

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People
ECOCITY
TRANSITION
LAB 2023

EBLE MESSERSCHMIDT PARTNER
Architekten und Stadtplaner PartGmbB
with student support from:

Build4People ECOCITY TRANSITION LAB 2023 PRESENTATION CONFERENCE

03 March 2023



Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Work Package #7
Work Package #6



CIUS
CAMBODIAN INSTITUTE FOR URBAN STUDIES

Local Project
Management Partner



OTTO VON GUERICKE
UNIVERSITÄT
MAGDEBURG

Work Package #1



TECHNISCHE
HOCHSCHULE
LÜBECK

Work Package #2

EBLE MESSERSCHMIDT PARTNER
Architekten und Stadtplaner PartGmbB

Work Package #3



Eberswalde University
for Sustainable
Development

Work Package #4

INKEK institute for
climate and
energy strategies

Work Package #5

Research Partners



Implementation Partners



Dissemination Partners



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research

FONA
Research for sustainability



PH
PENGHUOTH

Build4People Ecocity Transition Lab 2023 Presentation Conference National Anthems

Royal Kingdom of Cambodia



Federal Republic of Germany



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research

FONA
Research for sustainability



PH
PENGHUOTH

Build4People Ecocity Transition Lab 2023 Presentation Conference

Ms. Leakhena Setha, ECTL Process Moderator



Ms. Leakhena Setha

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

FONA
Research for sustainability



PH
PENGHUOTH

Build4People Ecocity Transition Lab 2023 Presentation Conference

Agenda

08:45-08:50: **Playing of National Anthems**

08:50-09:00: **Introduction to Agenda of B4P ECTL 2023 Presentation Conference**

- *Ms. Leakhena Setha, B4P ECTL 2023 Process Moderator*

09:00-09:10: **Greeting Words**

- *Dr Michael Waibel, Build4People project consortium representative*
- *Dr Heike Bauer, DLR Project Management Agency (funding Agency on behalf of the German Ministry of Education and Research, BMBF)*

09:10-09:25: **Report-back of the Process of the Build4People Ecocity Transition Lab 2023**

- *Rolf Messerschmidt, CEO of Eble Messerschmidt Partner / Leader of B4P WP#3 "Sustainable Neighbourhoods"*

09:25-09:45: **Presentation of Sustainability Approaches for Borey Peng Huoth: Analysis, potential micro-interventions and first ideas for guidelines of future developments – Young Perspectives**

- *Joint Presentation from students of Paññāsāstra University of Cambodia, Norton University and Institute of Technology of Cambodia, supported by Prof Tep Makathy, FAUP-PUC and Phanin Cheam, PPCH*

09:45-10:00: **Coffee / Tea Break**



build4people.org

| Build4People Ecocity Transition Lab 2023 | Presentation Conference | 03 March 2023

Page 4

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Ecocity Transition Lab 2023 Presentation Conference

Agenda

10:00-10:50: **Presentation of Sustainability Approaches for Borey Peng Huoth: Analysis, potential micro-interventions and guidelines for future developments – Build4People Perspectives**

Joint Presentation of Build4People Work Packages:

- *Urban Climate and Urban Green with focus neighbourhood level (WP#5 and WP#4)*
- *Sustainable Building for residential typologies (WP#2)*
- *People, Community Involvement and Corporate Transition Management (WP#1, WP#6, Stephan Anders DGNB)*

10:50-11:15: **Strategies and Guidelines for future-proof Borey Development with an enhanced Sustainability Performance**

- *Presentation of Build4People Work Package #3*

11:15-11:50: **Q&A and Way forward**

- *Facilitation by Ms. Leakhena Setha, B4P ECTL 2023 Process Moderator*

11:50-12:00: **Closing Words**

- *Mr. Ouk Villa, Chief Human Resources Officer of Peng Huoth Group*

12:00: **Group Photo**

12:15-13:45: Wrap-up Lunch of Build4People and Peng Huoth Group core team

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research

FONA
Research for sustainability



PH
PENGHUOTH

Welcome Remarks

Dr. Michael Waibel, Build4People Consortium Representative



Dr. Michael Waibel



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027

SPONSORED BY THE

 Federal Ministry of Education and Research

 **FONA**
Research for sustainability

 Build4People
ECOCITY
TRANSITION
LAB 2023



 **PH**
PENGHUOTH

Welcome Remarks

*Dr. Heike Bauer, DLR Project Management Agency
(funding Agency on behalf of the German Ministry
of Education and Research, BMBF)*



Dr. Heike Bauer

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Report-back of the Process of the Build4People Ecocity Transition Lab 2023



Rolf Messerschmidt, CEO of Eble Messerschmidt Partner
/ Leader of B4P WP#3 Sustainable Neighbourhoods“



PH
PENGHUOTH

Build4People
ECOCITY
TRANSITION
LAB 2023

EBLE MESSERSCHMIDT PARTNER
Architekten und Stadtplaner PartGmbB
with student support from:



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

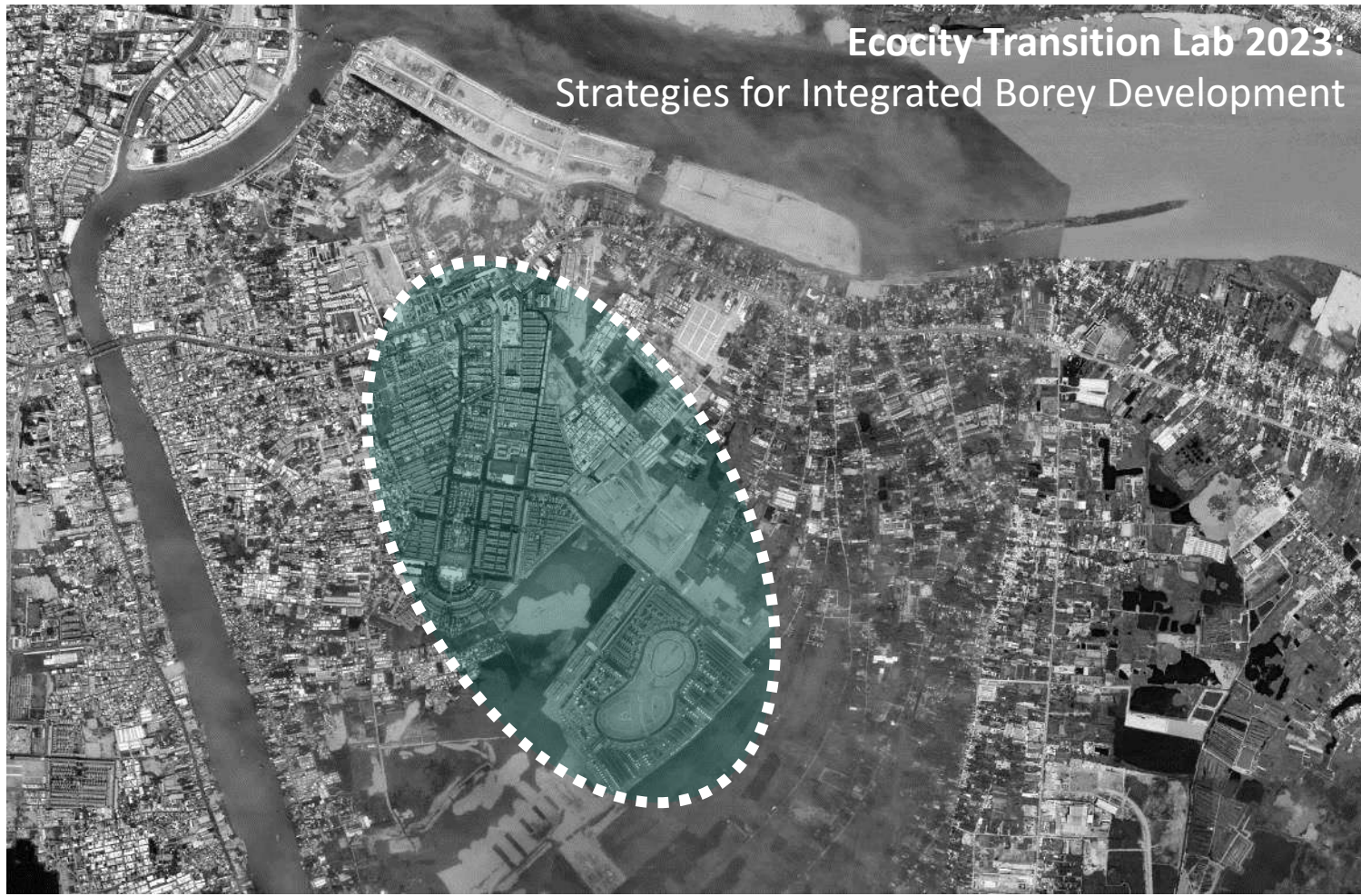
IMP 2025-2027

SPONSORED BY THE

 Federal Ministry
of Education
and Research

FONA
Research for sustainability

B4P Ecocity Transition Labs: Spatial and Topical Focusses





Build4People
ECOCITY
TRANSITION
LAB 2023



EBLE MESSERSCHMIDT PARTNER
Architekten und Stadtplaner PartGmbH

with student support from:



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4 People Ecocity Transition Lab 2023: Scope of Work

UNDERSTANDING: Analysis of existing borey and building typologies - identification of **potential for improvements**

IMPROVEMENTS: Upgrades of existing or planned boreys and building typologies for an **enhanced sustainability performance** (e.g. micro interventions)

FUTURE STANDARDS: Contributions to future-proof sustainable design, implementation and management standards of borey development

>> Based on sustainability strategies and criteria, as well as an integration with city, district and surrounding neighbourhoods



Build4People
ECOCITY
TRANSITION
LAB 2023



EBLE MESSERSCHMIDT PARTNER
Architekten und Stadtplaner PartGmbH
with student support from:



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023: Agenda

	Saturday 25 February	Sunday 26 February	Monday 27 February	Tuesday 28 February	Wednesday 01 March	Thursday 02 March	Friday 03 March
Morning	Focus Group Discussion WP#1 Residents Borey Peng Huoth	Internal kick-off Brunch meeting at Coconut Club & Park, Diamond Island	KICK-OFF CONFERENCE at Borey Peng Huoth	INTERNAL WORKSHOP Sustainable Building WP#2 + Focus Building Level	INTERNAL WORKSHOP Behaviour Change WP#1 Urban Transformation WP#6 + Focus Management	B4P ECTL 2023 Preparation of inputs to joint presentation on Friday	PRESENTATION CONFERENCE at Borey Peng Huoth (08:30 am)
Afternoon		Site Visit	INTERNAL WORKSHOP Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level	Team Work	Team Work	B4P ECTL 2023 Preparation of inputs to joint presentation on Friday	
Evening							



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

FONA
Research for sustainability

Team Briefing and Brunch at Coconut Park



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Team Briefing and Brunch at Coconut Park

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Site Visit Mapping



Route 1:

- Coconut Park (1) : Brunch & Team Briefing
- Ferry ride from Coconut Park(1) to Koh Norea (2)
- Drive to (2) Koh Norea Development
- Drive to (3) Borey Penh Huoth (Beoung Snour)

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Ferry Ride

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Bus Ride

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA

Research for sustainability

PH

Build4People
ECOCITY
TRANSITION
LAB 2023



PH

PENGHUOTH

Site Visit Route To Borey Peng Huoth



Routes in Borey Peng Huoth:

- Project Star Platinum (1)
- Project Star Platinum Athina (2)
- Project Rosato (3)
- Project Roseville (4)

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Star Platinum Athina

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Rosato

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Rosato

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Roseville

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Shophouses

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Site Visit Route To Borey Peng Huoth Eco Melody



Routes in Borey Peng Huoth Project Eco Melody:

- Eco Melody Commercial Strip (6)
- Eco Melody Luxury Villa (7)
- Eco Melody Clubhouse (8)

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Site Visit Eco Melody – Commercial Strip



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Eco Melody – Luxury Villas

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Site Visit Eco Melody – Central Area

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research



Site Visit Eco Melody – Group Pictures



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

FONAR
Research for sustainability

Build4People Ecocity Transition Lab 2023: Agenda

	Saturday 25 February	Sunday 26 February	Monday 27 February	Tuesday 28 February	Wednesday 01 March	Thursday 02 March	Friday 03 March
Morning	<div>Focus Group Discussion WP#1</div> <div>Residents Borey Peng Huoth</div>	<div>Internal kick-off</div> <div>Brunch meeting at Coconut Club & Park, Diamond Island</div>	<div>KICK-OFF CONFERENCE</div> <div>at Borey Peng Huoth</div>	<div>INTERNAL WORKSHOP</div> <div>Sustainable Building WP#2 + Focus Building Level</div>	<div>INTERNAL WORKSHOP</div> <div>Behaviour Change WP#1 Urban Transformation WP#6 + Focus Management</div>	<div>B4P ECTL 2023</div> <div>Preparation of inputs to joint presentation on Friday</div>	<div>PRESENTATION CONFERENCE</div> <div>at Borey Peng Huoth (08:30 am)</div>
Afternoon		<div>Site Visit</div>	<div>INTERNAL WORKSHOP</div> <div>Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level</div>	<div>Team Work</div>	<div>Team Work</div>	<div>B4P ECTL 2023</div> <div>Preparation of inputs to joint presentation on Friday</div>	
Evening							



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Focus Group Discussions WP#1

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

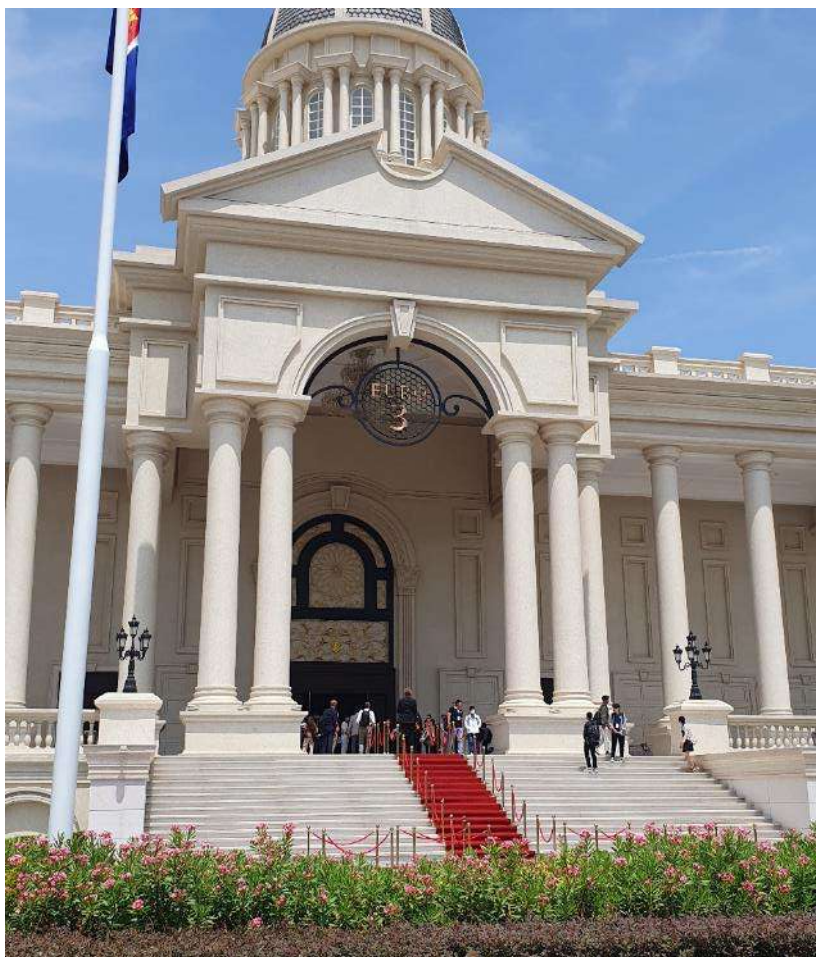


Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023 Kick-Off Conference at PH Grand Hall



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិតរបស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Kick-Off Conference - Handshake of HE N. Pharat with German Ambassador S. Messerer



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023 Kick-Off Conference - National Anthems



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023 Kick-Off Conference



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Kick-Off Conference Greeting Words

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

B4P ECTL 2023 Kick-Off Conference: Quotes from Greeting Words

„Today we are going to sign a Letter of Intent with Peng Huoth Group. They are the most renowned developer company of Cambodia with the high potential to make sustainable development possible!“

Dr. Michael Waibel, B4P Representative, University of Hamburg

„គំរោងលំនៅឋានមានចរភាពធ្វើឡើងសំរាប់បង្កើនជីវភាពប្រជាជនរស់នៅក្នុងទីក្រុងនៃប្រទេសកម្ពុជា។ “ ឯកឧត្តម នួន ជារ័ត្ន អភិបាលរង នៃគណៈអភិបាលរាជធានីភ្នំពេញ

„This project in sustainable development is created to enhance the lifestyle of residents of Cambodian cities. “

HE Nuon Pharat, Vice-Governor of PPCH

„This alliance between the private sector and academia is strongly needed for achieving the outmost change to sustainable urban development.“

Mr. Ambassador Stefan Messerer, Ambassador of the FR of Germany

„I’m very happy that Borey Peng Huoth has decided to join forces with Build4People to bring new creative ideas to Cambodia and to make Phnom Penh a better place to live in!“

Dr. Heike Bauer, DLR Project Management Agency

„ក្រុមហ៊ុនប៉េងហួតរីករាយស្វាគម័យយ៉ាងកក់ចំពោះកិច្ចប្រតិបត្តិការណ៍ចូលរួមក្នុងគំរោងសិក្សាអភិវឌ្ឍកែប្រែទីក្រុងស្អាតនៅកម្ពុជា រួមជាមួយរដ្ឋាភិបាលកម្ពុជា ដើម្បីលើកកម្ពស់គុណភាពរស់នៅរបស់ប្រជាជនផងដែរ។ “ឧកញ៉ា តាយ ម៉េងលី ប្រធានប៉េងហួត គ្រប់

“Borey Peng Huoth Group is delighted to cooperate in this research to turn cities in Cambodia into clean places to live in and to elevate the living conditions of the Cambodian people.”

Okhna Thay Mengly, GCEO of Peng Huoth Group

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Kick-Off Conference Signing of MoU



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Kick-Off Conference Keynote Speakers

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Kick-Off Conference Presentations

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

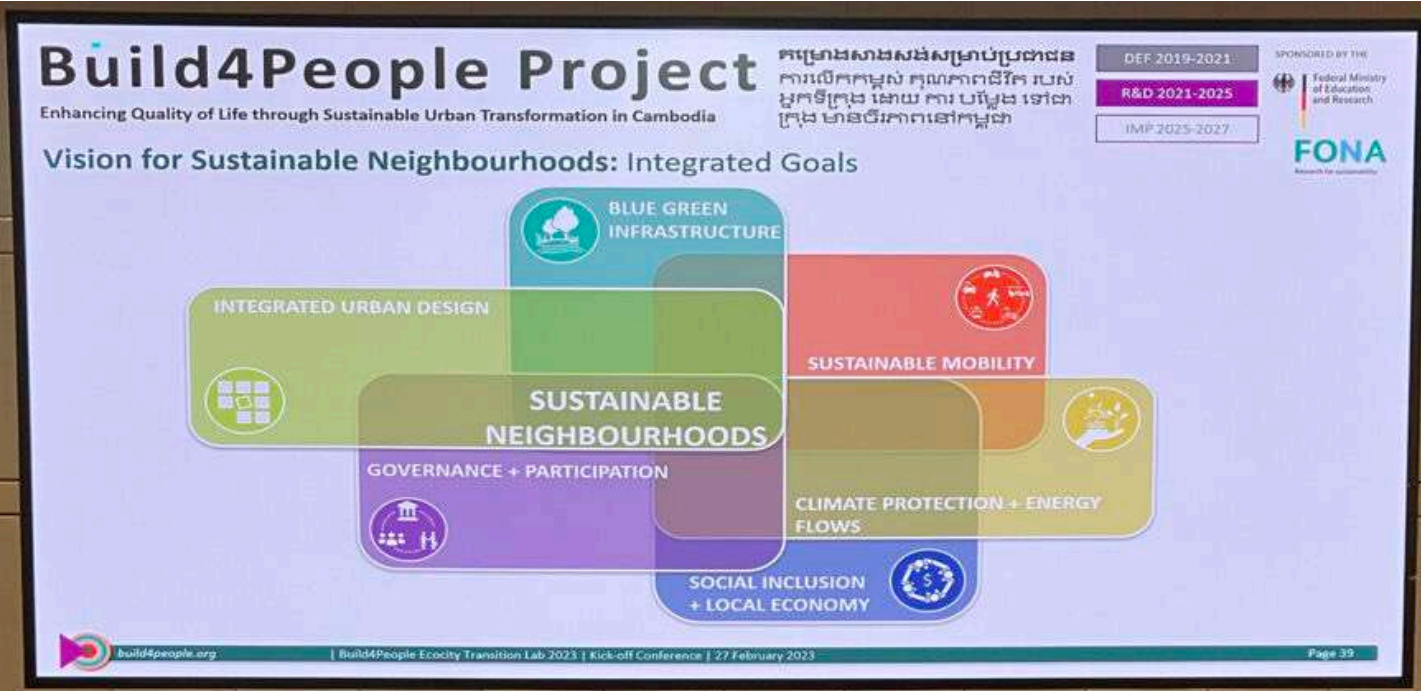
R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Kick-Off Conference Presentations



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia


គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021


R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability


Build4 People Ecocity Transition Lab 2023: Scope of Work

UNDERSTANDING: Analysis of existing borey and building typologies - identification of **potential for improvements**

IMPROVEMENTS: Upgrades of existing or planned boreys and building typologies for an **enhanced sustainability performance** (e.g. micro interventions)

FUTURE STANDARDS: Contributions to future-proof sustainable design, implementation and management standards of borey development


>> *Based on sustainability strategies and criteria, as well as an integration with city, district and surrounding neighbourhoods*



build4people.org

| Build4People Ecocity Transition Lab 2023 | Kick-off Conference | 27 February 2023

Page 36



Build4People
ECOCITY
TRANSITION
LAB 2023

PH
PENGDUOT

ASEAN MEMBER STATES PARTNER
GOVERNMENT AND NON-GOVERNMENT PARTNERS
ACROSS SECTORS AND DISCIPLINES

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Kick-Off Conference Presentations

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

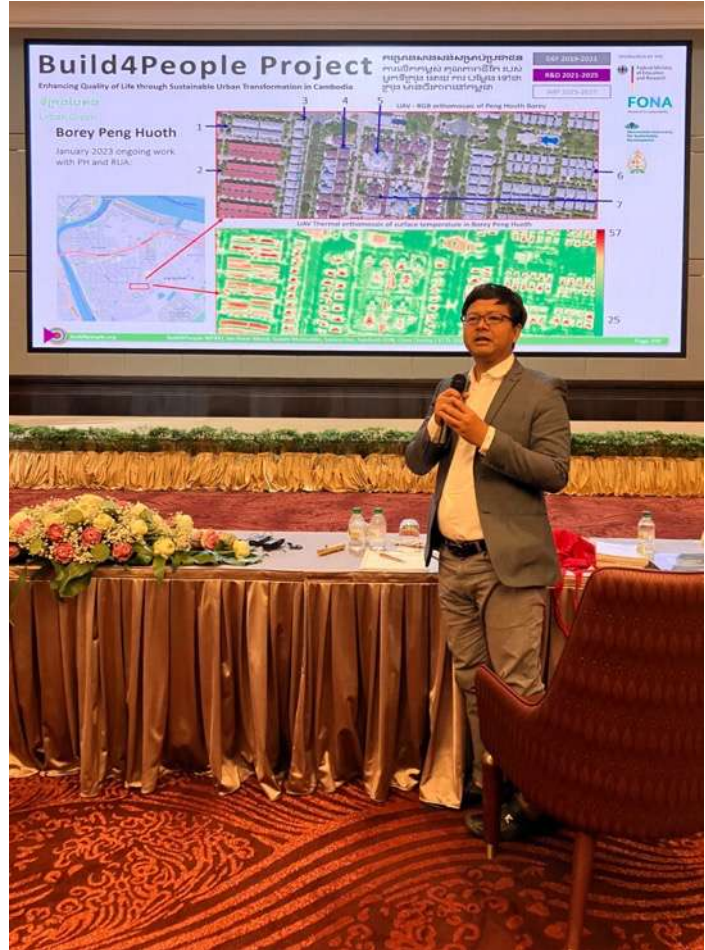
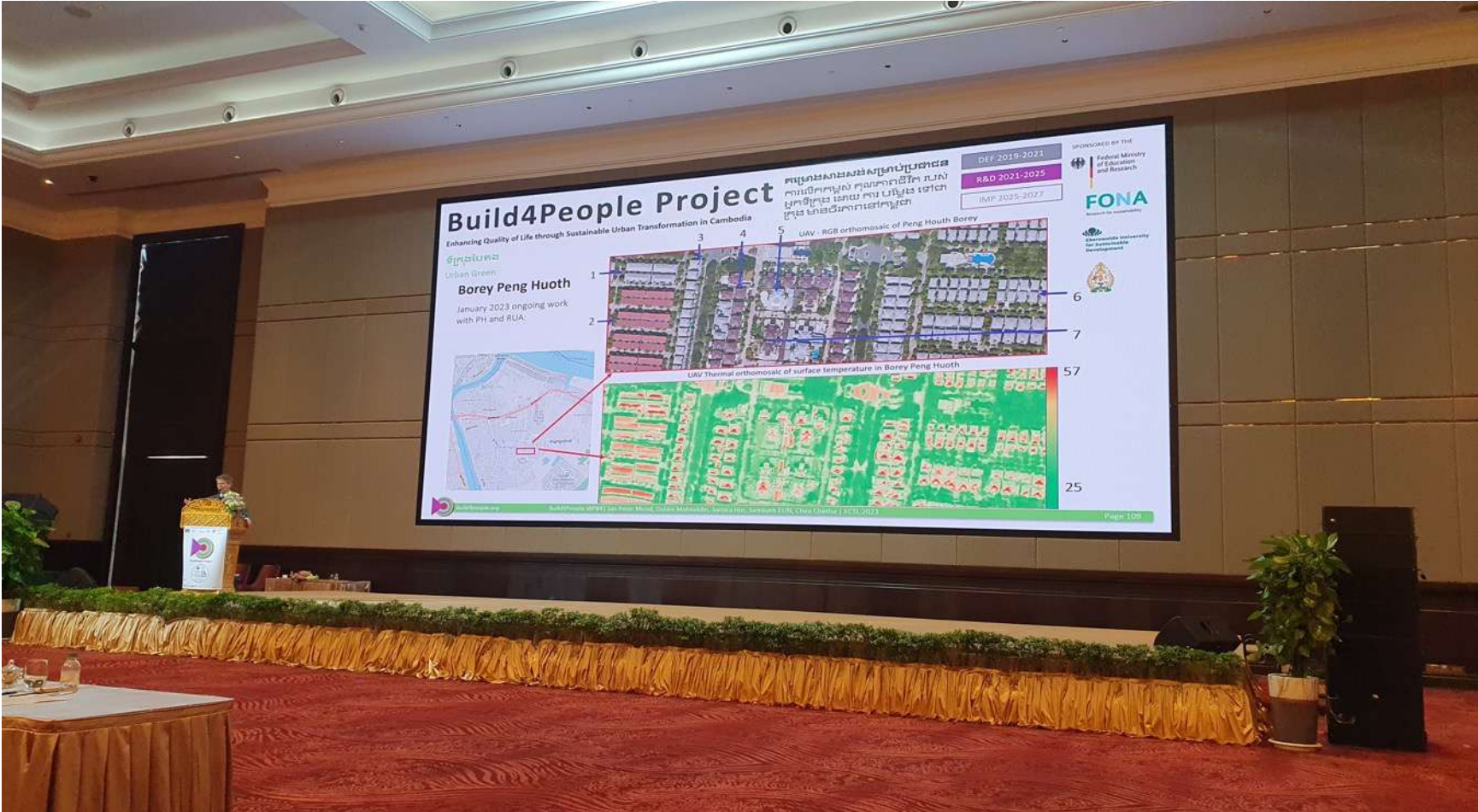
DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research

FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

B4P ECTL 2023 Kick-Off Conference: Quotes from conference speakers

„When we look into the future, the target should be to have more than 50% of green spaces in neighbourhoods.“
Dr. Stephan Anders, Director Network and Consulting, DGNB

„We would like to understand the spatial situation, and then we can link it to new blue green infrastructure networks.“
Prof. Jan-Peter Mund, University Magdeburg WP#4



„ចក្ខុវិស័យរបស់ថ្នាក់ដឹកនាំគឺជាក្រុមហ៊ុនកំរុំដែលអភិវឌ្ឍដោយមានចរាចរណ៍ជាមួយហេដ្ឋារចនាសម្ព័ន្ធបែកដេញដោល“ លោក ចាន់ រដ្ឋា នាយករងទទួលបន្ទុកកិច្ចការសាងសង់កម្ពុ និងជាជំនួយការ GCEO

“ The vision of our leader is to become an exemplary development company with suitability and green infrastructure.”

