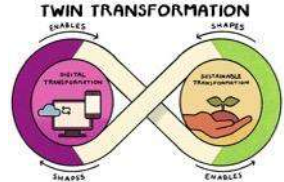
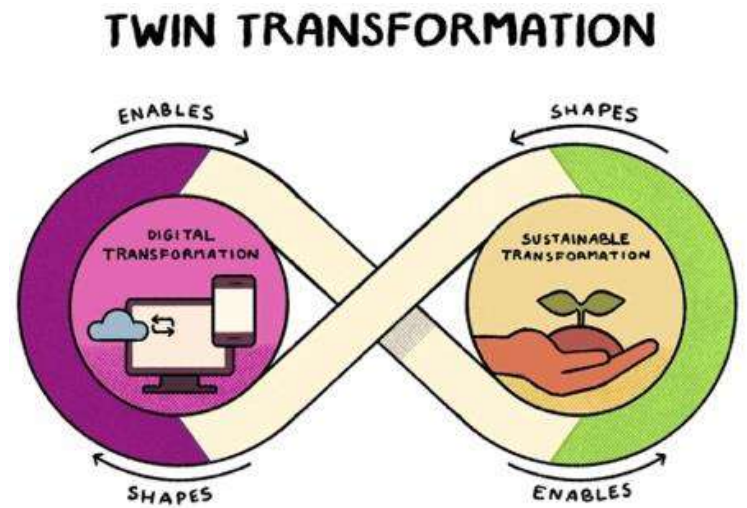
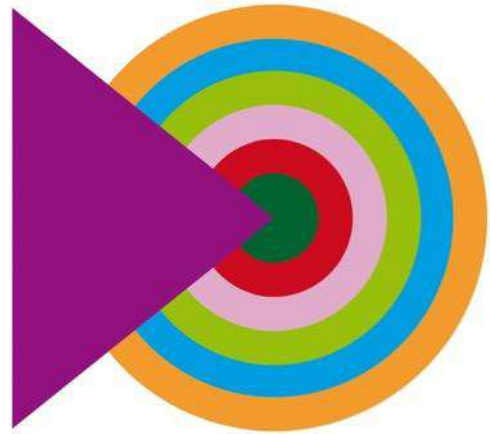


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Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia



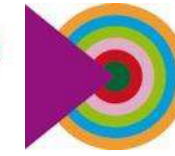
B4P TM KICK-OFF CONFERENCE



Monday, 09 March 2026

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia



Warming-Up Session

Moderation: Neele Worthmann & Anke Blöbaum

Build4People WP Behaviour Change”

Otto-von-Guericke-University Magdeburg



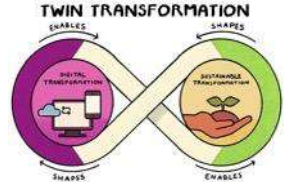
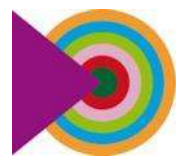
**Neele
Worthmann**



**Anke
Blöbaum**

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Introduction to Agenda

Prof Dr Tep Makathy

Director of CIUS, Prof of FAUP-PUC and RUA (Urban and Regional Planning Program)

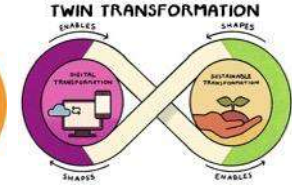
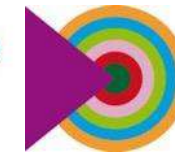


Tep Makathy



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Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia



AGENDA: B4P Transition Manufactory 2026 #1

08:00-08:30: Technical Set-up and Registration

08:30-08:40: Warming-Up Session

- *Neele Worthmann & Dr Anke Blöbaum, University of Magdeburg*

08:40-08:45: Introduction to Agenda of B4P Transition Manufactory 2026 #1

- *Prof Dr Tep Makathy, Director of CIUS, Prof of FAUP-PUC and RUA (Urban and Regional Planning Program)*

08:45-09:00 Greeting Words

- *Dr Michael Waibel, Build4People project consortium representative*
- *Mr. Sor Phara, Deputy Director of Urban Management Division, Phnom Penh Capital Hall*

09:00-09:10: Introduction to Mekong Quay Riverfront City (video clip)

- *Mr. Ousa Chamroeun, Executive Director of TP Moral Group*

09:10-09:20: Hand-over Ceremony of B4P TB Neighbourhood Evaluation Criteria and of Planning & Design Guidelines

Build4People -> TP Moral Group & Den Nokor Co., Ltd

09:20-09:25: Group Photo

09:25-09:40: Guided tour to introduce about Phnom Penh Smart City Hub concept

- *TBD, Consultant to Phnom Penh Smart City Hub development*

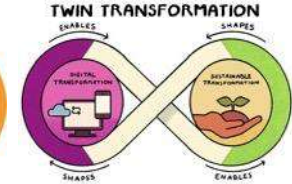
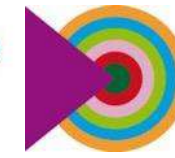
09:40-10:00 Coffee / Tea Break

10:00-10:15: Overview of envisaged activities of the B4P Transition Manufactory 2026 #1

- *Rolf Messerschmidt, CEO of Eble Messerschmidt Partner / Leader of B4P WP "Sustainable Neighbourhoods"*
- *Anja Jannack, Managing Director of the Laboratory of Knowledge Architecture at Technical University of Dresden*

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AGENDA: B4P Transition Manufactory 2026 #1

10:15-11:05: Input Presentations from involved stakeholders in the B4P Transition Manufactory process (each 10 minutes)

1) Input #1: Implementation of sponge city concepts and of blue-green infrastructure solutions: Lessons learnt from the Belgian landscape architecture and urban design practice OMGEVING

Steven Petit, Creative director at OMGEVING, Ho Chi Minh City

2) Input #2: Introduction to building and neighbourhood certification approaches in Cambodia on behalf of MLMUPC

SEANG Mengsang, Den Nokor Co., Ltd

3) Input #3: Introduction about digital green innovation approaches and the potential role of AI in urban dynamics

Dr Niklas Kossow, Head of Division, Smart City & Government Innovation at CityLAB Berlin

4) Input #4: The role of the RUPP-B4P Citizen Science APP to grasp urban climate data and to support digital simulations

Dr Anke Blöbaum, University of Magdeburg

Assistant Prof Dr Bunleng Se, Department of Geography Royal University of Phnom Penh

5) Input #5: Introduction to Visual Utopias of Inclusive Urban Transformation

Sokunlanita May, Co-founder of Women in Architecture and Engineering

11:05-11:25: Q&A and Outlook

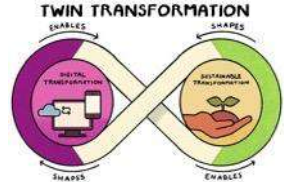
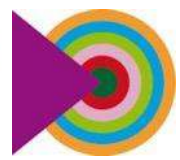
- Moderation: Prof Dr Tep Makathy, Director of CIUS, Prof of FAUP-PUC and RUA

11:25-11:30: Closing Words

- Dr Michael Waibel, Build4People project consortium representative

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Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia



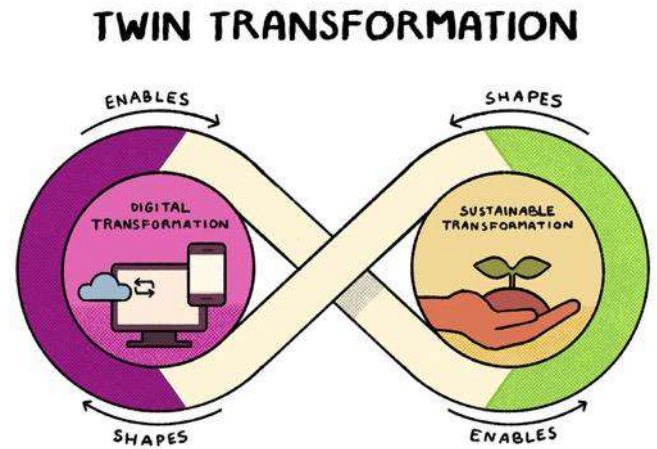
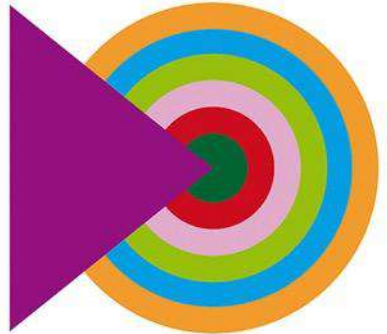
Greeting Words

Michael Waibel

Build4People project consortium representative, Senior Researcher at the University of Hildesheim



Michael Waibel



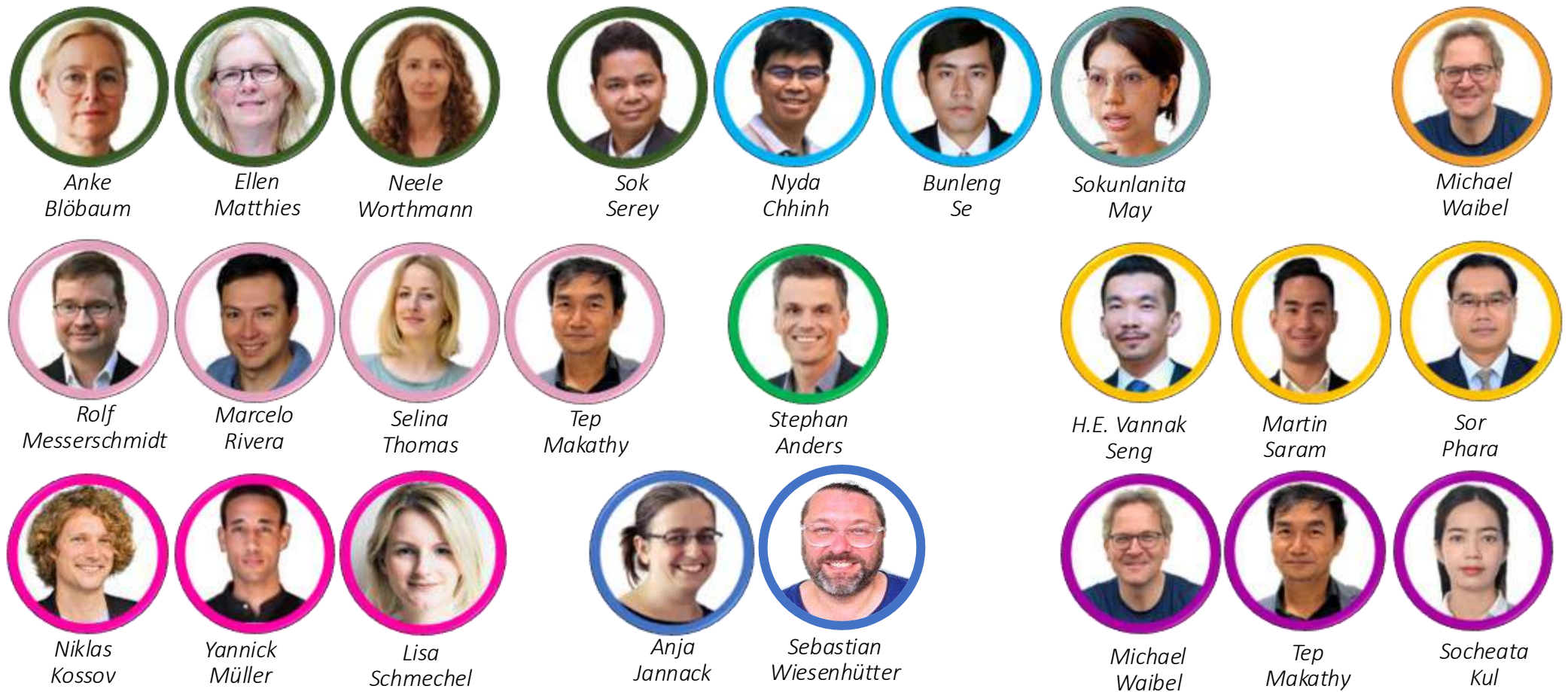
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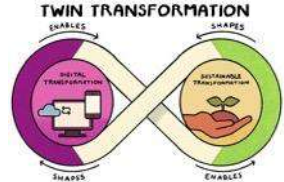
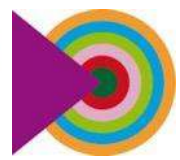
Build4People IMP phase strategy: Diversified team composition

Tackling the Twin Twin Transformation to foster sustainable urban transformation



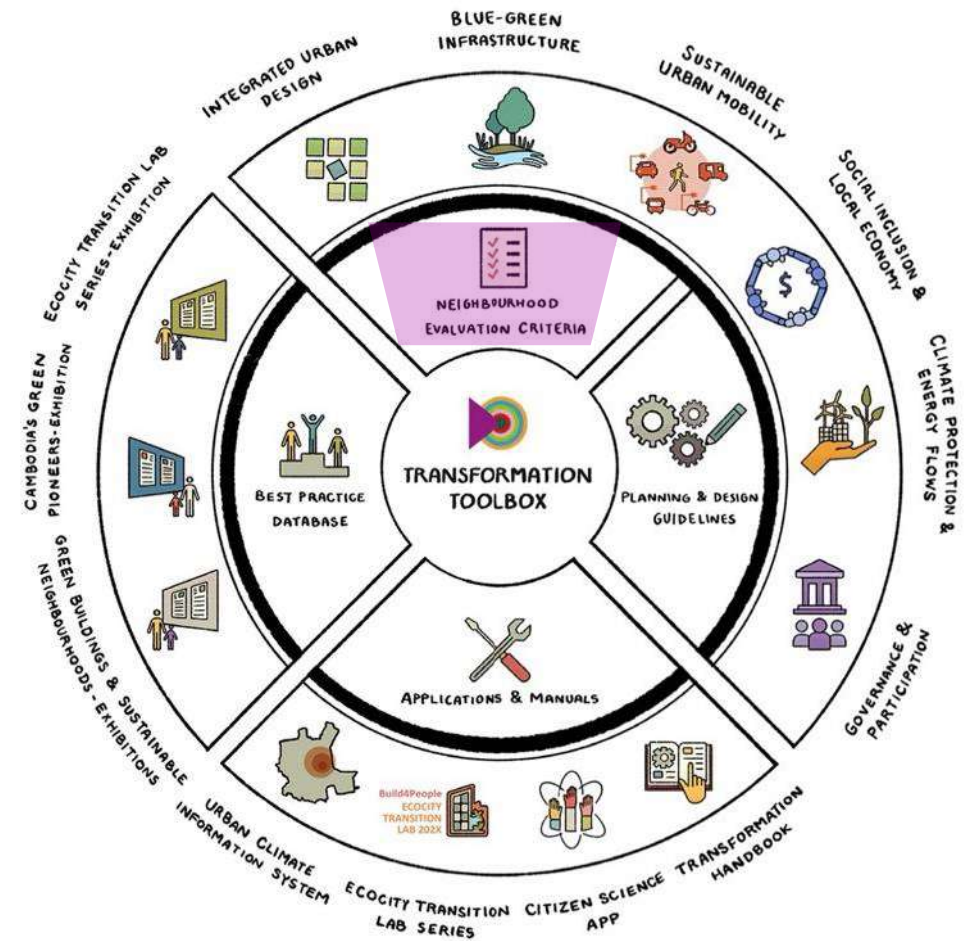
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Core aim of Build4People IMP phase (2025-2027):

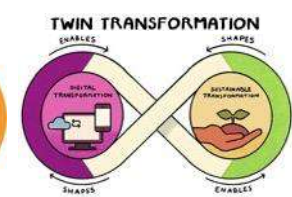
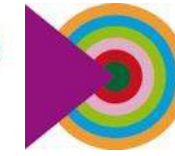
Tackling the Twin Twin Transformation to foster sustainable urban transformation



Establishment of **B4P Transformation Toolbox** as *inter-active information-, public participation-, knowledge-, technology-, and learning platform* supporting evidence-based data-driven decisions as well as scenario building towards sustainability and enhanced quality of life in urban Cambodia.

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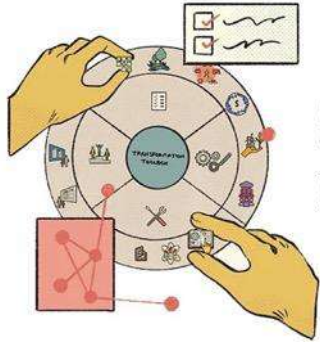
Key Goals of Implementation of B4P Transition Manufactories

B4P TRANSITION MANUFACTORIES



KICK-OFF EVENT

Introduction to B4P Transformation Toolbox as collective learning system to bring together a broad spectrum of actors and test the toolbox criteria

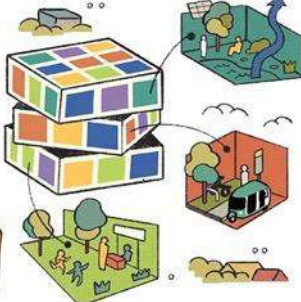


Team Briefing

TRAINING LAB

ON APPLICATION OF DIGITAL PLANNING TOOLS

Presentation of B4P Transformation Toolbox specific components (criteria, guidelines, etc.) and planning techniques

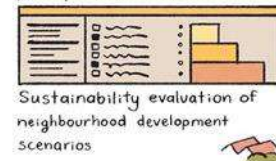


B4P Citizen Science App

Testing scenario building as innovative participatory approach



B4PLab2Go as public participation space

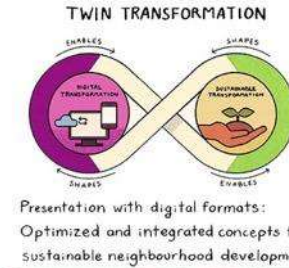


Sustainability evaluation of neighbourhood development scenarios

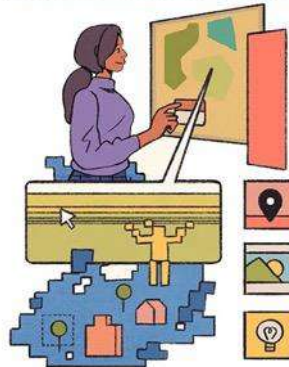


TEAM SITE VISIT

Understanding and studying the Neighbourhood Area



INTERACTIVE PRESENTATION EVENT

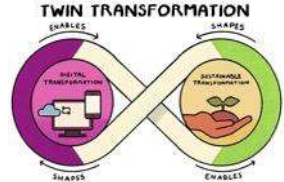
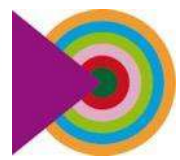


Follow-up format of B4P Ecocity Transition Lab

- 1) to implement Performance-Based Design (PBD) through infusing our B4P TTB Sustainability Neighbourhood Criteria and guidelines
- 2) to develop alternative (digital) visions of sustainable development
- 3) To do trainings in the use of digital urban planning tools
- 4) Step by step to develop a dynamic urban digital model (completed after B4P Transition Manufactory 2026 #2)

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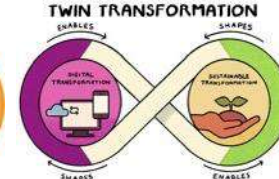


Multi-Stakeholder Involvement and Creation of a Learning Platform for Integrated Planning

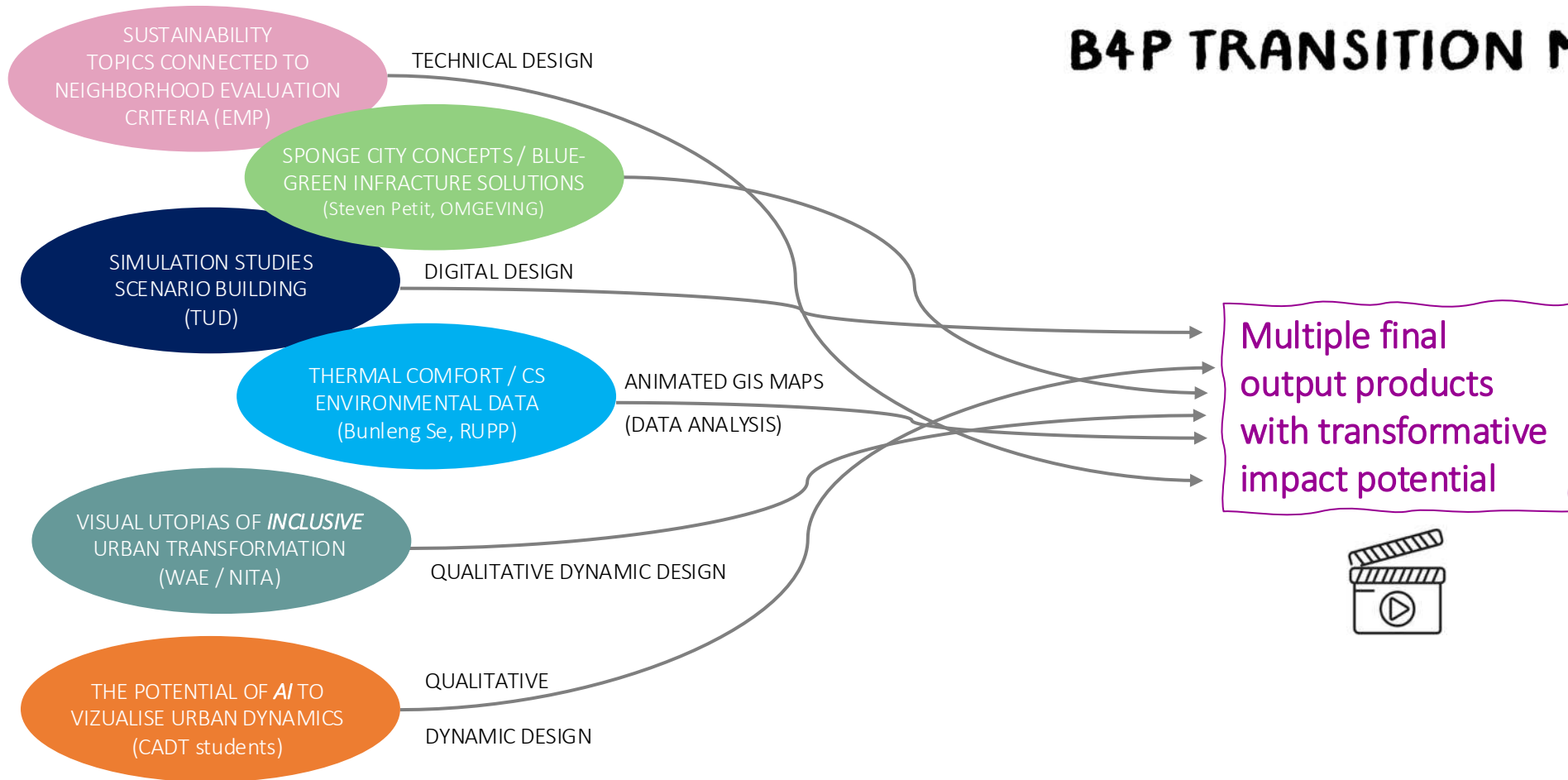
B4P TRANSITION MANUFACTORIES

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Topics for Integrated Planning of B4P Transition Manufactory 2026 #1



B4P TRANSITION MANUFACTORIES

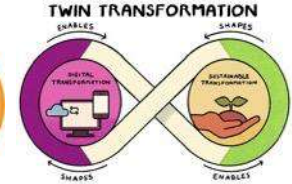
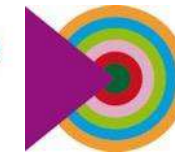
Overarching Aims

- Initiating of a visioning process to create a clear, inspiring, and shared image of an alternative sustainable urban future
- Testing the applicability of our sustainability criteria and establishing them as a governance practice



