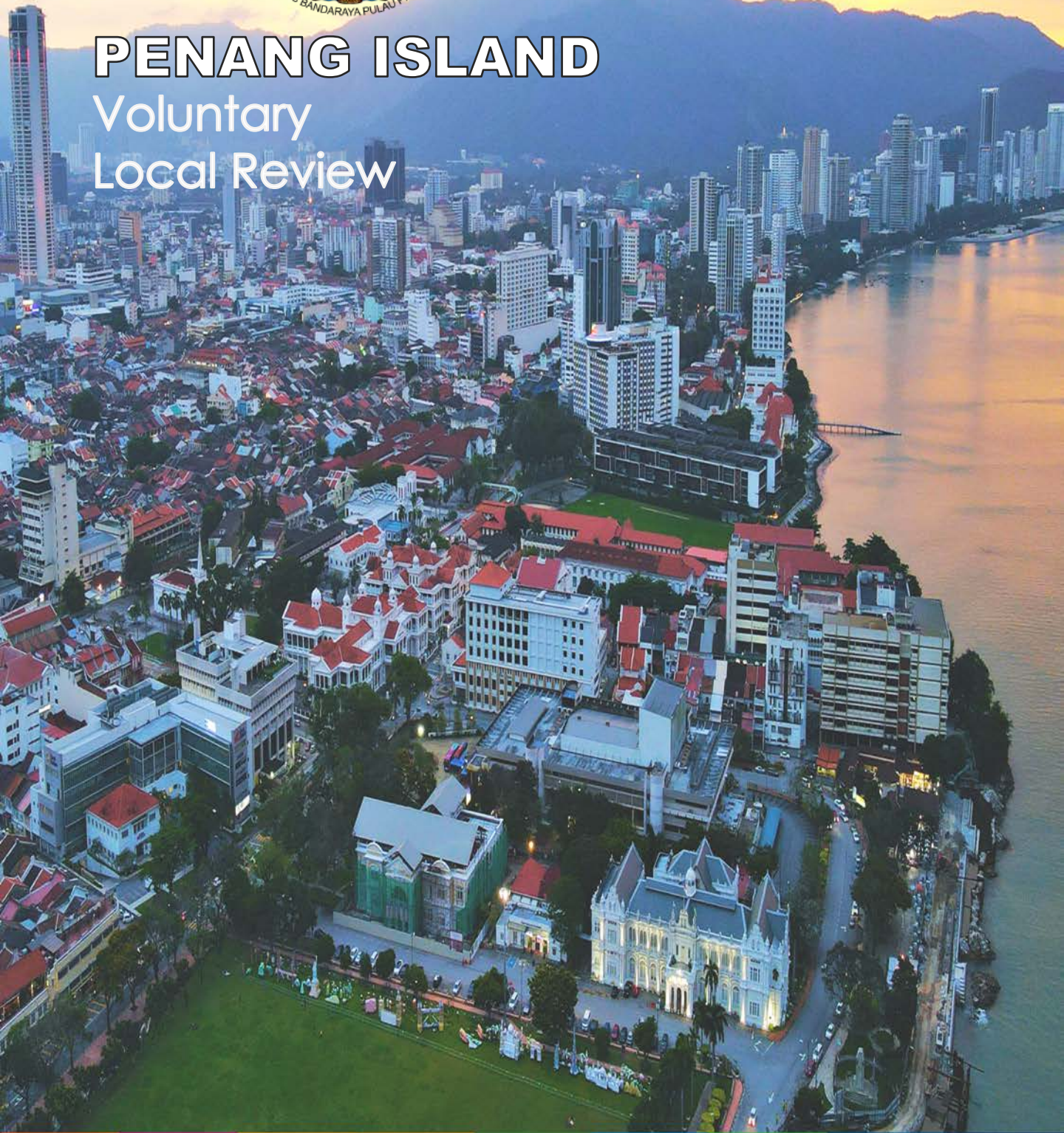




# PENANG ISLAND

## Voluntary Local Review







# CONTENTS

I	Sustainable Agenda
4	• Mayor's Preface
5	• Covid-19 Pandemic and The Sustainable Development Action of The City
II	City Profile
13	• Policies and Environment
III	City Roadmap
16	• Executive Summary
17	• Vision and Mission
21	• Highlight of This Report
IV	City Goal Review
27	• Priority Goals and Outcomes
V	City Future Prospects
68	• City Digital Transformation



# SUSTAINABLE AGENDA

Penang Island embarked on a collective journey to achieve the SDGs for the people and the environment and ensuring no one is left behind.





## MAYOR'S PREFACE

Penang Island has taken steps to implement sustainable development plans and create a low carbon compact city over the last decade. When the United Nations' framework of 17 Sustainable Development Goals (SDGs) was drafted in 2015, it became the guidelines with which we plan and strategise the city's vision. In fact, the state government's Penang 2030 Vision is framed with a goal of achieving the 17 SDGs.

The City Council of Penang Island (MBPP) published its first "Sustainable Development Goals - Penang Island Voluntary Local Review" report. This report outlined the challenges that the city faced in implementing policies and measures toward sustainable development.

Urbanisation and gentrification are two main challenges that the city faced in implementing any development plans for the city. There must also be a balance between economic viability and environmental conservation.

Climate change, which can profoundly impact our quality of life, is inevitable but this can be slowed down through systematic and firm action plans. This is where the city's goal of creating an intelligent, liveable and happy (ILHam) city comes in. ILHam City focuses on five domains; smart e-governance, smart mobility, smart economy, smart environment and smart social.

Sustainable development is an important component in forging forward in the post-pandemic era. There is a need for us to keep up with the times through digitalisation while remaining focused on achieving the SDGs goals – zero hunger, good health, quality education, gender equality, renewable energy, good jobs and economic growth, innovation and infrastructure, sustainable cities and communities, responsible consumption, climate action, and partnerships for the goals. The goal is to create data-driven delivery policies and a digitalised city that fully utilises technology to implement sustainable development projects. It is by marrying technology with sustainability that we can move forward to save the environment.

We will continue to take a participatory approach by involving citizens in formulating of policies and all aspects of development. The City Council of Penang Island will continue with its vision of an Intelligent, Liveable And Happy City.



Dato' Ar. Yew Tung Seang  
Mayor,  
City Council of Penang Island



## COVID-19 PANDEMIC AND THE SUSTAINABLE DEVELOPMENT ACTION OF THE CITY

According to statistics released by the World Health Organization, as of August 26, 2021, there are 213 million cases of COVID-19 including 4.5 million deaths globally. Meanwhile, as of August 24, 2021, a total 4.9 billion vaccine doses have been administered globally. The impacts brought on by the pandemic on countries around the world were not only in terms of public health but also financially and economically. It brought on a global recession that is underpinned by poverty, hunger, weak health systems, lack of clean water and sanitation, lack of access to education and a need for more global cooperation.

The City Council of Penang Island will need to make decisions to adapt to the new normal while using a rights-based framework. This is a time when the society needed to unite and the city needed to strengthen public-private cooperation, coordinate and create innovative action plans and provide support to affected groups. This is where the 4Ps (Public, People, Private & Professional Partnership) comes in to get things moving.

There is a need for our city to balance sustainable development with mitigating the impacts of the pandemic. Focus will need to be given to economic growth, social inclusion and at the same time, environmental protection. The responsibility lies not alone in the city administration but in a united front between the society, the administrators, the public and private sectors to coordinate and support each other in formulating policies, action plans and evaluating the impacts of the pandemic on various SDGs.





To mitigate the impact to the SDGs, we take steps to enhance good governance and increase efficiency while ensuring inclusivity. There is a need to move towards sustainability, not only in terms of development, but also at the economic level. Policies are formulated to emphasize on a green economy agenda.

Digitalisation and Industry 4.0 are the way forward through the adoption of Big Data Analysis (BDA), Internet of Things (IoT) and Artificial Intelligence (AI). It is imperative to invest in digitalisation to increase efficiency in implementation processes of policies and action plans.

In 2020, at the beginning of the pandemic, the City Council of Penang Island had immediately taken steps to set up a special squad and a command centre to manage the curb the spread of the virus. Preventive measures such as limited business hours, limited number of people within any business premises, ensuring the wearing of face masks and preventing gatherings of crowds were implemented. In addition to this, the city council also cooperated with both the state and federal governments in implementing all epidemic prevention measures.

The city applied the lessons learned from the COVID-19 episode to the crisis and play the role for knowledge sharing practices. This include standardize procedure were used for local authority within Malaysia.



Below are the various pandemic prevention measures the city has launched and continued to improve and implement:



## End poverty in all its forms everywhere

More than 71 million people fell below extreme poverty in 2020 due to the pandemic. The vulnerable groups in Penang island were not spared and are equally affected. The city council introduced various schemes to assist traders, entrepreneurs and small businesses through this period. Rental fees for public housing and commercial lots under the city council were waived for six months. License fees for traders and hawkers were also waived. A planned review of assessment rates for all properties were deferred



## Ensure healthy lives and promote well-being for all at all ages



The city council introduced measures and enforced strict adherence to SOP. Contact tracing systems for the community and the affected economic sectors, construction and manufacturing, were introduced. The city also created multi-lingual versions of the COVID-19 prevention SOP in various formats, visual and audio, to disseminate to the public through social media, official websites and through public announcements.







Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

The city council has introduced programmes to assist students in the vulnerable group in getting access to remote learning during the pandemic when schools are closed. The city council's STEAM education programme introduced a laptop on loan programme for students who had no access to computers or smart devices. Under this programme, refurbished laptops are distributed to eligible students so that they can undertake remote learning especially when schools are closed.

MBPP | MakerSpace @ Balik Pulau



Achieve gender equality and empower all women and girls



The city council is fully supportive of a Gender Inclusiveness Policy (GIP) introduced by the state government in 2019. A Gender Responsive and Participatory Budgeting (GRPB) programme is now fully implemented at both state and the local government levels. The GRPB programme serves as a bridge between communities, agencies and all levels of governments. It is an inclusive approach that lets women take part in budget planning and delivery especially when women are more affected during a pandemic through loss of income, loss of jobs and an increase in domestic violence.







Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

The city council introduced measures to spur economic activities and provide decent work for those affected by the pandemic. The pandemic has led to an economic downturn and the way of doing business has changed in accordance with the SOP to stop the spread of the virus. This is where digitalisation comes in and the city council came up with measures to promote e-commerce.



Those who lost their jobs or source of income were encouraged to take up e-commerce and to start small businesses from home through the city council's Jom Beli Online (JBO) and Business From Home (BFH) programmes. Business From Farm (BFF) is another programme targeted at farm and orchard owners. These platforms will allow them to reach out to a wider customer base through digitalisation. Other measures such as Dealing with Business Permit (DBP) with a 24-hour approval for license applications and Dealing with Construction Permit (DCP) were also introduced to assist businesses and organisations impacted by the pandemic.



## Make cities and human settlements inclusive, safe, resilient and sustainable



A community pandemic prevention management mechanism was established and implemented. The city embarked on designing community-led approaches to manage COVID-19. A pilot programme involving the training of residents from the high-rise housing schemes was introduced so that they can become the community COVID-19 Buster Team. This project involved cooperation between Penang Women Development Corporation and State Health Department and the community. It aimed to empower the community so that they can implement preventives measures effectively.



The city council also implemented COVID-19 Rapid Self-Testing for its workforce and customers. It helps to keep our employees safe at work as part of our responsibility to support and ensure the safety of the communities we serve.



## Ensure sustainable consumption and production patterns

One of the pandemic prevention measures introduced was to stop dine-in services at eateries and restaurants. This increased the use of single-use plastics for take-away packaging. On this end, the city council continued to encourage the public to adopt the Bring Your Own Containers (BYOC) habit. This is to reduce the use of single-use plastics.