Mr. Ratha Chan, Deputy Corporate Affair Director and Assistant to GCEO

„The collaborative Ecocity Transition Labs are successful events with an integrated approach involving many disciplines of urban planning. They create a mutual understanding between the stakeholders“

Mr. Rolf Messerschmidt, CEO of Eble Messerschmidt Partner, WP#3

„We aim to support a shift from conventional practices and structures to more sustainable ones through transformation processes.“

Mr. Ravi Jayaweera, University of Hamburg, WP#6

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Group Photo Kick-Off Conference



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Group Photo Kick-Off Conference



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4 People Ecocity Transition Lab 2023: Agenda

	Saturday 25 February	Sunday 26 February	Monday 27 February	Tuesday 28 February	Wednesday 01 March	Thursday 02 March	Friday 03 March
Morning	<div>Focus Group Discussion WP#1</div> <div>Residents Borey Peng Huoth</div>	<div>Internal kick-off</div> <div>Brunch meeting at Coconut Club & Park, Diamond Island</div>	<div>KICK-OFF CONFERENCE</div> <div>at Borey Peng Huoth</div>	<div>INTERNAL WORKSHOP</div> <div>Sustainable Building WP#2 + Focus Building Level</div>	<div>INTERNAL WORKSHOP</div> <div>Behaviour Change WP#1 Urban Transformation WP#6 + Focus Management</div>	<div>B4P ECTL 2023</div> <div>Preparation of inputs to joint presentation on Friday</div>	<div>PRESENTATION CONFERENCE</div> <div>at Borey Peng Huoth (08:30 am)</div>
Afternoon		<div>Site Visit</div>	<div>INTERNAL WORKSHOP</div> <div>Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level</div>	<div>Team Work</div>	<div>Team Work</div>	<div>B4P ECTL 2023</div> <div>Preparation of inputs to joint presentation on Friday</div>	
Evening							



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level

Group 1 (Students + B4P Experts):



Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

IMP 2025-2027

**Federal Ministry
of Education
and Research**

FONA
Research for sustainability

Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level

- Emission surface discussion: **roads**, influence of greenery placements, building façade elements for better internal building climate
- **Positive notes** of the neighbourhoods that can be duplicated throughout the other zones or projects: **internal alleyways**
- Cause of shading agent on paved surfaces to improve **outdoor temperature**



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level

Group 2 (Students + B4P Experts):



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level

Group 2:

- Discussion on ventilation : wind blow direction and paths
- High and low building design for efficient wind flow
- Positive notes on Alleyways and sidewalks in Rosato Project
- Brainstorming on zone cooling agents: small park connections, system of solar pump of cool air within the residential projects



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023 Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level

Group 3 (Students + B4P Experts):



Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

IMP 2025-2027

**Federal Ministry
of Education
and Research**

FONA
Research for sustainability

Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level

- **Ventilation and wind flow blockage:**
Straightness of road design causes no flow of wind in the area
- Height of residential fencing
- Overreliance of shading agents on individual building level



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Urban Green WP#4 Urban Climate WP#5 + Focus Neighbourhood Level



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Sustainable Building WP#2 + Focus Building Level



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

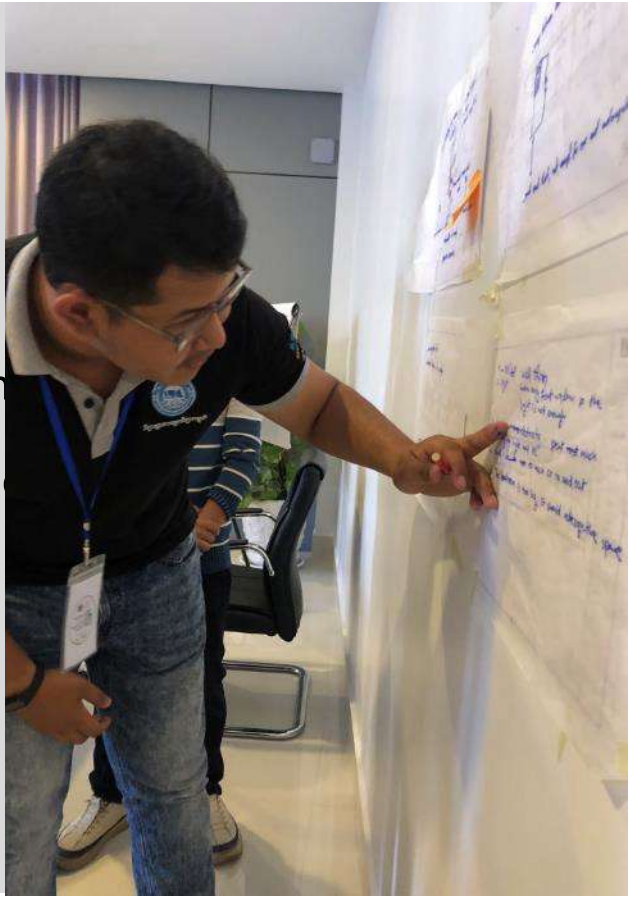
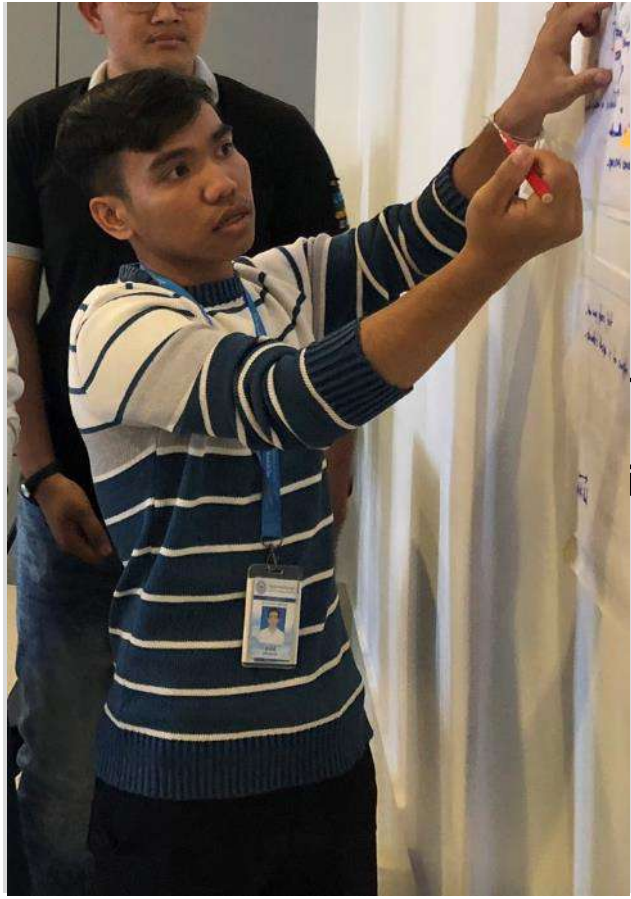


FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Sustainable Building WP#2 + Focus Building Level

Group 1 (Students + B4P Experts):



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

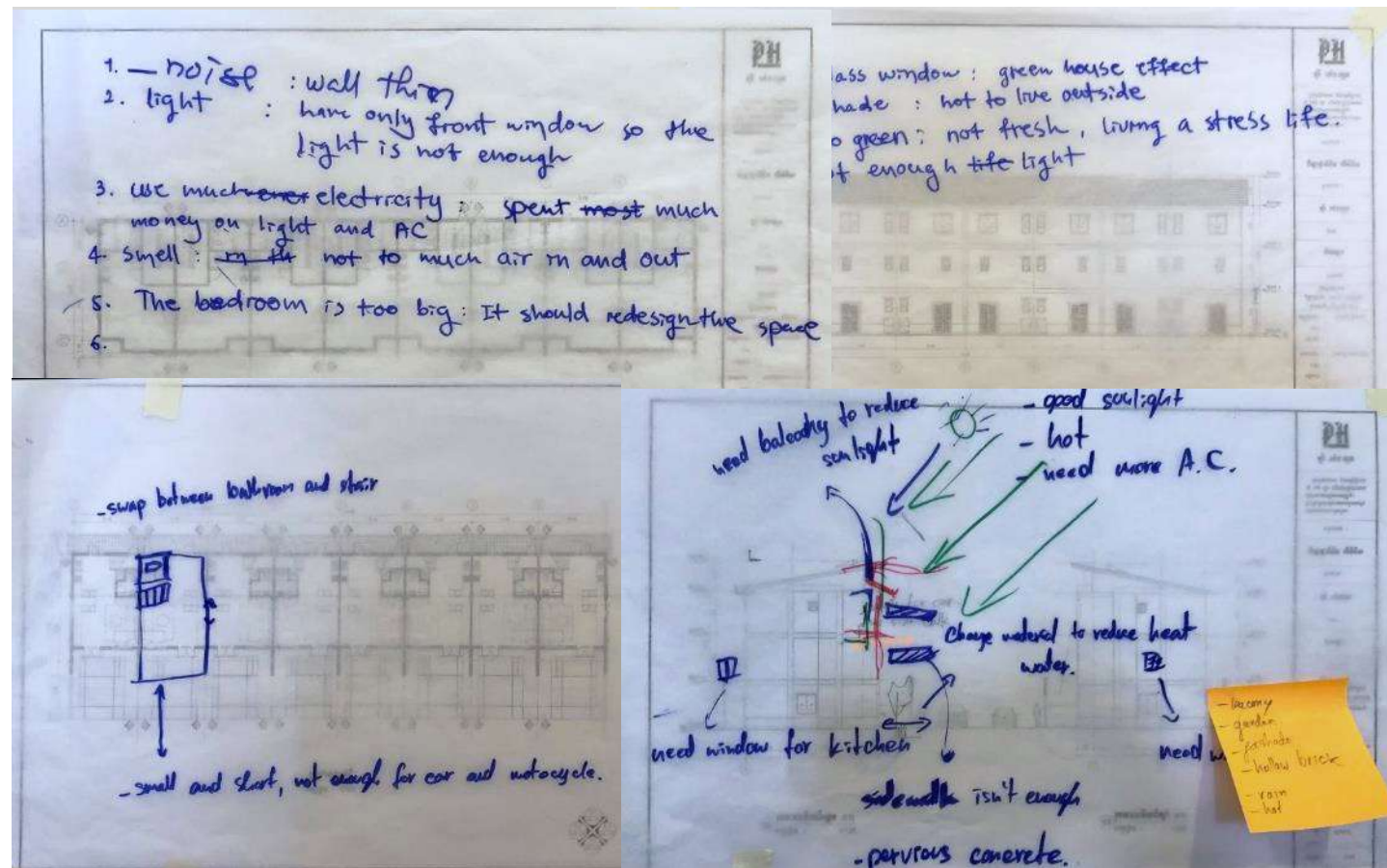
FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Sustainable Building WP#2 + Focus Building Level

Group 1 Affordable Rowhouse:

- Analysis of privacy and internal comfort
- Layouts study in internal ventilation and exterior openings
- Materials exploration: for heat reduction in roofs and shading agents
- Noise cancellation strategies with wall thickness



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Sustainable Building WP#2 + Focus Building Level

Group 2 (Students + B4P Experts):



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Sustainable Building WP#2 + Focus Building Level

Group 2 Jasmina Villa:

- Analysis of **exterior façade and site plan**
- **Semi-public area:** Shade-less balcony to classic veranda
- **Window locations :** a century long question discussion on the necessity window at staircase
- **Window sizes:** what is the reason for full-height and wide windows on the front façade? Does the bedroom need to be well lit at all times?



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Sustainable Building WP#2 + Focus Building Level



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023 Team Work



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Student Teamwork

Group 1 (Students + B4P Experts):



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Student Teamwork



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Behaviour Change WP#1Urban Transformation WP#6 + Focus Management



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិតរបស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Build4People Ecocity Transition Lab 2023

Workshop on Behaviour Change WP#1 Urban Transformation WP#6 + Focus Management



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027

SPONSORED BY THE

 Federal Ministry of Education and Research

 **FONA**
Research for sustainability

 Build4People
ECOCITY
TRANSITION
LAB 2023





Presentation of Sustainability Approaches for Borey Peng Huoth:

Analysis, potential micro-interventions and first ideas for guidelines of future developments – **Young Perspectives**

Students from Paññāsāstra University of Cambodia, Norton University and Institute of Technology of Cambodia supported by Prof Dr Tep Makathy, FAUP-PUC, and Phanin Cheam, PPCH

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

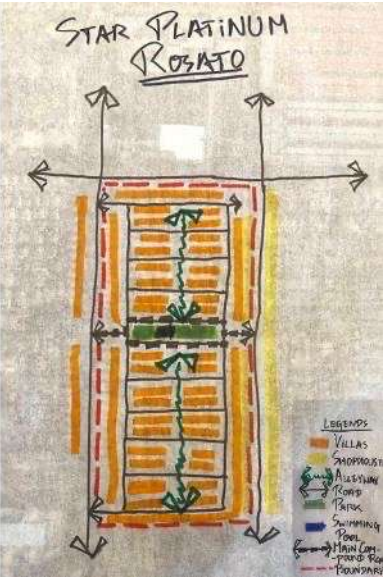
FONA
Research for sustainability

SITE ANALYSIS



GOOD POINTS

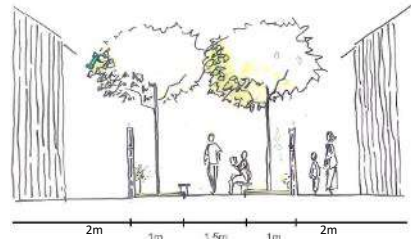
- Well shaded garden
- The temperature are cool
- There's a green corridor
- Streets are visually connected with people in the building



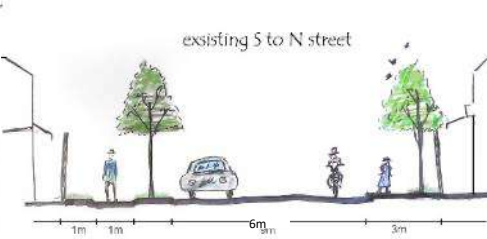
Neighborhood plan

GAPS

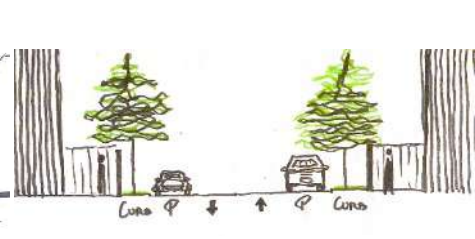
- Grass can be replaced with plants that require less watering
- Curb can be made permeable to allow rainwater to feed plants
- The alleyway lacks connection
- Houses facing West and South are too exposed
- Some streets lack sidewalk



Existing Alleyway section



Existing S to N street



Existing W to E street

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិតរបស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

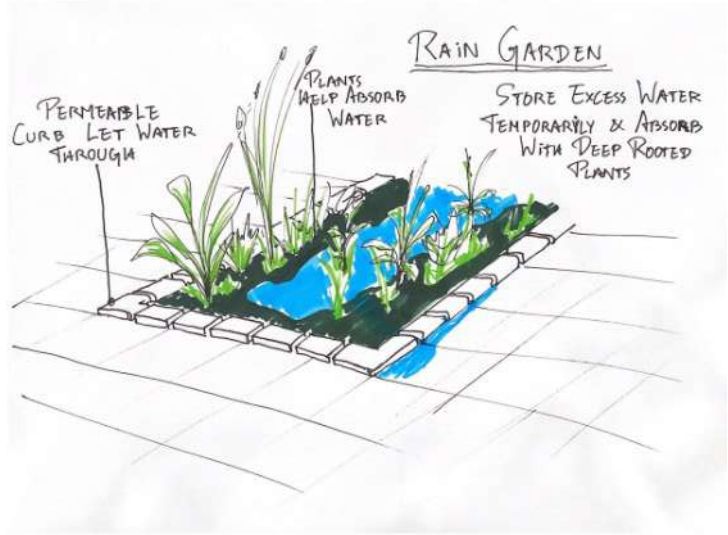
R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

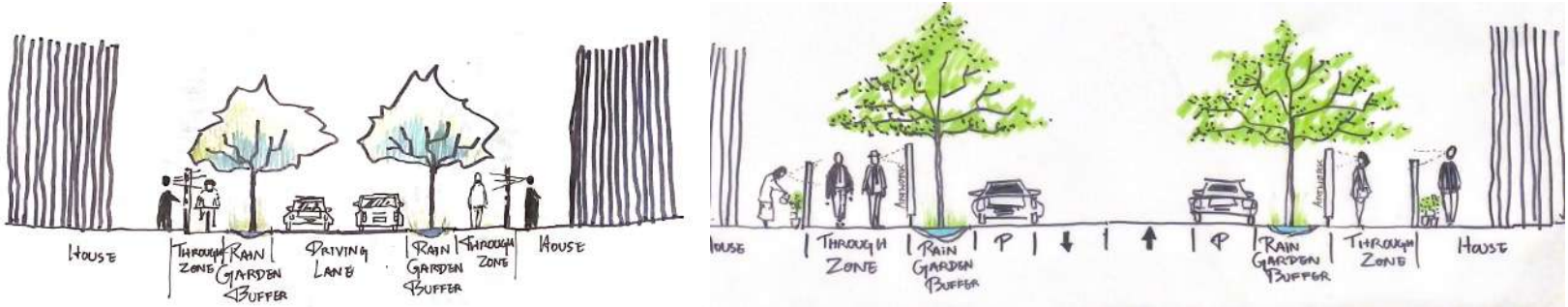
Federal Ministry
of Education
and Research

FONA
Research for sustainability



IMPROVEMENTS

- Raingarden helps absorb rainwater and with permeable curb, water can pass through. This feature can replace street side grass pot but still maintain its aesthetic.
- West to East street now have tree along with raingarden as a buffer between car traffic and pedestrian/cyclist through zone.
- South to North streets are activated with public art shows along the sidewalk.
- House fences are partially seen through to allow connection to the street. Pedestrians may feel safer by being seen.



Proposed W to E street

Proposed S to N street

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

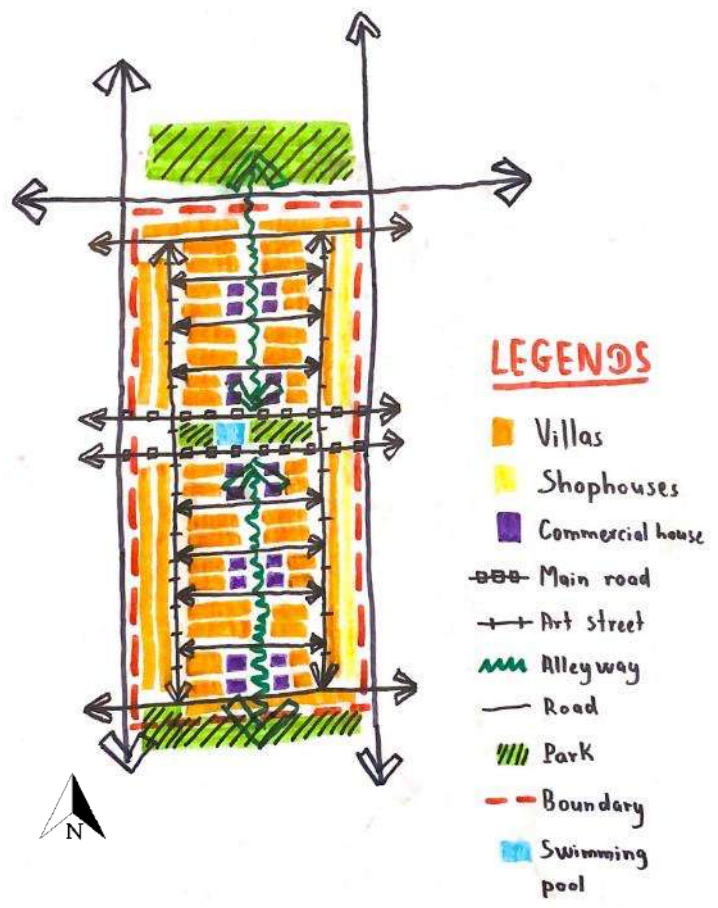
R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability



Re-vamped Alleyway 1

IMPROVEMENTS

- Rosato's alleyway is car-free and is favorable if it is fully turned to an active pedestrian thoroughfare.
- The alleyways and streets are given different atmosphere and design to offer variety, so the walking experience is more interesting.
- Alleyway business lined the alleys creating an active street.
- Passive alleyways allows passive activities like reading or resting to take place



Re-vamped Alleyway 2



Re-vamped Alleyway 3

Proposed Neighborhood Plan

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

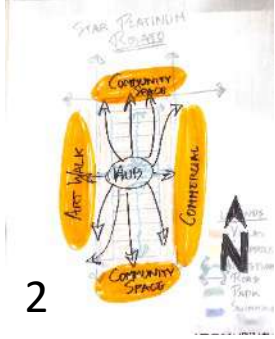
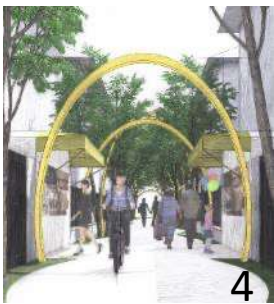
R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability



IDEAS FOR NEIGHBORHOOD GUIDELINES

- Permeable fence to the street that is high enough as a boundary yet low enough to see. Major parts of the fence should be seen through.
- Decentralize community hub to spread activities along the neighborhood
- Shading device for the building oriented to the West and South.
- Activate the alleyway with commercial activities alternating with passive activities.
- Open up the community hub to mobile street vendors with permit so the space can be lively filled with social interaction.
- Passive activities such as artwork exhibition along the sidewalk can still activate the space.
- Raingarden are employed to reduce rainwater runoff to storm drain. Curb surrounding the raingarden must be permeable.

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិតរបស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry of Education and Research

FONA
Research for sustainability

SITE ANALYSIS

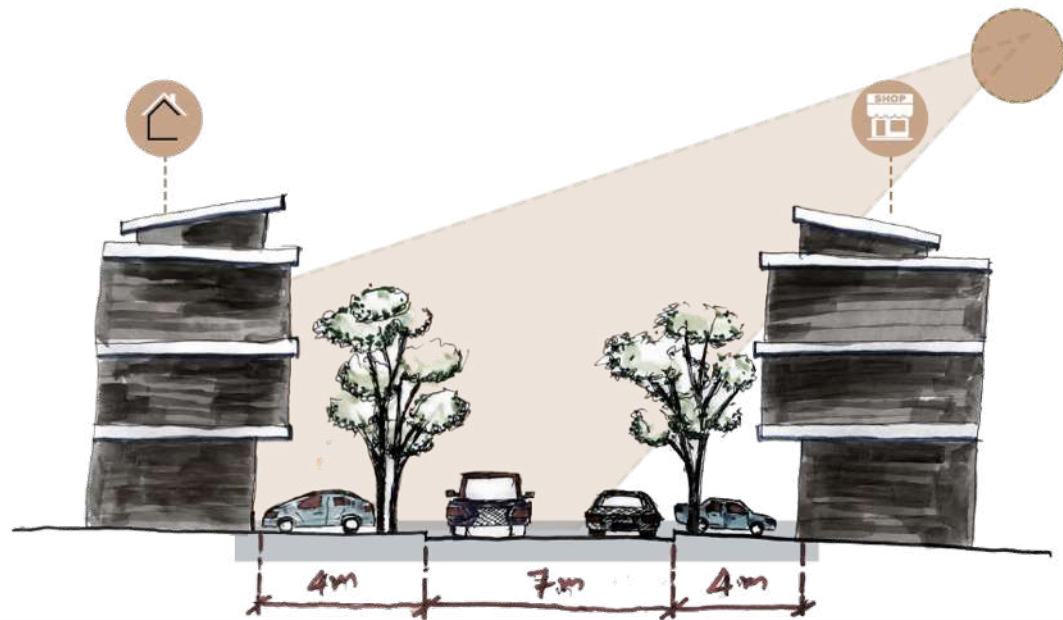
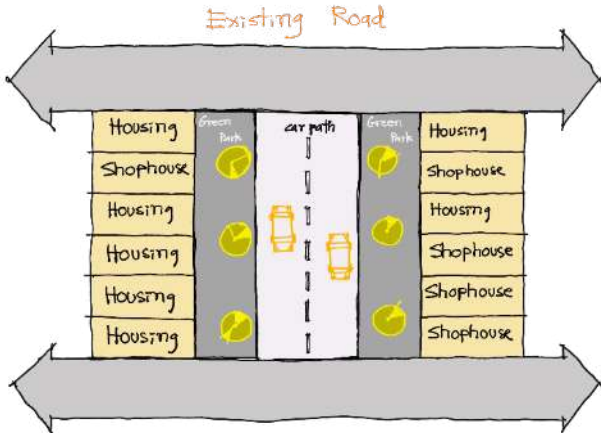


GOOD POINTS

- Well designed zone with less traffic and noise
- Provided mixed uses and thus activities
- Each plot are open to each other and not partitioned by walls/fences

GAPS

- Too much Glass on the Façade
- Urban Heat Island
- Less sidewalk
- It's not safe for kids;
- Less parking Space
- Low rate of greenery



SITE VISIT

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



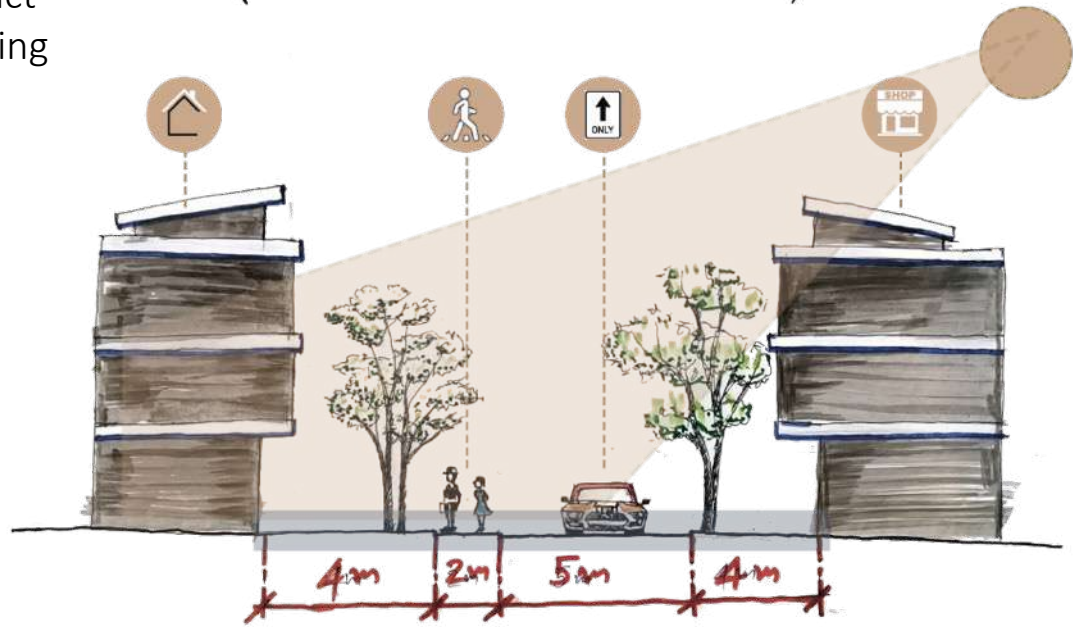
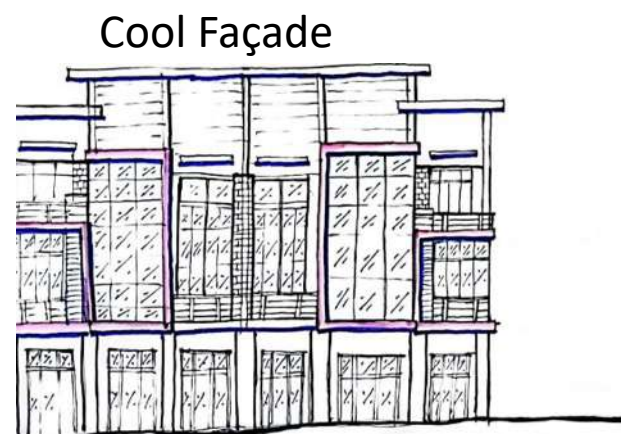
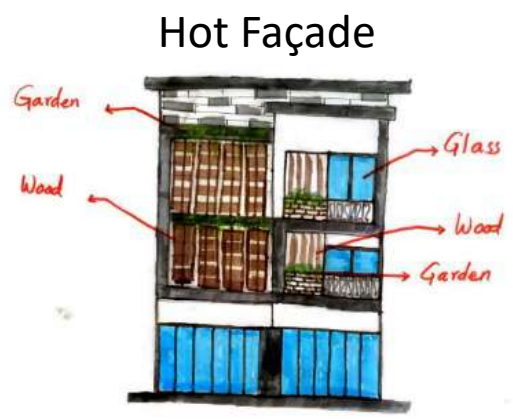
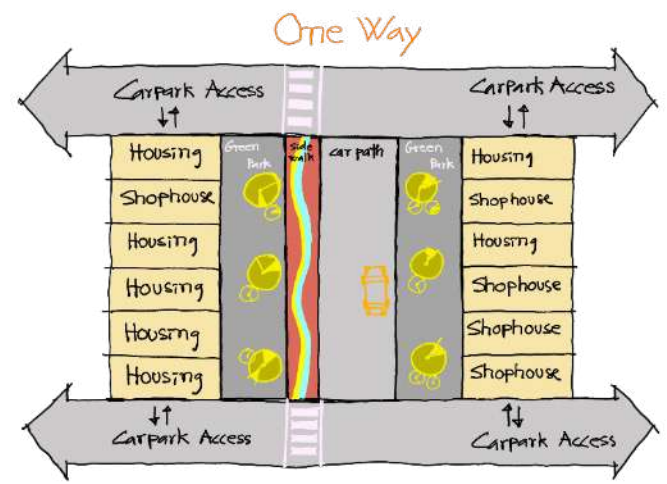
Federal Ministry
of Education
and Research

FONA
Research for sustainability



IMPROVEMENTS

- Improve connectivity within blocks, and add side way
- Designated parking lot to be built (and user-pay-principle)
- Open up more green façade and reduce concrete ration (green roof should be an option)
- One Way Road (Separate and reduce conflict between pedestrians and vehicles; increasing traffic flows).



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

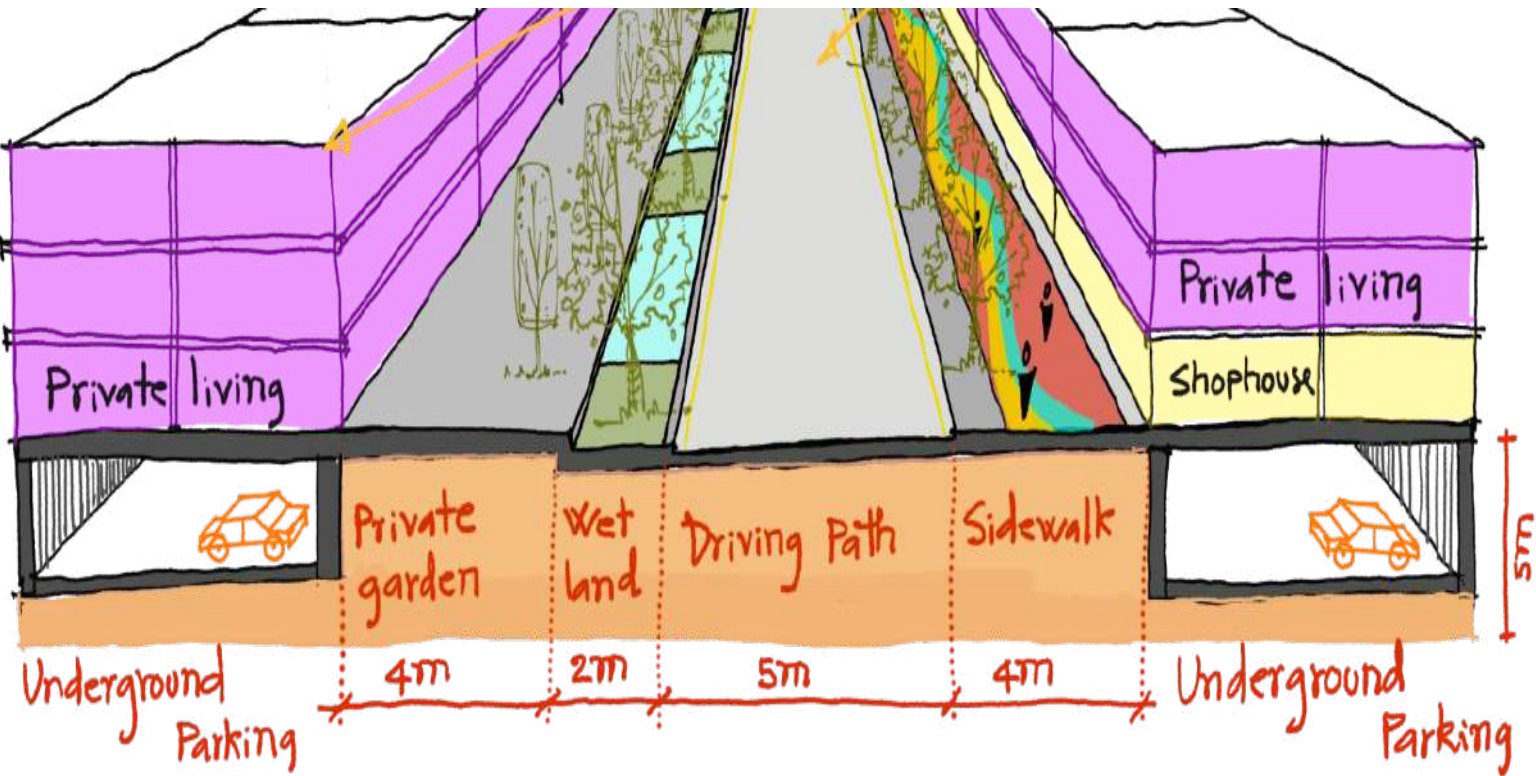
IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

INITIAL IDEA FOR UNDERGROUND PARKING



- Much more land available for non parking
- Easier access control to help reduce crime
- Not blocking of views or sunlight
- Protect Vehicles from elements of weather



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Draft Regulatory Guidelines for Future Works

These draft guidelines intend to provide guidance on outdoor/ landscape design:



- Add more greenery to outdoor landscape plus green façade and roof (for coolant and rainwater absorption).



