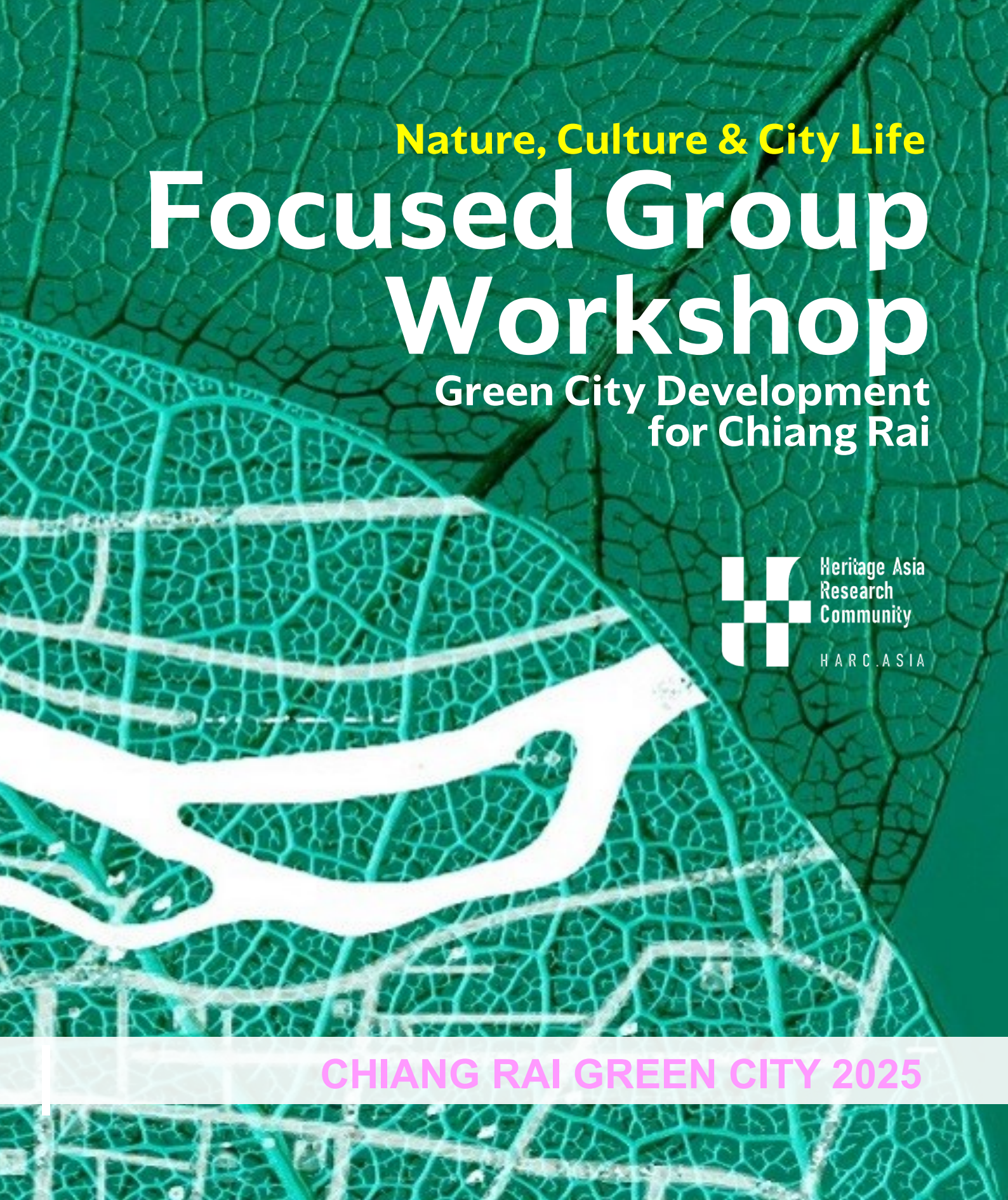


Nature, Culture & City Life

Focused Group Workshop

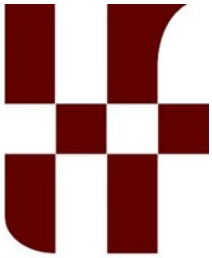
Green City Development for Chiang Rai

Heritage Asia Research Community

HARC.ASIA

CHIANG RAI GREEN CITY 2025


OIA
KMITL



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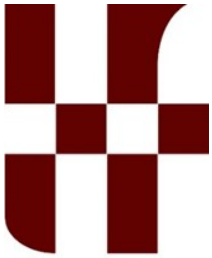

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Preface

Green is not merely about visible parks or decorative landscapes, but about agriculture as the true foundation of meaningful urban green. By integrating local knowledge, resilient plant species, and biodiversity into city systems, agricultural green offers practical solutions to multiple urban challenges — ensuring food security, preventing floods, filtering air pollution, absorbing toxins, generating community-based productivity, and reducing maintenance costs.

In an era marked by climate change, resource scarcity, and social inequality, agriculture and geographical resources have become essential tools for restoring balance to cities and ensuring quality growth in the 21st century. The concept of *"Geo-Agricultural Assets and Systemic Innovation: Reimagining the Future of Cities"* reflects the understanding that urban development cannot be separated from ecosystems, agriculture, and the geography of a place — all of which are the foundations of resilience, food security, and urban quality of life.

The **Focused Group Workshop: Green City**, held for the first time in conjunction with the AIPH event, brought together stakeholders from diverse sectors, with active participation from local communities. The workshop proposed strategic approaches to restore urban landscapes and systems through *"Re:Geo"* — using geography and ecological landscapes as the basis for urban design — and *"Urban Ecotone"* — creating transition zones that reconnect cities with nature. These approaches aim to reduce vulnerabilities and expand urban green spaces that are not only aesthetic, but deeply functional.

This first step has laid the foundation for an ongoing knowledge platform. The insights and policy recommendations generated provide essential direction for urban designers, planners, and policymakers who seek to build sustainable green cities rooted in agriculture, nature, culture, and community — shaping a resilient and meaningful future for Thai cities, while offering a replicable model for green space innovation worldwide.

Assoc. Prof. Surasak Kangkhao,

founder
Heritage Asia Research Community (HARC)

AIPH Green City Conference

Nature Culture & City Life

Cultural Ethnobotany

Cultural ethnobotany, the traditional knowledge of using plants for survival, plays a key role in developing Green Cities. Human life has always depended on nature,
particularly plants, and this indigenous wisdom is crucial for community survival.
By integrating this knowledge with modern urban planning, cities can create
sustainable green spaces that promote environmental health, community well-being, and ecological balance.
This approach strengthens the connection between people and nature, while also preserving cultural heritage and fostering long-term resilience in urban development.

CHIANG RAI GREEN CITY 2025

Nature Culture & City Life

CHIANG RAI GREEN CITY Preparation Meeting for the AIPH International Green City Conference, 2025

AIPH organises regular Green City conferences to keep our members, partners, and supporters up to date on Green City developments. Held in different regions around the world, and focussing on specific aspects of urban greening, these conferences provide a forum for ornamental producers, business in the supply chain, landscape practitioners, and leading authorities to interact and learn about the latest trends and developments in the science and practice of living green in urban environments.

2025 International Conference (AIPH International Green City Conference, 2025) of the International Association of Horticultural Producers (AIPH), which will be an International event. Corresponding to Thailand's large-scale exhibition is the World Horticultural Expo. Udon Thani Province 2026 and Nakhon Ratchasima Province 2029 to find ways to support the Chiang Rai Green City Conference 2025 to achieve its goals according to the next objective.

life has depended on nature since ancient times, mainly on plants. Learning to use plants for survival, passed down through generations, is known as indigenous wisdom, crucial for communities' survival.

8AIPH 9 SDGs

2025 GREEN CITY CHIANG RAI

Culture, Nature &City Life

9-13 Feb 2025

Chiang Rai, Thailand

Event Venue,

Planning for sustainable living is essential for our past, present, and future. Our ancestors' wisdom in geography and resource management created thriving cities rich in natural resources, an absolute truth that underscores the importance of sustainable practices. Today, we must continue learning from the past to maintain a strong connection with nature. This connection is crucial for our survival and the planet's, a relative truth reflecting the varying degrees of environmental impact. Embracing sustainability is a responsibility that supports innovative economic models, such as Green City, Wellness City, MICE City, Creative City and others, which combine economic growth with environmental care.

workshop participation

keynote speaker


to the craft for the community.
by training local
school students.
of himself.
He won the champion award
for the kite-making experience.
Heritage Asia
Research
Community
HARC.ASIA


Karens Minde Aksen. SLA / SLA / Beauty and the Bit. 2022


AIPH SPRIN
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Summary of the AIPH Green City Conference 2025

The **AIPH Green City Conference**, part of the **AIPH Spring Meeting 2025**, will take place in **Chiang Rai, Thailand, from February** The event focuses on **Nature, Culture, and City Life**, highlighting sustainable urban development, green innovation, and nature-based solutions (NbS).

Key Themes & Speakers:

1. Model Knowledge

- **Prof. Dr. Vanchai Sirichana (Mae Fah Luang University, Thailand)** *Topic: "Mae Fah Luang University: Green Journey from its Past to the Present"* Showcasing the university's transition into a **sustainable green campus**.

- **Kotchakorn Voraakhom (Landprocess Co. Ltd., Thailand)** *Topic: "Nature-Based Solutions to Increase Urban Adaptability"* Discussing **climate resilience and NbS** in urban settings.

2. Continuing Green Sustainable Development

- **Assoc. Prof. Surasak Kangkhao (King Mongkut's Institute of Technology Ladkrabang, Thailand)** *Topic: "Shaping the Future of Ecological Urbanization through Hidden Truths"* Exploring **hidden truths and ecological urbanization strategies**.


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2015
2020
(5 year : 4-5 meters height)
2025
(10 year : 12-15 meters height)
2035
(20 year : 20-25 meters height)
AIPH SPRING
MEETING
2025
www.aiph.org

3. Creativity for a Green Sustainable Future

- **Prabhakorn Vadanyakul (President, Architect Council of Thailand, Thailand)** *Topic: "Sustainable Urban Development and Green Innovation: The Wang Chan Project in EEC Rayong"* Highlighting **green urban innovations in the Eastern Economic Corridor (EEC)**.

- **Mr. Whoo Kiat Heng (Gardens by the Bay, Singapore)** *Topic: "Gardens by the Bay: A Green Marvel for Sustainability"* Showcasing **Singapore's Gardens by the Bay as a model for green urban planning**.

- **Prof. Emeritus Dr. Geoffrey A. Cordell (Natural Products Inc. & University of Florida, USA)** *Topic: "Exploring and Applying Ecopharmacognosy to Promote Green City Development and Sustainable Natural Resource Use"* Discussing **sustainable use of natural resources in green cities**.

- **Asst. Prof. Perrine Hamel (Nanyang Technological University, Singapore)** *Topic: "Low-Cost Options for City Greening: A Southeast Asian Perspective"* Presenting **affordable solutions for urban greening in Southeast Asia**.


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MEETING
2025
9-13 February | Chiang Rai, Thailand
Le MERIDIEN
CHIANG RAI


Culture,
Nature
&City Life


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MPxC
AIPH
GREEN CITY
biblo
2026
Culture, Nature, & City Life
Keynote Speaker
Urban
Agriculture
Wellness
URBAN

workshop participants


Urban

workshop participants

Participants

Workshop featuring lectures by experts from both domestic and international backgrounds, aiming to exchange information and ideas on the development of a green city in Chiang Rai while also promoting green space expansion in other provinces. The target audience includes academics, government officials, and professionals from both the public and private sectors involved in agriculture, the environment, society, architecture, and urban planning, who possess the knowledge and experience to drive tangible progress toward a green city.


URBAN


Culture, Nature & City Life


Urban
Agriculture
Wellness

Workshop : 31 Organizations

International Organizations

1. International Association of Horticultural Producers (AIPH)
2. Gardens by the Bay, Singapore
3. Beijing Huaxiang Green Garden Group Co., Ltd.

Government Ministries & Agencies

1. Department of Public Works and Town & Country Planning
2. Department of Agriculture
3. Thailand Convention and Exhibition Bureau (TCEB)
4. Program Management Unit for Area-Based Development (PMU-A)

Educational Institutions

1. King Mongkut's Institute of Technology Ladkrabang (KMITL)
2. Mae Fah Luang University
3. Nanyang Technological University
4. Royal Danish Academy
5. University of Florida

Local Government Organizations

1. Chiang Rai Province
2. Chiang Rai Municipality
3. Mae Sai Subdistrict Municipality
4. Ban Du Subdistrict Municipality
5. Sing Buri Province
6. Chiang Rai Provincial Public Works and Town & Country Planning Office


Urban
Agriculture
Wellness
Rural city countryside
GreenBelt city
Please suggest from your experience how the Green City approach can be successfully applied for urban development.
Focused Group Workshop


GreenBelt city

Other Organizations & Associations

1. Architect Council of Thailand
2. Medicinal Plant Innovation Center of Mae Fah Luang University
3. Heritage Asean Research Community (HARC)
4. Botanical Association of Siam (BAS)
5. City Planning and Development , Bangkok Metropolitan Administration (BMA)
6. Agriculture & Environment Organizations

Regional Research and Development Office 1

1. Chiang Rai Highland Agricultural Research and Development Center
2. Horticultural Research Institute
3. Chiang Rai Horticultural Research Center
4. Protected Areas Regional Office 15
5. Mae Fah Luang Foundation

Health & Cultural Organizations

1. Dr. Sem Pringpuangkeo Foundation
2. Institute of Arts, Culture, and Mekong Civilization

Honorary Advisor
Chiang Rai
Green City 2025

Pongnara Yenying
Director-General
Department of Public Works and Town
& Country Planning

Nature-Integrated Planning: Towards a Sustainable City

The Director-General of the Department of Public Works and Town & Country Planning, serving as an honorary advisor to GREEN CITY 2025 in Chiang Rai, plays a key role in advancing local urban planning. The initiative focuses on developing infrastructure that supports local agriculture and integrating water management with national infrastructure systems to enhance flood prevention. Additionally, it incorporates sponge city principles to improve resilience against environmental challenges. The project aims to promote sustainable economic growth while strengthening communities' ability to adapt to environmental changes.

A key component of the project is empowering local officials to educate communities on environmental stewardship and sustainable practices. This effort is essential for preserving agricultural areas and preventing issues such as flooding and air pollution, particularly PM2.5. Additionally, the project emphasizes urban design strategies that enhance water management and flood prevention by integrating sponge city principles and irrigation systems to mitigate the risks of drought and flooding.

Through this initiative, Chiang Rai aims to become a model province for effective resource management and sustainable development. It not only sets a standard for other cities in Thailand but also serves as an example for international cities looking to adopt similar approaches.

Urban Planning and Green City Development in Thailand

In response to the evolving environmental landscape, Thailand faces multiple challenges, including rapid economic growth, structural shifts in the economy and society, demographic changes, and advancements in technology. Additionally, the country must contend with the impacts of global pandemics, intensifying climate change, and increasing frequency of natural disasters. These factors significantly affect land use and urban environments. Consequently, urban planning must prioritize sustainable urban development that can effectively adapt to these changes, ensuring an improved quality of life for citizens and fostering long-term national stability.

Statement by the Director-General of the Department of Public Works and Town & Country Planning

The current trend in Thailand's land use is concentrated around key economic zones and high-potential areas, which has led to social and environmental challenges. In addressing these issues, the following strategic approaches and measures have been proposed to enhance disaster prevention and mitigation:

Key Strategies for Urban Resilience and Sustainability

1. **Resilient City Development**
   - Strengthening urban capacity to recover from natural disasters and crises.
   - Establishing effective risk management and disaster response systems.
   - Supporting infrastructure that can adapt to environmental and socio-economic changes.
2. **Compact City Development**
   - Promoting efficient land use and urban space optimization.
   - Reducing unplanned urban sprawl.
   - Encouraging eco-friendly urban development approaches.
3. **Sponge City Development**
   - Implementing integrated stormwater management systems.
   - Expanding green spaces and urban water retention areas.
   - Mitigating flood risks and addressing water scarcity challenges.
4. **Green City Development**
   - Increasing urban green spaces and promoting clean energy solutions.
   - Reducing greenhouse gas emissions.

Advocating for renewable energy adoption and environmentally sustainable urban growth.
In the long term, urban development strategies must align with the principles of sustainable urban governance and the Sustainable Development Goals (SDGs), ensuring cities can accommodate growing populations while maintaining ecological balance and resilience.

Mr. Chanwich Sirisoontranon – Chief Architect,
Dr. Rattikarn Khambud – International Relations Officer, Department of Public Works and Town & Country Planning, and Mr. Teerayut Kukamsai – Senior Architect, Chiang Rai Office of Public Works and Town & Country Planning,participated in the Focused Group Workshop: Green City for Chiang Rai.

Greenovate City

Greenovate City

Go Green & Urban Innovation:

Building upon and refining existing urban infrastructure and development strategies, the approach integrates advanced technology with sustainable urban principles to enhance efficiency, environmental stewardship, and quality of life. By modernizing city management systems and optimizing resource utilization, the initiative fosters resilience, adaptability, and long-term sustainability in urban environments.

Emphasizing digital technology, data-driven solutions, and green innovations, the policy ensures that urban infrastructure and services align with contemporary demands while anticipating future growth. Prioritizing environmental sustainability, energy efficiency, and smart urban planning, the framework supports balanced development that harmonizes economic, social, and environmental objectives, shaping cities that are future-ready and responsive to global challenges.

Honorary Advisor
Chiang Rai
Green City 2025

Rapibhat Chandarasrivongs

Director-General

Department of Agriculture

The Director-General Department of Agriculture, serving as an honorary advisor to the GREEN CITY 2025 project in Chiang Rai, plays a pivotal role in advancing spatial planning focused on sustainable agriculture and efficient water resource management. This project aims to foster economic growth in harmony with natural resource conservation while enhancing community resilience to environmental changes.

The core of the project involves educating and training local officials and farmers to promote sustainable agricultural practices. This includes adopting appropriate technologies in production processes, soil restoration, and effective water management for agriculture. Additionally, the project supports organic farming and integrated agriculture to minimize environmental impacts.

The initiative emphasizes raising community awareness about the environmental challenges such as flooding and air pollution (PM2.5) and highlights the critical role of agriculture in mitigating these issues. Strategies include reforestation, land adjustment to improve water retention, and cultivating plants that enhance biodiversity.

Chiang Rai aspires to become a model province for sustainable agriculture and natural resource management. The GREEN CITY project not only sets a benchmark for other provinces in Thailand but also serves as a global example for adopting similar practices. Ultimately, the project seeks to inspire systemic change towards sustainable agriculture at all levels of society.

Honorary Advisor
Chiang Rai
Green City 2025

Department of Agriculture

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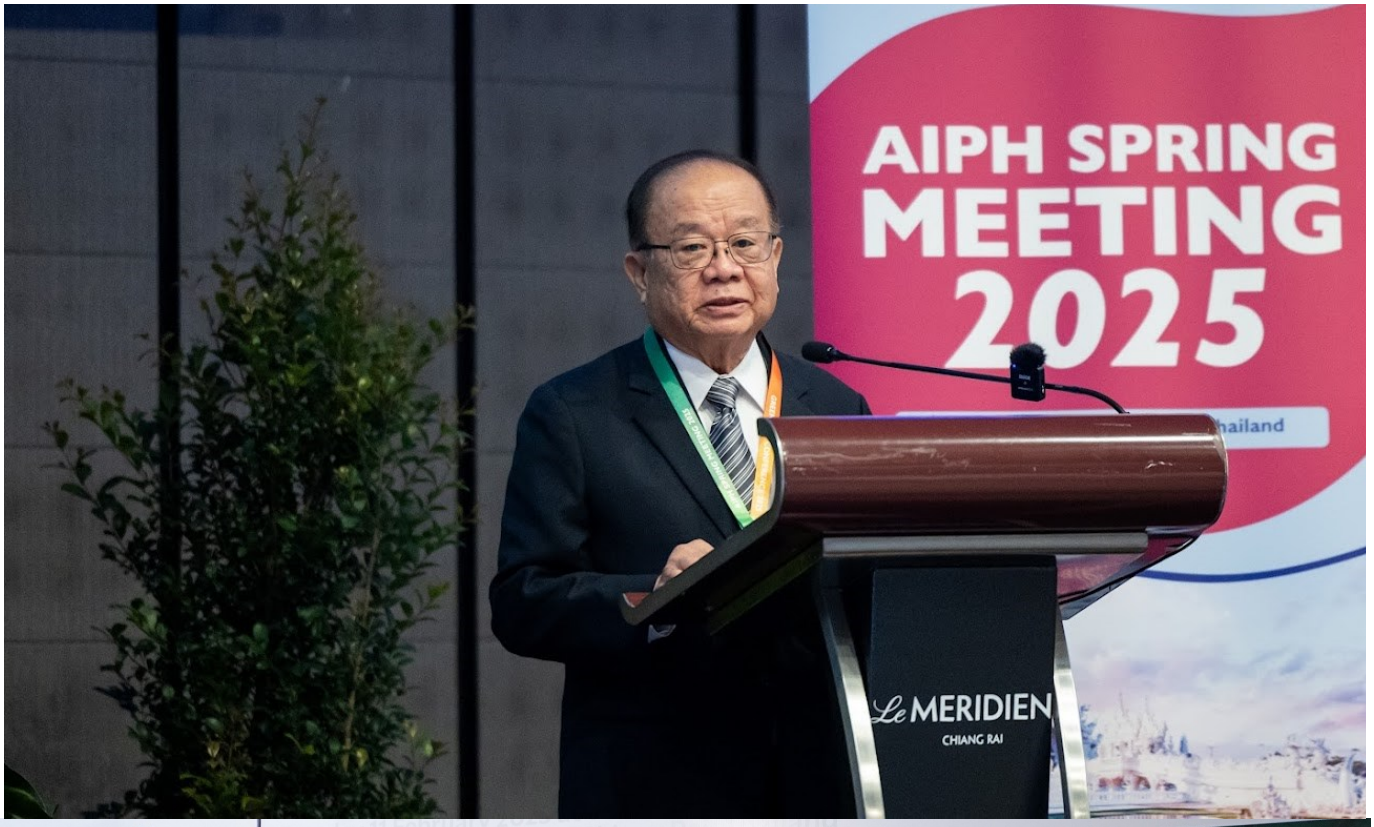
The Department of Agriculture participated in the **AIPH Spring Meeting 2025** in Chiang Rai, alongside delegations from various agencies, from **February 9–13, 2025**. The meeting included discussions with representatives of the **International Association of Horticultural Producers (AIPH)** on the progress of preparations for **Expo 2026 Udon Thani**, focusing on readiness for its scheduled opening on **November 1, 2026**. Additionally, updates on the preparations for **Expo 2029 Nakhon Ratchasima** were reported.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for Chiang Rai
Future Project Ideas for Chiang Rai
Heritage
Research

Chiang Rai
Green City 2025

Mae Fah Luang University

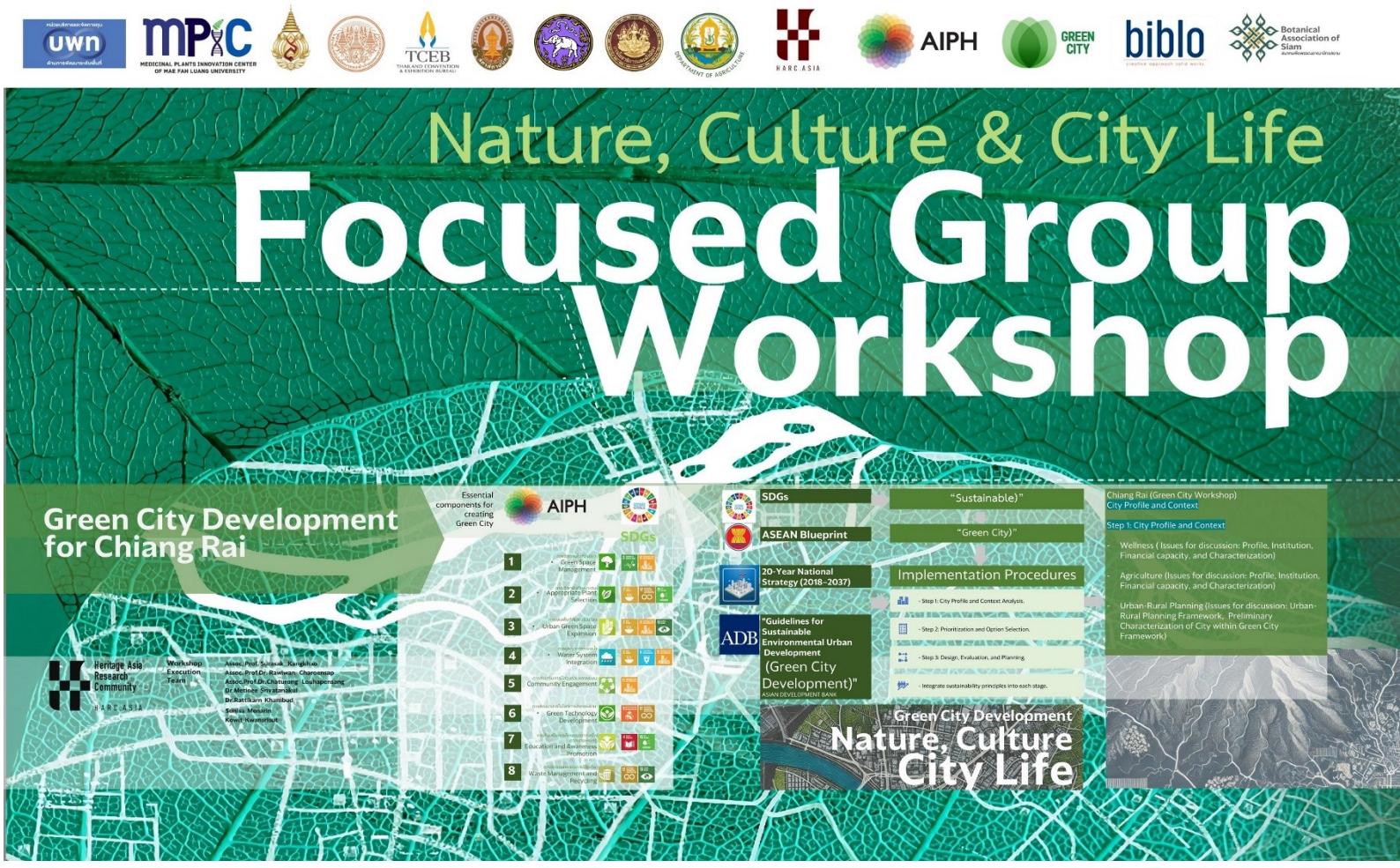
Mae Fah Luang University: A Hub for Medicinal Plant Innovation Driving Green and Wellness Cities

Mae Fah Luang University (MFU) in Chiang Rai is co-hosting an international workshop on medicinal plants and the development of Wellness Cities. At the heart of this initiative is the **Medicinal Plants Innovation Center of MFU**, which plays a crucial role in advancing research and innovation to foster green cities with sustainable well-being.