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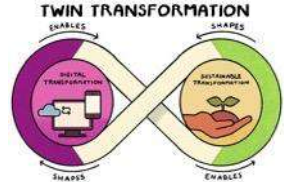
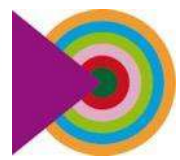
Schedule

B4P TRANSITION MANUFACTORIES

26 February 2026	Sunday 08 March 2026	Monday 09 March 2026	Tuesday 10 March 2026	Wednesday 11 March 2026	Thursday 12 March 2026	Friday 13 March 2026	Saturday 14 March 2026
<p>ONLINE TRAINING SESSIONS in regard of the 1) use of digital planning tools</p> <p>2) NEIGHBORHOOD EVALUATION CRITERIA to prepare for the B4P TM #1 (by TUD / EMP)</p> <p>ANALYSIS + PREPARATION of students, preliminary site, context analysis & data collection of Mekong Quay Riverfront City</p>	<p>12:00 a.m. BRIEFING & SITE VISIT with students, Site Screening of Mekong Quay Riverfront City</p>	<p>B4P TM Kick-off Conference @PP Smart City Hub including Site Visit of TPMG, Den Nokor Co.Ltd, GE Ambassador, GIZ, a.o. stakeholders</p> <p>LUNCHEON H.E. Say Samal, Minister of MLMUPC</p> <p>TUD Introduction Digital Urban tools</p> <p>EMP INPUT B4P TTB Guidelines Input Steven Petit</p> <p>INTERNAL WORKSHOPS & TRAINING</p> <ul style="list-style-type: none"> • Presentation of Analysis • Groupbuilding 	<p>TRANSFORMATION WORKSHOP RUPP: B4P CS App</p> <p>TUD WORK Integrated analysis</p> <p>EMP INPUT B4P TTB Criteria</p> <p>INTERNAL WORKSHOPS & TRAINING</p> <ul style="list-style-type: none"> • Design development and scenarios (Sketches & CAD drawing) • Concept of an urban district in Mekong Quay Riverfront City based on B4P TTB Guideline Criteria 	<p>INTERNAL WORKSHOPS & TRAINING</p> <ul style="list-style-type: none"> • Design development - CAD drawing with the result of an 3D model - Design of Mekong Quay Riverfront City • Application of B4P TTB Evaluation Criteria 	<p>TUD WORK digital integration of 3D models into various simulation studies</p> <p>LUNCHEON GIZ Country Director Matthias Bickel</p> <p>STUDENTS & TEAMWORK Preparation of presentations of outputs</p>	<p>B4P TM Presentation Conference @PP City Hall</p> <p><i>Internal Wrap-Up Session</i></p>	<p><i>Departure Day</i> <i>Build4People team</i></p> <p>+ Site Visit to Headquarter of TPMG (tbc)</p> <p>+ Site Visit to Maker Space CADT</p> <p>+ Site Visit to Den Nokor Co. Ltd. MLMUPC</p> <p>+ Implementation Brainstorming Meeting (tbc) MLMUPC</p>

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Greeting Words

Sor Phara

Deputy Head of Urban Management Division at Phnom Penh City Hall

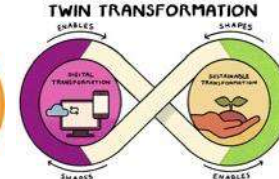


Sor Phara



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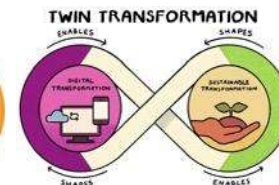


Introduction to Mekong Quay Riverfront City (video clip)



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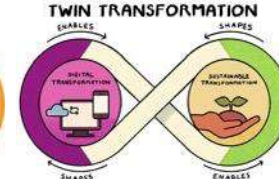


Hand-over Ceremony of B4P TB Neighbourhood Evaluation Criteria and of Planning & Design Guidelines (to TPMG & Den Nokor Co. Ltd)



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Group Photo



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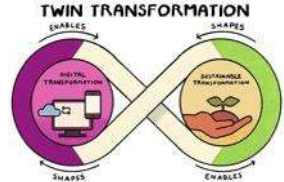
Guided tour to introduce about Phnom Penh Smart City Hub concept

Guidance: *Martin Saram*
Consultant to PPCH



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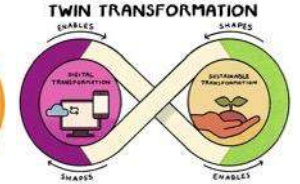
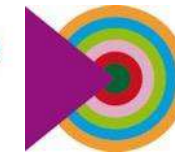


Coffee / Tea Break



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Input #1:

Implementation of sponge city concepts and of blue-green infrastructure solutions: Lessons learnt from the Belgian landscape architecture and urban design practice OMGEVING

Working Group A



Steven Petit

**Creative Director, landscape architect and urban designer
OMGEVING
Ho Chi Minh City, Vietnam**

steven.petit@omgeving.be

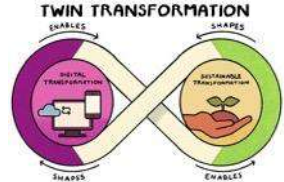
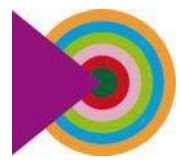




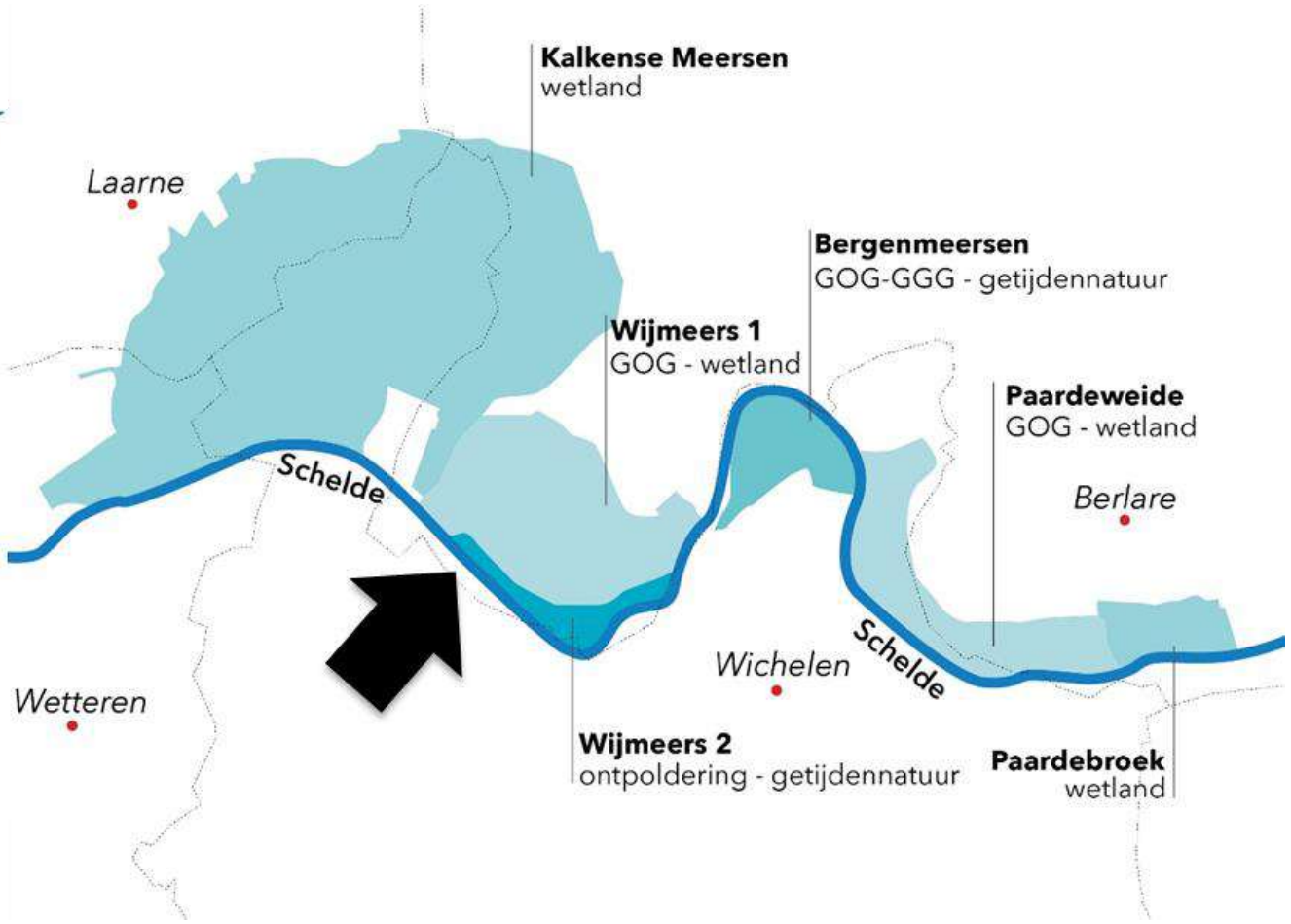
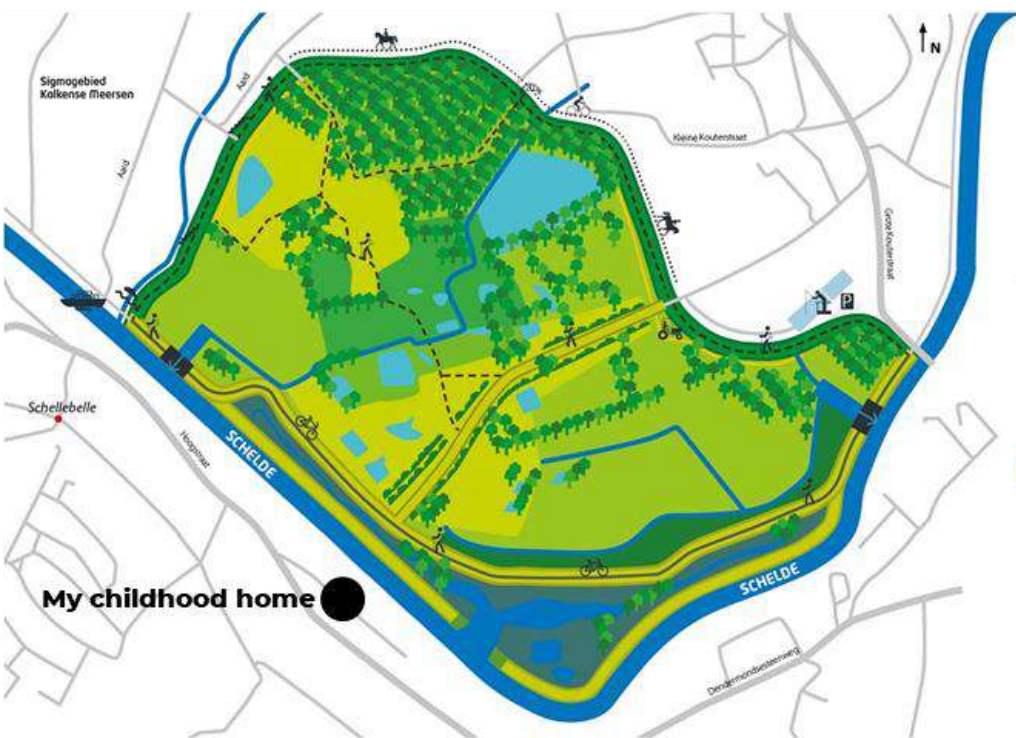
My childhood home

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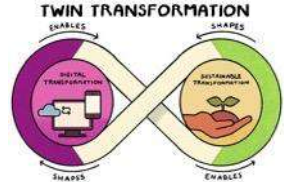
WIJMEERS FLOOD CONTROL AREA . BELGIUM





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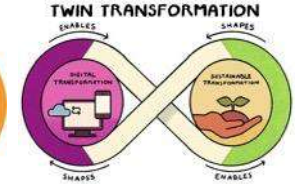
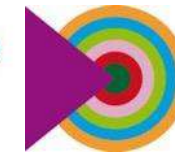
Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia



Mekong Quay: Designing a Climate-Resilient Riverfront City 1. Introduction

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WHY MEKONG QUAY MATTERS?

- A large-scale development still in the early masterplanning phase → maximum opportunity to embed sustainability
- Located in a critical ventilation corridor, providing cooling flows into Chbar Ampov district
- Will be reshaped by major new infrastructures: two new bridges, a ring-road connection, elevated boulevards
- High impact on Phnom Penh's wider metropolitan metabolism: mobility, hydrology and climate



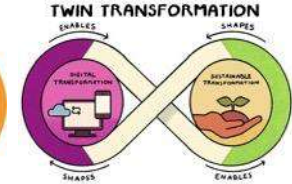
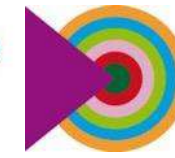
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FONA
Research for Sustainability

SURE
Sustainable
Development
of Urban Regions



TYPICAL CHALLENGES OF LAND RECLAMATION ALONG THE MEKONG

HYDROLOGY & FLOOD RISK

- **Highly saturated, unstable reclaimed soils**
- **Very limited infiltration capacity → accumulation of runoff**
- **Exposure to both river flooding and intense monsoon rainfall**

HEAT & WIND DYNAMICS

- **Blocking the natural wind corridor increases urban temperatures**
- **Slab-type building clusters create heat traps and reduce ventilation**

ECOLOGICAL DISCONNECTION

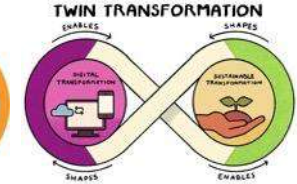
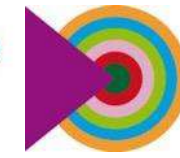
- **No existing ecosystems on reclaimed land → blue-green networks must be designed from scratch**
- **Risk of “cosmetic green” if not structurally embedded**

MOBILITY PRESSURES

- **Two new bridges will concentrate large mobility flows**
- **Without TOD principles, congestion becomes inevitable**

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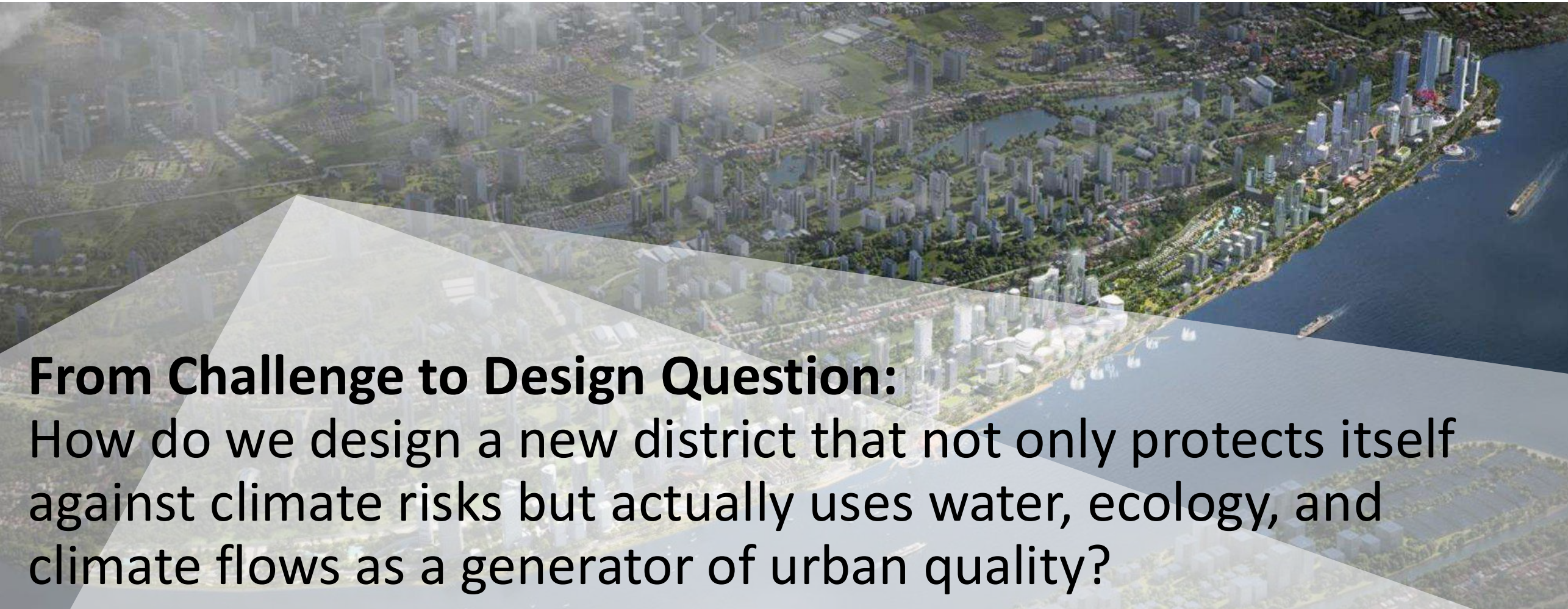
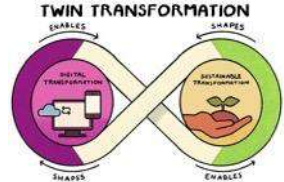
WHY SPONGE CITY & BLUE-GREEN INFRASTRUCTURE ARE ESSENTIAL HERE

- Reclaimed land has zero natural sponge capacity
→ urban water management must be engineered holistically
- Direct adjacency to the Mekong demands flood-adaptive design
- Phnom Penh traditionally struggles with drainage, heat, and fragmented open space: Mekong Quay can transform this pattern



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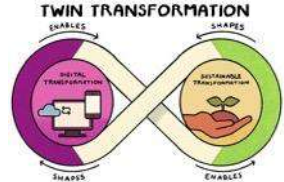


From Challenge to Design Question:

How do we design a new district that not only protects itself against climate risks but actually uses water, ecology, and climate flows as a generator of urban quality?

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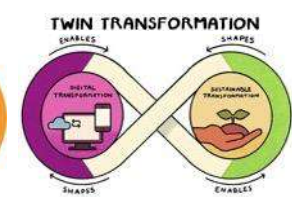
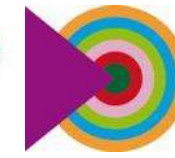
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Sponge City & Blue-Green Infrastructure 2. Theory

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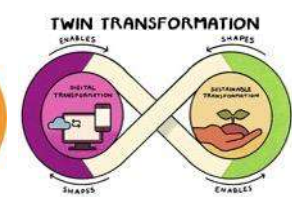
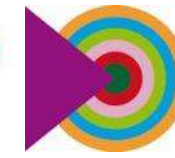
WHAT IS A SPONGE CITY?

- Urban water system that mimics natural hydrology
- Manages rainwater through Infiltration – Storage – Reuse – Conveyance
- Integrates nature-based solutions + grey infrastructure into one system
- Reduces flooding, heat, and improves water quality and urban livability



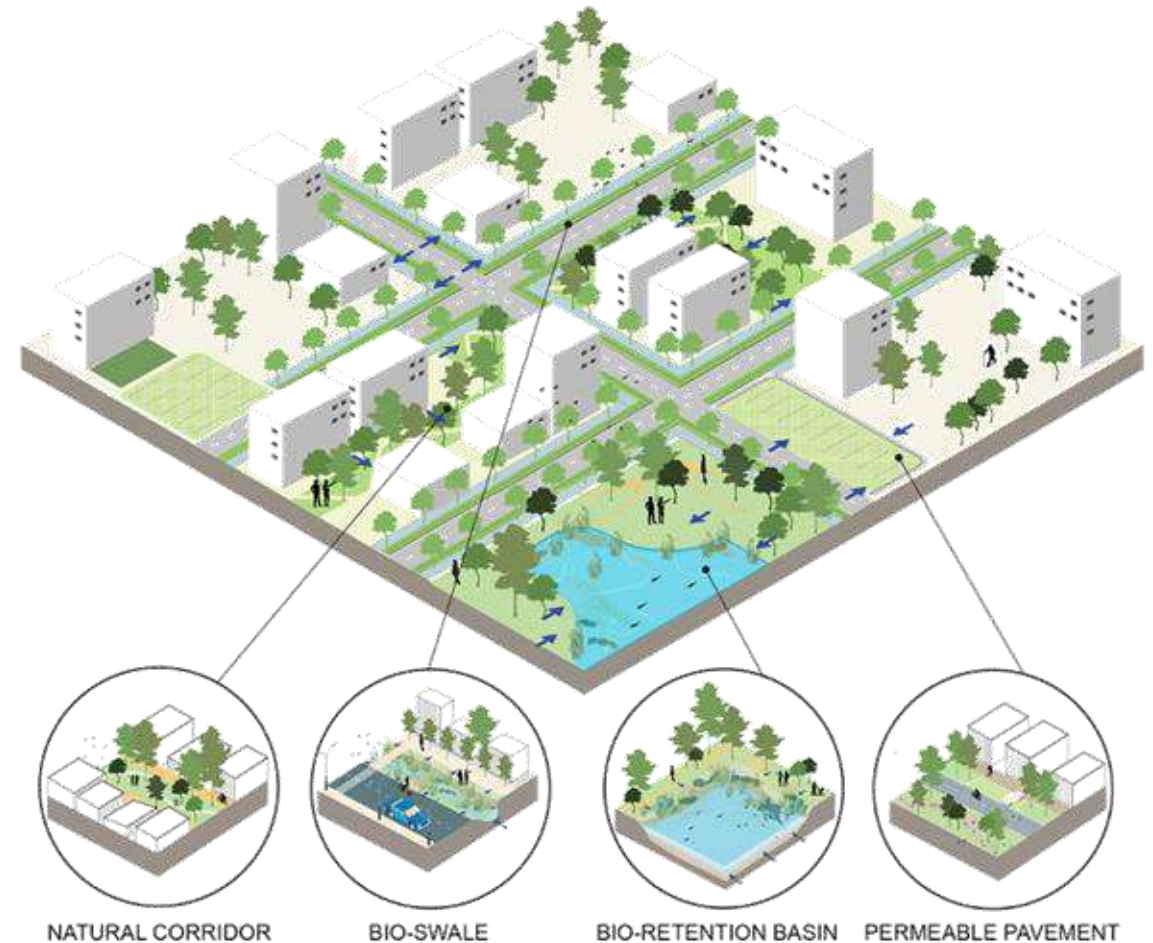
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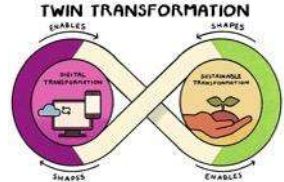
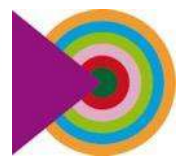
WHERE DOES BGI FIT?

