MAJLIS BANDARAYA PULAU PINANG

seminar

'TOWARDS ZERO CARBON CITY'

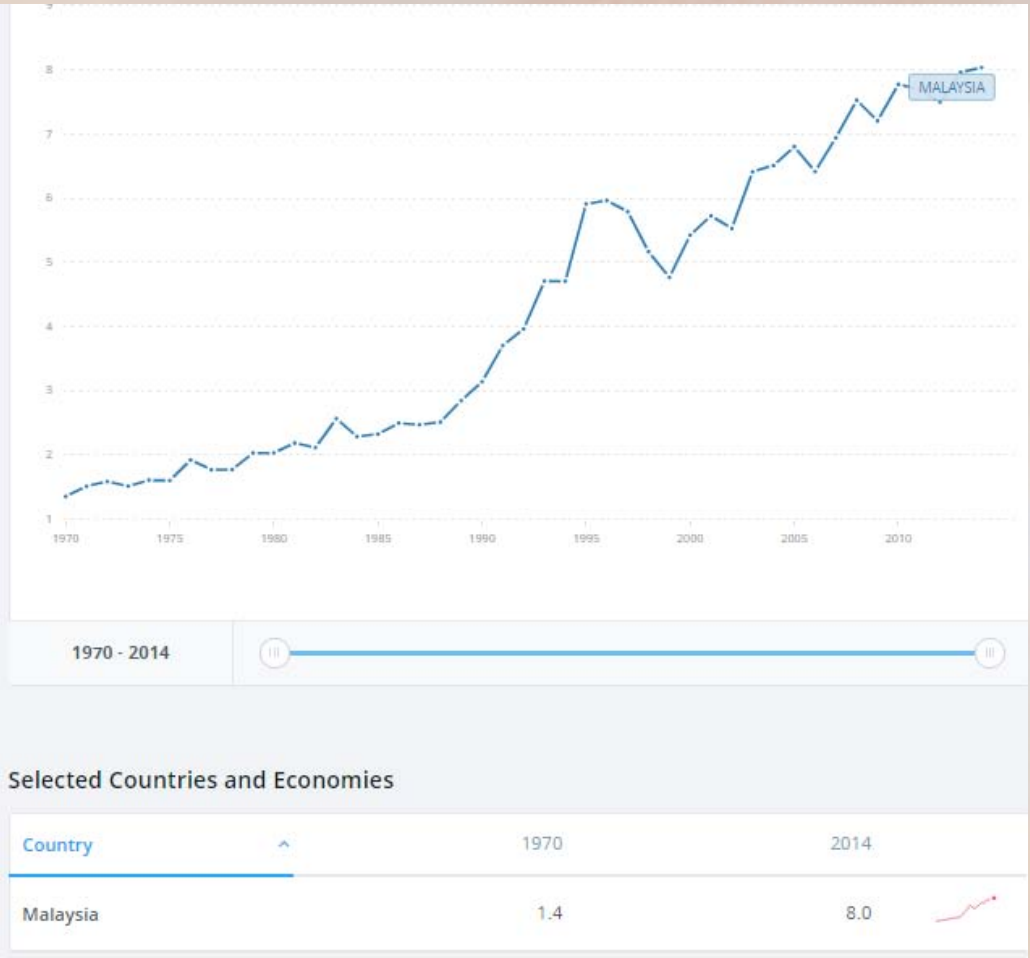
Date : 26th September 2018
Time : 08.30 am
Venue : Jen Hotel, Penang

Datuk Bandar

Majlis Bandaraya Pulau Pinang

MALAYSIA CO2 EMISSIONS (METRIC TONS PER CAPITA)

Data : THE WORLD BANK



https://data.worldbank.org/indicator/EN.ATM.CO2E.PC


GAMA


GAMA
DAIKIN
Cooling King

NEW STRAITS TIMES
ESTABLISHED 1845

Penang crippled by floods, described as 'worst in years'