As a leading institution in medicinal plant studies, the **Medicinal Plants Innovation Center** is a key driver in the **GREEN CITY 2025 project**, leveraging medicinal plants to transform Chiang Rai into a model green city through the following approaches:

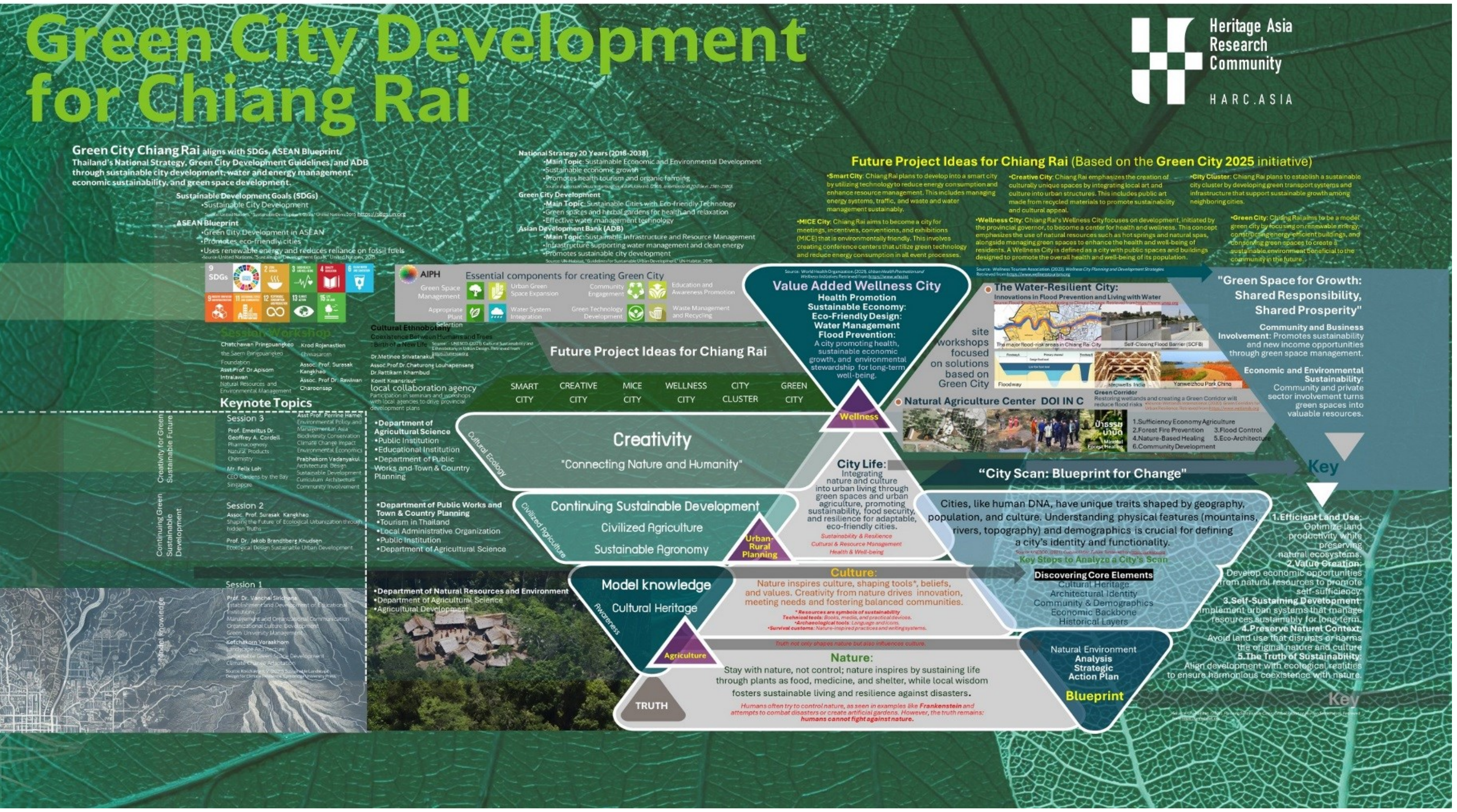
- **Green Space Planning with Medicinal Plants**: Promoting the integration of medicinal plants into urban landscapes to enhance biodiversity and expand green spaces.
- **Environmental Restoration Using Medicinal Plants**: Utilizing medicinal plants for soil rehabilitation, water purification, and air quality improvement, particularly in mitigating PM2.5 air pollution.
- **Sustainable Medicinal Plant Agriculture**: Supporting local farmers in adopting organic and integrated farming methods for medicinal plant cultivation, increasing both environmental sustainability and economic value.
- **Community-Based Herbal Economy**: Strengthening the value chain of medicinal plants—from cultivation to health and wellness product industries—to create sustainable economic opportunities for local communities.

Through the integration of medicinal plant knowledge with sustainable urban development, Mae Fah Luang University is committed to shaping Chiang Rai into a pioneering **Green & Wellness City**, balancing environmental conservation, economic growth, and public well-being.


Nature, Culture & City Life
Focused Group Workshop
Green City Development for Chiang Rai
Heritage Asia Research Community
HARC.ASIA
Workshop Execution Team
Assoc. Prof. Surasak Kangkhao
Assoc.Prof.Dr.Chaiyaporn Charoensap
Assoc.Prof.Dr.Chatuporn Lisahapongsa
Dr.Metinee Sreyatanakul
Dr.Rattikarn Khumbud
Sonpia Mesuna
Kowit Kaewmanit
Essential components for creating Green City
AIPH
SDGs
1 Green Space Management
2 Appropriate Plant Selection
3 Urban Green Space Expansion
4 Water System Integration
5 Community Engagement
6 Green Technology Development
7 Education and Awareness Promotion
8 Waste Management and Recycling
SDGs
ASEAN Blueprint
20-Year National Strategy (2018-2037)
"Guidelines for Sustainable Environmental Urban Development (Green City Development)"
ASIAN DEVELOPMENT BANK
"Sustainable)"
"Green City)"
Implementation Procedures
- Step 1: City Profile and Context Analysis.
- Step 2: Prioritization and Option Selection.
- Step 3: Design, Evaluation, and Planning.
- Integrate sustainability principles into each stage.
Green City Development
Nature, Culture City Life
Chiang Rai (Green City Workshop)
City Profile and Context
Step 1: City Profile and Context
- Wellness (Issues for discussion: Profile, Institution, Financial capacity, and Characterization)
- Agriculture (Issues for discussion: Profile, Institution, Financial capacity, and Characterization)
- Urban-Rural Planning (Issues for discussion: Urban-Rural Planning Framework, Preliminary Characterization of City within Green City Framework)

Tuesday 11 February 2025 at 14:00-17:00
Utopia 2 Le Meridien Hotel Chiang Rai, Thailand

GREEN CITY
CHIANG RAI 2025

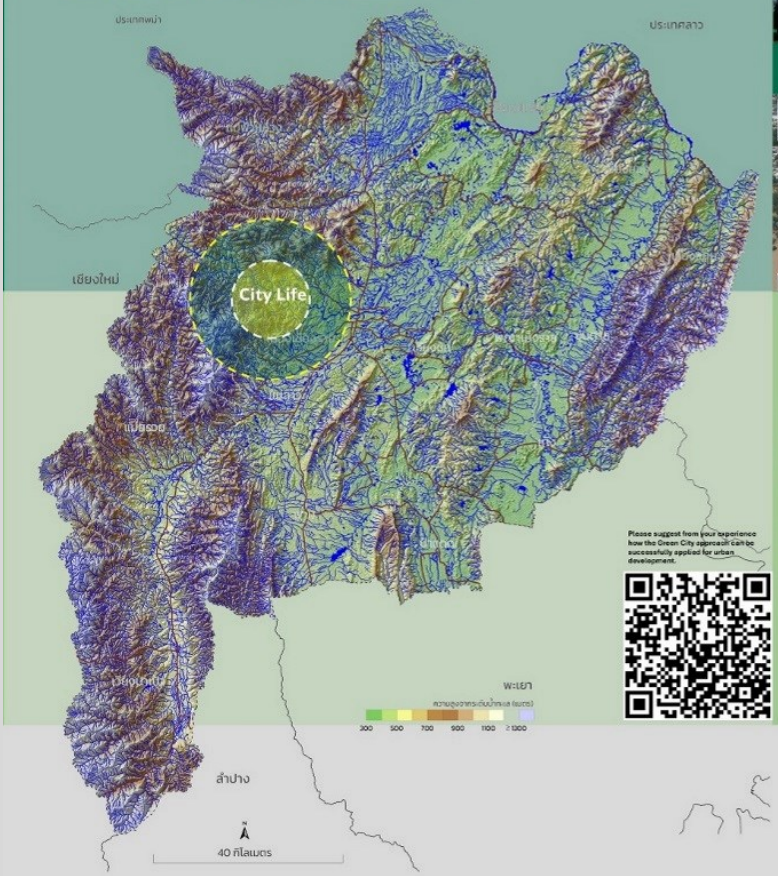


Please suggest from your experience how the Green City approach can be successfully applied for urban development.

Urban Agriculture Wellness

Shaping the Future of Ecological Urbanization
Chiang Rai City

Exploring the lesser-known aspects or truths about ecological urbanization, including sustainable development practices, environmental conservation, and the integration of nature within urban spaces. In the context of Chiang Rai, this entails the city's potential to lead in ecological urban planning while addressing challenges and opportunities unique to its local environment and culture.



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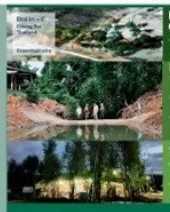

Nurture Commune

- **Self-Sufficiency Economy Agriculture:** Promote sustainable farming practices, such as the "Khok Nong Na" model and the cultivation of local herbal plants, to improve income and health, and well-being.

EcoRescue

- **Forest Fire Prevention:** Utilize buffer zones of forests to prevent wildfires and protect the surrounding environment.
- **Flood Control:** Construct check dams and other water management systems to reduce the risk of flooding and protect local communities.
- **Forest and Nature-Based Healing Lifestyle:** Encourage activities to be conducted in the forest and nature, focusing on exercise, health restoration through natural surroundings, forest meditation, and the use of farming plants and natural resources for sustainable living.

GrowLiving

- **Eco-Friendly Architecture:** Design buildings using local materials and the traditional elements in harmony with the environment, sustainability, and harmony with nature.
- **Community-based Development:** Apply community knowledge and wisdom to develop projects that support economic sustainability and environmental conservation.

Agriculture

Heritage Asia Research Community
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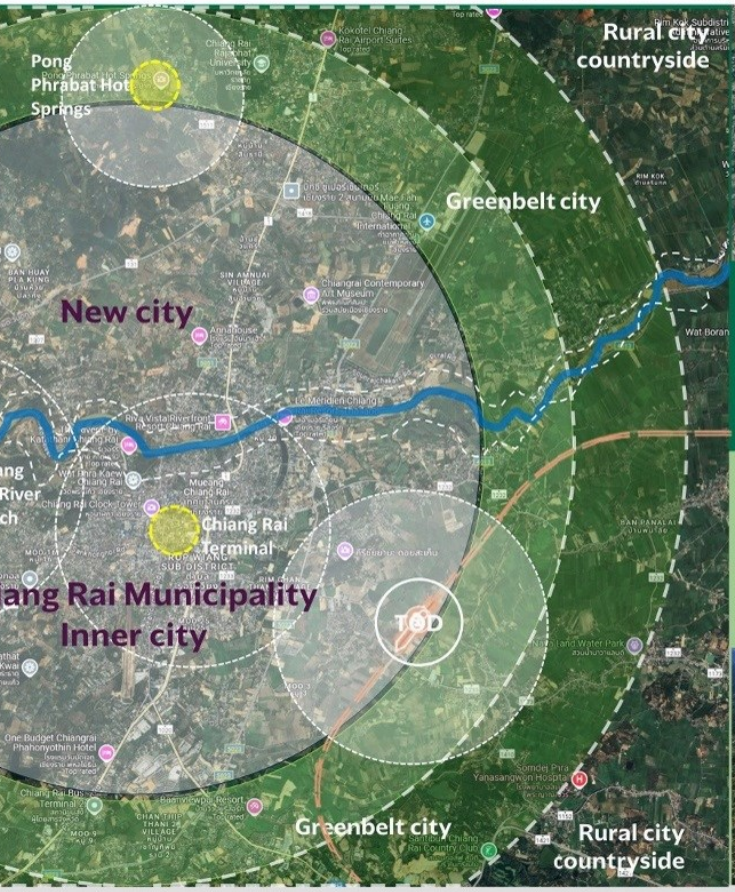
Focused Group Workshop

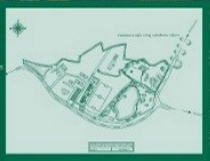
Response Form

Project Details

Discussion Group

GREEN CITY CHIANG RAI 2025





Wellness City

Ecological Urbanization

Wellness

Heritage Asia Research Community

HARC.ASIA

Workshop Execution Team

Assoc. Prof. Surasak Kangkhao
Assoc. Prof Dr. Rawiwan Charoensap
Assoc.Prof.Dr.Chaturong Louhapensang
Dr.Metinee Srivatanakul
Dr.Rattikarn Khambud
Sunisa Menarin
Kowit Kwansrisut


Urban
Agriculture
Wellness

Topics for the workshop participation

Topics for the workshop participation

Shaping the Future of Ecological Urbanization

Chiang Rai City

The lesser-known aspects or truths about ecological urbanization, which could involve sustainable development practices, environmental conservation, and integration of

Urban **Agriculture** **Wellness**

Development of Green Cities towards Wellness City in Chiang Rai

1. Analysis of Target Areas and Potential for Development to Support Wellness City
2. What Benefits or Solutions Can the Target Areas Provide for Chiang Rai?
3. Agriculture and Wellness: Local Plants, Benefits, Care Innovations, and Community Activities
4. Architecture and Urban Planning: Design of Green Spaces and Sustainable Infrastructure
5. Support and Long-Term Maintenance
6. Guidelines for Managing Areas to Achieve Sustainable Results

Essential components for creating Green City

AIPH

SDGs

1 การจัดการพื้นที่สีเขียว: • Green Space Management

2 การเลือกพืชที่เหมาะสม: • Appropriate Plant Selection

3 การเพิ่มพื้นที่สีเขียวในเมือง: • Urban Green Space Expansion

4 การบูรณาการระบบน้ำ: • Water System Integration

5 การส่งเสริมการมีส่วนร่วมของชุมชน: Community Engagement

6 การพัฒนาเทคโนโลยีการจัดการสวน: • Green Technology Development

7 การส่งเสริมการศึกษาและการสร้างความตระหนักรู้: Education and Awareness Promotion

8 การจัดการขยะและการรีไซเคิล: Waste Management and Recycling

SDGs

ASEAN Blueprint

20-Year National Strategy (2018–2037)

ADB "Guidelines for Sustainable Environmental Urban Development (Green City Development)" ASIAN DEVELOPMENT BANK

"Sustainable)"

"Green City)"

Implementation Procedures

- Step 1: City Profile and Context Analysis.
- Step 2: Prioritization and Option Selection.
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- Integrate sustainability principles into each stage.

Chiang Rai (Green City Workshop)
City Profile and Context

Step 1: City Profile and Context

- Wellness (Issues for discussion: Profile, Institution, Financial capacity, and Characterization)
- Agriculture (Issues for discussion: Profile, Institution, Financial capacity, and Characterization)
- Urban-Rural Planning (Issues for discussion: Urban-Rural Planning Framework, Preliminary Characterization of City within Green City Framework)

Green City Chiang Rai aligns with SDGs, ASEAN Blueprint, Thailand's National Strategy, Green City Development Guidelines, and ADB through sustainable city development, water and energy management, economic sustainability, and green space development.

Sustainable Development Goals (SDGs)
- Sustainable City Development

Source: United Nations, "Sustainable Development Goals," United Nations, 2015 https://sdgs.un.org

ASEAN Blueprint
- Green City Development in ASEAN
- Promotes eco-friendly cities
- Uses renewable energy and reduces reliance on fossil fuels

Source: United Nations, "Sustainable Development Goals," United Nations, 2015.

National Strategy 20 Years (2018-2038)
- **Main Topic**: Sustainable Economic and Environmental Development
- Sustainable economic growth
- Promotes health tourism and organic farming

Source สำนักงานสภาพัฒนาการเศรษฐกิจและสังคมแห่งชาติ. (2561). *ยุทธศาสตร์ชาติ 20 ปี (พ.ศ. 2561-2580).*

Green City Development
- **Main Topic**: Sustainable Cities with Eco-friendly Technology
- Green spaces and herbal gardens for health and relaxation
- Effective water management technology

Asian Development Bank (ADB)
- **Main Topic**: Sustainable Infrastructure and Resource Management
- Infrastructure supporting water management and clean energy
- Promotes sustainable city development

Source: UN-Habitat, "Guidelines for Sustainable Urban Development," UN-Habitat, 2019.

9 SDGs

AIPH

Essential components for creating Green City

- Green Space Management
- Urban Green Space Expansion
- Community Engagement
- Education and Awareness Promotion
- Appropriate Plant Selection
- Water System Integration
- Green Technology Development
- Waste Management and Recycling

Session Workshop

Chatchawan Pringpuangkeo
the Saem Pringpuangkeo Foundation

Asst.Prof. Dr.Apisom Intralawan
Natural Resources and Environmental Management

Krod Rojanastien
Chiwasarom

Assoc. Prof. Surasak Kangkhao

Assoc. Prof Dr. Rawiwan Charoensap

Cultural Ethnobotany
Coexistence Between Humans and Trees : Birth of a New Life

Source: - UNESCO. (2021). Cultural Sustainability and Ethnobotany in Urban Design. Retrieved from https://unesco.org

Dr.Metinee Srivatanakul
Assoc.Prof.Dr.Chaturong Louhapensang
Dr.Rattikarn Khambud
Kowit Kwansrisut

local collaboration agency
Participation in seminars and workshops with local agencies to drive provincial development plans

Project Chiang Rai

SMART CITY | CREATIVE CITY | MICE CITY | WELLNESS CITY | CITY CLUSTER

Keynote Topics

Creativity for Green Sustainable Future

Session 3

Prof. Emeritus Dr. Geoffrey A. Cordell
Pharmacognosy
Natural Products Chemistry

Mr. Whoo Kiat Heng
Project Director (Infrastructure) Gardens by the Bay, Singapore

Asst Prof. Perrine Hamel
Environmental Policy and Management in Asia
Biodiversity Conservation
Climate Change Impact
Environmental Economics

Prabhakorn Vadanyakul
Architectural Design
Sustainable Development
Curriculum Architecture
Community Involvement

- **Department of Agricultural Science**
- Public Institution
- Educational Institution
- Department of Public Works and Town & Country Planning

Cultural Ecology

Creativity

"Connecting Nature and Humanity"

Continuing Green Sustainable Development

Session 2

Assoc. Prof. Surasak Kangkhao
Shaping the Future of Ecological Urbanization through hidden Truths

Prof. Dr. Jakob Brandtberg Knudsen
Ecological Design Sustainable Urban Development

Somkiat Iochindapong
deputy managing director Architects 49 limited

- **Department of Public Works and Town & Country Planning**
- Tourism in Thailand
- Local Administrative Organization
- Public Institution
- Department of Agricultural Science

Civilized Agriculture

Continuing Sustainable Development

Civilized Agriculture

Sustainable Agronomy

Urban-Rural Planning

Model knowledge

Session 1

Prof. Dr. Vanchai Sirichana
Establishment and Development of Educational Institutions
Management and Organizational Communication
Organizational Culture Development
Green University Management

Kotchakorn Voraakhom
Landscape Architecture
Sustainable Green Space Development
Climate Change Adaptation

Source: Kotchakorn, V. (2020). Sustainable Landscape Design for Climate Resilience. Cambridge University Press.

- **Department of Natural Resources and Environment**
- Department of Agricultural Science
- Agricultural Development

Model knowledge

Cultural Heritage

Awareness

Agriculture

TRUTH

AIPH

GREEN CITY CHIANG RAI 2025

Nature Cultural & City Life

Future Project Ideas for Chiang Rai (Based on the **Green City 2025** initiative)

•**Smart City**: Chiang Rai plans to develop into a smart city by utilizing technology to reduce energy consumption and enhance resource management. This includes managing energy systems, traffic, and waste and water management sustainably.

•**Creative City**: Chiang Rai emphasizes the creation of culturally unique spaces by integrating local art and culture into urban structures. This includes public art made from recycled materials to promote sustainability and cultural appeal.

•**City Cluster**: Chiang Rai plans to establish a sustainable city cluster by developing green transport systems and infrastructure that support sustainable growth among neighboring cities.

•**MICE City**: Chiang Rai aims to become a city for meetings, incentives, conventions, and exhibitions (MICE) that is environmentally friendly. This involves creating conference centers that utilize green technology and reduce energy consumption in all event processes.

•**Wellness City**: Chiang Rai's Wellness City focuses on development, initiated by the provincial governor, to become a center for health and wellness. This concept emphasizes the use of natural resources such as hot springs and natural spas, alongside managing green spaces to enhance the health and well-being of residents. A Wellness City is defined as a city with public spaces and buildings designed to promote the overall health and well-being of its population.

•**Green City**: Chiang Rai aims to be a model green city by focusing on renewable energy, constructing energy-efficient buildings, and conserving green spaces to create a sustainable environment beneficial to the community in the future.

Source: World Health Organization. (2021). *Urban Health Promotion and Wellness Initiatives.* Retrieved from https://www.who.int

Value Added Wellness City

Health Promotion
Sustainable Economy:
Eco-Friendly Design:
Water Management
Flood Prevention:
A city promoting health, sustainable economic growth, and environmental stewardship for long-term well-being.

GREEN CITY

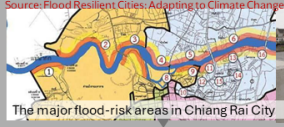
Wellness

Source: Wellness Tourism Association. (2023). *Wellness City Planning and Development Strategies.* Retrieved from https://www.wellnesstourism.org

The Water-Resilient City:

Innovations in Flood Prevention and Living with Water

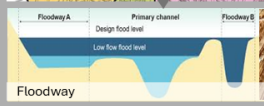
Source: Flood Resilient Cities: Adapting to Climate Change. Retrieved from https://www.unep.org



The major flood-risk areas in Chiang Rai City

Self-Closing Flood Barrier (SCFB)

site workshops focused on solutions based on Green City



Floodway

stepwells India

Yanweizhou Park China

Natural Agriculture Center DOI IN C

Green Corridor
Restoring wetlands and creating a Green Corridor will reduce flood risks

•Source: Wetlands International. (2020). Green Corridors for Urban Resilience. Retrieved from https://www.wetlands.org

1.Sufficiency Economy Agriculture
2.Forest Fire Prevention
3.Flood Control
4.Nature-Based Healing
5.Eco-Architecture
6.Community Development

Source: แหล่งอ้างอิง: กระทรวงเกษตรและสหกรณ์, "โครงการเกษตรกรรมยั่งยืนและการอนุรักษ์พื้นที่ป่า," กระทรวงเกษตรและสหกรณ์, 2021.

"Green Space for Growth: Shared Responsibility, Shared Prosperity"

Community and Business Involvement: Promotes sustainability and new income opportunities through green space management.

Economic and Environmental Sustainability: Community and private sector involvement turns green spaces into valuable resources.

"City Scan: Blueprint for Change"

City Life:
Integrating nature and culture into urban living through green spaces and urban agriculture, promoting sustainability, food security, and resilience for adaptable, eco-friendly cities.

Sustainability & Resilience
Cultural & Resource Management
Health & Well-being

Cities, like human DNA, have unique traits shaped by geography, population, and culture. Understanding physical features (mountains, rivers, topography) and demographics is crucial for defining a city's identity and functionality.

Source: UNESCO. (2021). *Culture: Urban Future.* Retrieved from https://unesco.org

Key Steps to Analyze a City's Scan

Discovering Core Elements
Cultural Heritage
Architectural Identity
Community & Demographics
Economic Backbone
Historical Layers

Culture:
Nature inspires culture, shaping tools*, beliefs, and values. Creativity from nature drives innovation, meeting needs and fostering balanced communities.

***Resources are symbols of sustainability**
***Technical tools**: Books, media, and practical devices.
•**Archaeological tools**: Language and icons.
•**Survival customs**: Nature-inspired practices and writing systems.

Truth not only shapes nature but also influences culture.