- **BGI = Blue + Green Infrastructure**
- **Blue: wetlands, lakes, canals → store & move water**
- **Green: trees, parks, rain gardens, permeable surfaces → absorb & filter water**
- **BGI is a core component of Sponge City systems**
- **Relieves and right-sizes grey drainage networks**

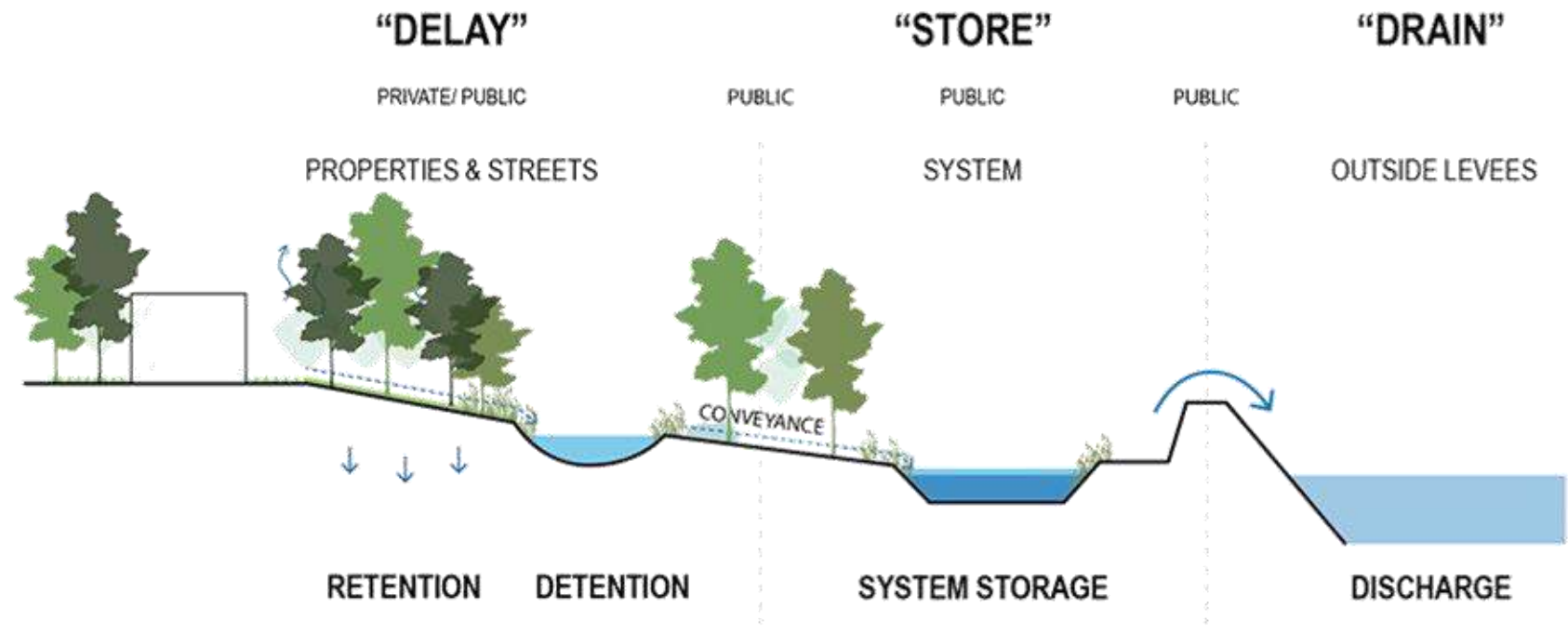


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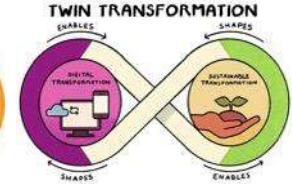
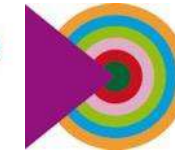


BGI & THE 'DELAY-STORE-DRAIN'-PRINCIPLE



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WHY THIS MATTERS FOR MEKONG QUAY

- Land reclamation = zero natural sponge capacity
- Adjacent to Mekong → extreme flood & monsoon exposure
- Site lies in a ventilation corridor > BGI helps maintain wind & reduce heat
- Masterplan is early-stage → unique chance to embed Delay–Store–Drain from the start
- B4P guidelines already promote integrated BGI approaches



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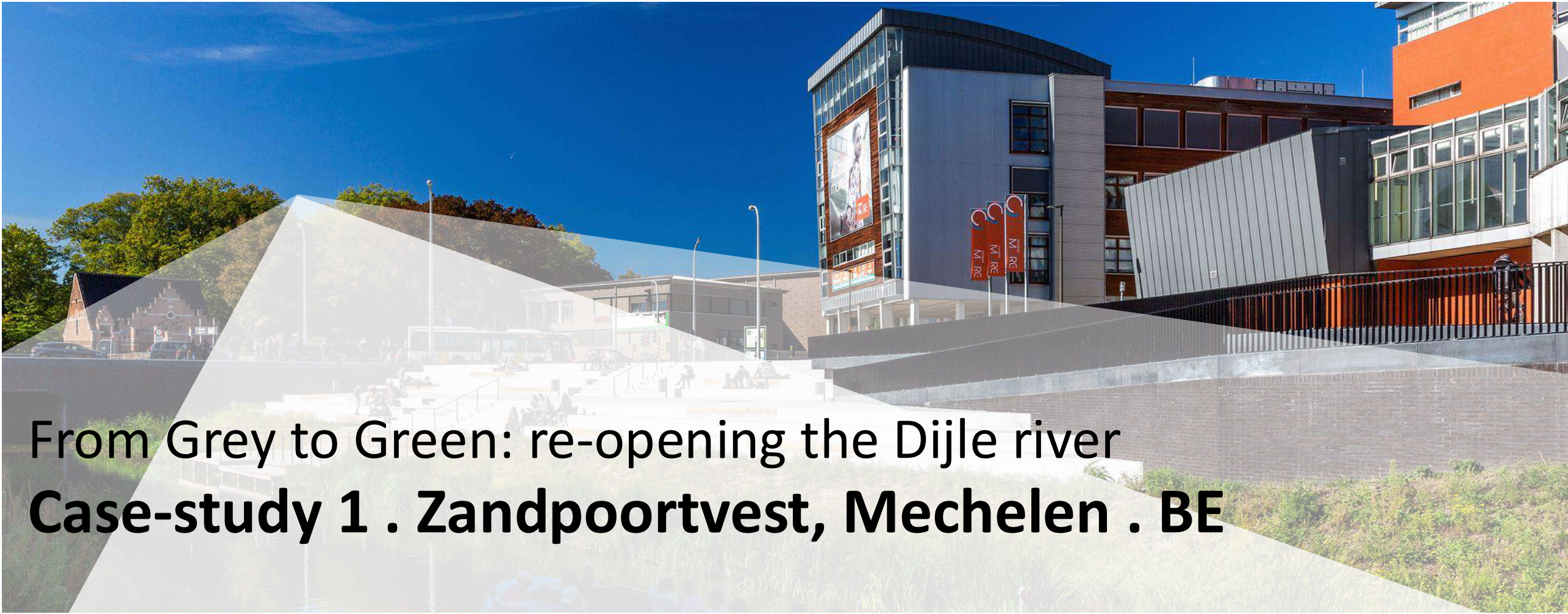
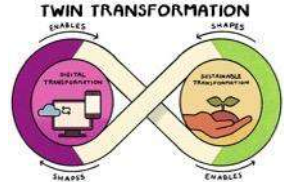
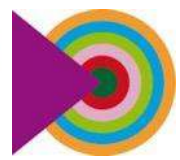


From Theory to Practice: Turning Sponge City & BGI Principles into Place

3. Practice

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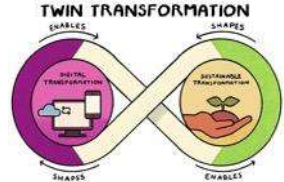
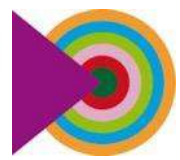


From Grey to Green: re-opening the Dijle river
Case-study 1 . Zandpoortvest, Mechelen . BE



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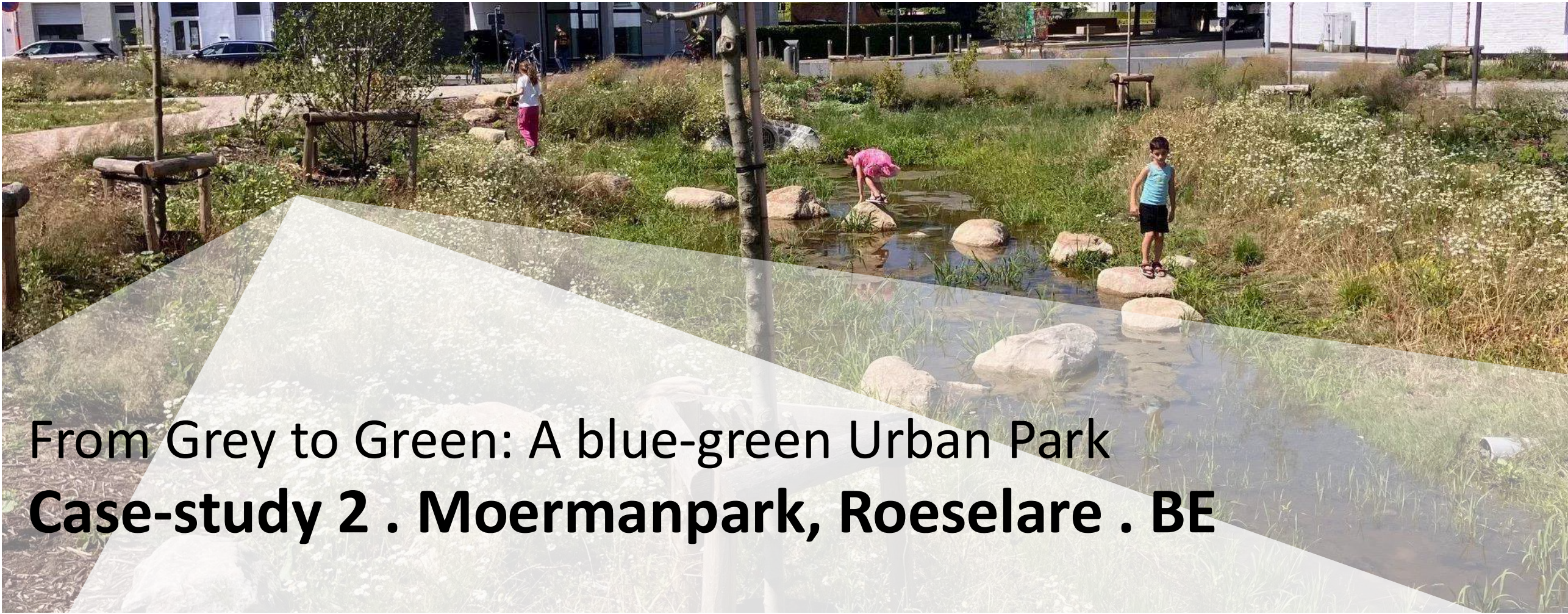
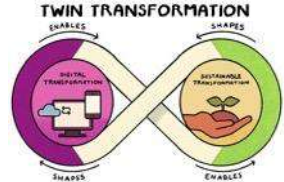
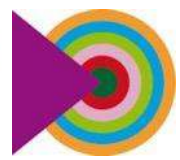
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From Grey to Green: A blue-green Urban Park Case-study 2 . Moermanpark, Roeselare . BE



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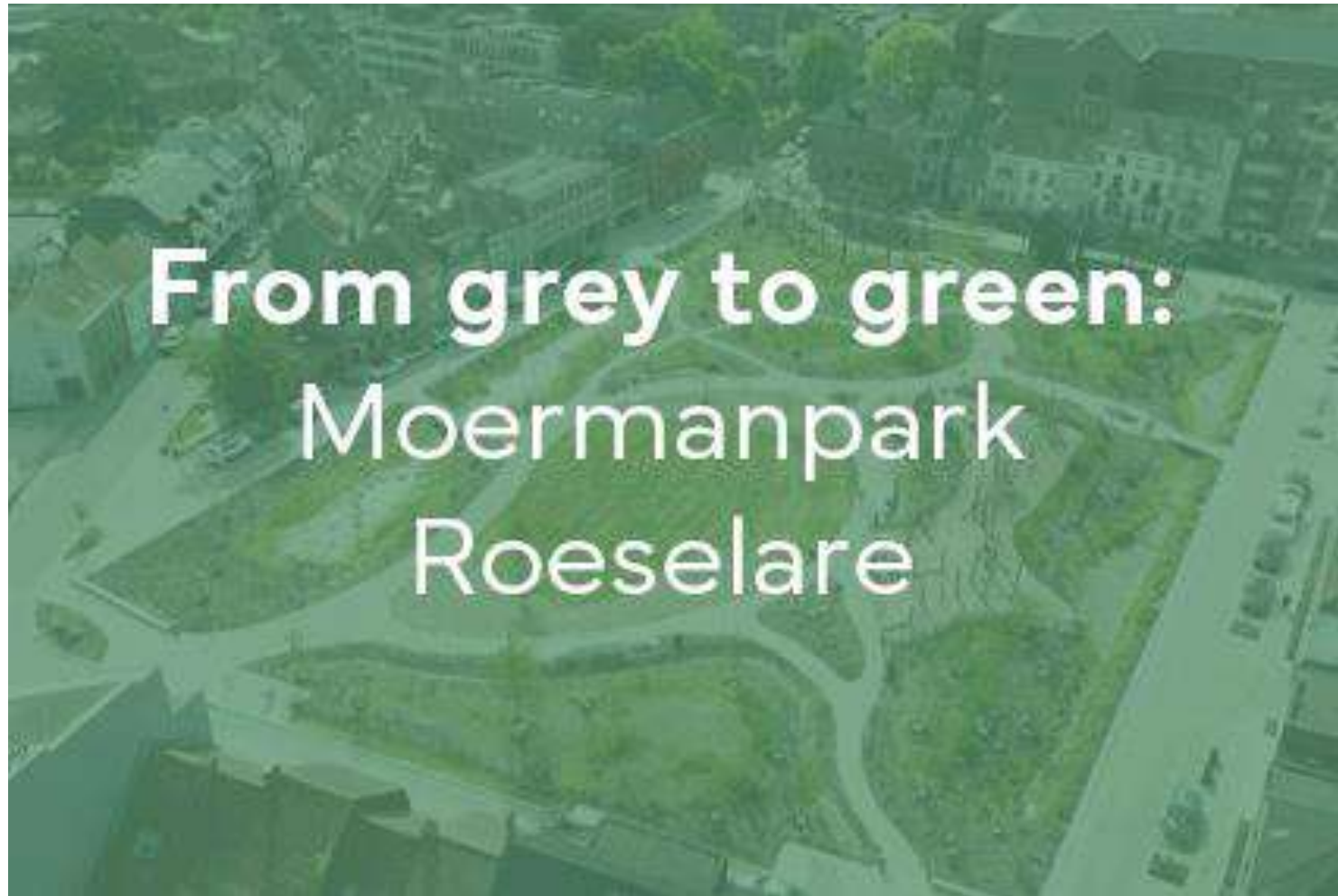
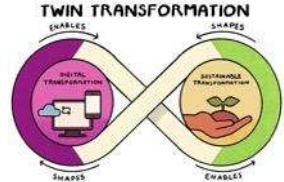


MOERMANPARK



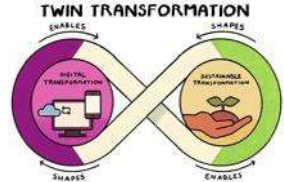
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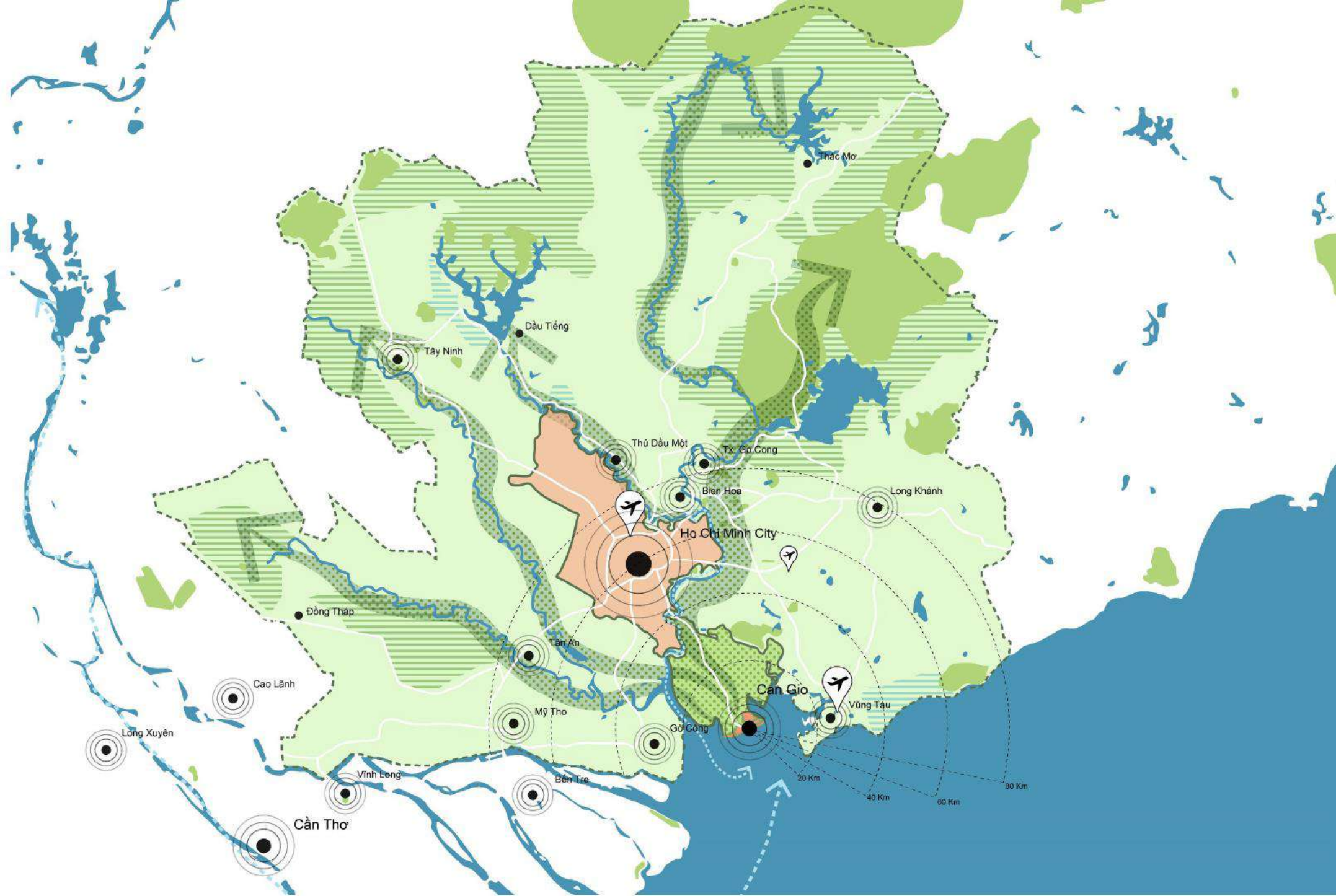
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From Land Reclamation Project to Mangrove City Case-study 3 . Can Gio, HCMC . VN

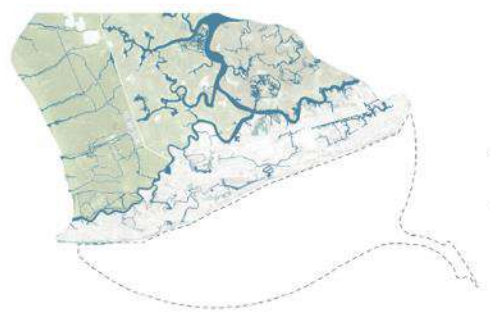
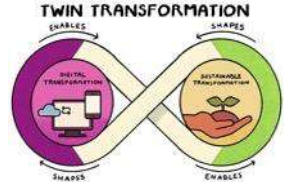
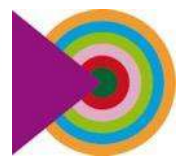




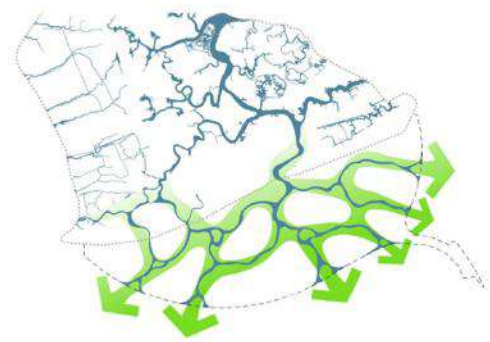


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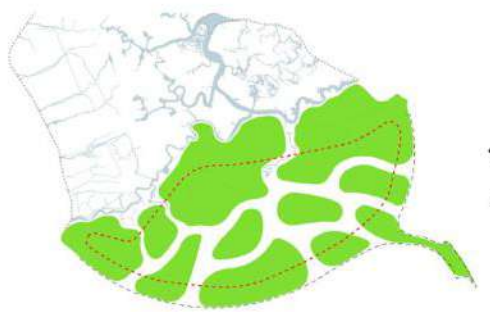
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Existing Site Condition



Expansion Of Mangrove Eco System



Network of Islands



Polycentric Urban Development





-  school
-  police
-  hospital
-  temple
-  resort
-  high-tech center
-  recycling center
-  hydro energy
-  water supply station
-  iconictower
-  eco-tourism infrastructure
-  forest
-  green buffer / park
-  residential / core area
-  historical village center
-  villas
-  resorts
-  exclusive resort-island
-  high-tech park
-  agriculture
-  harbour
-  historical site
-  mangrove



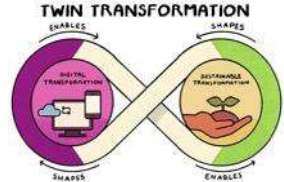
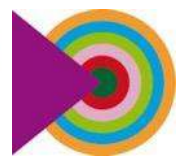






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A blue-green vision towards integrated flood risk management Case-study 4 . Thu Duc, HCMC . VN