Strengthen the means of implementation and revitalize the global partnership for sustainable development



This is a time where sister cities, twin cities and friendship cities with George Town can work together to share best practices on pandemic prevention measures. Virtual forums and discussions can be held to share the respective city's experiences and measures. Support and friendship with the global community is important to ensure successful implementation of epidemic prevention measures.

## Mayors' Conference Of The Sister Cities In Chengdu

2021 成都国际友城市长视频交流会  
2021 Chengdu International Sister Cities Mayors Online Conference

April 15, 2021





# CITY PROFILE

George Town became the first city in Malaya, and by extension, Malaysia, when in 1957, it was granted city status by Queen Elizabeth II. In addition, the city centre was inscribed as a UNESCO World Heritage Site in 2008. Today, Penang Island is also known as the Silicon Valley of the East. It is also a hub of cultural diversity, backed by its colonial-era architecture and is a popular tourist destination. It still serves as the financial centre of northern Malaysia today.





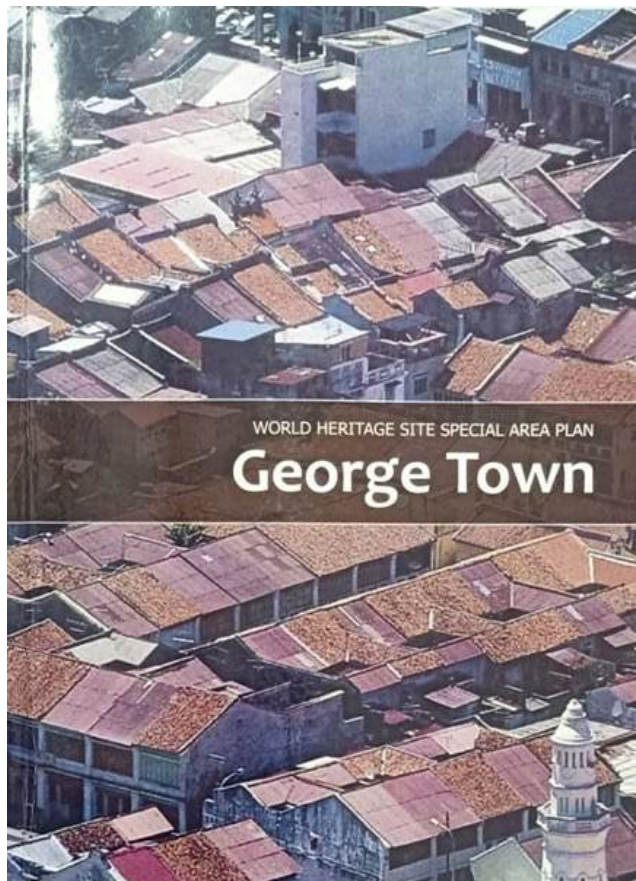
## POLICIES & ENVIRONMENT

George Town, the capital of Penang State, embodied a pattern of urban growth based on trade, resource-based industrial activities and urban planning. In the 1970s, Penang became a hub for Malaysia's electronics and electrical (E&E) industries and remained as the Silicon Valley of Malaysia. The state has a Penang2030 vision to become "A Family Focus Green and Smart State that Inspires the Nation". It is in the state plans to harness its growth potential through adoption of new technologies, efficient resource use and improving the urban environment.

Penang contributed 6.7% to Malaysia's GDP in 2019 with the manufacturing sector contributing the second largest share. Penang was also ranked third in GDP per capita since 2014. Penang state has a population of 1.8 million, with approximately 800,000 people residing on the island. Penang's economy was initially driven by its manufacturing sector, being one of the first economies to create a free trade zone in East Asia.

The Penang State government develop a second engine of growth by focusing on its services industry. The services industry consists of the tourism sector and business process outsourcing (BPO). Penang was positioned as a BPO Hub with international corporations setting up BPO offices here.

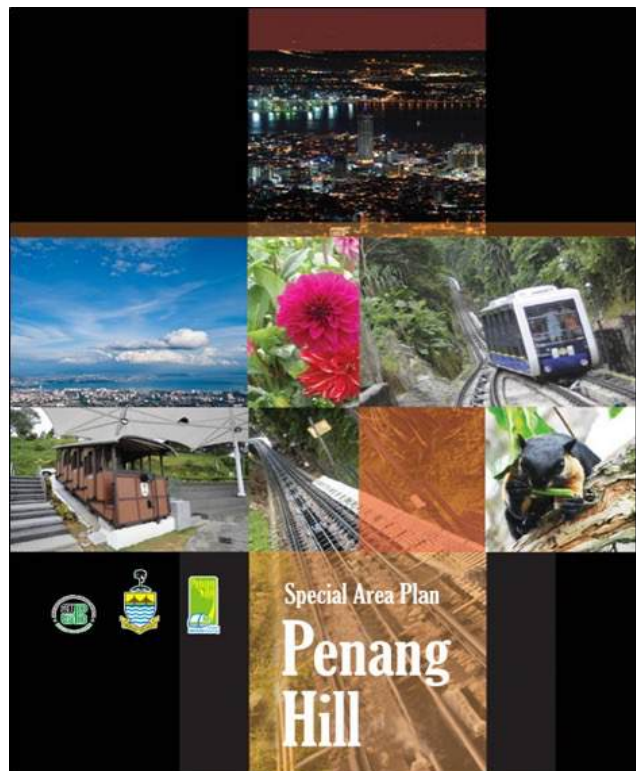
The tourism sector saw tremendous growth after George Town was inscribed as a UNESCO World Heritage Site in 2008.



George Town's positioning as a heritage city, a trading port, an industrial city and a tourist destination has led to urbanisation and gentrification due to an urban sprawl that spreads from the city centre and the industrial zones. This led to environmental degradation and increased temperatures in the industrial zone and inner city. The city introduces several policies and action plans to face these challenges and reduce its carbon footprint. The Cleaner, Greener, Safer and Healthier Initiative was introduced to promote green living. It was a holistic approach and an outcome-oriented initiative to achieve economic, environmental, cultural and development sustainability. Infrastructure projects were implemented to turn existing urban areas that were on the verge of becoming slums into cleaner and greener liveable spaces. New ideas and innovations were introduced into the institutional framework to push towards sustainable urban regeneration.

Sustainable urban regeneration will improve liveability, create more green spaces and be beneficial not only to the local community but to the region as well. A participatory approach involving collaboration between federal, state and local governments, stakeholders and the private sector is the way forward to formulate and implement successful urban regeneration efforts that focused on climate adaptation and reducing of the city's carbon footprint.

Each policy and action plan the city undertakes is guided by its vision of creating an intelligent, liveable and happy (ILHam) city.



The ILHam City focuses on five domains; e-governance, mobility, environment, social and economy. The goal is to create data-driven delivery policies and a digitalised city that fully utilises technology to implement sustainable development projects. It is by marrying technology with sustainability that the environment can be protected.



# CITY ROADMAP

The Penang Island SDG roadmap aims to create a prosperous city that aligns with the Penang2030 Agenda for Sustainable Development. The roadmap involves scaling up good practices in environmental and social developments while building on innovative partnerships. It also recognises the importance of the city's aim to implement successful sustainable action plans.





## EXECUTIVE SUMMARY

The 2030 Development Agenda, drafted at the United Nations Sustainable Development Summit on 25th September 2015, outlined 17 Sustainable Development Goals (SDGs) with 169 Targets and 232 Indicators as the guiding principle towards 2030.

The City Council of Penang Island (MBPP) evaluated how the SDGs could be achieved at the municipal level and incorporated them into the City's own sustainable development strategies and planning. MBPP plans to release the "Sustainable Development Goals - Penang Island Voluntary Local Review" as part of its efforts to achieve the SDGs.

To achieve the sustainable development goals, the city council will need to stay true to its principle of "Think Globally and Act Locally - Leaving No One Behind". The focus will be on local demands and needs. It is through engagement and a participatory approach that the Sustainable Development Goals can be achieved.





## VISION AND MISSIONS

The City Council of Penang Island is focused on creating an intelligent, liveable and happy (ILHam) city. In order to achieve this vision, the city needs to remain competitive while implementing sustainable projects to protect the environment and arrest climate change.

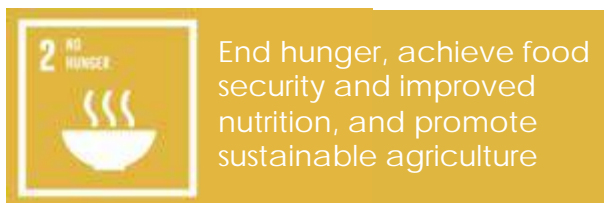
To become a progressive and intelligent city, technology plays an important role to improve the efficacy of urban planning and development. A globalised city has to adopt inclusive design thinking and build a living environment that supports all elements of cultural diversity.

Environmental protection and climate adaptation initiatives were similarly important to improve quality of life, lower temperatures and protect the people from drastic effects of climate change. It is our goal to adapt nature-based resources and solutions that boost economic development while protecting the environment.

The city has adopted a strategic roadmap for sustainable development based on the ILHam concept. The ultimate goal is to construct a world-class ecosystem of intelligent economy, environmental protection and sustainable development through collaborative efforts with stakeholders, the private sector and inter-governmental agencies and bodies.



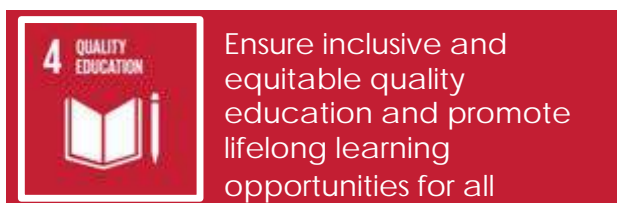
The following 11 priority goals have been identified based on an analysis of city-level needs and its development trends underpinned by a strategic roadmap for an intelligent, liveable and happy city. The promotion strategies and outcomes are as follows:



One of the effective ways towards achieving food security in a city is through community urban farming. The city council has formulated a comprehensive community urban farming plan. Urban farms can be set up with stakeholders' involvement at open spaces within an urban landscape. Workshops will be held to assist the community in setting up urban farms within their respective areas and appropriate communal spaces will be selected to start these farms.



The city council emphasises on the concept of a cleaner, greener, safer city for improved liveability. A healthy community is one that is safe and happy with policies to ensure their health and wellbeing. Community integrated care services, recreational and sports programmes for healthier lifestyles, health incentives, social participation for vulnerable groups and road traffic accident preventions were among the comprehensive measures taken in collaborative efforts with the state and non-government resources



The city council has always believed in nurturing future talents and supported this by preparing the platform and infrastructure to promote the learning of Science, Technology, Engineering, Arts and Mathematics (STEAM). The city council has also supported the state government in its educational programmes such as the Penang Science Cluster and Penang Digital Library. The city council converted one of our buildings into a MakerSpace to facilitate the teaching and learning of STEAM through various programmes for students.



A Gender Responsive and Participatory Budgeting (GRPB) programme is now fully implemented at both state and the local government levels. The GRPB programme serves as a bridge between communities, agencies and all levels of governments. It is an inclusive approach that lets stakeholders take part and have their say in budget planning and delivery. This approach allows for policy making and budgeting to take into account the different needs of different people while strengthening the links between economic and social policy outcomes.







## 7 AFFORDABLE AND CLEAN ENERGY



Ensure access to affordable, reliable, sustainable and modern energy for all

To ensure access to affordable, reliable, sustainable and modern energy for all, the city council implemented the Retrofit Energy Management Schemes (REMS). Under this scheme, we replaced all our streetlamps with energy-saving lights to reduce energy consumption.