Nature:
Stay with nature, not control; nature inspires by sustaining life through plants as food, medicine, and shelter, while local wisdom fosters sustainable living and resilience against disasters.

*Humans often try to control nature, as seen in examples like **Frankenstein** and attempts to combat disasters or create artificial gardens. However, the truth remains:* ***humans cannot fight against nature.***

Natural Environment
Analysis
Strategic
Action Plan

Blueprint

Key

1.Efficient Land Use: Optimize land productivity while preserving natural ecosystems.
2.Value Creation: Develop economic opportunities from natural resources to promote self-sufficiency.
3.Self-Sustaining Development: Implement urban systems that manage resources sustainably for long-term.
4.Preserve Natural Context: Avoid land use that disrupts or harms the original nature and culture
5.The Truth of Sustainability: Align development with ecological realities to ensure harmonious coexistence with nature.

Key

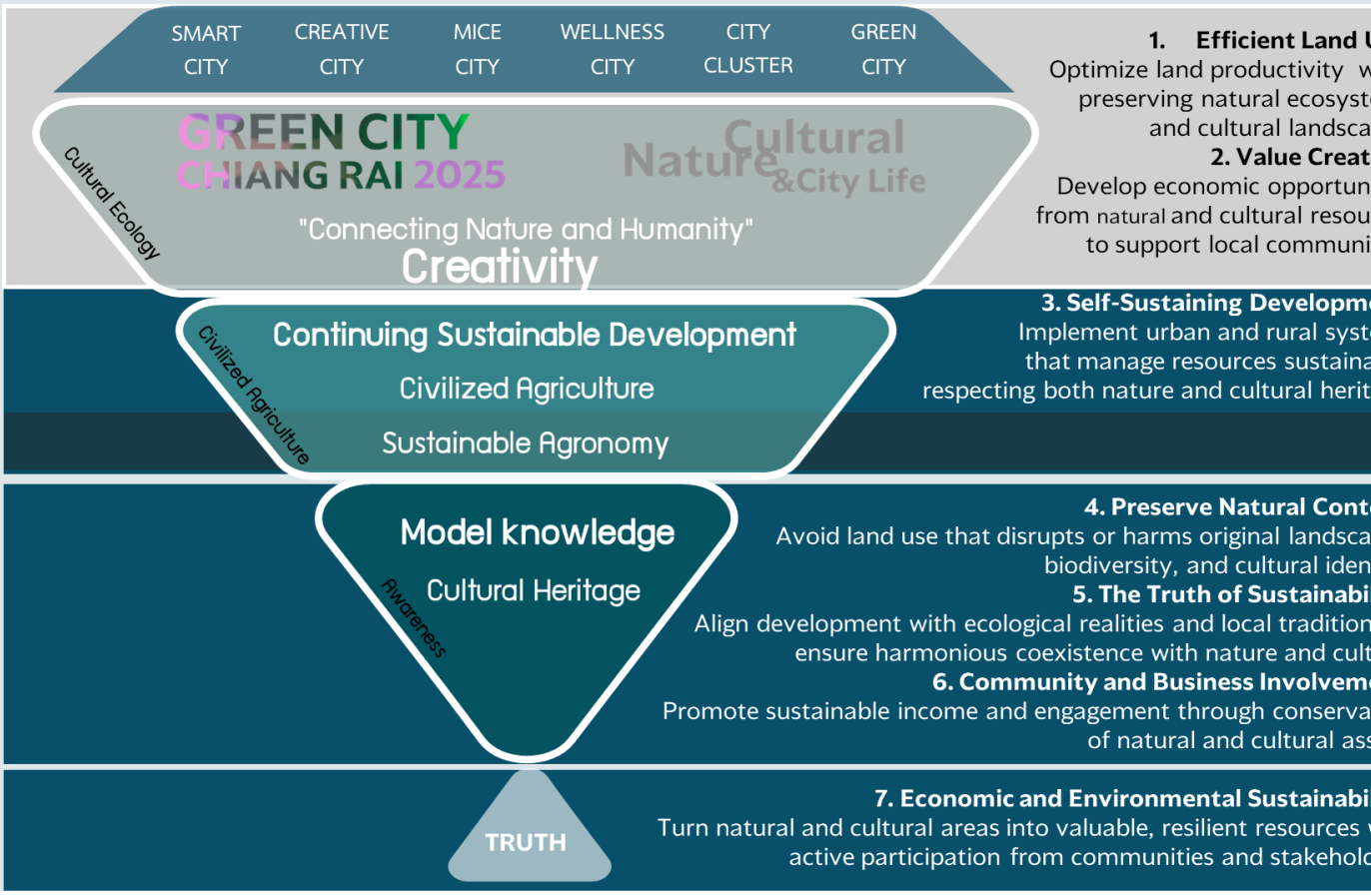
Source-UN-Habitat. (2020). *Planning Sustainable Cities: Global Report on Human Settlements.* Retrieved from https://unhabitat.org

Green Future City Corridor Thailand

From Chiang Rai 2025 ⟶ Udon Thani 2026 ⟶ Korat 2029

Chiang Rai sets the foundation by positioning nature and culture as the roots of sustainable city development.
The exposition emphasizes biodiversity, heritage, and landscape design as tools for ecological resilience and creative economy.

- A cultural green park combining native plants with cultural learning spaces.
- Biodiversity education through horticultural landscapes.
- Linking eco-tourism with creative economy initiatives.



AIPH

Blue-Green

Agro-cultural Geography and Blue - Green Landscape :
A Holistic Approach to Sustainable Development

Green Future City Corridor Thailand (2025–2029) – Summary

Chiang Rai 2025 – Nature & Culture:
Foundation of the corridor emphasizing cultural landscapes and biodiversity.

Udon Thani 2026 – Diversity of Life:
Integration of people, wetlands, and plant systems for sustainable living. Key project: **Diversity of Life Hub** at Nong Han Wetland.

Korat 2029 – Green Future:
Showcases a prototype sustainable city combining Nature, Culture, and Diversity of Life. Key project: **Green Innovation District** with eco-buildings, renewable energy, and smart green infrastructure.

The Blue–Green Bridge:

Water and greenery link all three regions:

- Chiang Rai: cultural landscapes & biodiversity
- Udon Thani: wetlands & sustainable living
- Korat: sponge city, water-smart districts, resilient urban design

Expected Outcomes:

- Connected green development corridor across three regions
- Living showcase of biodiversity and smart green infrastructure
- Global platform positioning Thailand as a leader in culture-driven sustainability

"Blue-Green Space for Growth: Shared Responsibility, Shared Prosperity"

In Summary:
The corridor unites **Nature, Culture, Water, and Innovation** into a single national vision for Thailand's Green Future:

- Chiang Rai = Nature & Culture (foundation)
- Udon Thani = Diversity of Life (wetlands & communities)
- Korat = Green Future (innovation & city model)

Community and Business Involvement (Blue-Green) :
Promotes sustainability and new income opportunities through integrated green and water space management.

Economic and Environmental Sustainability (Blue-Green):
Community and private sector involvement turns blue-green spaces into valuable and resilient resources.

"City Scan: Blueprint for Change"

Efficient Land Use (Blue-Green):
Optimize land and water productivity while preserving natural ecosystems and waterways.

Value Creation (Blue-Green):
Develop economic opportunities from natural and water-based resources to promote self-sufficiency.

Self-Sustaining Development (Blue-Green):
Implement urban systems integrating green spaces and water management for long-term sustainability.

Preserve Natural Context (Blue-Green):
Avoid land and water use that disrupts or harms the original nature and cultural heritage.

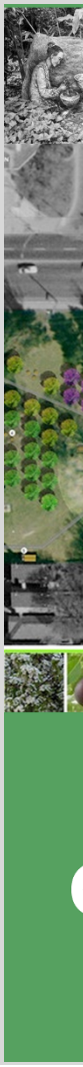
The Truth of Sustainability (Blue-Green):
Align development with ecological and hydrological realities to ensure harmonious coexistence with nature.

Nature

Nature: Ethnobotany and the Foundation of Life

Nature serves as the original, unaltered fundation of human existence, providing balanced ecosystems essential for life. Plants play a vital role in human survival as sources of food, medicine, and shelter. Local wisdom in plant usage enables sustainable living, while understanding and coexisting with nature builds resilience against natural disasters.

life has depended on nature since ancient times, mainly on plants. Learning to use plants for survival, passed down through generations, is known as indigenous wisdom, which is enriched by cultural and societal experiences. This accumulated knowledge is crucial for the survival and sustainability of communities.



Site Focus for the workshop participation

“Cultural Ethnobotany "

Coexistence Between Humans and Trees : Birth of a New Life

Ethnobotany: Connecting Humans and Plants in the Context of Green City, Chiang Rai

Herb Garden and Ethnobotany

In the framework of a Green City, fostering a deep connection between humans and plants is essential for sustainable urban development. *Ethnobotany*, the study of the cultural and practical uses of plants by humans, goes beyond the physical and biological characteristics of plants to include social and emotional dimensions.

Botanical studies often focus on observing and illustrating plants' physical traits, creating an emotional bridge that helps humans understand the essence of each species. This parallels anthropological approaches, which consider not only human cultures but also the roles of non-human life forms, such as trees, as active entities capable of growth, interaction, communication, and adaptation.

Such perspectives challenge the traditional divide between humans and nature, as this separation is a cultural construct that can shift based on environmental and societal contexts. Understanding the interdependence between humans, plants, and ecosystems reflects a social structure rooted in mutual relationships among diverse living beings, emphasizing the role of plants in building resilient and harmonious communities.

Culture

Ethnobotany

Herb garden + Ethnobotany : The Relationship Between People And Plants Humans, trees, and healing Plant studies, typically led by botanists, delve into understandingplants' physical and biological traits. They draw parallels with anthropologists studying human cultures, using techniqueslike drawing to depict plant features. This emotional connection helps grasp the essence of each plant, mirroring human sode- tal studies (Hartigan, 2017). Anthropological studiesinclude non-human life forms like trees recognizing them as livingentbies capable of growth, perception, interaction, communication, adaptation, learning, memory, dedsion-making, and problem-solving within theirenvironment (Gagiano,2015).Categorizing spedes separates humans from nature," but this division is a construct that can change based on environmental conditions (Descola 2013), Understanding relationships among humans, plants, and sodeties reflects a sodal struc- ture built on interdependence among diverse living beings.

Culture

The Emergence of Culture from Nature

Culture evolves from human interaction with nature, shaping social development and adaptation. Knowledge accumulated from nature forms tangible elements like tools and clothing, as well as intangible aspects such as beliefs and values. Creativity driven by nature allows for innovation, enabling humans to meet complex needs while sustaining balanced communities.

Time transforms everything—bringing forth creation, decay, and collapse in its unceasing flow. Planning for sustainable living is essential for our past, present, and future. Our ancestors' wisdom in geography and resource management fostered prosperous cities abundant in natural resources, a timeless truth emphasizing the importance of sustainable practices. Today, we must continually learn from the past to preserve our deep connection with nature.

City Life

City Life: Integrating Nature and Culture in Urban Living

As cities grow, nature and culture are adapted to fit urban lifestyles. Urban agriculture bridges food, health, and environmental needs, promoting sustainability. Key aspects include green spaces, local food security, and reduced dependency on external supply chains. Utilizing urban voids for agriculture strengthens urban resilience to change, creating sustainable, adaptable, and eco-friendly cities.

Everything humans depend on for survival is linked to sustainable nature, such as water, soil, air, and plants. Responsible and sustainable management of natural resources allows humans to coexist with nature in the long term without damaging or losing the biodiversity essential for all life on Earth.

Humans seek to conquer nature.

Site Focus for the workshop participation

Shaping the Future of Ecological Urbanization through hidden Truths

More than half of the global population lives in cities, with the urban population expected to reach 70% by 2070. Governments are driving innovation and adaptation efforts to address climate change impacts on cities. However, more comprehensive strategies are needed to ensure resilience in the face of future challenges.

Lin, B. B., Ossola, A., Alberti, M., Andersson, E., Bai, X., Dobbs, C., et al. (2023). Integrating solutions to adapt cities for climate change. The Lancet Planetary Health, 5(7).

Green Space Percentage: Estimates suggest around 10-15% of the city's land area is allocated to green spaces, benefiting from its surrounding natural environment.Green Space Percentage: Estimates suggest around 10-15% of the city's land area is allocated to green spaces, benefiting from its surrounding natural environment

Bangkok Metropolitan Administration. (n.d.). *Target for increasing green space in Bangkok under the Green Bangkok 2030 project.*

Shaping the Future of Ecological Urbanization through the Lens of Time

TIME: The Core of Green Urbanization

- Time influences planning, prioritizing, and achieving long-term goals.
- It shapes how today's decisions—plant selection, community engagement, and design—affect future ecological and social balance.

The Impact of Time on Plant Selection

- **Native Plants:** banyan trees, vetiver grass. Low-maintenance, enhances soil quality, reduces erosion, supports local fauna. Benefits grow over time.
- **Exotic Plants:** Japanese maple. High maintenance, short-term aesthetic value, potential ecological disruption.
- Decision reflects balancing immediate impact with long-term ecological integrity.

Time as a Catalyst for Community Engagement

- **Long-Term Impact Projects:** E.g., "Floating Garden" in Bang Kho Laem. Engages communities in environmental restoration, creating lasting connections and stewardship.
- **Modern Urban Needs:** E.g., vertical gardens in transport hubs. Short-term urban solutions, evolving with social and environmental needs.

Focused Group Workshop: Green City for Chiang Rai

โครงการ Focused Group Workshop: Green City for Chiang Rai จัดขึ้นในระหว่างวันที่ 10-12 กุมภาพันธ์ พ.ศ. 2568 ภายในงาน Green City Conference 2025: Nature, Culture, and City Life ณ โรงแรม Le Meridien จังหวัดเชียงราย เป็นกิจกรรมสำคัญที่มีเป้าหมายในการส่งเสริมการพัฒนาเมืองสีเขียวในจังหวัดเชียงราย โดยได้รับความร่วมมือจากสมาคมพืชสวนระหว่างประเทศ (AIPH) ซึ่งเป็นองค์กรที่มีบทบาทในการส่งเสริมการพัฒนาพื้นที่สีเขียวทั่วโลก

AIPH ก่อตั้งขึ้นในปี พ.ศ. 2491 และมีพันธกิจในการพัฒนาอุตสาหกรรมพืชสวน รวมทั้งการส่งเสริมการแลกเปลี่ยนความรู้และการสร้างเครือข่ายความร่วมมือระหว่างผู้ผลิตพืชจากหลากหลายประเทศ AIPH ยังมีบทบาทสำคัญในการจัดงานมหกรรมพืชสวนโลก ซึ่งประเทศไทยเคยเป็นเจ้าภาพในการจัดงานดังกล่าวที่จังหวัดเชียงใหม่ในปี พ.ศ. 2544 และ พ.ศ. 2549 และยังได้รับสิทธิ์ในการเป็นเจ้าภาพจัดงานในปี พ.ศ. 2569 ที่จังหวัดอุดรธานีและในปี พ.ศ. 2572 ที่จังหวัดนครราชสีมา

การประชุม Green City Conference ที่จัดโดย AIPH เริ่มต้นในปี พ.ศ. 2553 และได้จัดขึ้นเป็นประจำทุกปี โดยมีวัตถุประสงค์ในการแลกเปลี่ยนความคิดเห็นเกี่ยวกับการพัฒนาเมืองสีเขียวที่สามารถผสานการเติบโตทางเศรษฐกิจและการอนุรักษ์สิ่งแวดล้อมเข้าด้วยกัน การประชุมดังกล่าวได้รับความสนใจจากนักวิจัย ผู้เชี่ยวชาญ และผู้นำจากหลายประเทศในการเสนอแนวทางการพัฒนาเมืองที่ยั่งยืน

ในปี พ.ศ. 2567 การประชุม AIPH Spring Meeting ที่กรุงโดฮา รัฐกาตาร์ ได้มีการเสนอจังหวัดเชียงรายเป็นเจ้าภาพจัดงาน AIPH Spring Meeting 2025 & Green City Conference 2025 ซึ่งสะท้อนถึงความมุ่งมั่นของจังหวัดเชียงรายและประเทศไทยในการพัฒนาเมืองสีเขียว โดยคณะทำงานเครือข่ายวิจัยมรดกวัฒนธรรมเอเชีย (HARC) ได้เล็งเห็นโอกาสในการแลกเปลี่ยนความรู้และประสบการณ์จากผู้เชี่ยวชาญทั้งในประเทศและต่างประเทศ ซึ่งจะช่วยเสริมสร้างแนวทางในการดำเนินงานเพื่อพัฒนาเมืองเชียงรายให้เป็นเมืองสีเขียวที่ยั่งยืน

Focused Group Workshop: Green City for Chiang Rai

The workshop features lectures from experts both domestically and internationally, providing participants with an opportunity to exchange information and ideas on the development of green cities in Chiang Rai Province. Additionally, it aims to promote the development of green spaces in other provinces in the future. The target audience includes academics, government officials, and personnel from both public and private sectors who possess knowledge and experience in driving agricultural, environmental, social, architectural, and urban planning initiatives.

This event not only serves as an opportunity for exchanging opinions but also fosters collaboration between various agencies at both local and national levels in developing a green city that enhances the quality of life for citizens and improves the environment. The workshop presents development approaches suitable for Chiang Rai and proposes expansion to other provinces in the future to ensure sustainable development.

Therefore, the **Focused Group Workshop** reflects Chiang Rai's commitment to creating green spaces and developing environments conducive to urban living, aiming to establish a city that is in harmony with nature and sustainable in all aspects.

เป้าหมายผู้เข้าร่วมงาน

นักวิชาการ ข้าราชการ บุคลากรภาครัฐและเอกชนที่เกี่ยวข้องด้านการเกษตร สิ่งแวดล้อม สังคม สถาปัตยกรรม การวางผังเมือง ที่มีความรู้และประสบการณ์ในการขับเคลื่อนและผลักดันการดำเนินงานให้เกิดเมืองสีเขียวตามความมุ่งหวังของจังหวัดเชียงรายได้อย่างเป็นรูปธรรม

การพัฒนาเมืองสีเขียวในเชิงทฤษฎีและการปฏิบัติ

การสร้างเมืองสีเขียวที่ยั่งยืนมีการเชื่อมโยงกับการพัฒนาอย่างยั่งยืนตามหลักขององค์การสหประชาชาติ โดยมีความมุ่งหวังในการสร้างเมืองที่เป็นมิตรต่อสิ่งแวดล้อม สามารถลดผลกระทบจากการเปลี่ยนแปลงสภาพภูมิอากาศ และมุ่งเน้นการพัฒนาเศรษฐกิจที่ยั่งยืน ซึ่งมีส่วนในการสนับสนุนการพัฒนาพื้นที่สีเขียวให้สามารถรองรับการเติบโตของชุมชนและธุรกิจได้อย่างยั่งยืน

การพัฒนาเมืองสีเขียวในกรอบแนวทางของการพัฒนาผลิตภัณฑ์ที่ใช้พลังงานทดแทน ลดการใช้พลังงานฟอสซิล และส่งเสริมการใช้พลังงานสะอาดเพื่อการพัฒนาเมืองที่มีประสิทธิภาพและยั่งยืนมากยิ่งขึ้น การมีส่วนร่วมของทุกภาคส่วนในการพัฒนาพื้นที่สีเขียวเป็นส่วนสำคัญในการขับเคลื่อนงานนี้ให้ประสบผลสำเร็จ ทั้งจากหน่วยงานรัฐบาล ภาคธุรกิจ และประชาชนในพื้นที่ ซึ่งจะสามารถเสริมสร้างความเข้มแข็งในการพัฒนาเมืองสีเขียวในทุกมิติ.


Agriculture
Nature
Wellness
Agriculture
Wat Phuttha Utthayan
Doi Insi Temple
Doi In-

Summary of the Results from for the workshop


URBAN
2026
Culture
Nature
&City Life
Agriculture
Urban
Agriculture
Wellness

Meeting Summary

Focused Group Workshop: Green City Development for Chiang Rai

Tuesday, February 11, 2025 | 14:00 - 17:00 hrs
Le Meridien Hotel, Chiang Rai, Thailand

Meeting Commencement:
The meeting was officially opened at 2:12 PM.

Opening Remarks & Workshop Objectives:

Mr. Chanwit Sirisoonthornanont, Chief Architect of the Department of Public Works and Town & Country Planning, welcomed attendees and highlighted the importance of urban planning for sustainable development. He emphasized its alignment with Sustainable Development Goals (SDGs), particularly SDG 11, which aims to make cities inclusive, safe, resilient, and sustainable. Proper urban and architectural design can enhance the quality of life, foster knowledge exchange, and contribute to a shared vision for a high-quality city.

Associate Professor Surasak Kangkhao, a member of the organizing committee and founder of the Heritage Asia Research Community (HARC), outlined the objectives of the Green City Conference 2025. He noted that the participation of experts from various disciplines presents a valuable opportunity for professionals in agriculture, environment, society, architecture, and urban planning to exchange ideas and drive Chiang Rai's green city development. This workshop, organized in collaboration with the International Association of Horticultural Producers (AIPH) and related agencies, marks the first Focused Group Workshop within the Green City Conference. The goal is to foster discussions among experts, stakeholders, and participants to facilitate the development of a green city model that can be expanded to other provinces in the future.

Summary of the Morning Session & Introduction to the Discussion:

Dr. Methinee Sriwatthanakul summarized the key takeaways from the AIPH Spring Meeting 2025 session on Green Cities. The discussions revolved around essential principles for creating sustainable urban green spaces, including:

1. **Green Space Management** – Aligns with SDG 3 & SDG 11
2. **Appropriate Plant Selection** – Aligns with SDG 2, SDG 12, & SDG 15
3. **Urban Green Space Expansion** – Aligns with SDG 2, SDG 11, & SDG 13
4. **Water System Integration** – Aligns with SDG 2, SDG 6, & SDG 11
5. **Community Engagement** – Aligns with SDG 11
6. **Green Technology Development** – Aligns with SDG 9 & SDG 12
7. **Education & Awareness Promotion** – Aligns with SDG 4 & SDG 15

Waste Management & Recycling – Aligns with SDG 12 & SDG 13

These topics were discussed with a focus on practical applications, including how urban greenery can be optimized for maximum benefit. Key case studies presented during the morning session included:

1. Green city initiatives from Mae Fah Luang University, Chiang Rai
2. The development of Chulalongkorn University's Centenary Park
3. Singapore’s urban greening efforts

The use of herbal plants for sustainability

Associate Professor Dr. Rawiwan Charoensup, Head of **Medicinal Plant Innovation Center of Mae Fah Luang University**, presented an initiative aligning with the "Smart Livable City Incubation & Acceleration Program" under the 2024 fiscal year plan by the Office of National Higher Education Science Research and Innovation Policy Council (NXPO). The program incorporates green city development into Chiang Rai’s urban planning strategies.

Discussion on Chiang Rai’s Green City Development:

Associate Professor Dr. Poon Thiengburanathum, Deputy Director of Planning and Strategy at NXPO, emphasized that developing a green city requires a shared vision and collaborative planning. The "Go Green" initiative should adopt a **Horizontal Governance** approach, ensuring inclusive participation. Plans created during this workshop, based on expert insights and stakeholder engagement, will serve as a foundation for Chiang Rai's green city roadmap, benefiting all sectors involved.

Mr. Chatchawan Pringphuangkaew, a senior architect, shared his perspective on Chiang Rai's urban future, emphasizing the role of nature in shaping sustainable cities. He highlighted the 2024 flooding incident in Chiang Rai, which caused unprecedented damage due to mudslides and rising water levels. The discussion underscored the need for adaptive strategies to coexist with natural disasters, including:

1. Collaborative disaster prevention measures
2. Solutions to reduce PM2.5 pollution, addressing the impact of agricultural burning and chemical fertilizer usage

Water conservation as a crucial aspect of urban resilience

He pointed out that some government interventions may not effectively address core issues unless they are based on a deep understanding of natural systems. Sustainable urban planning must integrate ecological knowledge to ensure long-term resilience.

Conclusion & Next Steps:

The workshop concluded with a consensus on the importance of multi-sectoral collaboration for Chiang Rai's green city transformation. The key takeaways will be integrated into future urban development strategies, serving as a model for other cities in Thailand.

The meeting adjourned at 5:00 PM.

Summary of the Results from the Green City Conference Workshop

Objective of Green & Wellness in Chiang Rai

The Green & Wellness initiative in Chiang Rai focuses on creating a city that promotes health and happiness through clean air, water, healthy food, flood prevention, and tourism. It aims to enhance the quality of life, support sustainable development, and benefit the local community.

Approach to Achieving Goals

City planning should incorporate the natural environment, community needs, and local characteristics to create a green city suited to Chiang Rai's unique conditions.

Actions to be Taken

1. **Water Management**: Gather data on water sources and systems to ensure sufficient water supply and effective flood prevention.
2. **Green Spaces and Water Retention**: Integrate green spaces with water retention areas and Greenbelt zones to improve quality of life and preserve biodiversity.
3. **Diverse Planting**: Promote the cultivation of local plants like vanilla, coffee, and tea for environmental protection and economic development.

4. **Infrastructure Development**: Improve roads and pathways for better access to green spaces.
5. **Health Tourism**: Promote health tourism, including hot springs and wellness activities, to boost the local economy.

Methods for Achieving Goals

1. **Data Collection and Planning**: Gather relevant data to ensure effective city planning.
2. **Community Awareness**: Educate the community on the Green & Wellness goals to foster participation.
3. **Innovative Solutions**: Use sustainable technologies and innovations to support green city development.
4. **Agricultural and Brand Development**: Support sustainable agriculture and create branding for local products.
5. **Sector Collaboration**: Ensure collaboration among public, private, and community sectors for effective implementation and long-term sustainability.