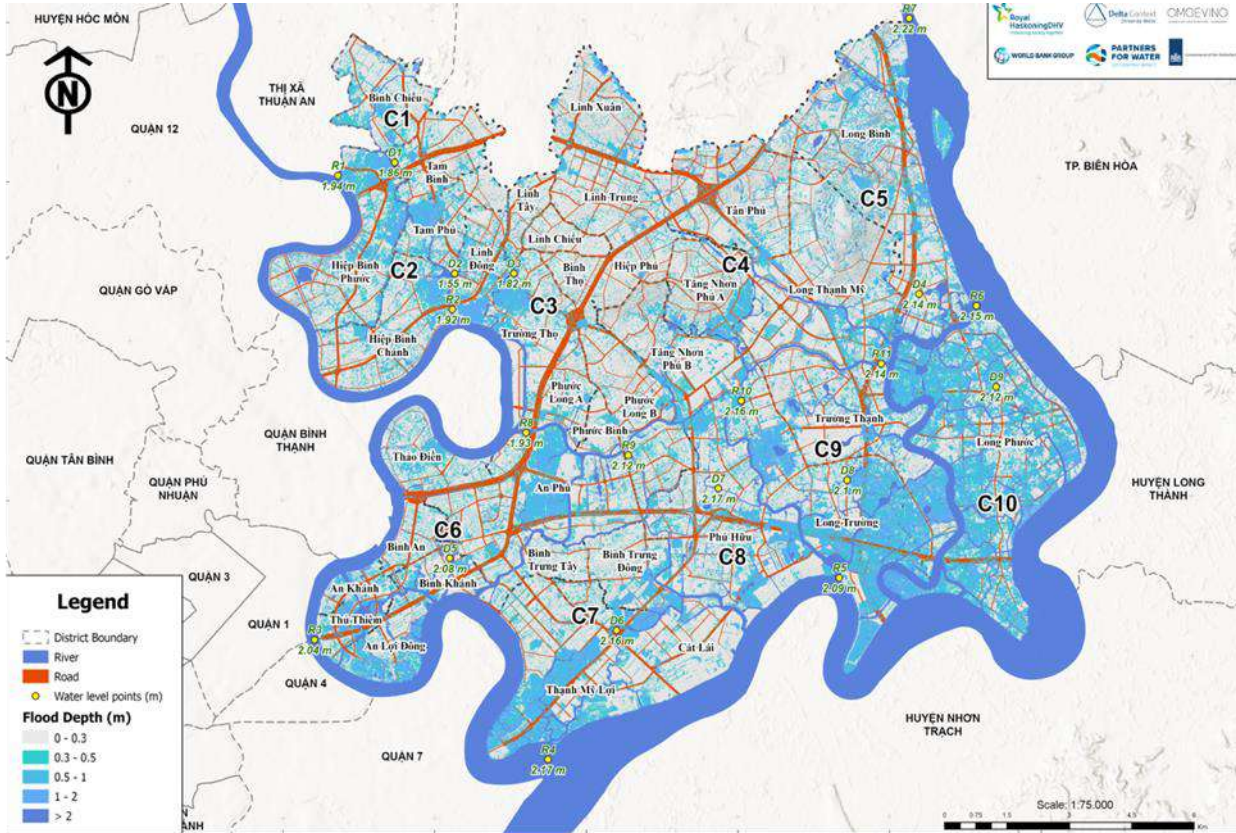


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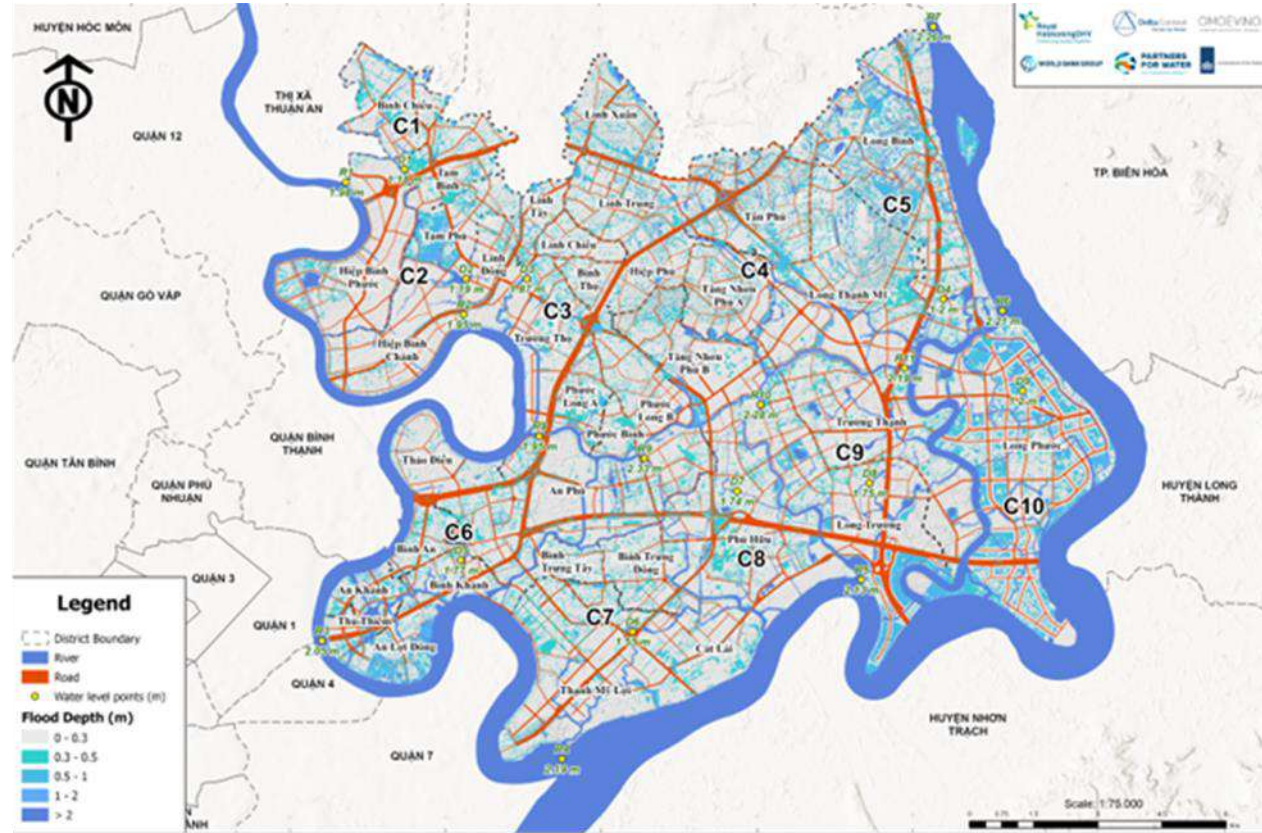
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THU DUC CITY FUTURE FLOOD HAZARD AND RISK MAPPING ANALYSIS



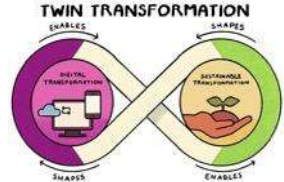
Flooding Do-Nothing 2050 1/100-year event . Source: Royal HaskoningDHV



Flooding Option F 1/100-year event . Source: Royal HaskoningDHV

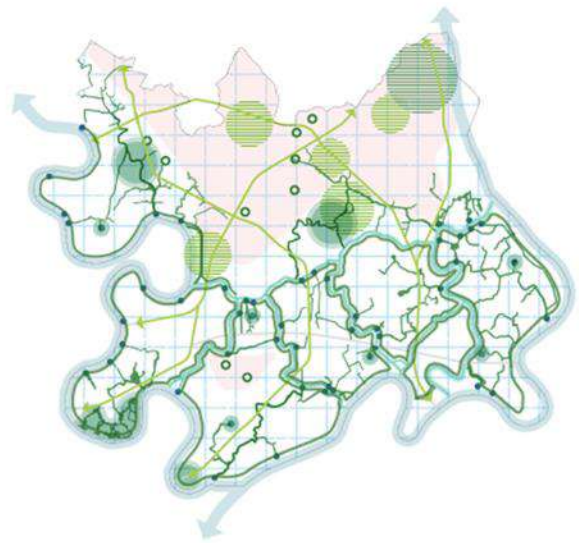
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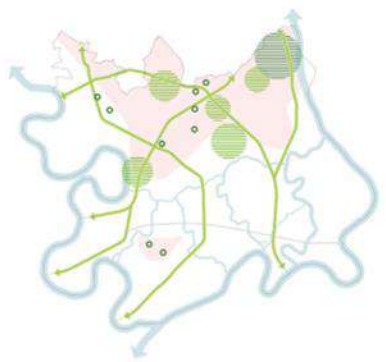


THU DUC CITY MAIN VISION AND STRATEGIES

BLUE-GREEN NETWORK



DELAY



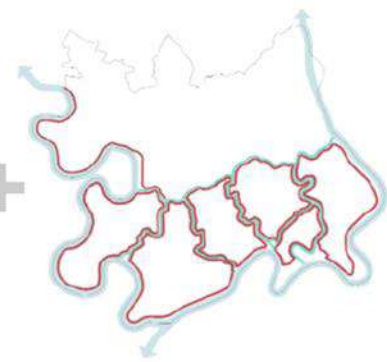
STORE



DRAIN & DISCHARGE

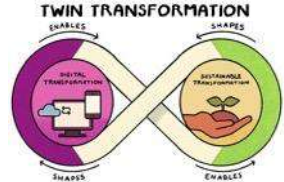
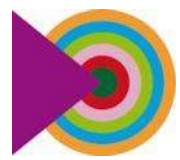


PROTECT

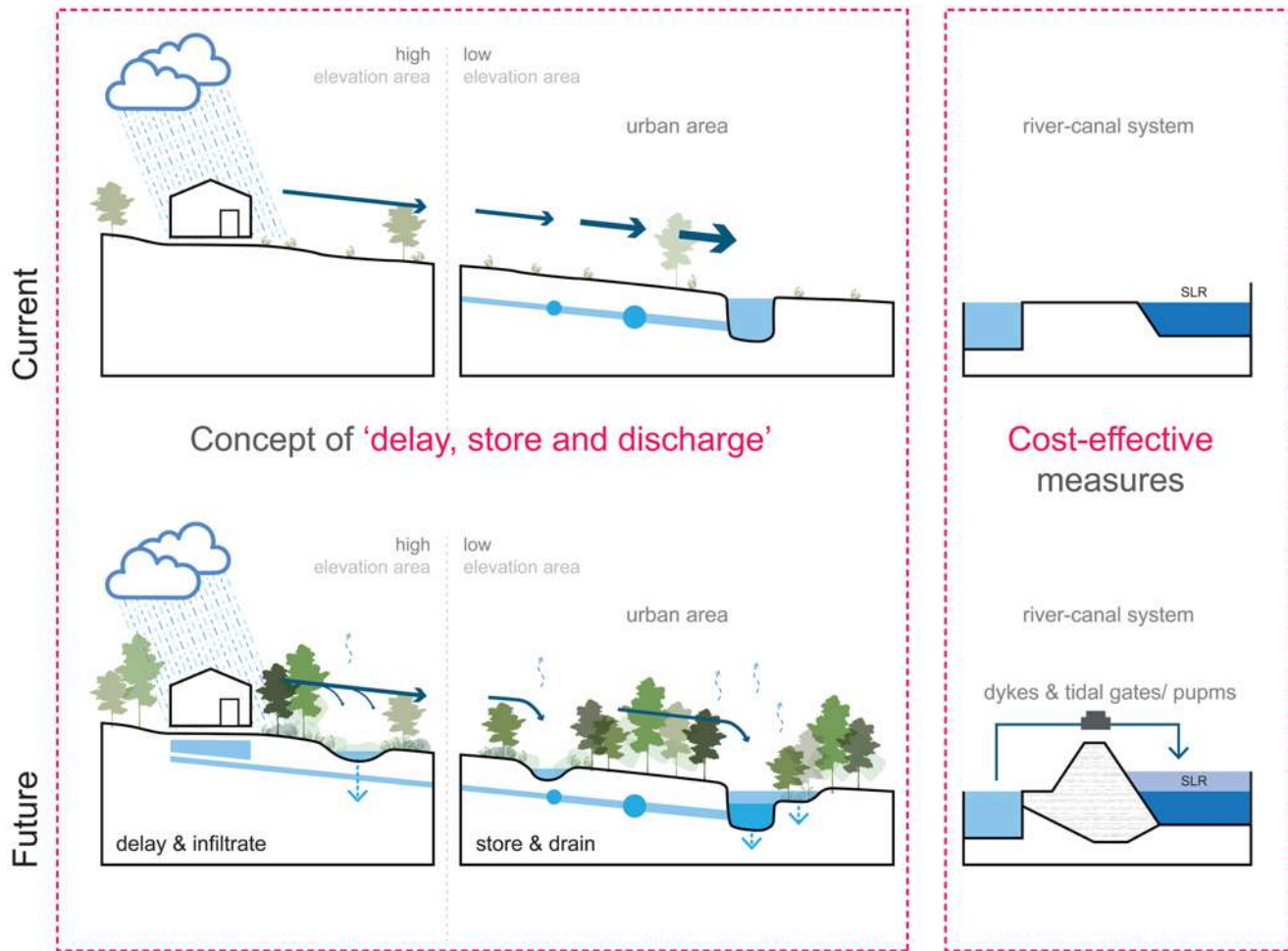


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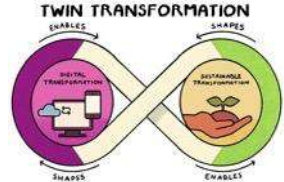
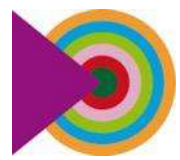


THU DUC CITY MAIN VISION AND STRATEGIES

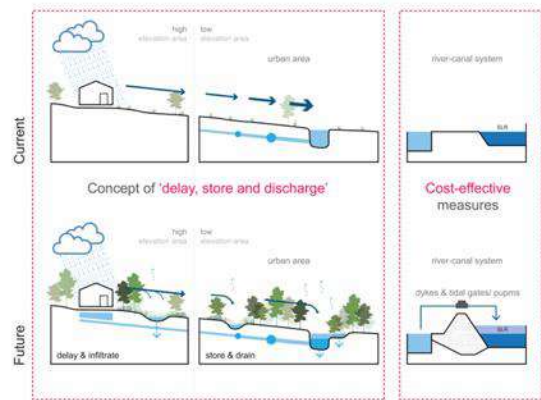


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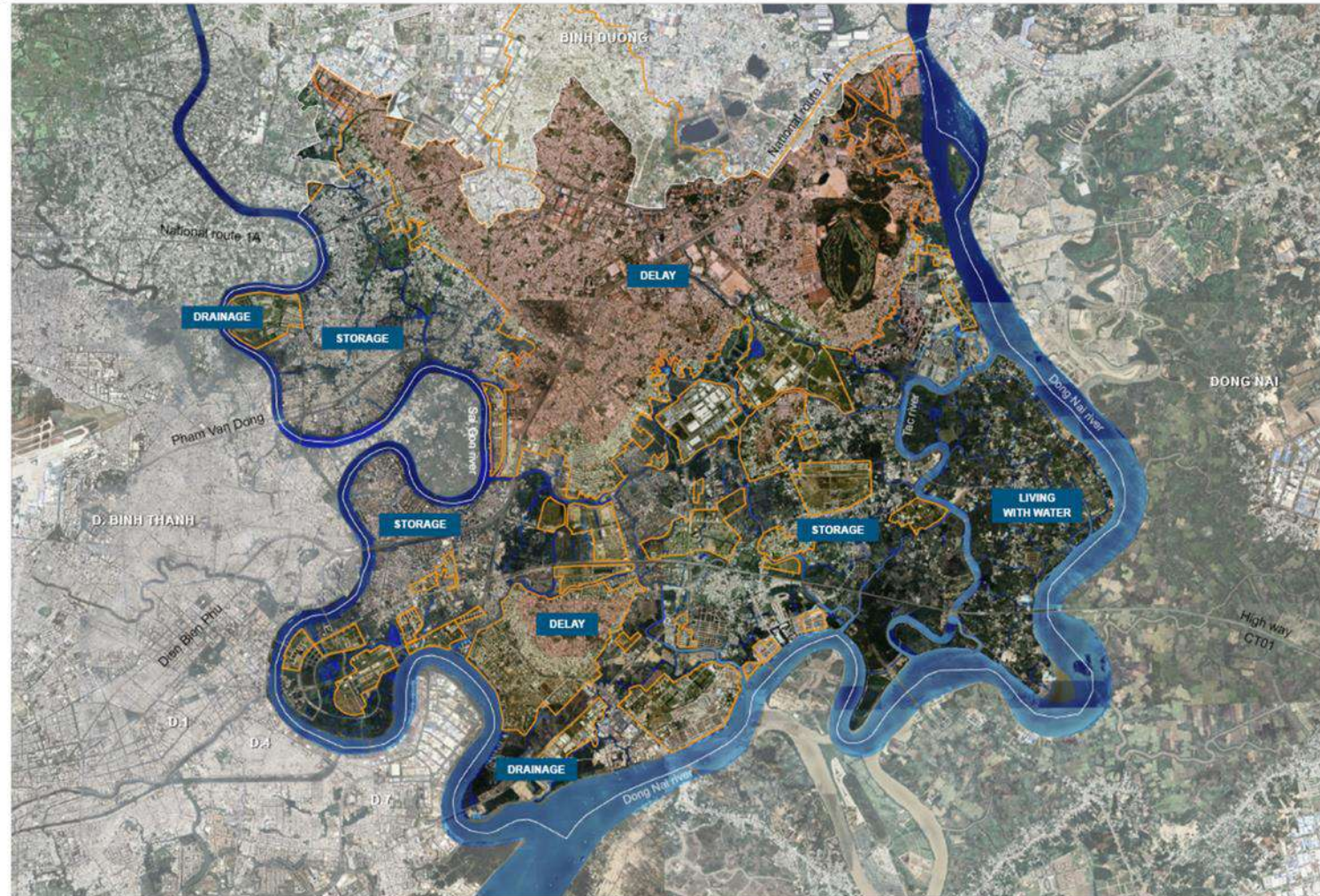
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APPLICATION KEY CONCEPT 'DELAY, STORE, DRAIN AND DISCHARGE'

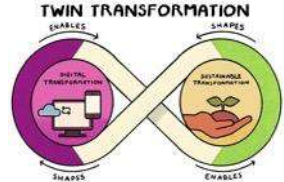
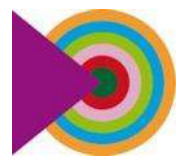


- historically higher elevated area
- recently higher elevated area for new development



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INTEGRATED FLOOD RISK MANAGEMENT TOOLBOX WITH NBS

DELAY

Location
HIGH ELEVATION AREAS

Goal
FLOOD DETENTION TOOLS

Existing and new urban fabric higher elevated areas

"New green infrastructure for high elevated Thu Duc" Urban detention tools

Applications



blue-green building



green corridor



urban forest/ green space



open space with water storage



STORE

Location
LOW ELEVATION AREAS

Goal
FLOOD RETENTION TOOLS

Enforced and protected blue-green network

"Resilient blue-green network for low elevated Thu Duc" Blue-green storage tools

Applications



natural wetland park



natural pond



natural canal park with increased water storage



wetland pocket park



DRAIN & DISCHARGE

Location
OVERALL INFRASTRUCTURE

Goal
URBAN DRAINAGE TOOLS

Improved and renewed urban drainage system for overall urban fabric

"Equiped Thu Duc" Urban drainage and discharge tools

Applications



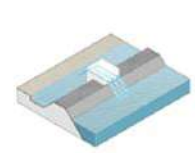
bio-swale



upgraded or extended sewer system with decoupled rainwater



sluice gate as movable closure tidal gate/ navigation lock



pump construction



PROTECT

Location
EDGES

Goal
FLOOD PROTECTION TOOLS

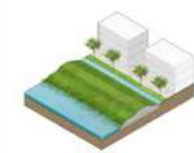
River edge and edges main canals protected with dikes

"Protected Thu Duc in several dike configurations" Dike protection tools

Applications



upgraded existing dike



new green dike



ground raising with green embankment

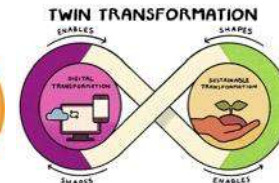


raised road



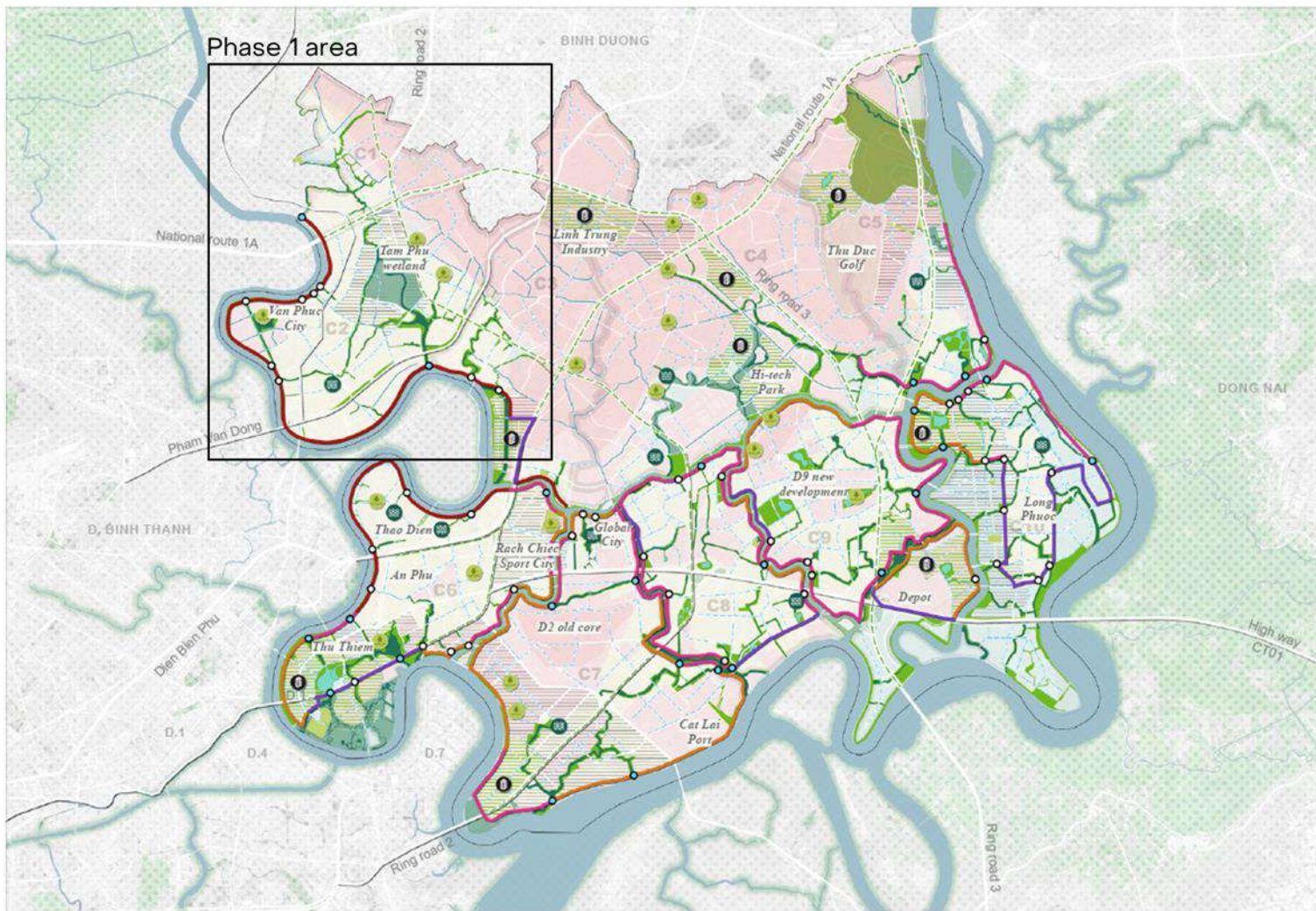
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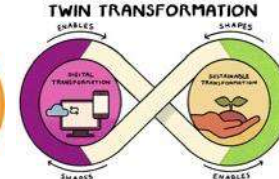
APPLICATION OF TOOLBOX ON THU DUC CITY SCALE

- PROTECT . Flood protection tools**
- existing dike
 - new green dike
 - ground raising with green embankment
 - raised road
- DELAY . Flood detention tools**
- green corridor
 - urban forest | green space
 - open space with water storage
 - new development with blue-green building
- STORE . Flood retention tools**
- natural canal park
 - natural wetland park
 - wetland pocket park
 - natural pond
- DISCHARGE . Urban drainage tools**
- sluice gate
 - pump construction
 - upgraded or extended sewer system
- historically higher elevated area
- recently higher elevated area for new development
- low-level area
- ecological area
- future urban development



