

CELEBRATING THE EXCHANGE OF SUSTAINABLE URBAN PRACTICES



17 Sustainable Development Goals

Urban SDG Knowledge Platform urbansdgplatform.org

RECIPRO:CITY ISSUE NO.04

RECIPRO:CITY is created as an annual publication of the Urban SDG Knowledge Platform in order to support all readers in sharing best practices on urban policies, and to introduce the ongoing activities carried out under the Platform. This 4th Issue is focusing on sharing cases to Asia-Pacific local authorities about Green and Energy-Efficient Buildings and the Revitalization of Existing Structures in accordance with policy priorities and urban development progress.

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/ Natalie Oh, Think City (Malaysia)

INTRODUCTION

ABOUT URBAN SDG KNOWLEDGE PLATFORM

+ INTRODUCTION

The Urban SDG Knowledge Platform was established in collaboration with the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), the Seoul Metropolitan Government (SMG) and CityNet to promote and support knowledge sharing and city-to-city cooperation for sustainable urban development.

The Urban SDG Knowledge Platform supports local action for the implementation of the 2030 Agenda for Sustainable Development by: providing a repository of policies, initiatives and best practices at the city level from municipal governments and other stakeholders; facilitating north-south, south-south, and triangular cooperation by linking cities that have developed specific policies and strategies with other cities interested in learning from and replicating them; and, facilitating regional follow-up and review of the implementation of the 2030 Agenda for Sustainable Development by providing a platform for local governments to share progress and lessons learned.

RECIPRO:CITY is the annual publication of the Urban SDG Knowledge Platform created in order to support the sharing of best practices on urban policies and introduce the on-going offline activities to all the readers. RECIPRO:CITY's 4th Issue is focusing on sharing cases to Asia-Pacific local authorities about Housing, Green and Energy-Efficient Buildings and the Revitalization of Existing Structures in accordance with policy priorities and urban development progress.

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The writing of this publication was led by the CityNet Secretariat staff and has benefited from the expert inputs from the Seoul Metropolitan Government. This publication has been reviewed by members of The CityNet Secretariat, however some details information may differ with each city's current condition.

ORGANIZERS







+ CITYNET SECRETARIAT

CityNet is the largest association of urban stakeholders committed to sustainable development in the Asia Pacific region. Established in 1987 with the support of UNESCAP, UNDP and UN-Habitat, the network of cities has grown to include 173 municipalities, NGOs, private sector and research centers. CityNet connects actors, exchange knowledge and build commitment to more sustainable and resilient cities. Through capacity building, city-to-city cooperation and tangible projects, we help our members respond to Climate Change, Disaster, Sustainable Development Goals (SDGs) and rising Infrastructure demands.

+ SEOUL METROPOLITAN GOVERNMENT

Seoul Metropolitan Government (SMG) is the administrative organization of the city of Seoul. Seoul is the capital city of the Republic of Korea and has been the center of the country throughout its long history from prehistoric era to the present day. In addition, in just five decades, Seoul has seen its population increase by 43.3 percent and income soaring by 1,389 percent. Along with this fast and tremendous development of Seoul, there were strenuous efforts to tackle urban challenges. With those efforts, Seoul is now one of the most prosperous cities in the world.

+ UN ESCAP

The Economic and Social Commission for Asia and the Pacific (ESCAP) serves as the United Nations' regional hub promoting cooperation among countries to achieve inclusive and sustainable development. The largest regional intergovernmental platform with 53 Member States and 9 associate members, ESCAP has emerged as a strong regional think-tank offering countries sound analytical products that shed insight into the evolving economic, social and environmental dynamics of the region. The Commission's strategic focus is to deliver on the 2030 Agenda for Sustainable Development.

DATABASE -FEATURE STORY

Perumahan Bandar; **Urban Housing** (Kuala Lumpur)

SUSTAINABLE DEVELOPMENT GOALS









Repurposing disused commercial buildings as 'Perumahan Bandar' as a way of repopulating downtown Kuala Lumpur with new graduates and young professionals.

Case submitted by: Kuala Lumpur City Hall (DBKL) Case edited by: CityNet Secretariat

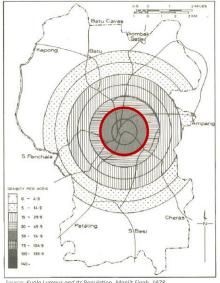


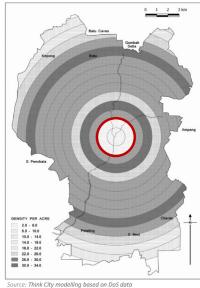


+ BACKGROUND

Over the past 50 years, the city of Kuala Lumpur saw a significant increase of population from 452,000 people in 1970 to 1.8 million in 2010. Despite this sudden rise, population density of the inner city has not proportionally increased, in fact there is a decrease of density when comparing with the 1970 level. Moreover, rapid urbanization is resulting in growing number of homeless and unplanned urban sprawl.







Population Density 1970-Population 452,000

Population Density 2010-Population 1.8 million

+ CHALLENGES

The decreasing inner city population has led to a series of challenges for the city, including:

- · High percentage of workers but lack of residents
- \cdot Busy during the day and quiet at night creating safety issues
- · Lack of housing choices leaving only high end or low end housing 1

+ OBJECTIVES

The main objective is to attract internal and external talents to live and work in the greater Kuala Lumpur and Klang Valley. Kuala Lumpur wishes to achieve this by:

- \cdot Improving public realm and green spaces
- · Provide a range of affordable, quality inner city living
- · Reduce the dependence on private transport ²

+ ACTIONS AND IMPLEMENTATION

Key actions taken by DBKL

In order to face the challenges caused by the diminishing inner city population and to create a more affordable and quality inner city life to attract desired residents, DBKL has taken various steps.

Urban Village @ Medan Pasar

Urban Village is an innovative and creative urban solution to make the city more liveable and inclusive.

Pilot projects of 2 micro house designs were located in urban environment at Medan Pasar plaza to get feedback and response from the public.





Micro housing is a communal living concept where the units are compact and self-sustained with ample amount of shared spaces to create an integrated and harmonious environment and foster community building.

These micro houses are to be rented out to unmarried working adults in the low-income category.

The first micro house project is to be launched at Jalan Tuanku Abdul Rahman in Kuala Lumpur, and is expected to be occupied by the end of 2020.

The micro homes will have 200 rooms to be rented out at RM100 (USD \$25) per month for each person including electricity and water consumption, with applications to be made online. The room will be featured with only sleeping and bathing facilities, without a dedicated place for cooking.

'Perumahan Bandar' & Adaptive Reuse

Disused commercial buildings are repurposed as 'Perumahan Bandar' as a way of repopulating downtown KL with new graduates and young professionals.









