



Sustainable Putrajaya: **GARDEN to GREEN**

**Malaysia Low Carbon Cities
Conference 2021
13 July 2020**

WANG TZE WEE (TPr.)
*Jabatan Perancangan Bandar
Perbadanan Putrajaya*

Photo courtesy of Putrajaya Lake & Wetland Photo Competition 2016

Presentation Outline

- ☐ Introduction of Putrajaya
- ☐ Background Putrajaya as a Low Carbon Green City
- ☐ Transforming Putrajaya Into A Low Carbon Green City

Putrajaya

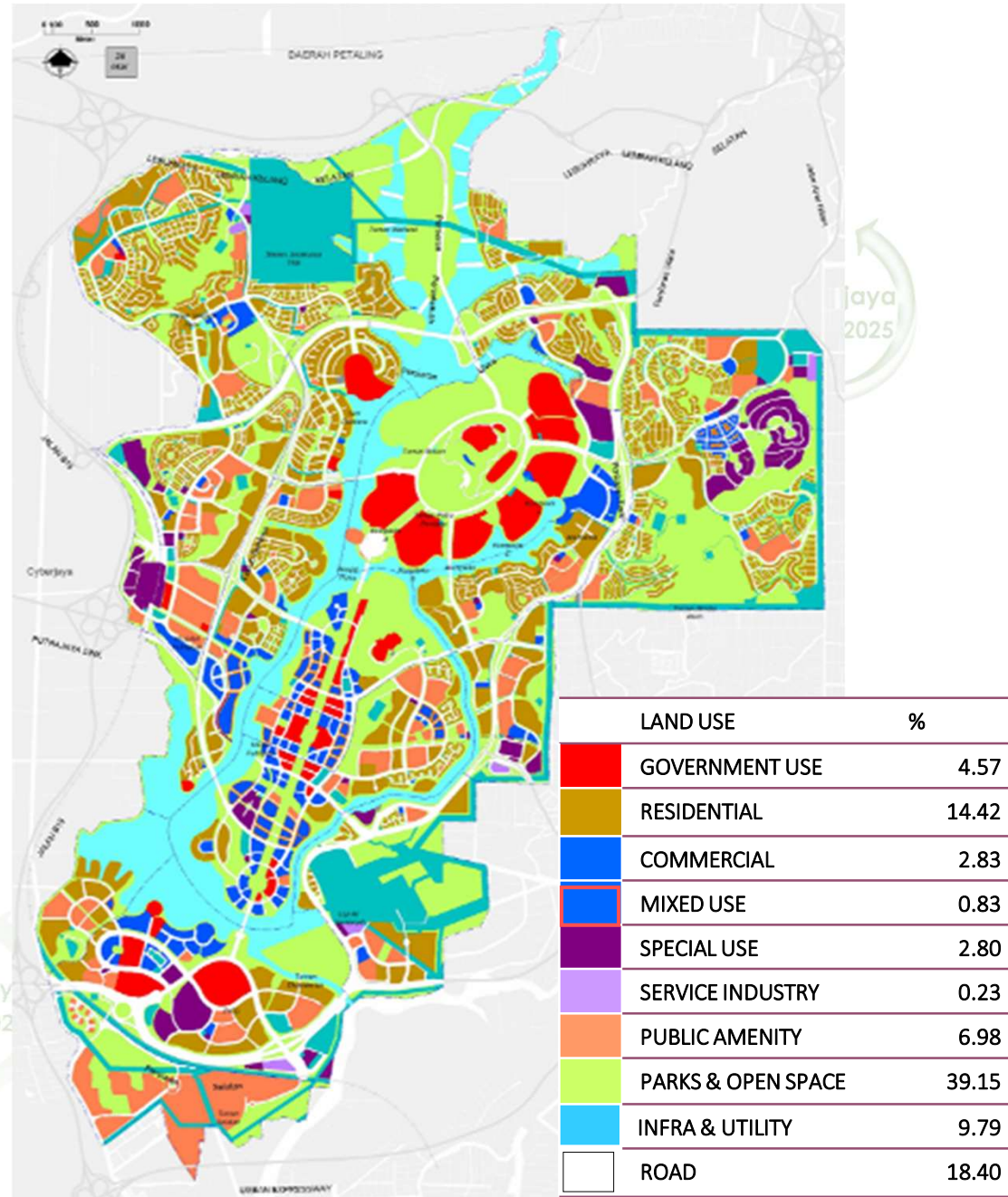
Federal Government Administrative
Centre of Malaysia

Area : 4,931 hectares

Population 2020 : 113,300

Main features of the Putrajaya Master Plan:

- City-in-a-Garden Concept;
- Almost 40% of the city area designated as open spaces (Inc. 400 hectares man-made lake, 200 hectares of wetlands);
- City divided into 20 precincts;
- Residential precincts at the peripheral are planned based on neighbourhood planning concept.