thesundaily

17 Nov 2017

Penang residents experienced worst flash floods

+ 1°C

Arctic is melting

+ 2°C

Coral Reefs dying

+ 3°C

Amazon rainforest drying out

+ 4°C

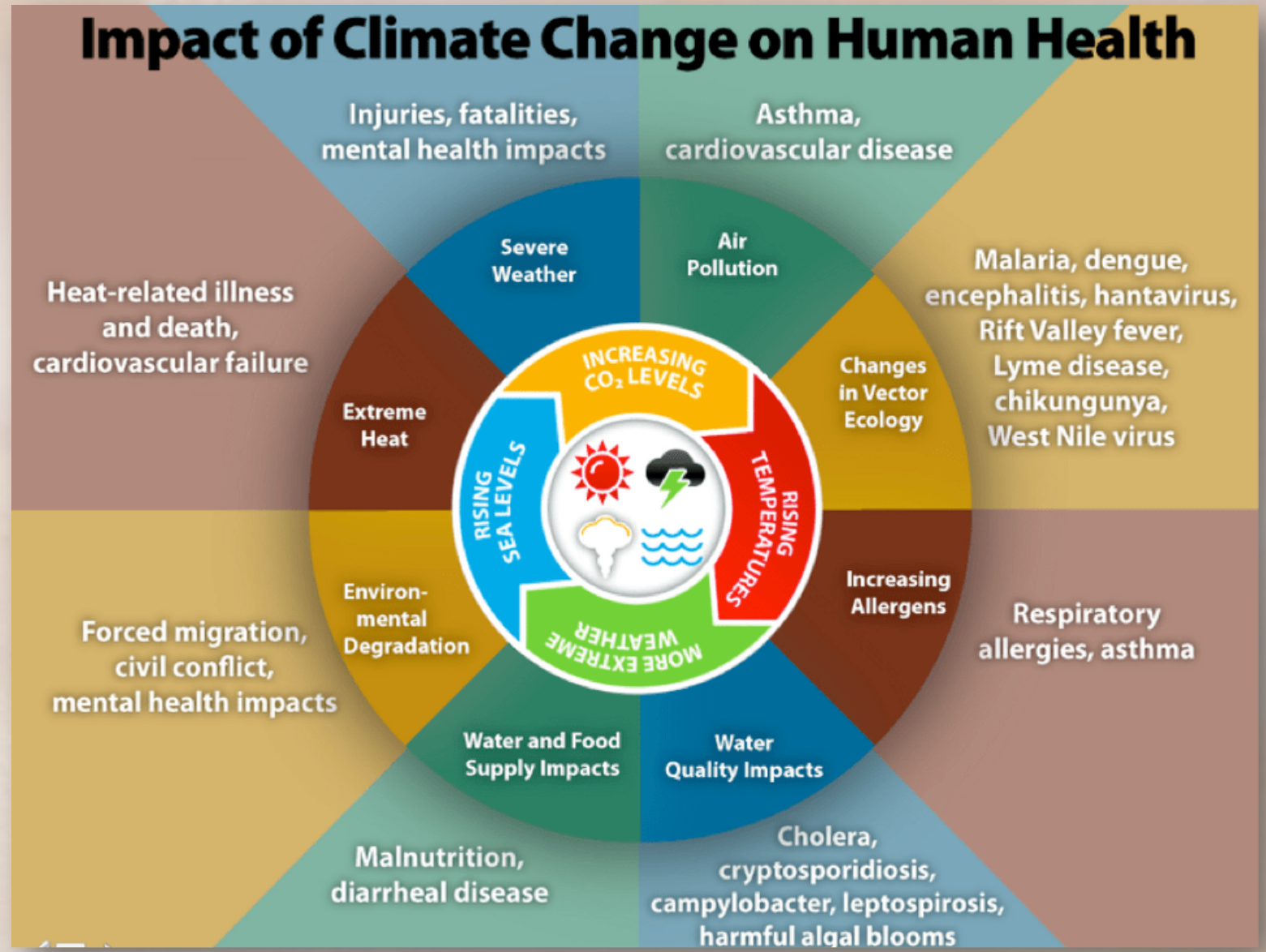
Many coastal cities could be flooded

+ 5°C

Increase in climate refugees

+ 6°C

Global Wipe Out


Impact of Climate Change on Human Health
Injuries, fatalities, mental health impacts
Asthma, cardiovascular disease
Heat-related illness and death, cardiovascular failure
Malaria, dengue, encephalitis, hantavirus, Rift Valley fever, Lyme disease, chikungunya, West Nile virus
Forced migration, civil conflict, mental health impacts
Respiratory allergies, asthma
Malnutrition, diarrheal disease
Cholera, cryptosporidiosis, campylobacter, leptospirosis, harmful algal blooms
Severe Weather
Air Pollution
Extreme Heat
Changes in Vector Ecology
Environ-mental Degradation
Increasing Allergens
Water and Food Supply Impacts
Water Quality Impacts
INCREASING CO_2 LEVELS
RISING TEMPERATURES
MORE EXTREME WEATHER
RISING SEA LEVELS


SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS


1
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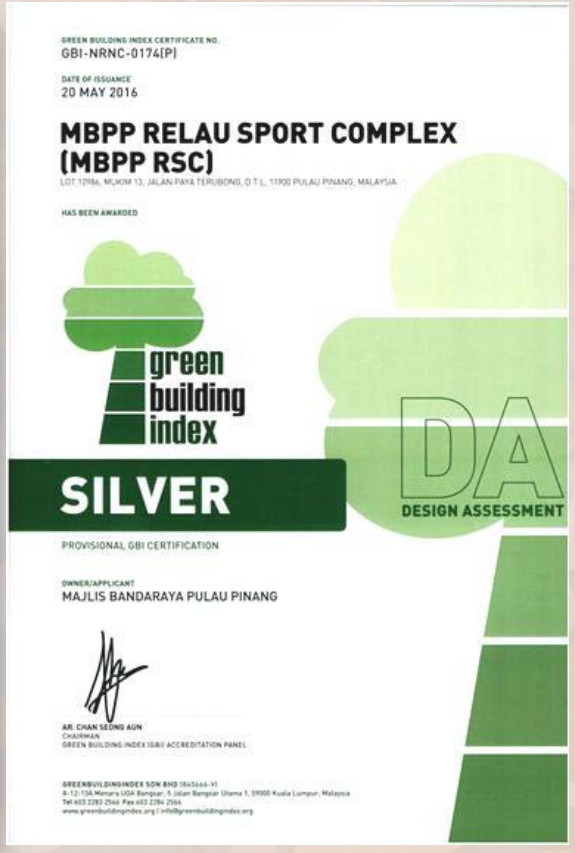
17
Climate & Energy
Redefining
value
Cities
Food & Land

GREEN BUILDING

Penang the only state in Malaysia that awards Green Incentives by rebating development charges GBI Gold or Platinum rating

GBI CERTIFICATION FOR MBPP PROJECT

RELAU SPORT COMPLEX



GREEN BUILDING INDEX CERTIFICATE NO.
GBI-NRNC-0174(P)

DATE OF ISSUANCE
20 MAY 2016

MBPP RELAU SPORT COMPLEX (MBPP RSC)

LOT 12986, MUKIM 13, JALAN PAYA TERUBONG, 0 T L, 11900 PULAU PINANG, MALAYSIA

HAS BEEN AWARDED

green building index

SILVER

DA
DESIGN ASSESSMENT

PROVISIONAL GBI CERTIFICATION

OWNER/APPLICANT
MAJLIS BANDARAYA PULAU PINANG

AR. CHAN SEDING AUN
CHAIRMAN
GREEN BUILDING INDEX (GBI) ACCREDITATION PANEL

GREENBUILDINGINDEX SDN BHD 1045644-V1
A-12-13A Menara UOA Bangsar, 5 Jalan Bangsar Utama 1, 59000 Kuala Lumpur, Malaysia
Tel: 603 2282 2566 Fax: 603 2284 2566
www.greenbuildingindex.org | info@greenbuildingindex.org