ADAPTIVE REUSE PROJECT PERUMAHAN BANDAR @ JALAN TUANKU ABDUL RAHMAN

Quick Facts				
Land Use	Commercial			
Building Height	8 FLOORS with basement			
Land Area	827m² / 8,900ft²			
Total Floor Area	7,438m² / 80,000ft²			
PLANNING CONTEXT (DKLCP 2020)				
Land Zoning	City Centre Commercial			

Public Transport

- · 200m from Masjid Jamek LRT Station
- · 600m from Bank Negara KTM Station

Perumahan Bandar, urban housing, is a new concept of shared living space introduced by Kuala Lumpur City Hall, targeted for Malaysians from Klang Valley, working in Kuala Lumpur for the first time. The two blocks of 7 storey building can accommodate 311 tenants with an affordable rental price of RM100 (USD \$25) per month.

Design Concept of 'Perumahan Bandar'

Compact & Practical: Bedroom furniture functions as a room partition and a cabinet

Vibrant Design: Reduces psychological stress from living in small spaces

Location: Conveniently located in the city centre, commute to work are within walking distance or easily reachable through public transportation

Communal Living: Shared spaces such as pantry, living area, TV room to interact with each other





Building Renovation and Sectional Description

The building renovation was done in 2 phases. Phase 1 consisted of 188 units which was completed on 23rd of October 2019, whereas Phase 2 comprised of 123 units is targeted to be completed by December 2020.

TOTAL NO. OF BEDS			
PHASE1	188		
PHASE 2	123		
TOTAL	311		

FEMALE BLOCK

MALE BLOCK

360m² / floor (3,884ft²)

412m² / floor (4,432ft²)

•	ROOF	ROOF TOP GARDEN				
	7F	22 BEDS		19 BEDS		PHASE
	6F	22 BEDS		23 BEDS		SE 2
	5F	22 BEDS		23 BEDS		
<u>. </u>	4F	22 BEDS	••••	23 BEDS		
	3F	22 BEDS		23 BEDS		
	2F	22 BEDS		23 BEDS		PHAS
	1F	22 BEDS		23 BEDS		Ë
	GF	LAUNDRY / LOBBY / GUEST AREA		LOBBY / GUEST AREA		
	B1 CYCLE PARKING / SERVICES					

📛 Jalan Tun Perak

Jalan Dang Wangi 📥

BUILDING LAYOUT



Each shared space consists of 3 to 6 units of bed. Every unit is provided with their own lighting fixtures, fan, bed, mattress and 4 doors wardrobe.











Corridor between the rooms

Curtain as unit divider

Each unit provided with a bed, mattress and wardrobe

Perumahan Bandar enhancement also include:

- · Roof top garden that consists of communal space and edible garden as a supporting facility to the building
- \cdot Installation of solar panels on the roof top

+ IMPACTS & EXPECTATION

The micro homes will benefit singles with low income who have just started working. This project promotes inner city living by providing lower and middle income group and young adults with their housing needs before they can get accommodations that are more comfortable. The project ensures that the living spaces, community needs and its built environment meets basic aspiration of living, which are safety and health.

Perumahan Bandar is a retrofitting project, reusing the existing shop lot buildings located in the city centre with the purpose of giving new life to the abandoned building and avoid building wastage. Being located in the city center, tenants make maximum use of public transport, reducing air and noise pollution. Bicycle parking is also provided in the building to encourage cycling as one of the main transportation in the city centre.

+ REPLICABILITY AND SCALABILITY

Since the official public opening of phase 1, requests received have been quite encouraging with applications far exceeding the capacity of the space provided. DBKL provides 98 beds for the 1st phase and applications received exceeded 250. For the 2nd phase, DBKL will provide an additional 221 extra beds to meet the demand of the target group.

DATABASE

CASE STUDIES ON GREEN AND ENERGY-EFFICIENT BUILDINGS AND THE REVITALIZATION OF EXISTING STRUCTURES

Green Building Policy (Bandung, Indonesia)

SUSTAINABLE DEVELOPMENT GOALS















Bandung's Green Building Policy is a regulation that was integrated in the permit process for buildings. It provides solutions for energy and environmental problems, ultimately creating a sustainable and liveable city.

Case submitted by: Bandung Cooperation Division Case edited by: CityNet Secretariat

+ BACKGROUND

Based on the building permit data from 2015 to 2019, 90% of Bandung's buildings are low-rise buildings (1-4 floors). Of these, 80% function as housing, residential, and small-scale home industries. Since they are the main energy consumers, they were as the main target of this project.

The context of Bandung was important to consider for the implementation of the project. Although Bandung itself is home to 2.5 million people, this number rises during the daytime due to the inflow of workers. These numbers can double on the weekends as Bandung is a popular tourist destination. Since the average temperature of Bandung is around 24°C, air conditioning is less important which makes it easier to achieve OTTV (Overall Thermal Transfer Value) score.

+ CHALLENGES

Challenges faced during implementation

- · Since most areas in Bandung are located close to the sea level, it is prone to flooding.
- · Bandung is already crowded with buildings as it is a city focused on tourism and education.
- Many social classes exist in terms of education level and economic status.

+ OBJECTIVES

Bandung wishes to achieve national energy and water conservation targets of 25% reduction in energy consumption and at least 10% decrease in water consumption.

Bandung enjoyed the opportunity of having already many professionals such as architects and academics who understand green buildings. Bandung is also receiving assistance from IFC (International Finance Corporation) in developing green buildings, with the goal to implement Green Buildings in all levels of society. To achieve this, the parameters of the policy were simplified.

+ ACTIONS & IMPLEMENTATION

Stages of Implementing Bandung Green Building Codes

STAGE 1. 2014-2016: Drafting and Ratification of Green Building Codes

STAGE 2. 2017-Present: Gradually Integrating Green Building Codes into Building Permit Requirements

- Step 1) Inform and educate the society about green buildings
- Step 2) Divide the requirements for authorization into 3 groups based on floor area
- Step 3) Once the current requirements are well implemented by building planners, additional requirements and parameters for green buildings will be added into the building permit requirements

The final goal is to have all new buildings as certified green buildings. To achieve this goal, the Bandung government is working with GBCI (Green Building Council Indonesia). Together, they are discussing the most suitable requirements to be applied in Bandung.

Tools used to measure the implementation of green buildings

- 1. Impact calculation at the planning stage (for building permits)
- 2. Survey and evaluation of several existing buildings
- 3. Certificate of Occupancy as a tool to check if completed buildings met the green building requirements set at the planning stage







Photos. Evaluation in residential homes, interviewing architects, and visiting residential clean water treatment.

The strategy for the continuation of this project is achieved through a process of verification and granting licenses to building actors, which include planners, building supervisors, and building technical reviewers, through so-called SLBP (Surat Lisensi Bekerja Perencana). This can ensure that the implementation of green buildings is carried out by certified building actors and that the government can evaluate the licenses depending on their compliance with regulations.

Bandung also utilized a reward & punishment system. Buildings which achieve better than the mandatory parameters can benefit of rewards such as tax discounts for a certain amount of time. However, buildings which are not able to meet the parameters will have their Certificate of Occupancy held up.