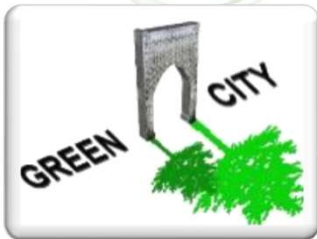
Background of Putrajaya as a Green City

- In tabling the 2010 Malaysian Budget, the Prime Minister announced to “develop Putrajaya and Cyberjaya as pioneer township in Green Technology as a showcase for the development of other townships”.

The Green City of Putrajaya aims to:



Minimise negative environmental impacts and degradation.



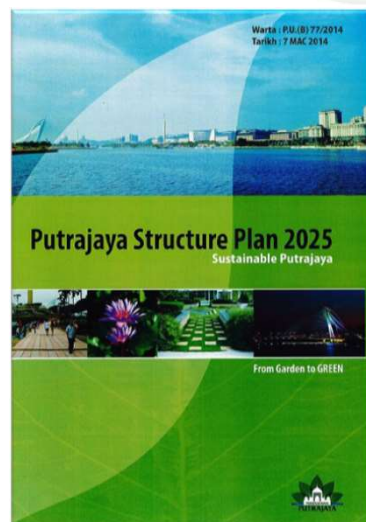
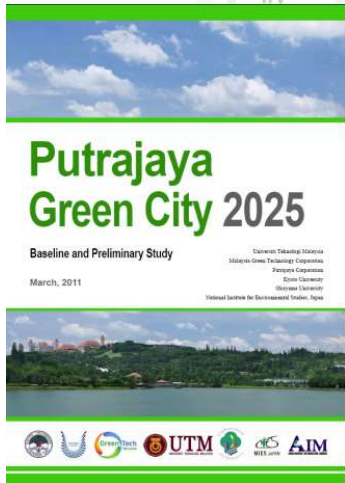
Encourage human interaction back with nature.



Reduce the carbon emissions from human activities.

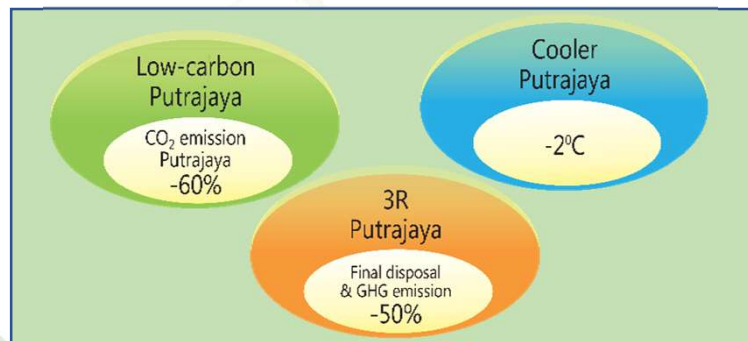
Transforming Putrajaya Into A Low Carbon Green City

Implementation Approach



SZA [Science + Policies = Actions]