Another way to reduce carbon emission is to switch to renewable energy. In line with this, we have installed solar panels on some of our existing buildings and complexes to harvest green energy.

## 8 DECENT WORK AND ECONOMIC GROWTH



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

The city council has moved towards digitalisation by introducing the use of e-wallets even before the pandemic changes the economic landscape. Faced with emerging new business models globally, we introduced platforms to promote e-commerce and ease the adoption of this new way of conducting business.

## 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Build resilient infrastructure, promote sustainable industrialization and foster innovation

The city council has an aim to maximise its public spaces to enhance wellbeing of the city's citizens and protect their safety. Therefore, upgrading and building resilient infrastructure in the George Town was a way forward to create a competitive and resilient environment. The city council adopted a 4P concept of Public, People, Private, Partnership to implement several urban improvement infrastructure.

## 11 SUSTAINABLE CITIES AND COMMUNITIES



Make cities and human settlements inclusive, safe, resilient and sustainable

Based on the concept of creating an intelligent, liveable and happy city, various programmes and action plans were implemented towards this goal. Projects such as Mobility As A Service, Green Connector, Back Lane Transformation, Barrier Free Environment, and Repopulating George Town were planned, implemented and activated.





**12** RESPONSIBLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns

**13** CLIMATE ACTION

Take urgent action to combat climate change and its impacts

In line with the city council’s green initiatives to create a low carbon compact city, policies and campaigns such as No Plastic Bags, No Single Use Plastics, Ban on Polystyrene and Bring Your Own Containers were introduced. The 5R system which is to refuse, reduce, reuse, repurpose and recycle became an important principle to reduce waste.

A nature-based adaptation plan is in the midst of implementation to increase the number of trees in urban areas. Incentives for sustainable development with lower carbon footprint were also introduced. The use of Green Building Index rating tool for new constructions is encouraged and incentivised.

**17** PARTNERSHIPS FOR THE GOALS

Strengthen the means of implementation and revitalize the global partnership for sustainable development

The city council continues to strengthen its global partnerships with its twin cities, sister cities and friendship cities in working towards similar goals of sustainable development. Participation in the IMT-GT Green Cities Mayor Council has improved collaboration with cities in the IMT-GT on their best practices implemented under seven portfolios: Transport, Solid Waste Management, Energy, Carbon Literacy, Circular Economy, Biodiversity and Education for Sustainable Development.





# HIGHLIGHT OF THIS REPORT



The preparation of the City's Voluntary Local Review was derived from the city's existing vision and goals towards a sustainable city. The existing sustainable indicators from the City Local Plan and Strategic Plan were used to compare against the performance of city management, quality of life and sustainable development goals indicators from the United Nations. The contents of each indicator are analyzed to see whether they can become the City's Sustainable Development Indicators and then these are adjusted according to the local strategic plan.



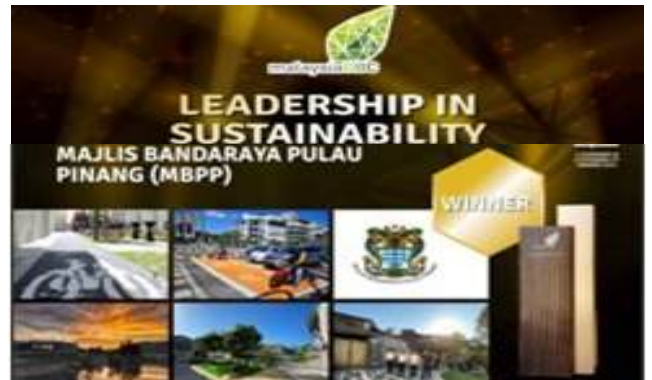
2

Between 2020 – 2021, numerous cross-departmental collaboration and focus group discussions with state representatives, local communities and non-governmental organization were held to decide on core SDGs to implement. Other international cities framework were referred to before we determine the tasks for the corresponding SDG indicators. The city has a strong foundation of sustainable development goals with an evolving strategic map, therefore, these became the basis for the development of a strategic map for execution.



3

George Town City has a vision for the City's promotion of sustainable development in connection with the SDGs. "Intelligent, Liveable and Happy" (ILHam) is our City ideology and this is used as the basis for the preparation of "Sustainable Development Goals - City Voluntary Local Review" this year.



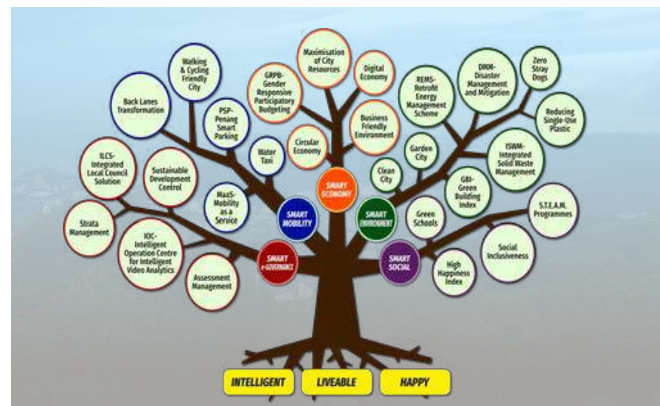
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We will endeavor to discern the relevance of the eleven (11) sustainable development goals for the entire city and add 67 priority goals.

5

In response to COVID-19 pandemic, public health and social development measures were undertaken by the City. These measures corresponded with seven (7) sustainable development goals. We continue to uphold these programmes and move towards achieving a livable and sustainable city.







# METHODOLOGY

The compilation of this Voluntary Local Review Report was carried out based on 17 Sustainable Development Goals set by the United Nations. The strategy road map for this local review is in alignment with the Penang2030 Vision that is on par with the City's Strategic Framework.



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| <div style="background-color: #e67e22; color: white; padding: 5px; width: 40px; margin: 0 auto;">1</div> <p>Vision of creating an intelligent, liveable and happy city</p> | <div style="background-color: #f1c40f; color: white; padding: 5px; width: 40px; margin: 0 auto;">2</div> <p>Corresponding SDGs for the city's visions</p> | <div style="background-color: #3498db; color: white; padding: 5px; width: 40px; margin: 0 auto;">3</div> <p>Selection of 11 SDGs as development priorities</p> | <div style="background-color: #27ae60; color: white; padding: 5px; width: 40px; margin: 0 auto;">4</div> <p>Other SDGs related policies and assessment indicators</p> |
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## City Council of Penang Island VLR Report Tiers

 TIER 1	 TIER 2	 TIER 3	 TIER 4
<ul style="list-style-type: none"> <li><span style="color: #e67e22;">●</span> Intelligent partnership and technology</li> <li><span style="color: #e67e22;">●</span> Enhancing built environment and liveability</li> <li><span style="color: #e67e22;">●</span> Enjoy both social cohesion and development</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: #f1c40f;">●</span> Smart governance</li> <li><span style="color: #f1c40f;">●</span> Green mobility</li> <li><span style="color: #f1c40f;">●</span> Competitive economy</li> <li><span style="color: #f1c40f;">●</span> Clean environment</li> <li><span style="color: #f1c40f;">●</span> Well-being community</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: #3498db;">●</span> MBPP Local Plan</li> <li><span style="color: #3498db;">●</span> MBPP Strategic Plan</li> <li><span style="color: #3498db;">●</span> Compilation of City's Voluntary Local Review</li> <li><span style="color: #3498db;">●</span> Voluntary disclosure of promotion outcomes of SDGs Indicators</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: #27ae60;">●</span> Sustainable indicators (MurniNet)</li> <li><span style="color: #27ae60;">●</span> ASEAN Clean Tourists City Standard (ACTC)</li> <li><span style="color: #27ae60;">●</span> Green Building Index</li> </ul>



### Tier 1: City Council of Penang Island smart and sustainable inspiration towards "Intelligent, Liveable and Happy City".

The foundation for smart and sustainable development of a city lies in the vision and roadmap of the city. It is based on this roadmap that strategies were formulated and action plans were implemented. The strategies included measures to protect the environment, promote social inclusion, boost economic development and reduce the impacts brought on by climate change. The city strategic planning began in 2011 with the rolling out of the Cleaner, Greener, Safer and Healthier Penang initiative.

Through the years, under the ILHam City vision, numerous work tasks, action plans, projects and initiatives were proposed with an eye of achieving three main goals: "Intelligent partnership and technology", "Enhancing built environment and liveability", and "Social cohesion and economic development".

### Tier 2: City's core visions corresponding to the SDGs.

The vision of Intelligent, Liveable and Happy City encompasses the following five domains; they are "Smart e-Governance", "Green Mobility", "Competitive Economy", "Clean Environment", and "Well-being of Community". Each of these corresponds to the SDGs.







**Tier 3: City SDGs key development priorities.**

The results of the evaluation of the 2016 - 2020 Strategic Plan Indicator for City Council of Penang Island were discussed in the year 2020. The city council compare and find correlation between the 17 SDG goals with the strategic plan. The SDG indicators were used as reference for the adoption by City Council of Penang Island. The key priorities of the local plan and strategic management plan in this review are drafted based on the SDGs.



**Tier 4: Other City-related SDG policies and evaluation indicators.**

Responding to SDGs motto of inclusivity and "leaving no one behind", comparisons were conducted based on city strategic planning in line the SDGs during the compilation of this report. Other relevant SDGs strategies and assessment indicators were reviewed too. As a result, five strategic themes, 19 strategic goals and 61 indicators were established.

UN SDG LEAVING NO ONE BEHIND A UNSDG OPERATIONAL GUIDE FOR UN COUNTRY TEAMS





# CITY GOAL REVIEW

Penang Island is fully committed to accelerate its achievements of the SDGs at a local level. This can be achieved through integrating governance management, frameworks and reviewing development priorities.





## PRIORITY GOALS AND OUTCOMES

The priority SDG targets under MBPP are as follows :

### SDG 2 Zero Hunger

2.4 Sustainable food production system through urban farming



### SDG 3 Good Health and Well-being

3.3 Infectious Disease Control  
3.6 Continue to improve public safety  
3.8 Encourage Healthier Lifestyle and Care System



### SDG 4 Quality Education

4.4 Access to STEAM education and reduce inequalities



### SDG 5 Gender Equality

5.1 Equality and non-discrimination of gender  
5.5 Ensure gender responsive participation



### SDG 7 Affordable and Clean Energy

7.1 Access to affordable, reliable and efficient energy system



### SDG 8 Decent Work and Economic Growth

8.1 Sustain the growth of business and e-Economy



### SDG 9 Industry, innovation and Infrastructure

9.1 Develop sustainable urban improvement infrastructure



## SDG 11 Sustainable cities and communities

- 11.1 Access to adequate and affordable housing
- 11.2 Safe, affordable, accessible and sustainable green connectivity system
- 11.3 Capacity for participatory, integrated and sustainable planning
- 11.4 Strengthen the world's cultural and natural heritage
- 11.6 Reduce air quality and waste
- 11.7 Inclusive and accessible green and public space
- 11.B Urban inclusion and disaster management



## SDG 12 Responsible consumption and Production

- 12.1 Implement programmes on sustainable consumption and production
- 12.5 Reduce waste generation through 5R (Refuse, Reduce, Reuse, Repurpose and Recycle) policy
- 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities
- 12.8 Ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature



## SDG 13 Climate Action

- 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
- 13.2 Integrate climate change measures into national policies, strategies and planning
- 13.3 Improve education, awareness- raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction



## SDG 17 Partnerships for The Goals

- 17.14 Enhance policy coherence for sustainable development
- 17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries.