+ IMPACTS & EXPECTATION

All the new buildings in Bandung that have received permits since 2017 were in compliance with the green building requirements. Through this project, Bandung was able to achieve cuts in energy and water costs for buildings and create a more sustainable and habitable city. This initiative has benefited disadvantaged and marginalized groups. Requirements for basic buildings (e.g. small houses) were simplified for easier implementation. In addition, the government will be responsible for the implementation of Certificate of Occupancy for basic houses (up to 3 floors)



Evaluation in school, interviewing teacher and building manager



Evaluation in hotels, checking recharging wells

+ REPLICABILITY AND SCABILITY

Factors and Conditions that contributed to its success

- 1. Simplifying many requirements for easier implementation
- 2. Technology utilized in green buildings are widely available in the market
- 3. As more building actors acknowledge the benefits of green buildings, more investors are willing to turn their buildings green

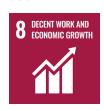
The first step for replicating this policy is to consider local context, such as location, climate, building types, and the community's ability to determine green building parameter values. The goal is that once the policy is successfully established, it will make implementation easier. After this has been achieved, it will gradually increase the parameter value based on whether or not the previous requirements have been met.

The prospect for implementing this policy on a greater scale is huge as this can be applied to public buildings as well as all other buildings including housing. It can even go beyond city level and reach provinces. In order to make this happen, we recommend creating a green building prototype, especially for small housing, so that we can provide solutions to housing problems.

This practice is being replicated in other cities. In fact, Semarang is the next city to adopt our Green Building Codes, by adding their local context.

Heritage Tourism in Bungamati (Lalitpur Metropolitan City, Nepal)

SUSTAINABLE DEVELOPMENT GOALS





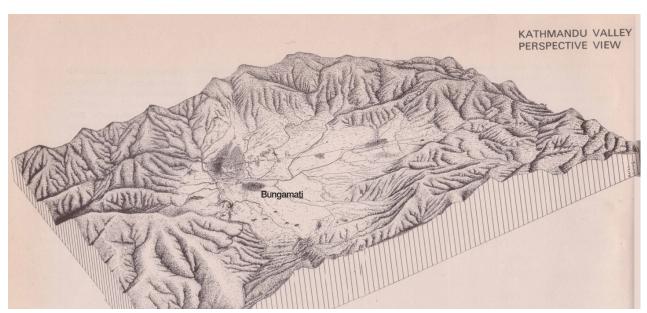


Vehicle to Sustainability of Traditional Towns: Revitalizing Bungamati through People's Process

Case submitted by: UN-Habitat Case edited by: CityNet Secretariat

+ BACKGROUND

Bungamati is a small town of approximately 4000 people, located in the Katmandu Valley, part of Lalitpur Metropolitan City. The town is famous for its built heritage including renowned shrines, intangible heritage such as local festivities and socio-cultural activities, and its handicraft-based economy tightly knitted with agriculture.



Picture 1. Bungamati's location within the Kathmandu Valley





Picture 2. Devastating aftermath of a fallen temple in Bungamati after the 2015 earthquake

However, the heritage settlements are under a threat as the agriculture and skill-based society is changing towards a service and business-based economy. The effects of urbanization are gradually moving into the agricultural land and replacing their products and services. These changes are deteriorating the values of Bungamati's tangible and intangible heritage.

To make matters worse, Bungamati was one of the 52 traditional settlements in the Kathmandu Valley damaged heavily during the 2015 Earthquake. When the magnitude 7.8 earthquake hit, approximately 65% of the houses, 563 out of the total 856, collapsed within Bungamati's core. Moreover, the remaining buildings were too damaged to be safely used again. Unfortunately, major temples and shrines including Machhendranath, Hyagriv Bhairav and Manakamana temple were also lost in the aftermath of the earthquake.

+ CHALLENGES

There were several points that the Bungamati community stressed when it came to preserving the heritage. It was important for Bungamati residents to have a living heritage instead of becoming 'another museum'. They also emphasized that displacements and gentrification should not happen under the name of heritage conservation and that the preservation of intangible heritage is as important as the preservation of tangible heritage. Additionally, they highlighted the opportunities created by the collaborative efforts from the local community, the private sector, and the local government.

Bungamati faced numerous challenges when it came to reviving the traditional settlements. A looming issue was the question of land, involving the division of property – fragmentation disputes, issues of land tenure and ownerships, differential economic status of property holders, and unplanned development of expansion areas. There were also questions to be answered on architecture, engineering, urban layout, society and culture, and economy.



+ ACTIONS

After the destructive natural disaster, local leaders and youths were at the forefront of the disaster response. They formed the 'Temporary Shelter and Relief Distribution Committee' to properly distribute the support. The committee was later reformed as Bungamati Area Reconstruction and Development Council to coordinate and lead the long-term reconstruction works in Bungamati.

The process for the execution of the project involved

Data Collection Preparation of Inventory

Review of previous literature

Community Consultation

Heritage Conservation

- · Integrated area-based approach
- · Comprehensive Heritage Settlement Recovery Plan prepared
- · Policy support to GoN and municipality
- · Exposure visits of locals to best practices
- · Linking intangible heritage to tangible heritage
- · Support to traditional groups and organizations
- · Technical assistance in housing and infrastructure improvements

Livelihood Enhancement

- \cdot Linking livelihood of people to rebuilding and developmental works
- · Promoting MSMEs, building their capacity and entrepreneurship
- · Promoting youths and women in livelihood activities
- · Support in linking the local products to larger market
- · Enhance local skills to suit market demand, particularly towards tourism-based products and services

Tourism Promotion

- · Prepare sustainable tourism development plan
- \cdot Develop new products and services for tourism promotion including greener products
- · Improve tourism amenities- information kiosks, guide services, street maps; etc.
- · Support in developing promotional audio-visuals, social media, etc.
- · Link the local market to larger tourism industry
- · Collective branding and marketing of Bungamati products

Heritage Tourism Partnership



01. COMMUNITY

To mobilize the community, 13 tole level community groups who conducted a series of meetings and community activities were formed. Cluster mapping was also conducted with the participation of local residents. This active involvement of the residents helped achieve local needs and expectations.

• Tole level Community Groups • Traditional Organizations - Guthi - Bhajan Khala - Caste Groups • Financial Institutions - Cooperatives - Women Saving Groups - Women Groups

People's Process in Bungamati

PROCESS

Education Process

Conservation of Heritage and Culture

Safer Building

Promotion of Heritage and Cultural

Settlement Planning

Trend Analysis

Need Assessment

Aspirations and Visioning

Conceptual Design

Stakeholder's Feedback

Implementation

STAKEHOLDERS

Local Governance

Municipality/ Ward Citizen Forum

Traditional Mechanisms

Guthi (Maharjan Samaj, Tuladhar Huthi, Mali Huthi) Dafa Khala

Bhajan Mandal

Interest Groups

Local Level

(Women's Group, Youth Clubs, Handicraft Association)

External Support Groups

National Groups (Development Partners, Civil Societies) International Dev Partners (UN-Habitat)

02. SUSTAINABILITY

The project emphasized the tight link between tourism and heritage. The economic sustainability from tourism is closely correlated with the livelihood of the population, while the tangible and intangible heritage is associated with the culture.