Three quantitative environmental targets

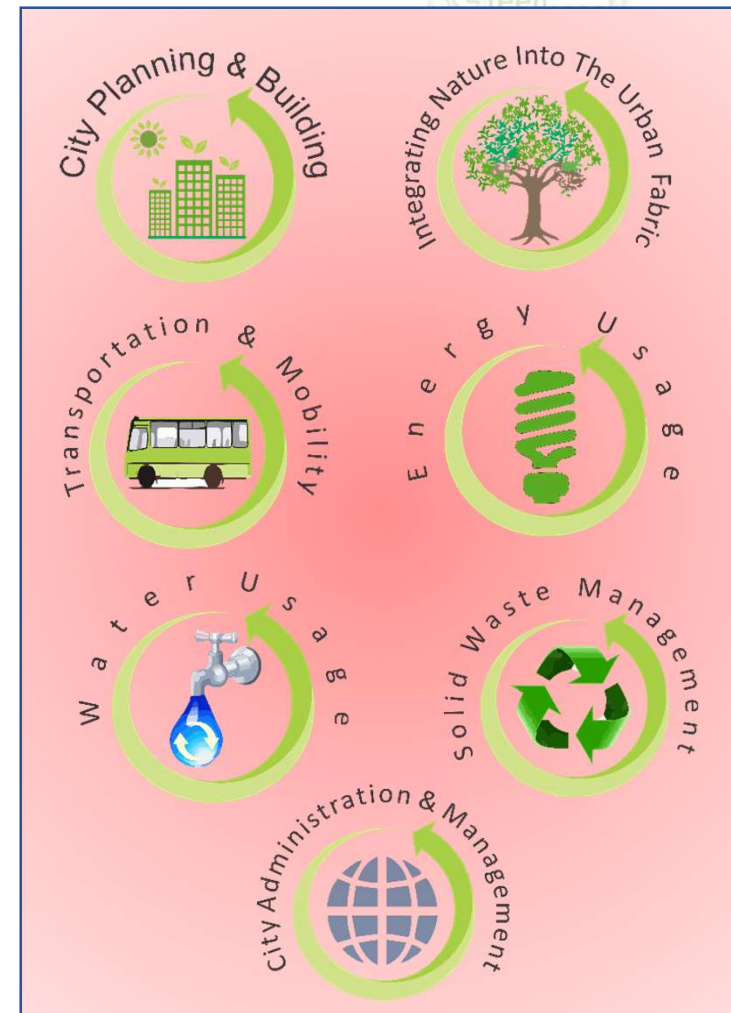


1 Vision
Sustainable Putrajaya 2025
From Garden To Green

- 4** Big Moves
- 1 Green
 - 2 Vibrant
 - 3 Distinctive
 - 4 Connected

- 8** Policies
- 1 Elevating Putrajaya as an Excellent Federal Government Administrative Centre
 - 2 Building a Progressive and Diverse Urban Economy
 - 3 Strengthening Tourism as Key Economic Function
 - 4 Enhancing Community Living Environment
 - 5 Moving Putrajaya Towards Green City
 - 6 Implementing Integrated Transportation System
 - 6 Employing Adaptable and Responsive Land Use Management
 - 8 Adopting Effective Partnership and Good Governance

Green Initiatives by 7 Focus Areas (7FAs)



Putrajaya Green City & LCCF

LCCF

PGC2025 7 Focus Areas & 16 Actions

Urban Transport (UT)

FA3: Low-carbon Transportation

Building (B)

FA1: Cutting-Edge Sustainable Buildings

Energy

FA7: Low-carbon Lifestyle

FA4: More & More Renewable Energy

FA4: Improve Energy Efficiency

Urban Infrastructure (UI)

Water

FA5: Keeping the Water Clean

FA5: Alternative of Water Resources

Waste

FA6: Use Less Consume Less

FA6: Think Before You Throw

FA6: Integrated Waste Treatment

Urban Environment (UE)

FA1: Integrated City Planning and Management

FA2: The Green Lung of Putrajaya

FA2: In Harmony with Nature

FA1: Cooler Urban Structure and Buildings

FA7: Community & Individual Action to Reduce Urban Temperature

Green Incentives and Capacity Building

FA1



FA2



FA3



FA4



FA5



FA6



FA7



City Planning & Building

- Planning principles that contribute towards reduction of carbon emissions.
- Reuse of Local Resources for Construction



Re-use of crushed rocks as construction material: Rock-filled' Putrajaya Lake Dam