# PRIORITY GOALS AND OUTCOMES





# SDG 2

End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

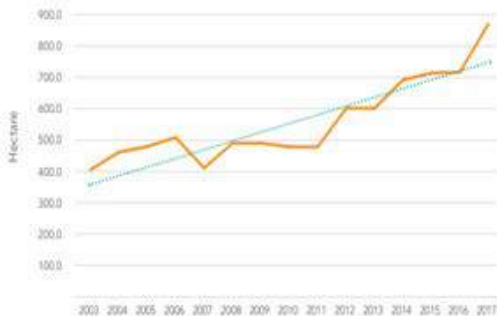


George Town is an inclusive city that introduced green initiatives as part of its environmental conservation efforts while introducing urban farming and smart agriculture to achieve food security. One of the effective ways towards achieving food security in a city is through community urban farming. A comprehensive community urban farming and smart agriculture plan is formulated to end hunger and promote sustainable agriculture.

Urban farms will be set up with stakeholders' involvement at open spaces within an urban landscape.

## 2.4 Sustainable food production system through urban farming

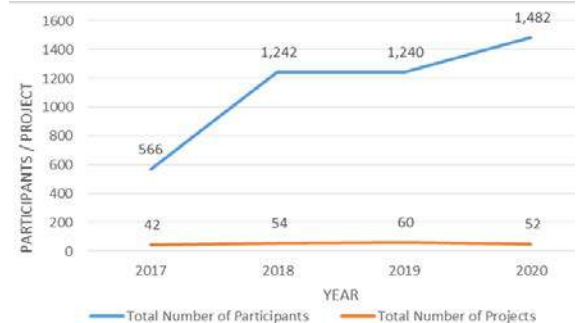
Vegetable Farmland in Penang, 2003 - 2017



Pic Source : Penang Institute

Source : Department of Agriculture, Penang

Penang Island Urban Farming Projects, 2017-2020



Source : Department of Agriculture, Penang

### Targets 2030

At least 10% for vegetable farms in Penang land

100 active urban farm hubs





## Setting up of Urban Farms

A total 7 urban farms were set up at available public spaces with stakeholders' involvement as at 2020. This is an initiative led and funded by the Department of Agriculture while the city council assists in providing the public spaces to set up these farms. Stakeholders and the local communities are often involved to take charge in monitoring, managing and harvesting of produce from the farms to ensure sustainability of the projects.

Communal spaces such as sections of public parks and the open spaces within city council and state-owned lands are potential sites to be converted into urban farms. The local community is encouraged to take part in urban farming projects and workshops are held to train them in the process.



In 2020, a total 1,482 individuals have taken part in urban farming workshops to set up their own urban farms.

The city council works to facilitate and assist individuals and local communities to embrace urban farming and set it up in any available space. The goal is to have 100 urban farm hubs all around the Penang State that are set up, managed and operated by the local communities by 2025. The city council has also started an urban farm at the Mayor's official residence and has plans to set up an urban farm on the rooftop of its transit centre for the homeless in the inner city of George Town.



# SDG3



Ensure healthy lives and promote wellbeing for all at all ages



The city council emphasises on the concept of a cleaner, greener, safer city for improved liveability. A healthy community is one that is safe and happy with policies to ensure their health and wellbeing. Community integrated care services, recreational and sports programmes for healthier lifestyles, health incentives, social participation for vulnerable groups and road traffic accident preventions were among the comprehensive measures taken in collaborative efforts with the state and non-government resources.

### 3. 3 Control Infectious Disease

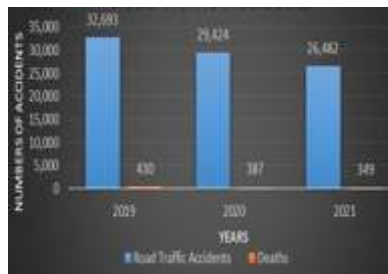
Incidence Rate Of Water, Food And Vector Borne Diseases (Per 100,000 population rate)

DISEASE		YEAR		
		2014	2015	2016
Water & Food	Cholera	0.00	0.00	0.00
	Typhoid	0.36	0.48	0.23
	Food Poisoning	135.32	26.09	35.45
	Hepatitis A	0.00	0.06	0.00
	Dysentery	0.12	0.06	0.00
Vector	Dengue	190.86	350.57	156.30
	Malaria	2.24	1.02	0.18
	Typhus & Other Rickettsioses	0.06	0.06	0.00
	Viral Encephalitis	0.36	0.06	0.12
	Filariasis	1.39	0.96	0.61

Source : Health Ministry of Malaysia

### 3.6 Continue to improve public safety

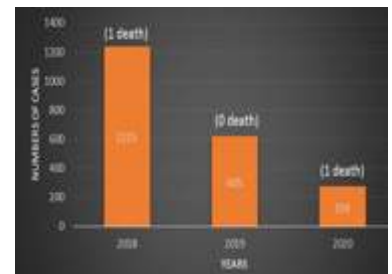
Road Deaths and Accidents in Penang



Source: Penang Road Safety Strategic Plan

### 3.8 Encourage Healthier Lifestyle and Care System

Dengue Cases in George Town by Year



Source : Health Ministry of Malaysia

## Targets 2030

0 fatality

Drop 10% per year for accidents & deaths

0 death





## Promote Healthier Environment

With a plan to create an inclusive, healthy and safe city, George Town city establishes local health care systems to control the spread of infectious diseases and provides community integrated medical care services such as centres for dialysis, vaccination and first aid. The city council emphasises on the concept of a cleaner, greener, safer city for improved liveability. A healthy community is one that is safe and happy with policies to ensure their health and wellbeing. Community projects such as recreational and sports programmes were introduced to reinforce the importance of a healthy lifestyle. Health incentives, social participation for vulnerable groups and road traffic accident preventions were among the other comprehensive measures taken in collaborative efforts with the state and non-government resources.



## Community Care Services

The city council has continued with its integrated care services to enhance healthcare services for vulnerable groups and the general public. To-date, the city council has set up and assisted in the setting up of a total 38 of Automated External Defibrillator (AED) at public spaces such as in parks and within public buildings for emergency use. AED devices can restore the heart rhythm of victims of sudden cardiac arrest. These devices are proven to be important to allow people to respond to medical emergencies that requires defibrillation.

The city council will continue to provide and facilitate community dialysis centres, vaccination centres and first aid centres as extra healthcare services for the public. The city council is now in the midst of constructing its first transit centre for the homeless that is equipped with a medical centre to protect the health of the vulnerable groups.



## Control of Infectious Diseases

### Dengue

The city council often collaborates with the health ministry to control the number of dengue cases in the state. The city council conducts daily search and destroy activities to get rid of potential mosquito breeding ground. Reactive vector control measures such as regular fogging at hotspots of dengue outbreaks to destroy the mosquitoes and its breeding grounds are implemented to control and prevent the transmission of the dengue virus. These measures have reduced the number of dengue cases in George Town city. The city also control the spread of dengue through community engagement.



### Food Safety and Typhoid Vaccination

The city council provides typhoid vaccinations at a minimal fee at its in-house clinic for food handlers in Penang. Typhoid vaccinations are effective in preventing typhoid fever which is a life-threatening infection caused by the bacterium, *Salmonella Typhi*. This bacterium is usually spread through contaminated food or water.



Food handlers are also provided with a free one-hour lecture on Food Safety by the city council's health inspector. All food handlers who had received their typhoid vaccination and attended the one-hour lecture will be issued a Food Handler Card that they will need to display at their business premises. This is to ensure that the food handlers comply with local by-laws on the requirement to receive typhoid vaccination and to attend food safety talks before they can handle food in a food establishment.







**Promote Public Health**

The city council continues to conduct activities and workshops for the public and in schools that cover topics on health, food hygiene, dengue fever awareness and in recent times, COVID-19 prevention measures.

Nurses continue to visit kindergartens and schools to conduct sessions within classrooms to talk about topics such as hand washing techniques, food hygiene awareness, dengue fever awareness and COVID-19 prevention measures.

**GREEN INCENTIVE**

- PUBLIC TRANSPORT**
  - Staff who opt to use public transport will also be eligible to claim a 50% subsidy for bus fees
- GREEN MILEAGE**
  - RM1.00 / km
  - Max RM300 / month
  - Effective from October 2020
- BICYCLE LOAN**
  - Up to RM4,000 with zero interest
  - Max RM300 / month
  - 3 years of tenure
  - Effective from September 2020
- EXPLORING A BUSINESS & RIDERS CORNER**
  - Collaboration with local bike shops
  - Discount for staff on purchase of cycling gear
  - Foyer at Level 4, KOMTAR
  - Coffee Corner / healthy food
- HEALTH INCENTIVE**
  - Staff who have not claimed medical expenses – RM200
  - Staff who have not taken any MC – RM100 will be credited into their e-wallet accounts.

**PROMOSI KESIHATAN PERSEKITARAN**









# SDG 4

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



The city council has always believed in nurturing future talents and supported this by preparing platforms and infrastructure, such as MakerSpace, to promote the learning of Science, Technology, Engineering, Arts and Mathematics (STEAM). The city council has also supported the state government in its educational programmes such as the Penang Science Cluster, and Penang Digital Library.

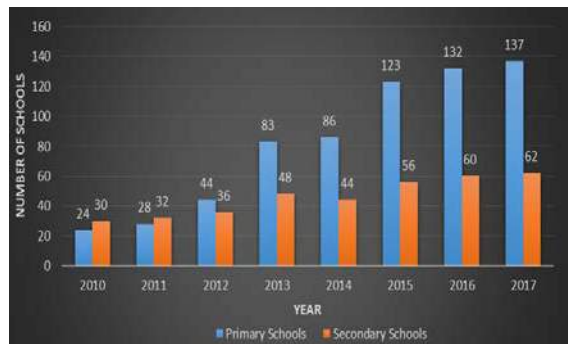
## 4.4 Access to technical education and reduce inequalities

Number of students participated in STEAM education



Source : Penang Science Cluster

Number of Participating Schools in Penang Green School Programme, 2010-2017



Source : City Council of Penang Island

### Targets 2030

9500+ students' participation

80 registered schools



## Implementation of STEAM syllabus

A syllabus on the learning of Science, Technology, Engineering, Arts and Mathematics (STEAM) is introduced and implemented at the city council's MakerSpace in Balik Pulau. Recognising the need to nurture future talents through STEAM education, the city council converted one of its buildings into a MakerSpace to facilitate the teaching and learning of STEAM through various programmes for students



### MBPP | MakerSpace @ Balik Pulau



The setting up of the MakerSpace @ Balik Pulau, set in a rural area, is part of the city council's innovation to maximize its building usage while improving urban placemaking based on a community focus approach. The MakerSpace @ Balik Pulau was set up in 2019 as an information technology hub to nurture future talents in the field of science, technology, engineering, arts and mathematics (STEAM). It is located within a 500 sq metre of space where there are flexible rooms to conduct various educational activities.

A digital maker hub was also set up within the space. The digital maker hub promotes technology such as 3D Sketch Up, Arudino, Microbit, Coding and Robotics and 3D printing where students can experiment with any of the technology freely. Other facilities in the MakerSpace include a clean and dry room that is suitable for design thinking focus groups to create a young generation of creatives and innovators, a virtual reality lab, a fabric and art lab for those interested in ethical fashion and design and a co-learning space for online learning.

A total 3,121 students have benefitted from the programmes held at the MakerSpace since March 2019 until October 2021.





## Nurture the talent of science and technology

The city council extended its support to programmes and workshops related to science and technology at Penang Science Cluster. The Penang Science Cluster offers various free programmes for schools in Penang through TechMentor programmes, outreach programmes and many more.