Keeping and flourishing Bungamati as heritage town

- · Economy
- Linking the livelihood to heritage tourism
- · Private sector participation
- Local investments
- Linking larger tourism market
- Association of entrepreneurs
- · Policy support
- Municipality declaring heritage settlement
- Tourism promotion policies
- · Demography
- Bring youths and women in the fore front

[1] SUSTAINABILITY

The heritage settlement recovery plan actions included improving infrastructures, adding amenities for tourists, rehabilitating heritage buildings, courtyards, shrines, and thematic promotion of various settlement points.

Heritage Settlement Recovery Plan (Bungamati)

Public space

- Ranking of public spaces (combined heritage value)
- Use & activities of PSs
- Architecture & building envelop of surrounding enclosed houses

Intangible heritage

- Ethnic/caste distribution of the neighbourhoods
- Role of different community in festivals & rituals
- Cultural groups associated with guthis, musics, etc.
- Story of various places & monuments

Infrastructure development

- Connectivity & linkages
- Linkages of tangible and intangible heritage
- Vehicular route vs pedestranization including parking
- Street furniture & streetscape

Infrastructure projects for implementation

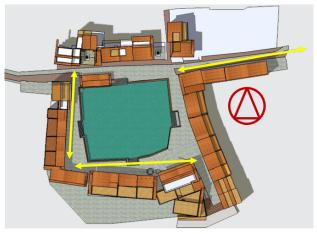
[a] Heritage conservation; [b] <mark>Tourism promotion;</mark> [c] Livelihood improvement and [d] Green design & technology

BEFORE









AFTER



The exemplary case from heritage settlement recovery plan was the renovation of De Pukhu.

[2] LIVELIHOOD ENHANCEMENT

The livelihood enhancement involved the preparation of torism promotion plan, skills training of youth and women, entrepreneurship development of SMEs (Small, and Medium Enterprises), and linking Bungamati with the larger tourism market.

[3] SUSTAINABLE TOURISM PROMOTION

The potential area for tourism entrepreneurs' development lies in various areas such as livestock, homestay, food and beverage industries, heritage tourism, and handicraft industries.







The handicraft industry of Bungamati include weaving and knitting, wood carving, and metal carving



The promotion of intangible heritage includes ROPAIN the rice plantation, heritage walks, and the Mataya festival.

+ REPLICABILITY AND SCABILITY

Attempting for multiplier effect for wider benefits

- $\cdot \ \text{More settlements}$
- Economy of scale
- Synergies
- · Networking
- Hinterland base
- Thematic promotion

Diversity

- Thematic promotion

Bungamati started to plan providing future assistance to ten additional heritage settlements in Chandragiri Municipality, Kirtipur Municipality, Mahalaxmi Municipality, Godawari Municipality.

Reforming the Wangjing Street (Beijing, China)

SUSTAINABLE DEVELOPMENT GOALS









Revitalization project of an old traditional shopping centre into a new public space, fusing commercial services, restaurants, entertainment, and a state-of-the-art office campus all under one roof.

Case submitted by: Beijing Wangjing Subdistrict Office Government Case contributed by: Entrusted Urban Planner Group of Wangjing Subdistrict Case edited by: CityNet Secretariat

+ BACKGROUND

This 4 year project was executed on the Wangjing Block of Beijing's Chaoyang District. For years, this area used to be a traditional commercial zone called Wangjing International Commercial Centre. However, the old facilities and the sharp distinction of the space between the inside and outside of the building showed signs of falling behind the pace of time.

The project was originally planned as a major reformation to the old commercial centre. However, as the local citizens were worried about the repercussions of gentrification, the issue of how to keep the city's identity while also transitioning into a more modern and sustainable settlement became the key focus.

+ ACTIONS AND IMPLEMENTATION

Focus on the goal of co-governance, sharing, and win-win results

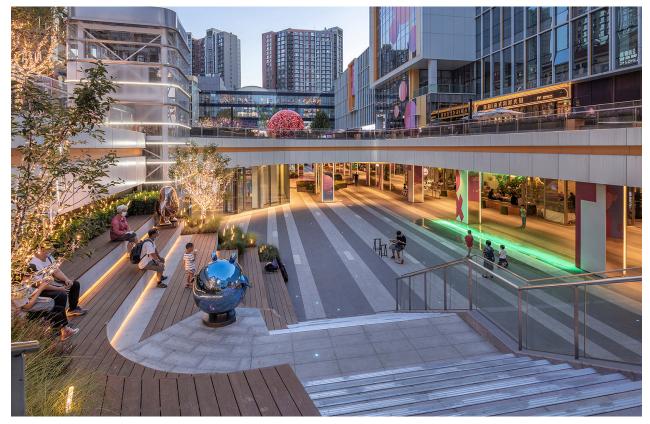
In the early design process of Wangjing Street, the subdistrict office reached a consensus with enterprises nearby through communication and coordination about the mechanism led by the government and invested by enterprises. By doing so, it solved the problem of lack of funds, and that the financial funds were limited by procurement projects. Also, it focused on the interconnectedness of business forms as a whole. The investment in a long-term management in the latter phase of construction were able to address the problem of "Preferring Construction to Management" of environmental construction projects.

Focus on fostering a sound business environment

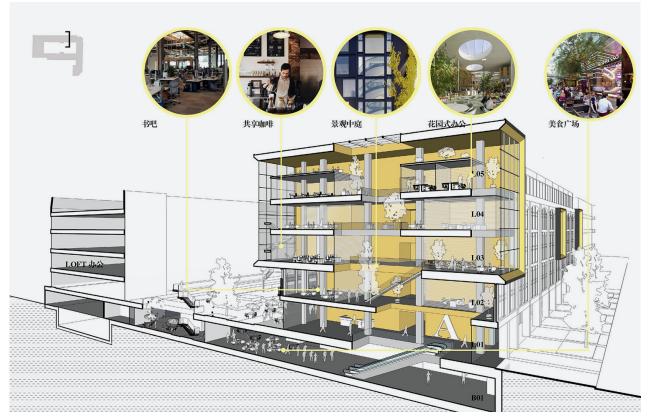
Wangjing Street is mainly lined with the subordinate enterprises of Vanke Group and Fangheng Group on both sides including hotels, office buildings, restaurants, shopping malls, entertainment facilities, which is predominated by the service industry. There are also four residential communities and seven large-sized and medium-sized commercial buildings nearby. The renovation and upgrading project aims to thoroughly change the status quo of chaotic parking, dirty environment and disordered management and to promote the interaction of multiple business forms in the area in order to optimize the business environment, stimulate "night consumption", and develop a vibrant neighborhood economy.

