



GREEN COUNCIL
環保促進會

Webinar: Building and Construction – What are the missing hotspots?

Impact of Recycled Materials in Construction Materials

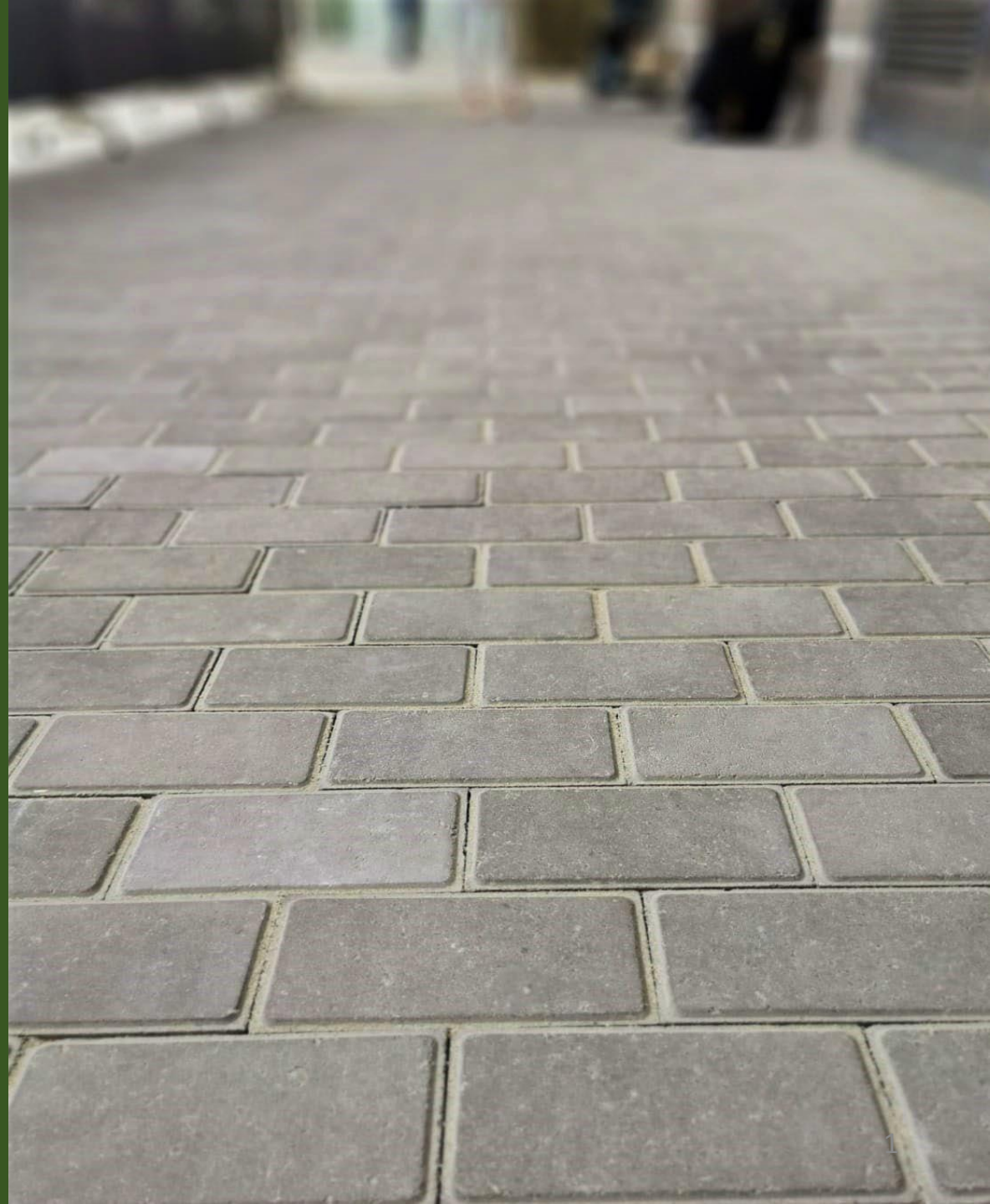
Mr. Shervin Sharghy
CEO and Founder
EcoBricks



Remarks: This material/event is funded by the Professional Services Advancement Support Scheme of the Government of the Hong Kong Special Administrative Region. Any opinions, findings, conclusions or recommendations expressed in this material/any event organised under this project do not reflect the views of the Government of the Hong Kong Special Administrative Region or the Vetting Committee of the Professional Services Advancement Support Scheme.