These programmes inspire students while creating a culture of innovation and entrepreneurship among the younger generation in Penang Island.



## Green School - Environmental Best Practices



Education is the way forward to encourage environmental awareness and create more environmental conservation programmes. This led to the introduction of the City of Environmental Education Programme for students. This initiative is part of the city council's efforts to start nurturing a love for environment among the young in collaboration with schools under its Green School Project.



# SDG 5

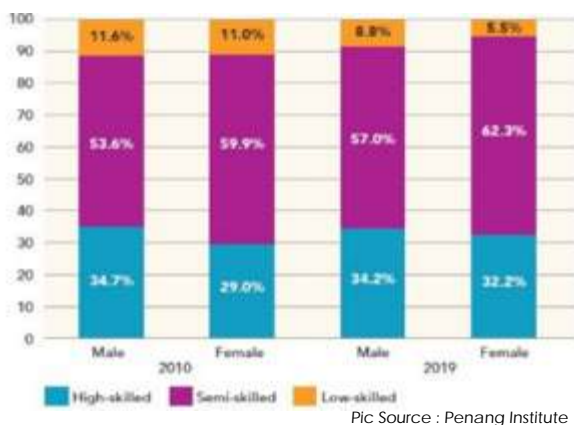
Achieve gender equality and empower all women and girls



The Gender Inclusive Policy (GIP) ensured equal treatment for women and girls and the Gender Responsive and Participatory Budgeting (GRPB) programme is a programme created under the GIP. It is now fully implemented at both state and the local government levels. The GRPB programme serves as a bridge between communities, agencies and all levels of governments.

## 5.1 Equality and non-discrimination of gender

Jobs by skills and Gender, Penang 2010 and 2019 (%)



Source : Department of Statistics Malaysia

## 5.5 Ensure gender responsive participation

Appointed City Policy Maker, 2017-2019



Source : City Council of Penang Island

### Targets 2030

50 % – 60 % employed women in workplace

Male : 60% Female : 40 % appointed city policy maker





# Gender Responsive Participatory Budgeting

The GRPB programme serves as a bridge between communities, agencies and all levels of governments. It is an inclusive approach that lets stakeholders take part and have their say in budget planning and delivery.

This approach allows for policy making and budgeting to take into account the different needs of different people while strengthening the links between economic and social policy outcomes.

Since 2019, a total 9 participatory programmes have been held to gather input and feedback from stakeholders before the introduction of new policies.



MALAYSIA URBAN FORUM

**SUSTAINABLE URBAN NATION 2030: BETTER CITIES FOR ALL WITH COVID-19**  
6-8 September 2021  
[Livestreaming on MUF2021 platform http://bit.ly/MUF2021](http://bit.ly/MUF2021)

Participation is Free  
7th Sept 2021, Tuesday  
Online  
2:00 pm-3:00pm

**URBAN LAB 1 SESSION**

**SUSTAINABLE BUDGETING THROUGH GENDER RESPONSIVE & PARTICIPATORY BUDGETING**

*Budget impacts women, girls, boys and men differently because their needs are different according to sex, age, income, education and capabilities. A sustainable municipal budget (Smart Municipal) is one that links communities, agencies and all levels of government and bridges the gap between service users and service providers.*

**ABOUT THE SESSION**

One successful approach of Sustainable Budgeting is through Gender Responsive Participatory Budgeting (GRPB) that:

- Includes all stakeholders in budget planning and delivery
- Responsive to the different needs of different people
- Creates gender awareness on policies and budgets in all agencies
- Strengthens linkages between economic and social policy outcomes
- Contributes to more sex-disaggregated data

PRESENTED BY:

In this Urban Lab, we will learn from the hands-on experiences from Penang Local Councils on their experience with GRPB and its impact towards sustainable urban development.

The Women's Assembly (MUF) has collectively prioritized GRPB as flagship initiative that creates more gender responsive and inclusive cities. In June 2020, a 3-day Sustainable Budgeting Workshop was held in Johor (online), we will also hear from attendees of this workshop to learn more about the early stages in implementing GRPB hearing from the city council of Iskandar Puteri.

**SHARING FROM :**

**SPEAKERS :**

Majlis Bandaraya Pulau Pinang:

- 1) Enck Muzawad Fawziah Suk Bi Zafarin, Landscape Architect

Majlis Bandaraya Seberang Perai:

- 1) Puan Siti Fatimah Ismail, Senior Assistant Director, Landscape Department
- 2) Puan Noor Azzahra Ismail Zamil Abidin, Assistant Director, Landscape Department

Majlis Bandaraya Alor Setar:

- 1) Enck Salwan bin Shams, Town and Country Planning Officer

Organized by

Global Partners

MUF001 Partner

<https://www.kominfo.gov.my/ku/2020/participatory-organization/>



# SDG 7

Ensure access to affordable, reliable, sustainable and modern energy for all

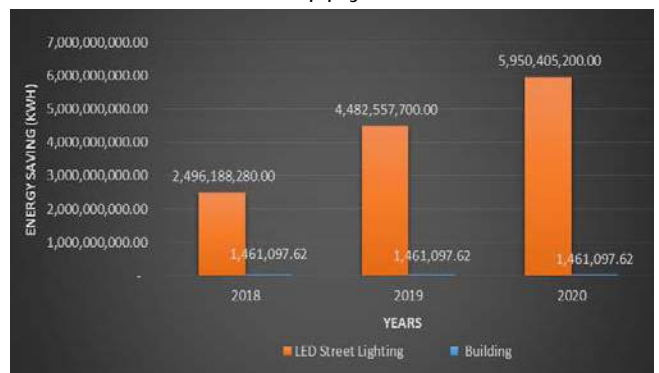
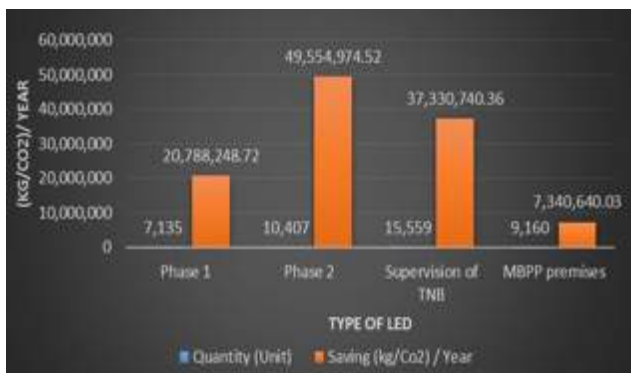


To ensure access to affordable, reliable, sustainable and modern energy for all, the city council implemented the Retrofit Energy Management Schemes (REMS). Under this scheme, all streetlamps were replaced with energy-saving lights to reduce energy consumption. Renewable energy were also introduced where solar panels were installed on existing buildings to harvest green energy.

## 7.1 Access to affordable, reliable and efficient energy system

Number of LED Street Lights

Capacity (kW) of Energy Saving Power Supply



Source : City Council of Penang Island

Source : City Council of Penang Island

### Targets 2030

100% LED street lighting

55,454,961 kWh generated





## BUILT A SMART ENERGY SAVING CITY

### Retrofit Energy Management Scheme

The aim of the city is to build a smart energy-saving city. Retrofit Energy Management Schemes (REMS) is a climate adaptation initiative. This initiative replaced streetlamps with LED lights to reduce energy consumption. A total 7 135 street lights on the island were converted to LED lights at the end of 2020. Another 10 407 street lights will be converted to LED lights in 2021. In Phase 1, a total 6,217 LED lights were installed and it saved the city RM1.4million in utility bills and maintenance fees. It easily reduced energy consumption by 60%.



### Promote Solar System Setup



George Town is a tropical city with ample sunlight and solar energy is a renewable energy that can be harvested. Existing buildings and facilities are lined with solar panels to harvest green energy. Penang has the biggest commercial solar PV farm at SPICE Arena. It generates up to 980MWh a year. The walkway along Chowrasta Market is also harvesting solar energy to power the market. The city council is now formulating a long-term plan to identify its assets and buildings as sites to install solar panels and harvest renewable energy to power the buildings.

### Energy efficiency and conservation strategies for green buildings

The Green Building Index (GBI) rating tool serves as an important component of creating pockets of low carbon development on the island. Incentives were introduced for GBI rated buildings so that every building constructed has less impact on the environment. Buildings with GBI Gold and Platinum-rated buildings were given two-third rebates on development charges. If these buildings continue to renew and sustain the status, they will be given full rebate on assessment taxes for the first three years.



# SDG 8



Promote sustained, inclusive & sustainable economic growth, full and productive employment and decent work for all



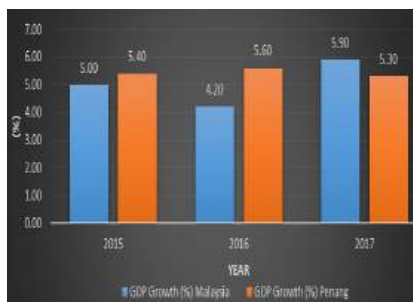
The city council has moved towards digitalisation by introducing the use of e-wallets even before the pandemic changes the economic landscape. Faced with emerging new business models globally, we introduced platforms to promote e-commerce and ease the adoption of this new way of conducting business.

## 8.1 Sustain growth of business and digital-friendly environment

Dealing with construction permit

GDP Growth in Malaysia and Penang, 2013-2017 (at constant 2010 prices)

Cashless Transaction in Public Markets and Selected FIZ Companies in Penang Island



Source : Doing Business in Malaysia 2020

Source : Department of Statistics, Malaysia

Source : The Central Bank of Malaysia

### Targets 2030

100 % approval of permit submission

6.5 % average GDP growth rate

0 cash transaction





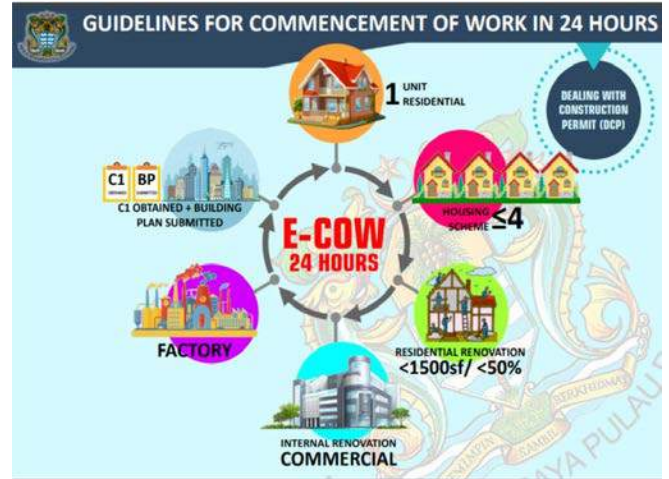
## BUSINESS FRIENDLY ENVIRONMENT

Economic recovery during the challenging business environment due to the pandemic is important to ensure sustained decent work for all. The city council implemented two important measures to streamline the application process for business permits and permits for minor construction projects.

The Dealing with Business Permit (DBP) policy was introduced in the midst of the pandemic in 2020. The DBP offers 24-hour approvals for license applications from businesses and shops in malls and commercial complexes. This measure proved popular as a total 19,829 permits have been issued by June 2 in 2021.

The Dealing with Construction Permit (DCP) policy was also introduced in the midst of the pandemic in 2020 to assist the local construction industry that was greatly impacted by the pandemic. The DCP offers 24-hour approvals for construction permits for minor construction projects such as internal renovations of commercial premises, factories and certain residential premises. Until May 2021, a total 36 permits have been issued with a majority it for factories. This has not only helped the construction industry but also the factories.