Focus on making international elements prominent

Combined with the relevant arrangements for the construction of the Chaoyang international talent community, and following the guidance from the head of Chaoyang district, Mr. Wen, the design of the project draws on some features and elements of the German commercial pedestrian street. Meanwhile, art exhibits with international characteristics, provided by the Central Academy of Fine Arts in the area, will be displayed for a long time in the future. When completed, Wangjing Street is linked with Vanke Time Square to introduce catering, entertainment and art performance with international features so as to turn the area into a fashionable neighborhood.



Picture.1 Transformation of a rundown commercial district into a multipurpose plaza with a pedestrian walkway which connects the public spaces.



Picture 2. The exhibition front based on the former frame

Focus on speeding up the establishment of a long-term management mechanism

Wangjing Street received strong support from the relevant government departments of Chaoyang district in the early design. Director Liu Bingqi of the Urban Management Committee has given on-the-spot guidance four times, and the representatives from transport departments have also given guidance on transport optimization in the latter phase many times. A number of departments, such as Beijing Municipal Commission of Planning and Natural Resources and Beijing Gardening and Greening Bureau have also provided support in their respective fields. The Wangjing subdistrict office will focus on the long-term management in the later phase, and then accelerate the research program on motor vehicles, non-motor vehicles, shared bicycles, garbage disposal, neighborhood conventions, etc. In addition, as outlined by departments and required by the head of the district, the plan will continue to be improved in order to make Wangjing Street more eye-catching and sustainable, and to exemplify the neighborhood renewal in Chaoyang district.





+ OUTCOMES AND IMPACTS

Wangjing Street has been transformed from a chaotic motor lane into a new international commercial street, integrating office buildings, shopping, leisure and art. Yang Xiaosheng, director of the Wangjing subdistrict office, said that Wangjing neighborhood is home to foreigners from more than 60 countries including a permanent foreign population of over 4,000 who are mainly from South Korea and Germany. There are also six Fortune Global 500 companies and more than 30 multinational enterprises within one kilometer. Therefore, it is one of the earliest neighborhoods in Beijing that gathers international enterprises and foreign talents.

Ms. Yang lives in the Chaoting community to the southeast side of Wangjing Street. Before the transformation, there were many vehicles on both sides of the street including cars, shared bikes and express cars. She felt worried about her son's safety. After the transformation, the environment is much more comfortable for the elderly and children.

On both sides of the street are Vanke Times Center and Fangheng International Center. In recent years, there have been some problems such as road damage, parking chaos, traffic congestion, dirty environment and so on. At the same time, the business forms, space management and service quality were also below par.

"The two commercial spaces on the sides of this street are small. One is more than 40,000 square meters and the other is more than 70,000 square meters. The middle is divided

by green belts, motor vehicles, bicycles and takeout." said Yang Xiaosheng. Before embarking on the renovation of the neighborhood, the officers of the subdistrict asked residents, merchants, enterprises and other parties' opinions, and then came up with the idea of building a pedestrian-friendly street to connect the commercial space.

However, besides Vanke and Fangheng, there are nearly a thousand merchants holding property rights on the street. "It is difficult to coordinate overall design and planning due to many subjects of property rights, and inconsistent demands between merchants and residents." said Yang Xiaosheng. The subdistrict office established a governance structure with a focus on Vanke and Fangheng, the Party Building Coordination Committee as the core, Wangjing Street Autonomy Committee as the foundation, the Merchant Autonomy Alliance and the mobile party branches as the supplement. By doing so, the property rights owners, managers and users were integrated. Inter-departmental cooperation mechanism was also introduced into relevant government departments to solve series of important and difficult problems, such as traffic order, garbage sorting, construction management, catering and standardized management of merchants.

Yang Xiaosheng said that in about two months, the subdistrict office managed to conduct hundreds of investigations and meetings, and finally reached a unanimous and well-considered renovation plan through well coordination of residents, enterprises, merchants, government departments and other parties. According to the final plan, the construction of Wangjing Street began on March 15 and was completed in less than five months.



Picture 3. Wangjing Walk Pedestrian Street

Additional Function - Reforming of the Wangjing Street

At the end of the construction phase, a parking lot on the west side of Wangjing Road has been remodelled into a 300 meter international and cultural pedestrian street, under the concepts of modernity, openness, and quality life. The English name 'Wangjing Walk 'for the pedestrian street is aimed to emphasize the importance of having open, green spaces.



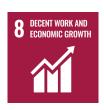
+ REPLICABILITY AND SCALABILITY

With the rapid development of China in the last 40 years, urban construction has also increased. This rise entailed the importance of innovating and repurposing old buildings in urban planning. A good design can constantly self-update and will be an economic and social driving force for the city. The innovation of a city lies not only in beautified facades, but also in upgraded density and function, responsive to the community's needs. It was also emphasized that the community's needs, environment, economy and society should be taken into account.

Conservation of Fort Cornwallis (George Town, Malaysia)

SUSTAINABLE DEVELOPMENT GOALS











Enhancing the cultural identity of George Town through the conservation of Fort Cornwallis and its surrounding historic urban landscape. This project stimulates long-term socio-economic development through culture-led initiatives that further preserve George Town's World Heritage Site status.

Case submitted by: Think City
Case edited by: CityNet Secretariat



Picture 1. Aerial view of Fort Cornwallis and its surrounding areas

+ BACKGROUND

In 2008, George Town and Melaka were the first cultural sites in Malaysia to be selected as a UNESCO World Heritage Site. The joint inscription of the two cities was based on the Outstanding Universal Value (OUV) embedded in their living and built heritage.

Fort Cornwallis, a landmark that represents the early development of George Town, is the largest and most intact fort in Malaysia. Built in the late eighteenth century, it was initially constructed out of nibong palms before gradually being rebuilt with bricks into the fort we see today. It sits adjacent to the Esplanade, George Town's seaside promenade, and is surrounded by multiple public spaces, including a sports field, a historic fountain garden, and a waterfront area.

The main purpose of the project is to restore Fort Cornwallis to its period of highest significance. However, the project also aims to provide innovative solutions in the conservation and restoration of historic structures and their public spaces, catalyze a new economy based on cultural heritage, and promote inward investment in socio-economic and socio-cultural development.

+ ACTIONS AND IMPLEMENTATION

To protect the UOV of George Town, the Penang State Government created the George Town Special Area Plan in 2016, which contains strategies and action plans for better care and management of the city's heritage buildings. The Planning and Design Guide for the Public Realm was also created, which envisions concept plans for the redevelopment of George Town's northern and eastern seafronts and the upgrading of Fort Cornwallis.



The 5 stages of conservation and restoration of Fort Cornwallis

Stage 1: Preparation of the Fort Cornwallis Conservation Master Plan (CMP)

The Fort Cornwallis CMP provides guidelines for restoration works and for managing the property.

Stage 2: Fort investigation works

A dilapidation audit and site assessment were conducted to record the potential risk or damage to the property before any restoration works were to be carried out.