- Emphasize on safety and healthy walking by introducing friendly walkway in the neighbourhood thus reducing the dependency on transports.



- Reduce glass dependency, thus introducing local materials for air and light movement (and people-to-people interactions).



- Use-less absorb heats materials such as recyclable (Circular Economy) and Eco Materials to better thermal comfort and better energy consumption.



- Building orientation include inner garden (Courtyard) to bring fresh air and natural light to the building without any energy needed.

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry of Education and Research



FONA
Research for sustainability

SITE ANALYSIS

GOOD POINTS

- **Shading** Trees provide shadow.
- **Front yard** Enough space for each house's owners (available for car parking inside the plot)
- **Security** Provide secure and peaceful environment, no crime (?), owners are able leave vehicles outside
- **Direction** Since the houses face less sunlight intensive direction, make the area low heat.
- **Environment** Waste collection service is provided.

ROOM FOR IMPROVEMENTS

- **Improper Parking** Most of the house owners park on the public road (not in their plots)
- **Side walks** There is almost no space for walking on the side of the road.
- **Lack interaction** Neighbors barely get to meet or interact with each other in an absence of community space..
- **Enclosure** Tall fences divide between each house and outside environment.
- **No public space** Lack space for walking or exercising and cycling lane, neither playground for entertainment purpose.

Site Plan



Existing road



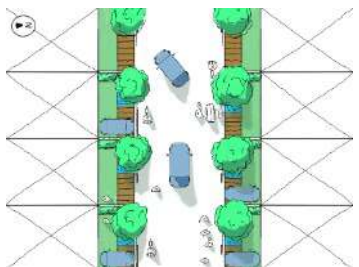
Existing section road



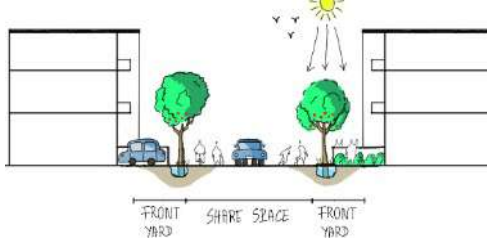
OUR PRELIMINARY IDEAS

- One way direction street can be implemented to provide a much more needed space which can be use as share space for pedestrian usage or cycling.
- Lower the fences for much easier interaction between neighbors.
- Infront of residential houses, design rain garden system to:
 - Allow the rainwater to properly flow through
 - Help to reduce the area temperature when the sunlight evaporates the water.
 - Improve the community's aesthetic.

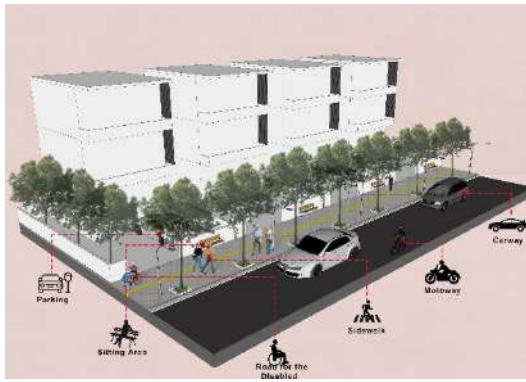
Proposed Site Plan



Proposed Section



3D Model



Proposed Road



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



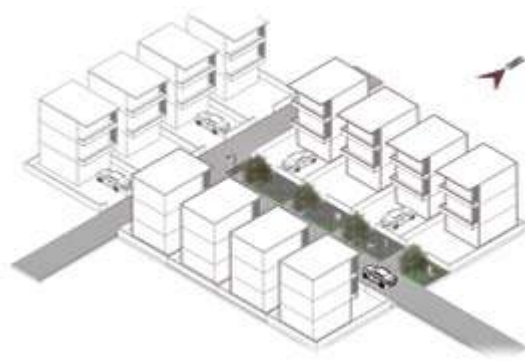
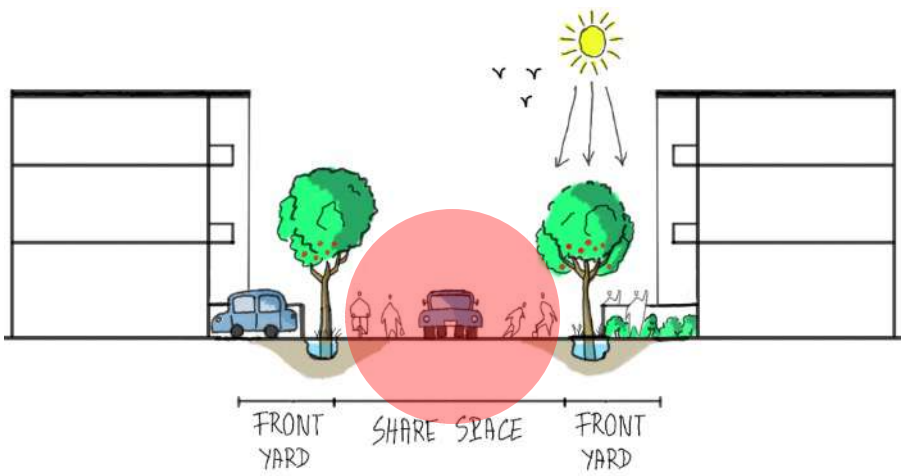
IMPLEMENT ONE DIRECTION ROAD

ISSUE

- Most of the house owners parks their cars on public space causing the road to become smaller for cycling and pedestrian usage.

PROPOSAL

- Implement one direction road to avoid improper parking.
- Create share space for multi-functional purpose like walking, cycling, playing...



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

PRELIMINARY IDEAS FOR GUIDELINES



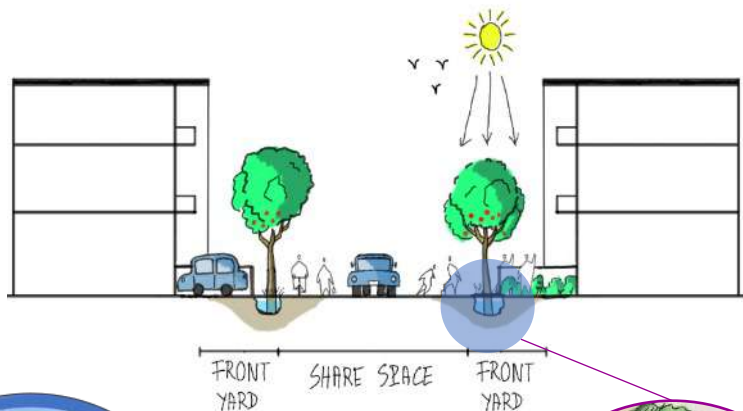
RAIN GARDEN INTEGRATION

PROPOSAL IDEA

- Our proposal is to integrate Rain Garden in front of house to evacuate water and attract natural bio-diversity in Borey. This way, we can filter and remove pollutants from storm water.

HOW IMPORTANT IS RAIN GARDEN?

- It can help filter out pollutants in runoff and provide food and shelter for natural living things (etc. birds, sounds, .
- It reduces the area temperature when the sunlight evaporates the water.
- Increase beneficial insects and reducing the number of mosquitoes.
- The storm water's flow will be reduced and evacuated.



LOWER FENCES INTEGRATION

ISSUE

- Tall fence partitioned each residential house from one another with decrease the interaction between neighbors.

PROPOSAL

- Lower fence height.
- Do a survey asking for the customer to ask for how low would they be comfortable with their wall and fence and come up with the agreement on the height of the partitions.
- Encourage the resident to plant greeneries inside their space which could increase the community overall aesthetic.



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE




Federal Ministry
of Education
and Research

FONA
Research for sustainability



GOOD POINTS

- Acceptable parking space
- Enough sunlight
- Enough balcony
- Enough space at the back for doing laundry and to enjoy with greenery
- Security



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

 Federal Ministry
of Education
and Research

 **FONA**
Research for sustainability

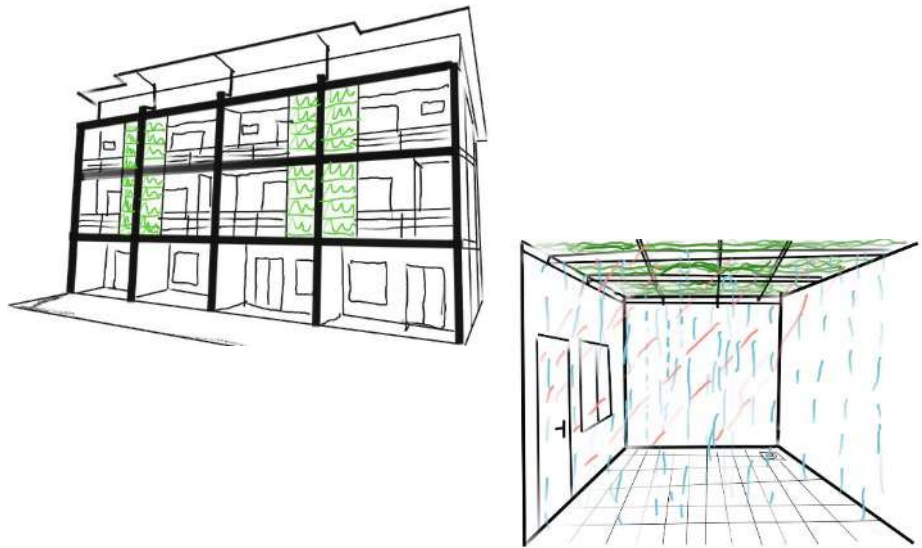
OUR PRELIMINARY IDEAS

Pay better regard to heat absorption by:

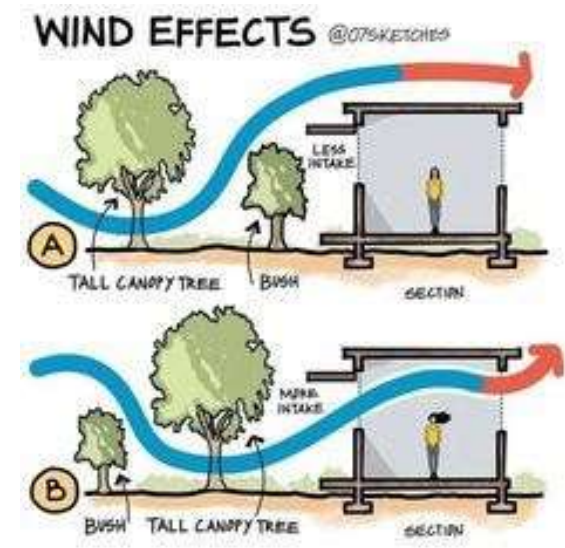
- (1) Roof

(2) Glass

(3) Road
- Raise awareness about the effectiveness of curtains
 - Plant more green at the front and the back of the house to improve air quality.



- Ventilation: the air doesn't flow properly in the building since the front and the back door directly face each other.
- Greening outside the house also brings better ventilation.



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

OUR PRELIMINARY IDEAS

HEAT ABSORPTION

- Change from normal concrete road to cool pavement to reduce sun heat
- Add insulation under the roof to reduce sun heat.



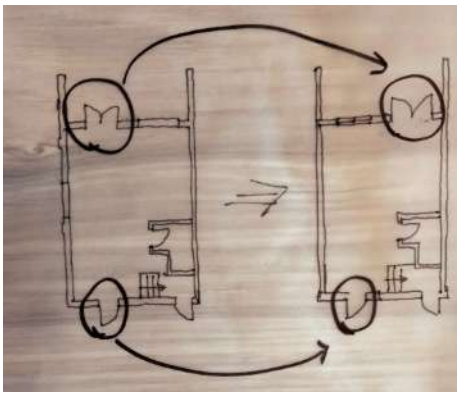
GREENERY

- Change some skin of the building from steel louver to air brick which able to plant some green such as flower, plant at the front of the building



VENTILATION

- Change the position of the front door, the back door and window to not be directly face each other.



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

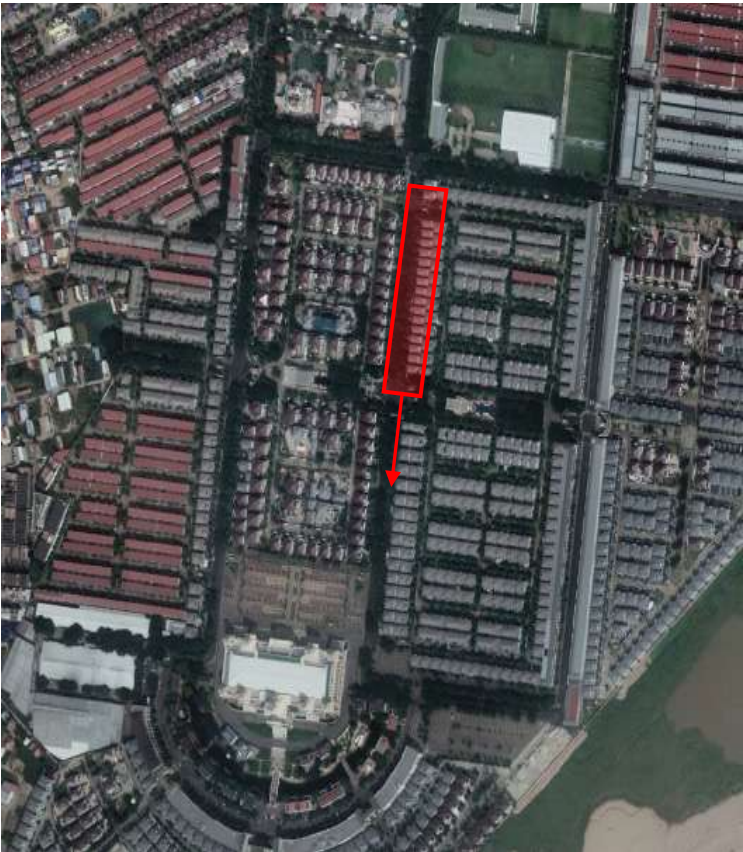
IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

SITE ANALYSIS



Master Plan



Sites visit

GOOD POINTS

- Calm atmosphere (quiet and secure)
- Good amount of greenery
- Walking distance from commercial and public space(Euro Park)
- Enough space for car packing

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

ROOM FOR IMPROVEMENTS AND POSSIBLE SOLUTIONS



- Too much glass on facade. So, in order to reduce the heat and direct light into house we can add vertical / horizontal louver behind the glass.



- Not enough roof for car parking. So, we can use automatic roof for protect car from heat.



- Too hot on first and second floor balcony. So, we can add roof above the balcony.



- Not sufficient water system. We can add water gutter.

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

PRELIMINARY IDEAS FOR IMPROVEMENTS



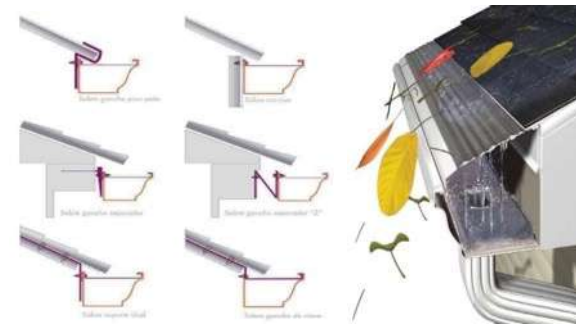
- For louver we want to add behind the glass in order to reduce heat and direct light into bedroom. We can use wood for louver. It can be moved 180 degrees



- For the car parking we can use the automatic roof similar to the left image. But for this point we make sure it's durable and strong.



- For roof on the first balcony, we can decorate with plants but not too much and make sure it keep space for air flow.



- For solving the problem of blocking leaves, we suggest to add a rain gutter

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027

SPONSORED BY THE

 Federal Ministry of Education and Research

 **FONA**
Research for sustainability

 Build4People
ECOCITY
TRANSITION
LAB 2023





Presentation of Sustainability Approaches for Borey Peng Huoth: Analysis, potential micro-interventions and first ideas of guidelines for future developments – B4P Perspectives

Joint Presentation of Build4People Work Packages WP#5 and WP#4 / WP#2 / WP#1, WP#6, Stephan Anders (DGNB)

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

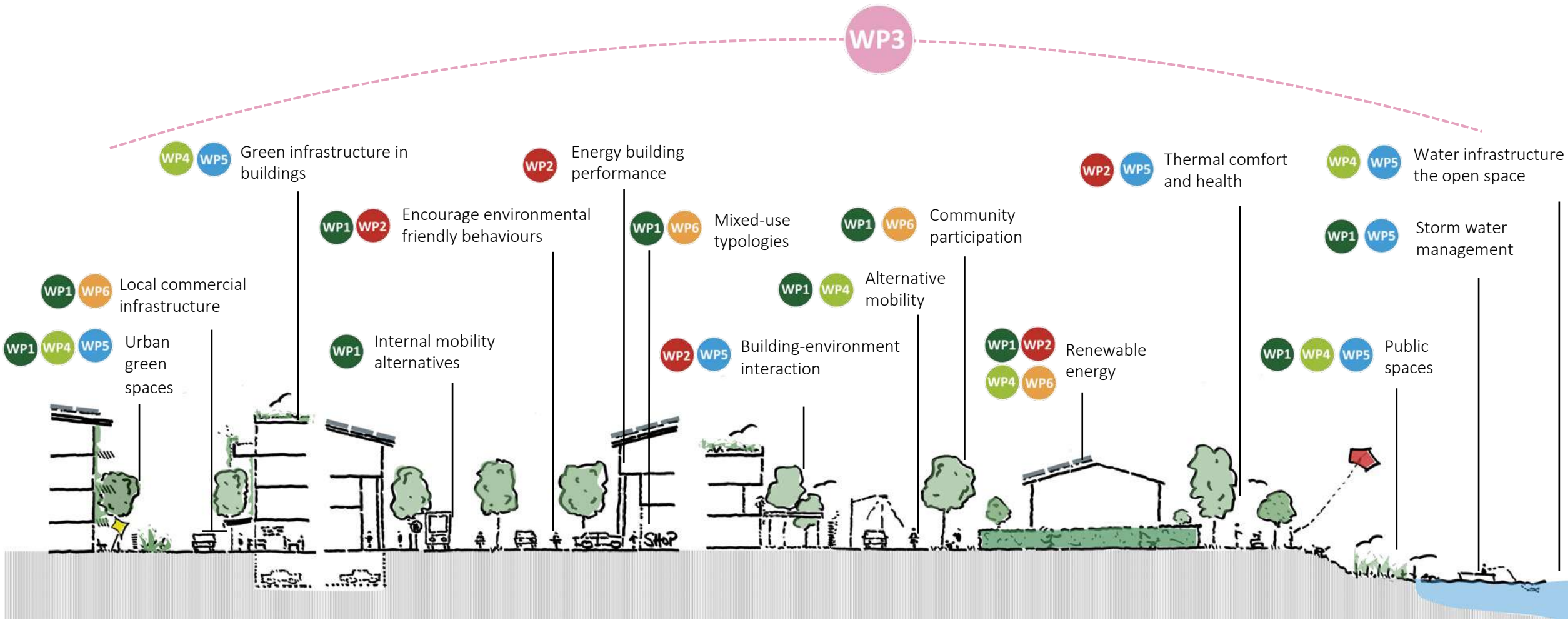


Federal Ministry
of Education
and Research



FONA
Research for sustainability

Multi- and trans-disciplinary synergies among Build4People Work Packages



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Urban Climate and Urban Green with focus neighbourhood level

(WP#5 and WP#4)



Prof. Dr. Lutz Katzschner



Mr. Sebastian Kupski



Dr. Janalisa Hahne



Dr. Nyda Chhinh



Bunleng Se



Prof. Dr. Jan-Peter Mund



Gulam Mohiuddin



Dr. Sanara Hor



Sambath EUN



Chea Chetha



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

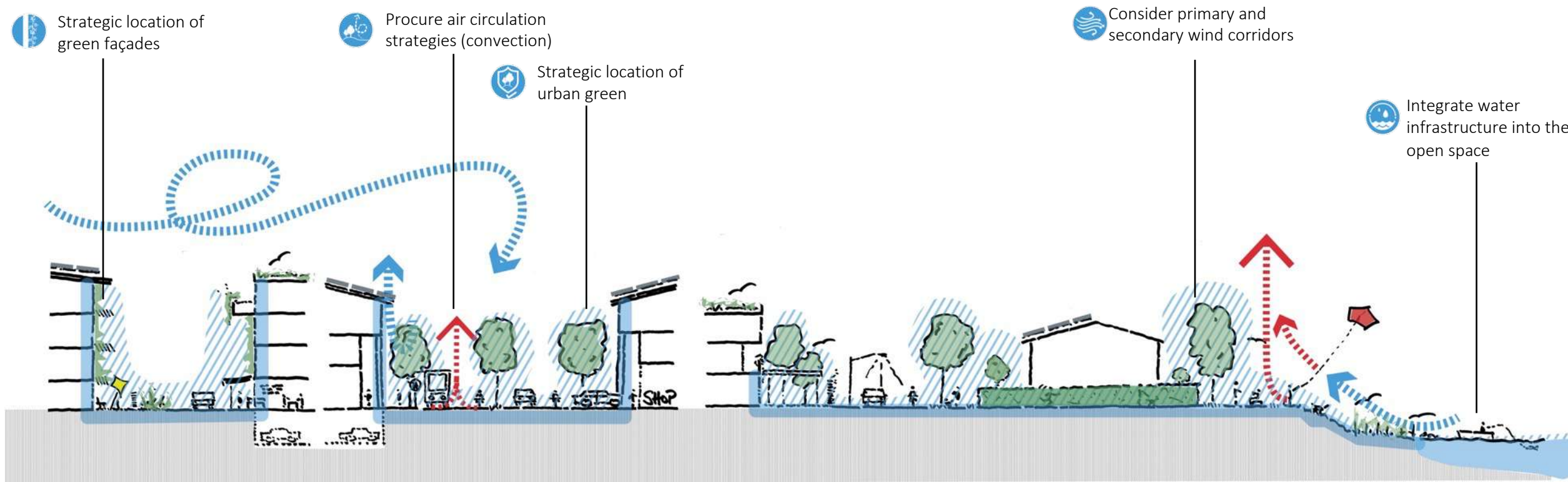
Federal Ministry
of Education
and Research

FONA
Research for sustainability

Urban Climate with Focus on a Neighbourhood Level

អាកាសធាតុទីក្រុង

Urban Climate



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Urban Climate Map Phnom Penh 2022

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

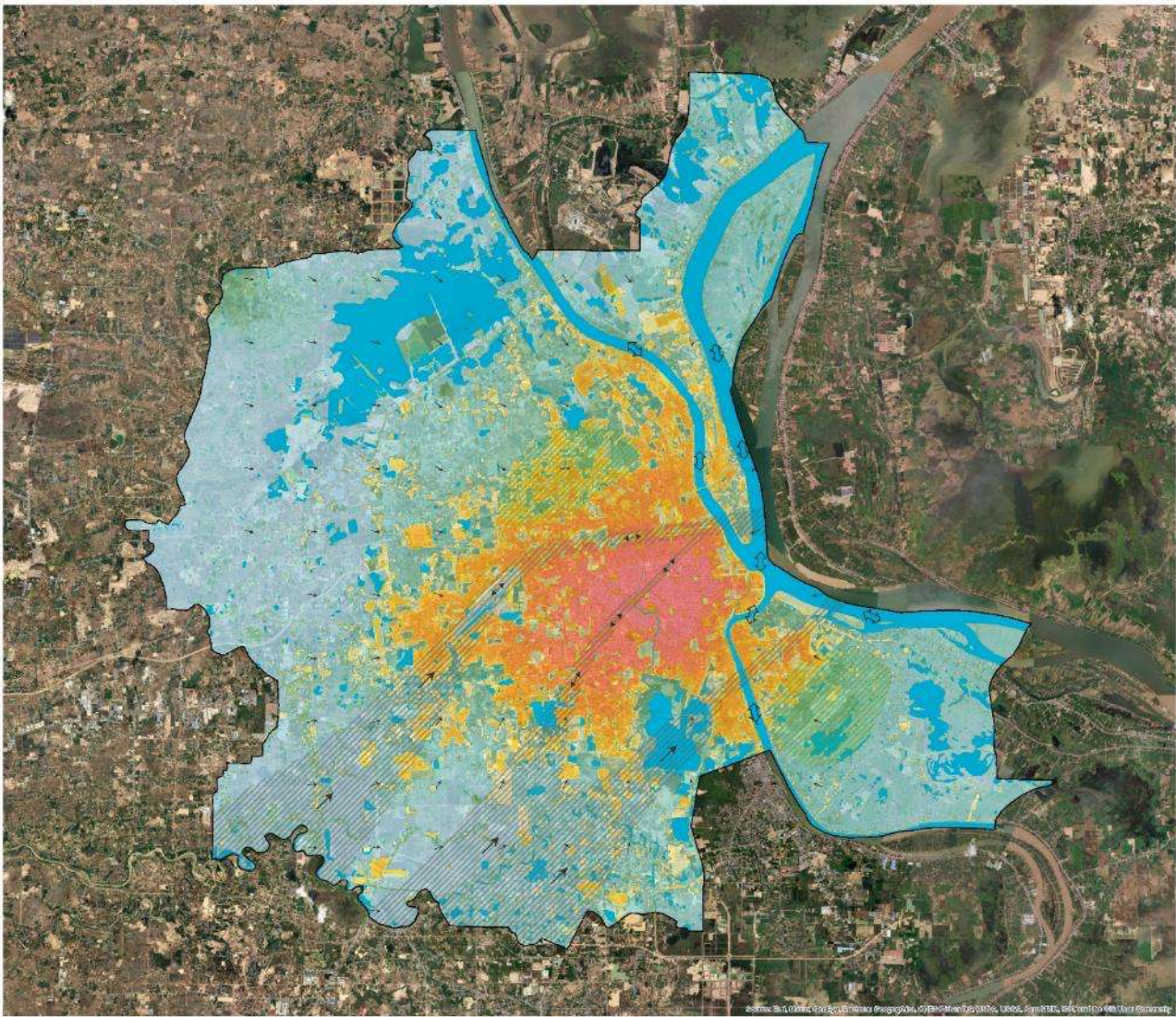
R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability



URBAN CLIMATE MAP
PHNOM PENH 2022 ver02

Climatope	
Category	Name
Blue	Strong cooling potentials
Green	Moderate cooling potentials
Light Green	Slight cooling potentials
Yellow	Reduced heat load
Orange	Moderate heat load
Red	Strong heat load

Dynamic pattern	
Category	Name
↕	Ventilation corridor
↑	Wind direction air paths
↕	Wind direction air paths for all seasons
▨	Main air paths
▨	Good ventilation

WP5 Urban Climate
អាកាសធាតុទីក្រុង

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

FONA
Research for sustainability

Category	Climatope	Description
	High cooling potentials	Mainly cold and fresh air formation Orientation according to VDI Climate characteristics: open land climate . Highly active outdoor areas that primarily produce cold air and/or fresh air. Mostly with low roughness and/or corresponding slope.
	Medium cooling potentials	Mainly fresh air generation Orientation according to VDI climate characteristics: forest climate . Highly relevant areas for the formation of fresh air and cold air, mainly with a dense stock of trees.
	Cooling potentials	Mixed and transitional climates Orientation according to VDI climate characteristics: climate of inner-city green spaces . Areas of high vegetation that help mitigate heat islands.
	Minor heat load	Slight form of heat island Orientation according to VDI climate characteristics: suburban climate . Structural areas with sealed surfaces, but with a lot of vegetation in the open spaces, mostly adequate ventilation.
	Moderate heat load	Remarkable heat islands Orientation according to VDI climate characteristics: urban climate . Dense development, a high degree of sealing and little vegetation in the open spaces cause pronounced heat islands. Barriers create ventilation deficits.
	Strong heat load	Remarkable heat islands with high loads Orientation according to VDI climate characteristics: inner city climate . Highly dense inner-city areas/city, industrial and commercial areas with little vegetation and a lack of ventilation.



