely due to the significant drop in activities at its properties amid COVID-19.
- Carbon intensity & energy intensity performance figures for 2020 have been updated to include district heating & district cooling energy consumption
- In progress towards meeting 2030 targets Achieved/Exceeded Targets





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