Penang Island has a high number of small traders and entrepreneurs that do not operate within malls or in buildings. These are small businesses with very low capital that operated through small stalls. The city council facilitated these businesses by allocating lots for these stalls to operate in open air public spaces. The famed Lorong Kulit flea market is one such site with 160 lots. There are two other such sites, the Teluk Bahang Market with 50 lots and Balik Pulau Farmers' Market with 100 lots.



## DIGITAL ECONOMY FOR MERCHANT



The economic landscape has evolved and changed due to the pandemic and so must the way of doing business in light of lockdowns, physical distancing rules and the temporary closure of the country's borders. Digitalisation and e-commerce are now viable solutions to ensure sustainable economic growth during this challenging times.

The city council introduced several modules for businesses to start immersing in e-commerce and to adapt to a new way of doing business during this pandemic and after. One of it is Jom Beli Online (JBO), an online platform at [jbo.mbpp.gov.my](http://jbo.mbpp.gov.my) for small traders and businesses to sell and promote their products that will be delivered direct to their customers, cutting down the need for people to leave their home. The traders may deliver the products direct to their customers on their own. The city council has collaborated with delivery partners such as Delivereat, Bungkusit and Tapau Food to provide delivery services to traders without delivery resources.



There are a total 10,962 registered traders under the city council and since the launch of JBO in 2020, a total 1,387 traders have signed up for the platform. The city council aims to continue providing and marketing this platform to assist the traders to continue using the platform. The aim is to have at least 30% of the total registered traders in Penang island sign up on JBO.



Penang island is home to the King of Fruits, durians, which comes into season twice a year. Usually, during durian season, sellers would set up temporary stalls to sell these fruits along with other seasonal fruits such as rambutan and mangosteens. However, this mode of business has to change due to the pandemic as large groups and gatherings are discouraged in public spaces. Therefore, Business From Farm (BFF) was introduced for seasonal fruit sellers to apply for lots within existing market complexes to sell their fruits.



Now, seasonal fruit sellers have stalls within markets such as the Dato Keramat Market, Jalan Rajawali Market, Farlim Market, Jalan Patani Market, Gold Coast Complex, Jalan Permai Glugor Market, Taman Terubong Jaya Market, Jalan Tengku Market and Balik Pulau Market. These stalls are also registered on JBO so that customers can order durians and seasonal fruits directly from them online. This expanded their reach to customers in the whole state instead of only one district and some of these traders have received orders from customers in other states.



Source : Harian Metro

In line with a new business environment and to alleviate the issues of joblessness, Business from Home (BFH) permits were introduced. This is to allow home-based entrepreneurs and those who lost their jobs an opportunity to start their small businesses at home. This created work for those who were jobless and generated a new stream of economic activities. Since the introduction of BFH permits in 2020, a total 55 permits have been issued.



## GOING CASHLESS FOR CONSUMER



In an era of digitalisation, going cashless is the way forward. The city council has fully embraced cashless payment solutions that can be made online and through e-wallets since 2019. Ratepayers and payment for permits and many other of the city council's services can be made through online banking, JOMPay, eBayar and PBTPAY. Motorists who park in city council parking lots were also able to pay online using the Penang Smart Parking applications. Alternatively, for those who were unable to access online banking sites, they can use the city council's smart kiosks to submit their payment using credit cards, debit cards and e-wallets such as Boost, Touch n' Go, GrabPay, Maybank QRPAY, RazerPay and MPay Walet.



Reception to the city council's cashless payment systems were good as the amount of cashless transactions was higher than cash transactions. In 2019, a total 300,910 cash transactions amounting to RM33.1 million were made. In comparison, about 91.06% of the total amount transacted that year were cashless payments where 445,927 cashless transactions amounting to RM337 million were made. In 2020, about 94% of the total amount transacted at RM311 million for 482,366 transactions were cashless transactions. This trend continued in 2021 where a total RM265 million in cashless payments were transacted as at Sept 2021 compared to RM9.5 million in cash payments transacted for the same period.





## CREATIVE ECONOMY

As a city of design, the investment in creative and culture related infrastructure will attract entrepreneurs and start-ups from the creative sector, resulting in an increase in employment and economic opportunities. As levels of liveability increases, it is expected that more people will be attracted to live, work, and play in George Town. With a more robust and resilient economy, there will be less dependence on the hospitality sector and tourism. Our city can also become a national and regional creative design hub.



There are 419 enterprises or organisations in the creative content industry on the island. The largest numbers were IT firms (74), Marketing (65), Architecture (59), Film, Video & Photography (59) and Interior Design (29). The number has been increasing from year to year.



There are 35 street arts and 52 pieces of iron welded caricature installations called Marking George Town all around the city. This had placed George Town on the world map as a creative city in Malaysia for its expressive use of public art. The installations were featured prominently in marketing and tourism materials.

There are more than 10 fashion design companies in Penang, and there is a robust fashion and textiles retail sector here. Fashion design is one area of potential growth especially products with cultural influences such as songkok (head gear) and kasut manek (Nyonya beaded shoes).



# SDG 9

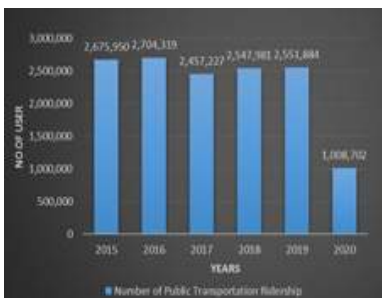
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



The city council has an aim to maximise its public spaces to enhance wellbeing of the city's citizens and protect their safety. Therefore, upgrading and building resilient infrastructure in George Town was a way forward to create a city of urban improvement and connectivity.

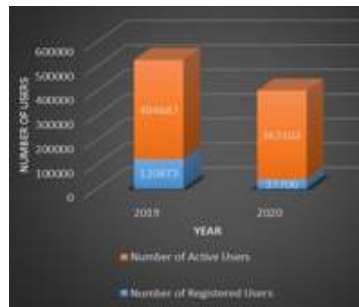
## 9.1 Develop sustainable urban improvement infrastructure

Number of Public Transportation Ridership



Source : Rapid Penang

Number of registered and active users Penang Smart Parking



Source : City Council of Penang Island

Broadband Speed



Source : Malaysian Communication and Multimedia Commission

### Targets 2030

1.5 million  
Ridership of public transportation

Increase 15 %  
of registration per year

1 Gbps  
high speed broadband





## SMART PARKING SYSTEM

The city council implemented another measure to reduce the number of cars in the city and to alleviate traffic congestion – the Smart Parking System. The system allowed users to have real-time access to the smart parking system and management using an app.

Users can easily locate vacant parking lots and make cashless payments using the app. The system allowed motorists to plan their journeys early and to seek parking spots effectively so that they do not have to drive around aimlessly in search of vacant lots, thus cutting down the time cars are making its rounds on the roads.



## CENTRAL AREA TRANSIT

To increase mobility of residents in the city, the Central Area Transit (CAT) bus service was introduced as a free service for residents to travel around the city conveniently. The service is temporarily suspended due to the pandemic but it will be reintroduced in future during recovery from the pandemic.

## SETTING UP SMART BUS STOP

Smart bus stops were introduced in 2019. The pilot smart bus stop was set up in Jalan Sungai Dua on September 5 in 2019. The smart bus stop provides WiFi facility, USB charging ports, a panic button, a rooftop solar panel, CCTVs and a digital directory. The bus stop aimed to transform the whole experience of taking public transport and to encourage more people to take public transport.



# SDG 11

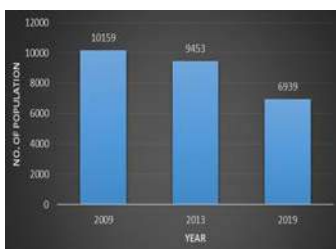
Make cities and human settlements inclusive, safe, resilient and sustainable



Based on the concept of creating an intelligent, liveable and happy city, various programmes and action plans were implemented towards this goal. Projects such as Mobility As A Service, Green Connector, Back Lane Transformation, Barrier Free Environment, Repopulation George Town and Business Improvement District Scheme (BIDS) were planned, implemented and activated.

### 11.1 Access to adequate and affordable housing

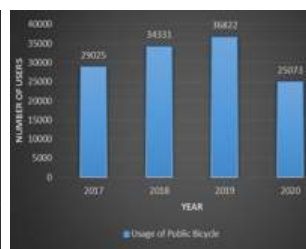
Population in World Heritage Sites



Source : City Council of Penang Island

### 11.2 Safe, affordable, accessible & sustainable green

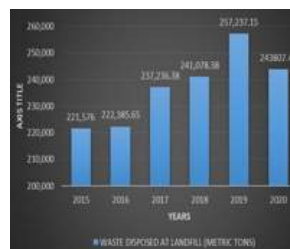
Usage of Public Bicycle



Source : City Council of Penang Island

### 11.6 Reduce air quality and waste

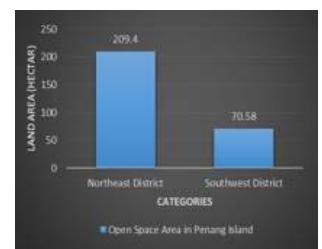
Waste Disposed at Landfill (Metric Tons)



Source : City Council of Penang Island

### 11.7 Inclusive and accessible green and public space

Open Space Area



Source : City Council of Penang Island 2019

## Targets 2030

10 000 – 15 000 population in World Heritage Sites

45 000 ridership of public bicycle

0.55 kg/capita waste disposed at landfill

46 Neighbourhood parks  
88 Pocket parks

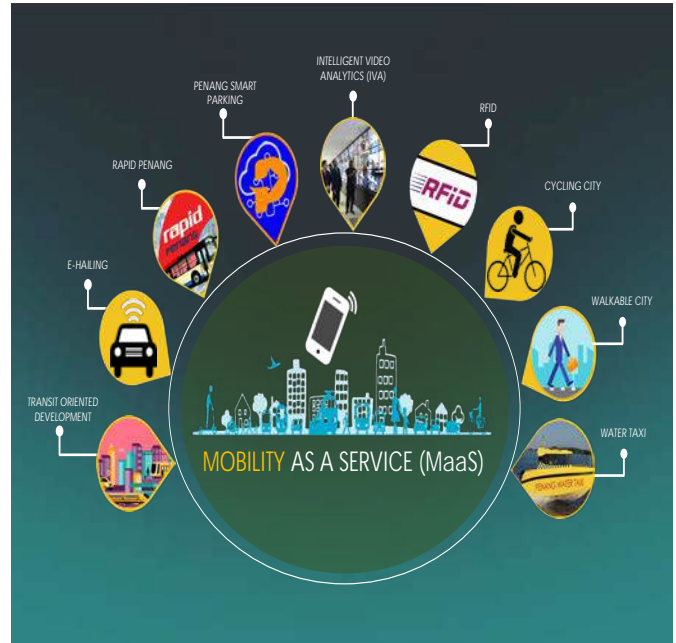




## MOBILITY AS A SERVICE

The city council aims to turn George Town into an inclusive city that is intelligent, liveable and happy so that it is safe, resilient and sustainable for its citizens. Mobility is an important element to ensure liveability of a city and this was where the Mobility As a Service (MaaS) system comes in. The city council introduced MaaS with the Green Connector project as one of its components.

MaaS is a comprehensive mobility plan to move people while reducing carbon emissions. The MaaS covers public buses, e-hailing, smart parking system, walking, cycling, Intelligent Video Analytics and in future, water taxis. It brings together all elements of mobility from the many components under the Green Connectors project to public transportation.