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

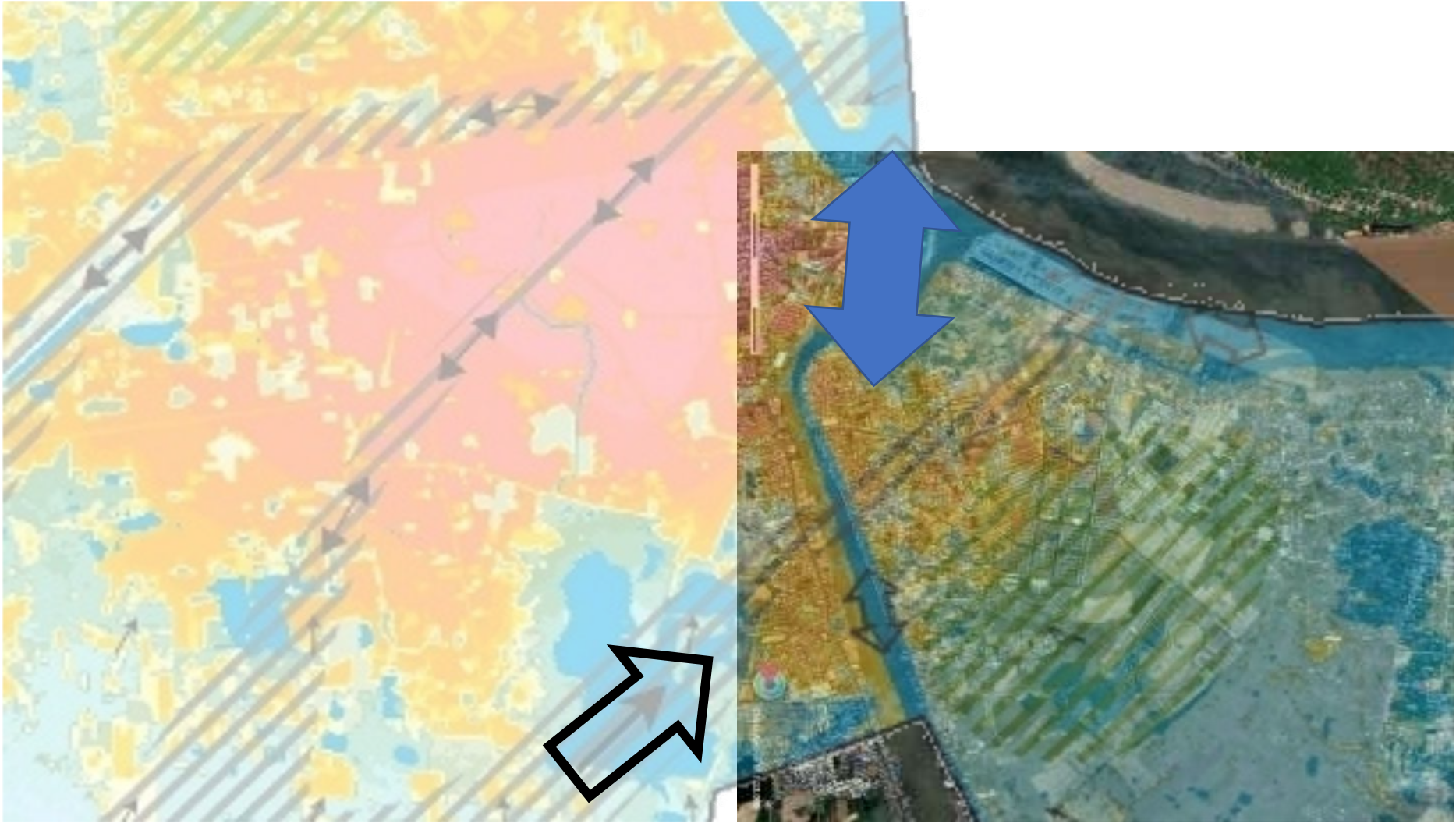
R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

1. ANALYSIS OF EXISTING BOREY

- Main wind corridor Southwest
- Barriers blocking wind
- Small ventilation corridors

2. IMPROVEMENTS OF EXISTING BOREY

- Improvement in greening
- Thermal induced circulation



3. CONCEPTS AND STANDARDS FOR FUTURE BOREY DEVELOPMENT

Focus: improving the thermal comfort and the liveable city even in times of climate change:

Creating ventilation corridors:

- Green infrastructure and
- Single shaded areas

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Urban Climate with Focus on a Neighbourhood Level

Street **without trees**

Façades surface temperate differences too low for creating turbulences

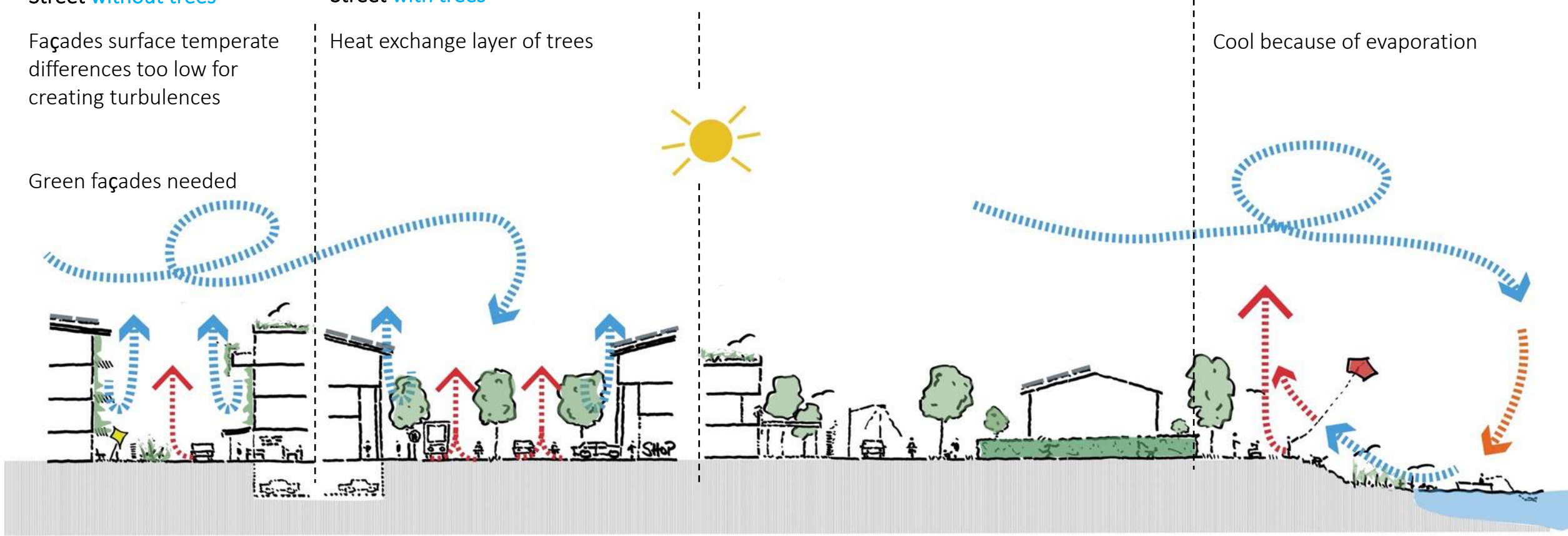
Green façades needed

Street **with trees**

Heat exchange layer of trees

River/**water influence:**

Cool because of evaporation



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Main topics to focus of WP#4 in ECTL 3

- Number of green corridors throughout the city
- Area of green space network in PH Borey's
- Thermal emission in specific Borey areas
- Spatial dimension of urban green and urban heat in specific Borey areas

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

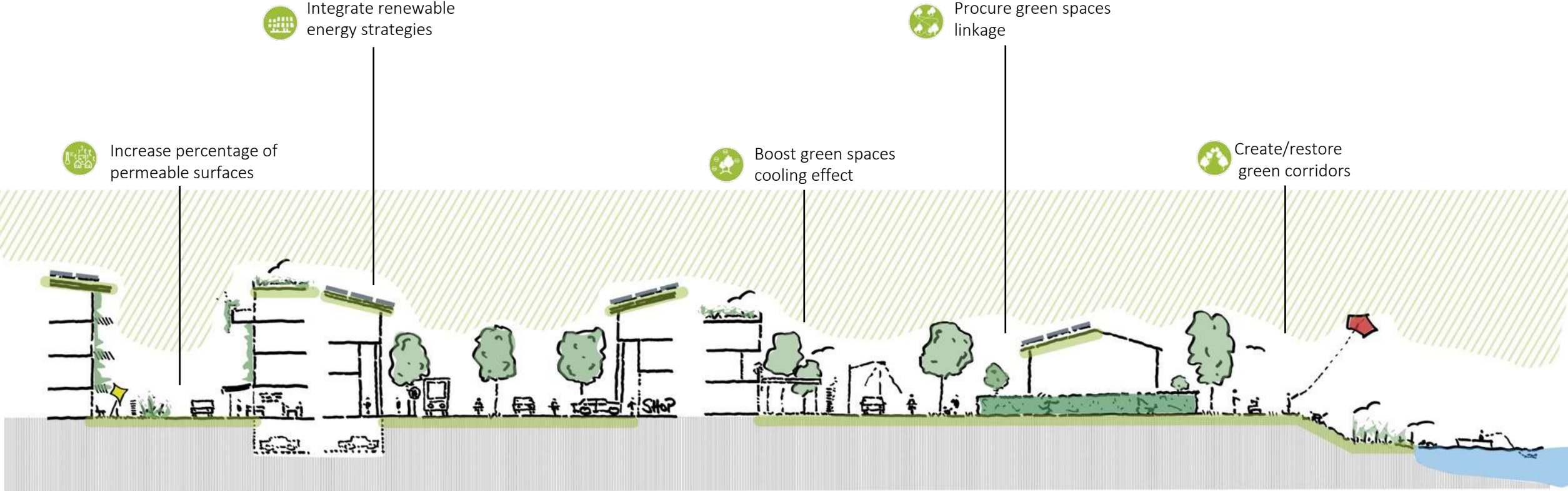
SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Urban Climate and Urban Green with Focus on Neighbourhood Level

ទីក្រុងបៃតង Urban Green



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

VISION

By 2030, Phnom Penh will become a clean, green and competitive city offering a safe and quality lifestyle to its residents.



MISSION

- Create or restore **green corridors** throughout the city (number of corridors)
- Improve natural lakes and wetlands in the city, which serve as natural flood control and wastewater management systems (surface of natural lakes and wetlands in hectares or acres)



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

“From Vision to Mission”

P(N)H Cycling network - from Peng Huoth Borey to Wat Phnom

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

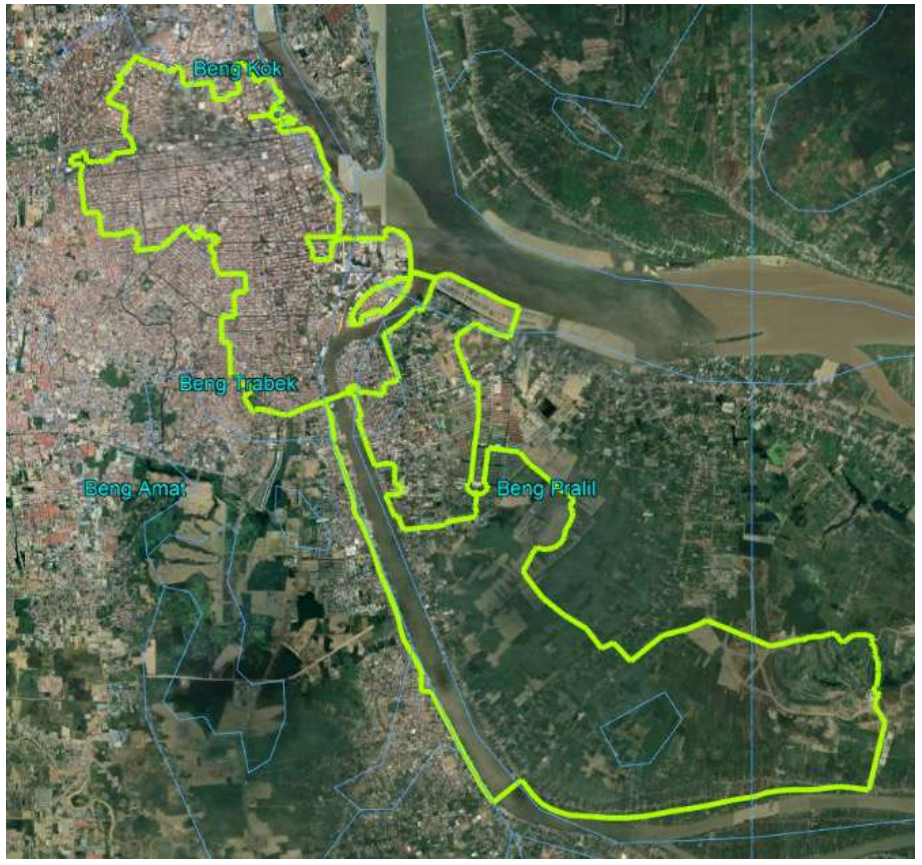
SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

“From Vision to Mission”

P(N)H Cycling and Marathon circle network: Micro-Intervention

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

UGI and Urban heat analytics of Peng Huoth Borey Areas

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

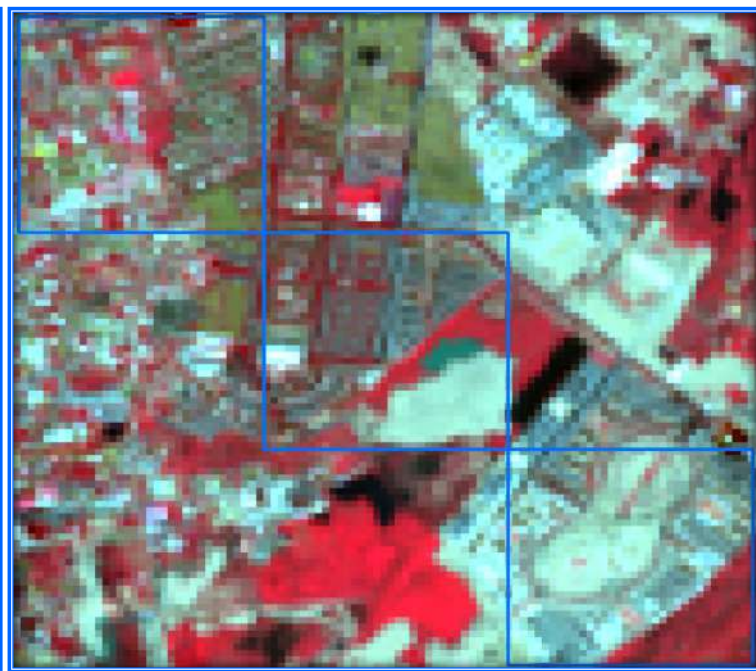
FONA
Research for sustainability



Open Street Map (Vector)



Google Earth Image 17.12.2022



Landsat 8 Image (NIR-Red-Green) 21.01.2023

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

UGI and Urban heat analytics of Block 1 in Peng Huoth Borey



- The block includes some areas outside of the Borey.
- 0.2 square km (20%) areas are identified as Green area. However, it does not necessarily means trees, it includes any type of vegetation including grass, shrubs, trees etc. The visual connection between green areas and low LST is visible
- 0.4 sq. km (39%) areas are buildings, bare lands and other impervious surfaces. Concentration of buildings in south-east and south-west part of the block includes higher LST

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

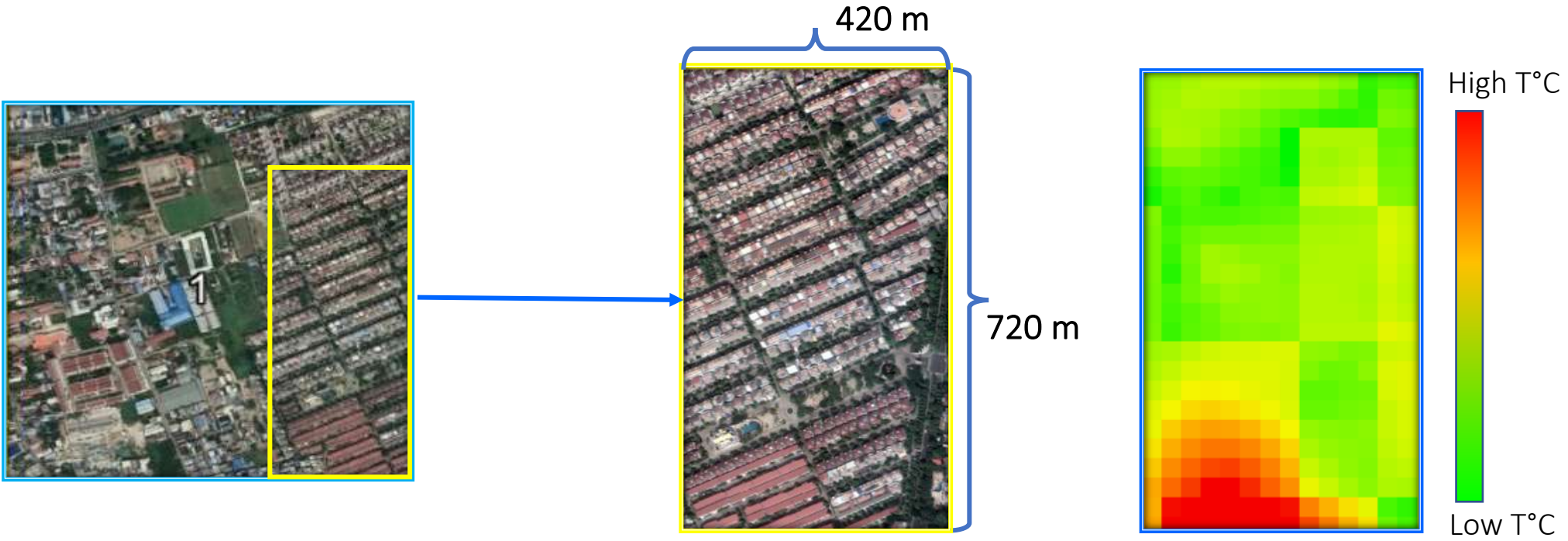
IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

UGI and Urban heat analytics of Block 1 in Peng Huoth Borey



- This building block has about 19% green areas where most of the green areas includes trees
- The trees are relatively older and more grown in this part which is keeping the northern part mostly cooler
- In the south-west part there are larger buildings with less trees, which is showing higher temperature

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

UGI and Urban heat analytics of Block 2 in Peng Huoth Borey



- The block includes a big portion of land is out of Borey’s ownership
- 0.23 sq. km (23%) areas are identified as green area which not necessarily means trees, it includes any type of vegetation including grass, shrubs, trees etc.
- 0.26 sq. km (26%) of the areas are building, bare land and other impervious surfaces.
- Visual connection between bare land in the south-east and higher LST is noticeable.

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

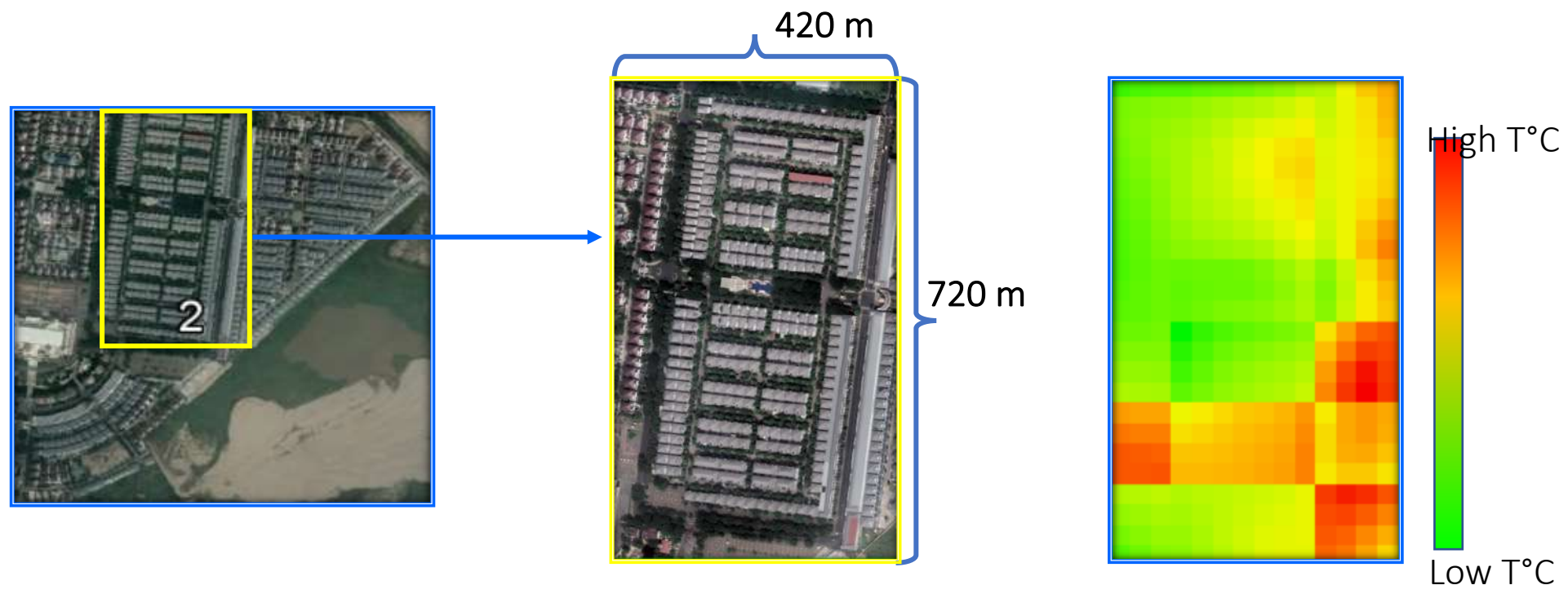
IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

UGI and Urban heat analytics of Block 2 in Peng Huoth Borey



- This building block has about 23% green areas where most of the green areas includes trees
- At the eastern border of the block is road without big trees and a long uninterrupted building which might be the reason for relatively higher temperature
- However, the northern part has a concentration of trees and that part is relatively cooler

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

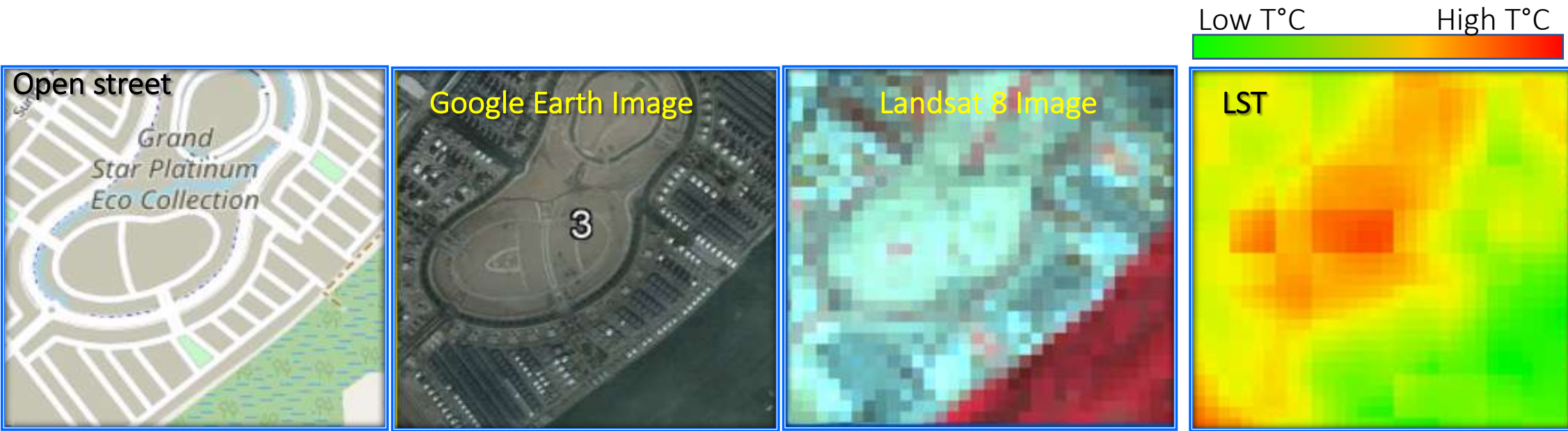


Federal Ministry
of Education
and Research



FONA
Research for sustainability

UGI and Urban heat analytics of Block 3 in Peng Huoth Borey



- The block includes a the incomplete part of the construction that includes a large construction sites
- 0.18 sq. km (18%) areas are identified as green area which not necessarily means trees, it includes any type of vegetation including grass, shrubs, trees etc.
- 0.58 sq. km (58%) of the areas are building, bare land and other impervious surfaces.
- Visual connection between construction site in the middle and higher LST is noticeable.

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Guidelines for Urban Green Infrastructure

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

- Create or **restore green corridors** throughout the city (number of corridors)
- Develop a **green space network** in PH Borey's
- **Establish P(N)H Cycling network** - from Peng Huoth Borey to Wat Phnum
- Improve **EAST-WEST ventilation corridors** in the Borey
- Develop **Urban Heat monitoring scheme** using Thermal UAV Sensor

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Suggestions for Micro-Interventions at PH

- **Green cycling corridors** throughout Phnom Penh from Peng Huoth Borey to Wat Phnom on a Bicycle establish cycling lanes on big roads in the Borey
- Connect cycling roads to the Phnom Penh cycling lane network from Peng Huoth to Wat Phnom
- **Improve tree shadowing** of roads and side streets in order to reduce heat stress and hot surfaces
- **Open more green areas to the public** in the Borey in improve the neighbourhood situation

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Sustainable Building with focus on Residential Typologies

អគារដែលមាននិរន្តរភាព
Sustainable Building

WP#2-Team



Prof. Dr. Dirk Schwede



Ms. Christina Karagianni



Mr. Chanly Hash



Dr. Virak Han

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



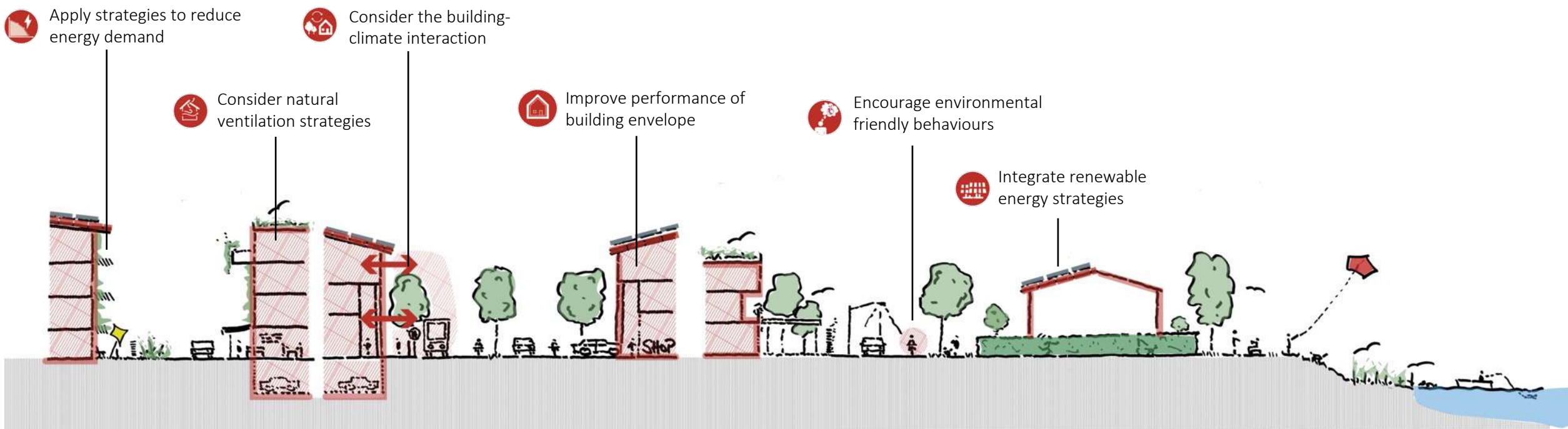
Federal Ministry
of Education
and Research

FONA
Research for sustainability

Sustainable Building with focus on Residential Typologies

អគារដែលមាននិរន្តរភាព

Sustainable Building



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

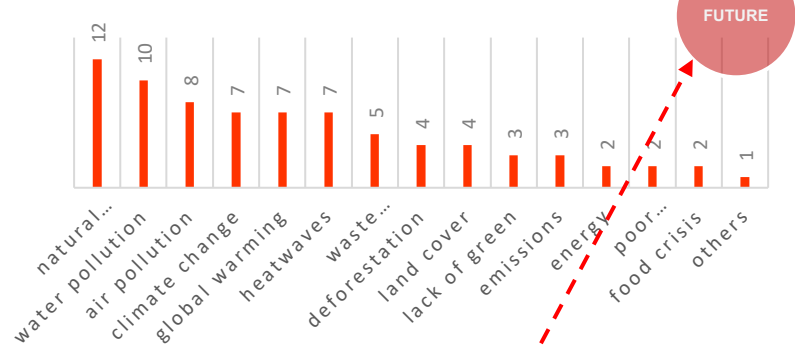
SPONSORED BY THE
Federal Ministry
of Education
and Research

FONA
Research for sustainability

Analysis

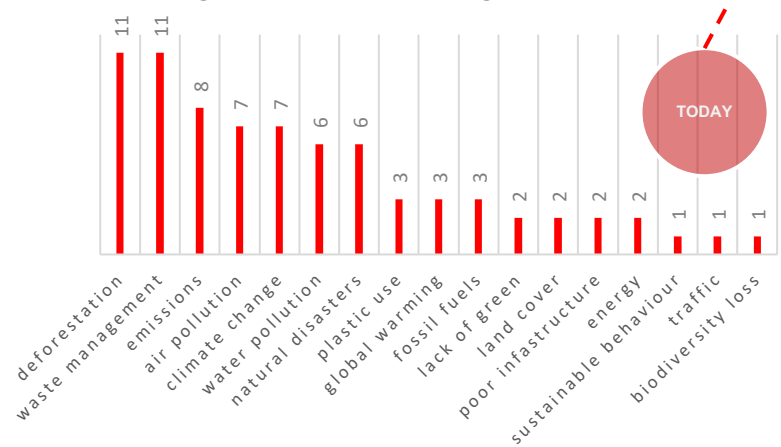
Survey on
Environmental
Challenges in
Cambodia

Do you know of existing environmental problems that are not yet visible or impactful, but will be in the future?



SITE VISIT

What are the most important environmental challenges in Cambodia with impact on the global environment right now?