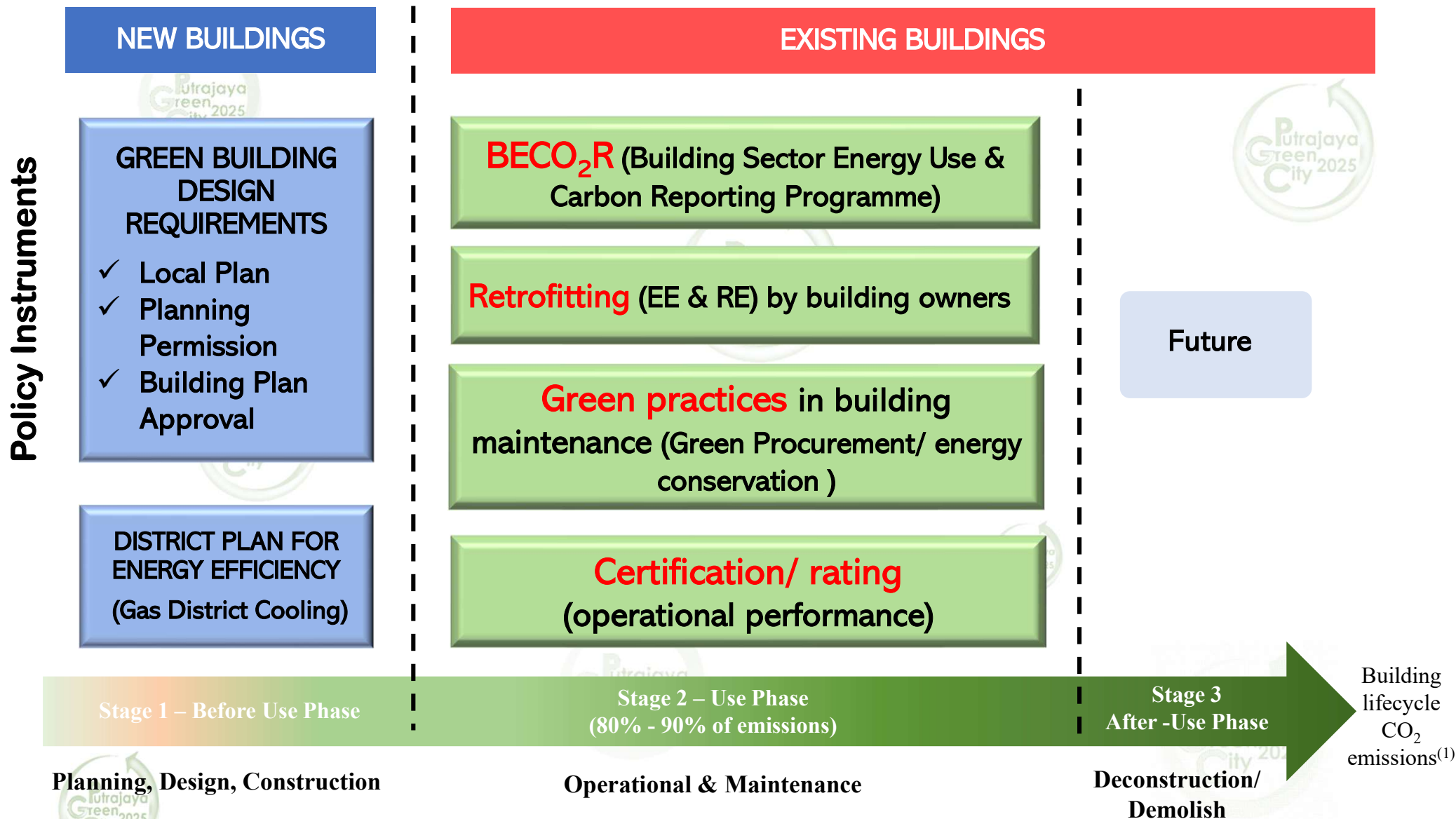


Comprehensive Pedestrian & Cycling Network

self-contained
integrated
neighborhood
centers/
complex



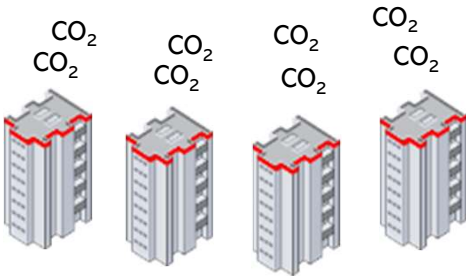
Green Initiatives for Building Sector by Lifecycle



(1) : UNDP-SBCI & WRI, 2010

GHG Emissions by the Building Sector in Putrajaya

CO₂ from Building Sector > 60%



10%



90%

Building Sector Energy Use & Carbon Reporting (BECO₂R)

WHAT?

a bottom-up building performance monitoring programme involving the participation of building stakeholders during the operational stage of a building.

HOW?

Reporting entities are required to submit their monthly building energy consumption data to PPj using an online system.