## GREEN CONNECTORS

The Penang Bicycle Lane Master Plan with a goal of creating 200km of cycling routes all around Penang Island is an additional complement to the green connectors project for the city. The bicycle lanes will be a combination of dedicated and shared lanes that snaked through the city, through the coasts and within townships for cyclists to travel all around the island without generating carbon. To further encourage more people to cycle everywhere instead of driving, a bike sharing system was introduced in 2017. The number of bike ridership increased in 2018 and 2019 but dropped in 2020 due to the pandemic when less people are outside. The city council hoped to reach a target ridership of 45,000 annually by 2025.







The city council aims to transform and make full use of existing public spaces in George Town to benefit the people. There is a plan to create 10 acres of connected green spaces that worked as a green connector within the city.



The Back Lane Transformation project contributes to part of this goal. This project, launched in 2019, have upgraded a total seventeen (17) back lanes with the addition of green landscapes, installation of lights, and removal of obstructions. These back lanes were previously neglected, dirty and hardly used pathways that run through the city.

Located behind rows of heritage houses in the city, these pathways were identified as the perfect sites to be converted into pedestrian and cyclist friendly paths that are away from the busy vehicular traffic on the main roads. This is in line with the city council's goal of creating a green and safe space for the people.





## REPOPULATION GEORGE TOWN

### CO LIVING AND CO WORKING

The city council introduced the Repopulation George Town Programme (RePoP-GT) to alleviate the effects of gentrification. The programme aims to bring people back into the city and to retain residents in the city. The George Town World Heritage Site covers 400 hectares of the island and back in 2009, it has a total population of 10,159 residents.

The number of residents dwindled to 9,425 people in 2013 before dropping further to 6,939 in 2019. The RePoP-GT programme aimed to draw residents back into the city and bring its population back up to 10,000 by 2025.

One of the projects introduced under RePoP-GT is the purpose built residents accommodations (PBRA). There are two pilot PBRA projects in the inner city, one is located in Kimberley Street and a second one in Aceh Street. These projects aimed to bring residents back into the city and make it a compact city for people to live, learn, work and play.



## BUSINESS IMPROVEMENT DISTRICT SCHEME (BIDS)



The Business Improvement District Scheme (BIDS) is an urban renewal and revitalisation project for the inner city of George Town. It uses a public-private partnership model to improve liveability in the city through the upgrading of public facilities and amenities while at the same time, generate economic activities in the area.

The local authority worked together with business property owners in the area to upgrade, improve and revitalise the selected area.

The project focused on walkability to elevate the on-foot experience for pedestrians. The end result created a safer and conducive street environment with more pedestrian traffic due to the lush greenery and wider pavement that can be shared by both pedestrians and cyclists.

The road carriageway was narrowed and this improved traffic flow in the area while preventing illegally parked vehicles at the area.

The creation of this project are based on universal designs with barrier free access to ensure accessibility to everyone including senior citizens, people with disabilities and mobility limitations.

The project was implemented along a 850-metre stretch of street - Jalan Gurdwara and within the radius of KOMTAR area.





## PEDESTRIAN IS KING

The Pedestrian is King programme was introduced in 2015 in George Town to create an awareness among motorists to slow down at zebra crossings. A total 15 zebra crossings were painted with traffic lights to slow down motorists and to create a safer environment for pedestrians.

As an additional step to slow down vehicular traffic at high pedestrian traffic areas such as junctions, school zones and areas near markets, zig-zag lines were painted on the roads. A total six roads on Penang island have the zig-zag lines that provided an added visual for drivers to slow down and create a safe environment for pedestrians.





## STREET ART

Street art in the historical city of George Town especially along the streets and alleyways have added a new character to the UNESCO World Heritage site.

The street art had drawn global attention and serves as an inspiration for city makers/urban planners worldwide on creative placemaking. It served to elevate the overall aesthetic value of public spaces or streets while revitalizing the neighbourhood and promoting economic activities. Furthermore, Marking George Town formed part of an urban regeneration strategy to cultivate a creative city.

The way forward for the city is to continue to encourage creativity through street art while regulating and promoting it through public engagement.





## ENVIRONMENTALLY SOUND MATERIAL RECOVERY SOCIETY

Environmental protection is an important component in any city planning as it serves as a foundation for the survival of the human race. Penang Island, as a developing city, too faces various environmental issues and challenges due to the increase in population and economic growth.

To combat the effects of development, the city council introduced integrated programmes to create a sustainable and sound material-cycle society.

Our aim in creating a “sound material-cycle society” is to reduce the waste generation per capita thus, minimising the environmental load to the fullest extent possible. Programmes to minimise impact on the environment have been implemented in a comprehensive and structured manner.

Among the city’s plans was the introduction of an Integrated Waste Management Plan. The plan included community-based waste separation at source to reduce the amount of waste ending up on the landfills.



# SDG 12



Ensure sustainable consumption and production patterns

# 5R

**REFUSE,**  
Reduce,  
Reuse,  
Repurpose  
and Recycle

In line with the city council's green initiatives to create a low carbon compact city, policies and campaigns such as No Plastic Bags, No Single Use Plastics, Ban on Polystyrene and Bring Your Own Containers were introduced. The 5R system which is to refuse, reduce, reuse, repurpose and recycle became an important principle to reduce waste.

12.5 Reduce waste generation through 5R (Refuse, Reduce, Reuse, Repurpose and Recycle) Policy

12.7 Promote public procurement practices that are sustainable

Number of Shop Adhering To No Single Use Plastic Policy



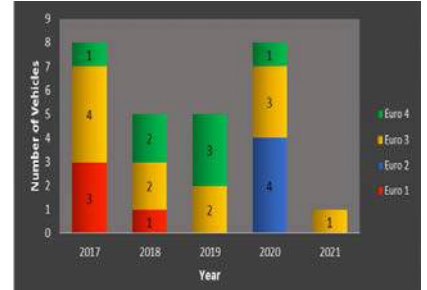
Source : City Council of Penang Island

Recycling in Penang Island



Source : City Council of Penang Island

Number of Green Product Vehicle



Source : City Council of Penang Island

## Targets 2030

148 Franchise Food Establishment

35 Shopping Malls

50% waste recycled

30 Vehicles EURO 3-4





## Sustainable Campaigns



### Sustainable 5R Campaigns

The city introduced and promoted sustainable campaigns to increase resource efficiency and reduce impact on the environment. This included the introduction of the 5R campaign (Refuse, Reduce, Reuse and Repurpose) along with many other programmes and policies that took into account the environmental, economic and social aspects of sustainable development.

The city council has implemented "Say No To Plastic" to educate and encourage consumers to stop using plastic bags. This programme was introduced in cooperation with supermarkets and commercial outlets across the island. It is also a way to promote the Bring Your Own Bag (BYOB) and Bring Your Own Container (BYOC) initiatives.



Constant community engagements were also held to introduce and implement 5R and other environmental programmes towards creating a sound material-cycle society.

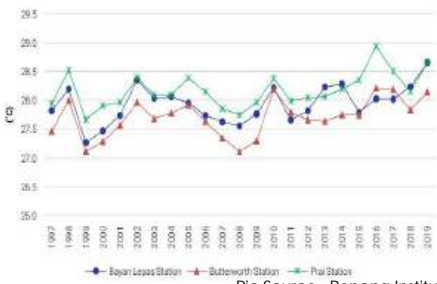


# SDG 13



## Take urgent action to combat climate change and its impacts

The average annual temperature



Picture Source : Penang Institute

Source : Malaysian Meteorological Department

The city has set the goal of reducing greenhouse gas emission intensity and also working towards stabilizing carbon emission by adapting a holistic climathon adaptation plan. This climate change strategy addresses the mitigation of greenhouse gas emissions and also outlines the city's efforts to lower its carbon footprint.

<b>Trees For Life Programmes</b>	<b>Urban Transport</b>
49 879 trees x 1,000kg CO <sub>2</sub> = 49 879 000 kg CO <sub>2</sub> / 49 879 tonnes CO <sub>2</sub>	195 km bicycle lane x 6kg CO <sub>2</sub> x 365 days = 427 050 kg CO <sub>2</sub> / 427.05 tonnes CO <sub>2</sub>
<b>Green Space Area</b>	<b>National / Botanical Park</b>
35 579.37 acres x 2 600 kg CO <sub>2</sub> = 92 506 362 kg CO <sub>2</sub> / 92 506.36 tonnes CO <sub>2</sub>	7,738.11 acres x 2 600 kg CO <sub>2</sub> = 20,119,086 kg CO <sub>2</sub> / 20,119.08 tonnes CO <sub>2</sub>
<b>Green Building Index</b>	<b>Waste Recycling</b>
35 buildings (12,325,998.70 sq. feet x 0.0027 tonnes CO <sub>2</sub> ) = 34,159,130 kg CO <sub>2</sub> / 34 159 tonnes CO <sub>2</sub>	112,846.74 kg x 586.531 kg CO <sub>2</sub> = 66,188,111.26 kg CO <sub>2</sub> / 66,188.11 tonnes CO <sub>2</sub>

### Targets 2030

Trees For Life Programmes	Urban Transport	Green Space Area	National / Botanical Park	Green Building Index	Waste Recycling
100,000 trees	200 km	35 579.37 acre	7 738.11 acre	55 building	274,179.55 kg
<b>Reduction CO<sub>2</sub> (tonnes)</b>					
100,000	438	92,506.36	20,119.08	62,203	160,814





## Nature Based Solutions for Climate Adaptation



The city council, in collaboration with Think City, participated in the EIT-Climate KIC's Global Climathon Awards and won the First Place in the Global Climathon Global Awards – Cities Award for its Nature-Based Solutions for Climate Adaptation.

The nature-based solutions for climate adaptation programme for the urban areas of Penang Island is predicted to be an effective strategy to reduce temperatures in the city through shade from trees, evapotranspiration, enhancing wind flows and a combination of green spaces with water surfaces. Additionally, the programme will lead to the creation of more recreational spaces that brings about ecological benefits to the island as a whole.



The goal is to introduce more trees and greenery to urban Penang through built projects such as connected canopies, tree-lined streets, the back lanes transformation project, urban farming project, the creation of pocket parks, introduction of rooftop gardens and the creation of swales and infiltration wells to absorb runoff water.



At the same time, strategies such as school programmes and knowledge transfer platforms are introduced to improve community readiness and encourage stakeholders' involvement.

The ultimate goal of the plan is to reduce the temperatures by 1.5° Celsius in urban areas.





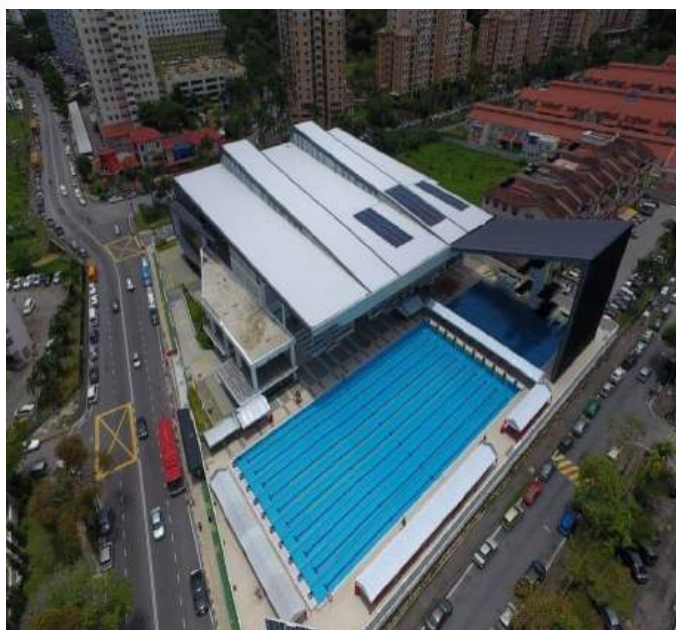
## GREEN BUILDING INDEX (GBI)



The use of the Green Building Index (GBI) rating tool serves as an important component of creating pockets of low carbon development on the island. Incentives were introduced for GBI rated buildings so that every building constructed has less impact on the environment. Buildings with GBI Gold and Platinum-rated buildings were given two-third rebates on development charges. If these buildings continue to renew and sustain the status, they will be given full rebate on assessment taxes for the first three years. There are now 35 GBI certified buildings in Penang island. The increasing number of GBI certified buildings has reduced carbon dioxide emissions in the city.