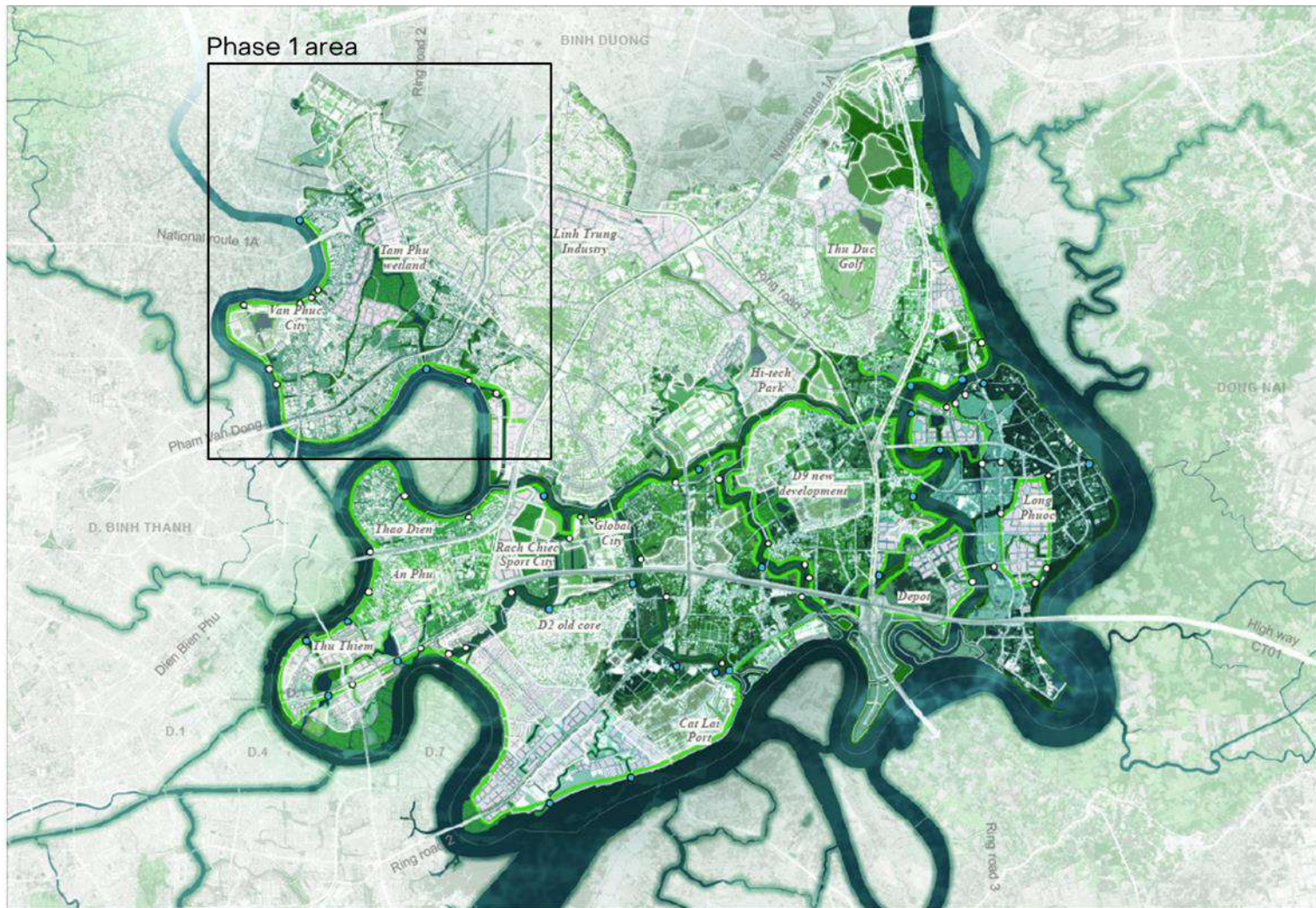
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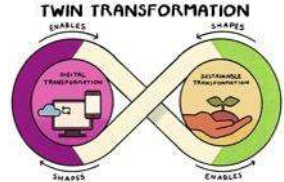
APPLICATION OF TOOLBOX ON THU DUC CITY SCALE

- PROTECT . Flood protection tools**
- upgraded or new dike
 - historically higher elevated area
- DELAY . Flood detention tools**
- green corridor
 - urban forest | green space
 - open space with water storage
 - new development with blue-green buildings
 - future urban development
- STORE . Flood retention tools**
- natural canal park
 - natural wetland park
 - wetland pocket park
 - natural pond
- DISCHARGE . Urban drainage tools**
- sluice gate
 - pump construction
 - upgraded or extended sewer system

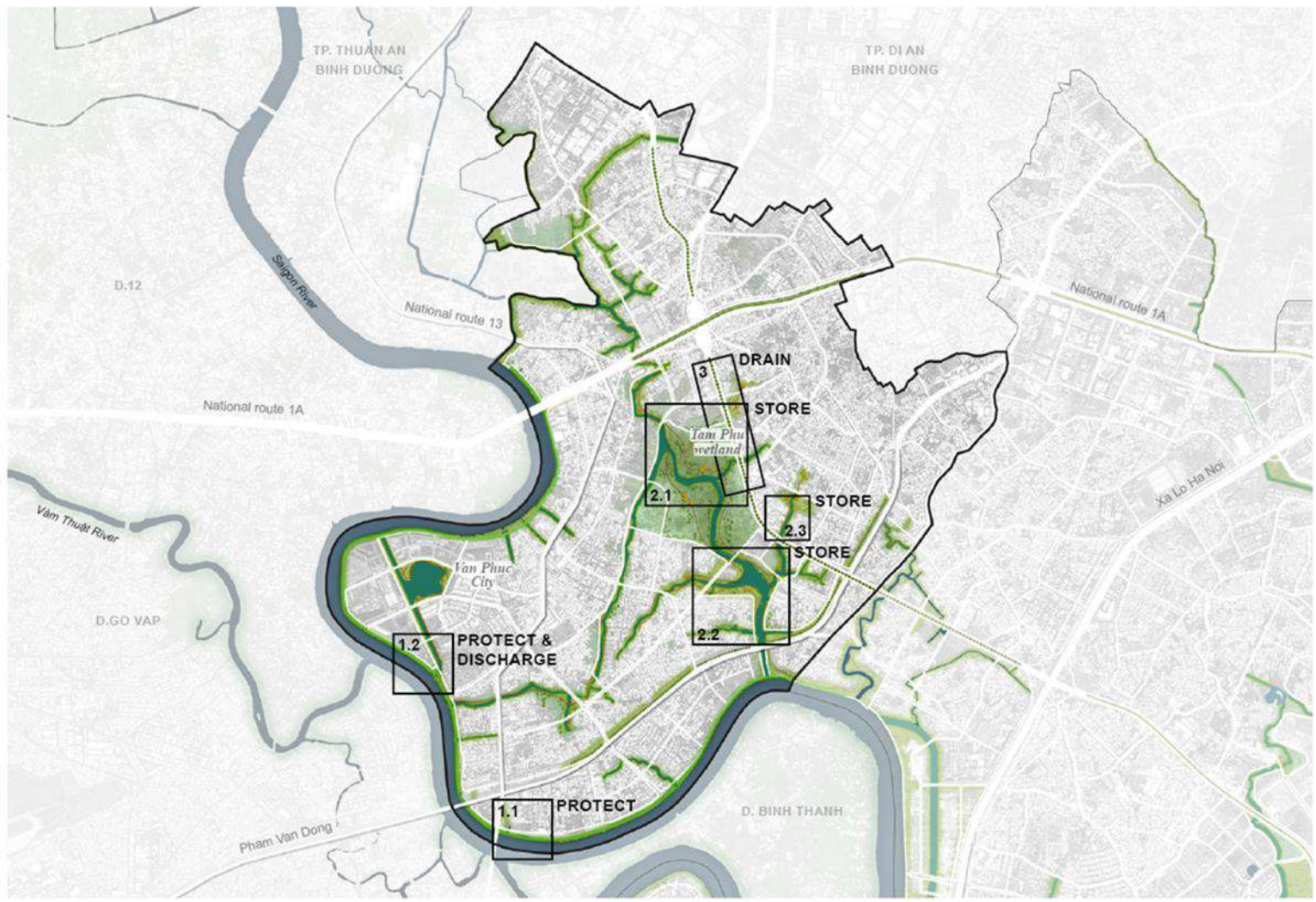


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PHASE 1 AREA

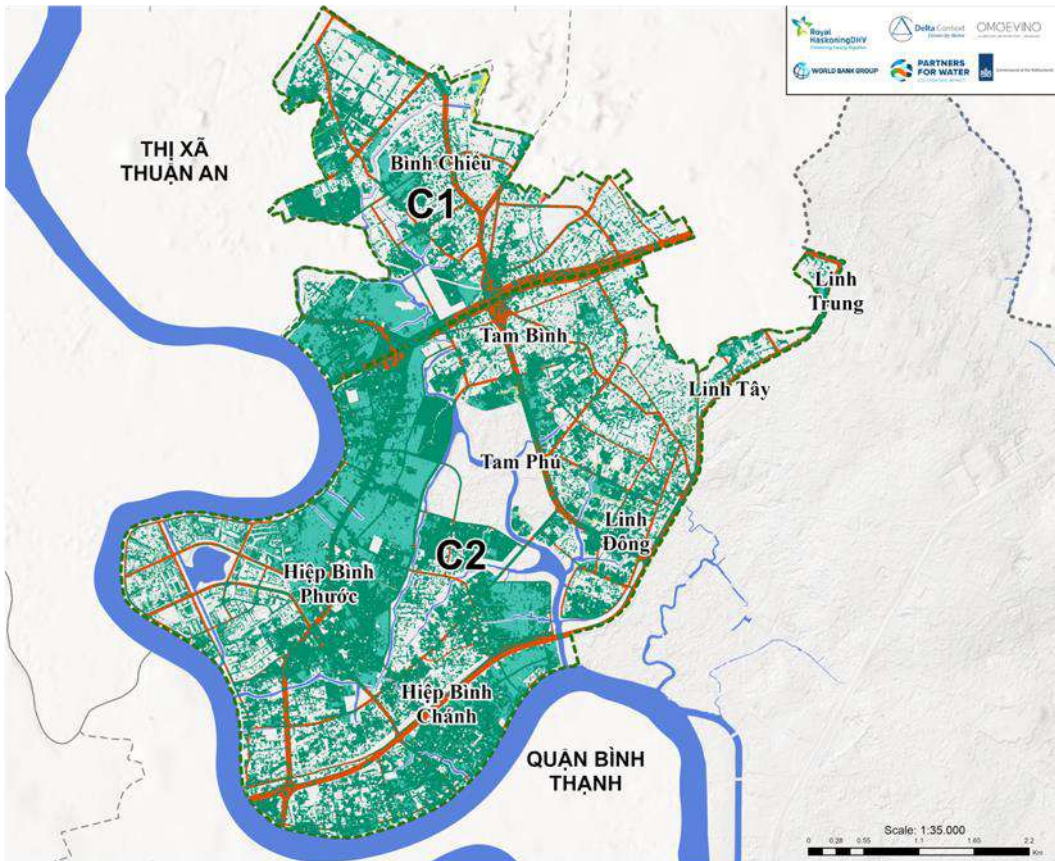
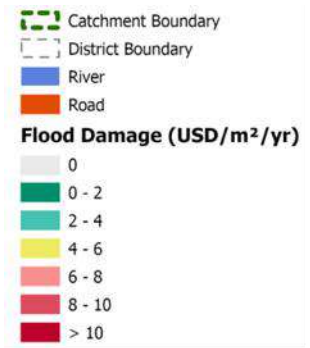


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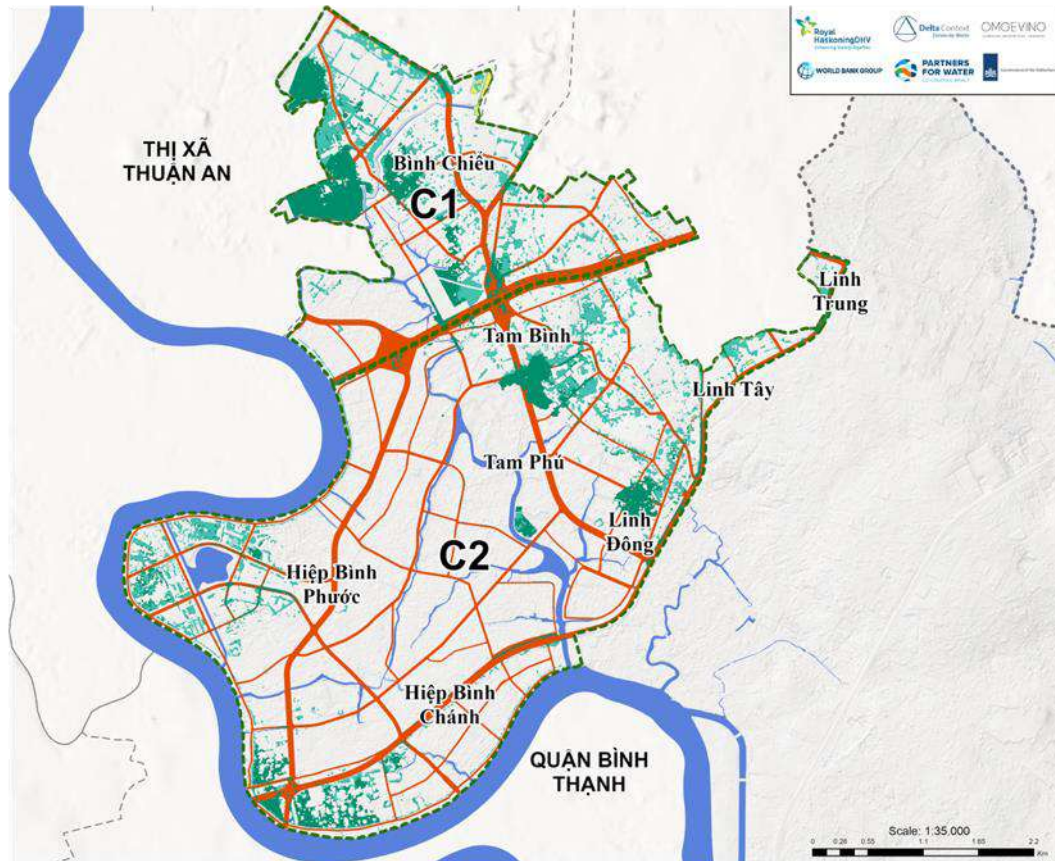


PHASE 1 AREA FUTURE FLOOD HAZARD AND RISK MAPPING ANALYSIS



Flooding Do-Nothing 2050 1/100-year event

Source: Royal HaskoningDHV

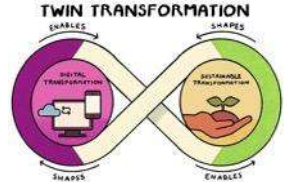
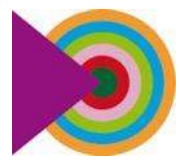


With Phase 1 IFRM work items 2050 1/100-year event

Source: Royal HaskoningDHV

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TYPICAL SECTION “DELAY, STORE, DRAIN AND DISCHARGE’ PHASE 1 AREA



1

DELAY

HIGH ELEVATION AREAS
Existing and new urban fabric higher elevated areas

STORE

LOW ELEVATION AREAS
Enforced and protected blue-green network

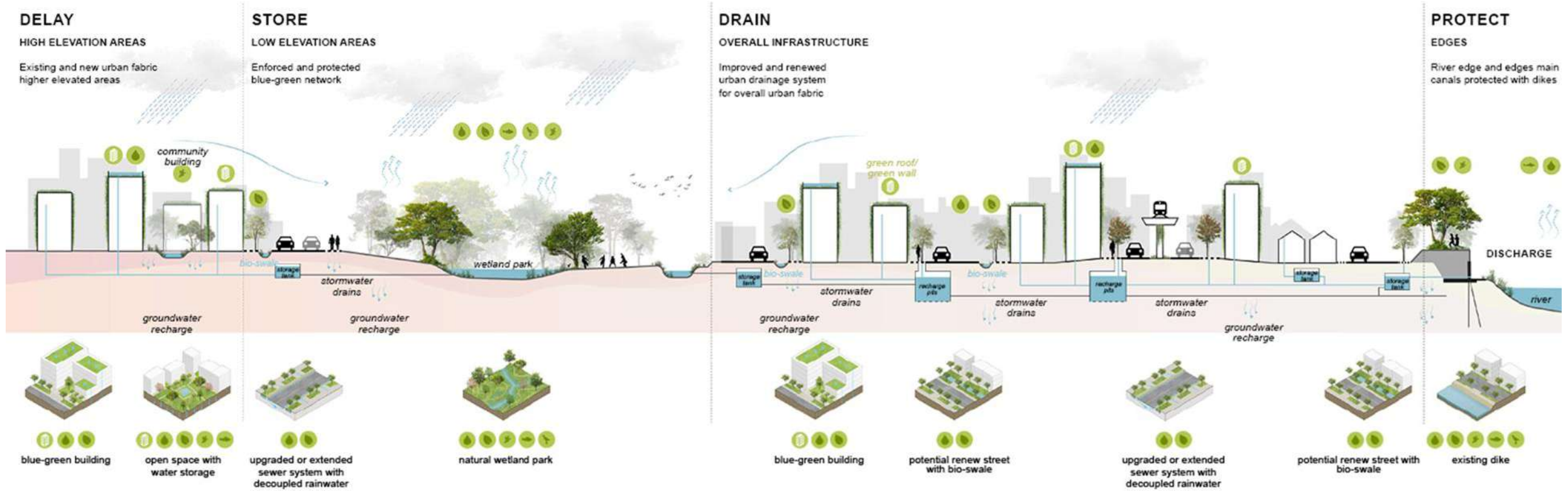
DRAIN

OVERALL INFRASTRUCTURE
Improved and renewed urban drainage system for overall urban fabric

2

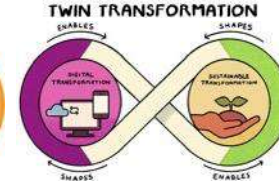
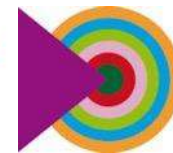
PROTECT

EDGES
River edge and edges main canals protected with dikes

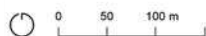
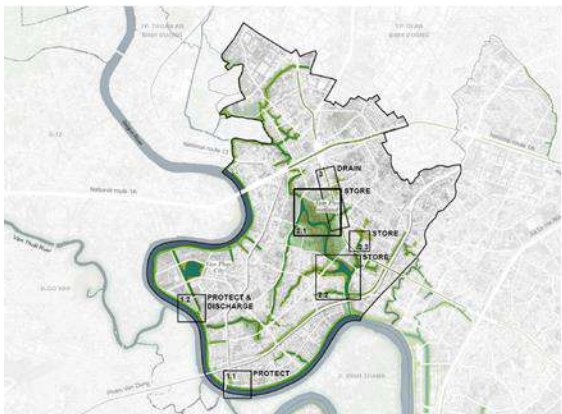


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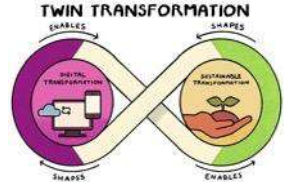
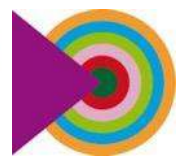


EXISTING CONDITIONS TAM PHU URBAN WETLAND PARK



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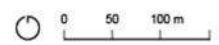


FUTURE TAM PHU URBAN WETLAND PARK

- Stormwater harvesting pond
- River/canal
- Swamp forest
- Restored wetland
- Open lawn
- Enforced green banks
- Green trees with bioswale
- Elevated canal pathway
- Wooden pathway loop
- View deck and seating

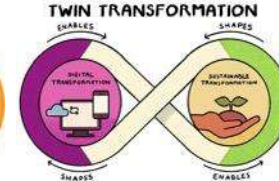
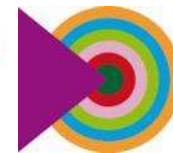
- 1 East entry
- 2 Sub entry
- 3 Welcome and service center
- 4 Entry bridge
- 5 Wetland visitor center and restaurant/ cafe
- 6 Outdoor sport
- 7 Playground
- 8 Picnic area
- 9 Urban farming
- 10 New urban development
- 11 Existing residential area
- 12 Tidal gate

Visual viewpoint



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TAM PHU URBAN WETLAND PARK AS A WATER STORAGE AREA



Dry season

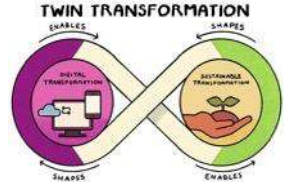


Wet season



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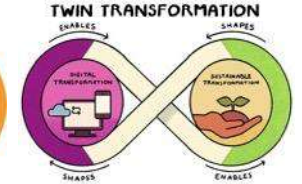
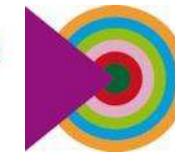


Technical Limits & Design Strategies for BGI on Reclaimed Land

4. Conclusion

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TECHNICAL CONSTRAINTS OF BGI ON RECLAIMED RIVERFRONT LAND

ARTIFICIAL SOIL CONDITIONS

- Reclaimed land = mainly sand fill with thin topsoil layer
- Low organic matter and poor soil structure
- Limited biological soil activity

LIMITED ROOTING DEPTH FOR TREES

- Large tropical trees require 1.5–3 m rootable soil
- Reclaimed sites often provide less than 1 m
- Risk of poor growth and wind instability

HYDROLOGICAL IMBALANCE

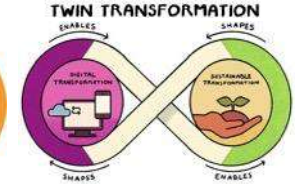
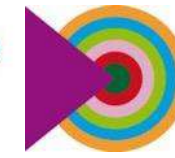
- Sand fill often has very fast infiltration but low water retention
- Difficult to maintain stable water levels in wetlands or rain gardens

NO EXISTING ECOSYSTEMS

- Reclaimed sites start with zero ecological capacity
- Blue-green networks must be designed from scratch

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DESIGNING SPONGE CAPACITY: SOLUTIONS & STRATEGIES

ENGINEERED SOIL SYSTEMS

- Create deep soil zones (1.5–3 m) for trees and ecological areas
- Use structured soils with higher organic content

LARGE ROOT VOLUMES FOR URBAN TREES

- Provide 20–30 m³ soil volume per tree
- Use shared rooting zones instead of isolated tree pits

CONSTRUCTED WETLANDS & RETENTION LANDSCAPES

- Design controlled wetland basins or retention parks
- Ensure stable hydrology despite permeable sand layers

INTEGRATED SPONGE CITY NETWORK

- floodable parks
- bioswales & rain gardens
- retention lakes
- permeable streets
- urban forests

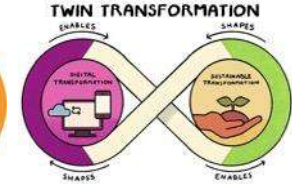
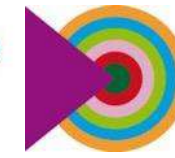
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FONA
Research for Sustainability

SURE
Sustainable
Development
of Urban Regions



CONCLUSION

Reclaimed land has no natural sponge capacity

But when hydrology, soil engineering and landscape design work together, it can become:

- a climate-resilient riverfront
- a cooling blue-green network
- a new urban ecosystem