Forest Group Workshop
Rural City countryside
Green Cafe, Chiang Rai
น้ำพุร้อนโป่งพระบาทกับแนวคิด
Ecological Urbanization ในเชียงราย
Wellness City
Rural city countryside
Wellness
Heritage Asia Research Community

Summary of the Green City Workshop Conference Results

Goals of Green & Wellness Chiang Rai
The main goal of the **Green & Wellness Chiang Rai** project is to develop a city that focuses on promoting health and happiness for its citizens through fundamental factors, including clean air, clean water, healthy food, flood prevention, reducing heat accumulation, promoting tourism, and distributing income to local communities. The project emphasizes the creation of an environmentally friendly city that promotes economic and social sustainability by integrating urban development with environmental conservation in a balanced manner. This approach aims to sustainably enhance the quality of life for the people.

Operational Approaches towards Green & Wellness Goals
Urban planning that understands the land, nature, and community is crucial for achieving these goals. Utilizing Chiang Rai's unique natural resources and city potential to create a balance between urban development and environmental preservation will allow Chiang Rai to grow in harmony with nature and the environment.

Key Areas of Focus

1. **Water Management** Collecting data on water sources and the water management system in the area, along with the creation of drainage systems and irrigation dams, will help prevent floods and optimize water resources for green city development. Attention must also be given to both urban water use and the restoration of natural water sources.

2. **Development of Green Spaces and Water Retention Areas** Integrating green spaces with water retention areas and developing greenbelts will create environmentally friendly areas, improving the quality of life for citizens while maintaining biodiversity and promoting ecosystem sustainability.

3. **Planting for Conservation and Community Economic Development** Promoting the cultivation of plants suitable for Chiang Rai’s environment, such as vanilla, coffee, cocoa, and tea, will generate income and reduce the impacts of environmental changes. Additionally, planting crops that help preserve sloped areas and prevent flooding will help maintain the environment while expanding public gardens to create job opportunities within the community.

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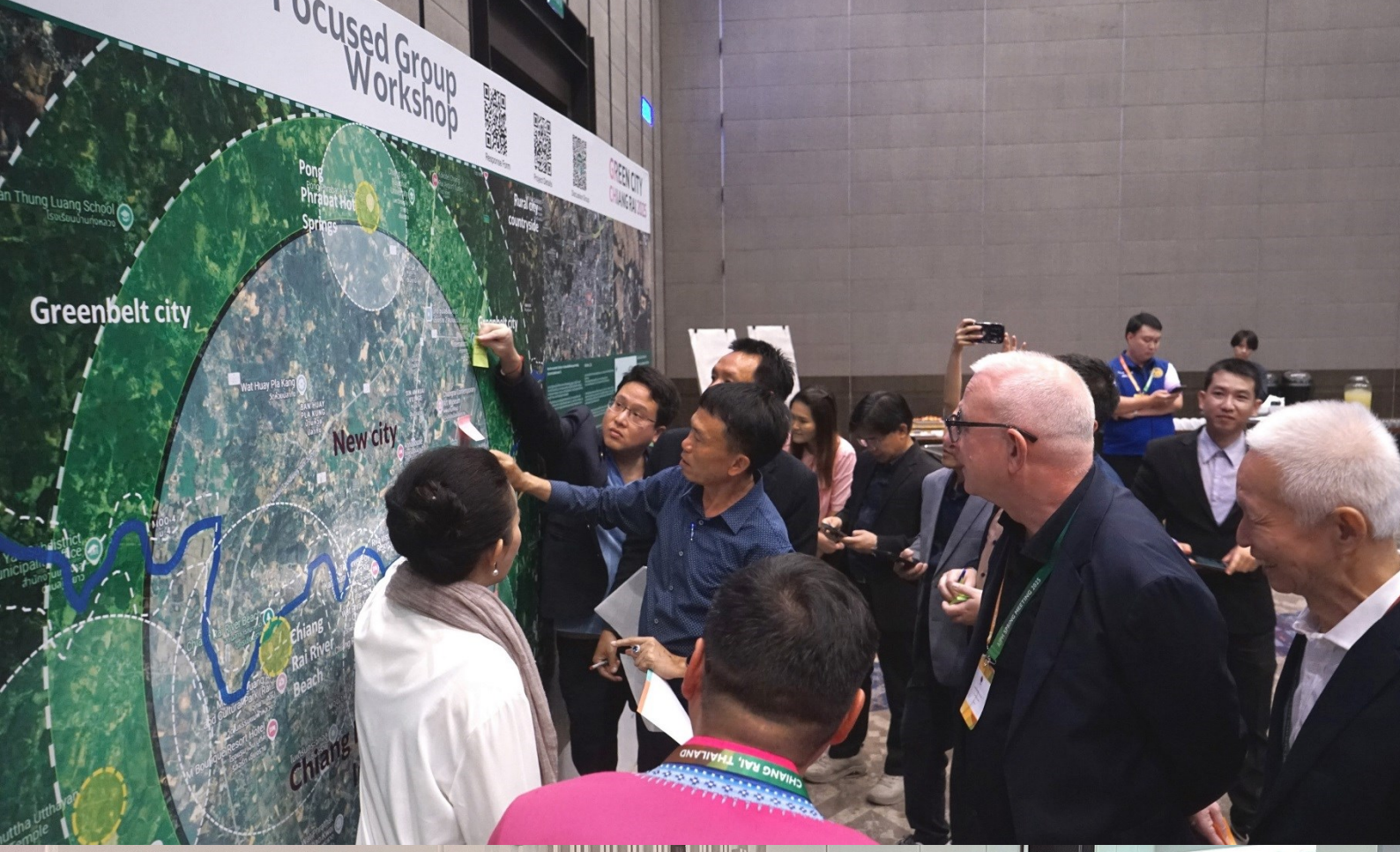
4. **Infrastructure Development** The development of road systems and transportation networks that provide easy, safe, and environmentally friendly access to green spaces will create a convenient and comfortable urban life, surrounded by greenery and nature.

5. **Promoting Health Tourism** Encouraging health-focused tourism, such as utilizing hot springs or organizing health-related activities, will boost community income and deepen public understanding of health and environmental conservation.

Operational Methodologies

1. **Data Collection for Strategic Planning** Gathering relevant data related to city development and considering plans that suit the area's specific circumstances and needs will ensure the effectiveness of the plan and its practical application.
2. **Raising Awareness and Educating the Community** Providing education about the Green & Wellness development approach will foster understanding and genuine participation from the community. Activities should be organized to engage the
public at all levels.
3. **Utilizing Tools and Innovations** Selecting appropriate tools and innovations for developing green cities, such as sustainable agricultural technologies and academic tools for urban planning, will enable effective urban development that aligns with the set goals.
4. **Agricultural Development and Branding** Promoting sustainable agriculture and creating a brand for local products, such as those cultivated in Chiang Rai, will enhance the value of local products and foster markets both locally and beyond. This approach focuses on establishing networks between consumers and producers.
5. **Sectoral Integration** Collaboration between the public sector, private sector, academic institutions, and communities is
essential for city development. The use of budgets from various agencies, such as the Department of Irrigation, Department of Public Works and Town & Country Planning, and the Department of Land Development, will ensure integration and sustainability. Utilizing academic knowledge, community involvement, and decentralization will drive the project to success.


Focused Group
Workshop
Greenbelt city
New city
Chiang
Rai River
Beach
CHIANG RAI, THAILAND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TVOC
(mg/m³)
38

Conclusion

The **Green & Wellness Chiang Rai** project is an ambitious initiative that requires comprehensive coordination across all sectors to ensure its success. This project emphasizes the sustainable use of natural resources and the preservation of local assets, aligning with both regional and national development goals. By focusing on the integration of ecological and wellness principles, the project aims to create a city that offers a high quality of life, promotes environmental health, and fosters economic and social sustainability.

This initiative not only supports the development of Chiang Rai but also contributes to the broader vision of **Thailand's sustainable development agenda**. It complements the national strategies aimed at promoting green cities, eco-tourism, and local community empowerment, which are key components of the **Thailand 4.0 policy**. Through the careful management of Chiang Rai's unique natural resources, including local plant species and ecosystems, the project will drive forward Thailand's transition to a more sustainable future.

The success of this project relies heavily on the collaboration between the **public and private sectors**, ensuring the alignment of local, provincial, and national policies. It also involves the development of key infrastructures such as water management systems, transportation networks, and green spaces that will transform Chiang Rai into a city that is truly livable and sustainable in the long term.

By integrating local knowledge and sustainable practices, this initiative will not only improve the quality of life for Chiang Rai residents but also serve as a model for other cities across the country, promoting a more environmentally conscious, economically viable, and socially inclusive approach to urban development. This alignment with national development strategies ensures that Chiang Rai's transformation is in line with Thailand's overarching vision for a green, sustainable, and resilient future.

Conclusion from the Truth That Must Start with Nature

From the Green City Conference seminar and workshop, the fundamental truth we have learned is that returning to nature is the key to creating sustainability in cities and improving the quality of life. In an era of technological and informational advancement, what we often overlook is the connection between humans and nature, which we should not ignore.

Nature is not just a resource, but an ecosystem with balance that can provide sustainable benefits to humanity. When we begin with nature, the design of cities and societies will be balanced in terms of health preservation, quality of life, and efficient resource management. The integration of architecture and landscapes that consider nature is not just about creating green cities but also about building infrastructure that supports well-being in all dimensions.

Understanding and accepting the truth that nature offers will allow us to coexist within a sustainable ecosystem, opening up opportunities for cities and societies to develop in a better, more sustainable direction in the future.

Nature: The Truth of the Core Concept for Survival in the Age of Change

As technology advances and information flows without limits, are we moving toward a secure future or challenging the boundaries of nature? Amid environmental crises, the Green City concept and s ustainability have become mainstream ideas. But are we truly adapting, or are we only addressing immediate problems?

True wellness is not merely about maintaining health; it is about living in balance with nature. Have we forgotten the foundation of survival?

Nature is not just a resource, but an ecosystem we depend on without realizing it. If change is inevitable, perhaps the answer is not to create something new but to rediscover the truth that nature has always provided.

From Green Cities to True Wellness: Integrating Architecture and Landscapes for Quality of Life

In an era of rapid technological development, Green Cities have become the primary approach to sustainable development. However, simply adding trees or green spaces may not be enough. True wellness does not just mean health; it is about living in an environment that nurtures quality of life in terms of physical, mental, and social well-being.

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Flood Risk and Landscape Conditions in Mae Sai District

Mae Sai District, located along the Sai River on the Thai-Myanmar border in Chiang Rai Province, features a mix of lowland plains and hilly terrain. The area is prone to flooding, particularly in communities situated near the river and in lower-lying regions. Heavy rainfall and floodwaters from Myanmar during the monsoon season can significantly impact water levels and affect the local economy. These environmental conditions require careful planning and infrastructure development to mitigate flood risks and protect the community and its economic activities.

Nature and Water Management : Understanding the Truth in All Dimensions Towards Sustainable Development Concepts

In an era where environmental and social changes are rapidly occurring, the concept of sustainable development in architecture and landscape design becomes crucial in creating cities that are friendly to nature and adaptable to change in a sustainable way. Water management plays a fundamental role in the development of cities that can coexist with nature in balance. This approach not only involves the use of advanced technologies for water control and management but also includes the restoration of natural landscapes, such as the planting of local vegetation, which helps reduce resource consumption and promotes ecological sustainability in the area.

The selection of locations for city development or projects with efficient water management must consider not only the geography and characteristics of the area but also the capacity to support natural water systems and green spaces that can treat and store rainwater effectively. Additionally, the use of modern technologies, such as digital systems for water data analysis, can assist in designing spaces that are more responsive to changes.

Integrating local plants into the water management system enhances sustainability. These plants are well-suited to the environment and can help improve the climate in the area. For instance, planting vegetation in flood-prone areas can reduce the impact of flooding and promote biodiversity.

By blending local knowledge with modern technologies, we can create a sustainable environment that is better prepared to face the challenges of the present world. This fusion can help maintain balance in ecosystems and improve the quality of life for people in a sustainable way.

Area-based Management: Connecting Water Governance with Sustainable Development

Water governance is intrinsically linked to sustainable development, focusing on water security and community participation. The OECD defines water security as maintaining acceptable levels of risk that impact water service provision and enhancing the capacity of communities to adapt and recover from related crises.

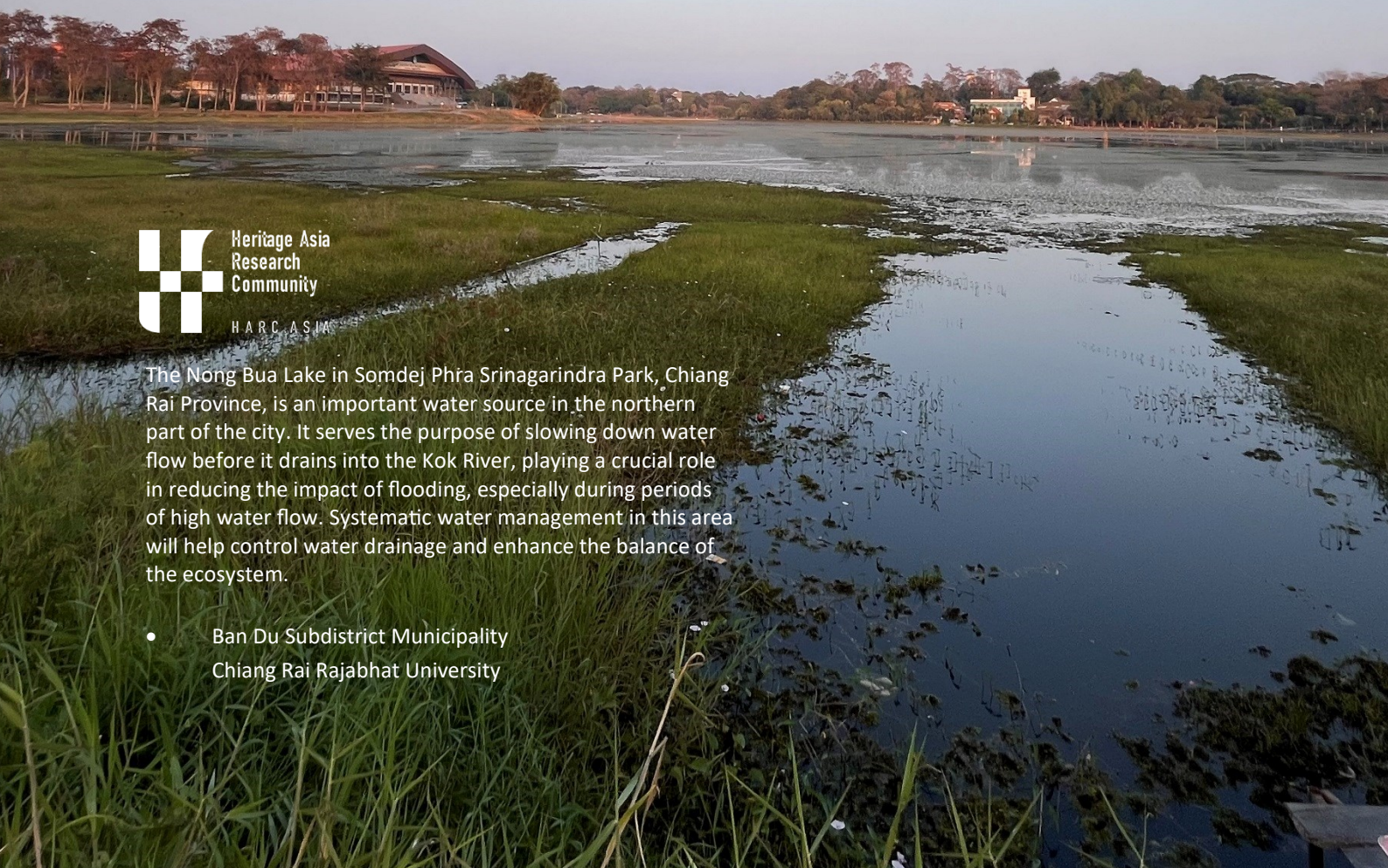
Key concepts in water management include Integrated Water Resources Management (IWRM) and Integrated Water and Land Resources Management (IWLRM), which emphasize managing water alongside land use, infrastructure, and urban planning to ensure a balance between economic, social, and environmental aspects. River Basin Management (RBM) and valuing water are also critical, requiring management across administrative boundaries and user participation. These approaches connect with food, energy, and natural resource security.

To achieve sustainable water management, the Sustainable Development Goals (SDGs) play a vital role, particularly SDG 6 (Clean Water and Sanitation), SDG 2 (Zero Hunger), SDG 7 (Affordable and Clean Energy), and SDG 11 (Sustainable Cities and Communities).

Source:

UN Sustainable Development Goals (2022), Water Action Decade, retrieved from sdgs.nesdc.go.th

UN High Level Panel on Water (HLPW) 2021.



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The Nong Bua Lake in Somdej Phra Srinagarindra Park, Chiang Rai Province, is an important water source in the northern part of the city. It serves the purpose of slowing down water flow before it drains into the Kok River, playing a crucial role in reducing the impact of flooding, especially during periods of high water flow. Systematic water management in this area will help control water drainage and enhance the balance of the ecosystem.

- Ban Du Subdistrict Municipality
  Chiang Rai Rajabhat University

The Truth in Solving Problems Through Architecture and Urban Landscape

Architectural and landscape design to address flooding issues is a matter that requires a deep understanding of the environment, culture, and social structure of the area. The integration of local concepts alongside innovative developments that align with natural conditions can help reduce the impacts of flooding and create long-term
sustainability for communities.

Local Concepts and Water Management

Architecture and landscapes that take local contexts into account often feature
designs that align with the original environment. For example, elevated houses, the use of materials that allow water drainage, the design of canals or flood retention
systems in urban areas, and the use of green spaces as infrastructure to manage
water. These concepts serve as examples of applying local wisdom to address flooding problems.

Ecological Design to Manage Flooding

In addition to local concepts, the use of ecological design approaches can further
enhance water management effectiveness. Examples include:

1. **Green Spaces and Rain Gardens**: These help absorb and retain water, reducing the burden on drainage systems.
2. **Water Recycling Systems**: Such as rainwater harvesting or allowing water to seep into the soil to reduce flood accumulation.
3. **Natural Water Pathways**: Restoring the original water paths of the city rather than constructing closed systems that might cause flooding in other areas.

	Truth	Belief
	Ethnobotany	**Artificial Garden**
Focus	**Native plants, tradition**	**Creativity, adaptation**
Investment	**Low**	**High**
Maintenance	**Low**	**Ongoing**
Concept	**Sustainable**	**Flexible, relative**
Impact	**Eco-friendly**	**Resource-intensive**

source :

Assoc.Prof.Surasak Kangkhao

Green City Conference - Nature , Culture & City Life" Shaping the Future of Ecological Urbanization through hidden Truths"

Water management in Thailand still focuses on fast drainage, leading to flooding in downstream areas of rivers. The concept of water retention ponds helps store excess water and release it slowly, reducing flood risks and restoring the natural water cycle. This approach also incorporates local plants, supporting the ecosystem by enhancing soil retention and improving water infiltration, while benefiting both the environment and local communities.

source

Department of Water Resources. (n.d.). Restoration of the Natural Water Cycle.

Chaipat Website. (n.d.). Flood Mitigation Theory.

Chiang Mai University Research Project. (n.d.). Using Local Plants to Enhance Ecosystems. Retrieved

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ภาพ: โครงการเขื่อนกันตลิ่งและการปรับปรุงภูมิทัศน์พื้นที่ริมแม่น้ำในเขตเมืองเชียงราย

Contemporary Architecture Design Linked to Local Geography and Flood Mitigation

Contemporary architectural design that connects with local geography and addresses flooding problems is a fusion of local wisdom and modern technology. This approach ensures that designs can sustainably respond to natural challenges. The use of local plants in landscapes plays a crucial role in controlling rainfall and reducing the impacts of flooding effectively.

Choosing plants suitable for the area helps absorb rainfall and prevent soil erosion, while also creating vegetation that can absorb carbon and promote biodiversity in the area (Kouadio et al., 2020). Moreover, the concept of landscape restoration using native plants can be applied in various projects to help build resilient ecosystems and mitigate the effects of future flooding.

Adaptable Design to Mitigate Flooding

Adaptable design is one approach to reducing the impacts of flooding. By utilizing digital technology to analyze water data, effective flood prevention systems can be designed (Wang et al., 2021). The key to successful design lies in the integration of local wisdom with appropriate technology, ensuring sustainable development and the ability to respond to natural changes.

Successful Design for Flood Mitigation and Sustainability

To successfully address flooding issues and create sustainability, it is essential to understand the local context, integrate local knowledge with modern technology, and maintain a balance between development and environmental conservation. This approach will yield results that benefit both people and ecosystems in the long term.

Source
Kouadio, A. et al. (2020). Eco-engineering and sustainable design for flood mitigation. *Environmental Science and Technology*, 45(2), 150-167.
Wang, F., et al. (2021). Flood management systems in urban architecture: Integrating digital technology for disaster resilience. *Journal of Environmental Engineering*, 148(4), 04020056.

URBAN RIVERS

Wild Mile Chicago, a floating eco-park located on the North Branch Canal of the Chicago River.

Transforming Urban Waterways into Wildlife Sanctuaries

Concepts and Theories of Sustainable Water Resource Management: Proven Case Studies and Applications Based on the Authenticity of Nature

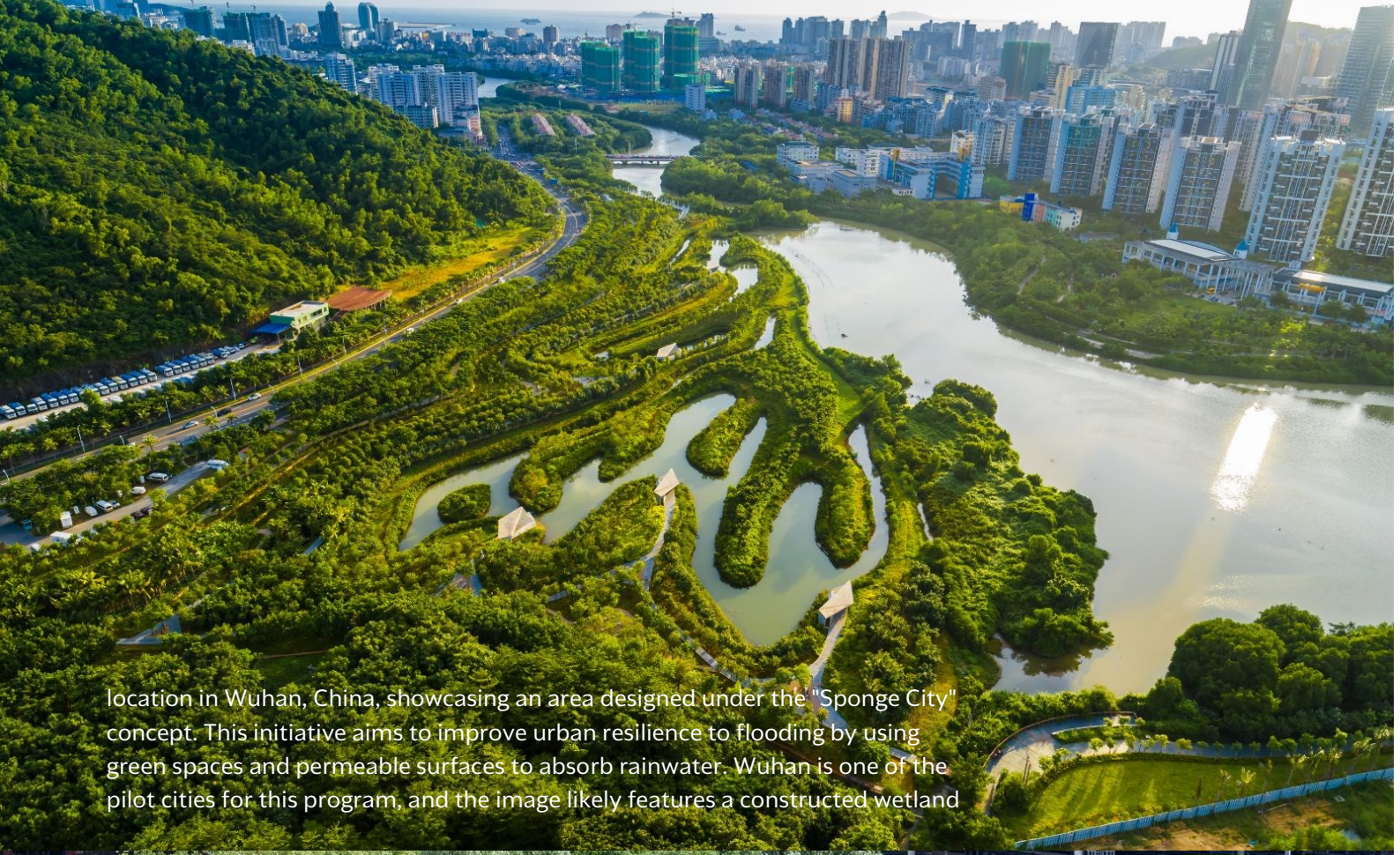
In an era of rapid urban expansion and advanced technologies, sustainable water resource management has become a crucial element in city development and the quality of life for its residents. The Green City Conference emphasized key principles that have been proven effective—principally, the return to nature and learning from the authentic mechanisms of ecological systems.

Nature is not just a resource; it is a system that maintains balance and can sustain all life forms in a sustainable way. Local plants (ethnobotany) play a critical role in allowing urban ecosystems to recover and develop sustainably. The use of native plants and herbs in Bioretention Basins, or Local Botanical Bioretention Systems, is an example of how natural principles can be integrated into urban design to address flooding issues, soil restoration, and creating balanced water systems.