PASAR CHOWRASTA

GREEN BUILDING INDEX CERTIFICATE NO.
GBI-NREB-0010(P)

DATE OF ISSUANCE
11 JANUARY 2016

PROJEK MENAIKTARAF DAN PENGUBAHSUAIAN PASAR CHOWRASTA

PASAR CHOWRASTA, JALAN PENANG, 10000 GEORGE TOWN, PULAU PINANG

HAS BEEN AWARDED

green building index

CERTIFIED

DA
DESIGN ASSESSMENT

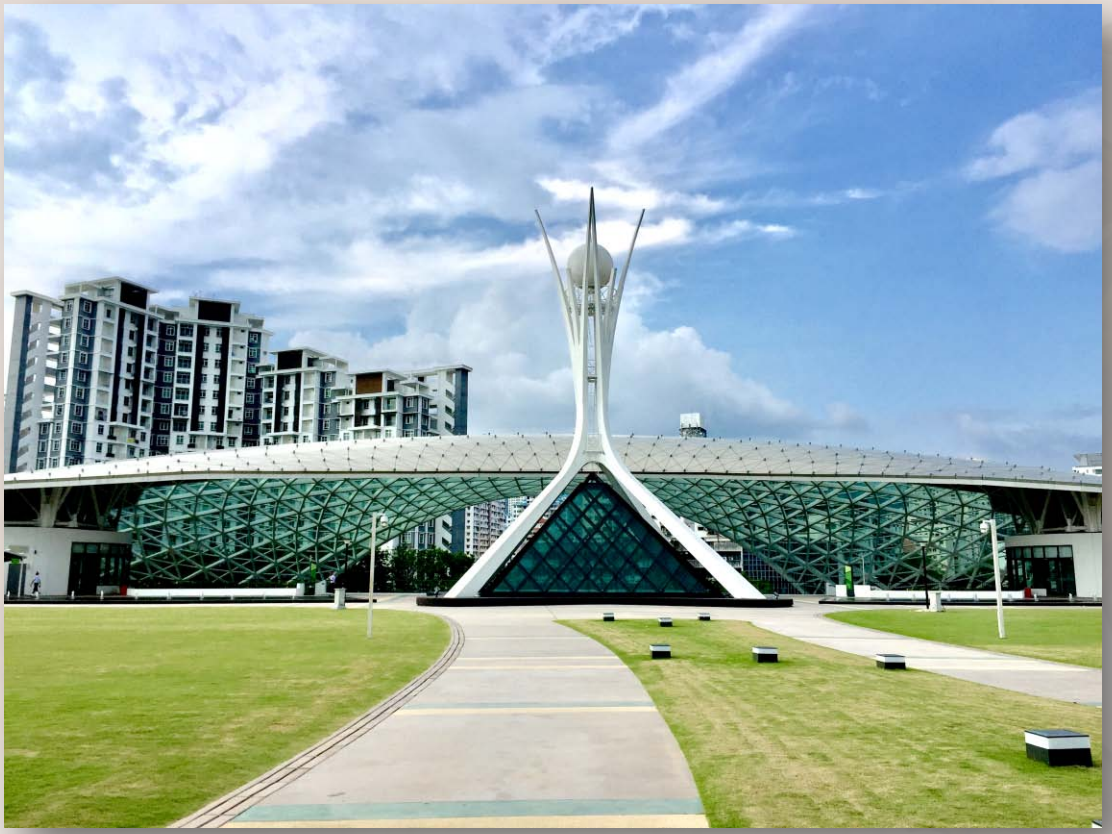
PROVISIONAL GBI CERTIFICATION

OWNER/APPLICANT
MAJLIS BANDARAYA PULAU PINANG

AR. CHAN SEONG AUN
CHAIRMAN
GREEN BUILDING INDEX (GBI) ACCREDITATION PANEL

GREENBUILDINGINDEX SDN BHD (640444-H)
A-12-156 Menara UOA Bangsar, 5 Jalan Bangsar Utama 1, 59000 Kuala Lumpur, Malaysia
Tel 603 2282 0866 Fax 603 2284 2964
www.greenbuildingindex.org | info@greenbuildingindex.org

SPICE



GREEN BUILDING INDEX CERTIFICATE NO.
GBI-NRNC-0191(P)

DATE OF ISSUANCE
7 APRIL 2017

SUBTERRANEAN PENANG INTERNATIONAL CONVENTION AND EXHIBITION CENTRE (SPICE)

NO. 108, JALAN TUN DR. AWANG, 11900 BELAU, PULAU PINANG.

HAS BEEN AWARDED

green building index

CERTIFIED

DA
DESIGN ASSESSMENT

PROVISIONAL GBI CERTIFICATION

OWNER/APPLICANT
ECO MERIDIAN SDN. BHD.

AR. CHAN SEONG AUN
CHAIRMAN
GREEN BUILDING INDEX (GBI) ACCREDITATION PANEL

GREENBUILDINGINDEX SDN BHD (843664-V)
Level 4, PAM Centre, 99L, Jalan Tandok, Bangsar, 59100 Kuala Lumpur, Malaysia
Tel 603 2201 6064 Fax 603 2201 6566
www.greenbuildingindex.org | info@greenbuildingindex.org

GBI CERTIFIED PROJECTS BY STATES/TERRITORIES

GBI Projects by States / Territories	Registered Projects	Certified Projects
Kuala Lumpur	259	173
Selangor	301	152
Penang	**88**	**42**
Putrajaya	35	27
Johor	80	34
Melaka	18	8
Sarawak	14	7
Sabah	12	3
Perak	8	4
Pahang	10	3
Negeri Sembilan	11	6
Kelantan	1	-
Kedah	7	1
Perlis	-	-
Terengganu	-	-
Labuan	-	-

Penang recorded the third highest state in Malaysia which practices Green Building Index (GBI). A total of 42 buildings with a floor area of approximately 14.9 million square feet which will reduce the emission of CO2 by 40.4 kilotan per year.