FOCUS GROUP DISCUSSION

- Noise Pollution
- Water leaks through roof
- The walls are too thin
- Construction quality
- Proper ventilation in house and bathroom
- Very thin dividing walls → noise
- No insulations to keep out heat & keep in cool



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Synergies of the district

- Solarisation of the masterplan
 - Pooling the roof space for PV use and operation
 - Low-exergy district networks for heat rejection
-
- ✓ Secure energy supply
 - ✓ Noise reduction in the neighbourhood
 - ✓ Beautification of the neighbourhood (no visible ACs)

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

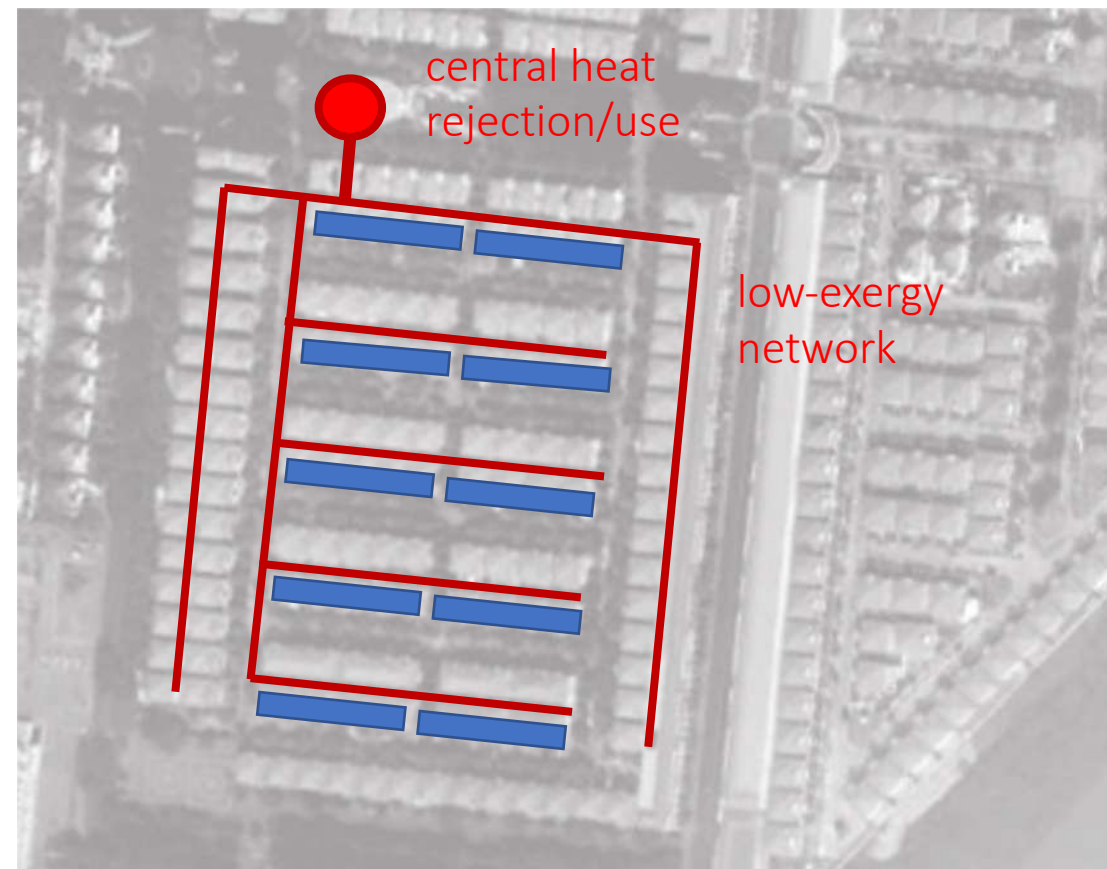
IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

FONA
Research for sustainability



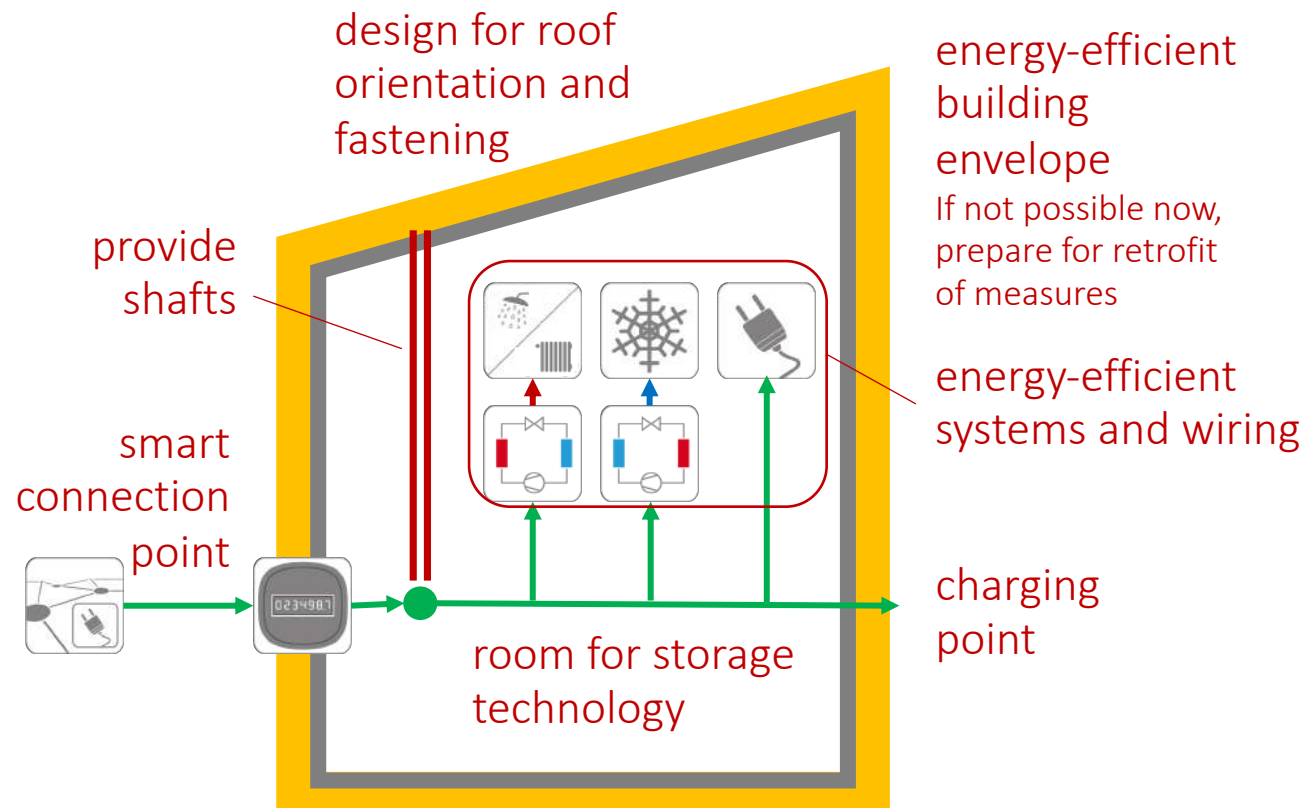
Prepare for the future – prepare for retrofit

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

IMP 2025-2027

FONA
Research for sustainability

- solar shading systems
 - improved glazing
 - PV-system
 - electric wall box
 - mechanical ventilation
-
- ✓ buildings are prepared for retrofit of measures
 - ✓ build-up of quality over time
 - ✓ adapted to economic capabilities



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Modular improvement packages

- solar shading systems
- improved glazing
- PV-system
- electric wall box
- mechanical ventilation

- ✓ Buyers can choose qualities based on the same base design
- ✓ Build-up of quality over time
- ✓ Adapted to specific economic capabilities

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Adapted ecological technology standards

- good comfort to excellent comfort quality
- good conventional, decreased life-cycle cost to PlusEnergy



Basic

EnergyPlus

- high IAQ / IEQ
- GSHP
- BIPV
- HR ventilation

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Basic concepts for Green Buildings

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027



- Energy efficiency – Energy supply - Energy safety
- Interaction between indoors and outdoors
 - ✓ Indoor environmental quality: indoor climate, air quality, dust, CO² concentration, health
 - ✓ Thermal comfort
- Building functions
- Central energy utilities: district cooling system, reduced noise, energy efficiency, less maintenance



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Improvements for existing Borey

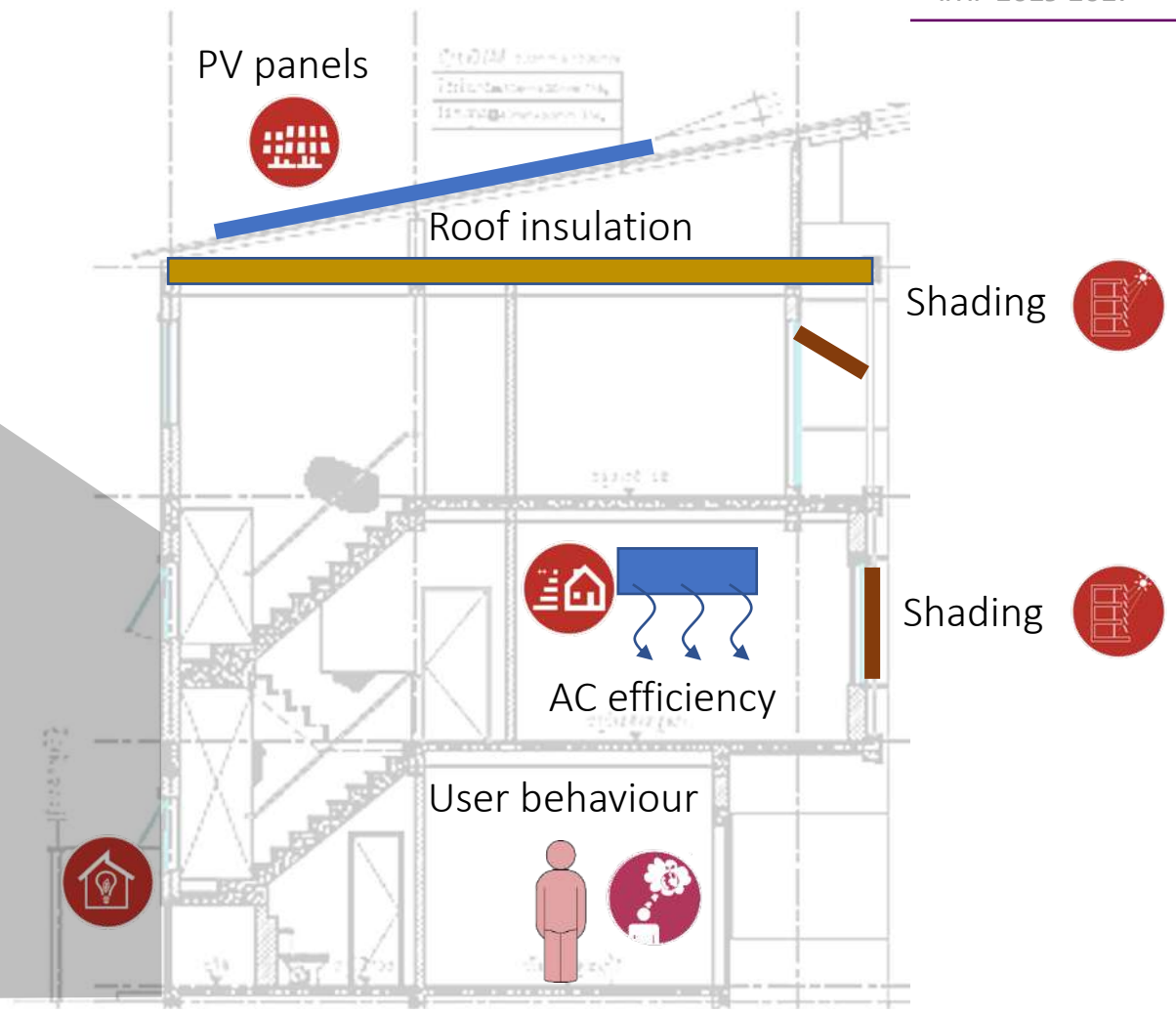
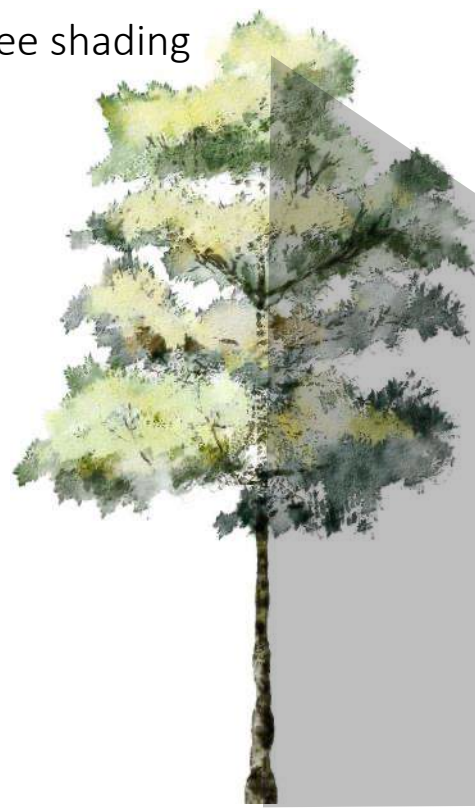
គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability



Tree shading



Build4People Project

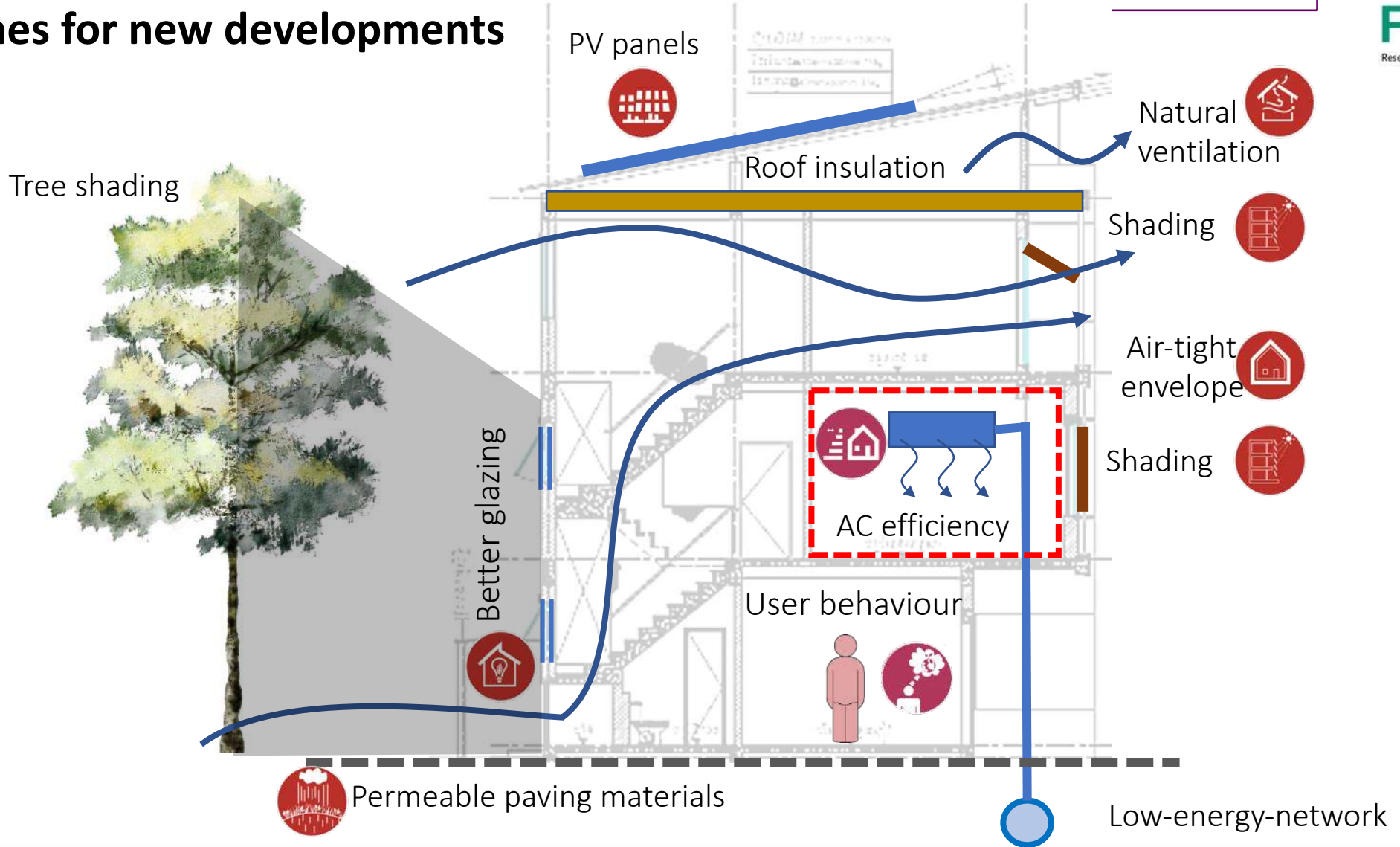
Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Ideas for Guidelines for new developments

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

People, **Community Involvement** and Corporate **Transition Management**
(WP#1, WP#6, Stephan Anders)

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability



Dr. Michael Waibel



Mr. Ravi Jayaweera



Dr. Sothun Nop



Dr. Seak Sophat



Dr. Stephan Anders



Dr. Anke Blöbaum



Prof. Dr. Ellen Matthies



Ms. Ramune Pansa



Dr. Op Vanna



Dr. Sok Serey

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research

FONA
Research for sustainability

People, Community Involvement and Corporate Transition Management

ការផ្លាស់ប្តូរទីក្រុងដោយនិរន្តរភាព
Sustainable Urban Transformation

ការផ្លាស់ប្តូរឥរិយាបថ
Behaviour Change



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Results from representative survey on Urban Quality of Life (2022)

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry of Education and Research

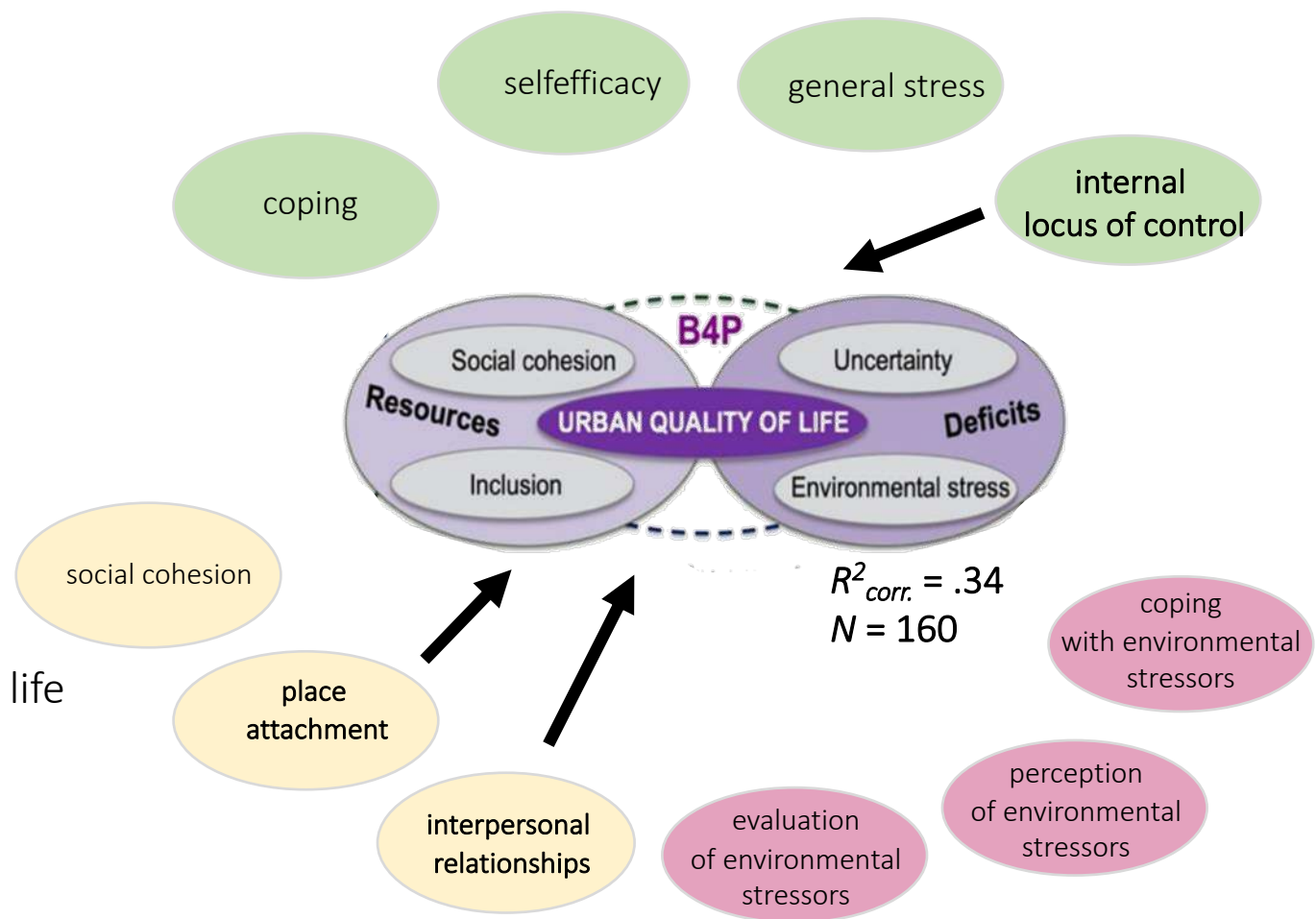
FONA
Research for sustainability

PP citizens' urban quality of life survey, $n = 750$:

Subsample from Chbar Ampov: $n = 160$:

- ✓ place attachment,
- ✓ internal relationships
- ✓ internal locus of control

are the most important predictors of urban quality of life



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Focus group discussion, 25 February 2023

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027



SAFETY
„more control, more security“

GREEN
„green and ventilation was a reason to move here – it’s already good - could be more!“

INFRASTRUCTURE
„shuttle busses, organic market, more shops“

TECHNOLOGIES
„rainwater storage, wind power, guidelines for solar panel“

SOCIAL RELATIONS
people don’t obey rules (pets, traffic, noise)

main topics

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Innovation ideas for existing Boreys

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

- Green Upgrading Partnerships
- co-designed pop-up measures to experience streetscape options
→ *participation, social relations*
- pop-up playground + pop-up participatory meeting station
→ *attractor to meet neighbours* → *social event*
- localized communication
→ *P.H. <-> residents; neighbours <-> neighbours*
- urban gardening
→ *joint activity*



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

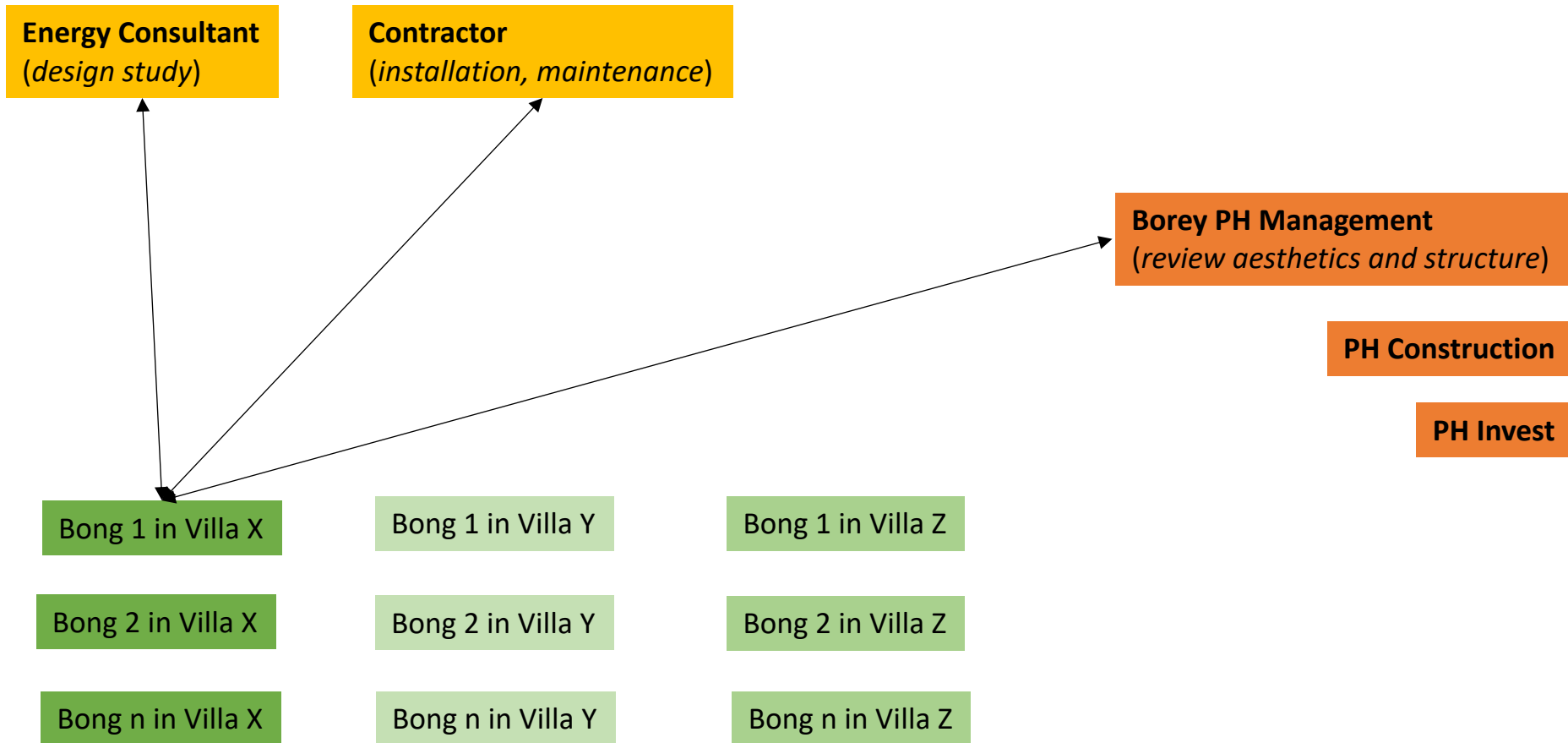
IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Analysis: Few Green Building Upgrades within Borey Peng Huoth



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

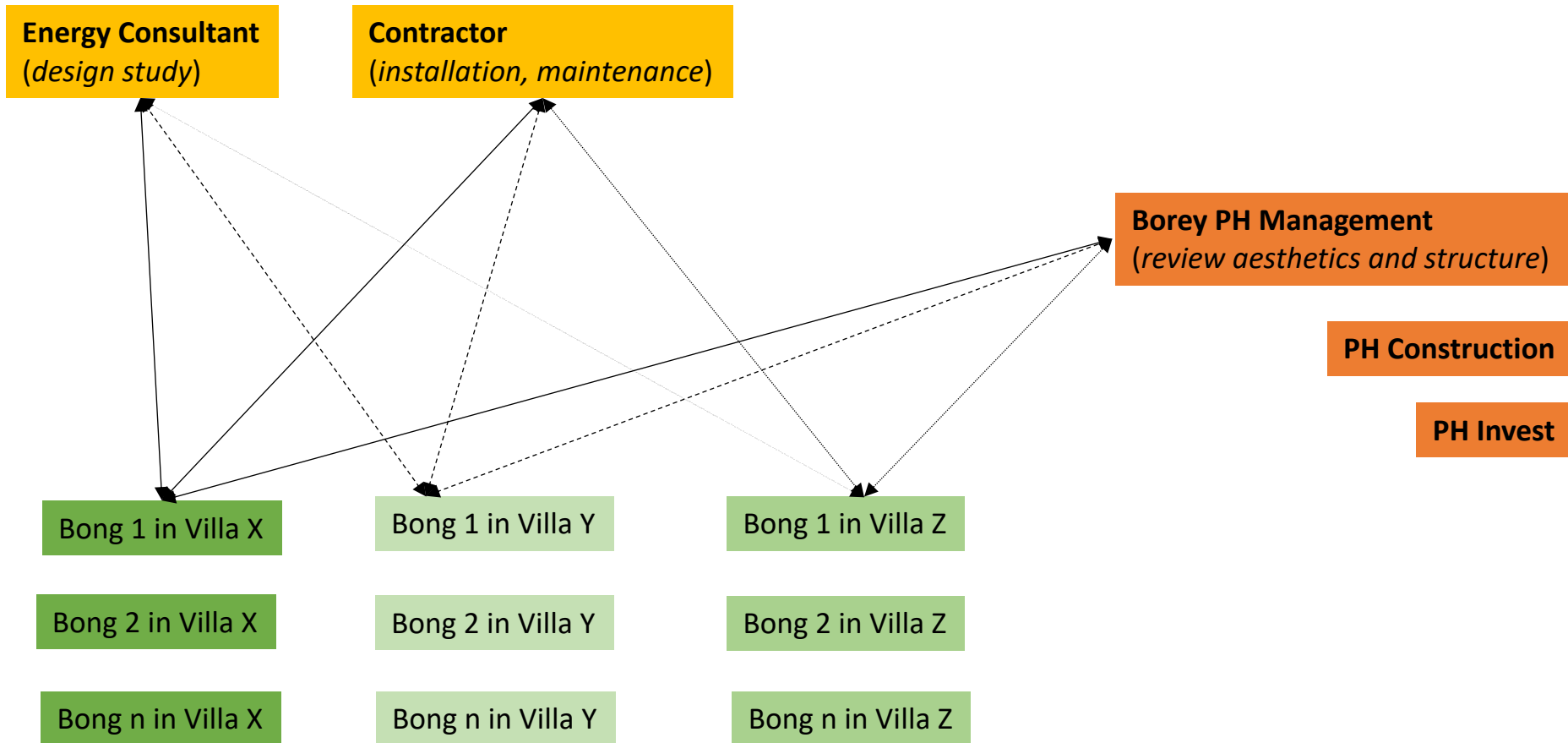
IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Analysis: Few Green Building Upgrades within Borey Peng Huoth