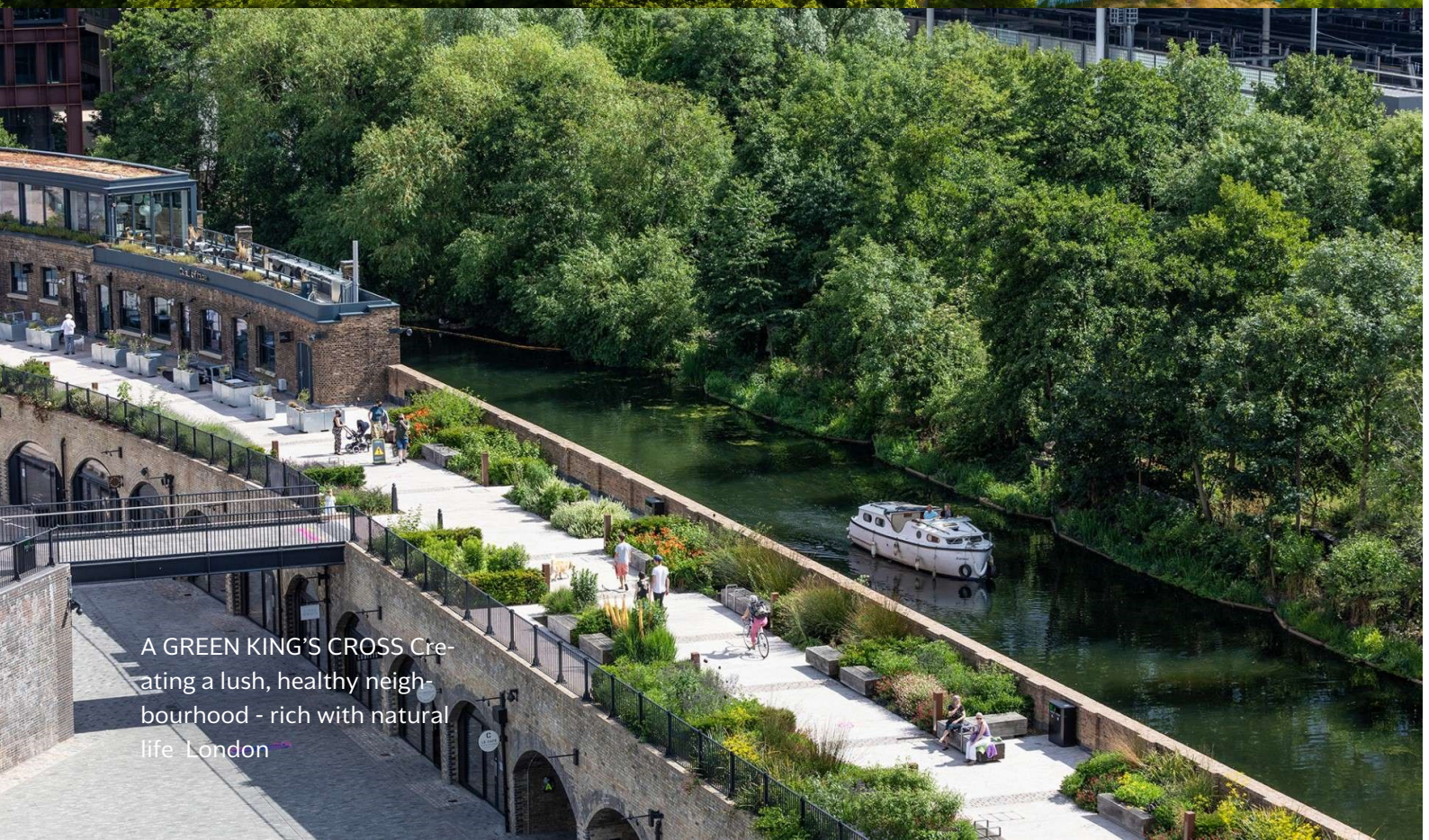
Exploring sustainable water management concepts and theories, proven through case studies globally and applied in the context of Thailand, especially in Chiang Rai, which has unique terrain and ecosystems, full of diverse local plant life and indigenous knowledge, is key. Understanding and embracing the authentic truths that nature offers will be crucial for creating sustainable, balanced cities in the future.

Bioretention Basins & Ethnobotanical Approach

The approach to water management, incorporating local botanical knowledge from Chiang Rai, uses native herbs and plants to absorb water, treat water, and create a balanced ecosystem, in line with the concept of Wellness, herbal culture, local food, and eco-tourism. This approach connects nature and indigenous wisdom for the sustainability of communities.



location in Wuhan, China, showcasing an area designed under the "Sponge City" concept. This initiative aims to improve urban resilience to flooding by using green spaces and permeable surfaces to absorb rainwater. Wuhan is one of the pilot cities for this program, and the image likely features a constructed wetland



A GREEN KING'S CROSS Creating a lush, healthy neighbourhood - rich with natural life London

Sponge City (Sponge City) – China

Main Concept:

The concept of "Sponge City" was introduced by the Chinese government in 2013 to address urban flooding problems and collect rainwater for use during droughts. This system utilizes green infrastructure such as public parks, wetlands, and permeable pavements to allow the city to absorb rainwater and store groundwater more effectively.

1. Green spaces and wetlands to slow down rainwater and allow it to seep into the ground.
2. Permeable surfaces (Permeable Pavements) reduce waterlogging.
3. Rain gardens and bioretention basins to filter and store water.

Successful Examples:

1. Shenzhen: Reduced flood damage from rainstorms by up to 70%.
2. Wuhan: Developed sponge gardens and permeable areas, reducing flooding in urban areas.

Source:

Yu, C., et al. (2020). "Sponge City Program in China: A Review of Implementation, Assessment, and Challenges," *Water*, 12(12), 3362.

Sustainable Drainage Systems (SuDS) – United Kingdom

Main Concept:

Sustainable Drainage Systems (SuDS) is a sustainable water management system developed in the United Kingdom, designed to mimic natural drainage processes and reduce the use of rigid structures like concrete drainage pipes. The goal is to slow the flow of rainwater, reduce flooding, and improve water quality.

1. Retention ponds and wetlands reduce water runoff from areas.
2. Swales direct water to storage locations.
3. Green roofs and porous pavements.

Successful Examples:

1. King's Cross, London: SuDS was used to reduce rainfall runoff and allow more water to seep into the ground.

Source:

CIRIA (2015). "The SuDS Manual," *Construction Industry Research and Information Association.*

Royal Park Wetlands and Stormwater Harvesting scheme in Melbourne

Room for the River, Nijmegen ,The Netherlands

Water Sensitive Urban Design (WSUD) – Australia

Main Concept:
WSUD is an urban development approach that considers the entire water cycle, not just wastewater drainage, but also the storage and reuse of water.

1. Uses rain gardens and green spaces instead of traditional drainage systems.
2. Treats wastewater using natural systems for reuse.

Successful Example:

Melbourne: Successfully reduced the amount of rainfall flowing into drainage systems by 50%.

Source:
Water Sensitive Cities - Case Studies

Dutch Room for the River – The Netherlands

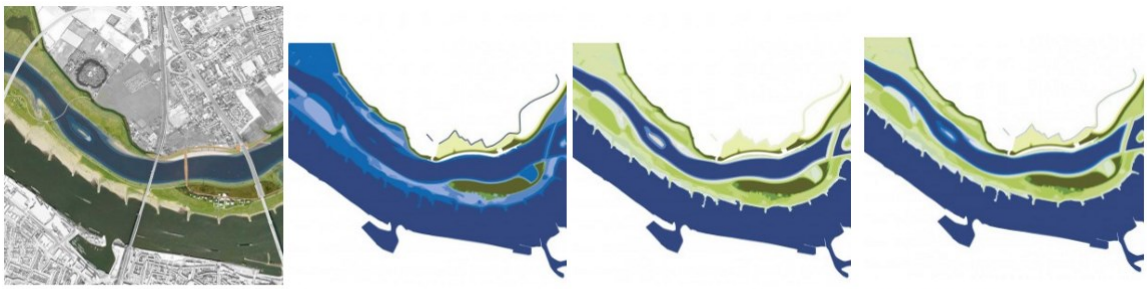
Main Concept:
This concept emerged from the Netherlands' experience with frequent flooding. Instead of building flood barriers, the approach focuses on giving rivers more space to manage floods.

1. Restores riverbank areas to allow rivers to expand during floods.
2. Creates natural floodplains (Floodplain Restoration).

Successful Example:

Nijmegen: Successfully reduced flood risks without relying on concrete flood barriers.

Source:
Rijkswaterstaat (2021). "Room for the River Programme."



Dutch Room for the River Program is to give the rivers more room, to be able to safely process higher water levels

แผนที่ “น้ำท่วมซ้ำซาก” ในรอบ 10 ปี
ระบบสนับสนุนการตัดสินใจเพื่อการ
บริหารจัดการพื้นที่น้ำท่วม : GISTDA

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Application in Thailand, especially Chiang Rai

Chiang Rai faces both drought and flooding issues, especially along the Kok River and its tributaries. The following approaches can be applied:

Sponge City + WSUD

- **Improve the Kok Riverbank Area**: Transform it into a natural flood retention area and rain gardens.

Develop Green Infrastructure: Introduce permeable pavements and green spaces in Chiang Rai that can store water.

Room for the River

- **Enhance the Kok Riverbank**: Allow the river to expand during flood seasons, and reduce reliance on flood barriers by using landscape modifications instead.

These approaches align with **SDGs**:

- **SDG 6**: Water Management
- **SDG 11**: Sustainable Cities and Communities
- **SDG 13**: Climate Action
- **SDG 15**: Life on Land

This development will revitalize the city and create long-term sustainability.

"Chiang Rai Water Management Development Project Phase 2" (2024)
This project focuses on improving water management in Chiang Rai by designing natural water retention systems, such as rain gardens and infrastructure that alleviates both flooding and drought. It also promotes community participation in providing feedback for sustainable urban development.

Responsible Agency: Department of Public Works and Town & Country Planning

Sources:

- UN Water (2021). "Sustainable Development Goal 6: Water and Sanitation for All." United Nations. Retrieved from UN SDGs.
- United Nations (2020). "The 2030 Agenda for Sustainable Development." United Nations.

The Restoring Waller Creek at Waterloo Park Project

The Restoring Waller Creek project is part of an ecological restoration effort aimed at revitalizing Waller Creek in Austin, Texas. This project focuses on transforming the creek and surrounding area into a sustainable, community-friendly space while enhancing its ecological health. Key aspects of the project include:

The application of this concept will help manage flooding and create a sustainable and nature-friendly city while promoting health and health tourism in Chiang Rai.

Herbal plants for water retention systems:

1. Lemongrass (Cymbopogon citratus): Filters water and is used in health products.
2. Galangal (Alpinia galanga): Prevents erosion and maintains moisture.
3. Turmeric (Curcuma longa): Maintains moisture and improves soil structure.
4. Basil (Ocimum basilicum): Revives soil and retains moisture.

Suitable local plants:

1. Guinea grass (Panicum maximum): Absorbs water well.
2. Vetiver grass (Vetiveria zizanoides): Prevents erosion and absorbs water.
3. Taro (Colocasia esculenta): Absorbs water well in waterlogged areas.
4. Water spinach (Alternanthera sessilis): Used in food and herbal medicine, improves soil and restores moisture in the area.
5. Tiliacora triandra (Yanan leaves): Used as herbal medicine, absorbs water and helps restore soil.
6. Tamarind (Tamarindus indica): Used in cooking and herbal medicine, improves soil and retains moisture.
7. Bitter melon (Momordica charantia): Used for treating diseases, absorbs water, and improves soil.
8. Mint (Mentha piperita): Used in cooking and herbal medicine, helps refresh and absorbs water.
9. Dioscorea alata (Yam): Used in cooking and for medicinal purposes, helps improve soil structure and retains moisture.

Alternatives to Vetiver grass:

1. Citronella grass (Cymbopogon nardus): Prevents erosion and is used in health products.
2. Long-stemmed grass (Heteropogon contortus): Drought-resistant and absorbs water well.

Local trees that can be used:

1. Tamarind (Tamarindus indica): Improves soil and is used in food and medicine.
2. Coconut (Cocos nucifera): Absorbs water and is used in various industries.
3. Bamboo (Bambusoideae): Used in construction and creates green spaces.
4. Teak (Tectona grandis): Produces wood for furniture.
5. Jackfruit (Artocarpus heterophyllus): Used to make sweets and products.
6. Coffee (Coffea): Known for its excellent taste and popularity.

Blue-green infrastructure: from a single measure to city-wide network

source :

Ecoshape. (2019, September 22). Building a Resilient Future Outcome Document. Retrieved from https://www.ecoshape.org/app/uploads/sites/2/2019/09/Building-a-Resilient-Future-Outcome-Document-1.pdf

International Institute for Sustainable Development (IISD). (2019, September 22). Building a Resilient Future. Retrieved from https://sdg.iisd.org/events/building-a-resilient-future/

Blue-Green Infrastructure for Resilient Cities: Integrating Native Vegetation with Urban Planning for Sustainable Development

Sustainable urban development and climate resilience are key objectives of national strategic plans and policies by the Ministry of Interior. The Department of Public Works and Town & Country Planning plays a crucial role in shaping urban infrastructure that aligns with SDG 11: Sustainable Cities and Communities, by promoting the use of green spaces and native vegetation in urban design.

According to UN-Habitat (2023), by 2050, 68% of the world's population is expected to live in urban areas, presenting environmental challenges such as pollution, urban heat island effects, and natural resource scarcity. In Thailand, forest cover has steadily declined, with only 31.8% of the land covered by forests as of 2022 (Department of Forestry, 2023). Promoting the concept of a "Green City" using native plants as a tool for urban regeneration is vital in balancing urban ecosystems. This approach focuses on utilizing native plants to enhance infrastructure, reduce disaster risks, and improve the quality of life, aligning with SDG 11 and supporting national policies of the Ministry of Interior and the Department of Public Works and Town & Country Planning.

By applying this concept, Chiang Rai could become a model city for green urban development in Thailand and an international case study for other cities to adopt.

Key Components of Blue-Green Infrastructure

1. Natural water sources, such as rivers, canals, and lakes
2. Rainwater management systems, such as detention ponds and nature-based drainage systems
3. Water retention areas, such as reservoirs and floodplains
4. Green spaces, such as parks, green roofs, and green walls
5. Suburban forests or natural buffer zones
6. Urban agriculture systems, such as vertical farms or urban farming areas

Benefits of Blue-Green Infrastructure

1. Flood reduction and improved water drainage: Permeable surfaces and water retention ponds help slow down water flow before it enters main drainage systems
2. Improved air quality and reduced urban heat island effect
3. Enhanced biodiversity: Connecting aquatic ecosystems and green spaces
4. Creation of recreational areas and improved quality of life: Public green spaces make cities more livable
5. Carbon sequestration and adaptation to climate change

The Role of Native Vegetation in Urban Infrastructure

1. Flood protection infrastructure: Using water-absorbing plants like vetiver grass, sedge, and bamboo to reduce soil erosion and prevent flooding
2. Soil stabilization and wind barriers: Using trees such as banyan, tamarind, and neem to prevent soil erosion and stabilize the land
3. Urban green spaces: Increasing the green area ratio to at least 9 square meters per person, in line with WHO standards (2022)

Building Green Cities: Innovations in Architecture and Urban Design
การสร้างเมืองสีเขียว: นวัตกรรมด้านสถาปัตยกรรมและการออกแบบเมือง

Native Vegetation in Green Building Development

1. **Green Roof**: Using local herbs like lemongrass, ginger, and turmeric on rooftops to reduce indoor temperatures by 2-4°C
2. **Vertical Garden**: Designing buildings with vertical gardens to reduce energy use and increase green space in cities
3. **Green Facade**: Using climbing plants on walls to reduce building heat absorption

Policy Recommendations for Sustainable Urban Development

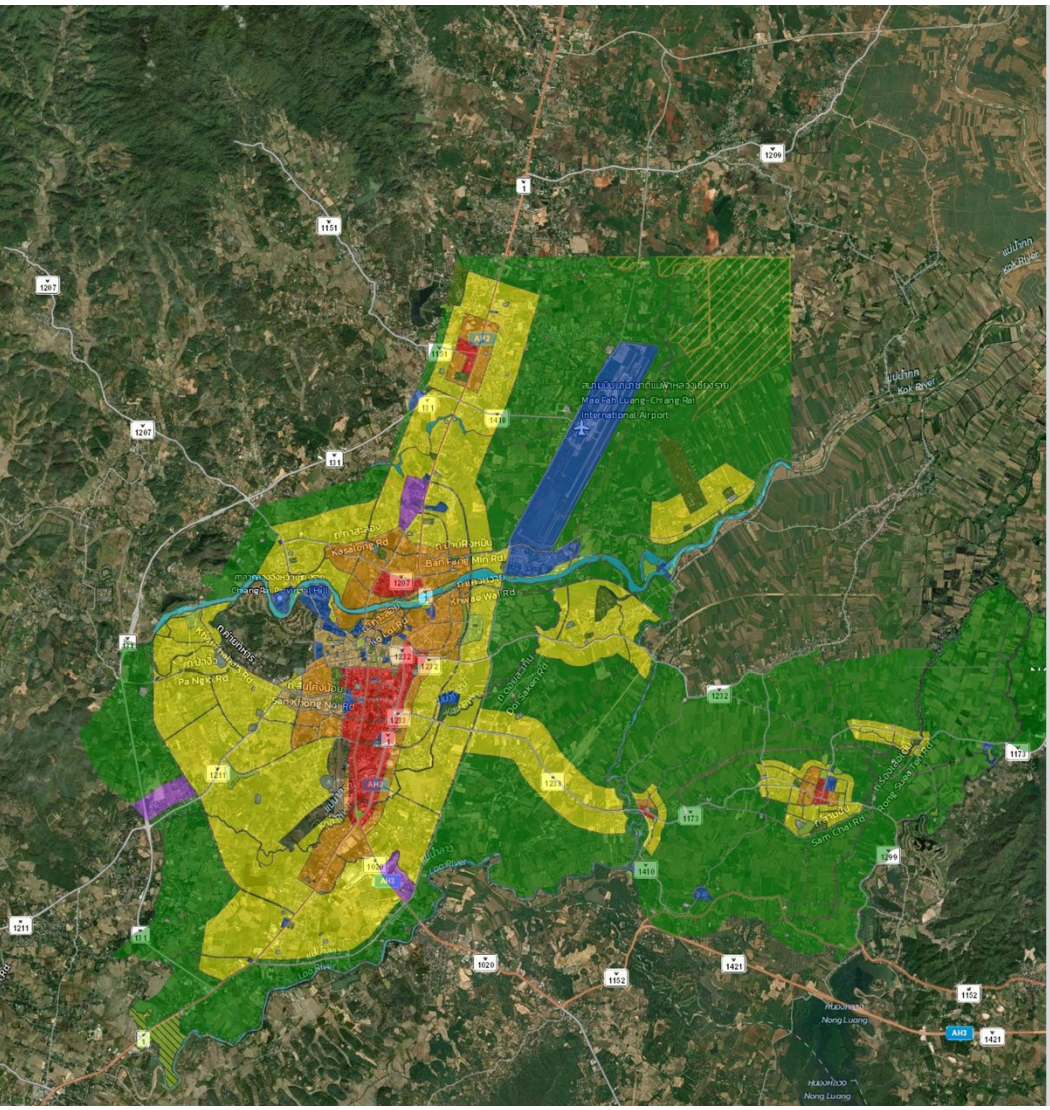
1. Establish environmental-friendly infrastructure design standards
2. Implement Green Building Codes in public buildings
3. Mandate at least 30% green space in new urban development projects
4. Promote public and private sector involvement
5. Create a Green Urban Fund to support community-based green projects
6. Encourage private investment in green infrastructure through tax incentives
7. Integrate the Green City concept into national strategic plans
8. Align green urban development with Thailand's 20-Year National Strategy (2018-2038)
9. Use the Smart & Green City model as a nationwide urban development framework

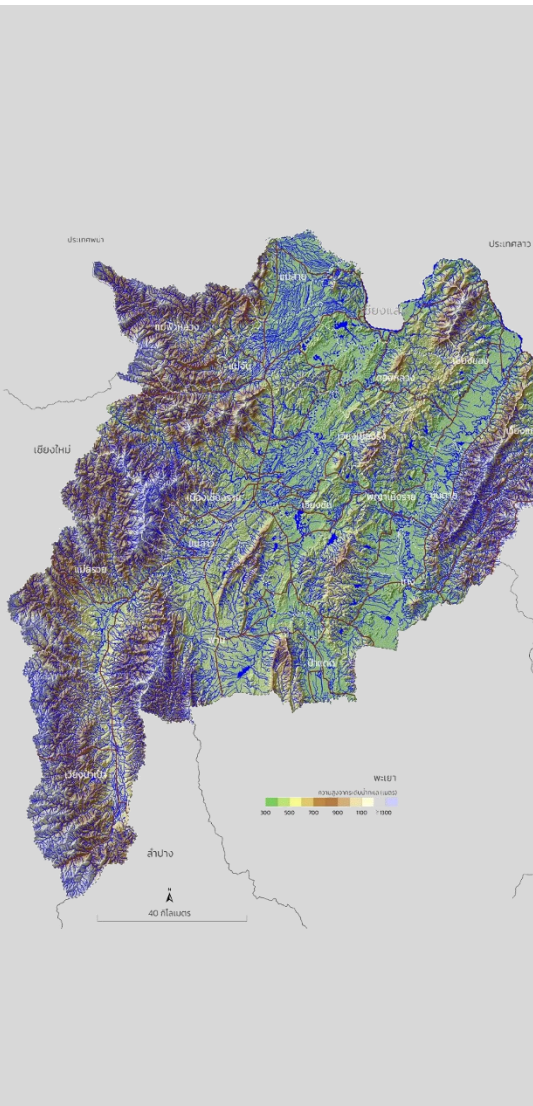
Sources:

. UN-Habitat (2023), World Cities Report
. WHO (2022), Urban Green Space and Health
. Bosco Verticale (2023), Sustainable Architecture in Urban Development
. Changi Jewel (2023), Integrating Nature into Architecture
. European Environment Agency (EEA), promoting Nature-Based Solutions (NBS) and Green Infrastructure (GI)
. United Nations Environment Programme (UNEP), Ecosystem-based Adaptation (EbA)
. ICLEI, Local Governments for Sustainability
. World Resources Institute (WRI)
. International Water Association (IWA)
. European Commission – Green Infrastructure Strategy
. UN-Habitat – Blue-Green Infrastructure for Resilient Cities (2021)
. IWA – Nature-Based Solutions for Urban Water Management (2018)

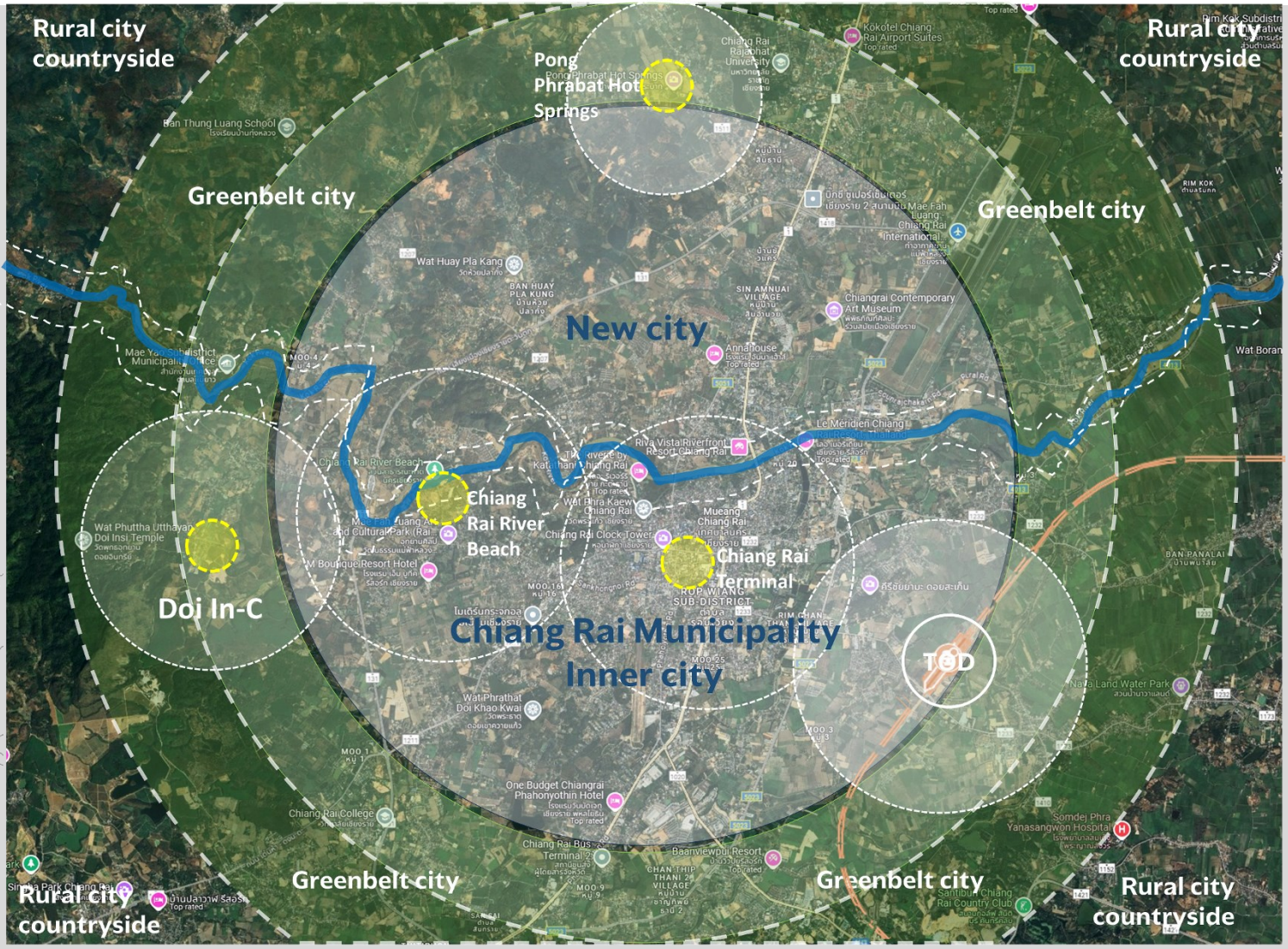
SAND BOX

Urban Horticulture +Greenbelt City





Site Focus for the workshop participation


Rural city countryside
Rural city countryside
Pong Phrabat Hot Springs
Greenbelt city
Greenbelt city
New city
Chiang Rai River Beach
Doi In-C
Chiang Rai Terminal
Chiang Rai Municipality
Inner city
TOD
Greenbelt city
Greenbelt city
Rural city countryside
Rural city countryside

Nature

- **Sufficiency Economy Agriculture**:

EcoRescue

- **Forest Fire Prevention**:
  Utilize buffer zones of forests to prevent wildfires and protect the surrounding environment.
- **Flood Control**:
  Construct check dams and other water management systems to reduce the risk of flooding and protect local communities.
- **Forest and Nature-Based Healing Lifestyle**:
  Incorporate a lifestyle connected to the forest and nature, focusing on rest and health restoration through natural surroundings, forest meditation, and the use of herbal plants and natural resources for sustainable living.