The city council is now constructing the first ever triple net zero building, a transit centre for the homeless, which will be GBI rated.





## Disaster Risk Management Plan



As a tropical coastal city, Penang island is prone to floods during the inter-monsoon seasons. Therefore, it is important to have a comprehensive disaster risk management plan. The city council has a drainage and flood mitigation plan and system in place.

Technological advances meant that the city council can implement smart solutions as part of its disaster risk management plan. An Intelligent Operation Centre (IOC) was set up with video analytics to provide real-time alerts not only for disaster management but also for traffic management and public safety. The system also collects data for analysis.



In terms of disaster management, the city council has installed 10 units of water level sensor at flood hotspots. These sensors will send out notifications when the water level reach a certain level, thus alerting the city council and the public of imminent floods.



The abundance of rain on the island presented a potential for water conservation through rain harvesting. The city council introduced a Rainwater Collection and Utilisation System (SPAHS) to collect rainwater for usage such as to water gardens and for toilets. Building owners are encouraged to install the SPAHS to reduce treated water consumption. Between 2020 and 2021, a total 20 projects in Penang island have installed SPAHS.



# SDG 17

Strengthen the means of implementation and revitalize the global partnership for sustainable development



The city council continues to strengthen its global partnerships with its twin cities, sister cities and friendship cities in working towards similar goals of sustainable development. Participation in the IMT-GT Green Cities Mayor Council has improved collaboration with cities in the IMT-GT on their best practices implemented under seven portfolios: Transport, Solid Waste Management, Energy, Carbon Literacy, Circular Economy, Biodiversity, and Education for Sustainable Development.



The city council has been able to connect with other CityNet members to exchange knowledge and to build joint commitments to establish more sustainable and resilient cities. It is through CityNet that the city council is able to undertake city-to-city cooperation and capacity building in respond to climate change and rising infrastructure demands.





## CITY FUTURE PROSPECTS

The future will witness fundamental changes in social economy and experience digital revolution. Penang Island will continue to innovate and transform as well as strengthen its policies to adapt to changes in business processes in accordance with the expectations of community needs.



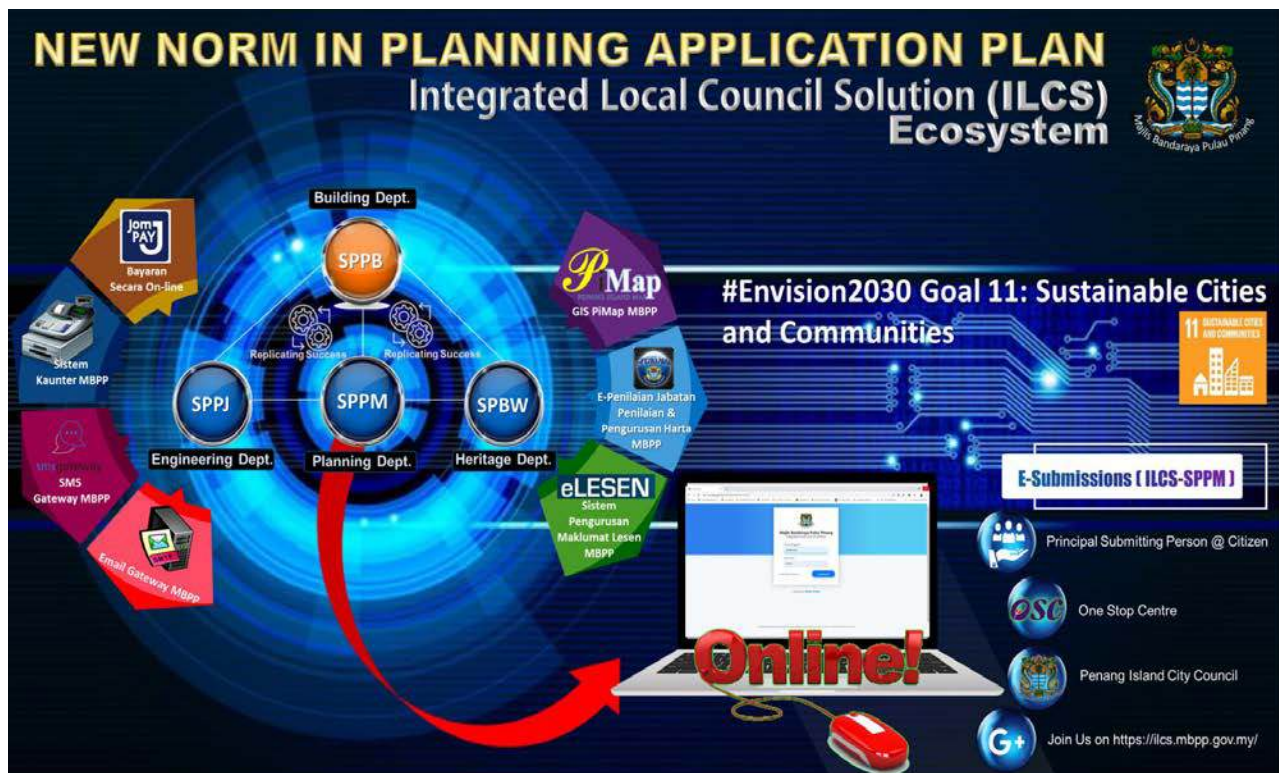
## Digital Transformation Plan

The future of urbanisation is a Smart City, where the city is equipped with Information and Communications Technology (ICT) and emerging technologies such as the Internet of Things (IoT), Big Data Analytics (BDA) and Artificial Intelligent (machine learning and deep learning) to advance a city's liveability, sustainability, and economy agenda.

Becoming smart is not about installing technology but utilizing technology and data to work to make a better decision, navigate uncertainty and deliver better outcomes for the city's diverse community. MBPP recognized the transformative opportunities of the digital age for improving the delivery of services and enhancing quality of life.

MBPP's enhanced strategic direction for year 2020 to 2030 incorporates five smart cities domains which are Smart e-Governance, Smart Social, Smart Economy, Smart Mobility and Smart Environment. The smart city transformation agenda of MBPP is translated into five (5) strategic thrusts in accordance with the five (5) aforementioned smart city domains as depicted in the diagram below. It is driven by the ultimate goal of developing an Intelligent City, Liveable City and Happy City as well as to support the Penang state government's vision of Penang 2030.

To improve efficiency, the city council is planning to set up a centralised project management office called the Smart City Transformation Office. Among the key initiatives include enhancing our digital infrastructure such as fiberization of the whole island, creation of a data centre, applications and network.

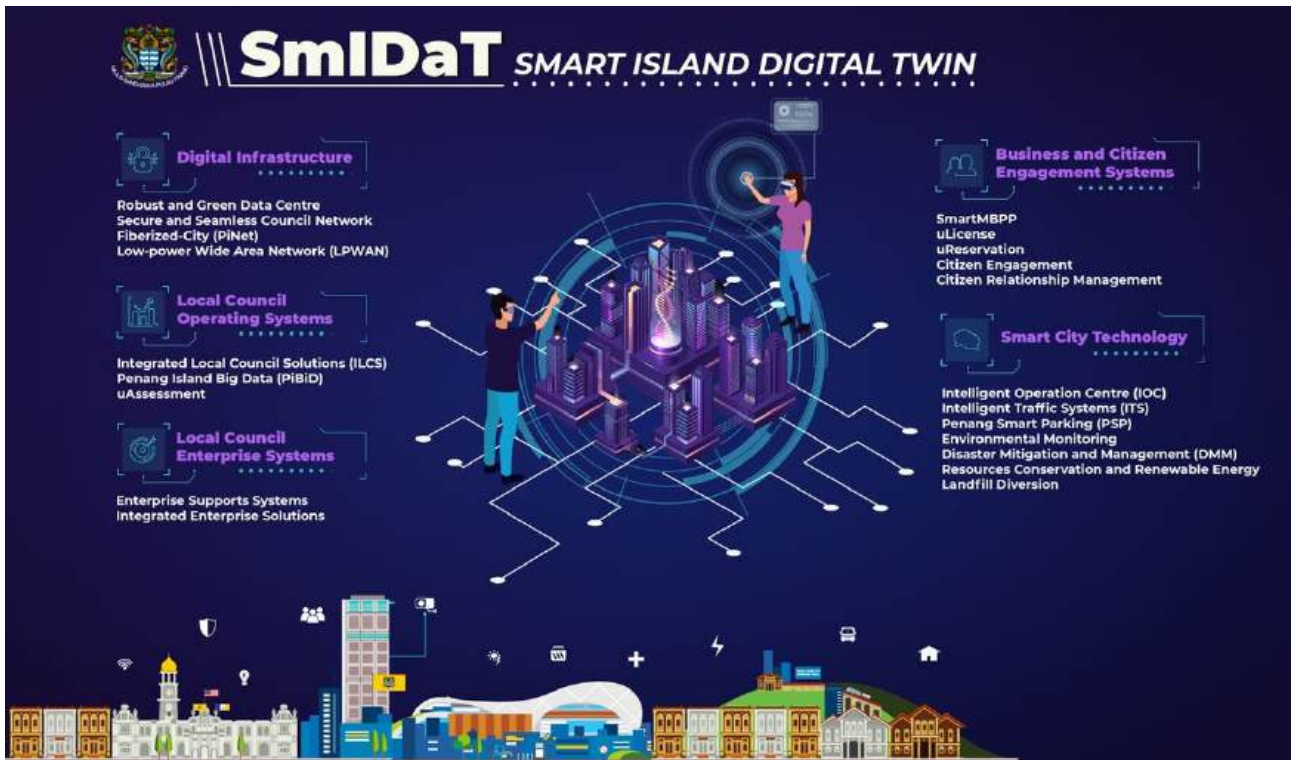




City Council of Penang Island is transitioning from digitalization to digital transformation with the ultimate goals of achieving a Smart Digital Twin City. The Smart Digital Twin City consists of a Virtual Real-World Model (replica) including roads, buildings, infrastructures, transportation, communications, distribution networks and their accessibility. It is also comprehensive real-time information generated from Internet Of Things (IoT) or sensors, video analytics, satellites together with Big Data Platform. An Artificial Intelligence (AI) will be applied to generate smart decisions and actions.

Among the benefits of a Smart Digital Twin is it allows citizen to visualize the impact of new constructions before breaking ground. Initial responders can also run computer simulations to prepare for potential emergency scenarios. City planners are able to analyse better and respond to local energy and environmental changes. Furthermore, the application assists the Traffic and Transportation Systems in planning, to prepare for calamities and pollution control. As for telecommunication companies, they may experiment different wireless deployment model to optimize coverage. Facilitating business owners to find the best place to install solar panels and City planners to analyse pedestrian patterns to improve parks and evacuation routes are another great advantage of the Digital Smart Twin City.

The Smart Digital Twin City will enhance all aspects of urban planning and management including design, development, operation, maintenance and revitalization. Ultimately, the Smart Digital Twin will enable us to achieve a truly data-driven city by 2026.







# *Hari* **BANDARAYA**



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