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

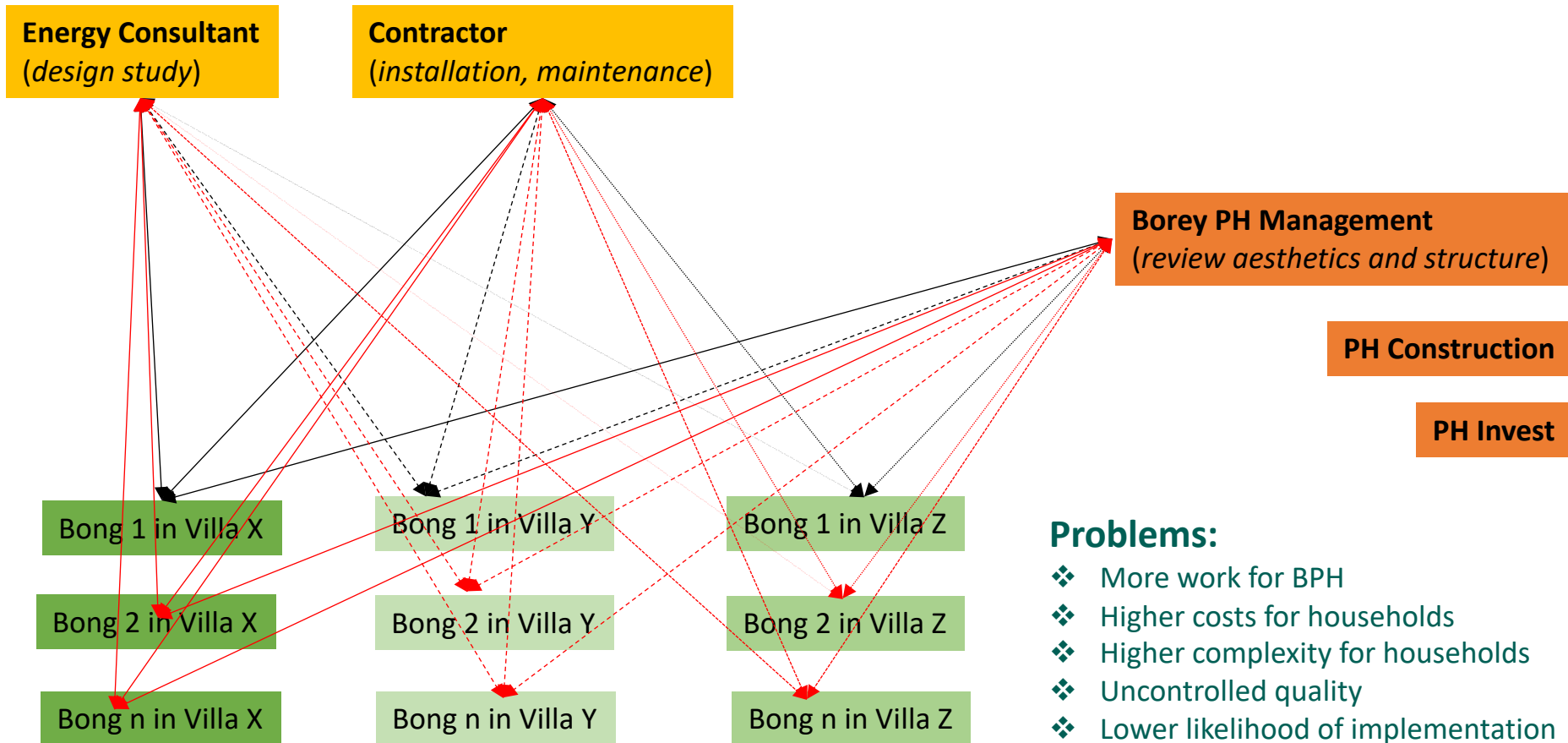
IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Analysis: Few Green Building Upgrades within Borey Peng Huoth



- Problems:**
- ❖ More work for BPH
 - ❖ Higher costs for households
 - ❖ Higher complexity for households
 - ❖ Uncontrolled quality
 - ❖ Lower likelihood of implementation

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Innovation Idea: Peng Huoth Green Upgrading Partnership

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

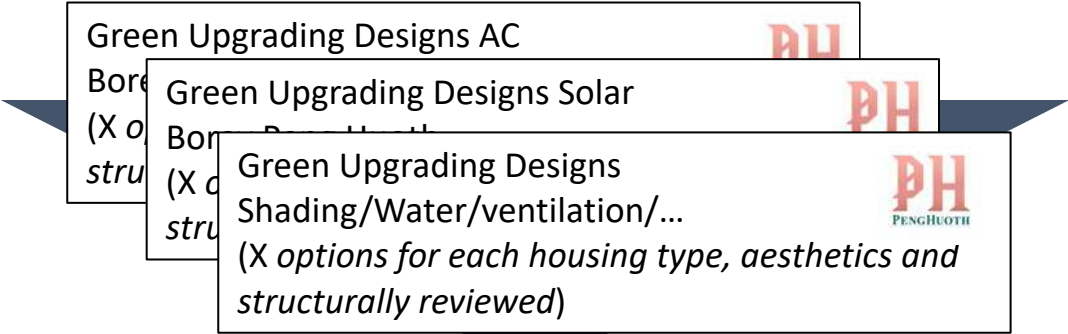
IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Energy Consultant
(design study)

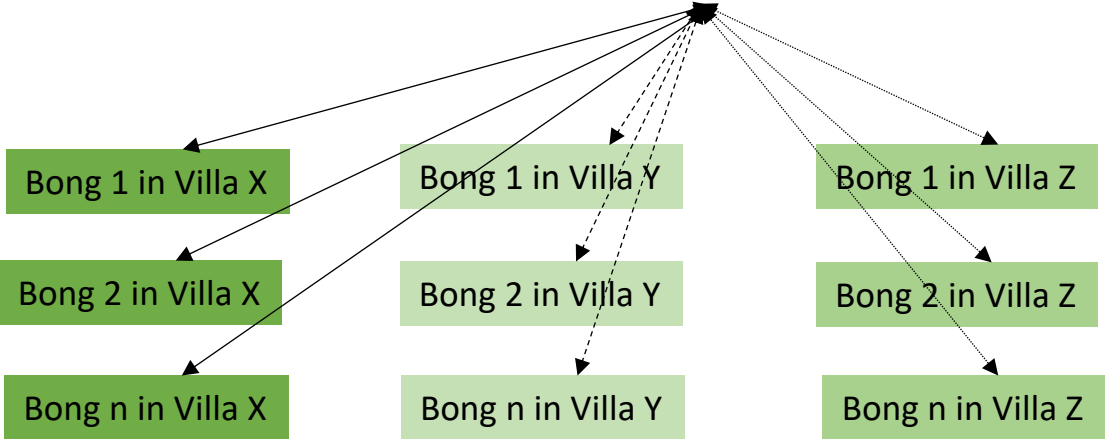


Borey PH
(review aesthetics and structure)

Contractor
(installation, maintenance)

PH Construction

PH Invest



Benefits:

- Less work for BPH
- Lower costs for households
- Lower complexity for households
- Controlled Quality
- Higher likelihood of implementation



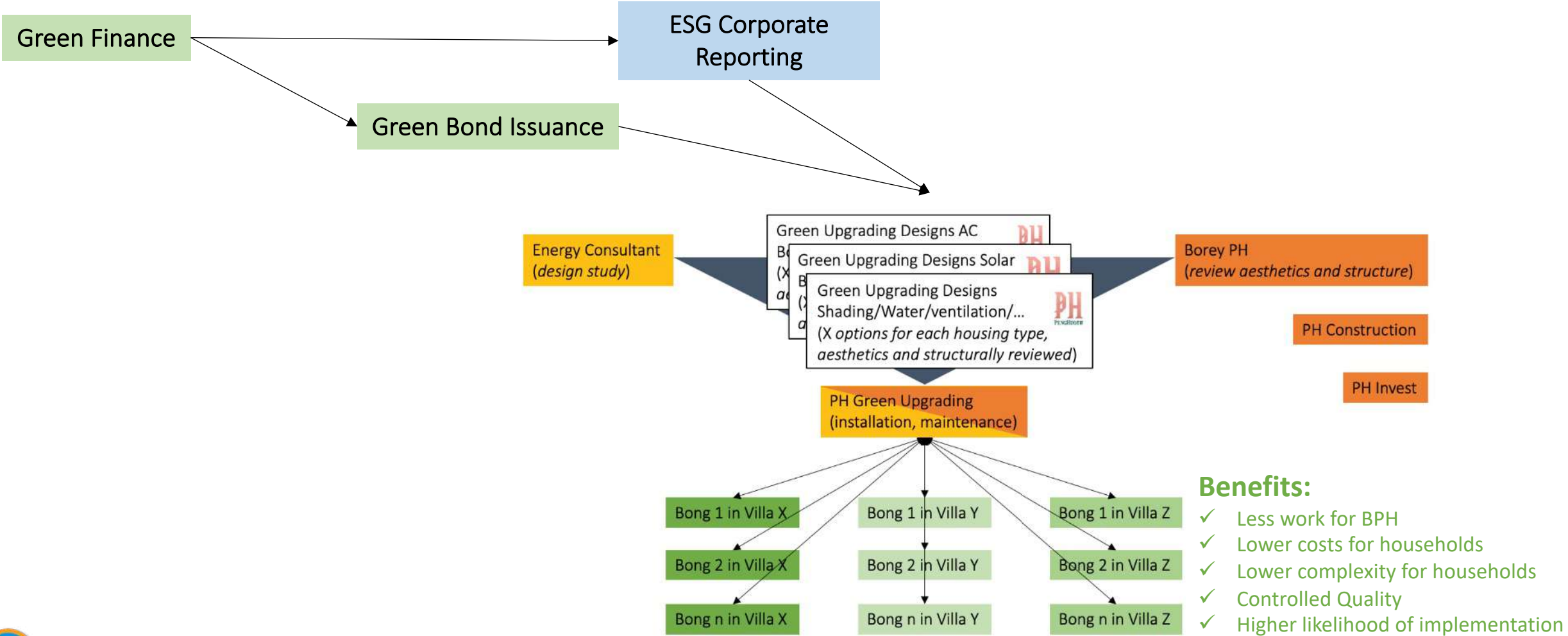
Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Innovation Idea: Peng Huoth Green Upgrading Partnership: **Scenario 2**

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

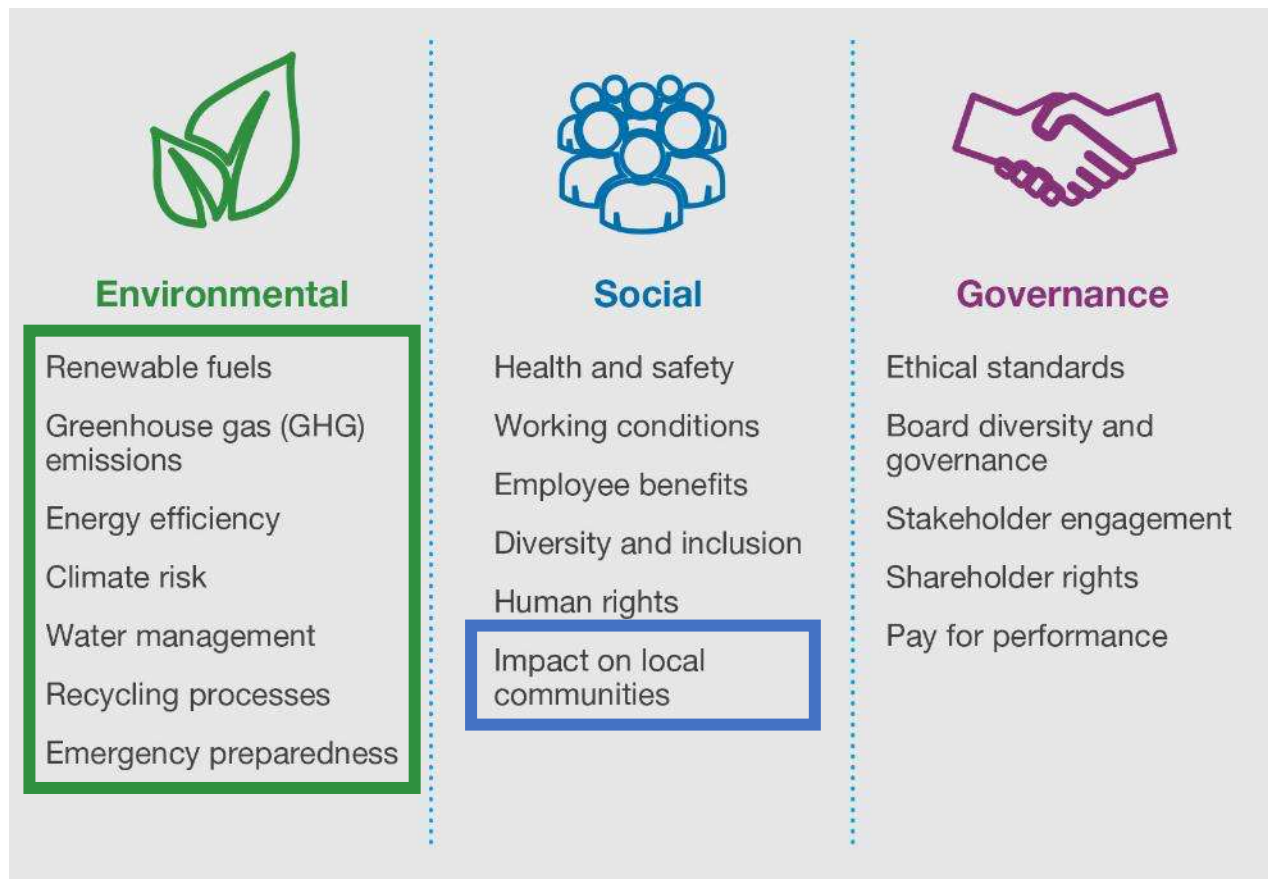
Workshop: Urban Green and Urban Climate on Neighbourhood Level

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027



Sustainability
certification of
districts and
buildings



<https://www.weforum.org/agenda/2021/06/esg-resilience-investment-environment-social-governance/>

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Workshop: Urban Green and Urban Climate on Neighbourhood Level

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

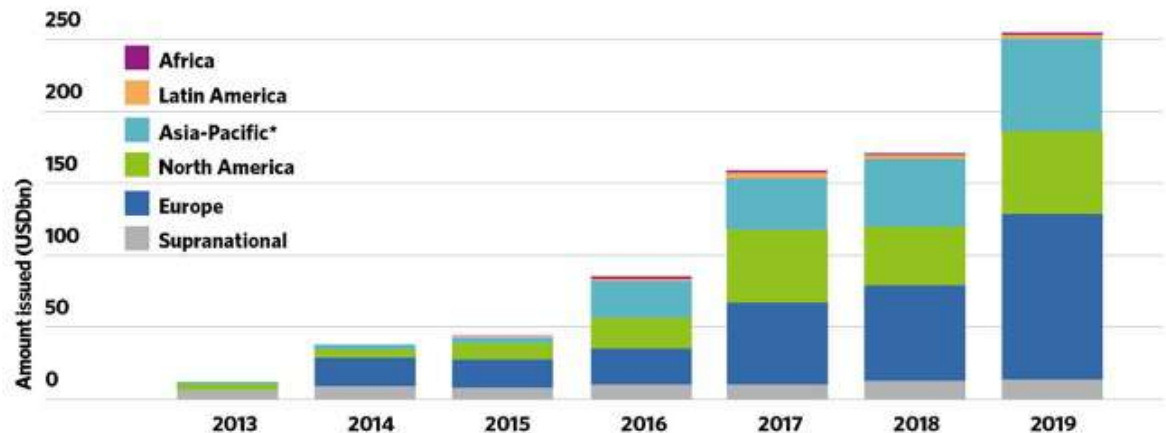


FONA
Research for sustainability

Why is ESG important?

- It is good for the environment and therefore good for your children and good for your grandchildren
- Investors ask more about the ESG standard of project development (better financing conditions)
- Positioning as an ESG frontrunner (possibly facilitating the purchase of building land)
- Attractive employer for young people

Global green bond and loan issuance increases over 50% in 2019



*ASEAN issuance represents 3% of global total, 12% of Asia-Pacific in 2019

© Climate Bonds Initiative 2020

ASEAN Green Finance State of the Market 2019



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Innovation ideas for existing boreys

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

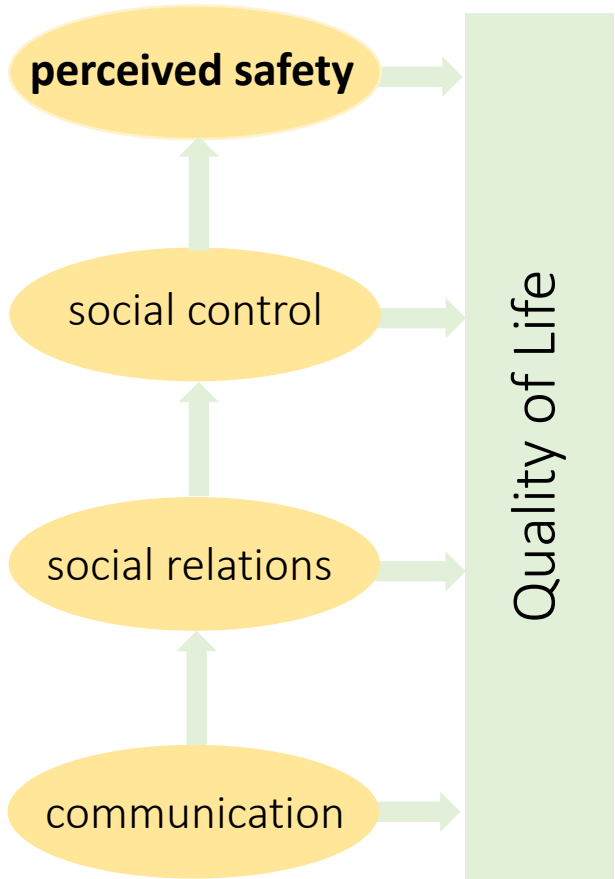


Federal Ministry
of Education
and Research



FONA
Research for sustainability

- Green Upgrading Partnerships
- co-designed pop-up measures to experience streetscape options
→ *participation, social relations*
- pop-up playground + pop-up participatory meeting station
→ *attractor to meet neighbours → social event*
- localized communication
→ *P.H. <-> residents; neighbours <-> neighbours*
- urban gardening
→ *joint activity*



Impact of social factors on QoL

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Example for innovation ideas:

Effective communication of rules and restrictions

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability



Self-made sign by local BPH residents



Borey Peng Huoth official sign



positive
descriptive
norms!



Coconut Park, Phnom Penh



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Example for innovation ideas:

Pop-up measures to experience streetscape options

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability



restrictions → resistance



designed by WP#4 / WP#1

behaviour constraints without explicit restrictions

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Innovation ideas for future boreys

- Green Upgrading Partnerships
- co-designed pop-up measures to experience streetscape options
→ *participation, social relations*
- pop-up playground + pop-up participatory meeting station
→ *attractor to meet neighbours* → *social event*
- localized communication
→ *P.H. <-> residents; neighbours <-> neighbours*
- urban gardening
→ *joint activity*
- Semi-private and semi-public spaces
→ *spaces for social interaction, communication*

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

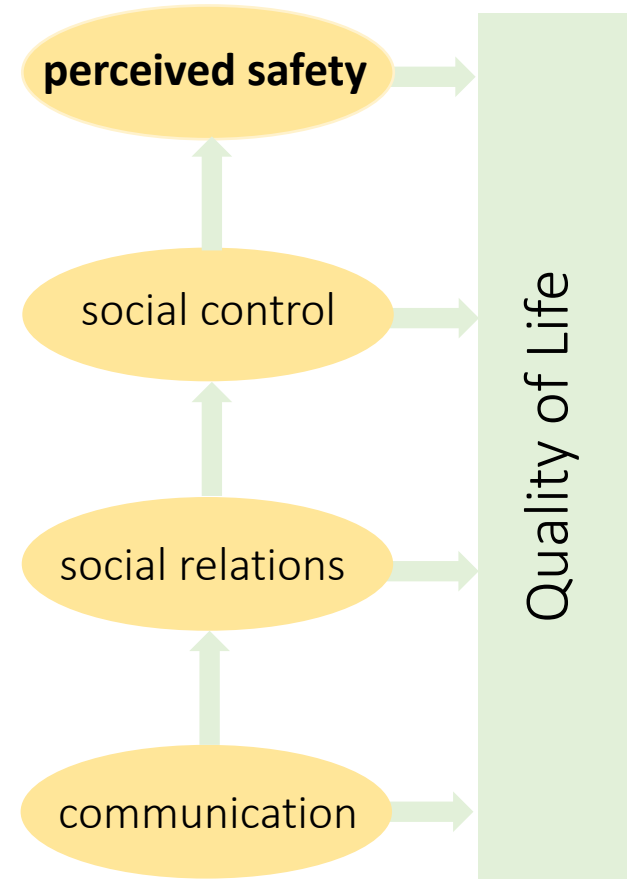
DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

FONAR
Research for sustainability



Impact of social factors on QoL

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Innovation ideas for future boreys

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



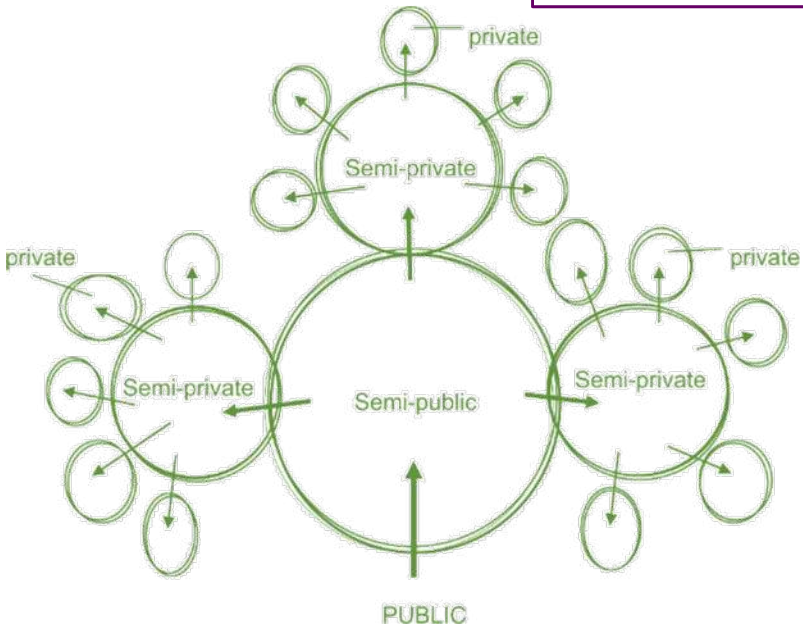
Federal Ministry
of Education
and Research



FONA
Research for sustainability

Perceived safety and social relationships

- SEMI PUBLIC SPACES within a dwelling and in the immediate outdoor area should be designed in such a way that residents and visitors perceive these spaces as "semi-private" and take responsibility.
 - reduced vandalism
 - indicator of social control
- SEMI-PRIVATE SPACES owned by the individuals, but still accessible to neighbours
 - communication, interaction
 - social control



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

 Federal Ministry
of Education
and Research

 **FONA**
Research for sustainability







Build4People Ecocity Transition Lab 2023

General Conclusions



Collaborate to transform
→ Sustainability Partnerships



Participate to improve
→ Quality of Life



Communicate to connect
→ Safe and Cohesive Communities

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

 Federal Ministry of Education and Research

 **FONA**
Research for sustainability

 Build4People
ECOCITY
TRANSITION
LAB 2023



 **PH**
PENGHUOTH

Strategies and Guidelines for future-proof Borey Development with an enhanced Sustainability Performance

WP#3 Team

EBLE MESSERSCHMIDT PARTNER
Architekten und Stadtplaner PartGmbB



Mr. Rolf Messerschmidt



Mr. Oliver Lambrecht



Ms. Nuria Roig



Dr. Tep Makathy

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

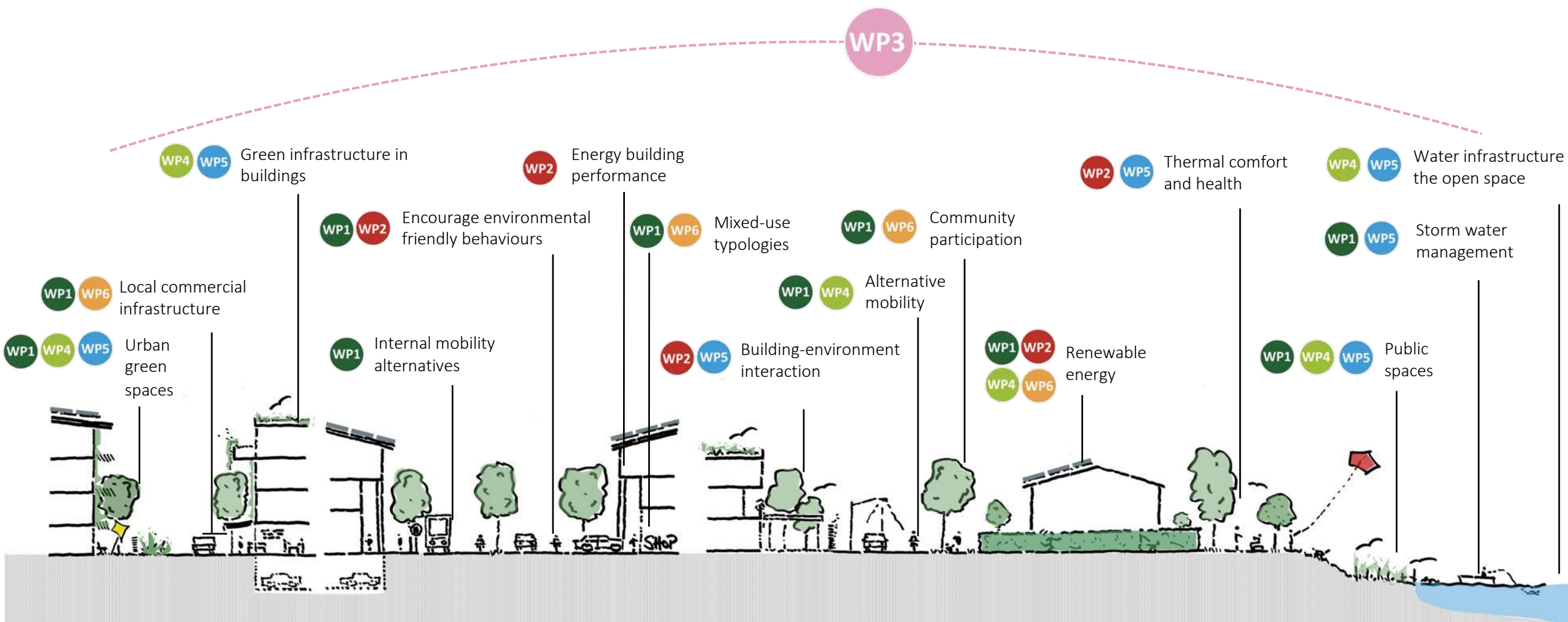


Federal Ministry
of Education
and Research



FONA
Research for sustainability

Multi- and trans-disciplinary synergies among Build4People Work Packages



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិតរបស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability

Strategies + Early Stages Criteria for Sustainable Neighbourhood Development

Goals

-  **ការរៀបចំក្រុង តាមបែបសមាហរណកម្ម**
INTEGRATED URBAN DESIGN
-  **ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបៃតង**
BLUE GREEN INFRASTRUCTURE
-  **ការផ្លាស់ទីប្រកបដោយចីរភាព**
SUSTAINABLE MOBILITY
-  **ការការពារអាកាសធាតុ និងរំហូរថាមពល**
CLIMATE PROTECTION AND ENERGY FLOWS
-  **បរិយាបន្នសង្គម និងសេដ្ឋកិច្ចមូលដ្ឋាន**
SOCIAL INCLUSION AND LOCAL ECONOMY
-  **អភិបាលកិច្ច និងការចូលរួម**
GOVERNANCE AND PARTICIPATION

Strategies



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

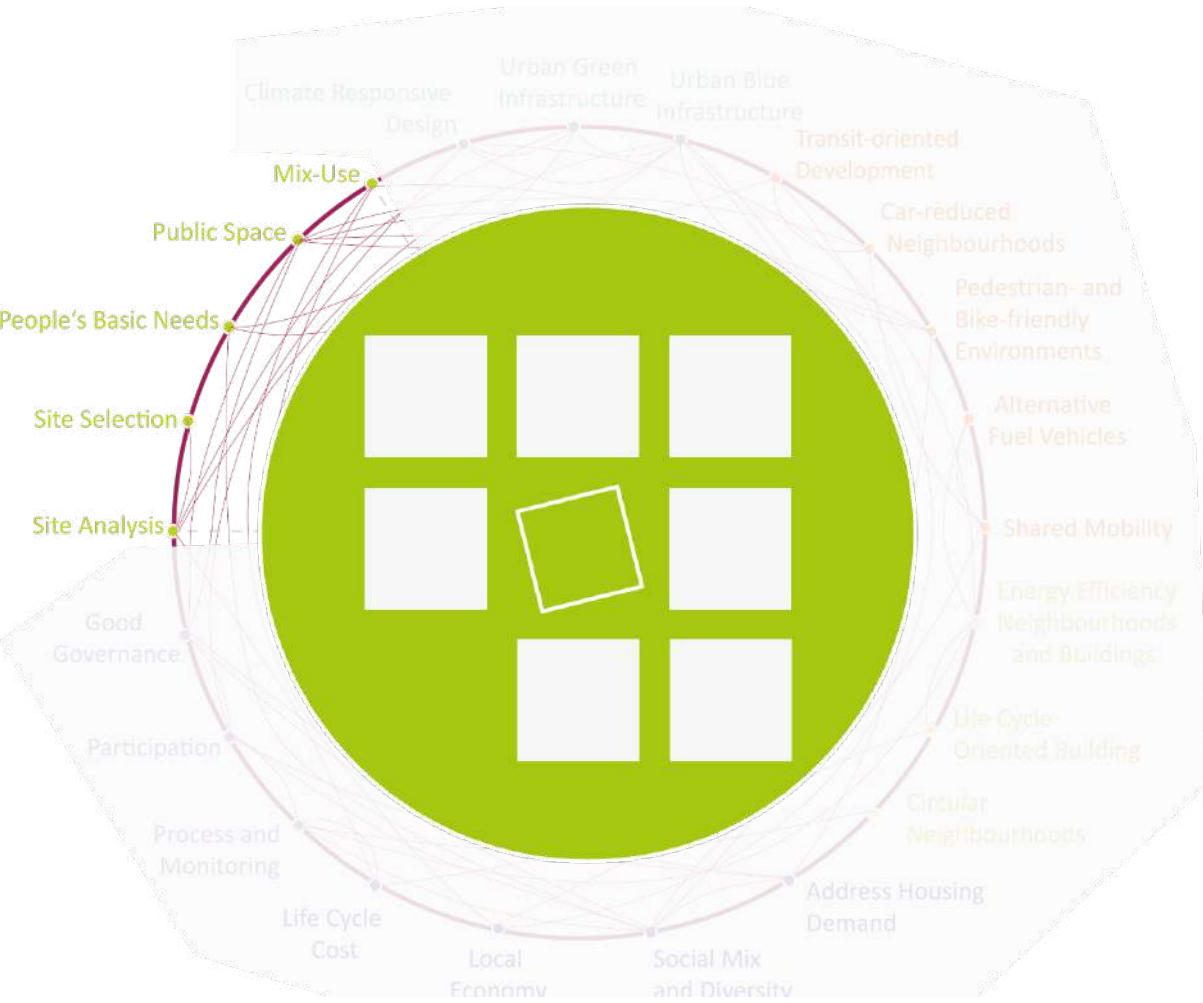


FONA
Research for sustainability

Integrated and Sustainable Borey Development

ការរៀបចំក្រុង តាមបែបសមាហរណកម្ម INTEGRATED URBAN DESIGN

- ការជ្រើសរើសទីតាំង
Site selection
- ការវិភាគទីតាំង
Site analysis
- បំពេញតម្រូវការជាមូលដ្ឋានរបស់ប្រជាពលរដ្ឋ
Fulfillment of People's Basic Needs
- ការប្រើប្រាស់ចម្រុះប្រកបដោយតុល្យភាព/ហេដ្ឋារចនាសម្ព័ន្ធសង្គម
Balanced Mix of Uses
- រៀបចំទីឆ្នោសាធារណៈសម្រាប់មនុស្សគ្រប់គ្នា
Public Spaces for all People