OUTCOME/ ACHIEVEMENT

Number of Participating Buildings in BECO₂R

Buildings Type	No. of Building
Government Office Complexes	76
Commercial Buildings	4
Hotel	3
Public Facilities	2
Residential (Apartment)	1
School/University	1
Other Buildings	2
TOTAL	89

Building Sector Emissions Intensity 2019 vs 2014:

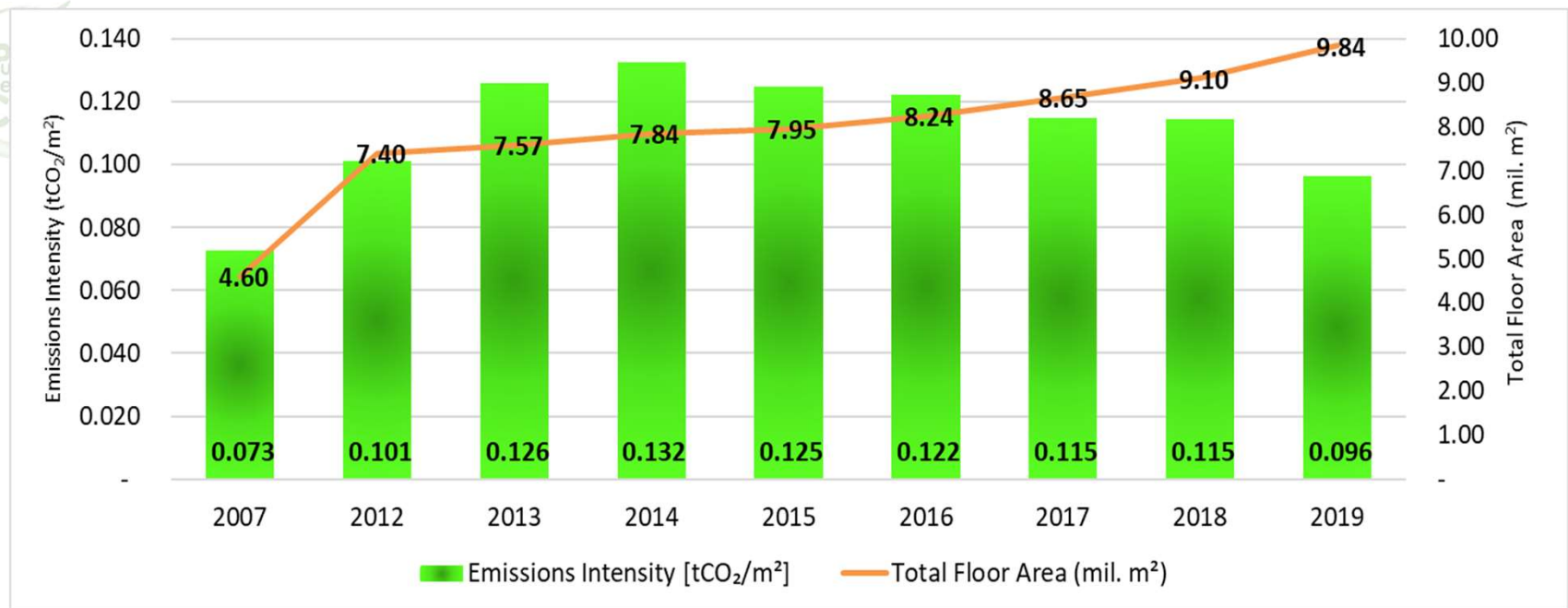
CO₂ emissions intensity
by floor area



Completed
floor areas



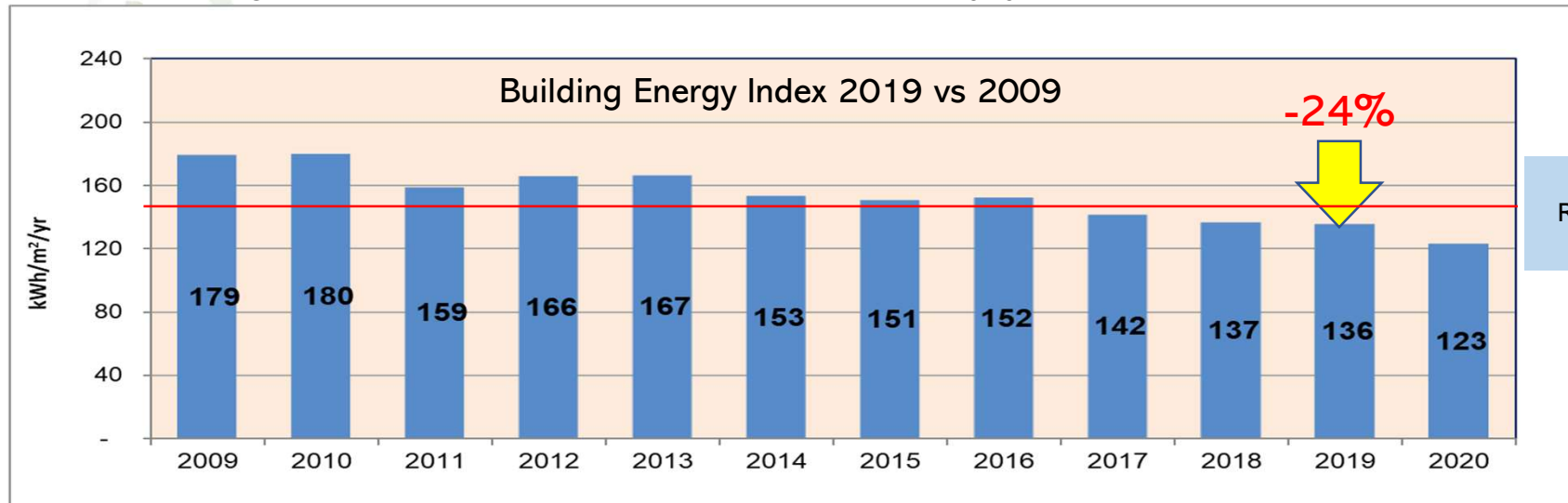
Energy
efficiency of
building
sector has
IMPROVED!