PEMBANGUNAN DI KAWASAN MBPP YANG MENDAPAT PENSIJILAN GBI

1. The Light Linear
2. The Light Point
3. The Light Collection
4. Setia Greens - Phase 1
5. The Light Collection 2
6. The Address
7. Marinox Sky Villas
8. Tree Sparina
9. G-Home (20000BJ), G-Home(20001BJ) and G-Home(20002BJ)
10. 11 Brook Residences
11. Setia Greens (Phase 2) - Landed Parcel
12. Setia Pinnacle
13. 1 Tanjong
14. Sandilands
15. Southbay Plaza, Southbay City
16. The Light Collection IV
17. Nadayu 290 Penang – Mulberry Tower
18. Enclave Private Residences
19. Y Cantonments
20. The Light Collection III
21. Olive Tree Residence
22. The Oceanus Waterfront Luxury Villa
23. Eco Terraces (Condominium)
24. Alila II
25. City of Dreams Development - Tower A "Elaine" & Tower B "Chloe"
26. Sunway Penang @Anson
27. Subterranean Penang International Convention And Exhibition Centre (SPICE)
28. Projek naiktaraf Pasar Chowrasta
29. Relau Sport Complex
30. Wafer Building PEN32
31. Hotel Penaga

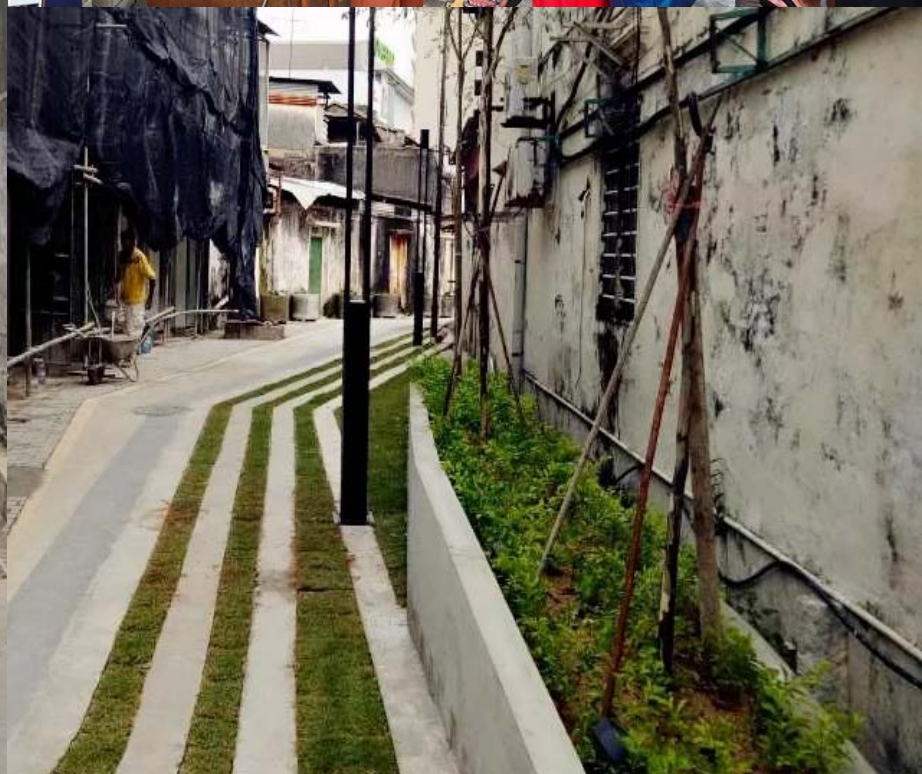
TREE PLANTING

POCKET PARKS & NEIGHBOURHOOD PARK PROJECTS

PROGRAMME PLOGCLEAN

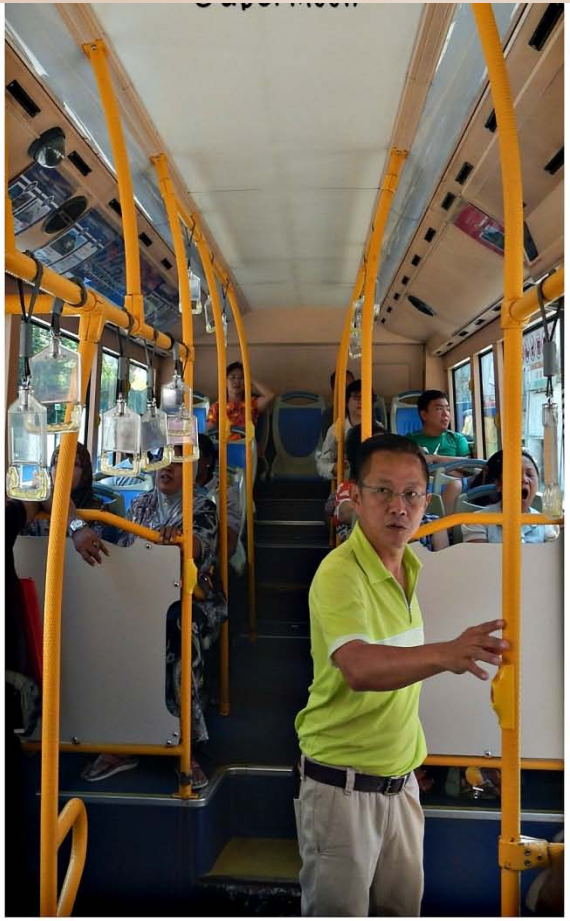
Re-Populating George Town (RePoP-GT)