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

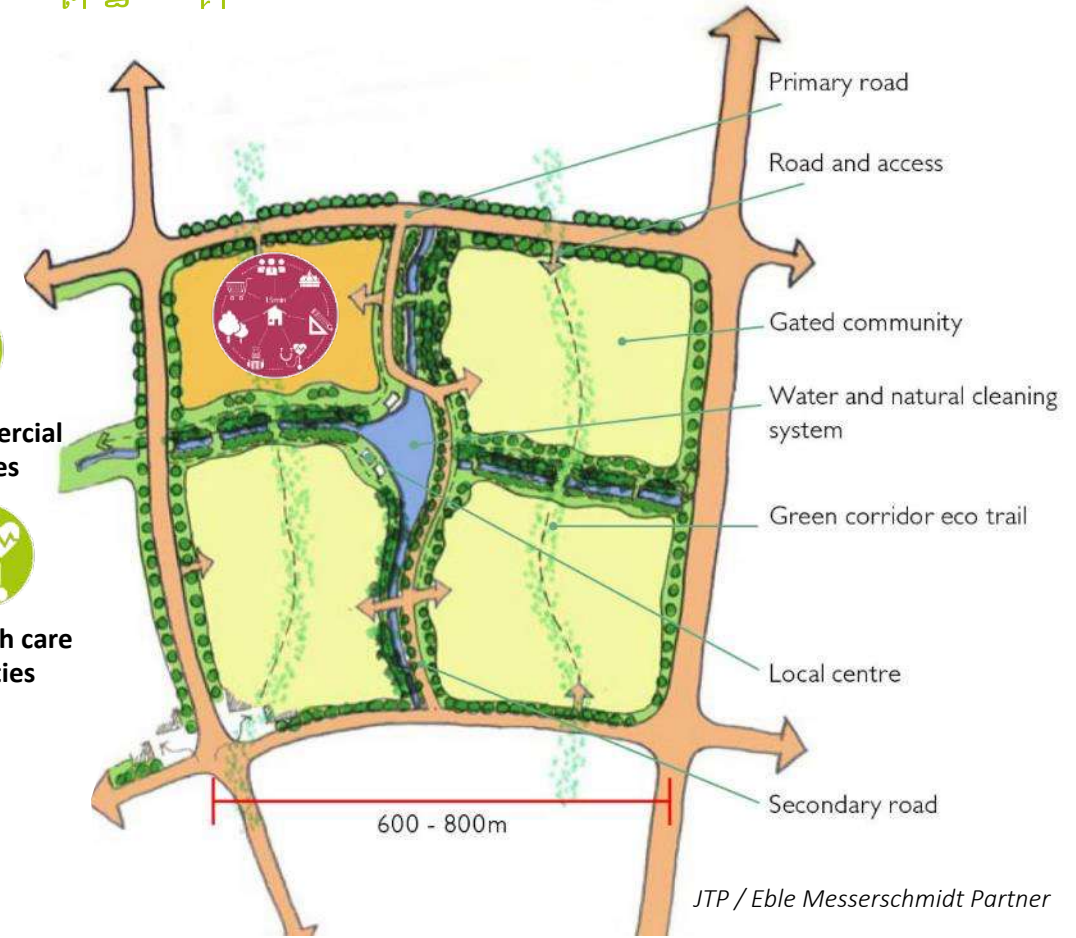
Integrated Urban Design



ការប្រើប្រាស់ចម្រុះប្រកបដោយតុល្យភាព/ហេដ្ឋារចនាសម្ព័ន្ធសង្គម
BALANCED MIX OF USES

Design Guidelines

- Provide social and commercial infrastructure within boreys
- Procure a **balanced ratio of uses** (residential housing, working spaces, commercial units, cultural, educational and social facilities)
- Design **vibrant public spaces**
- Integrate connections with adjacent neighbourhoods



JTP / Eble Messerschmidt Partner

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability

Integrated Urban Design

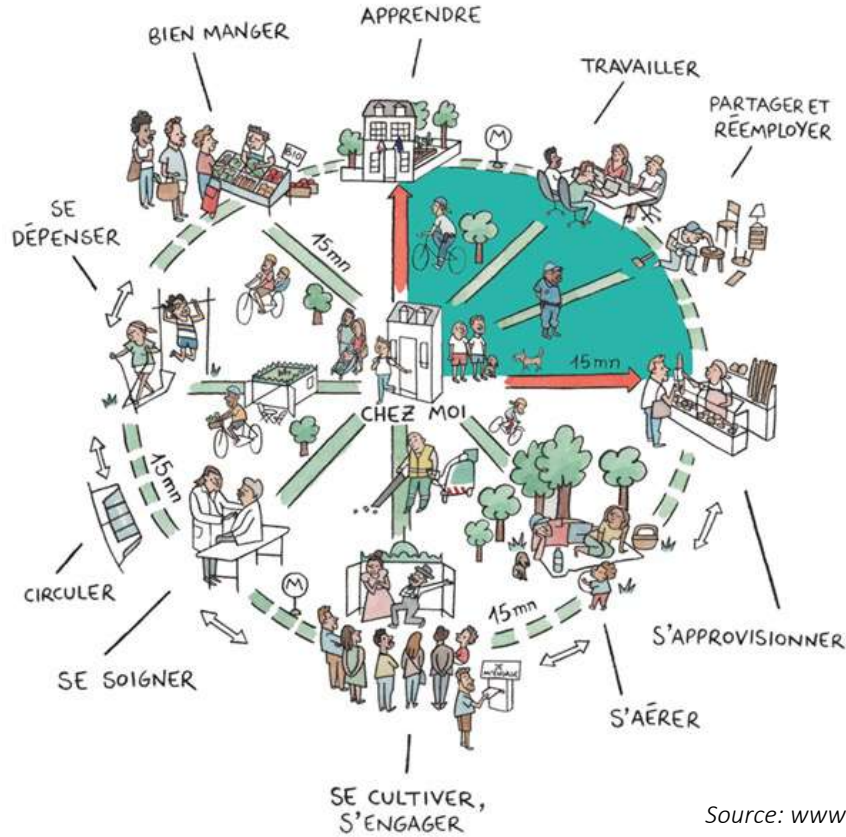


ការប្រើប្រាស់ចម្រុះប្រកបដោយតុល្យភាព/ហេដ្ឋារចនាសម្ព័ន្ធសង្គម
BALANCED MIX OF USES

LE PARIS DU 1/4 HEURE



Shophouses at Borey PH



Source: www.bauwelt.de

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

FONA
Research for sustainability

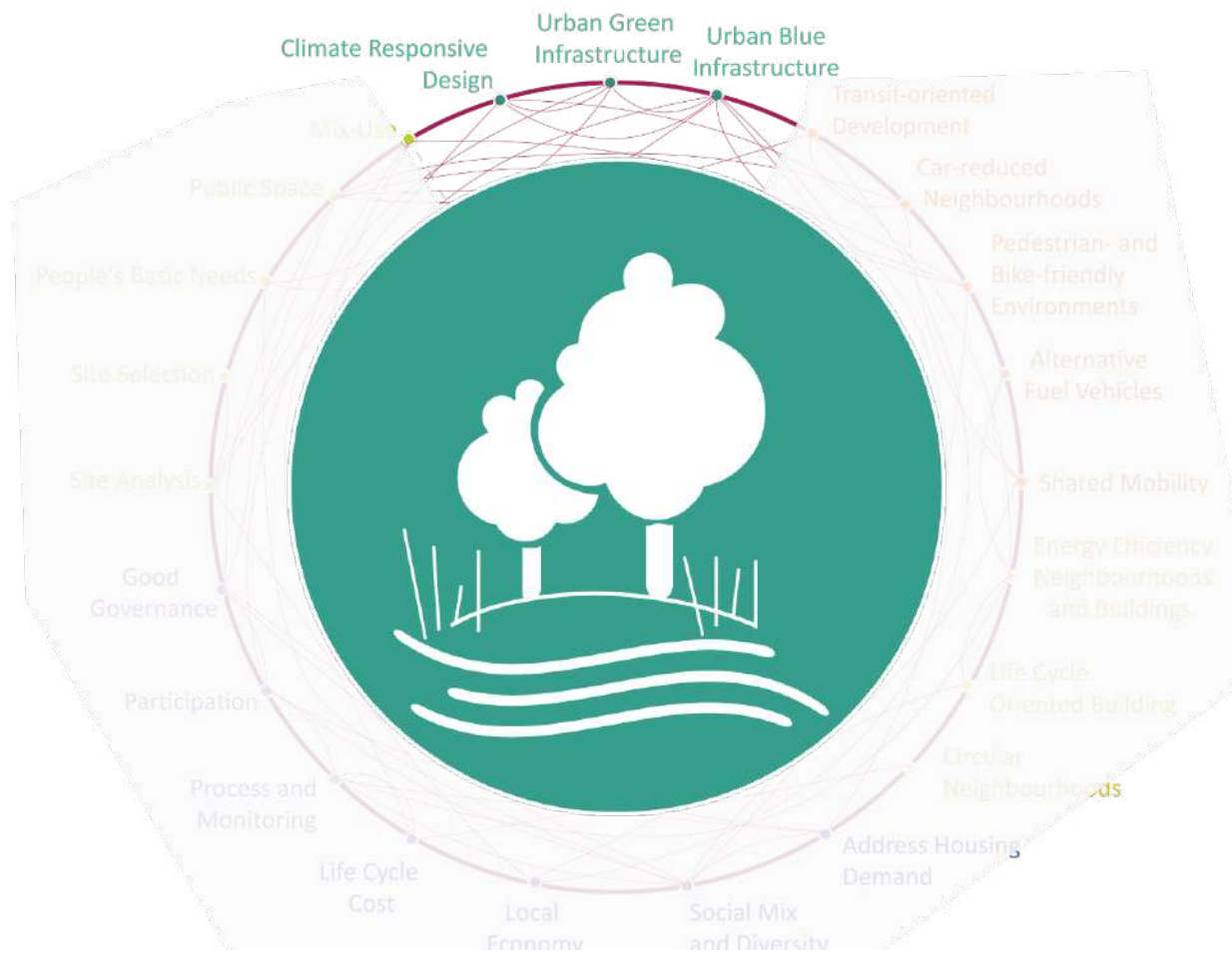
Integrated and Sustainable Borey Development



ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបែតង

CLIMATE RESPONSIVE URBAN DESIGN

- ការរៀបចំក្រុងដែលឆ្លើយតបទៅនឹងកត្តាអាកាសធាតុ
Climate responsive urban design
- ការប្រើប្រាស់ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបែតងនៅក្នុងទីក្រុង ជា
ឧបករណ៍សម្រាប់រៀបចំក្រុង
Green infrastructure as design tool
- ការប្រើប្រាស់ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបែតងនៅក្នុងទីក្រុង ជា
ឧបករណ៍សម្រាប់រៀបចំក្រុង
Blue infrastructure as design tool



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

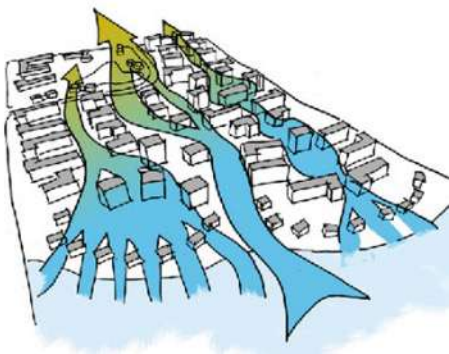


FONA
Research for sustainability

Blue Green Infrastructure

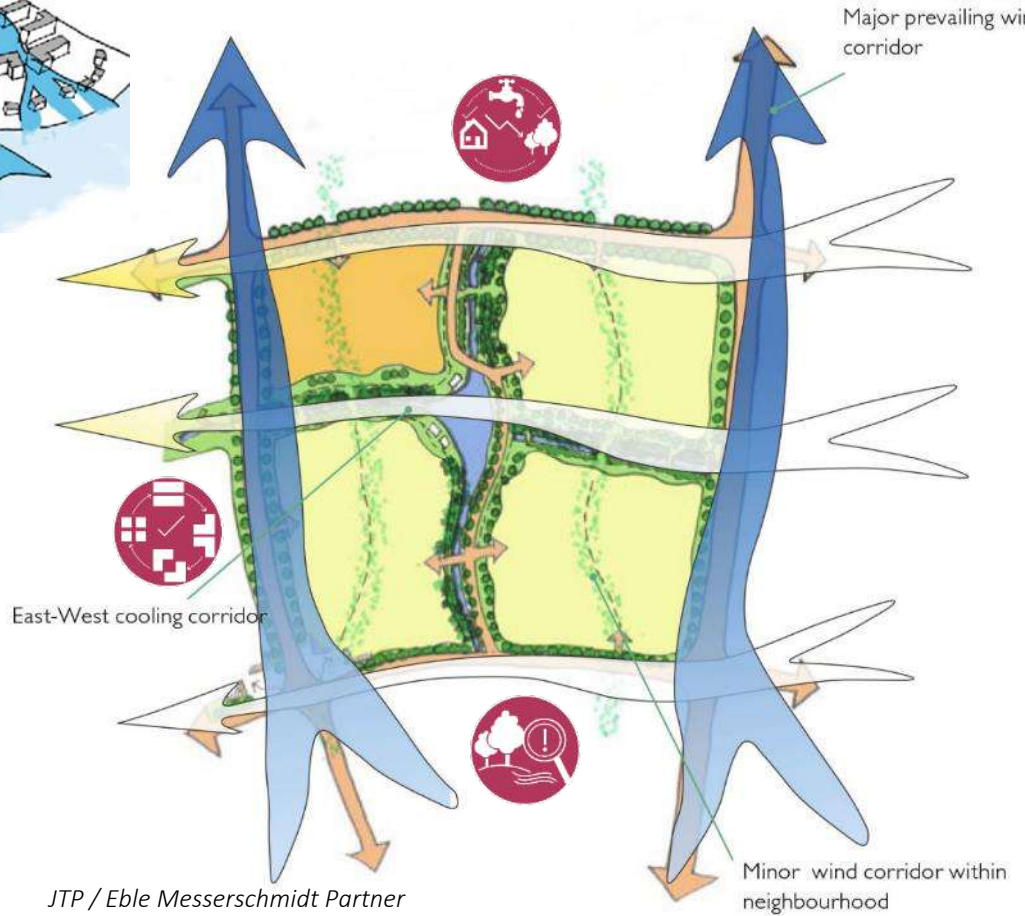


ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបៃតង
CLIMATE RESPONSIVE URBAN DESIGN



Design Guidelines

- Optimise urban design according to urban climate and site characteristics (wind corridors following locally prevailing wind direction, porosity of urban structure, maximizing urban green, considering Albedo effect of surfaces)
- Apply strategies to reduce water consumption and grey water recycling on a neighbourhood and building level, landscape-integrated stormwater management (local retention, infiltration, evaporation and use for irrigation)
- Carry out an environmental site assessment and evaluate environmental risks



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Blue Green Infrastructure



ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបៃតង
CLIMATE RESPONSIVE URBAN DESIGN



Pocket park at Borey PH



Stormwater management and liveability *Source: Ramboll Studio Dreiseitl*

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

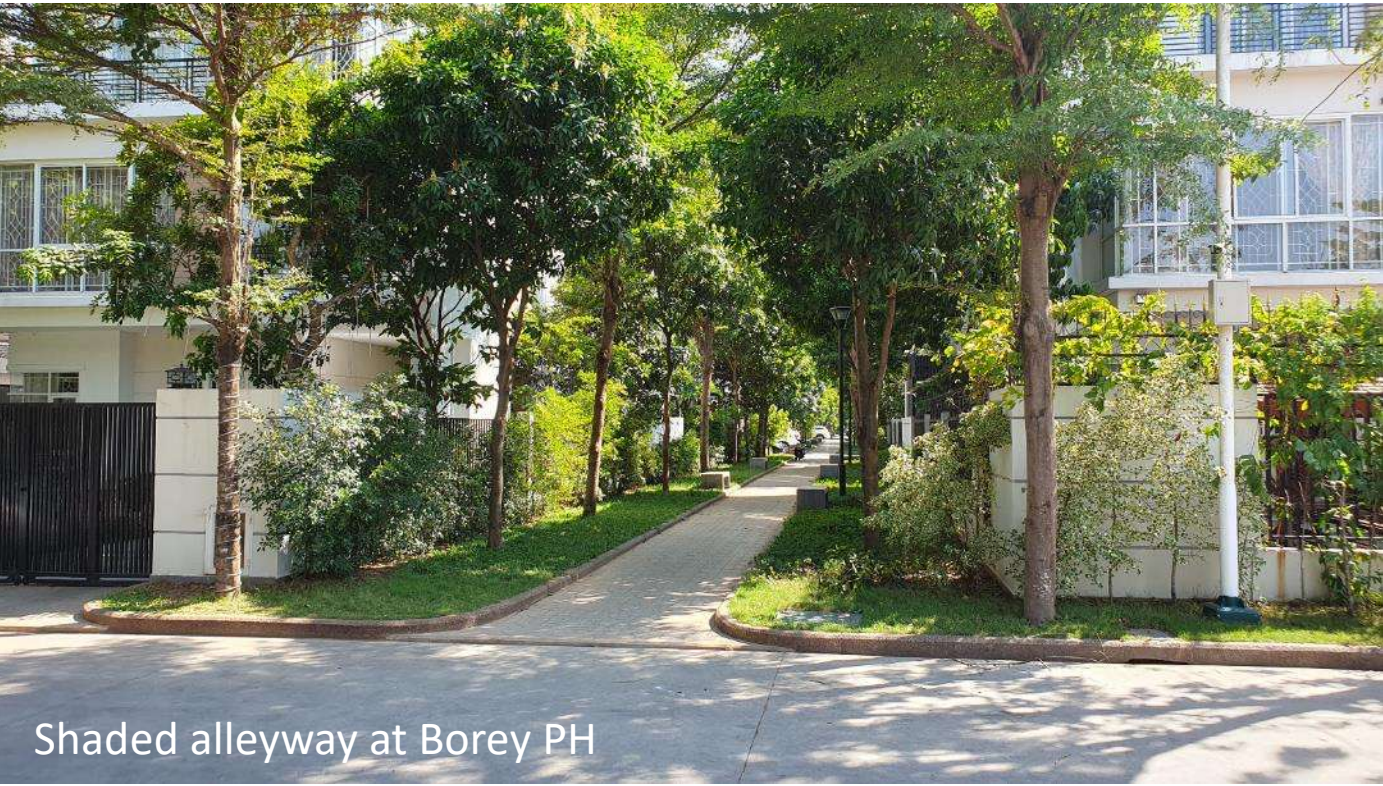


FONA
Research for sustainability

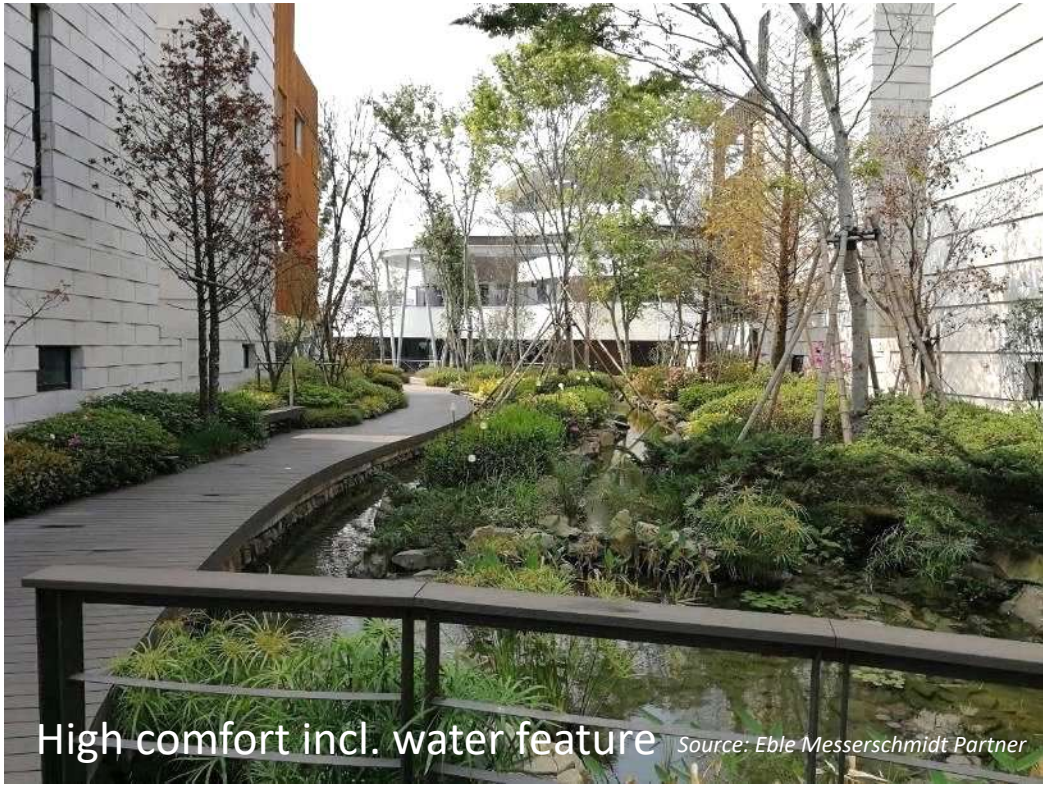
Blue Green Infrastructure



ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបៃតង
CLIMATE RESPONSIVE URBAN DESIGN



Shaded alleyway at Borey PH



High comfort incl. water feature *Source: Eble Messerschmidt Partner*

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

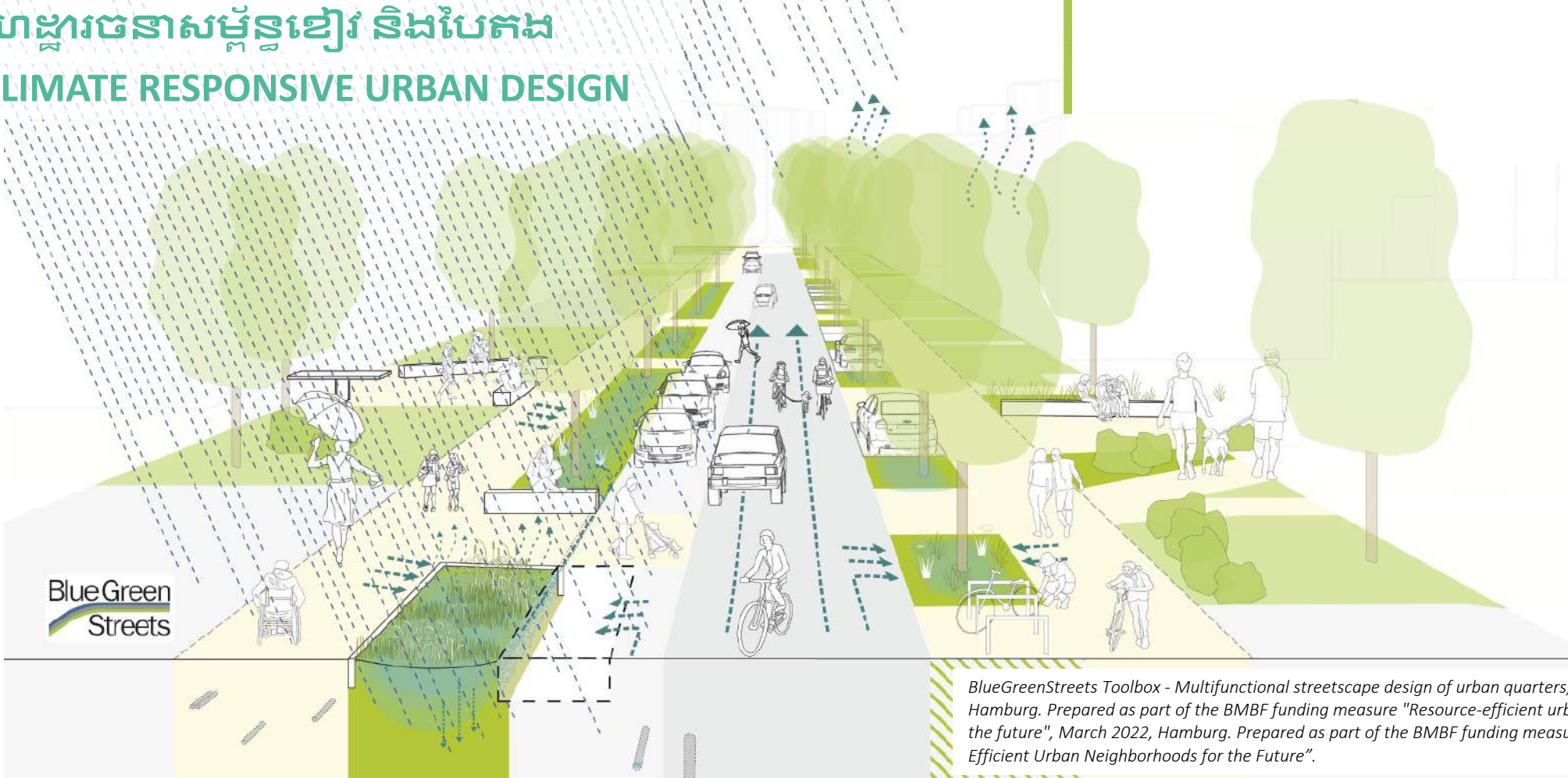
DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability

Blue Green Infrastructure



ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបៃតង
CLIMATE RESPONSIVE URBAN DESIGN



BlueGreenStreets Toolbox - Multifunctional streetscape design of urban quarters, March 2022, Hamburg. Prepared as part of the BMBF funding measure "Resource-efficient urban quarters for the future", March 2022, Hamburg. Prepared as part of the BMBF funding measure "Resource Efficient Urban Neighborhoods for the Future".



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

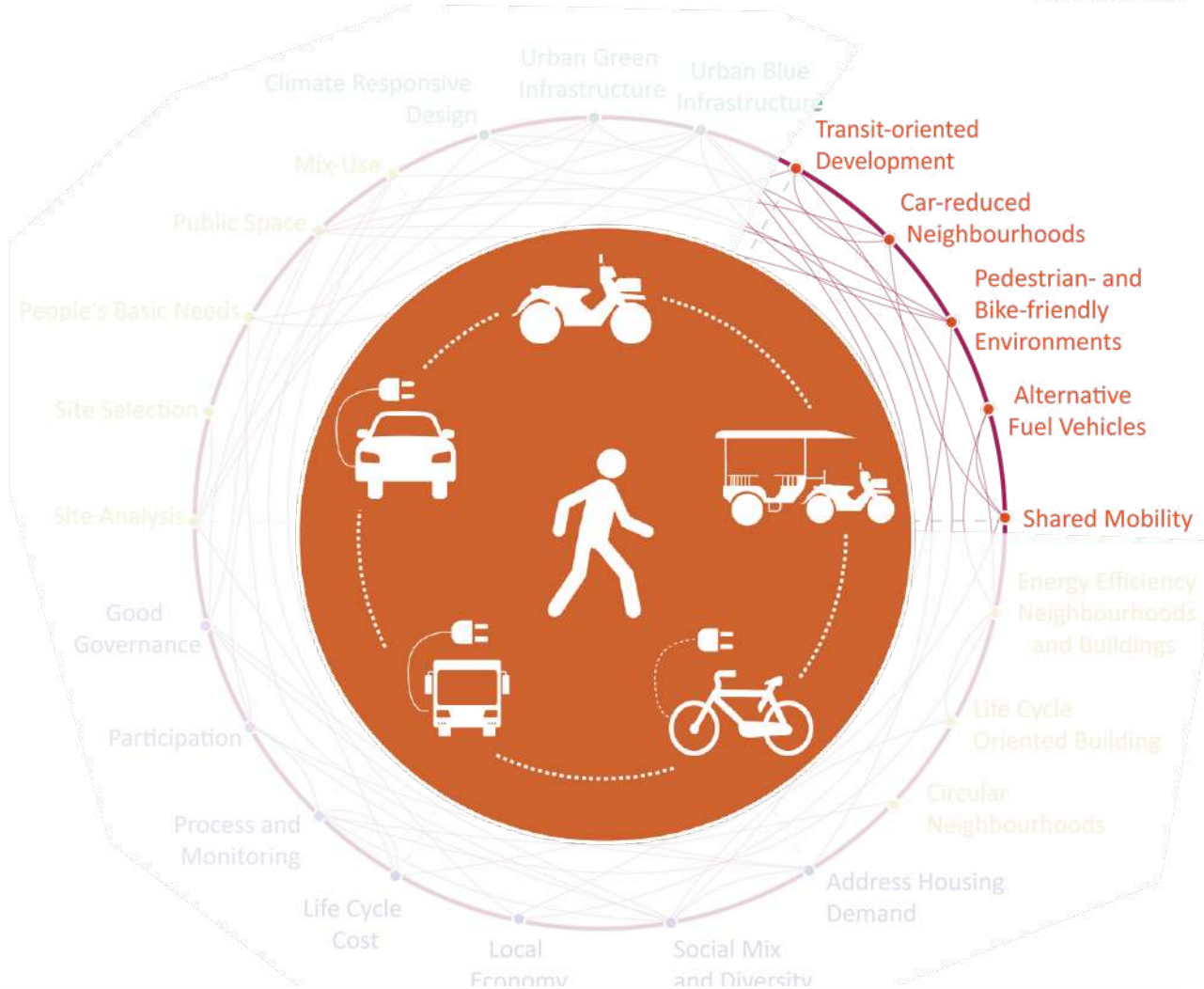


Integrated and Sustainable Borey Development



ការផ្លាស់ទីប្រកបដោយចីរភាព SUSTAINABLE MOBILITY

- ការអភិវឌ្ឍដែលគិតគូរពីការធ្វើដំណើររបស់ប្រជាជន
Transport-oriented development
- រួមចំណែកដល់ការកសាងសហគមន៍លំនៅដ្ឋានដែល
មានការប្រើប្រាស់រថយន្តតិចជាងមុន
Car-reduced neighbourhood
- បរិយាកាសមេត្រីភាពសម្រាប់ថ្មើរជើង និងអ្នកជិះកង់
Pedestrian and bike friendly environment
- គាំទ្រដល់ការប្រើប្រាស់យានជំនិះដែលប្រើប្រាស់ឥន្ធនៈ
ពីប្រភពផ្សេងៗ
Infrastructure for alternative fuel vehicles
- ការធ្វើដំណើរដោយប្រើប្រាស់មធ្យោបាយរួមគ្នា
Shared Mobility