GrowLiving

- **Eco-friendly Architecture**:
  Design buildings using upcycled materials and live trees as essential elements in construction to promote sustainability and harmony with nature.
- **Community-based Development**:
  Apply local knowledge and traditions to develop projects that support economic sustainability and environmental conservation.

SAND BOX
Urban Horticulture + Greenbelt City
Connecting Urban Horticulture and Greenbelt City: Green Buffers with Community Forests

The Role of Urban Horticulture

Urban horticulture is a vital tool in creating a sustainable food system, focusing on maximizing the use of vacant urban spaces. This includes growing vegetables in abandoned lots, public parks, and even on building rooftops. Urban horticulture helps ensure food security, reduces dependence on external food sources, and improves the quality of life for urban residents. Additionally, it reduces environmental impacts, such as decreasing energy use in food transportation, minimizing organic waste, and increasing green spaces within cities, which in turn benefits air quality and the overall health of the community.

Site Focus for the workshop participation

Greenbelt City: Community Forests as Buffer Zones

The Greenbelt City concept focuses on creating "green buffer zones" around cities, using community forests and green spaces to prevent flooding, reduce soil erosion, and protect against forest fires near residential areas. Community forests also play a role in enhancing biodiversity, restoring ecosystems, and providing spaces for relaxation and mental well-being.

Integrating Urban Horticulture and Greenbelt City

Linking urban horticulture with the Greenbelt City concept can create a sustainable development system that effectively addresses current needs.

Green City for Chiang Rai

1. **Nature: Ethnobotany**
   Nature is the foundation of life and a balanced ecosystem. Plants play a vital role in all aspects of human life, such as food, medicine, and shelter. Traditional knowledge allows humans to live sustainably and securely, drawing lessons from nature to cope with disasters and minimize the impacts of natural hazards.

2. **Creating the Future of Ecological Urban Development**
   Developing green spaces in cities improves quality of life and promotes the local economy through eco-tourism, carbon emission reduction, and oxygen production. Green spaces in cities create a balance between urban living and nature, benefiting both the environment and the health of the community.

3. **Culture: The Emergence of Culture**
   Living in harmony with nature fosters a balanced society and culture. Nature is the source of culture, passed down through generations, helping communities adapt to changing environments. Culture
   promotes creativity and the enhancement of nature to meet complex needs.

4. **Community and Business Involvement**
   Encouraging community and business participation in the care of green spaces promotes sustainability and creates new business opportunities, such as the production of edible plants and natural products. Collaborative green space management strengthens the local economy and fosters innovation within the community.

5. **City Life: Integrating Nature and Culture into Urban Life**
   Increasing green spaces in cities reduces pollution and enhances quality of life. Urban agriculture promotes food security and reduces reliance on external food sources. Utilizing vacant urban spaces
   increases the city's adaptability to environmental and social challenges.

6. **Wellness City: A Self-Sustaining and Sustainable City**
   Designing cities for sustainability in all dimensions, including health, food security, and resilience to change, creates systems that meet all the needs of life. Cities that integrate nature and culture lead to greater sustainability and higher quality of life.

Value Added Wellness City

A Value Added Wellness City focuses on enhancing the quality of life by promoting health and well-being for its residents, while simultaneously integrating economic development and sustainable environmental management.

1. **Health Promotion**
   Developing infrastructure to support health, such as health centers, public parks, and exercise areas, encourages an active and healthy lifestyle for the community.

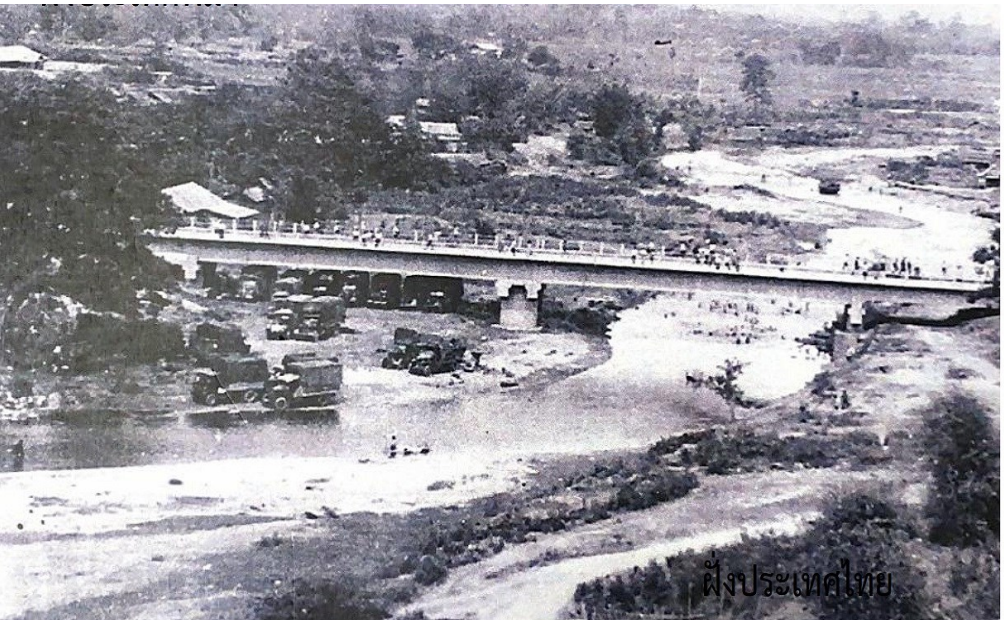
2. **Sustainable Economy**
   Promoting industries related to health, such as health tourism and organic agriculture, creates a thriving,
   eco-friendly economy while improving the well-being of the population.

3. **Environmentally-Friendly Design**
   Incorporating sustainable technologies like solar panels and water recycling systems reduces the city's carbon footprint and supports resource efficiency.

4. **Water Management**
   Implementing water circulation and treatment systems supports agriculture and green spaces, such as herbal gardens, promoting sustainability and self-sufficiency.

5. **Flood Prevention**
   Designing intelligent water management systems and utilizing water retention areas helps reduce the impact of flooding, making the city more resilient to climate changes.

Pilot and Urgent Project : Chiang Rai

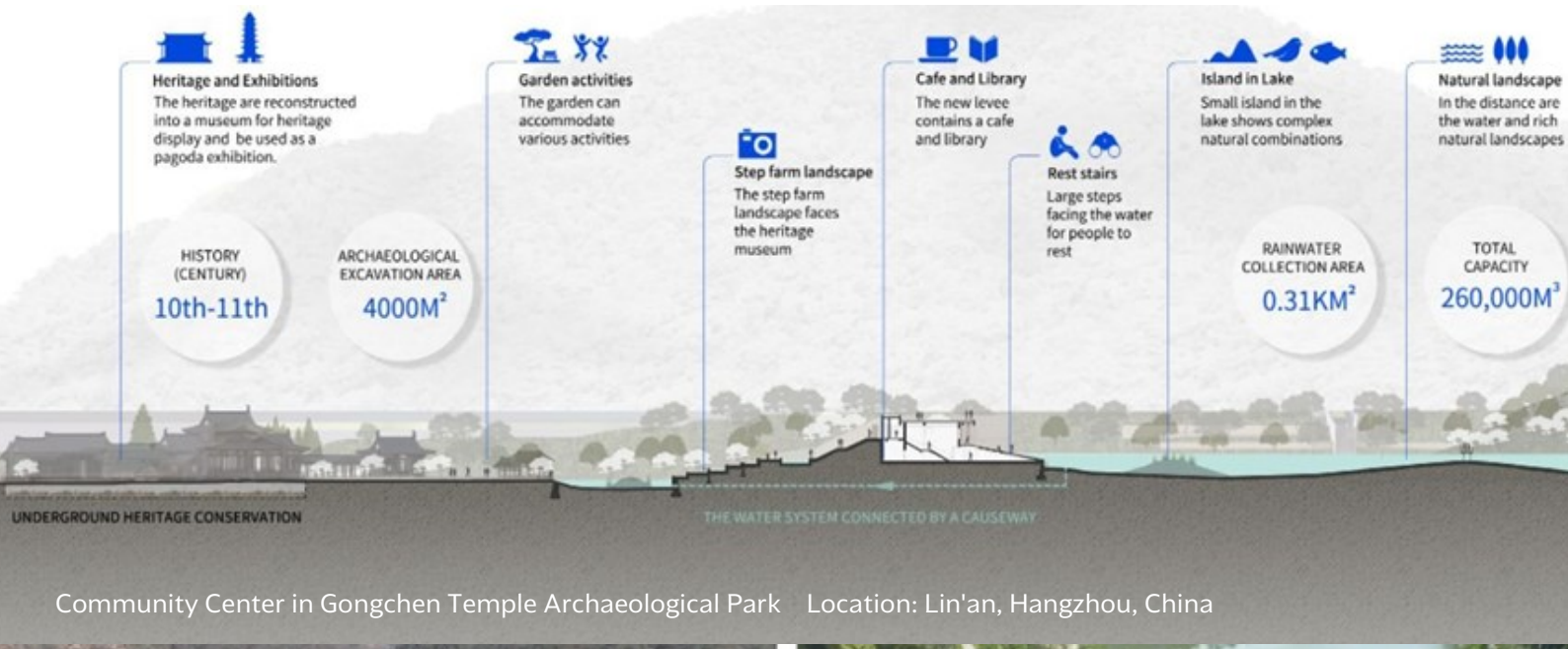


ฝั่งประเทศไทย

Pilot and Urgent Project for the Mae Sai Area, Chiang Rai

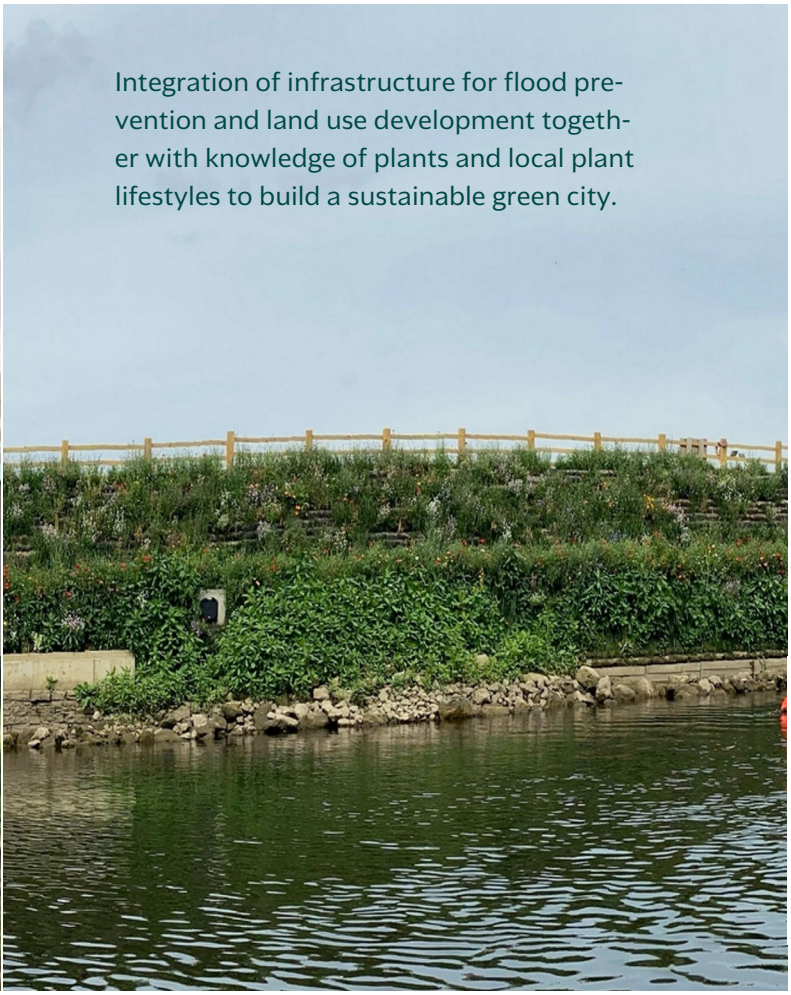
Flood Risk and Landscape Conditions in Mae Sai

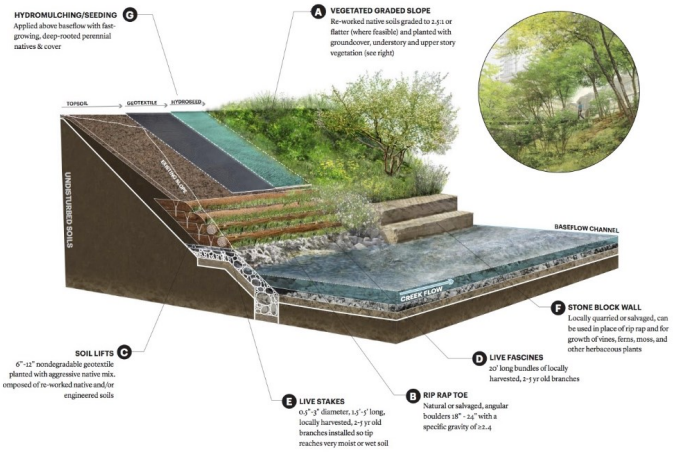
Mae Sai District, located along the Sai River on the Thai-Myanmar border in Chiang Rai Province, features a mix of lowland plains and hilly terrain. The area is prone to flooding, particularly in communities situated near the river and in lower-lying regions. Heavy rainfall and floodwaters from Myanmar during the monsoon season can significantly impact water levels and affect the local economy. These environmental conditions require careful planning and infrastructure development to mitigate flood risks and protect the community and its economic activities.

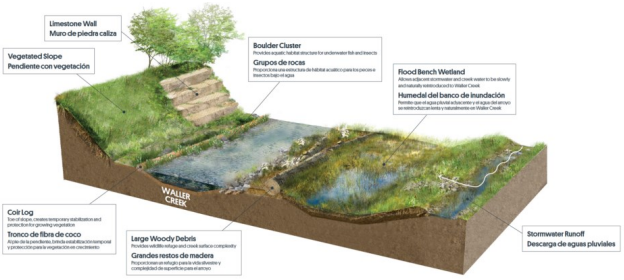


Community Center in Gongchen Temple Archaeological Park Location: Lin'an, Hangzhou, China

- Integration of infrastructure for flood prevention and land use development, combined with knowledge of plants and local plant ecosystems, to build a sustainable green city.



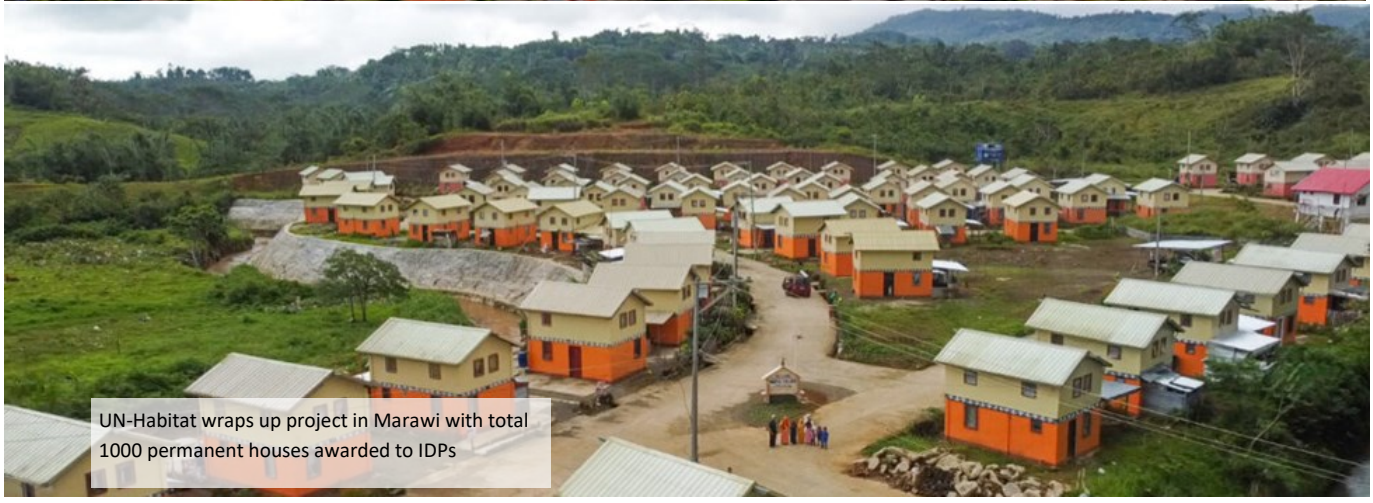




- **Integration of infrastructure for flood prevention and land use development together with knowledge of plants and local plant lifestyles to build a sustainable green city.**

UN-HABITAT

COMPENDIUM OF INSPIRING PRACTICES ON URBAN-RURAL LINKAGES:



UN-Habitat wraps up project in Marawi with total 1000 permanent houses awarded to IDPs

UN-Habitat: Urban-Rural Linkages – Guiding Principles

Developed by UN-Habitat, this framework promotes systematic and sustainable connections between urban and rural areas. The goal is to balance urban and rural development, reduce inequalities, and create economic and social opportunities for all sectors.

Key Principles of Urban-Rural Linkages

1. Integrated Development – Urban and rural development should be interconnected, considering ecological, social, and economic systems.
2. Participatory Governance – Encourages involvement from local governments, communities, private sectors, and NGOs.
3. Functional Economic Linkages – Supports economic integration, such as agricultural supply chains, local industries, and employment.
4. Infrastructure & Mobility Connectivity – Develops roads, energy, water, and transport systems that link urban and rural areas.
5. Sustainable Natural Resource Management – Focuses on efficient and conservation-based management of water, soil, and energy.
6. Sustainable Food Systems & Value Chains – Enhances food security and agricultural markets connected to urban demand.
7. Disaster Risk Reduction & Climate Resilience – Promotes disaster prevention and climate adaptation through coordinated urban-rural management.
8. Access to Basic Services & Social Protection – Reduces service gaps in education, healthcare, and social welfare between urban and rural areas.
9. Sustainable Land Use & Spatial Planning – Encourages eco-friendly urban development while preserving rural agricultural lands.

Investments & Financial Mechanisms – Develops financial systems to support sustainable development in both urban and rural regions.

Significance of Urban-Rural Linkages

This approach enables governments and stakeholders to design policies and projects that foster urban-rural collaboration, reduce inequality, and promote balanced economic, social, and environmental systems. It is essential for Sustainable Urban Development (SUD) and achieving the Sustainable Development Goals (SDGs).

References:

- Sietchiping, R. et al. (2019). *Urban-Rural Linkages: Guiding Principles*. UN-Habitat.
- Bartke, S. et al. (2021). *The UN-Habitat Urban-Rural Linkages Guiding Principles*. Springer.
- UNCCD. (2022). *Urban-Rural Linkages and Ecosystem Restoration*. UNCCD.
- UNESCO. (2019). *UNESCO-CHIC Biosphere Integrated Rural Urbanization Project (BIRUP)*. UNESCO.


Economic Corridors
Subcorridors
YUNNAN (PRC)
GUANGXI (PRC)
MYANMAR
LAO PDR
THAILAND
CAM
VIET NAM
NSEC5
NSEC6
NSEC3
NSEC1&2
NSEC4A
NSEC4B
NSEC4
NSEC4alt
NSEC2
NSEC1
NSEC7&8
NSEC8
NSEC7
EW
NSEC2&7
SEC4
SEC
SEC2
SEC1
SEC3
Disclaimer: Draft. Not authoritative.
0
150
300
600 km

Strategic Plans and Operational Frameworks of International Organizations

GMS and ACMECS: Cross-Border Economic and Sustainable Urban Development

The **Greater Mekong Subregion (GMS) Economic Cooperation Program** focuses on addressing urban expansion and cross-border infrastructure through **Economic Corridors**, such as:

1. **North-South Economic Corridor** (Thailand–Laos–China), improving rural market access.
2. **Strategic Environmental Management**, tackling waste and pollution in Mekong cities.

GMS 2030 Strategy, promoting **Smart Cities** and urban connectivity for economic efficiency.

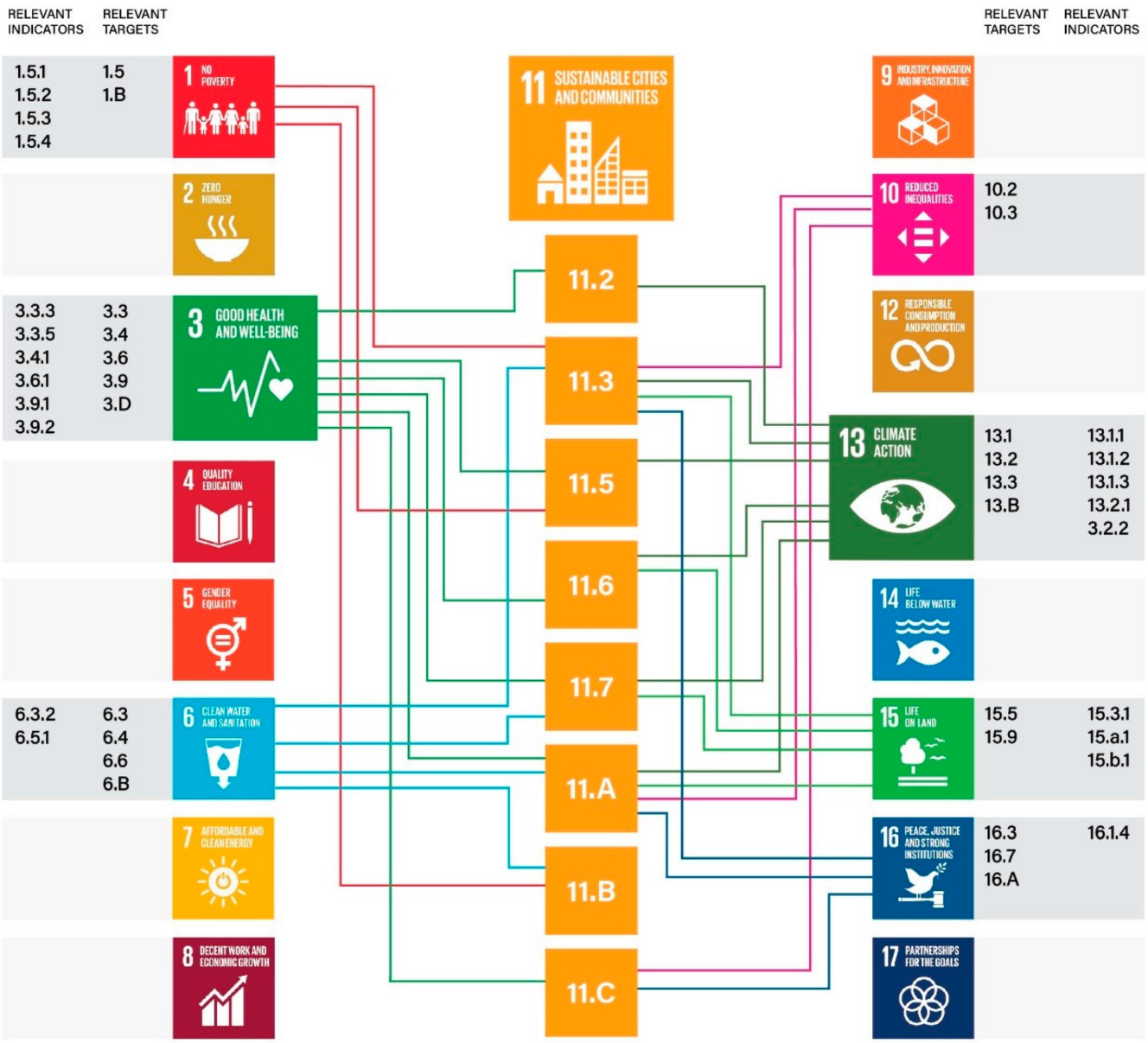
Aligned with **UN SDGs**:

3. **SDG 11**: Sustainable cities and public transport.
4. **SDG 10**: Reducing inequality via cross-border policies.
5. **SDG 17**: International cooperation on transboundary issues.

The **Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS)** unites Myanmar, Thailand, Laos, Cambodia, and Vietnam in **border development and natural resource management**, particularly for shared river systems.