Sponge City thinking turns land reclamation from a risk into an opportunity



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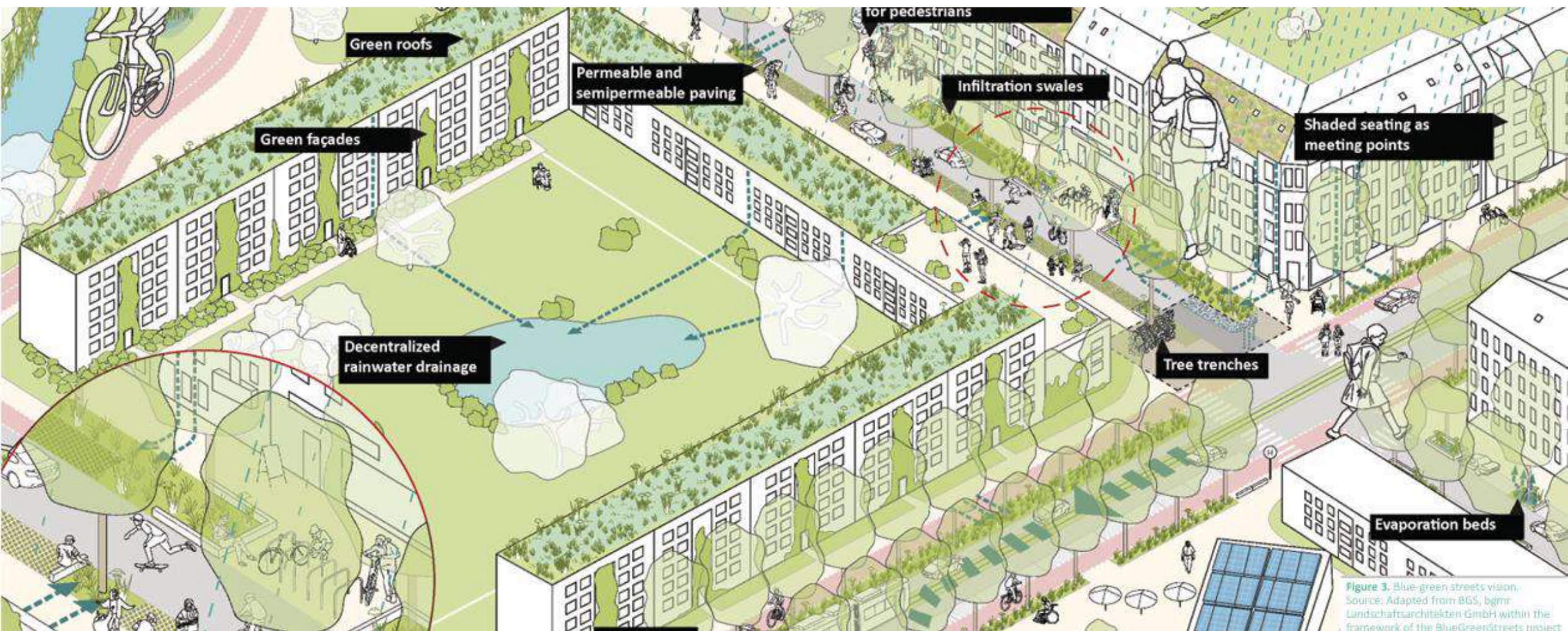
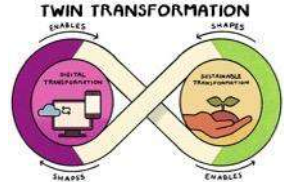
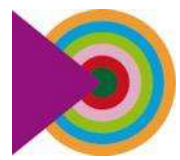
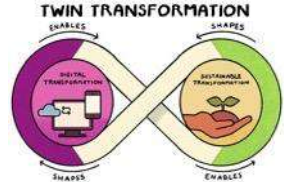
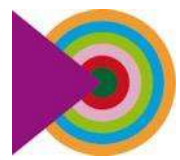


Figure 3. Blue-green streets vision. Source: Adapted from BGS, bgmr, Landschaftsarchitekten GmbH within the framework of the BlueGreenStreets project

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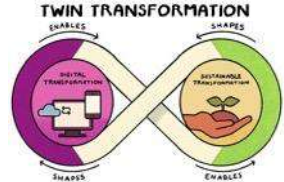
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Thank you

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Contact

OMGEVING
LANDSCAPE ARCHITECTURE . URBANISM

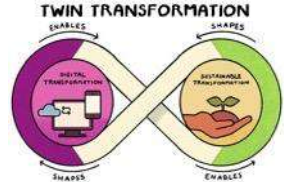
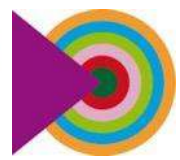
Steven Petit

Landscape and Urban designer
steven.petit@omgeving.be
+84 3208 742 971



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Input #2:

Introduction to building and neighbourhood certification approaches in Cambodia on behalf of MLMUPC



SEANG Mengsang

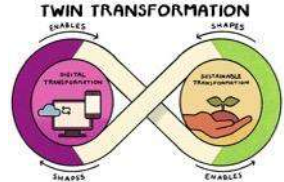
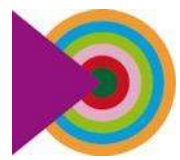
Creative Director, landscape architect and urban designer
OMGEVING
Ho Chi Minh City, Vietnam

@mengsangTA (Telegram)



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AGENDA

1.

About Us



2.

Vision, Missions, Core Values



3.

Our Team



4.

Achievements & Services



01 |

MORE FROM US



DEN Nokor Co., Ltd is the first company obtained the license as Accredited Checker of General Construction Level 1 No 001 on December 31, 2021.



DEN Nokor Co., Ltd commenced the very first check since January 2022.



DEN Nokor Co., Ltd employs a large number of experienced checkers (60+) who check all types of projects to meet requirement of Cambodian Standard and the Law of Construction in Cambodia with high satisfaction service.

OUR LICENSE & REGISTRATION (CON'T)

01

ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់
Ministry of Land Management, Urban Planning and Construction
លេខ/N° ០០៥ ស៊ីខេ/១១៣៧

ព្រះរាជាណាចក្រកម្ពុជា
Kingdom of Cambodia
ជាតិ សាសនា ព្រះមហាក្សត្រ
Nation Religion King

អាជ្ញាប័ណ្ណបញ្ជាក់និក្ខេបបញ្ជាក់សំណង់
CONSTRUCTION CERTIFIER LICENSE

ឈ្មោះក្រុមហ៊ុន៖ ដែននគរ ឯ.ក
Company Name: DENNORKOR CO.,LTD.
បញ្ជីពាណិជ្ជកម្មលេខ៖ ១០០១១១៣៨៧៧ ចុះថ្ងៃទី ៣០-១២-២០២១
Company Registration N° 1000113839 Dated 30-DEC-2021

ទីស្នាក់ការ៖ ផ្ទះលេខបន្ទប់លេខ ៥០៧ ផ្លូវ៣០៧ ភូមិអន្ទង់ក្លាន សង្កាត់បឹងកេងកង ខណ្ឌសែនសុខ រាជធានីភ្នំពេញ
Head Office: #Room 507, St.307, Anlong Kngan Village, Khmnooh Sangkat, Saensokh Khan, Phnom Penh Capital

ប្រធានក្រុមហ៊ុន៖ យ៉េន ហ៊ុន ហ៊ុន
President/CEO: YEAN Horm
នាយកបច្ចេកទេស៖ វង់ សេង
Technical Director: VONG Seng

អាជ្ញាប័ណ្ណបញ្ជាក់និក្ខេបបញ្ជាក់សំណង់លេខ៖ ០០០១(០១) អតបស
Construction Certifier License N° 0001(01)
ថ្នាក់៖ សំណង់ទូទៅ កម្រិត៖ ១
Class: GENERAL CONSTRUCTION Level: 1
កាលបរិច្ឆេទផ្តល់អាជ្ញាប័ណ្ណ៖ ថ្ងៃទី ១១ ខែ ធ្នូ ឆ្នាំ២០២៤
First Issue Date: 11 December 2024
សុពលភាពរហូតដល់៖ ថ្ងៃទី ១១ ខែ ធ្នូ ឆ្នាំ២០២៧
Valid until: 11 December 2027

អ្នកកាន់អាជ្ញាប័ណ្ណបញ្ជាក់និក្ខេបបញ្ជាក់សំណង់នេះ ត្រូវតែអនុវត្តតាមច្បាប់ និងក្របខណ្ឌនៃព្រះរាជាណាចក្រកម្ពុជា។
The licensee shall observe and comply with relevant laws and regulations of the Kingdom of Cambodia.

រាជធានីភ្នំពេញ ថ្ងៃ ឈ្នះ ១០ កើត ខែ ភទ្របទ ឆ្នាំឃ្លា ២០២៤
Phnom Penh, 10th day of the 10th lunar month of the year of the white ox, 2024

នាយករដ្ឋមន្ត្រី
Deputy Prime Minister, Ministry of Land Management, Urban Planning and Construction

សាយ សំរោង



ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ
MINISTRY OF ECONOMY AND FINANCE
អគ្គនាយកដ្ឋានពន្ធដារ
GENERAL DEPARTMENT OF TAXATION
លេខ/N°PTM25090314534 អតដ

ព្រះរាជាណាចក្រកម្ពុជា
KINGDOM OF CAMBODIA
ជាតិ សាសនា ព្រះមហាក្សត្រ
NATION RELIGION KING

ប័ណ្ណពន្ធដារ ថ្ងៃទី ២០ ខែ កញ្ញា ឆ្នាំ ២០២៥
អ្នកជាប់ពន្ធដារ

ឈ្មោះសហគ្រាស៖ ដែននគរ ឯ.ក
លេខអត្តសញ្ញាណកម្មសហគ្រាស៖ K009-902200186
ចុះបញ្ជីនៅ៖ អគ្គនាយកដ្ឋានពន្ធដារ ស្ថិតនៅក្រុមការងារពន្ធដារ សាខាពន្ធដារខណ្ឌសែនសុខ
ទ្រង់ប្រាយសហគ្រាស៖ ក្រុមហ៊ុនបំណែងទទួលខុសត្រូវកម្រិត
សកម្មភាពអាជីវកម្មមួយ៖ សេវាកម្មវាយតម្លៃគម្រោង និងបញ្ជាក់និក្ខេបបញ្ជាក់សំណង់
ភាសាយុទ្ធសហគ្រាស៖ ធីតាស្រីលេខ ២០០៥ ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់ រាជធានីភ្នំពេញ
ភូមិអន្ទង់ក្លាន សង្កាត់បឹងកេងកង ខណ្ឌសែនសុខ រាជធានីភ្នំពេញ
ឈ្មោះម្ចាស់សហគ្រាស៖ យ៉េន ហ៊ុន ហ៊ុន សញ្ជាតិ៖ ខ្មែរ

PATENT TAX 2025
Medium Taxpayer

Enterprise's name : DEN NOKOR CO., LTD.
Tax Identification Number (TIN) : K009-902200186
Registered at : General Department of Taxation Under : Sensok Tax Branch
Main business activity(ies) : Building project layout appraisal and quality control service
Forms of business : Private limited company
Owner's name : YEAN HORM Nationality : Cambodian

ទឹកប្រាក់ពន្ធដារ ២០២៥
១,២០០,០០០ រៀល
លេខស៊េរី៖ EABA2502131002054061

អគ្គនាយកដ្ឋានពន្ធដារ
General Department of Taxation

រាជធានីភ្នំពេញ ថ្ងៃទី ០៣ ខែ កញ្ញា ឆ្នាំ ២០២៥
Phnom Penh, 03 September 2025




បញ្ជាក់៖ ប័ណ្ណពន្ធដារនេះត្រូវដាក់តាំង ឬចម្លងបង្ហាញប្រកបដោយសុចរិត។
Note : This patent tax must be hanged or displayed at the company's office.

01

OUR LICENSE & REGISTRATION (CON'T)



ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់
លេខ ០០៥ ២១៦ ច្រក/១៧៧៧

ក្រសួង
នីតិ

ការផ្តល់អាជ្ញាបណ្ណត្រួតពិនិត្យទិសដៅសំណង់

ឧបនាយករដ្ឋមន្ត្រី រដ្ឋមន្ត្រីក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់

- បានឃើញរដ្ឋធម្មនុញ្ញនៃព្រះរាជាណាចក្រកម្ពុជា
- បានឃើញព្រះរាជក្រឹត្យលេខ នស/រកជ/០៨២៣ /១៩៨១ ចុះថ្ងៃទី២២ ខែសីហា ឆ្នាំ២០២៣ ស្តីពីការតែងតាំងរាជរដ្ឋាភិបាលនៃព្រះរាជាណាចក្រកម្ពុជា
- បានឃើញព្រះរាជក្រមលេខ នស/រកម ០១៩៤/០៩ ចុះថ្ងៃទី២៣ ខែមិថុនា ឆ្នាំ១៩៩៤ ដែលបានប្រកាសឱ្យប្រើច្បាប់ស្តីពីការបង្កើតក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់
- បានឃើញព្រះរាជក្រមលេខ នស/រកម/១១១៤/០១៩ ចុះថ្ងៃទី០២ ខែវិច្ឆិកា ឆ្នាំ២០១៩ ដែលប្រកាសឱ្យប្រើច្បាប់ស្តីពីសំណង់
- បានឃើញអនុក្រឹត្យលេខ ៦២ អនក្រ.បក ចុះថ្ងៃទី២០ ខែកក្កដា ឆ្នាំ១៩៩៤ ស្តីពីការរៀបចំនិងការប្រព្រឹត្តទៅរបស់ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់
- បានឃើញអនុក្រឹត្យលេខ២២៥ អនក្រ.បក ចុះថ្ងៃទី៣០ ខែធ្នូ ឆ្នាំ២០២០ ស្តីពីលក្ខខណ្ឌនិងនីតិវិធីនៃការត្រួតពិនិត្យទិសដៅសំណង់
- បានឃើញប្រកាសលេខ០៣៣ ជ.ន.ស./ប្រ.ក.នី.ក ចុះថ្ងៃទី២១ ខែមករា ឆ្នាំ២០២១ ស្តីពីបែបបទនិងវិបធាននៃការផ្តល់អាជ្ញាបណ្ណ ការផ្តល់សន្លឹកអាជ្ញាបណ្ណ ការបញ្ចប់សុពលភាព និងការបន្តសុពលភាពអាជ្ញាបណ្ណត្រួតពិនិត្យទិសដៅសំណង់
- យោងតាមសំណើសុំប្តូរនាយកក្រុមហ៊ុនថ្មី (លើកទី១) នៃអាជ្ញាបណ្ណត្រួតពិនិត្យទិសដៅសំណង់ ទូទៅកម្រិត១ របស់ក្រុមហ៊ុន ដែននគរ ឯ.ក ចុះថ្ងៃទី៣១ ខែកក្កដា ឆ្នាំ២០២៥

សរុប

ក្រសួង

អនុញ្ញាតឱ្យក្រុមហ៊ុន ដែននគរ ឯ.ក (DEN NOKOR CO.,LTD.) សញ្ជាតិខ្មែរ ដែលមានវិញ្ញាបនបត្រចុះបញ្ជីពាណិជ្ជកម្មលេខ ១០០០១១៣៨៣៩ ចុះថ្ងៃទី៣០ ខែធ្នូ ឆ្នាំ២០២១ មានទីស្នាក់ការ បន្ទប់លេខ ៥០៧ ស្ថិតនៅលើដីឡូត៍លេខ២០០៥ ផ្លូវ៣០៧ ភូមិអន្លង់ត្នាន សង្កាត់ឃ្នួល ខណ្ឌសែនសុខ រាជធានីភ្នំពេញ តទៅនេះហៅកាត់ថា "អ្នកកាន់អាជ្ញាបណ្ណ" ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់ ផ្អែកលើលទ្ធផលនៃការត្រួតពិនិត្យ និងលោក វ៉ង សេង ជាតាមកបច្ចេកទេស។

ទំព័រ ១

ក្រសួង

អាជ្ញាបណ្ណត្រួតពិនិត្យទិសដៅសំណង់មានសុពលភាពដល់ថ្ងៃទី១១ ខែ ធ្នូ ឆ្នាំ២០២៧។
រយៈពេល៣០(សាមសិប)ថ្ងៃ មុនពេលផុតកំណត់សុពលភាព អ្នកកាន់អាជ្ញាបណ្ណត្រូវដាក់ពាក្យស្នើសុំបន្តសុពលភាពនិងប្តូរសន្លឹកអាជ្ញាបណ្ណត្រួតពិនិត្យទិសដៅសំណង់ ជាថ្មីនៅក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់។

ក្រសួង

- អ្នកកាន់អាជ្ញាបណ្ណ មានកាតព្វកិច្ចដូចខាងក្រោម៖
- តាំងបង្ហាញអាជ្ញាបណ្ណត្រួតពិនិត្យទិសដៅសំណង់នៅទីស្នាក់ការរបស់ខ្លួន
 - ធ្វើរបាយការណ៍ប្រកាសលទ្ធផលការងារប្រចាំឆ្នាំនៃការប្រកាសអាជ្ញាបណ្ណរបស់ខ្លួន និងចម្លងជូនមកអគ្គនាយកដ្ឋានសំណង់ នៃក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់
 - ត្រូវស្នើសុំការយល់ព្រមជាលាយលក្ខណ៍អក្សរមកក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់ ក្នុងករណីក្រុមហ៊ុនសម្រេចប្តូរនាយកបច្ចេកទេសឬអ្នកបច្ចេកទេស
 - ត្រូវជូនដំណឹងជាលាយលក្ខណ៍អក្សរមកក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់ ក្នុងករណី ប្តូរអភិបាលក្រុមហ៊ុន ប្តូរសន្លឹកក្រុមហ៊ុន ប្តូរទីតាំងទីស្នាក់ការប្រកាសអាជ្ញាបណ្ណ ប្តូរលេខខ្លួនសុំប្តូរនិងអ៊ីមែលសម្រាប់ទំនាក់ទំនង និងប្តូរចំនួនទីកម្រិតសម្រាប់ប្រើប្រាស់នៅទីតាំងនៃកម្មវិធីប្រតិបត្តិការណ៍នីមួយៗ
 - អនុវត្តតាមការណែនាំរបស់ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់ និងត្រូវគោរពច្បាប់ និងបទប្បញ្ញត្តិជាធរមាននៃព្រះរាជាណាចក្រកម្ពុជា។

ក្រសួង

ក្នុងករណីអ្នកកាន់អាជ្ញាបណ្ណប្រព្រឹត្តិកិច្ចខុសនឹងប្រកាសនេះឬលិខិតបទដ្ឋានភតិយុត្ត ជាធរមាន អ្នកកាន់អាជ្ញាបណ្ណអាចទទួលបានទណ្ឌកម្ម រួមមាន ការព្រមានជាលាយលក្ខណ៍អក្សរ ការព្រមានអាជ្ញាបណ្ណ ការដកហូតអាជ្ញាបណ្ណ ការដកស្រង់អន្តរការណ៍ ការផ្តន្ទាទោសពិន័យជាប្រាក់ និងឬការផ្តន្ទាទោស ដាក់ពន្ធនាគារស្របតាមច្បាប់ស្តីពីសំណង់។

ក្រសួង

ប្រកាសនេះ ចូលជាធរមានចាប់ពីថ្ងៃចុះហត្ថលេខានេះតទៅ។
ថ្ងៃ ខែ ឆ្នាំ ០១ ខែ ធ្នូ ឆ្នាំ ២០២៥
ធ្វើនៅរាជធានីភ្នំពេញ ថ្ងៃទី ០២ ខែ កញ្ញា ឆ្នាំ ២០២៥

ឧបនាយករដ្ឋមន្ត្រី
រដ្ឋមន្ត្រីក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់
ស៊ុយ សំរោង



- រន្ធដំណាច៖
- ទីស្នាក់ការកណ្តាលរដ្ឋមន្ត្រី
 - ក្រសួងពាណិជ្ជកម្ម
 - សាលារាជធានី ភ្នំពេញ
 - លើដីឡូត៍លេខ ០១៧
 - សាមីខ្លួន ជួនប្រការ១
 - លើដីឡូត៍លេខ ០១៧
 - ឯកសារ-ការបញ្ជី

02

VISION, MISSION, CORE VALUES

VISION STATEMENT

Den Nokor Co., Ltd is to be the most **Trusted and Innovative Partner** in Cambodia for ensuring the **Safety, Integrity and Quality** of architectural and structural designs and construction, thereby shaping a resilient and sustainable built environment for our communities.

02 | VISION, MISSION, CORE VALUES

Den Nokor Co., Ltd is to **Provide expert and Impartial Evaluation and Approval Services** for architectural and structural designs adhering to the highest international standards and local regulation



Safeguard Public Safety and Investment

by meticulously assessing



Empower clients and stakeholders

with clear, timely and actionable insights



Foster a culture

of continuous learning and technical adoption to remain at the forefront of **design and construction evaluation and delivery**

02

VISION, MISSION, CORE VALUES

Creativity and Continuous Improvement. 5

We embrace new technologies, techniques, and skills to constantly improve our services.

Through: Providing innovative advice and using modern digital tools.

Collaboration and Partnership. 4

We work as a team, both internally and with partners, to achieve high-quality results.

Through: Sharing knowledge with various professions and creating collective solutions.

3. Safety and Responsibility

We prioritize public safety to protect lives, property, and the community.

Through: Focusing on safety, reporting risks, and implementing preventative measures.

1. Integrity and Transparency

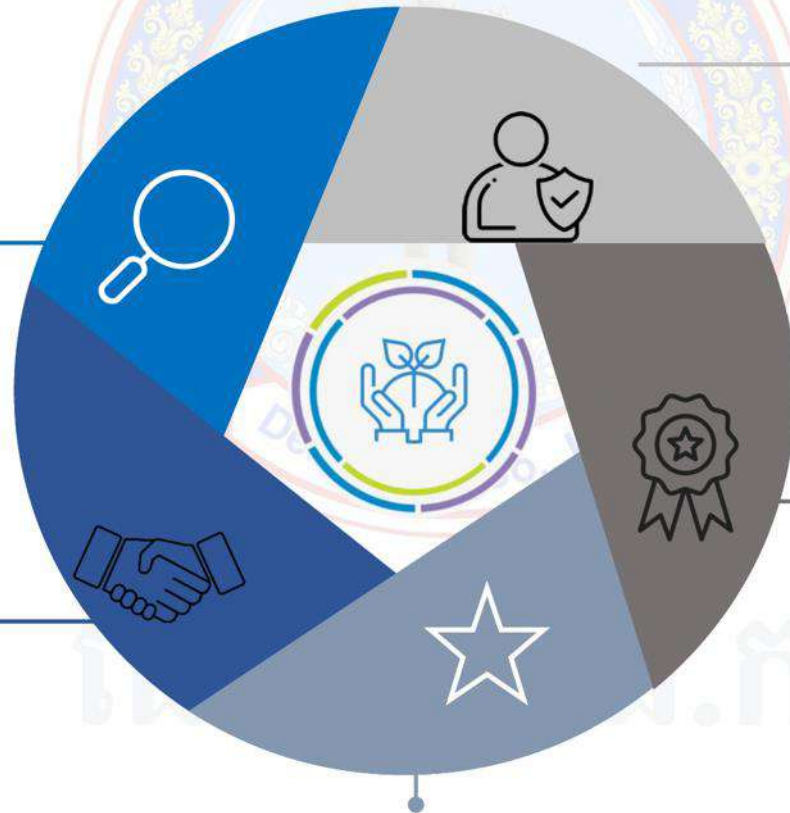
We maintain honesty, openness, and impartiality in all decision-making to preserve the trust of our clients and the government.

Through: Adherence to laws and regulations without bias, and maintaining open communication.

2. Excellence and Consistency

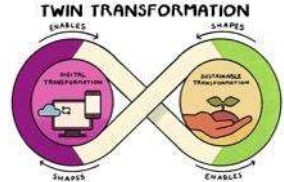
We provide services of the highest standard and reliability, following international building codes and regulations.

Through: Continuous monitoring of operations and upholding high professional ethics.