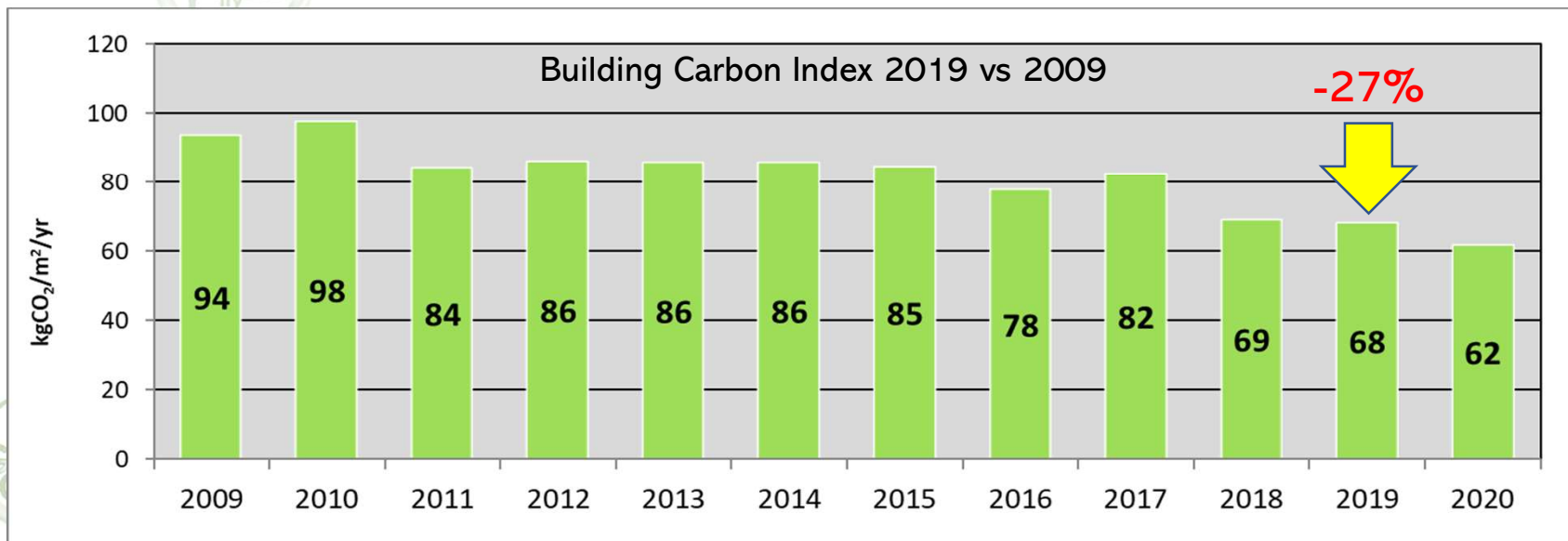
OUTCOME/ ACHIEVEMENT

Establishment of Common Carbon Metric (CCM) at City Level

CCM for government office complexes in Putrajaya



150kWh/m²/yr
Recommended by
MGTC



Transportation & Mobility



- 390km pedestrian walkways & cycleways.
- signalised traffic light for cyclist (50 junctions) & pedestrian (100 junctions).
- safety reminder signages
- Panic button for emergency rescue.