Turning Plastic Waste
into **Green** Concrete

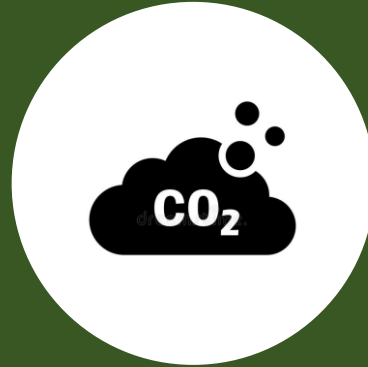


The Problem

The Built Environment



Waste Generation



Carbon Footprint



Natural Resource
Consumption

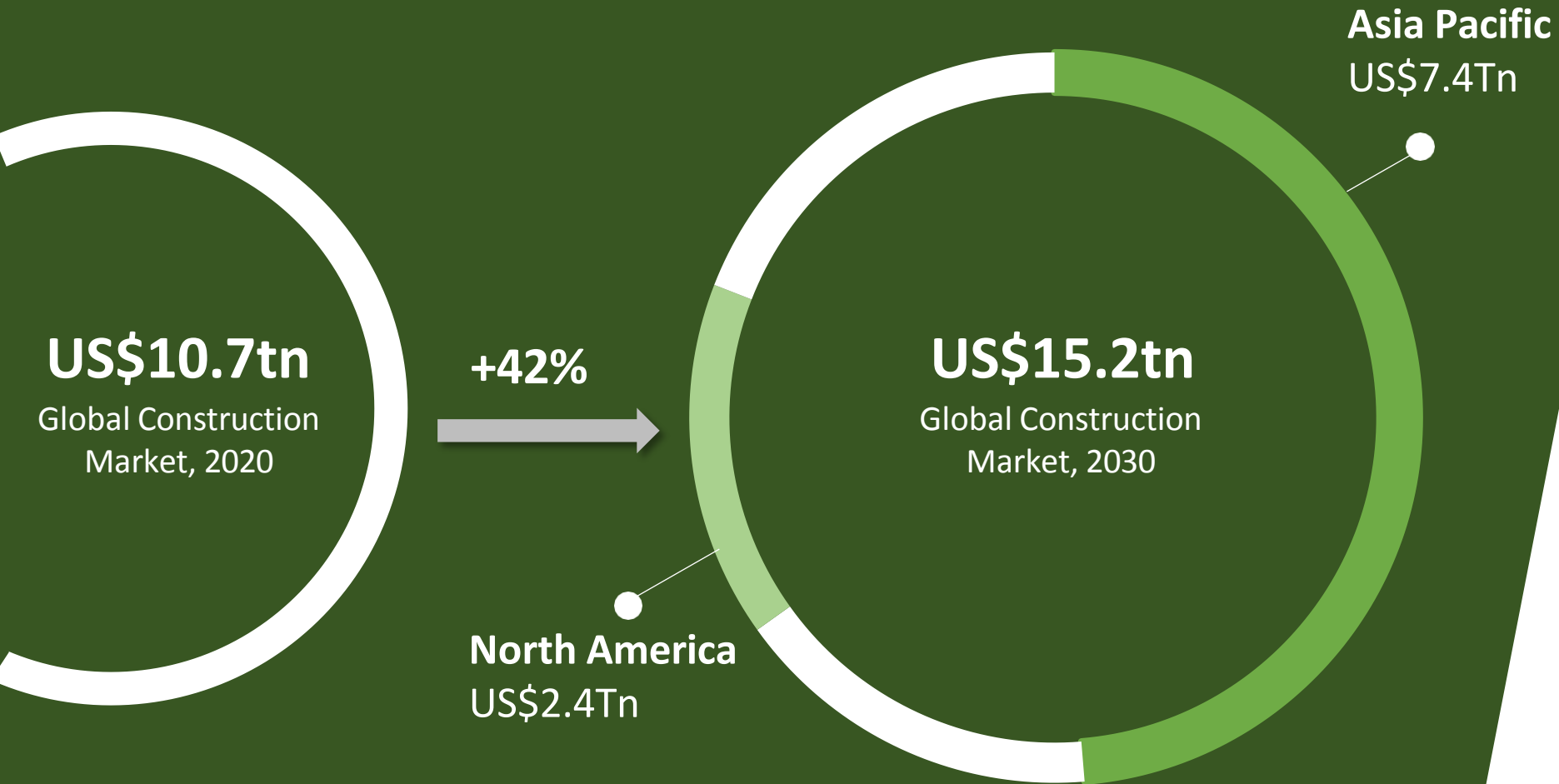


Unprecedented
Growth

**A Big Part
of the
Problem...**

Demand for Construction Materials




APAC >3x Larger than North America