REVITALIZING BACKLANE



Traffic Solutions

- Smart Parking
- Free Buses
- Bicycle State




JUALAN
2255


EE TONG
AL HALL
RM 50 MASSAGE
50 BODY MASSAGE
PROMOTION RATE
RM 38
西
南

SUMMARY

52,709
RIDERSHIP
CYCLE FOR 17 MINUTES EACH TRIP

= 231,480 km Distance Travel using LinkBike

= 24,768 liters of Petrol Save
In money value is RM 49,583.10

= 30.09 Approxi tons of CO_2 reduce emit to environment

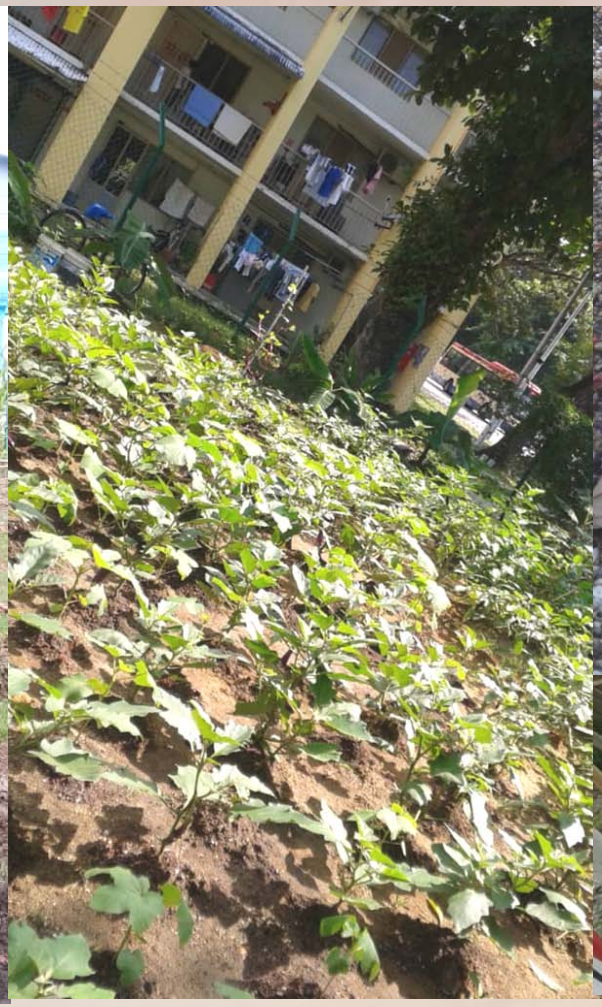
= 26,355 cars reduce in the Georgetown area through using LINKBIKE as Last Mile Transport

GREEN SCHOOL AWARD PROGRAM

LED STREET LIGHTING

MBPP is strives to convert all the HPSV type street lighting to LED types for Penang Island. To date, MBPP has installed 7,135 LED street lightings, while conversion of another 9,501 units of street lights is expected to be completed in 2019. MBPP is also working closely with Tenaga Nasional Berhad to convert all TNB street lighting to LED lighting to reduce carbon footprint.

URBAN FARMING



RECYCLING PROGRAMME


Reduce
Recycle
Reuse
KERTAS
PAPER
TIN ALUMINIUM
& LOGAM
ALUMINIUM CAN
& METAL
PLASTIC

NO FREE PLASTIC BAGS EVERY DAY

Hotbed of plastic waste

Malaysia is fast 'becoming' the dumping ground for plastic waste since China banned them. Mushrooming illegal factories processing plastic waste have become a health and environmental hazard. In order to tackle the menace, Malaysia will now impose a levy and put in place more stringent rules on imports of such waste.

›See Pages 2 and 3 for reports by WANI MUTHIAH, ARNOLD LOH, FATIMAH ZAINAL and RASHVINJEET S. BEDI

TOTAL BAN ON POLYSTYRENE FOOD CONTAINERS

WASTE SEGREGATION AT SOURCE

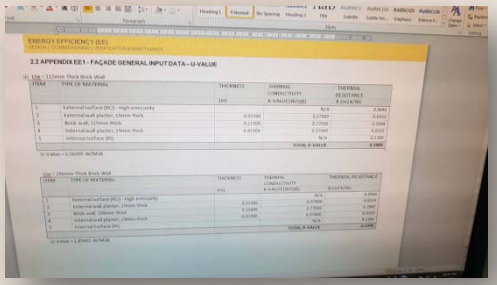
WASTE SEGREGATION @ CONSTRUCTION SITE

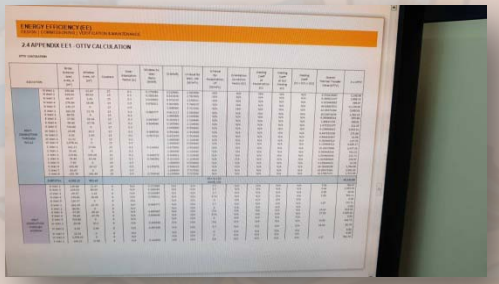
SPAH

Requirement of Rainwater Collection And Utilisation System (SPAH) pursuant to By-Laws 115