References:

- United Nations (2015). *Transforming our world: the 2030 Agenda for Sustainable Development.*
- UNESCAP (2020). *Smart Cities for All: Inclusive Urban Development in Asia-Pacific.*
- ADB (2019). *GMS Economic Cooperation Program Strategic Framework 2030.*



the SDGs, linking long-term sustainable development with climate change mitigation and adaptation to address health risks [.SDG 11 (sustainable cities) is interconnected with other goals, as progress in non-health sectors (e.g., environmental and socio-economic determinants) also drives healthy urban development. Examples include mental health and non-communicable disease linkages [40]. Figure 1 illustrates SDG 11's synergies with other SDG targets and indicators.

Source
Orsetti, E., Tollin, N., Lehmann, M., Valderrama, V. A., & Morató, J. (2022). *Building resilient cities: Climate change and health interlinkages in the planning of public spaces. Int. J. Environ. Res. Public Health, 19*(3), 1355. https://doi.org/10.3390/ijerph19031355

An Integrated Approach to Sustainable Area Development through Innovation and Social Geography
Resilient Urban Development in a Changing Climate

1. **Technology & Social Geography**
   Integrating smart technology with local knowledge ensures sustainable urban planning. Tools like air pollution monitoring and flood simulations enhance disaster preparedness, but understanding land use, water flows, and settlement history is equally crucial.

2. **Cross-Border Urban Planning**
   Cities are interconnected ecosystems. Programs like GMS Development and SDG 11 emphasize cross-border infrastructure and economic zones to foster resilience and reduce inequality.

3. **Community-Led Urban Resilience**
   Local participation is key to disaster management. Urban farming and community-driven water systems align with SDGs and the Sufficiency Economy Philosophy, ensuring self-sufficiency in food, water, and land use.

4. **Green Landscapes & Food Security**
   Urban green spaces regulate temperatures, absorb water, and sustain agriculture. Preserving peri-urban farmland is vital for long-term food security.

5. **Sufficiency Economy for Cities**
   Balancing progress with resilience, this approach promotes:
   Self-Sufficient Communities, optimizing land and water resources.

6. Economic Resilience, strengthening urban agriculture and local economies.

Source

UN-Habitat. (n.d.). *Urban-Rural Linkages: Guiding Principles*.

Harvard Graduate School of Design. (n.d.). *Envisioning the Rural Metropolis*.

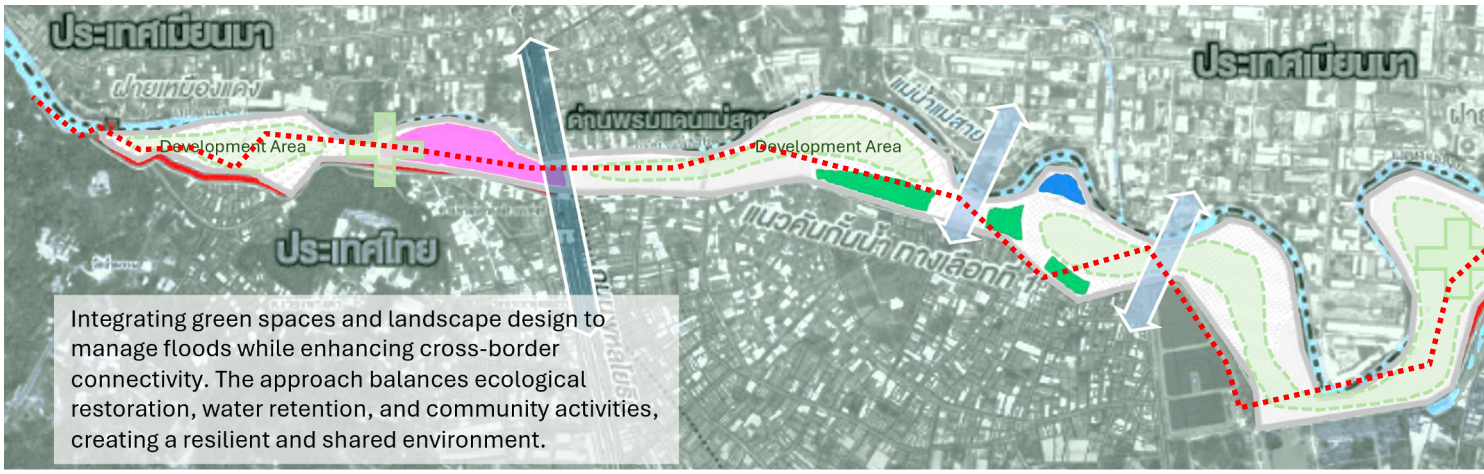
United Nations. (2018). *World Urbanization Prospects: The 2018 Revision*.

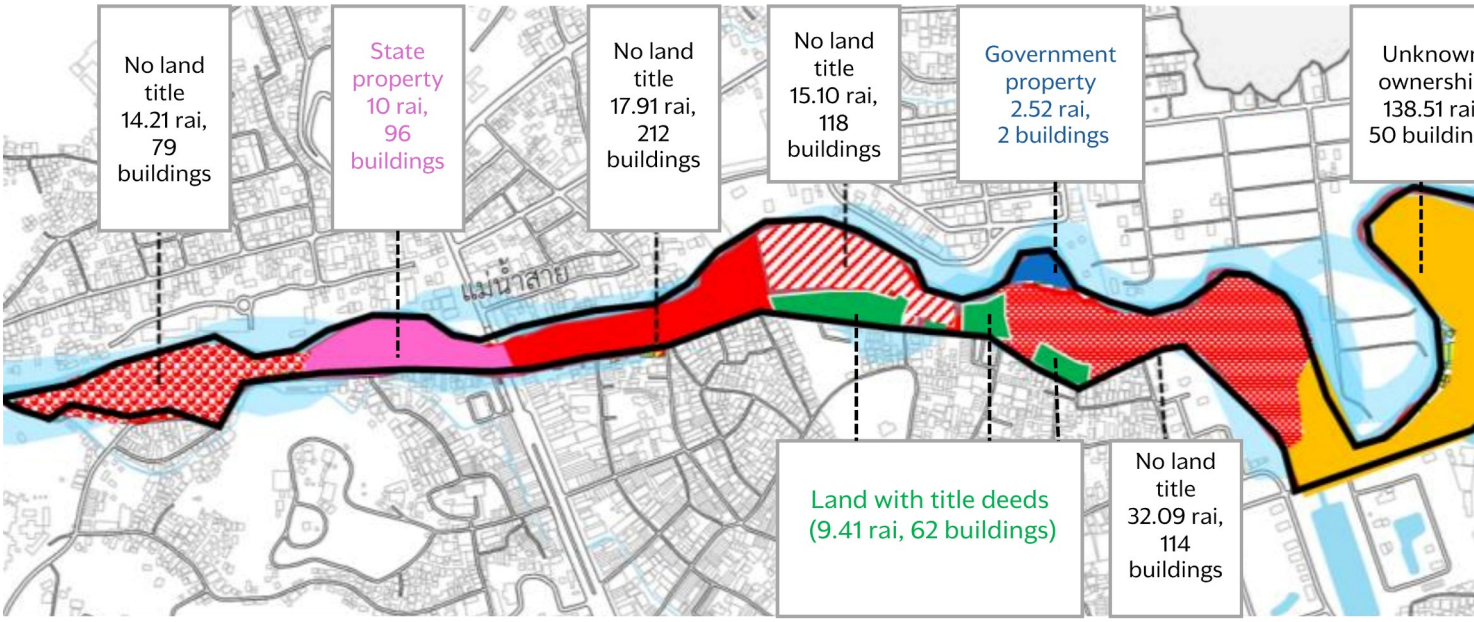
Asian Development Bank (ADB). (1992). *Greater Mekong Subregion Economic Cooperation Program*.

Ayeyawady - Chao Phraya - Mekong Economic Cooperation Strategy (ACMECS). (n.d.).

NTS Mekong. (n.d.). *Transboundary Natural Resource Management and Community Participation*.

Institute of Trade and Development (ITD). (n.d.).





Urgent areas for expropriation and building demolition : Approximate area: 240.84 rai, number of buildings: 733

Source: Department of Public Works and Town & Country Planning

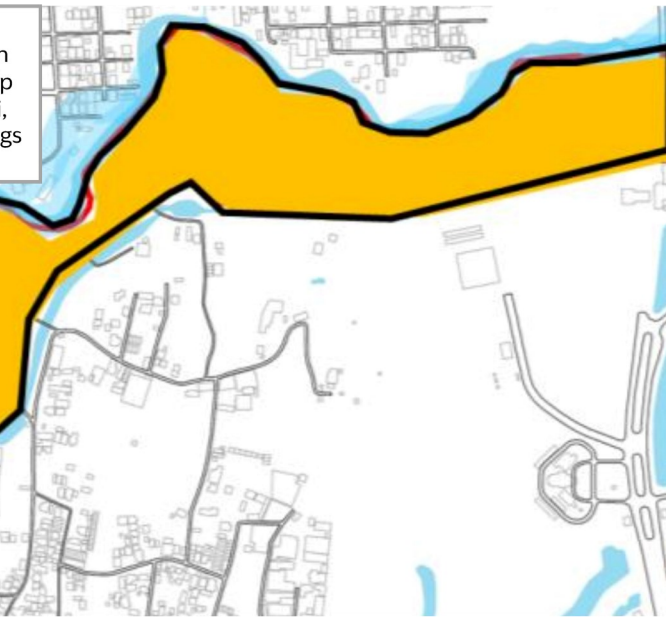
Royal Irrigation Department (RID)

Department of Water Resources (DWR)

Office of the National Economic and Social Development Council (NESDC)

Japan International Cooperation Agency (JICA)

Pilot and Urgent Project
Mae Sai Area, Chiang Rai



The "Pilot and Urgent Project for the Mae Sai Area, Chiang Rai" aims to develop and improve the area to address flood management issues while promoting cross-border connectivity. This is achieved through landscape design and green space management, which not only help in water management and ecological restoration but also provide opportunities for community engagement in various activities within the area.

The approach focuses on restoring and developing the area to be resilient to natural changes, while also fostering connections between Mae Sai and cross-border regions. The development of green spaces will help with water retention, flood prevention, and serve as venues for activities that enhance social and economic ties within the community, as well as promote sustainable tourism and cross-border trade.

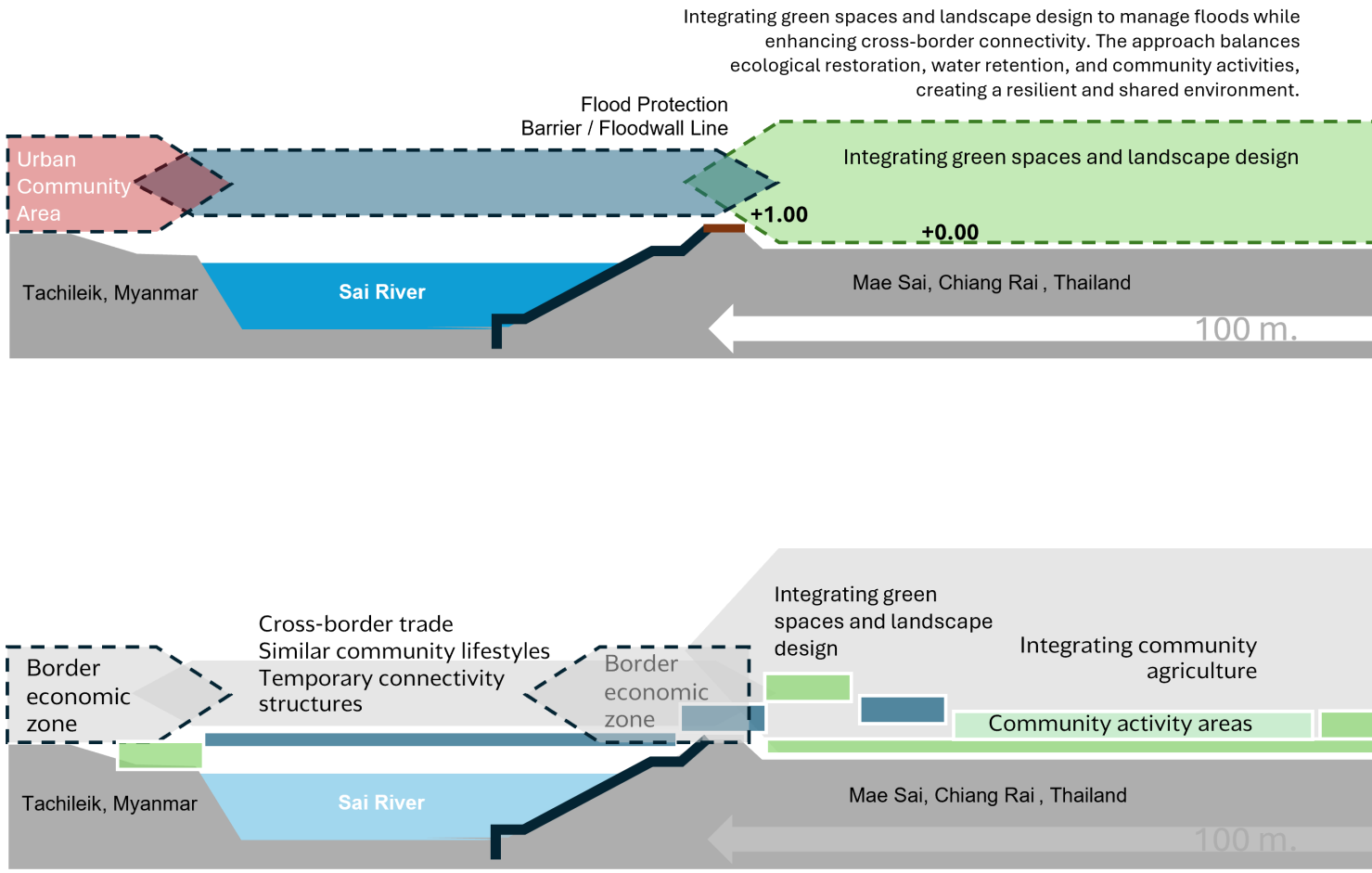
Top Map:

1. Red Line: Thailand side – Proposed flood protection embankment alignment

2. Blue Line: Myanmar side – Proposed flood protection embankment alignment Boundary Line: National border between Thailand and Myanmar

Key Areas Identified on the Map:

1. On the Thailand side: Border towns and economically significant communitiesIncludes existing and proposed roads, border checkpoints, and strategic zones



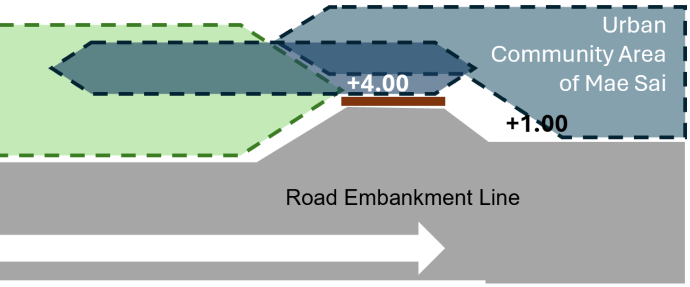
The concept of constructing flood barriers and implementing a flood protection system in the buffer zone along the border river.

Source Selection : Department of Public Works and Town & Country Planning

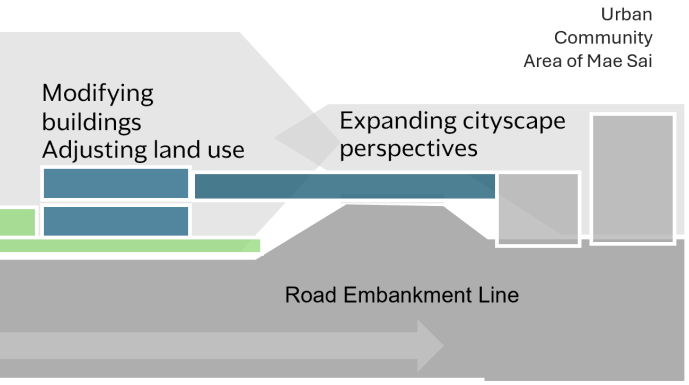
Cross-Section Design – Type 1 (a) : Community and Major Economic Area and Agricultural or Low-Density Area

1. Integrated flood embankment and road construction according to Royal Irrigation Department (RID) standards
2. Flood capacity: 430 cubic meters per second
3. Total reserved width: 100 meters on average (range: 80–150 meters)
4. Top elevation of embankment: +396.00 meters
5. Typical embankment height: Approximately 3 meters
6. Includes service road, tree buffer zone, and community access paths
7. Designed to minimize impact on existinga land use with a focus on flood protection and green space
8. Road width: 7 meters (for shared access and maintenance)

Pilot and Urgent Project
Mae Sai Area, Chiang Rai



The concept of constructing flood barriers and implementing a flood protection system



Approaches to land adaptation

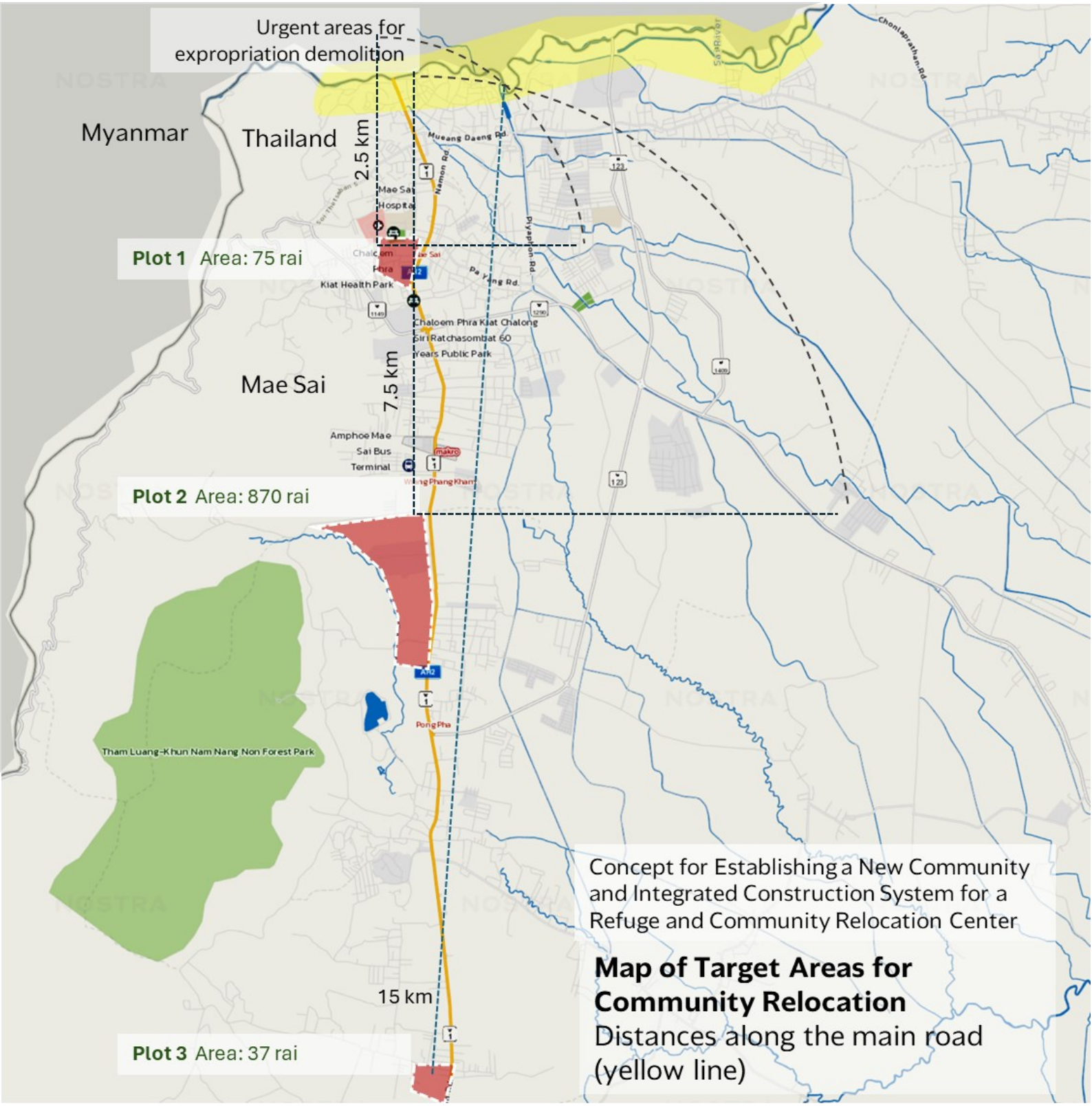
The border area between Tachileik, Myanmar, and Mae Sai, Chiang Rai, Thailand, holds great potential for integrated development that connects both countries economically, socially, and environmentally. The Sai River, which currently acts as a natural boundary, can be transformed from a dividing line into a shared, collaborative space.

The development concept focuses on establishing border economic zones on both sides, along with temporary connectivity structures to enhance cross-border interaction. These changes aim to support local trade and joint economic activities, while respecting the existing urban fabric.

On the Thai side, the plan includes a comprehensive transformation of the landscape—integrating green spaces, promoting community agriculture, and creating public activity zones. Existing buildings and land use are to be adjusted to align with new community needs, while cityscape perspectives are expanded to improve the overall visual and functional quality of the area.

This approach exemplifies how a "border" can evolve into a "shared space," fostering peaceful cooperation and mutual growth. It not only strengthens cross-border relationships but also improves the quality of life for local communities through thoughtful, sustainable urban-riverfront development.

CASE STUDY
THE HYDROELECTRIC CANAL PrizeWinner in Landscape Location
Boston, Massachusetts, USA CompanyPaul Lukez Architecture


Urgent areas for expropriation demolition
Myanmar
Thailand
2.5 km
Mae Sai Hospital
Plot 1 Area: 75 rai
Chaloem Phra Kiat Health Park
Chaloem Phra Kiat Chalong Sirirat chasombat 60 Years Public Park
Mae Sai
7.5 km
Amphoe Mae Sai Bus Terminal
Plot 2 Area: 870 rai
Tham Luang-Khun Nam Nang Non Forest Park
Pong Pha
15 km
Plot 3 Area: 37 rai
Concept for Establishing a New Community and Integrated Construction System for a Refuge and Community Relocation Center
Map of Target Areas for Community Relocation
Distances along the main road (yellow line)

Post-disaster community relocation site

Concept for Establishing a New Community and Integrated Construction System for a Refuge and Community Relocation Center

This concept is based on creating an integrated system for developing a new community and constructing a refugee and resettlement center. It emphasizes utilizing the existing landscape characteristics, which originally lack defined boundaries or physical enclosures. Instead of relying on hard barriers, the approach leverages landscape design and topography, harmonized with architectural elements, to define space and

Integrated Cross-Border Urban and Geographical Management

Managing border areas between cities, provinces, and countries requires a shift from administrative boundaries to geographical and ecological systems to reduce conflicts and improve resource management.

1. Geographical-Based Governance – Managing regions based on watersheds, forests, and coastlines rather than administrative divisions can enhance coordination. Example: A unified management system for the Chao Phraya River Basin across multiple provinces.

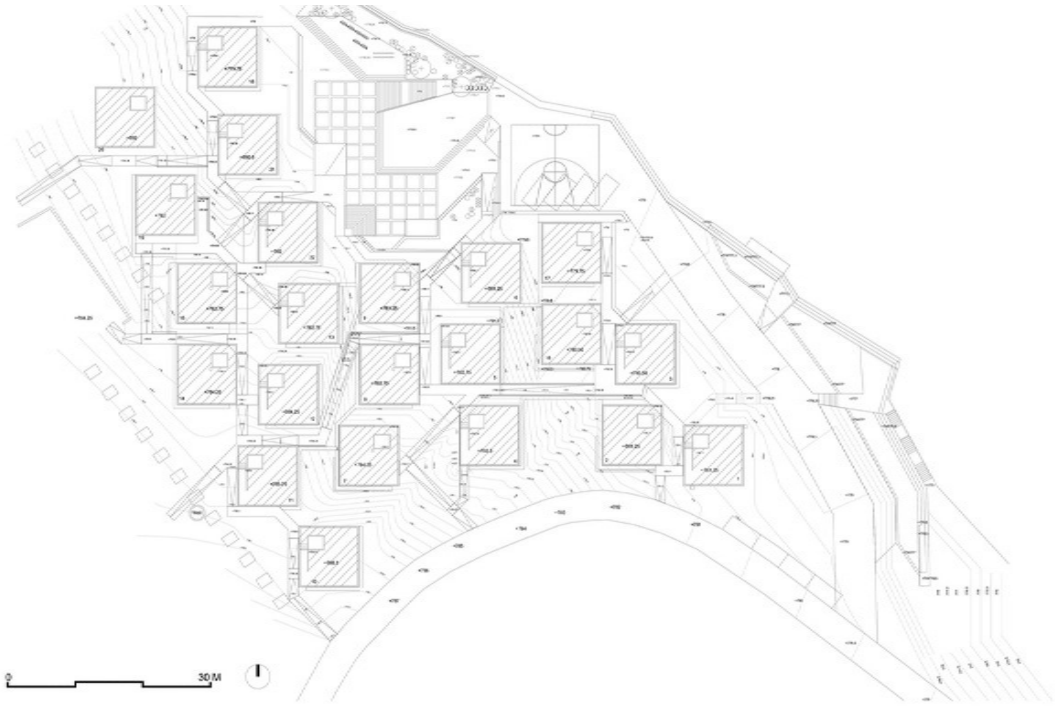
2. Metropolitan & Economic Corridor Planning

3. National Disaster Management Integration – Floods, wildfires, and storms impact multiple regions. A nationwide disaster response system with real-time data sharing can improve preparedness and response.

Cross-Border Urban & Environmental Management – Shared environmental issues like transboundary haze and water resources require international cooperation, such as ASEAN-led agreements for sustainable resource management.