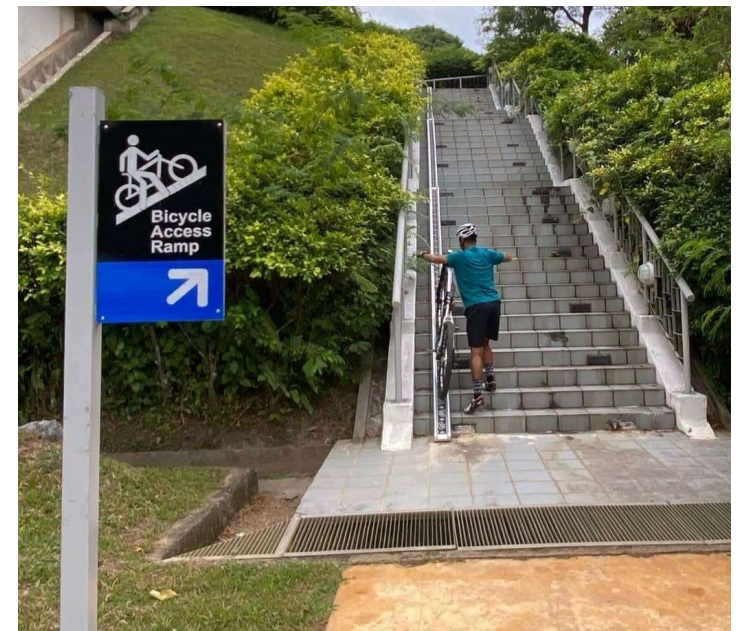
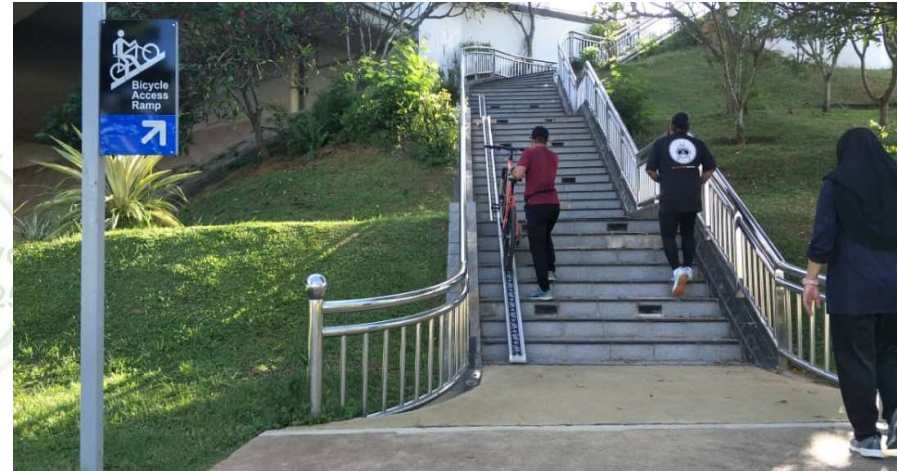
Transportation & Mobility

Use bike ramps to improve continuity, create shorter & more comfortable routes for cyclist to use the bikelane along waterfront promenade.

Before



After



SOLID WASTE MANAGEMENT – CAREton@Putrajaya

Circular economy concept & innovative reused of solid waste



UBC products



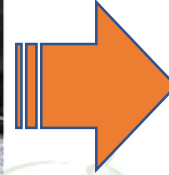
**Consumer/household
Used Beverage Carton
(UBC)**



SOLID WASTE MANAGEMENT – CAREton@Putrajaya

Circular economy concept & innovative reused of solid waste

Recycling process at
factory – polyAl
panel & roof



Product PolyAl by community



Consumer/household
Used Beverage Carton
(UBC)



SOLID WASTE MANAGEMENT

Fasilitas Inovasi Kitar Semula (FIKS) – increase the capacity to process recyclable items & ability to provide more frequent 3R collection trips within the city



Integrated Recycling facility (IRF)



SOLID WASTE MANAGEMENT

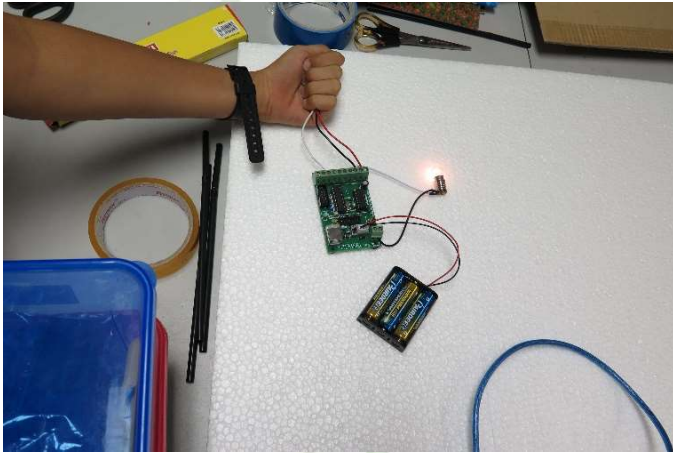


Provide facilities for learning & information on recycling and its processes.