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03

OUR MANAGEMENT



Dr. YEAN Horm
CEO

Group of Advisors



Dr. VONG Seng
Technical Director



Mr. CHING Vutthe
Sr. Manager of Technical



Mr. TOUCH Veassna
Manager of Architectural Check



Mr. TOUCH Houseng
Technical Consultant



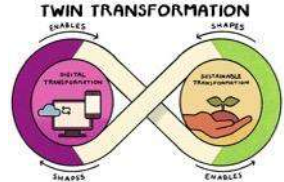
Dr. HENG Hok
Manager of Structural Check



Mrs. HENG Sochantra
Technical Consultant

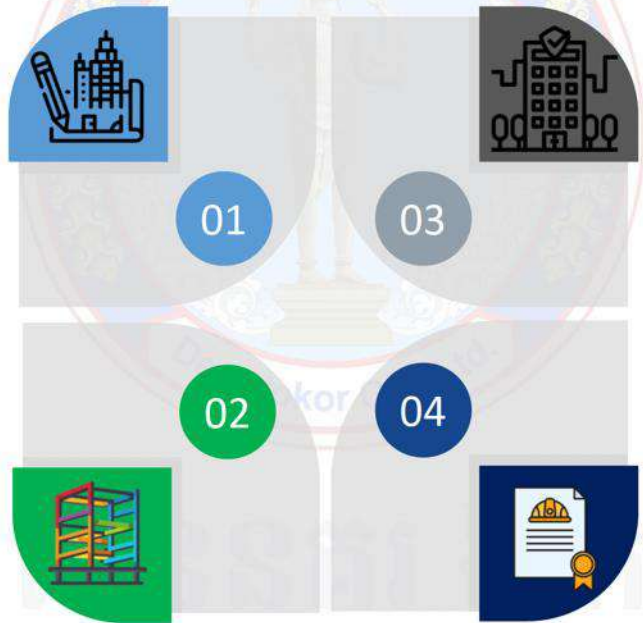
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04 | OUR SERVICES

ត្រួតពិនិត្យ និងបញ្ជាក់ប្លង់ស្ថាបត្យកម្ម
Architectural Design Check



ត្រួតពិនិត្យគុណភាព និងសុវត្ថិភាពសំណង់
Certificate of Occupancy

ត្រួតពិនិត្យ និងបញ្ជាក់ប្លង់គ្រឿងផ្គុំសំណង់
Structural Design Check

ត្រួតពិនិត្យ និងបញ្ជាក់ ការងារសាងសង់
Check and Certify Construction's Work

5. Project Coordination

7. Check and Certify Demolition Work

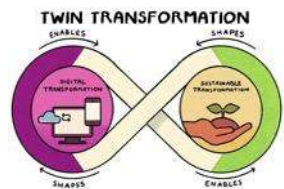
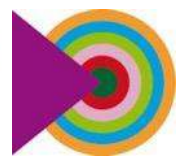
6. Building Assessment

8. Check and Certify Repairing Work

9. Check and Verify Construction Work

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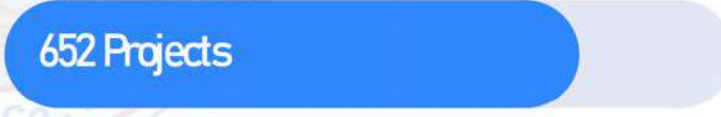
04 | OUR ACHIEVEMENTS (CON“T)



TOTAL PROJECTS



Architectural Checked



Structural Checked



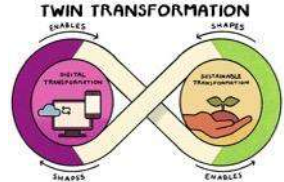
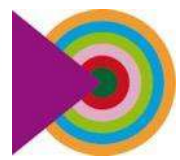
Certificate of Occupancy



■ Total Projects ■ Architectural ■ Structural Checked ■ CO

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To be the #1 preferred and trusted choice in the market.



MEET OUR TECHNICAL CONSULTANT FOR FREE



TOUCH HOUSENG

077 947 771



HENG SOCHANTRA

077 947 772

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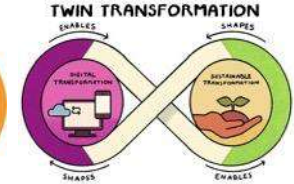
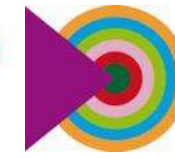
Thank You
សូមអរគុណ



AC ត្រួតពិនិត្យនិងបញ្ជាក់សំណង់
SINCE 2022

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Input #3:

Digital Green Innovation & The Potential Role of AI in Urban Dynamics

Working Group C



Niklas Kossow

Head of Division, Smart City & Government Innovation, CityLAB Berlin / Technologiestiftung Berlin

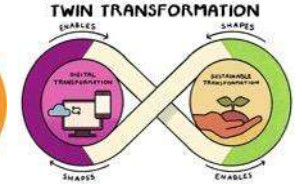
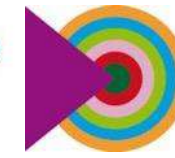
niklas.kossow@ts.berlin



CityLAB Berlin

Build4People Project

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Who We Are

Three partners bringing complementary expertise to this working group

CityLAB Berlin

a project of Technologiestiftung Berlin

Berlin's public innovation lab
— prototyping smart city solutions and AI applications for urban governance

GIZ Digital Transformation Center

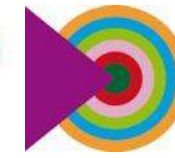
Supporting Cambodia's digital ecosystem through capacity building, policy advice, and innovation programs

Cambodia Academy of Digital Technology (CADT)

Training the next generation of Cambodian digital talent — students bring local knowledge and technical skills

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia



The Question We're Exploring

How can Artificial Intelligence help us understand, visualize, and shape urban dynamics?



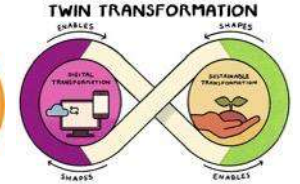
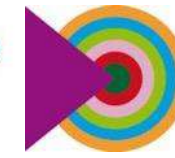
What do we mean by urban dynamics?

- How cities grow, densify, and transform over time
- Mobility flows — how people and goods move through urban space
- Environmental quality — green space, heat, air, water
- Land use change and the interplay between built and natural systems

Credit: iStock-metamorworks

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AI in 2025 — A Turning Point

Recent breakthroughs in Large Language Models and generative AI are reshaping what's possible — including in urban planning.

01 Large Language Models

Systems like ChatGPT and Claude can now analyze complex documents, generate code, and reason about spatial data — making AI accessible to non-technical users for the first time.

02 Generative AI for Images & 3D

AI can now create realistic visualizations of urban scenarios from text descriptions — turning planning concepts into tangible images within seconds.

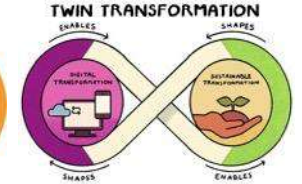
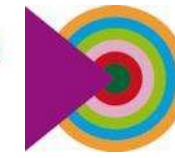
03 AI Agents & Automation

AI systems increasingly connect to real data sources, run simulations, and process satellite imagery autonomously — enabling analysis at a scale previously impossible.

The key shift: AI is no longer a specialist tool. It's becoming an everyday capability — and cities need to explore how to use it wisely.

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What AI Can Do for Urban Planning

Some concrete approaches relevant to sustainability and urban dynamics



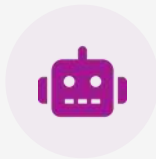
Generative Urban Design

AI can generate alternative design scenarios for neighborhoods — testing density, green coverage, and building layouts to optimize for sustainability criteria.



Satellite & Spatial Analytics

Machine learning detects land use change, vegetation loss, and urban sprawl from satellite imagery — making invisible dynamics visible over time.

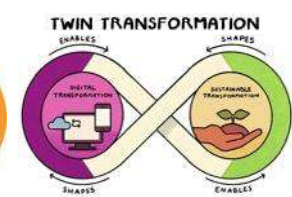
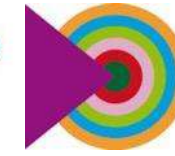


Simulation & Digital Twins

AI-powered models simulate traffic flows, microclimate effects, and energy demand — allowing planners to test interventions before implementation.

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Generative Urban Design

Kiezvisionen — CityLAB Berlin & UrbanistAI

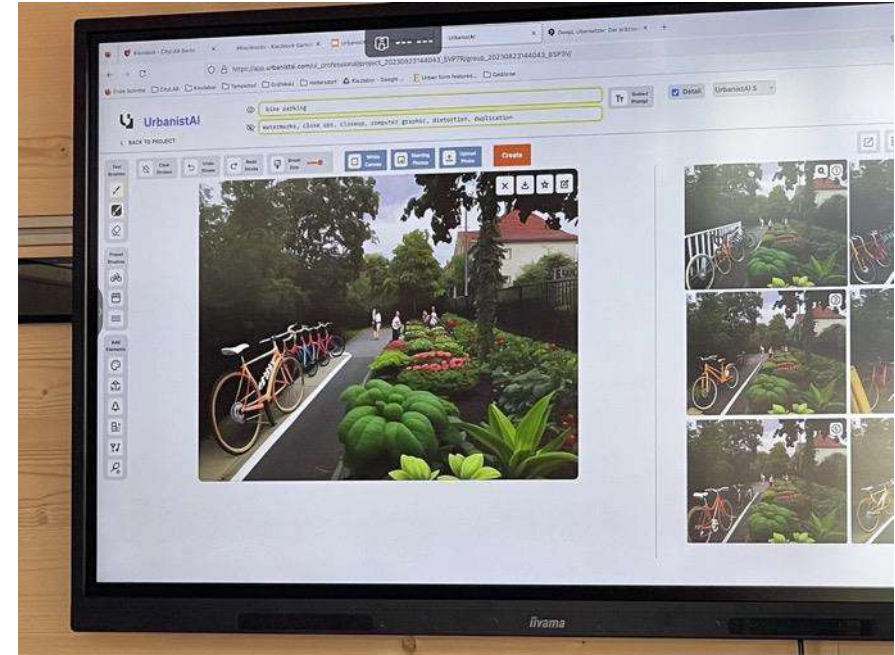
EXAMPLE

What it is

A generative AI tool used in CityLAB Berlin's Kiezlabor — a mobile participation lab that tours Berlin's neighborhoods. Citizens describe how they'd like to transform a street or square (more trees, a playground, a pond), and the AI generates realistic before/after images in seconds.

How it was used

- ✓ Community workshops across Berlin districts
- ✓ Workshop with a primary school — children reimagined their schoolyard
- ✓ Kiezlabor visitors experimented with street-level placemaking ideas



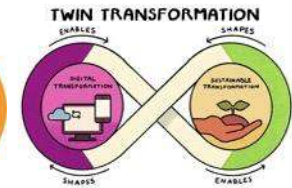
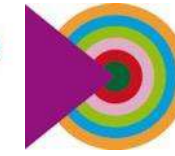
Why it matters for Phnom Penh

AI-generated visualizations can make urban planning tangible and inclusive — lowering the barrier for non-experts to participate in shaping their city.

citylab-berlin.org/projects/stadtvisionen | urbanistai.com

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Satellite & Spatial Analytics

PV-Finder — CityLAB Berlin

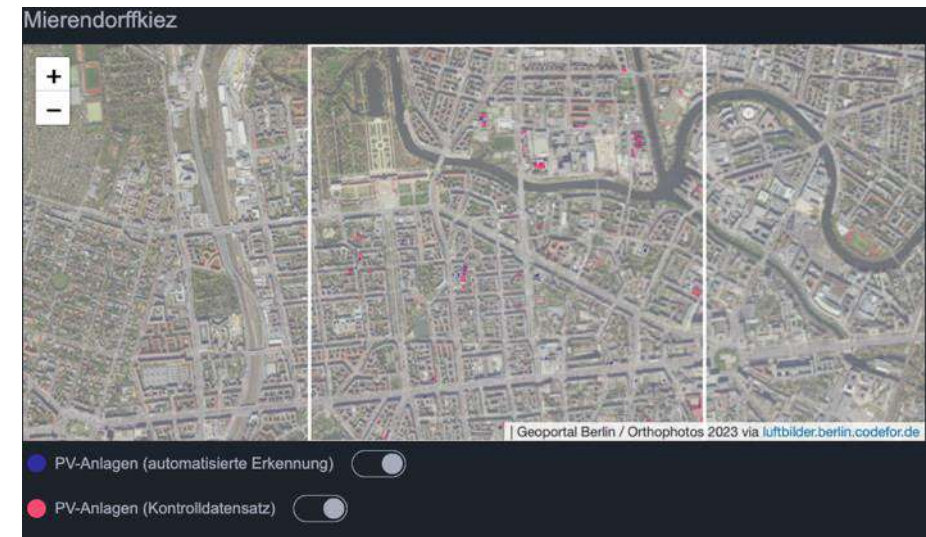
EXAMPLE

What it is

A prototype by CityLAB Berlin developed in cooperation with the Berlin Senate Department for Economic Affairs, Energy and Public Enterprises. PV-Finder uses AI to automatically detect solar panel installations on Berlin's rooftops from aerial imagery (10 cm/pixel resolution, 2023 data).

What it does

- ✓ AI analyzes aerial photographs of two sample areas in Berlin
- ✓ Automatically identifies and marks PV installations on rooftops
- ✓ Enables data-driven evaluation of Berlin's Solar Energy Act



citylab-berlin.org

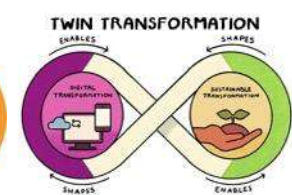
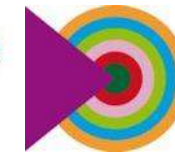


Why it matters for Phnom Penh

The same approach — AI applied to aerial or satellite imagery — can detect land use change, green cover, building density, or informal development patterns. It makes urban dynamics visible at scale.

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Simulation & Digital Twins

Connected Urban Twins (CUT) — Hamburg, Leipzig, Munich

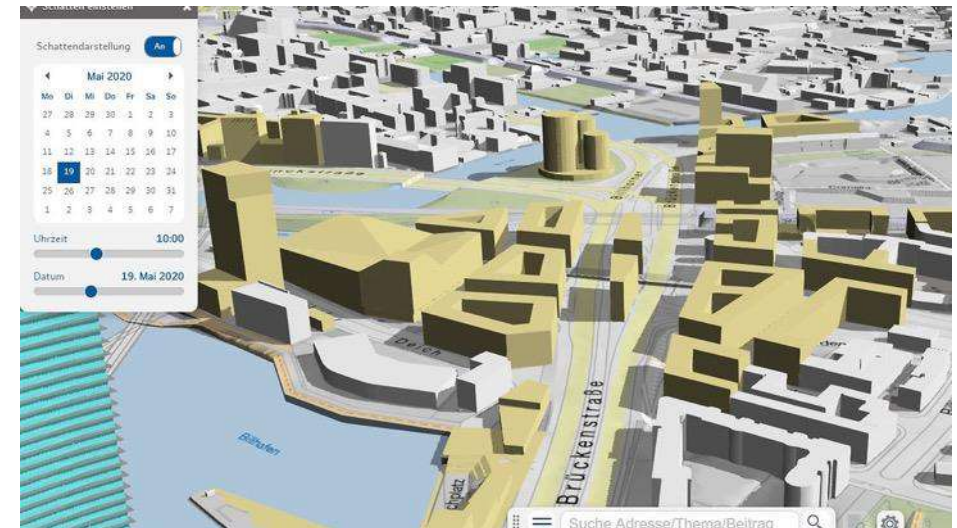
What it is

Germany's largest Smart City model project (2021–2025). Three cities jointly developed urban data platforms and digital twins — virtual representations of cities that bundle diverse urban data for visualization, simulation, and participatory planning.

What it enables

- ✓ "What-if" scenarios: How does a neighborhood develop under different planning assumptions?
- ✓ Use cases from daycare planning to climate-neutral district design
- ✓ DIPAS: a digital participation system that brings citizens into the planning process
- ✓ All components are open source — designed for reuse by other cities

EXAMPLE



connectedurbantwins.de

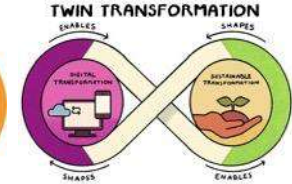
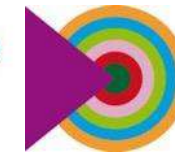


Why it matters for Phnom Penh

Digital twins allow planners to test ideas before building them — reducing cost, risk, and making complex urban systems understandable for decision-makers and citizens alike.

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Our Working Group C Plan

The Task: CADT students prepare a short presentation on *"The Potential of AI to Visualize & Shape Urban Dynamics"* for the B4P Presentation Conference on 13 March.

1

Framing & Inspiration

~45 min

Intro to AI in urban planning, global examples, overview of the Mekong Quay site

2

Mapping the Landscape

~30 min

Guided brainstorm: which AI tools and approaches are relevant?

3

Group Work

~90 min

Small teams draft slides on specific angles (e.g. AI for green space, mobility, participation, time-lapse, urban visioning videos)

4

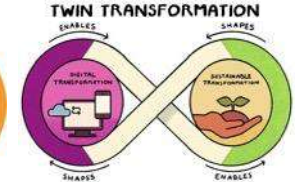
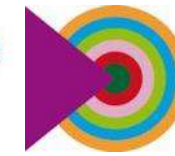
Synthesis & Rehearsal

~45 min

Merge into one deck, assign speakers, rehearse for B4P TM Presentation Conference at PP City Hall on 13 March 2026

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Working Group C - Overview

WHO

CADT students (6-8 participants max), guided by CityLAB Berlin & GIZ DTC

WHEN

Half-day working session during the Transition Manufactory week (09–12 March)

WHERE

Phnom Penh Smart City Hub, Wat Phnom compound

OUTPUT

A presentation for the B4P Presentation Conference at Phnom Penh City Hall, 13 March 2026

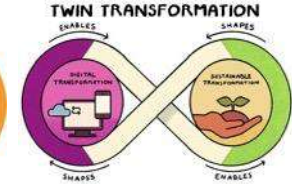
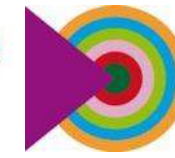
All active participants receive a Certificate of Appreciation, signed by Phnom Penh City Hall, TP Moral Group, and Build4People.

Contact: niklas.kossow@ts.berlin



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Input #4:

The Role of the RUPP-B4P Citizen Science APP to Grasp Urban Climate Data and to Support Digital Simulations

Working Group B



Anke Blöbaum

Lead of Build4People workgroup Behavior Change Change
Department of Psychology
University of Magdeburg
anke.bloebaum@ovgu.de

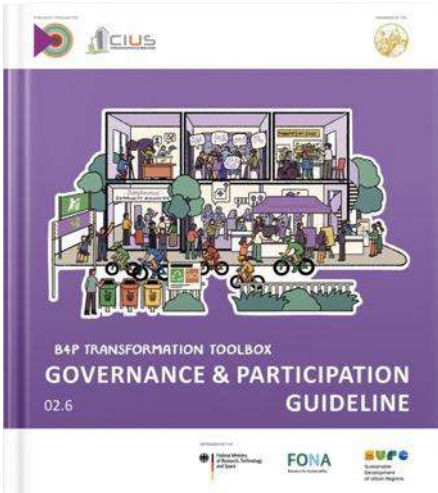
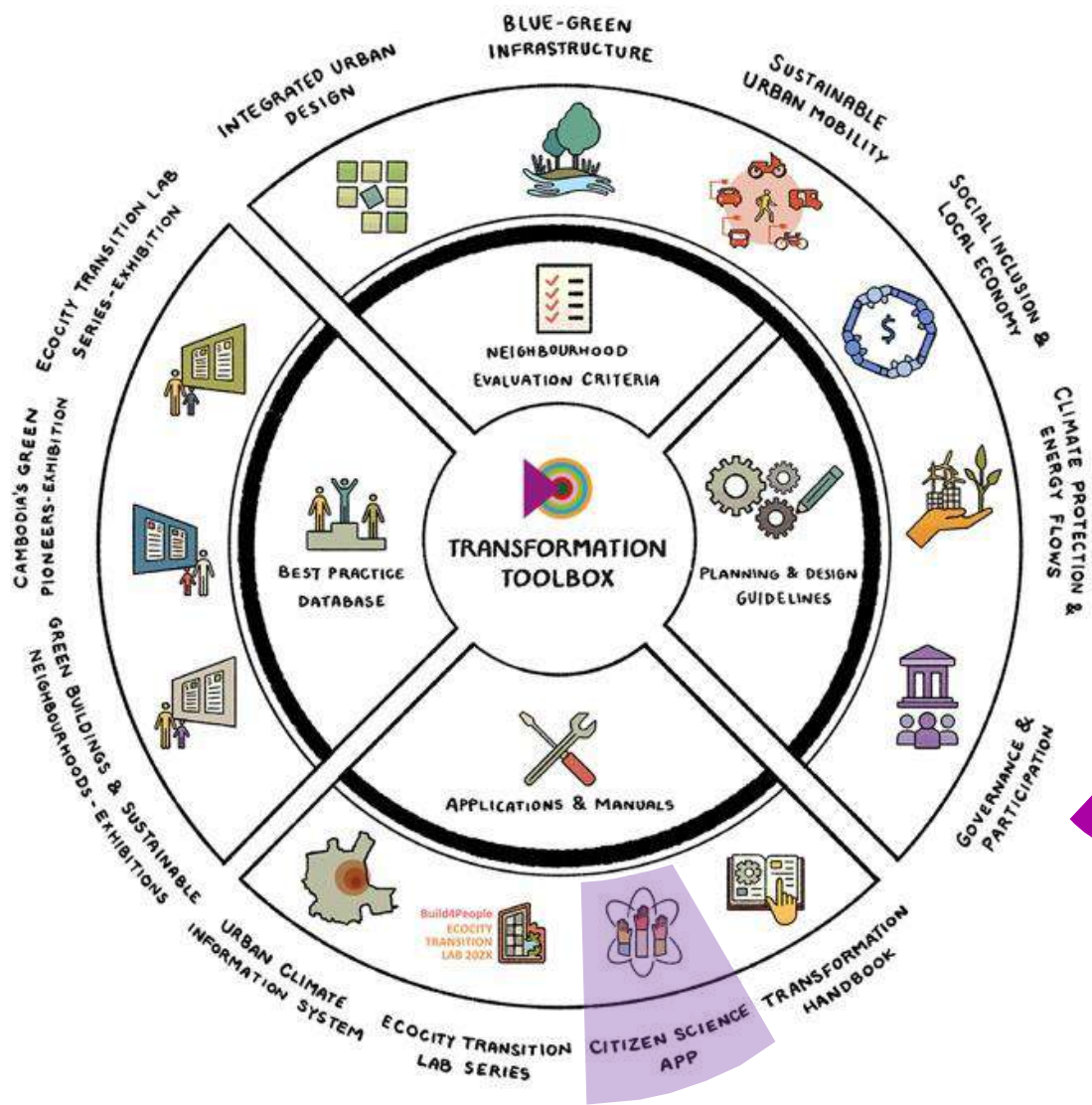
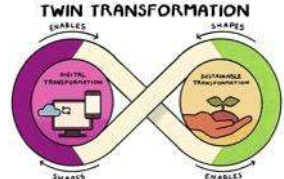
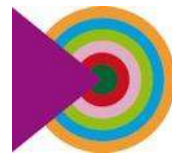


Bunleng Se

Head of Climate Change and Water Group (CCWG)
Department of Geography and Land Management
Royal University of Phnom Penh
se.bunleng@rupp.edu.kh

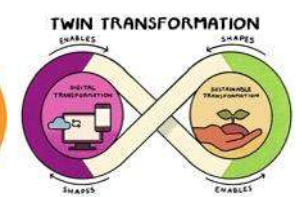
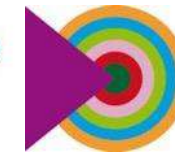
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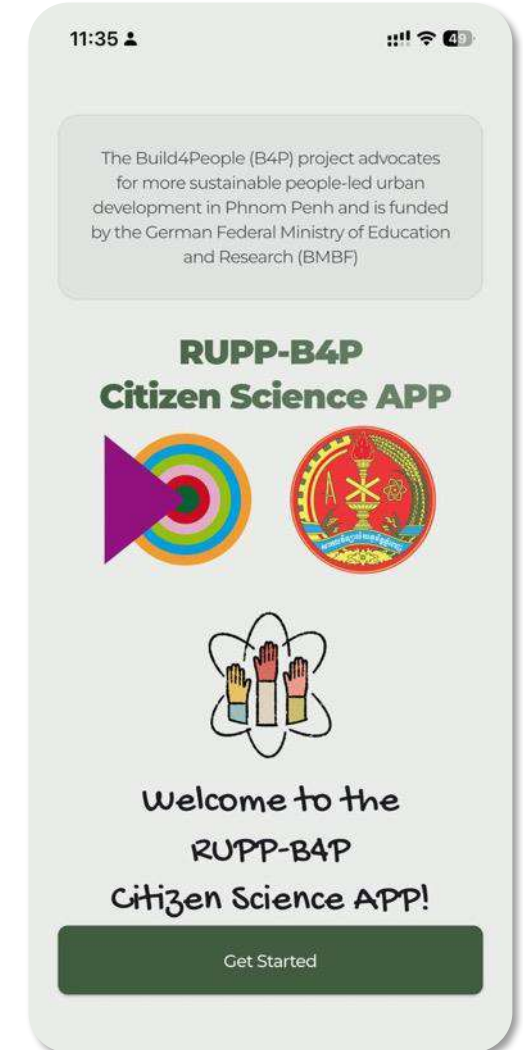
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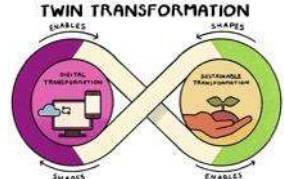
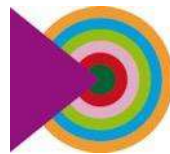
Specific advantages of the RUPP-Build4People Citizen Science APP

- ❖ User-friendly apps can facilitate participatory processes.
- ❖ Citizen Science via a mobile app is **low-threshold**, and **inclusive**: allowing diverse groups of residents to contribute their specific needs.
- ❖ Can be easily adapted to specific questions and demands.