Stage 3: Archeological works

Archaeological works uncovered brick and stone structures belonging to the moat and led to the discovery of cannons, a mortar, and other smaller historical items.

Stage 4: Preparation of the Fort Cornwallis Conservation and Museological Programme

The Fort Cornwallis Conservation and Museology Programme involves the development of a new cultural heritage museum, an exhibition at the fort, and the curation of narratives for the historical items discovered at the site.

Stage 5: Physical conservation and restoration works on the fort

Fort Cornwallis is being enhanced through the restoration of the storerooms and moat, conservation of the fort wall and bastion, and improvements in landscaping.



Community engagement initiatives

- · Besides the ongoing physical works at the fort, several workshops, knowledge-sharing sessions, and site visits have been organized as part of an effort to build capacity in all stakeholders and partners.
- · A special program known as the Fort Cornwallis Young Archaeologists' Program, led by the USM (University of Science Malaysia) archeology team, was developed to promote awareness on sustainable care for Fort Cornwallis among children and teenagers. This program was a collaborative initiative between GTCDC (George Town Conservation and Development Corporation), MBPP (Penang Island City Council) Department of National Heritage, USM, and Esplanade Park.
- · Open days and engagement sessions involving leading NGOs and special interest groups/ individuals were organized to receive feedback about the project and encourage third party monitoring. This initiative proved to be invaluable as it meets the overall objective of deepening public participation in the project with the goal to initiate more programs in the future.
- · Information about the project is being provided on the site's hoarding boards as part of the strategy to reach out and notify the general public about the project and its intentions.

+ IMPACTS & EXPECTATION

The project has already had a positive impact on the local community and the fort's surrounding areas. This can be seen with the upgrade of the sports field, ensuring more efficient use of the space for the community. Also, students were able to take part in the archaeological excavation works at the site, where they learned about the history of the fort through hands-on excavation and developed a deeper appreciation for the city and country's shared history and heritage through the Young Fort Cornwalllis Young Archeologists' Program.

At the broader level, the project enables planning practices to be introduced within the heritage zone that take into consideration the historic character of the area while enhancing the quality of life for residents. All of these efforts are based on the firm belief in and commitment to the World Heritage values.



Picture 2. Fort Cornwallis Young Archaeologists' Program

Key achievements

- \cdot Cultural heritage capacity building and knowledge transfer at the various stages.
- · Innovative solutions (e.g. Exploration and establishment of sustainable building materials, methods and design approaches; introduction of a sustainable urban drainage system for the moat).
- \cdot Preservation of George Town's UOV.

+ REPLICABILITY AND SCALABILITY

Heritage conservation projects will often vary in terms of building/monument size, historical context and significance, and heritage type (natural, tangible, intangible, indigenous, etc.). Nevertheless, the planning and implementation process demonstrated in this project can be replicated in other urban environments.

Key takeaways

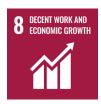
- · Financial support and political commitment from the government is vital for the successful execution of a heritage conservation project or plan.
- · As heritage buildings and monuments hold a unique niche in the urban landscape, projects are bound to face a lack of technical skills and expertise at some point. It is important to keep on tapping into local and international networks to produce solutions to this challenge.
- \cdot A management plan is needed to ensure regular maintenance and long-term sustainability of the project after its completion.
- •The relevance of a conservation project is often questioned or misunderstood. A conservation project is different than conventional development projects as it involves additional layers from initiation to completion (i.e. investigation, test/demonstration, and implementation). Ensuring that stakeholders, partners, and funders understand the nature of project is crucial to better manage project goals, timelines, and expectations.

Rehabilitation Center (Haiyan County, The Tibetan Autonomous Prefecture of Haibei, Qinghai Province, China)

SUSTAINABLE DEVELOPMENT GOALS









The Rehabilitation Center of the Tibetan Autonomous Prefecture of Haibei is a medical platform that integrates medical treatment, rehabilitation and elderly service in a Second Class Grade A hospital with 300 bedspaces.

Case submitted by: Architectural Design and Research Institute of Tsinghua University Case edited by: CityNet Secretariat



+ BACKGROUND

Due to the increasing complexity of medical functions and the long-term neglect of the hospital space's influence on the human spirit, hospital architecture is facing the threat of losing its own architectural value. The development of this project pays attention to social inclusiveness and well-being. The architect aims to redefine the function of a hospital so that it, as a social institution, will be no longer limited to providing medical treatment, but can also provide people with humanistic care, thus becoming a public place for rehabilitating people both physically and mentally.

This project aims to upgrade service accessibility and to improve resource utilization efficiency. The policy guides the local government to carry out the reallocation of regional health resources and the re-planning of medical institutions into a more cohesive system. Improvement of the local people's living standards, the existing medical conditions in Haiyan County, Tibetan Autonomous Prefecture of Haibei, Qinghai Province can no longer meet the regional use and development needs. For this reason, under the policy of National Medical and Health Reform and the implementation of the Belt and Road Initiative, the government of the Tibetan Autonomous Prefecture of Haibei put forward the initiative of establishing a rehabilitation center characterized by Chinese and Tibetan medicine in Haiyan County.





+ ACTIONS AND IMPLEMENTATION

The whole process of the design and construction of this Rehabilitation Center has been supported by Haiyan County Tibetan Hospital and Fujian University of Traditional Chinese Medicine. Haiyan County Tibetan Hospital is familiar with the local background, while Fujian University of Traditional Chinese Medicine provided professional consultation and was responsible for the training of the medical staff. This project is also a construction aid project assisted by Shandong Province, which is by far the largest single investment project on the list of Shandong Province's aiding projects to Qinghai Province in the past ten years.

On the aspects of architectural design itself, the project drew on the prototype of traditional Tibetan architecture, and was in response to the local climate and native culture. The functional service buildings of the Rehabilitation Center (outpatient and medical skills department, inpatient department, rehabilitation department and administrative office) are arranged in a series of courtyards with closed roofs or are completely open. Different from the construction of centralized, large-scale single buildings, the scattered courtyard layout makes the unit scale smaller, and the depth of the building more compact, which can successfully express the traditional architectural features, while still introducing new structures and material.

Moreover, the project follows the low-tech as well as the sustainable design strategy. With the utilization of appropriate technical means, including passive cooling and ventilation, low emissivity coated (Low-E) glass, ecological permeable floor and rain water infiltration utilization system, the Rehabilitation Center turned out to be a low-carbon and environmental friendly project.