Environmental Education

GreenROSE@Putrajaya: Children-led climate change adaptive initiative

Smart Street Light



Eco-bricks



Eco Boat



Eco Stories by Children of Putrajaya

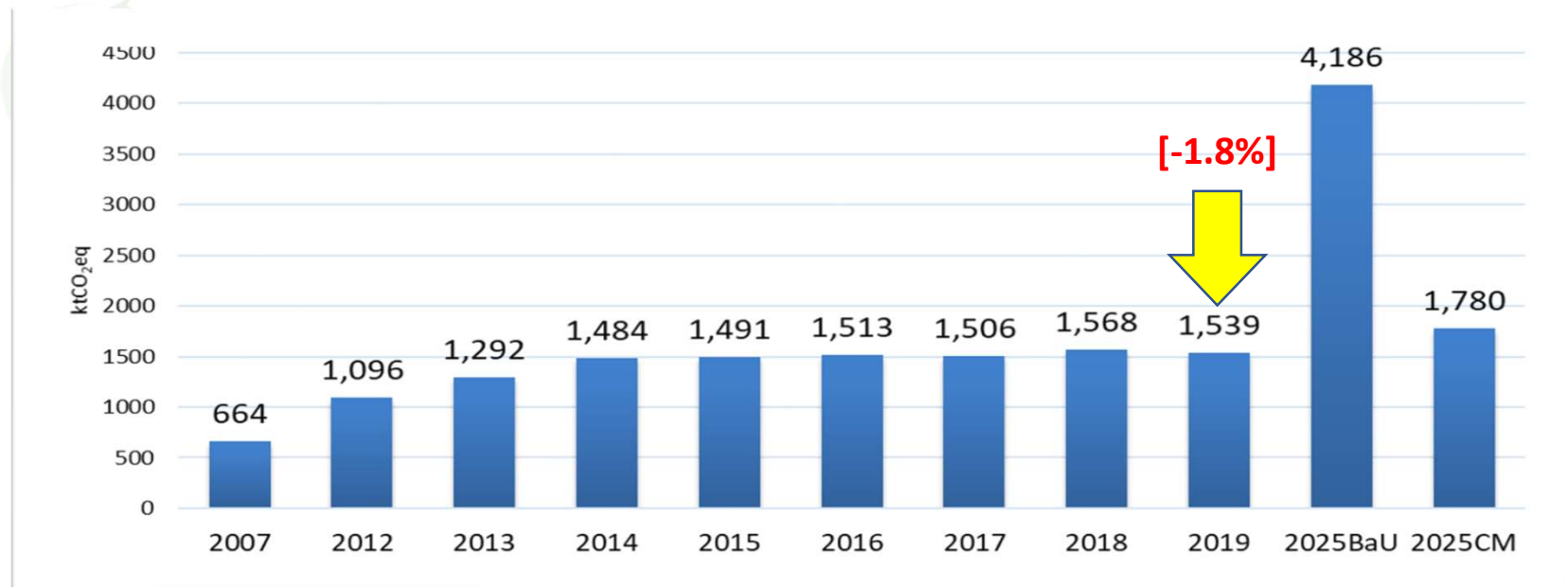


Folio Hijau – Green Book for children



CONCLUDING REMARKS

GHG Emissions in Putrajaya



- ❑ The 'City in a Garden' Concept has provided a solid foundation for the city to move towards achieving the goal of Putrajaya as low carbon green city.
- ❑ Our challenges:
 - ✓ To formulate effective instruments to secure the desired urban sustainability;
 - ✓ To further strengthen the existing programs & to develop as a scope for long-term initiatives.



SEKIAN TERIMA KASIH

THANK YOU



www.ppj.gov.my



@perbadananputrajaya



Perbadanan Putrajaya



Perbadanan Putrajaya

@putrajayacorp