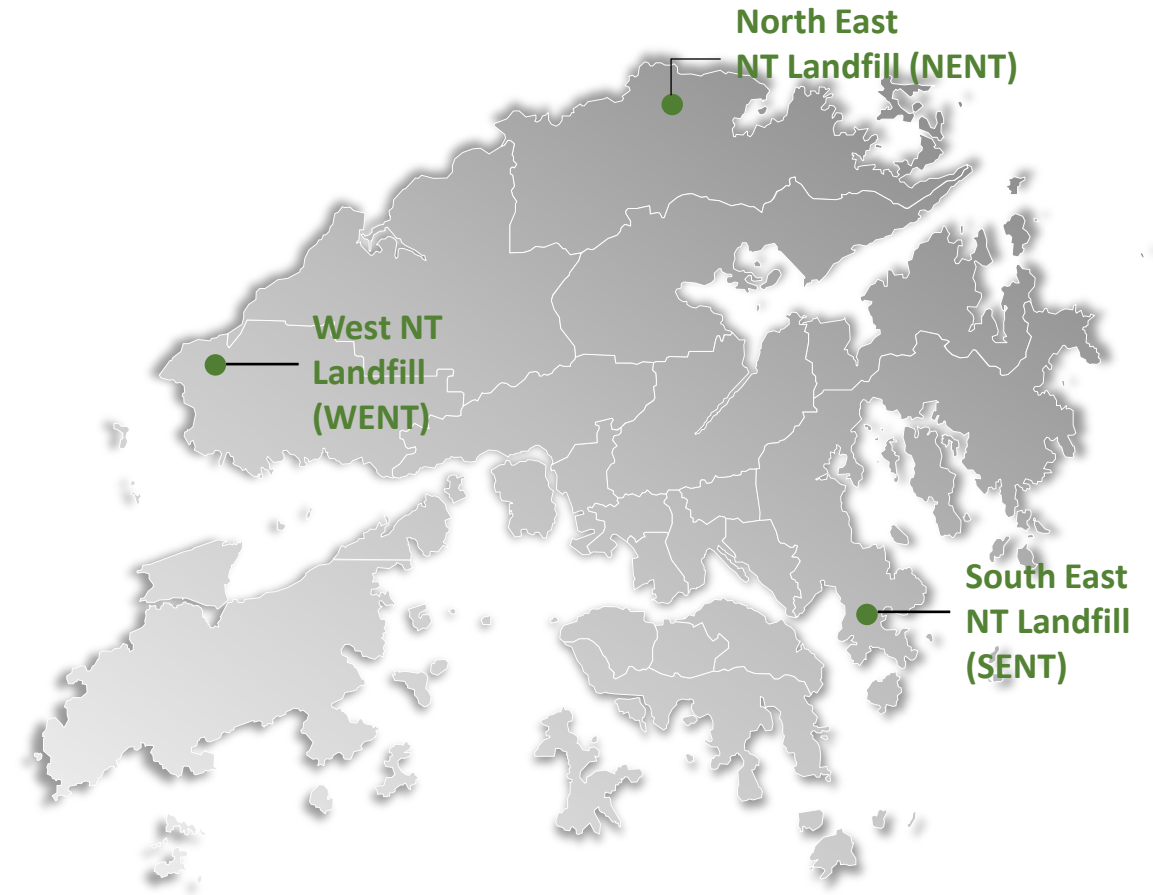


**APAC will
account for 49%
of the global
construction
market**

Waste is a Carbon Problem

Hong Kong's 3 Landfills are in the Top 20 Globally for CO₂ Emissions

	WENT	SENT	NENT
 <p>Highest CO₂ emissions globally</p>	#7	#10	#20
 <p>Tonnes of CO₂ equiv.</p>	2.62Mn	1.96Mn	1.10Mn
 <p>Trees equivalent</p>	1.1Mn	820k	460k