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

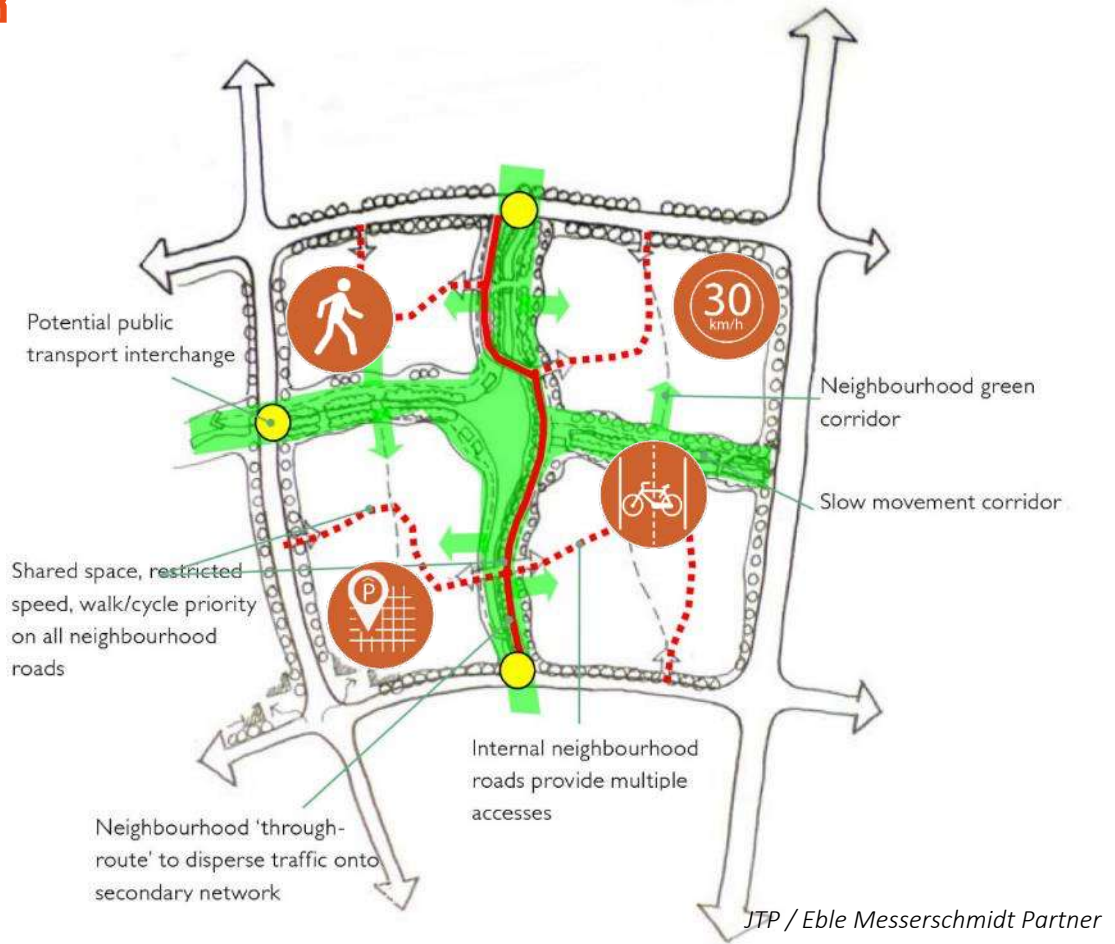
Sustainable Mobility



បរិយាកាសមេត្រីភាពសម្រាប់ថ្មើរជើង និងអ្នកជិះកង់
BIKE AND PEDESTRIAN FRIENDLY ENVIRONMENT

Design Guidelines

- Local bus / shuttle within Borey connecting housing with social and commercial infrastructure (Bus Rapid Transit organised by city)
- Provide a high-quality infrastructure for pedestrian mobility (wide sidewalks, home zones, fine-meshed networks)
- Provide a high-quality infrastructure for bike mobility (bike lanes and paths, bike parking facilities)
- Strive for reduce speed of cars within residential areas and introduce parking management



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability

Sustainable Mobility



បរិយាកាសមេត្រីភាពសម្រាប់ថ្មើរជើង និងអ្នកជិះកង់
BIKE AND PEDESTRIAN FRIENDLY ENVIRONMENT

Bikes4Kids_Cambodia
@Bikes4KidsKH · Charity Organization

Edit Send message

Bike project Chbar Ampov



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability

Integrated and Sustainable Borey Development



ការការពារអាកាសធាតុ និងរំហូរថាមពល CLIMATE PROTECTION AND ENERGY FLOWS

- រៀបចំសហគមន៍លំនៅដ្ឋាន និងអាកាសធាតុដែលសន្សំសំចៃថាមពល
Energy Efficient Neighbourhoods and Building
- រៀបចំខ័ណ្ឌផ្ដោតលើវដ្តជីវិត
Plan life-cycle-oriented districts
- ជំរុញឱ្យមានការកសាងសហគមន៍លំនៅដ្ឋាន
ដែលមានលក្ខណៈវិលជុំ
Circular Neighbourhoods



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Integrated and Sustainable Borey Development



រៀបចំសហគមន៍លំនៅដ្ឋាន និងអាការដែលសន្សំសំចៃថាមពល
ENERGY EFFICIENT NEIGHBOURHOODS AND BUILDINGS

Design Guidelines

- Reduce energy demand on building and neighbourhood level and maximise efficiency of energy supply
- Increase the share of renewable energy sources (e.g. solar panels, district cooling)
- Maximise the use of environmentally friendly and healthy building materials, use renewable and recyclable materials
- Reduce primary building material consumption, promote sustainable lifestyles based on adequate building volumes
- Minimise the amount of waste going to landfills, facilitate the recycling and re-use of collected materials and resources, promote sharing-economy



District Cooling *Energy Design Asia / Eble Messerschmidt Partner*

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021
R&D 2021-2025
IMP 2025-2027

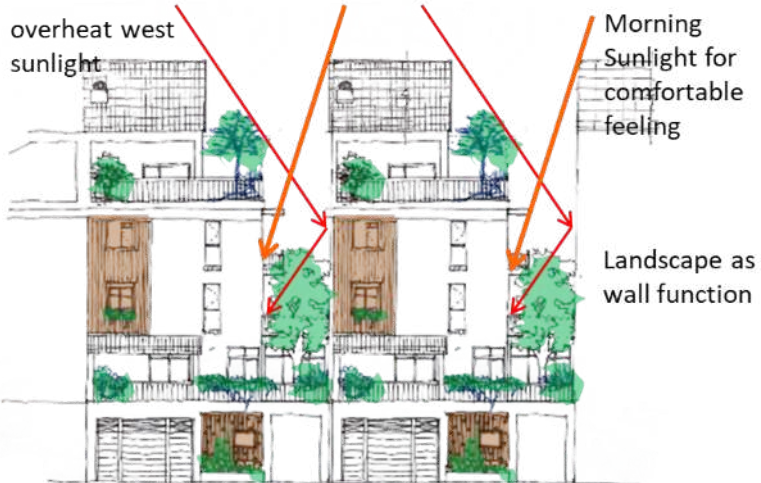
SPONSORED BY THE
Federal Ministry
of Education
and Research
FONA
Research for sustainability

Integrated and Sustainable Borey Development

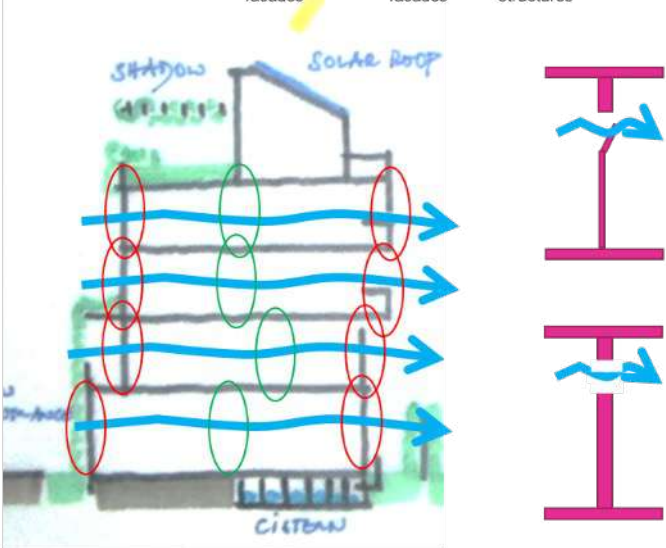
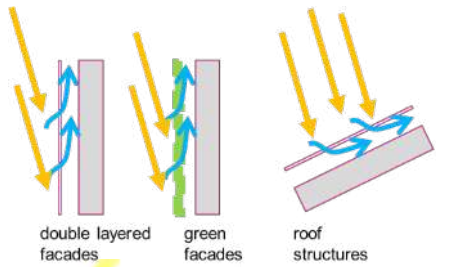


រៀបចំសហគមន៍លំនៅដ្ឋាន និងអាការដែលសន្សំសំចៃជាមពល ENERGY EFFICIENT NEIGHBOURHOODS AND BUILDINGS

Cooling and ventilation



- sufficient openings for cross ventilation
- indoor partitions need to be designed to allow cross ventilation
- air tightness for times, when natural ventilation is not possible



Source: Eble Messerschmidt Partner

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

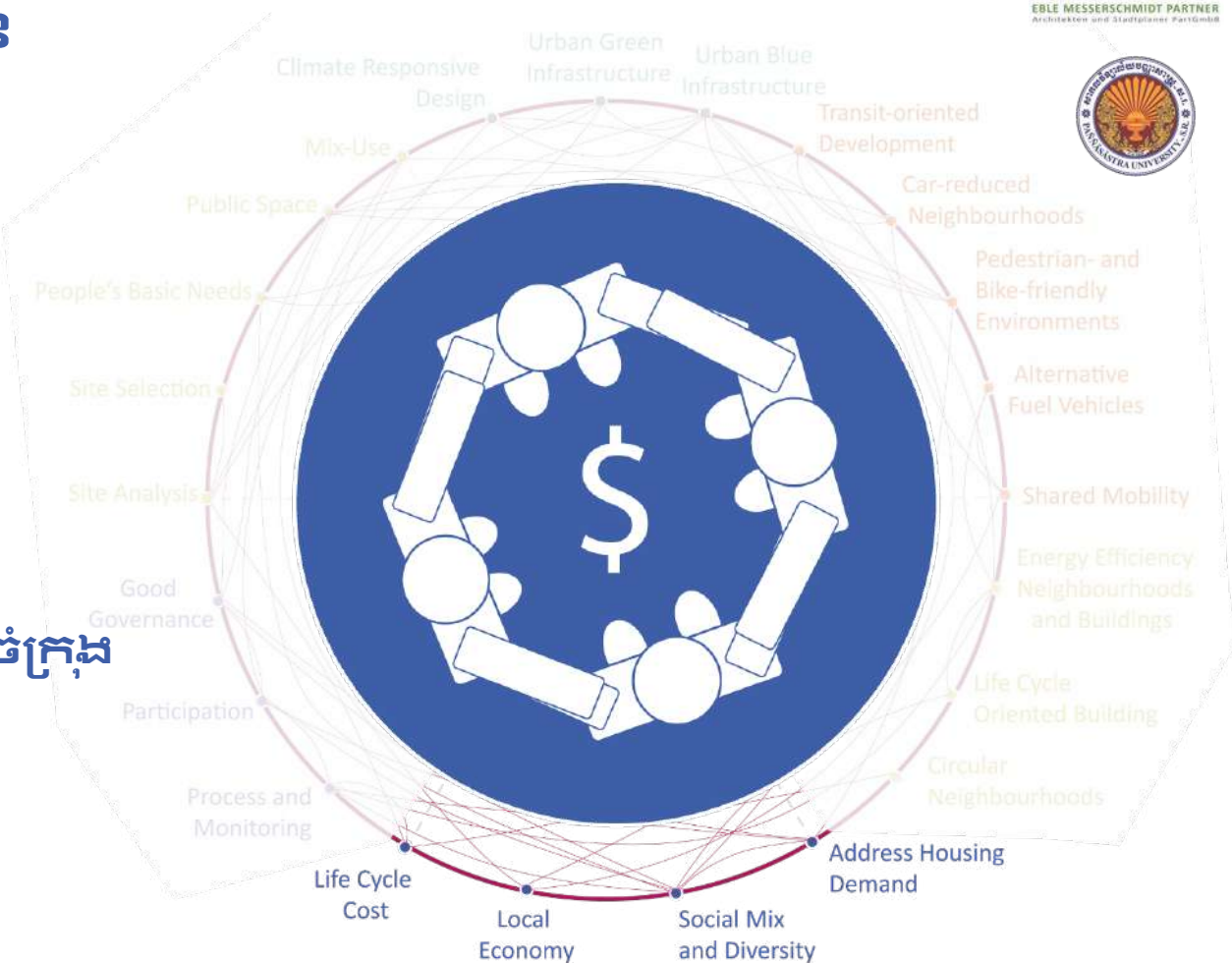
FONA
Research for sustainability

Integrated and Sustainable Borey Development



បរិយាបន្នសង្គម និងសេដ្ឋកិច្ចមូលដ្ឋាន SOCIAL INCLUSION AND LOCAL ECONOMY

- ឆ្លើយតបចំពោះតម្រូវការលំនៅដ្ឋាន
Addressing housing demand
- ជំរុញឱ្យមានការចូលរួម និងភាពចម្រុះនៅក្នុងសង្គម
Social mix and diversity
- ពង្រឹងសេដ្ឋកិច្ចមូលដ្ឋាន
Strengthening local economy
- ចំណាយក្នុងវដ្តជីវិតជាឧបករណ៍សម្រាប់ធ្វើការរៀបចំក្រុង
Life cycle cost as design tool



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research



FONA
Research for sustainability

Integrated and Sustainable Borey Development



បរិយាបន្នសង្គម និងសេដ្ឋកិច្ចមូលដ្ឋាន
SOCIAL INCLUSION AND LOCAL ECONOMY

Design Guidelines

- Include affordable housing options within new urban developments
- Diversify building typologies to target different population groups
- Procure mixed-used typologies on strategic areas
- Integrate working hubs for a neighbourhood of short distances
- Consider a life cycle cost (LCC) to find long-term economical solutions



Co-Working Spaces in Neighbourhood

Source: www.sharedesk.net

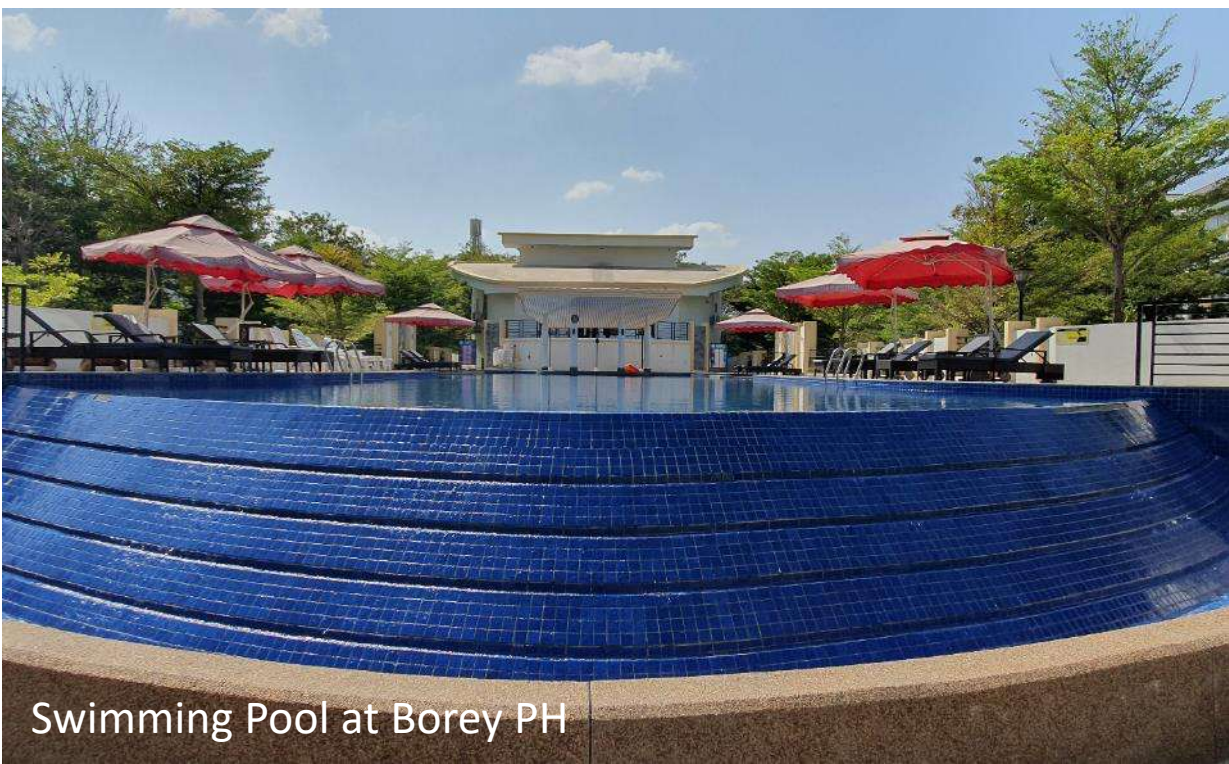
Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Integrated and Sustainable Borey Development



បរិយាបន្នសង្គម និងសេដ្ឋកិច្ចមូលដ្ឋាន
SOCIAL INCLUSION AND LOCAL ECONOMY



Swimming Pool at Borey PH

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

- DEF 2019-2021
- R&D 2021-2025
- IMP 2025-2027



Club House

Source: Eble Messerschmidt Partner

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

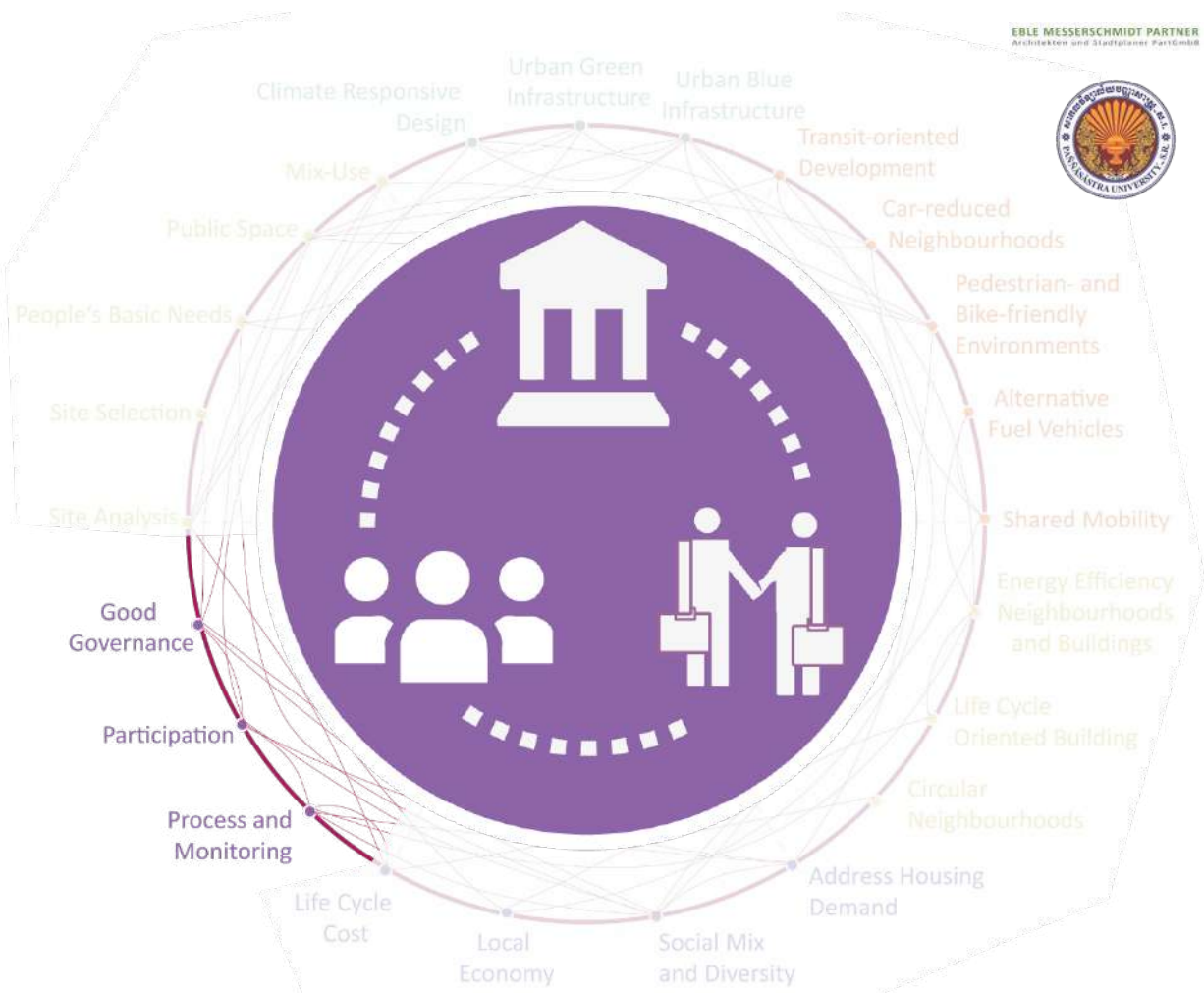
FONA
Research for sustainability

Integrated and Sustainable Borey Development



អភិបាលកិច្ច និងការចូលរួម GOVERNANCE AND PARTICIPATION

- បញ្ចូលការគ្រប់គ្រង និងការតាមដានដំណើរការ
Process, management and monitoring
- ការចូលរួមរបស់សហគមន៍លំនៅដ្ឋាន
Community involvement and participation
- អភិបាលកិច្ចល្អៈ បញ្ចូលឧបករណ៍ គោល
នយោបាយ និងលិខិតបទដ្ឋានគតិយុត្ត
Good Governance



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry of Education and Research

FONA
Research for sustainability

Integrated and Sustainable Borey Development



អភិបាលកិច្ច និងការចូលរួម
GOVERNANCE AND PARTICIPATION

Design Guidelines

- Establish comprehensive community involvement by participation of residents and users in planning and operation of the neighborhood
- Promote awareness-raising incl. communication concept and campaigns addressing sustainable lifestyle for saving resources
- Apply an integrated planning approach and implement a neighbourhood sustainable management scheme and monitoring after completion



Build4People Sustainable Building Arena 2022



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry
of Education
and Research

FONA
Research for sustainability

Integrated and Sustainable Borey Development



អភិបាលកិច្ច និងការចូលរួម
GOVERNANCE AND PARTICIPATION



Community Event BPH



Community Involvement



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

Integrated and Sustainable Borey Development

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry
of Education
and Research

FONA
Research for sustainability

- 

ការរៀបចំក្រុង តាមបែបសមាហរណកម្ម
INTEGRATED URBAN DESIGN
- 

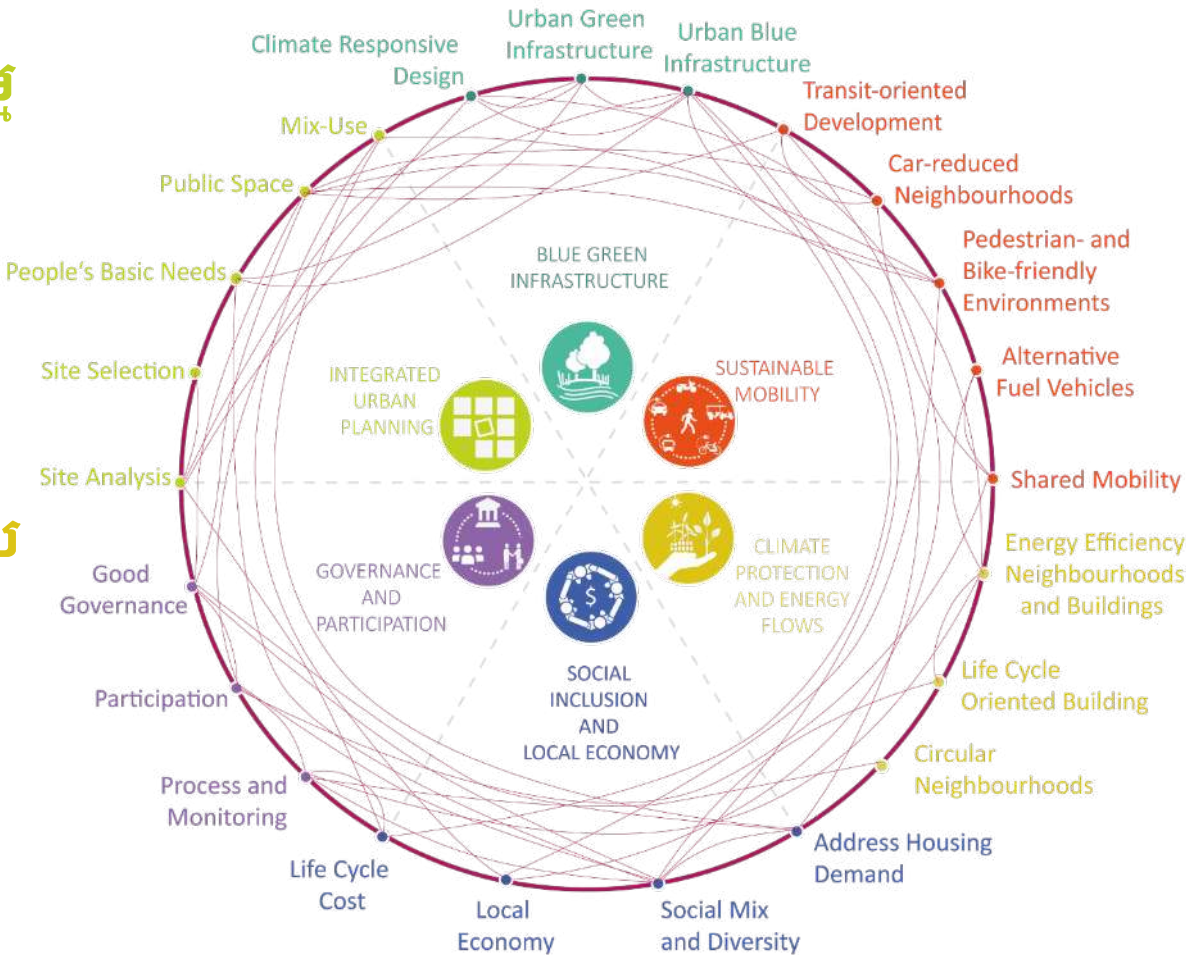
ហេដ្ឋារចនាសម្ព័ន្ធខៀវ និងបៃតង
BLUE GREEN INFRASTRUCTURE
- 

ការផ្លាស់ទីប្រកបដោយចីរភាព
SUSTAINABLE MOBILITY
- 

ការការពារអាកាសធាតុ និងរំហូរថាមពល
CLIMATE PROTECTION AND ENERGY FLOWS
- 

បរិយាបន្នសង្គម និងសេដ្ឋកិច្ចមូលដ្ឋាន
SOCIAL INCLUSION AND LOCAL ECONOMY
- 

អភិបាលកិច្ច និងការចូលរួម
GOVERNANCE AND PARTICIPATION



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

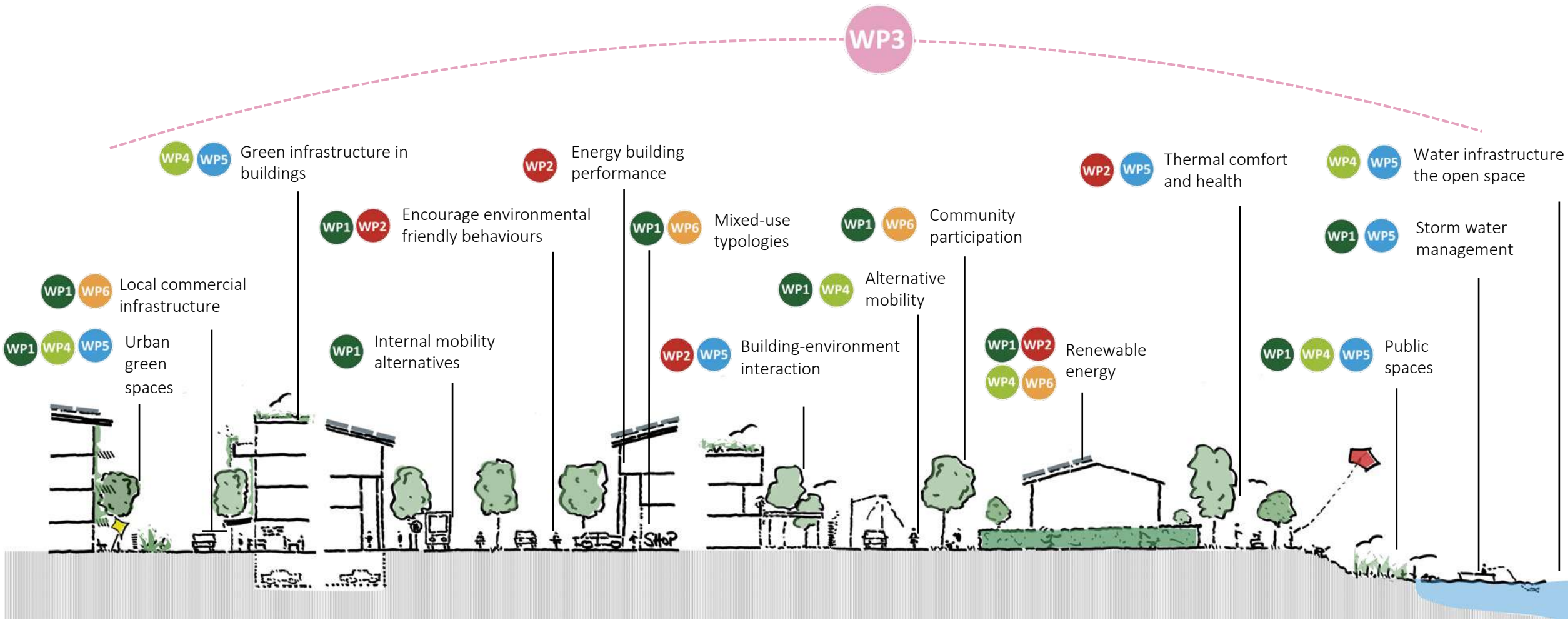


Federal Ministry
of Education
and Research



FONA
Research for sustainability

Multi- and trans-disciplinary synergies among Build4People Work Packages



Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន
ការលើកកម្ពស់ គុណភាពជីវិត របស់
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE
Federal Ministry
of Education
and Research

FONA
Research for sustainability





Build4People
ECOCITY
TRANSITION
LAB 2023



EBLE MESSERSCHMIDT PARTNER
Architekten und Stadtplaner PartGmbH
with student support from:


Thanks so much
for your
attention!

More info: build4people.org

អរគុណសម្រាប់
ការយកចិត្ត
ទុកដាក់!

Research Partners



Implementation Partners



Dissemination Partners