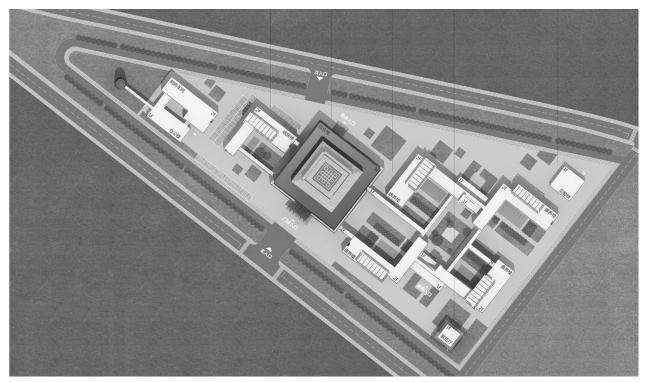
+ IMPACTS & EXPECTATION

The construction of the Rehabilitation Center has been completed and it was put into use on July 1, 2020. The Haibei Prefecture Committee and the Prefectural Government transferred 15 staff from state-level medical institutions, and recruited 20 people to the Center. The center now is equipped with imported DR, imported full-body color doppler ultrasound, fully automatic biochemical analyzer, limb linkage rehabilitation treadmill, lower limb rehabilitation robot, rehabilitation evaluation detection system and other large-sized and medium-sized medical as well as rehabilitation equipment. More than 1400 pieces of rehabilitation equipment installation and their related operation training has been completed.

The software and hardware conditions of the Center are both at the highest level in the region, which is believed to make up for the local medical gaps. Moreover, it is also expected that based on the local characteristics of Tibetan medicine and climatic conditions, the innovative mode of combining the tourism industry with health care services does not only address the local medical needs, but also triggers economic and cultural development of the region.

+ REPLICABILITY AND SCALABILITY

- 1. The innovative economic model of this project is worthy of reference. The designer part is good at exploring local characteristics, and with the success combination of tourism and health care industries, the project is conducive not only to addressing local medical needs, but also serves as a driving force for social, economic and cultural development of the region.
- 2. The implementation of this project reflected the mode of multi-section participation as well as internal and external collaboration. This initiative reached the outcome to support relatively weak areas and improve the local software and hardware conditions. Moreover, the implementation progress of the project effectively avoided the previous traditional mode, which is carried out from top to bottom, from the outside to the inside.



Picture. Master Floor Plan

INSIGHTS

Water Distribution: Water Supply Geographical Information System (GIS)

Case submitted by: Seoul Metropolitan Government (SMG) Case edited by: CityNet Secretariat

+ SUMMARY

The 'Water Supply Geographic Information System (GIS)' utilizes GIS technology to create a digital database of design and property information of water pipes, supporting components, and other urban facilities in general. This helps to organize the analysis of the waterworks database and to maintain a sustainable water management.

+ BACKGROUND

Originally, when a problem arose in a water supply pipe, the information provided by the 2D GIS was limited, making it difficult to respond quickly. To solve this problem, in 2017, SMG built a facility data through 3D GIS and increased the efficiency of its work through stereoscopic information and comprehensive record management.

+ ACTIONS AND IMPLEMENTATION

Creating the GIS to be applied to Seoul's Water Supply System

Based on a 1:1000 scale map, Seoul created a digital database of water supply facilities' location and properties information, which was further improved with additional programs and maintenance. Based on the government's 'Basic Plan for National Spatial Data Policy', it drafted the 'Basic Plan for the Seoul Geographic Information System' and initiated nine new GIS services. SMG also implemented several GI-related policies and projects.

Creating a division fully dedicated to GIS operation and management

The Geographic Information Division consists of one director, water supply GIS DB officials, computer systems managers responsible for water supply GIS maintenance, facility managers for data management, along with a GI specialist, and a DB editor at each of the eight district waterworks offices in Seoul.

Implementing projects to upgrade the water supply GIS & improve DB accuracy

SMG plans to improve its water supply management capability by developing new programs such as 'Pipe Depreciation Assessment/Management Program,' 'Water Supply Asset (Completion) Management Program,' and 'Use Permission Management Program' and by creating a more user-oriented supply system. SMG has been surveying, exploring, and measuring 5,889km of water pipes and supporting facilities through the 'Water Supply GIS DB Upgrade Project'.

+ OUTCOMES AND IMPACTS

- · Water supply management capabilities are improved with higher-quality geographic information system
- · Strict adherence to the Provisions on Public Survey and public survey evaluations led to stronger public confidence in the information
- · Implementation of the World Geodetic System and data standardization provided a basis for conversion and integration with other management systems
- \cdot Reduction in water interruption, rusty water, the number of excavated sites, and maintenance cost

+ REPLICABILITY

Most municipalities in Korea, regardless of size, have their own water supply GIS modelled after Seoul.

CASE ANALYSIS: Water Supply Geographical Information System (GIS)

Column submitted by: Natalie Oh, Think City (Malaysia)

In 2018, non-revenue water (NRW) levels¹ in Malaysia were at 33%; a stark contrast from South Korea's 4%². Seoul's implementation of a Water Supply GIS system is one of the many smart water solutions pursued in South Korea to reduce water wastage and increase water security. To learn by example, this case analysis explores how and why this initiative should be implemented in Malaysia to reduce our NRW levels.

Tapping into Smart Water Management

- Seoul's Water Supply GIS Solution

The 'Water Supply Geographic Information System (GIS)' solution was implemented in Seoul, South Korea, as a solution to the data limitations of the city's existing 2D GIS system. A new smart water supply facility management system was introduced to provide high-quality spatial information and reduce the number of water disruptions experienced by the public. To implement this system, the Office of Waterworks created a team dedicated to the design, implementation, and management of a new 'Water Supply GIS' system. This upgrade enabled more effective collection of facility data for accurate data analysis, record management, and 3D GIS mapping.

The integration of this new Water Supply GIS system resulted in: 1) improvements to the overall water supply management capability; 2) stricter adherence to public survey evaluations and stronger public confidence in the information collected; 3) the integration of an internationally standardized system; and 4) a reduction in leak incidents. All in all, the project was a great achievement in helping to build a smart water system for the city of Seoul.

A Wave of Reform Needed in Malaysia

Malaysia's water industry is currently a shared responsibility between the federal and state governments but is ultimately governed by a single regulatory body. To rectify the disconnectedness and inefficiency between the different statemanaged water resources, the industry underwent reform in 2008 to restructure and centralise water management through the establishment of the National Water Services Commission and Water Asset Management Company³.

Although the reform brought a small but positive impact to the efficiency of water services, a bigger task to improve the water industry is at hand. Largely caused by poor water management and pollution of supplies, water insecurity remains a regular dilemma with unscheduled disruptions occurring across several Malaysia states. In September 2020, 1,292 areas in Selangor were affected by a six-day shutdown of water treatment plants in the state due to odour pollution⁴. Likewise, the 2019 Kim Kim River toxic pollution incident in Johor resulted in the closure of 111 schools after water supplies were tainted by illegal chemical waste dumping⁵.

The integration of a smart water supply management system could reduce the number of water disruptions in Malaysia and improve in the nation's overall water security. This is in line with the aims set out in various national policies and guidelines, such as the Eleventh Malaysia Plan 2016-2020 which highlights the importance of providing quality infrastructure, such as water services.