The ESG Reporting Challenge

Scope 3 Will Redraw the Reporting Landscape

The Greenhouse Gas Protocol: Scopes 1, 2 & 3

Scope 1



Company facilities



Company vehicles

Scope 2



Purchased electricity, heat and steam

Scope 3

Upstream



Purchased goods & services



Transportation & distribution



Waste disposal



Business travel & commutes

Downstream



Investments



End-of-life of sold products



Use of sold products



Leased assets

For most companies, Scope 3 emissions represent from **65% to 95%** of a company's broader carbon impact —Carbon Trust

The EcoBricks Solution



EcoBricks – Circularity in Action



Sustainable Concrete

Made with waste materials that outperforms conventional concrete



Unique Plastic Solution

Recycle plastics that no one else can; diverting them from landfills



Carbon Reductions

ISO 14040 Life Cycle Assessment validation



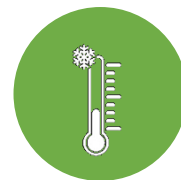
100% Circular Solution

Waste from the built environment into high-value materials for future construction



Saves Natural Resources

Natural aggregates replaced with local waste plastic & construction waste



100% Clean & Zero Waste

No heating or chemical processing. All waste can be recycled into new bricks

**Sustainable
concrete building
materials, made
with waste, that
reduce embodied
carbon**

We Can Upcycle all 7 Types of Plastic

1

PET