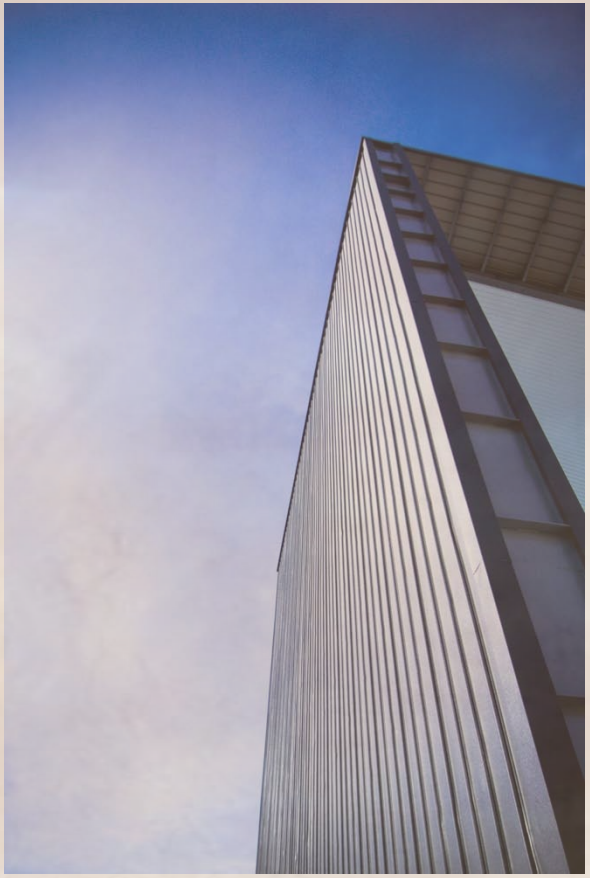
RTTV/OTTV

EE by-law in compliance with MS1525 under Sec 38A of the UBBL





Roof U Value

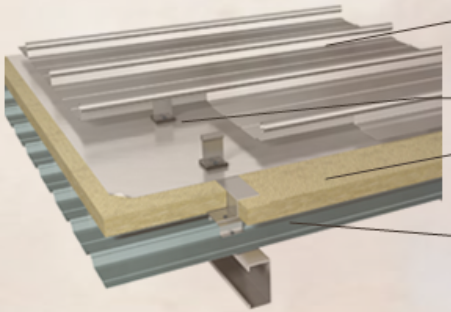


ROOF U Value CALCULATIONS

Uw= Metal Cladding With Insulation

ITEM	TYPE OF MATERIAL	THICKNESS (m)	THERMAL CONDUCTIVITY K-VALUE (W/mK)	THERMAL RESISTANCE R (m2 K/W)
1	External Surface (RO) - High emissivity		N/A	0.0440
2	0.42mm BMT (0.47mm TCT) BluescopeLysaghtKlip-Lok Optima in Clean Colorbond XRW roofing sheet	0.00042	47.60000	0.0000
3	TAC 880BS foil laminate industrial double sided radient barrier		0.00300	0.2400
4	100mm thk 'Roxul or Willhams' rockwool insulation density of 40kg/cm3	0.10000	0.03600	2.7778
5	0.42mmBMT (0.47TCT) BluescopeLysaght roofing sheet	0.00042	47.60000	0.0000
6	Internal Surface (RI)		N/A	0.1300
			TOTAL R-VALUE	**3.1918**

U-Value=0.31330 W/M2k



0.42mm BMT (0.47mm TCT) Bluescope Lysaght Klip-Lok Optima in Clean Colorbond XRW roofing sheet

TAC 880BS foil laminate industrial double sided radient barrier

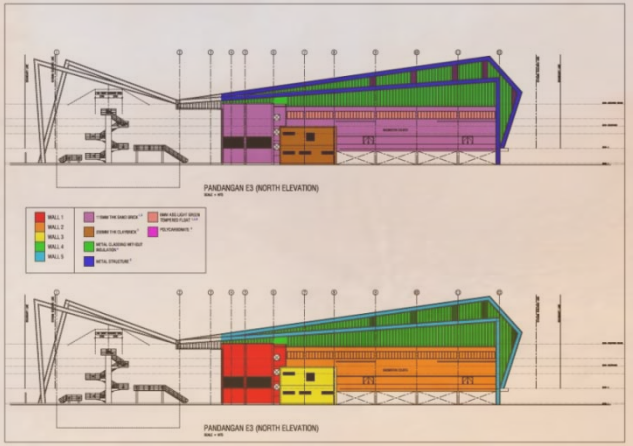
100mm thk 'Roxul or Willhams' rockwool insulation density of 40kg/cm3