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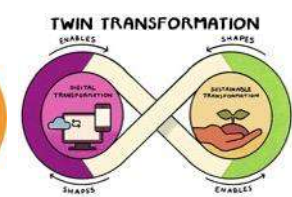
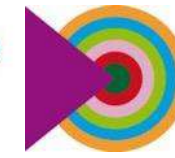
B4P Citizen Science APP: Communication tool: Smart City Hub Phnom Penh

- ❖ Easy to integrate digital tool for the Smart City Hub Phnom Penh.
- ❖ Involving citizens of Phnom Penh, raising awareness for vibrant urban topics...
... e.g., in regard of climate comfort!



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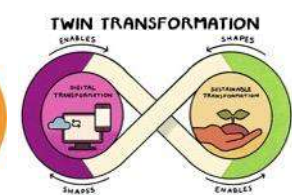
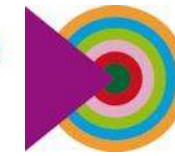
The RUPP-B4P Citizen Science App

- The RUPP-B4P Citizen Science App is a mobile-based research tool designed to **involve students and residents** in monitoring the urban environment.
- Through short surveys linked with GPS location, users provide **subjective environmental perceptions** (thermal comfort or shading availability), while researchers simultaneously collect **objective weather data** (temperature, humidity, wind) from meteorological measurements.
- This dual approach bridges the gap between **scientific measurement** and **everyday experiences** of urban residents.



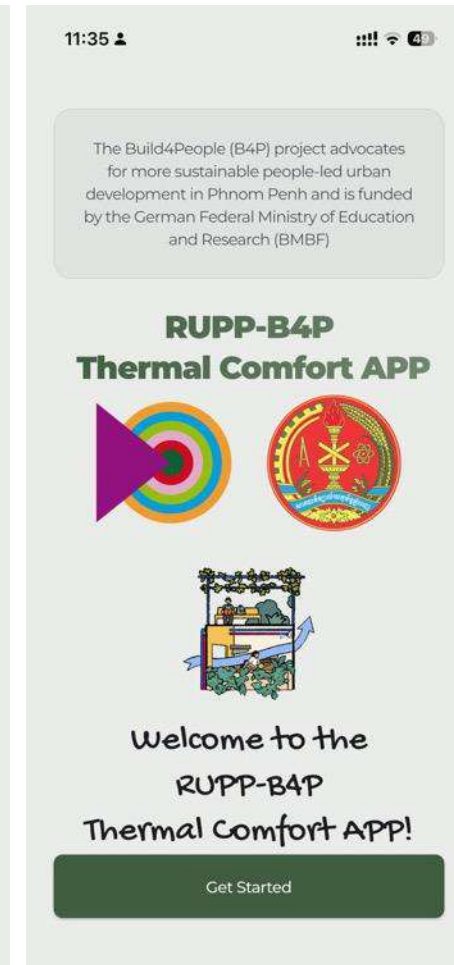
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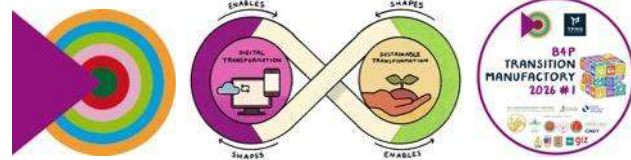
Collecting Micro-scale Urban Climate Information

- Urban climate varies significantly across neighborhoods depending on **land use, vegetation, building density, and surface materials**.
- Traditional **weather stations alone** cannot capture these micro-scale differences.
- The Citizen Science App helps to fill this gap by enabling citizens to report environmental conditions at many locations across the city.
- Data collected include:
 - ✓ Perceived **thermal comfort and heat stress**
 - ✓ Availability of **shade and urban greenery**
 - ✓ General perception of **urban quality of life**



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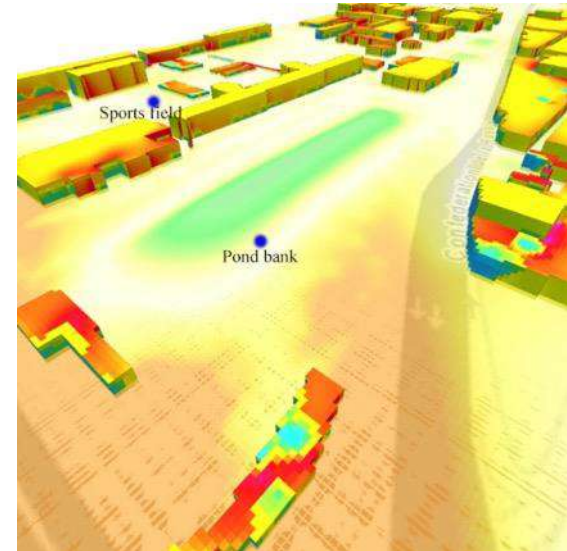
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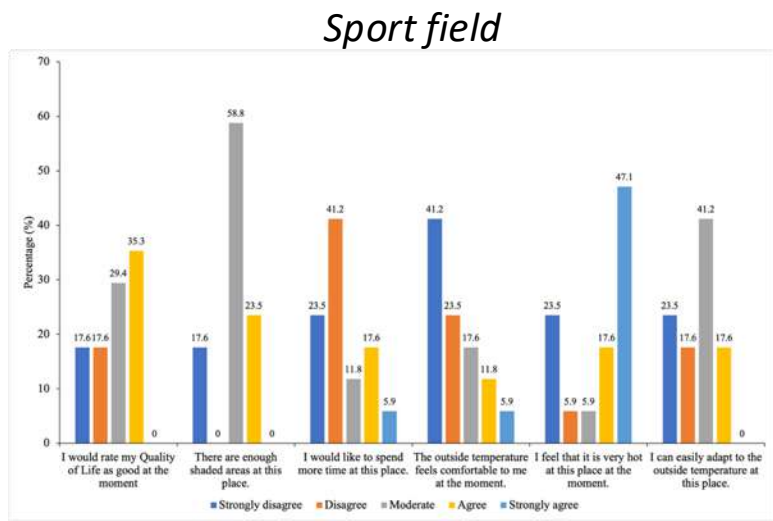
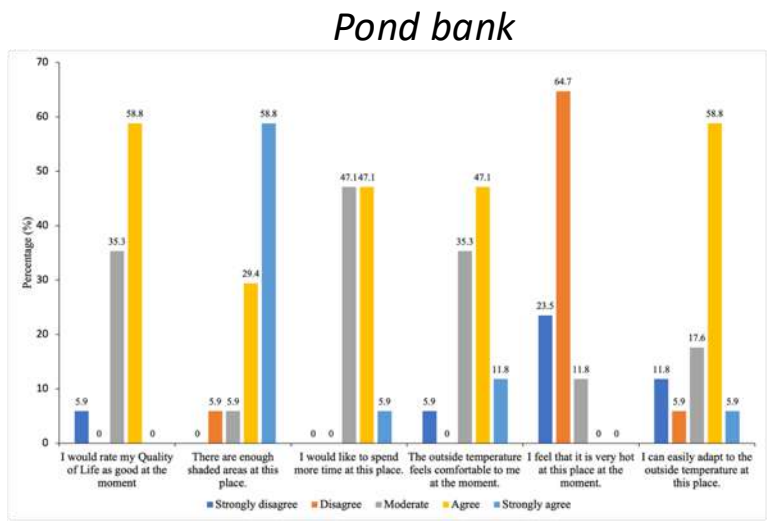
Integrating Objective and Subjective Data

- A key innovation of the RUPP-B4P App is the integration of two types of data:
- Objective measurements
 - Temperature
 - Humidity
 - Wind conditions

No	Parameters	Pond bank site	Sports field site
1	Air temperature	30.9°C	32.7°C
2	Humidity	63.50%	51.40%
3	Wind speed	0.5 m/s	0.3 m/s

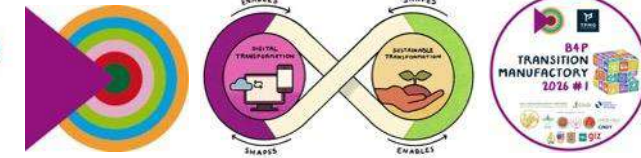


- Subjective perceptions
 - Feeling of heat or comfort
 - Perceived safety and walkability
 - Evaluation of urban green spaces



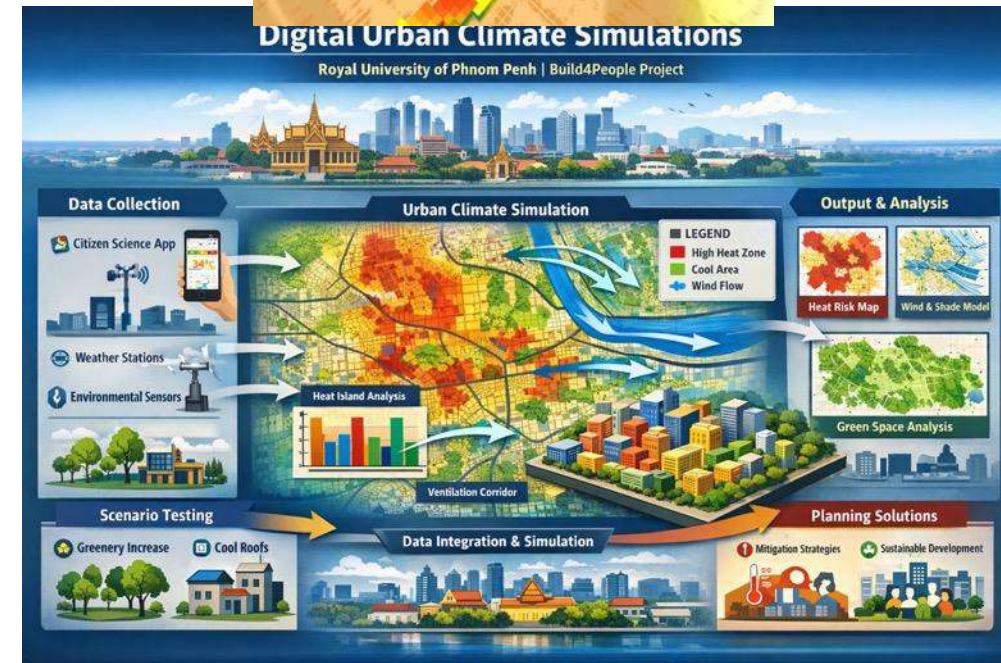
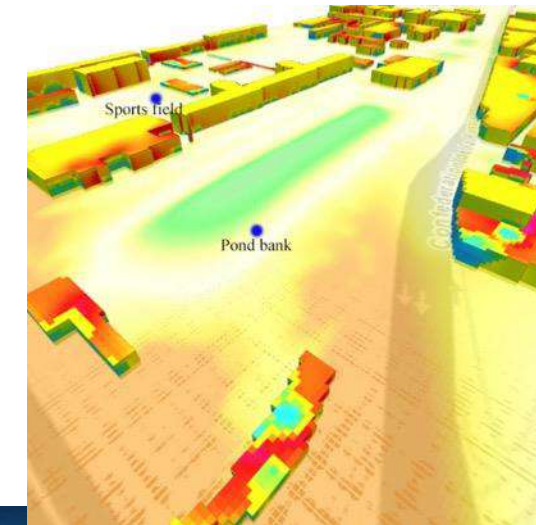
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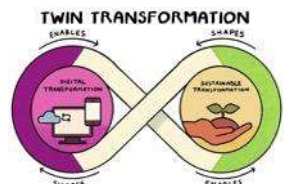
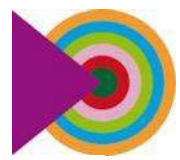
Calibration of Urban Climate Models

- Digital simulations, urban climate models or computational micro-climate simulations, require reliable input data.
- Citizen science observations help validate and calibrate these models by providing real-world information about environmental conditions at street level.
- The collected datasets can be integrated into:
 - Urban climate maps
 - Micro-climate simulation models
 - GIS-based environmental analyses
- Citizen-generated data can further refine these maps by adding detailed local observations.



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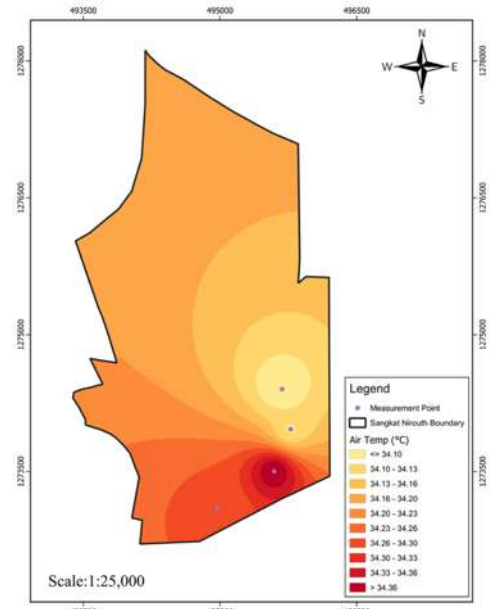
Supporting Scenario-Based Urban Planning

- Digital simulations supported by citizen science data can be used to test different urban development scenarios such as:

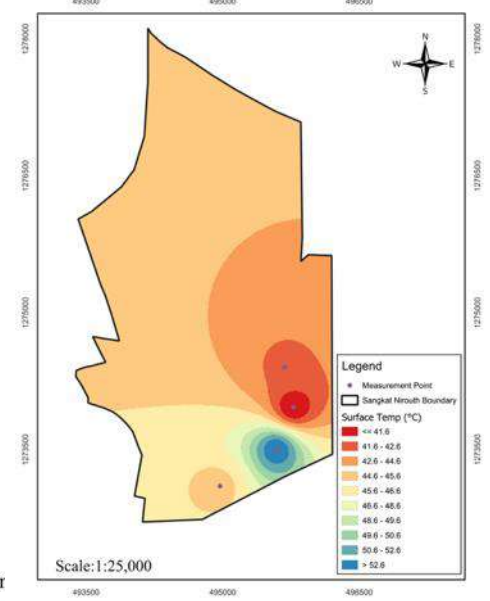
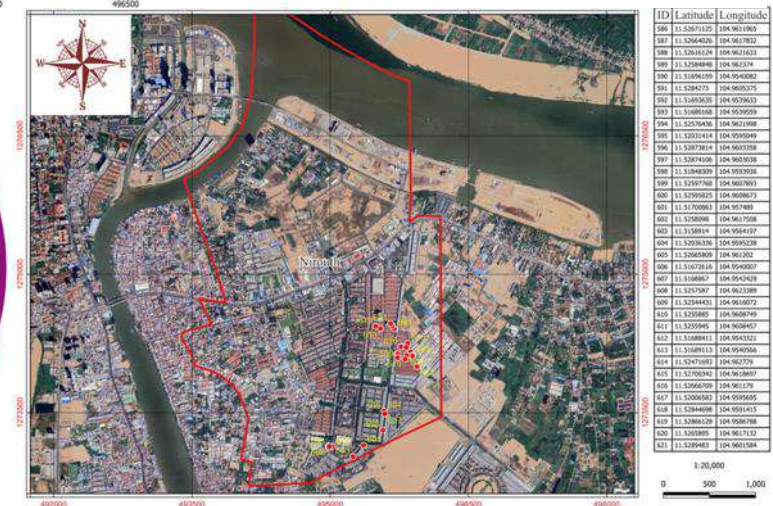
- ✓ Increasing **urban trees and green corridors**
- ✓ Improving **ventilation pathways**
- ✓ Reducing **heat-absorbing surfaces**
- ✓ Designing **climate-responsive urban areas**

- These simulations help planners evaluate how planning decisions influence urban heat islands, airflow, and thermal comfort before implementing physical changes.

Average Air Temperature on 01 March 2026

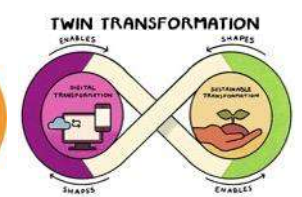
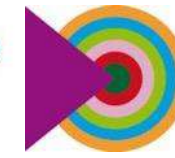


Average Surface Temperature on 01 March 2026

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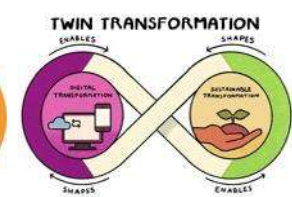
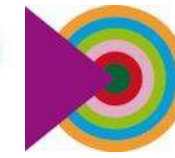
Enhancing Participatory Urban Planning

- Beyond scientific data collection, the app strengthens **public participation in urban planning**.
- Citizen science tools allow residents to express their needs and experiences directly through digital platforms.
- The app serves as a communication bridge between **citizens, researchers, and urban planners**, enabling a more inclusive and transparent planning process.
- Through this approach, urban planning becomes not only a technical process but also a **collaborative societal process**.



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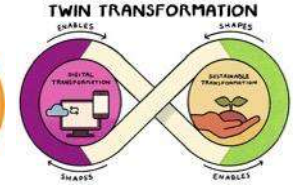
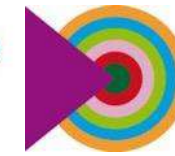
Capacity Building and Education

- The Citizen Science App also contributes to **capacity building in Cambodian universities**.
- Students participate in field data collection, urban climate analysis, and digital simulation exercises.
- As a result, the tool supports interdisciplinary research linking:
 - ✓ Urban climate science
 - ✓ Geography and GIS
 - ✓ Urban planning
 - ✓ Environmental behavior studies



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Contribution to Sustainable Urban Development in Cambodia

The RUPP-B4P Citizen Science App contributes to sustainable urban transformation in Cambodia in several ways:

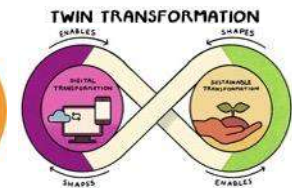
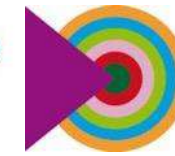


- **Expanding urban climate data coverage** through crowd-sourced observations
- **Supporting digital simulations and climate modelling** for evidence-based planning
- **Integrating citizen perceptions with scientific measurements**
- **Promoting participatory urban governance** and community engagement
- **Enhancing research and education capacity** in Cambodian universities

These contributions help policymakers and planners develop climate-sensitive urban design strategies aimed at **improving thermal comfort, reducing heat stress, and enhancing the quality of urban life** in Phnom Penh and other rapidly growing Cambodian cities.

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Conclusion

- The RUPP-B4P Citizen Science App represents an innovative digital tool for urban climate research and participatory planning in Cambodia.
- By combining citizen observations with scientific measurements and digital modelling, the platform strengthens the evidence base for sustainable urban development.
- In the future, integrating citizen science data with advanced simulation tools and smart-city platforms could further improve climate-resilient planning and the livability of Cambodian cities.

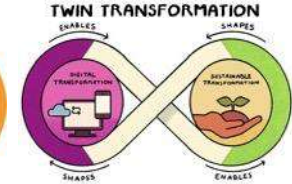
Working Group B

Will discuss how all this can be infused into the B4P Transition Manufactory 2026 #1



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Input #5:

Creating Animated Visual Urban Utopias: Inclusive Urban Development of Phnom Penh

Working Group D



**Founder of Women in
Architecture and Engineering**

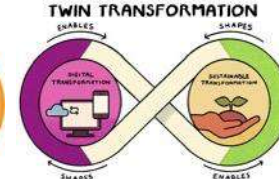
lanitamaysokun@gmail.com



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Our Values

Support Women Network in Architecture and Engineering fields

Women Advocacy, Empowerment, and Leadership in the Industry

Training Program and Other Opportunities for Women in the Fields

Creating inclusive urban environments



Our highlighted Activities

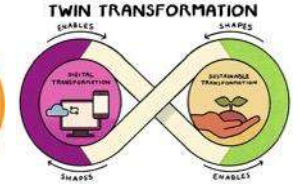
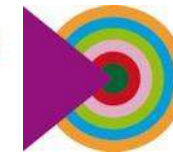
W1: Bridging the gap women in AE W2: Gender and Inclusive mobility



W1



W2



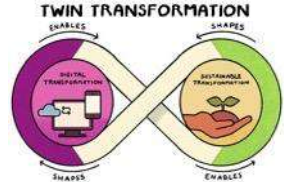
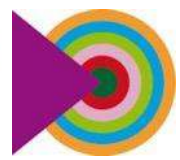
Creating animated Visual Urban Utopias: Inclusive Urban Development of Phnom Penh

Why is this topic relevant today?

- ❖ limited public spaces, accessibility barriers, traffic-dominated streets, and urban environments that are not always **inclusive** for women, children, the elderly, or people with disabilities
- ❖ Many urban discussions remain highly technical and are often difficult for the wider public to engage with.

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia



Concept Inspiration

German artist Jan Kamensky's Visual Urban Utopias

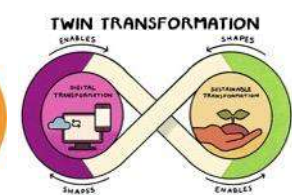
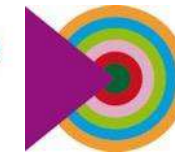


<https://www.youtube.com/@visualutopias>

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Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia



During the B4P TM 2026 #1 our Working Group D will focus on 2 main aims:

- Observe and analyze specific urban spaces in Phnom Penh with respect to different target groups and behaviors
- Develop creative “before and after” animated digital visualization
→ *Creating visual stories and using them as a communication tool to foster inclusive and gender-sensitive urban development*