e.g. water bottles & soft drinks bottles



2

HDPE

e.g. detergent bottles & water barriers



3

PVC

e.g. bottle labels & children's toys



4

LDPE

e.g. food containers



5

PP

e.g. washing machines & bottle caps



6

PS

e.g. disposable cutlery & food packaging

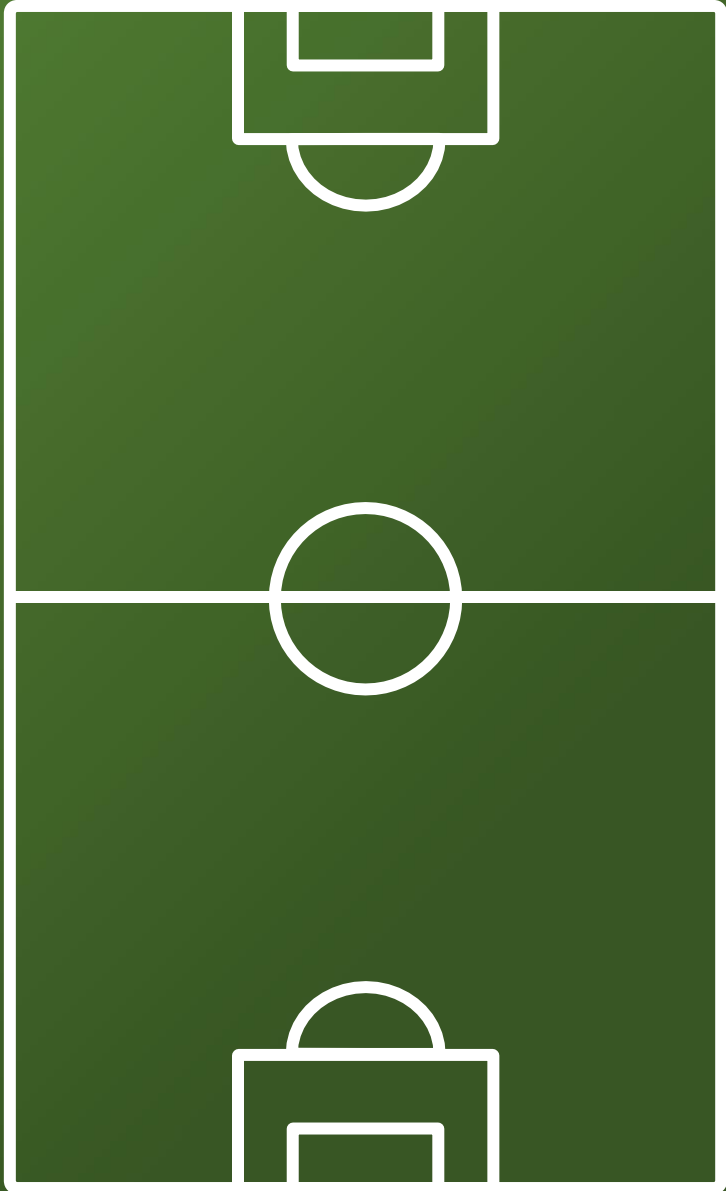


7

Mixed / Other

All other plastics, including mixed and composite



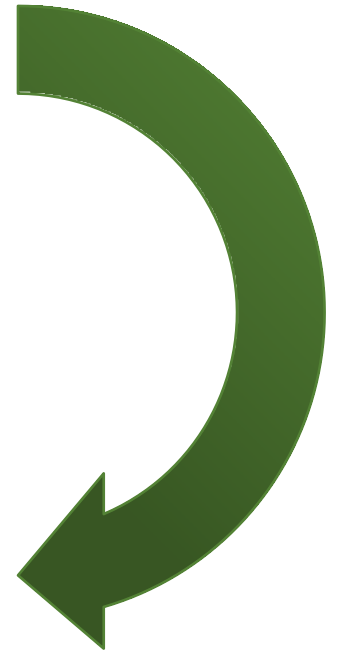


1

Football Pitch
of EcoBricks



14,300,000
Plastic Bottles



More Than Just Plastic

Virgin Materials Replaced with Upcycled Waste

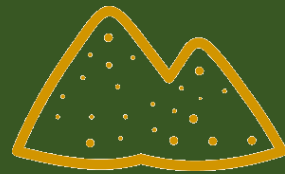


Cement

Makes up 8% of global CO2 emissions



Industrial waste materials



Sand

Most mined material in the world - 85% of all mined materials



Plastic waste and construction waste



Coarse Aggregate

Mined from natural habitats and shipped all across the world



Plastic waste and construction waste

Turning
waste into
a valuable
commodity

EcoBricks: High-Grade and Low-Carbon



V1.0
HiStrength

V2.0
HiWaste



**Compressive
Strength**

48MPa

38MPa



**CO₂ Saving
%**

19%

32%



**CO₂ Saving per
1,000 sqm**

6.1 tonnes

10.2 tonnes



**Recycled Waste
%**

25%

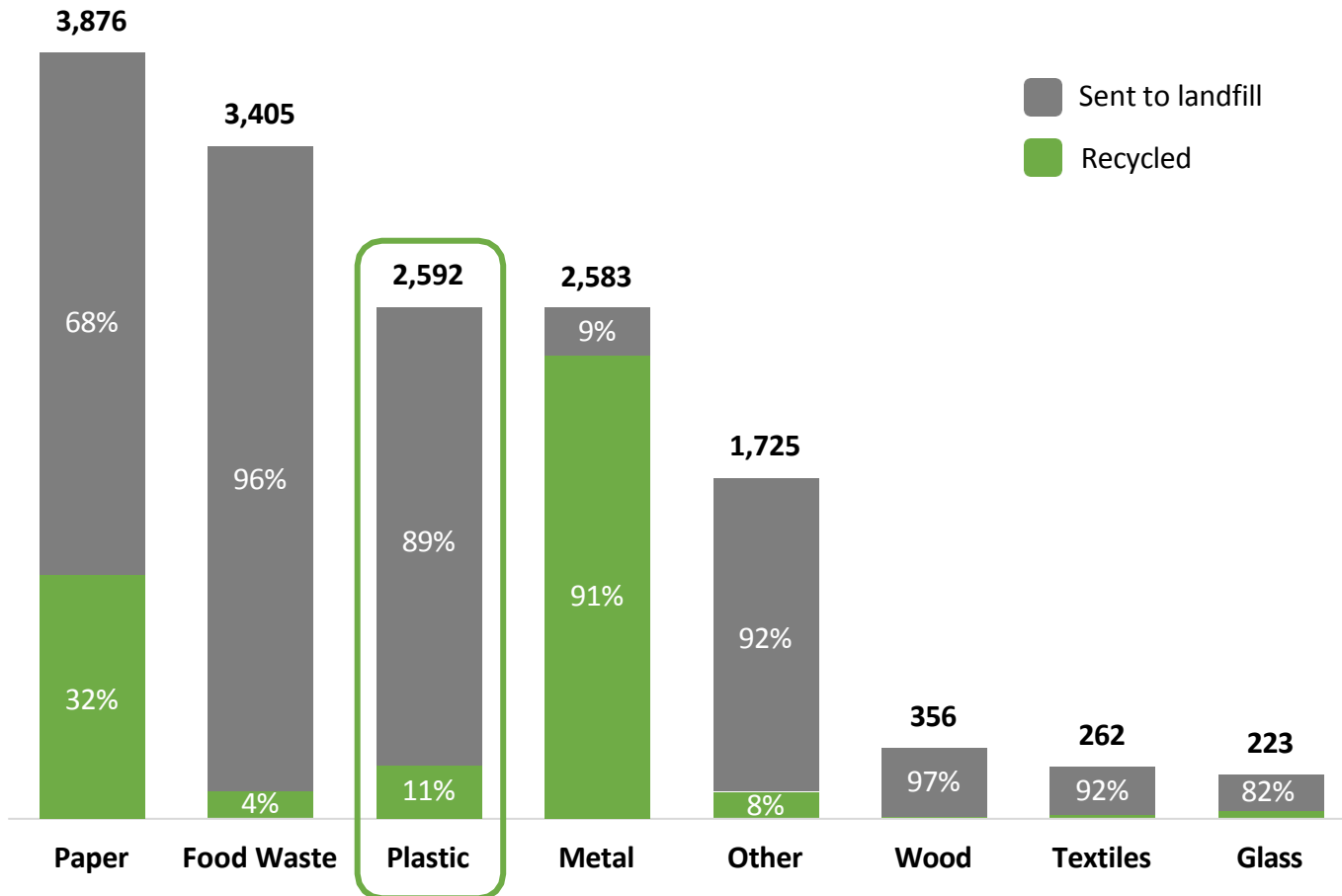
65%

Waste & Recycling Statistics

Hong Kong, 2020



Municipal Solid Waste (MSW), Tonnes per Day



Source: EPD's Municipal Solid Waste 2020 Report

21%