0.42mmBMT (0.47TCT) Bluescope Lysaght roofing sheet

OTTV

OTTV CALCULATION

ELEVATION		Gross Exterior Wall Area, A (m^2)	Window Area, AF (m^2)	Constant	Solar Absorption Factor (α)	Window to Wall Ratio (WWR)	(1-WWR)	U-Value for Wall, UW (W/m^2k)	U-Value for Fenestration, UF (W/m^2k)	Orientation Correction Factor (CF)	Shading Coeff of Fenestration SC1	Shading Coeff of Ext Shading SC2	Shading Coeff (SC = SC1 x SC2)	Overall Thermal Transfer Value (OTTV)	A x OTTV
HEAT CONDUCTION THROUGH WALLS	N Wall 1	130.64	22.47	15	0.3	0.171999	0.828001	2.563989	N/A	N/A	N/A	N/A	N/A	9.553429047	1,248.06
	N Wall 2	319.03	60.03	15	0.3	0.188164	0.811836	2.563989	N/A	N/A	N/A	N/A	N/A	9.366921157	2,988.33
	N Wall 3	49.37	1.43	15	0.3	0.028965	0.971035	1.854022	N/A	N/A	N/A	N/A	N/A	8.101440885	399.97
	N Wall 4	276.84	16.06	15	0.5	0.058012	0.941988	5.746835	N/A	N/A	N/A	N/A	N/A	40.60087872	11,239.95
	N Wall 5	130.37	0	15	0.5	-	1.000000	5.727298	N/A	N/A	N/A	N/A	N/A	42.95473364	5,600.01
	E Wall 1	262.05	22.74	15	0.3	0.086777	0.913223	2.563989	N/A	N/A	N/A	N/A	N/A	10.53671679	2,761.15
	E Wall 2	89.53	0	15	0.3	-	1.000000	2.124646	N/A	N/A	N/A	N/A	N/A	9.560906514	855.99
	E Wall 3	37.50	26.14	15	0.3	0.697067	0.302933	2.124646	N/A	N/A	N/A	N/A	N/A	2.896631728	108.61
	E Wall 4	59.40	47.76	15	0.3	0.804040	0.195960	2.124646	N/A	N/A	N/A	N/A	N/A	1.873551377	111.29
	E Wall 5	724.80	0	15	0.5	-	1.000000	0.554660	N/A	N/A	N/A	N/A	N/A	4.159949423	3,015.13
	W Wall 1	25.09	10.2	15	0.3	0.406536	0.593464	2.563989	N/A	N/A	N/A	N/A	N/A	6.847352108	171.80
	W Wall 2	4.32	2.45	15	0.3	0.567130	0.432870	2.563989	N/A	N/A	N/A	N/A	N/A	4.994436367	21.58
	W Wall 3	12.32	0	15	0.3	-	1.000000	2.124646	N/A	N/A	N/A	N/A	N/A	9.560906514	117.79
	W Wall 4	1,078.42	0	15	0.5	-	1.000000	0.554660	N/A	N/A	N/A	N/A	N/A	4.159949423	4,486.17
	S Wall 1	142.21	17.64	15	0.3	0.124042	0.875958	2.563989	N/A	N/A	N/A	N/A	N/A	10.10675999	1,437.28
	S Wall 2	53.48	0	15	0.3	-	1.000000	2.124646	N/A	N/A	N/A	N/A	N/A	9.560906514	511.32
	S Wall 3	115.81	103.08	15	0.3	0.890079	0.109921	2.124646	N/A	N/A	N/A	N/A	N/A	1.050948449	121.71
	S Wall 4	79.44	63.44	15	0.3	0.798590	0.201410	2.124646	N/A	N/A	N/A	N/A	N/A	1.925660929	152.97
	S Wall 5	7.50	0	15	0.5	-	1.000000	0.554660	N/A	N/A	N/A	N/A	N/A	4.159949423	31.20
	S Wall 6	103.48	16.13	15	0.5	0.155876	0.844124	5.746835	N/A	N/A	N/A	N/A	N/A	36.38283039	3,764.90
	S Wall 7	83.87	0	15	0.5	-	1.000000	5.727298	N/A	N/A	N/A	N/A	N/A	42.95473364	3,602.61
	S Wall 8	252.76	192.86	15	0.5	0.763016	0.236984	5.727298	N/A	N/A	N/A	N/A	N/A	10.17957171	2,572.99
	SUBTOTAL	4,038.23	602.43	15 x α x (1-WWR) UW											45,320.80
HEAT CONDUCTION THROUGH WINDOW	N Wall 1	130.64	22.47	6	N/A	0.171999	N/A	N/A	5.7	N/A	N/A	N/A	N/A	5.88	768.47
	N Wall 2	319.03	60.03	6	N/A	0.188164	N/A	N/A	5.7	N/A	N/A	N/A	N/A	6.44	2,053.03
	N Wall 3	49.37	1.43	6	N/A	0.028965	N/A	N/A	5.7	N/A	N/A	N/A	N/A	0.99	48.91
	N Wall 4	276.84	16.06	6	N/A	0.058012	N/A	N/A	5.74	N/A	N/A	N/A	N/A	2.00	553.11
	N Wall 5	130.37	0	6	N/A	-	N/A	N/A	0	N/A	N/A	N/A	N/A	-	0.00
	E Wall 1	262.05	22.74	6	N/A	0.086777	N/A	N/A	5.7	N/A	N/A	N/A	N/A	2.97	777.71
	E Wall 2	89.53	0	6	N/A	-	N/A	N/A	0	N/A	N/A	N/A	N/A	-	0.00
	E Wall 3	37.50	26.14	6	N/A	0.697067	N/A	N/A	5.6	N/A	N/A	N/A	N/A	23.42	878.30
	E Wall 4	59.40	47.76	6	N/A	0.804040	N/A	N/A	5.71	N/A	N/A	N/A	N/A	27.55	1,636.26
	E Wall 5	724.80	0	6	N/A	-	N/A	N/A	0	N/A	N/A	N/A	N/A	-	0.00
	W Wall 1	25.09	10.2	6	N/A	0.406536	N/A	N/A	5.6	N/A	N/A	N/A	N/A	13.66	342.72
	W Wall 2	4.32	2.45	6	N/A	0.567130	N/A	N/A	5.7	N/A	N/A	N/A	N/A	19.40	83.79
	W Wall 3	12.32	0	6	N/A	-	N/A	N/A	0	N/A	N/A	N/A	N/A	-	0.00
	W Wall 4	1,078.42	0	6	N/A	-	N/A	N/A	0	N/A	N/A	N/A	N/A	-	0.00
	S Wall 1	142.21	17.64	6	N/A	0.124042	N/A	N/A	5.6	N/A	N/A	N/A	N/A	4.17	592.70



Water Saving Device

Water Demand Management In Penang: Mandatory Installation Of Water Saving Devices In New Development Projects

First state in Malaysia to require water saving devices (tap fittings, shower fittings, toilet cisterns and urinals), to be installed in all new projects.

Water saving devices (WSDs) may reduce water consumption by between 14% and 87%.

'NO PLASTIC STRAW' AND 'NO SINGLE USE PLASTIC'

Now Penang State Government is working on 'no plastic straw' and 'no single use plastic' policy.

Preserving nature: Dr Xavier (second from right) looking at a preserved turtle after the launch of the International Union for Conservation of Nature (IUCN) Symposium and Red List Assessment at Universiti Malaysia Terengganu. With him is UMT vice-chancellor Datuk Dr Nor Aeini Mokhtar (fourth from right). — Bernama

Yeo: Do away with single-use plastic

By JOSEPH KAOS Jr
joekaosjr@thestar.com.my

PUTRAJAYA: Malaysia is aiming to do away with single-use plastic by 2030, as the country tries to shed its reputation as one of the largest producers of plastic waste in the world.

At the forefront of this mission is the Roadmap to Zero Single-Use Plastic 2018-2030, which will be unveiled on Oct 17, says Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin.

"Malaysia is the eighth largest producer of plastic waste in the world. Plastic waste is the second biggest type of waste in the country after food.