¹ Non-revenue water: Water produced but lost or unaccounted for

²Ali, A., 2019., Exploratory Study on Digitalization of Malaysian Water Services. EPFL and IGLUS.

³ Kridel, T., 2020. TM R&D and Air Selangor partner on an 'Internet of Water' that optimizes usage, efficiency and more. Inform.

⁴Choong, J., 2020. A history of water cuts in Selangor this year. Malay Mail

⁵Lee, C., 2019. Pasir Gudang fuming: Total of 111 schools closed. The Star.

Other relevant policies include the National Water Resource Policy (2012) and the National Water Vision (2000). These frameworks demonstrate Malaysia's desire to ensure safe, equitable access and supply to water, thus building a case for the adoption of initiatives like the Water Supply GIS system to attain these goals.

An Emerging Tide of Digitalization in Malaysia's Water Industry

There is a growing momentum within Malaysia's water industry to accelerate digitalisation of its systems. For example, the theme of the Malaysia International Water Convention 2019 was 'Advancing innovation, embracing transformation and securing the future', which explored water 4.0, digital adoption, IOT, intelligent water management and sustainable water management⁶. This highlights the shift in the industry towards more digitalised solutions and the likely positive reception towards a new, smart Water Supply GIS system. There are also examples of cities adopting these digital trends. In Melaka, GIS is used to identify customer complaints and map them out for pipe repairs7, while Selangor trialled a Smart Water Integrated Management System as an Internet of Water solution to improve supply management⁶. This trend towards smart water management is also part of a larger effort to pursue 'Smart City' development. The overall movement in favour of digital integration creates a positive enabling environment for the adoption of Water Supply GIS.

Potential Problems in the Pipeline

There are three main foreseeable challenges of implementing the Water Supply GIS system in Malaysia: the financing gap, lack of accessibility to data, and limited human capacity.

A pressing question is who will foot the bill for the upgrading of the GIS system? Implementing a new water supply management system can be time-and capital-intensive, particularly the cost of purchasing or collecting data for a 3D model. Currently, the total revenue of Malaysia's water sector is only sufficient to cover 76% of its total cost. This is further exemplified by the sewerage sector which is only able to collect back 70% of its cost, falling short of the goal to meet at least 81% in order to cover its operating cost⁸. This poses a challenge in financing the upgrade of Malaysia's existing water supply system, further exacerbated by Covid-19 which may see funds prioritised towards economic recovery as opposed to investment in utilities.

The second anticipated challenge is the accessibility and availability of existing data to build a sufficient baseline and enable the transition from a 2D to a 3D GIS model. Implementing parties may either find that current data on the water supply system may be insufficient or non-existent. The utility owner, Pengurusan Air Selangor, in the state of Selangor notes that poor record-keeping and the submission of inaccurate information has resulted in a weak GIS data base⁹. This lack of data could be further hampered, depending on the willingness of existing service providers to offer access to their database. Other potential obstacles include the lack of access to relevant GIS technologies, the human capacity to implement the new supply management system, and an under-developed regulatory framework.

⁶ Asia Research News., 2019. Malaysia International Water Convention 2019. https://www.asiaresearchnews.com/content/malaysia-international-water-convention-miwc-2019 [Accessed on: 11th November 2020]

⁷TM One., 2019. Syarikat Air Melaka sets to pioneer digital water utility. Access: https://www.tmone.com.my/insights/think-tank/articles/syarikat-air-melaka-sets-to-pioneer-digital-water-utility

⁸ Malaysian Water Association., 2020. The Malaysian Water Industry Status and Outlook. Malaysian Water Association.

⁹ Air Selangor., 2019. Air Selangor Guidelines of Digital Data and Utility Map Submission for Underground Utility Survey During Construction.
Pengurusan Air Selangor Sdn Bhd.

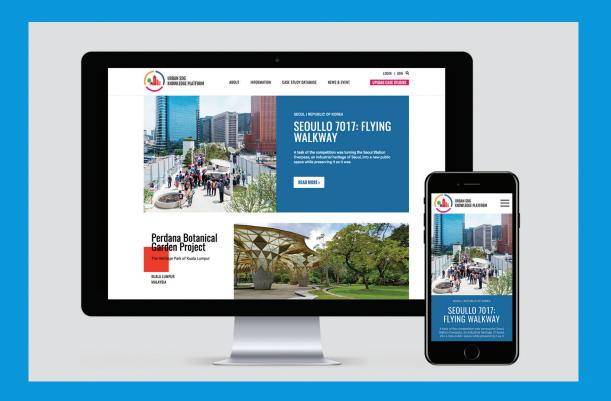
Recommendations - A Fluid Approach

- I. Understand data gaps and local challenges to design a system appropriate for the local context
- II. Develop a self-sustaining financial business model that can robustly justify investment in upgrading the GIS system
- III. Create clear communication channels with all stakeholders for buy-in and cooperation
- IV. Establish a clear governance and implementing structure
- V. Conduct skills training to ensure there is sufficient human capacity to support the establishment and maintenance of a new GIS system
- VI. Set up a dedicated GIS team to follow through and monitor datasets

However, establishing a new GIS management system is only a drop in the ocean of smart water solutions. Stakeholders should think flexibly and creatively to implement smart solutions best suited for their local environment. A holistic approach must also be taken to think beyond technical tools and consider policies, governance frameworks, and other supporting initiatives that work towards ensuring the future of global water resources which are secure, safe, and can meet the needs of a growing population.

Introduction to The Urban SDG Knowledge Platform

The Urban SDG Knowledge Platform www.urbansdgplatform.org



CityNet, the Seoul Metropolitan Government and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) have established the Urban SDG Knowledge Platform to promote and support knowledge sharing and city-to-city cooperation for sustainable urban development. This initiative is a follow-up of the 2016 International Forum on Urban Policy for Sustainable Development Goals (SDGs) held in Seoul, Republic of Korea; and a response to the 2015 Sixth Asia Pacific Urban Forum (APUF-6) Jakarta Call for Action held in Jakarta, Indonesia. Both forums were held in order to deliberate and contribute action-oriented recommendations to the region's leaders, focused strongly on an implementation agenda, including scaling up existing successful practices by fostering knowledge sharing.

The Urban SDG Knowledge Platform is intended to support local action for the implementation of the 2030

Agenda for Sustainable Development, including through up-take and replication of successful initiatives and good practices, conduction of capacity building workshops and technical assistance, and partnering with urban think tanks to analyze best practices implementation in the local level.

Through the Urban SDG Knowledge Platform project, CityNet, the Seoul Metropolitan Government and the UN ESCAP will continuously scale up its efforts to foster sustainable urban development in the Asia Pacific region. By working together among various stakeholders and partners, the Urban SDG Knowledge Platform will keep connecting resources to further contribute to the city-to-city and city-to-multilateral cooperation. Through connecting urban stakeholders together, the Urban SDG Knowledge Platform will ensure that no cities are left behind from the implementation of the 2030 Agenda for Sustainable Development.



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