of MSW in landfill is plastic;
1.7% is glass

2,592 tonnes
of plastic waste every
single day

11%
of plastic waste is recycled;
the rest goes to landfill

Awards & Projects

Achievements to Date



Inventions Geneva Award 2022

Gold Medal with
Congratulations of the Jury

March 2022



HK Government Grant

Largest ever Recycling
Fund grant

October 2022



CIC Innovation Awards 2022

1st Prize – Construction
Sustainability

December 2022



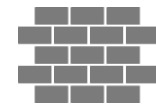
Innovation Challenge 2023

Winner – Circular
Economy

January 2023

Gold Coast Piazza

Paving Bricks, Q1 2022



10,719
bricks delivered



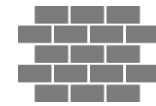
3.3 tonnes
plastic upcycled



339
washing machines saved from landfill

Olympian City, Phase 1

Yellow Paving Bricks, Q1 2022



8,500
bricks delivered



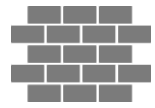
2.6 tonnes
plastic upcycled



269
washing machines saved from landfill

GC Yacht & Country Club

Pizza Oven, Q1 2022



400

bricks delivered



169kg

plastic upcycled



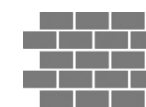
17

washing machines



Citywalk Mall

Christmas Decor, Q4 2022



3,200
bricks delivered



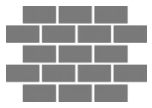
1.0 tonnes
plastic upcycled



101
washing machines

One Island East

Feature Wall, Q4 2022



420

bricks delivered



171kg

plastic upcycled



17,080

plastic bottles