"We need a proper roadmap with clear plans on how we can reduce and even better, eliminate the consumption of single-use plastic by 2030," Yeo said at a town-hall session here.

The session was held to gather stakeholders' feedback on plastic waste, which would be incorporated into the drafting of the roadmap.

To encourage people to stop using single-use plastics, Yeo said the government should find ways for alternative solutions that were not only affordable but accessible to all.

"At the same time, our mission to reduce consumption of single-use plastics must not kill existing plastic manufacturers. We want to help them and everyone else prepare for the future," said Yeo.

The roadmap will be launched at the International Greentech and Eco Products Exhibition and Conference Malaysia.

In a statement, Water, Land and Natural Resources Minister Dr A. Xavier Jayakumar called on the relevant authorities to suspend all unlicensed plastic waste recycling factories in Selangor.

According to Bernama, the Kuala Langat MP said the unabated recycling activities continued to pollute the environment and posed health risks to nearby residents in his constituency.

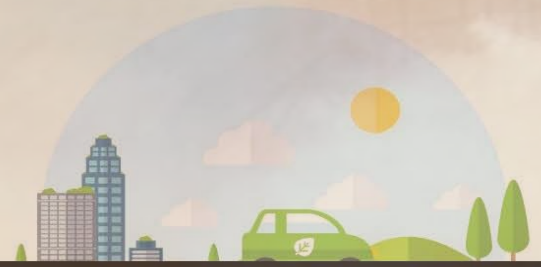
He said the activities continued despite his order last month to the Kuala Langat Municipal Council (MDKL) to suspend the operations of all plastic waste recycling factories in Kuala Langat.

LOW CARBON CITY

EMERGING MOVEMENT TOWARDS LOW CARBON CITIES

SITE SELECTION
Development within Defined Urban Footprint •
Infill Development •
Development within Transit Nodes and Corridor •
Brownfield and Greyfield Re-development •
Hill Slope Development •

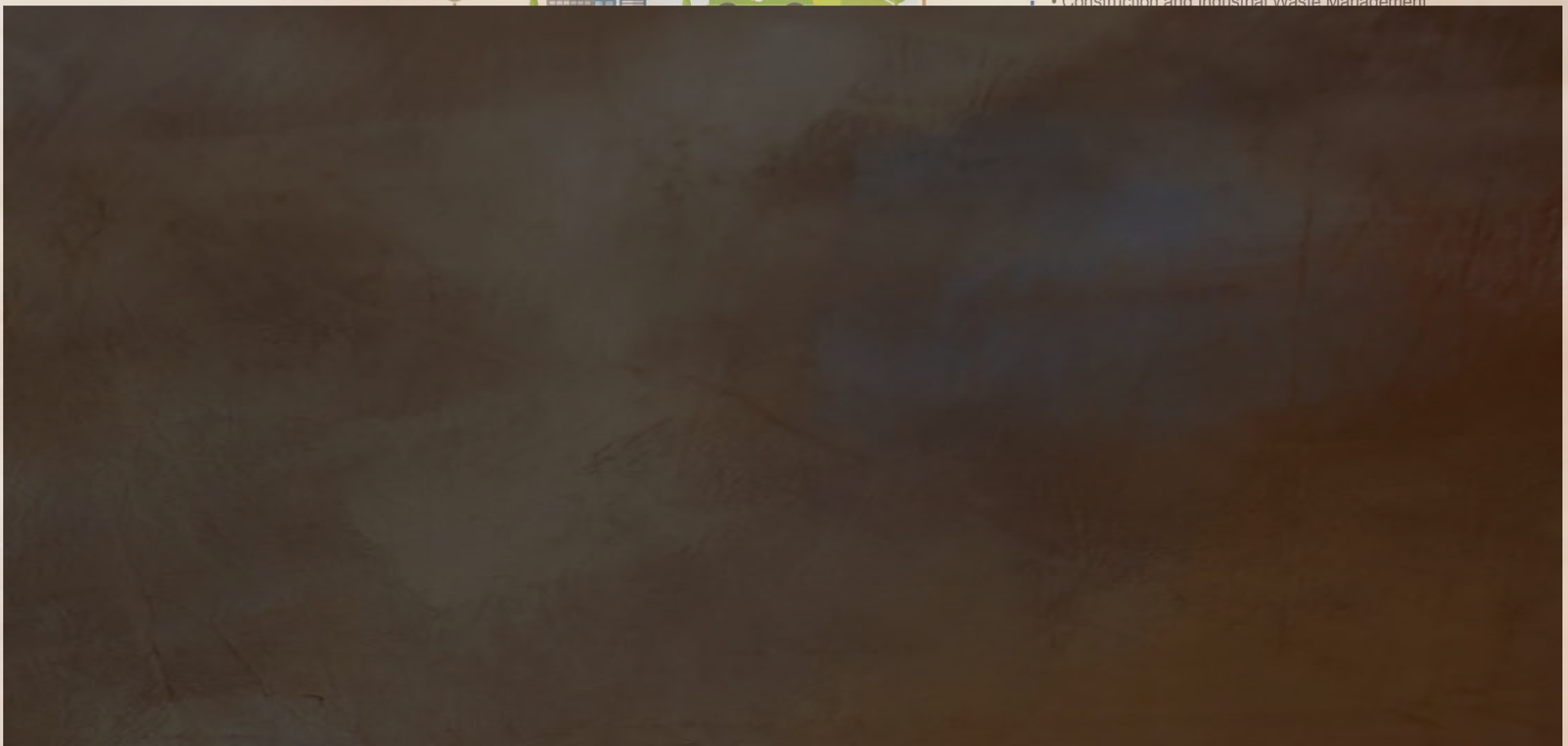
URBAN FORM



FOUR MAIN ELEMENTS FOR CO_2 REDUCTION WITHIN CITIES AND TOWNSHIPS

WATER MANAGEMENT
• Efficient Water Management

WASTE
• Construction and Industrial Waste Management



End of Presentation