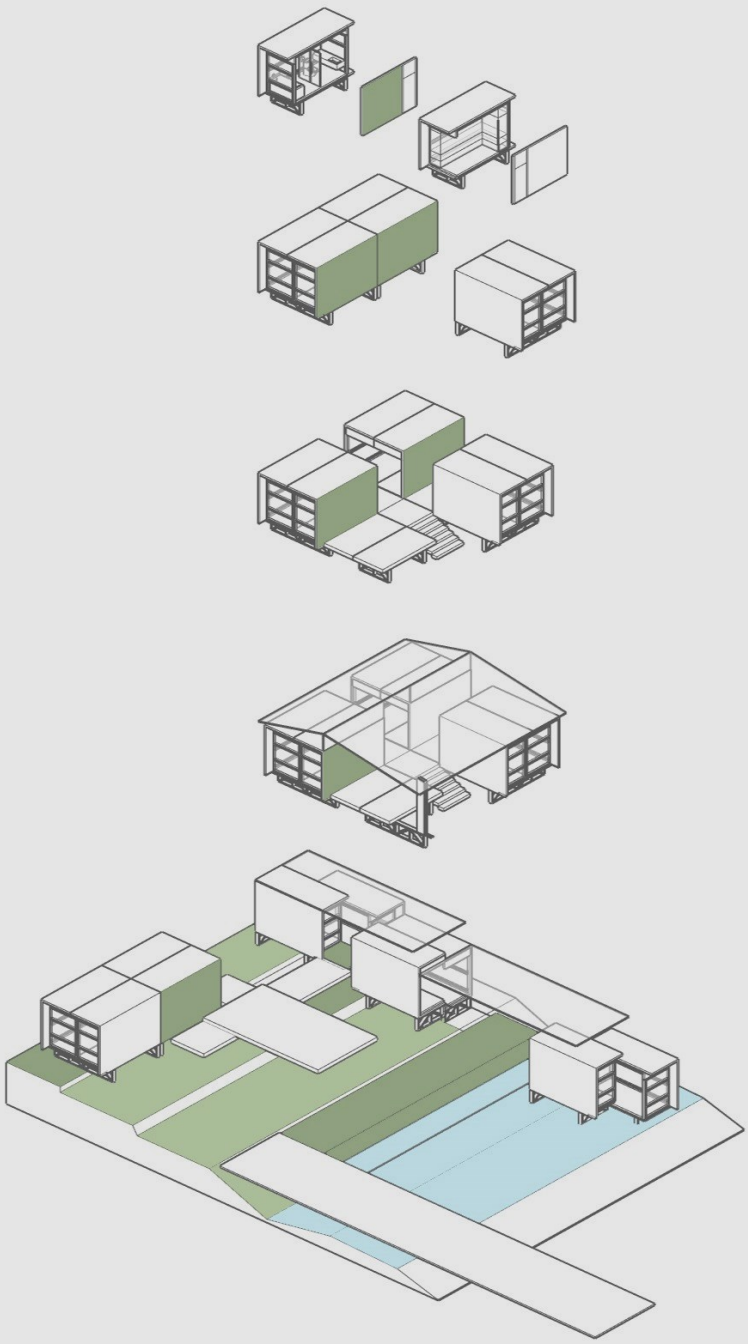
Shifting from siloed governance to integrated geographical management enhances urban resilience, resource sustainability, and disaster preparedness at national and regional levels.

Green-roofed village shows a more sustainable way to rebuild after disasters



Pilot and Urgent Project
Mae Sai Area, Chiang Rai

Case Study ：Jintai Village is located near Guangyuan, Sichuan Province — one of the places hardest hit by the May 12th Wenchuan Earthquake in 2008. The disaster left nearly 5 million people homeless and it is estimated that 80% of all buildings in the affected area were destroyed. Major reconstruction efforts have taken place. However, in July 2011, after heavy rainfall and landslides in the region around Jintai Village, many of newly rebuilt homes and some in process were once again destroyed. Despite this tragic event, locals were left without further donations or aid. With support from the local government and NGOs, this project demonstrates a socially and environmentally sustainable model for earthquake reconstruction while examining the many nuances of reconstructing a community.



Concept Summary:
Flexible Modular Growth with Centralized Community Space

1. Starts with a Pair of Modular Units (Top)
2. Assembled quickly and independently
3. Elevated structure for flood protection
4. Addition of a Shared Central Space Units are connected with a wooden walkway or central deck
5. Encourages communal living and interaction
6. Installation of a Light Roof Canopy
7. Covers both living units and the shared area
8. Protects from sun and rain while allowing natural light in
9. Formation of a Cluster (Bottom Right)
10. Units expand horizontally into a cluster
11. Creates a flexible shelter center
12. Suitable for evacuation centers, temporary shelters, or community hubs

Modular Housing & Disaster Relief

1. Scalable Design: From individual units to community clusters
2. Adaptable to Terrain: Elevated and lightweight structure, ideal for flood- or quake-prone areas
3. Community-Oriented: Central platform fosters interaction and cooperation
4. Fast Deployment & Reusability: Ideal for emergency relief and temporary settlement needs

Community-Based Resilience: Designing Shared Public Spaces and Disaster-Proof Housing for Social Sustainability

The integration of architectural design and space planning is key to transforming communities while enabling mobility, with the goal of creating disaster-resilient and sustainable homes for people living in disaster-prone or vulnerable areas.

Over the past decade, disasters have left over 23 million people homeless. For example, when Hurricane Maria devastated the Caribbean island of Dominica last year, only 11% of homes remained standing. It is often the most vulnerable populations, such as the poorest, who suffer the most in these situations. With half of the urban infrastructure expected to be built by 2050 still in development, decisions made over the next 15-20 years will greatly influence the shape of future cities.

Designing disaster-resilient and sustainable housing is critical to strengthening the resilience of urban areas. Utilizing durable materials that are locally sourced and designing structures that are adaptable to environmental shifts is essential to ensure long-term safety and stability.

Such resilient housing designs can help communities recover swiftly without being overly reliant on external assistance. Furthermore, these designs can be replicated across various regions, providing local employment and fostering sustainable development practices.

By improving the design and functionality of homes and communal spaces, we can enhance community security and resilience, helping cities to effectively adapt to the challenges posed by future natural disasters.

Source

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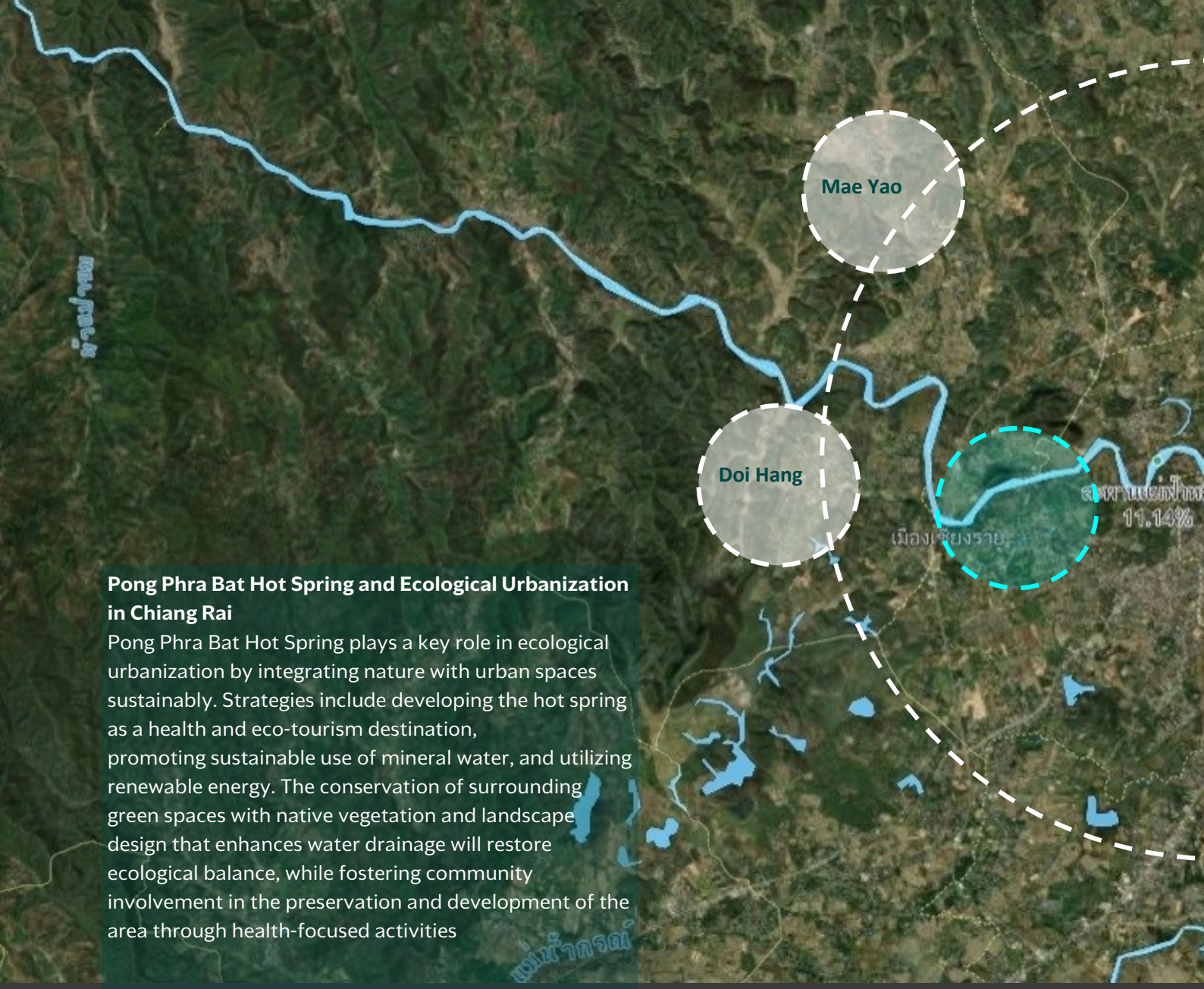


Pong Phra Bat Hot Spring and Ecological Urbanization in Chiang Rai

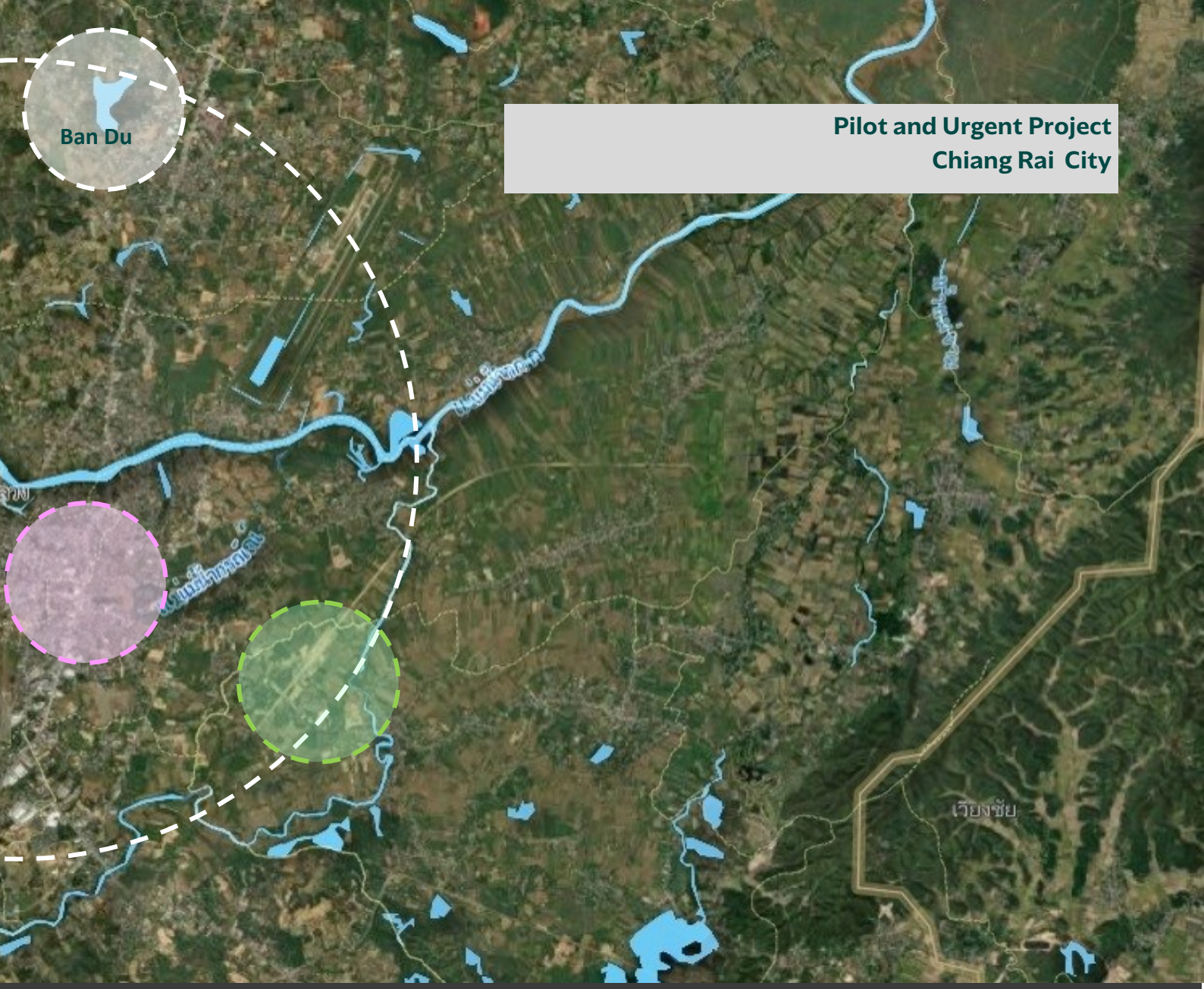
Pong Phra Bat Hot Spring plays a key role in ecological urbanization by integrating nature with urban spaces sustainably. Strategies include developing the hot spring as a health and eco-tourism destination, promoting sustainable use of mineral water, and utilizing renewable energy. The conservation of surrounding green spaces with native vegetation and landscape design that enhances water drainage will restore ecological balance, while fostering community involvement in the preservation and development of the area through health-focused activities

Nong Bua Lake at Somdet Phra Srinakarin Park, Chiang Rai

Nong Bua Lake is a vital water source in northern Chiang Rai, functioning as a water retention area to slow the flow of water before it reaches the Kok River, helping reduce flooding, especially during high water periods. Systematic water management in this area will improve water flow control and enhance ecosystem balance.

Public Development Area along the Kok River in Chiang Rai

Chiang Rai Beach, a public area in the city, has been developed into a herbal garden using the riverbank landscape as a model for managing wetland areas. This project focuses on restoring and maintaining the environment to support sustainable community use. It promotes the use of local medicinal plants, enhances water absorption, and fosters biodiversity, improving flood management and maintaining ecological balance along the riverbanks.

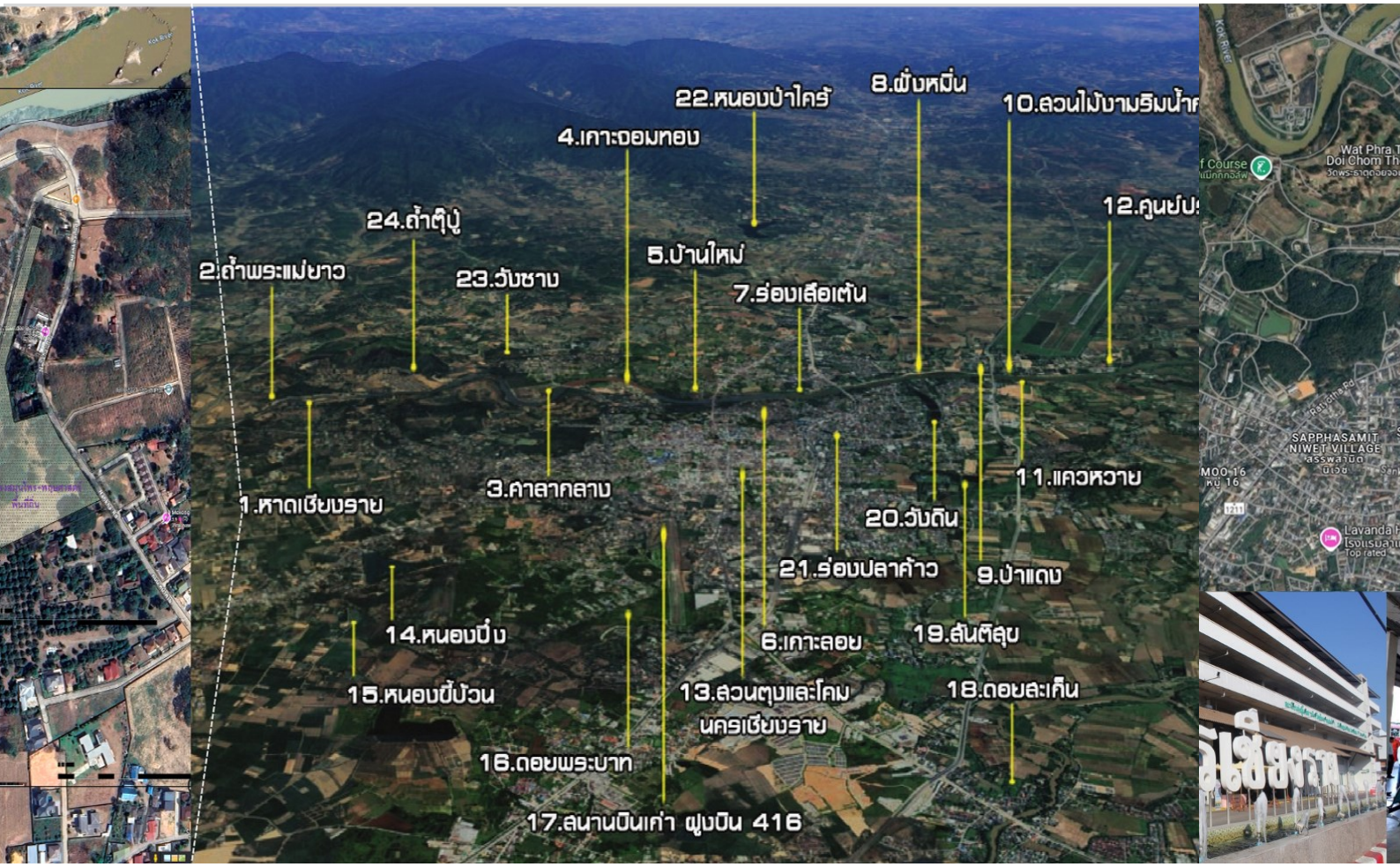


Development of Prasobsuk Road District, Chiang Rai: A Model Green City and Learning Community (Chiang Rai Bus Terminal)

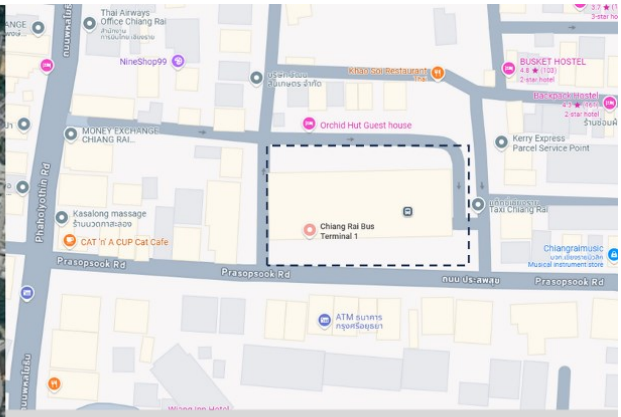
Chiang Rai's old town, rich in historical and cultural significance, is located at the heart of this key northern Thai city. Beyond its architectural heritage, temples, and local traditions, the district serves as a central hub connecting economic, social, and environmental aspects of urban life. As urban planning shifts toward sustainability, this area holds the potential to become a model district integrating Green City, Smart City, and Wellness City principles, aiming to preserve local identity while addressing contemporary needs.

Green Economy Zone TOD Development

The TOD project in Chiang Rai, located in the Greenbelt area, emphasizes creating a Green Economy Zone by integrating urban development with environmental conservation. This approach ensures that development does not negatively impact natural and agricultural lands. The project supports eco-friendly economic activities, such as renewable energy use, the creation of green spaces to improve air quality, and promoting public transportation to reduce car use and pollution, improving residents' quality of life. Sustainable land management is at the core of this development, which fosters environmentally friendly economic growth.


22.หนองบ้าไคร้
8.ฝั่งหมิ่น
10.สวนไม้งามริมน้ำ
4.เกาะดอมทอง
12.คูนย์ป
24.ถ้ำตุ๋ปู่
5.บ้านใหม่
2.ถ้ำพระแม่ยาว
23.วังซาง
7.ร่องเสือเต้น
1.หาดเชียงราย
3.คาลาคลาง
11.แควหวาย
20.วังดิน
21.ร่องปลาค้าว
9.ป่าแดง
14.หนองบึง
6.เกาะลอย
19.สันติสุข
15.หนองขี้ม้วน
13.สวนตุงและโคม
นครเชียงราย
18.ดอยสะเก็น
16.ดอยพระบาท
17.ลานบินเก่า ฝูงบิน 416

Pilot and Urgent Project
Chiang Rai City



Chiang Rai Municipality
Inner city

Development of Prasobsuk Road District, Chiang Rai: A Model Green City and Learning Community

(Chiang Rai Bus Terminal)

Chiang Rai's old town is a historically and culturally significant area, located at the heart of this key northern city of Thailand. Beyond its architectural heritage, temples, and local way of life, the district serves as a central hub connecting the city's economic, social, and environmental aspects in the context of modern urban development.

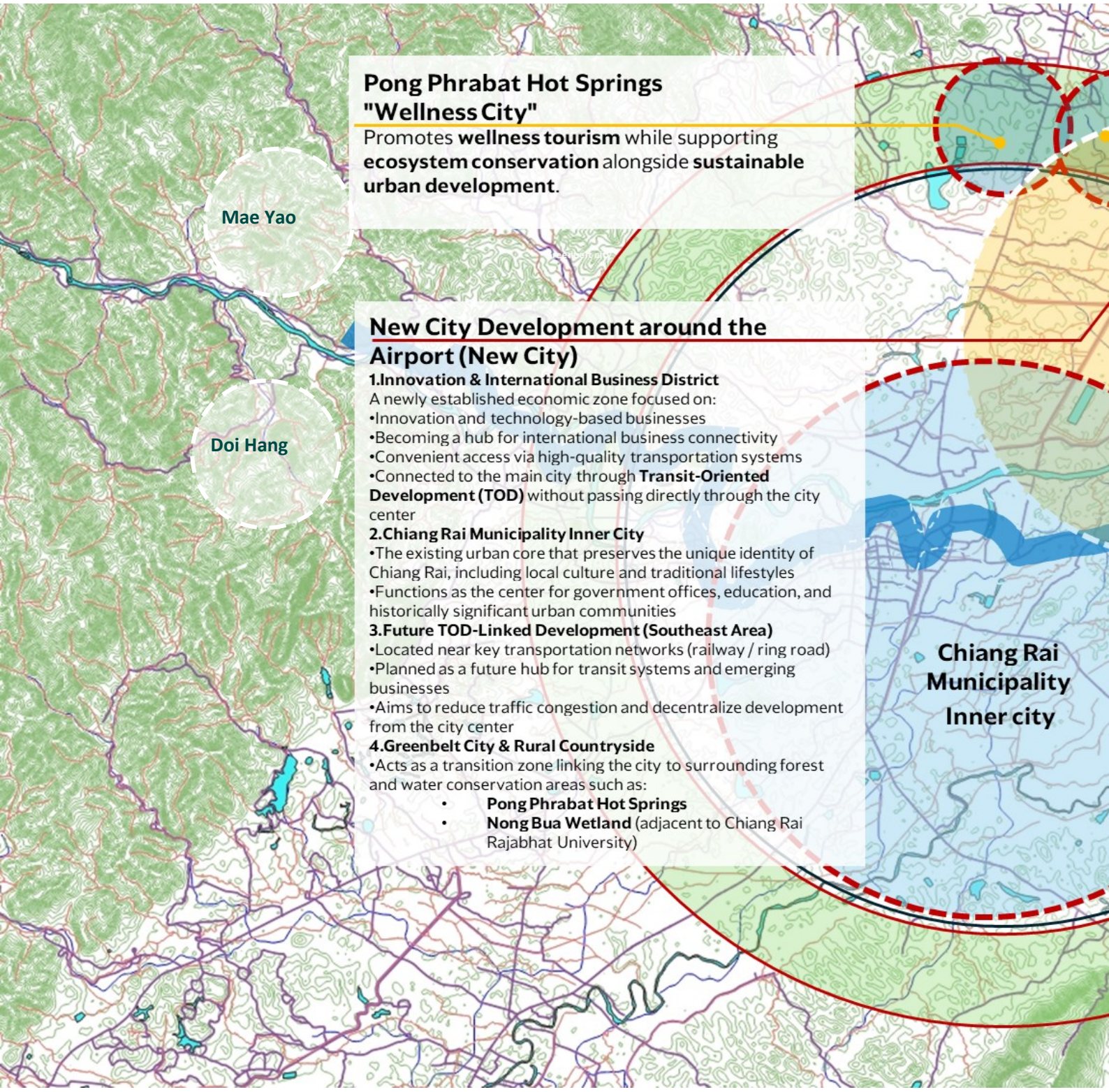
As urban planning shifts towards sustainability, Chiang Rai's old town holds great potential to become a model district that integrates **Green City, Smart City, and Wellness City** principles. This approach aims to balance the **preservation of local identity** with development that meets the evolving needs of contemporary society.

Community Area Development and Landscape Improvement Project for the Riverbank Cityscape Along the Kok River, Chiang Rai Municipality, Mueang Chiang Rai District, Chiang Rai Province
Project Length: 1,845 meters

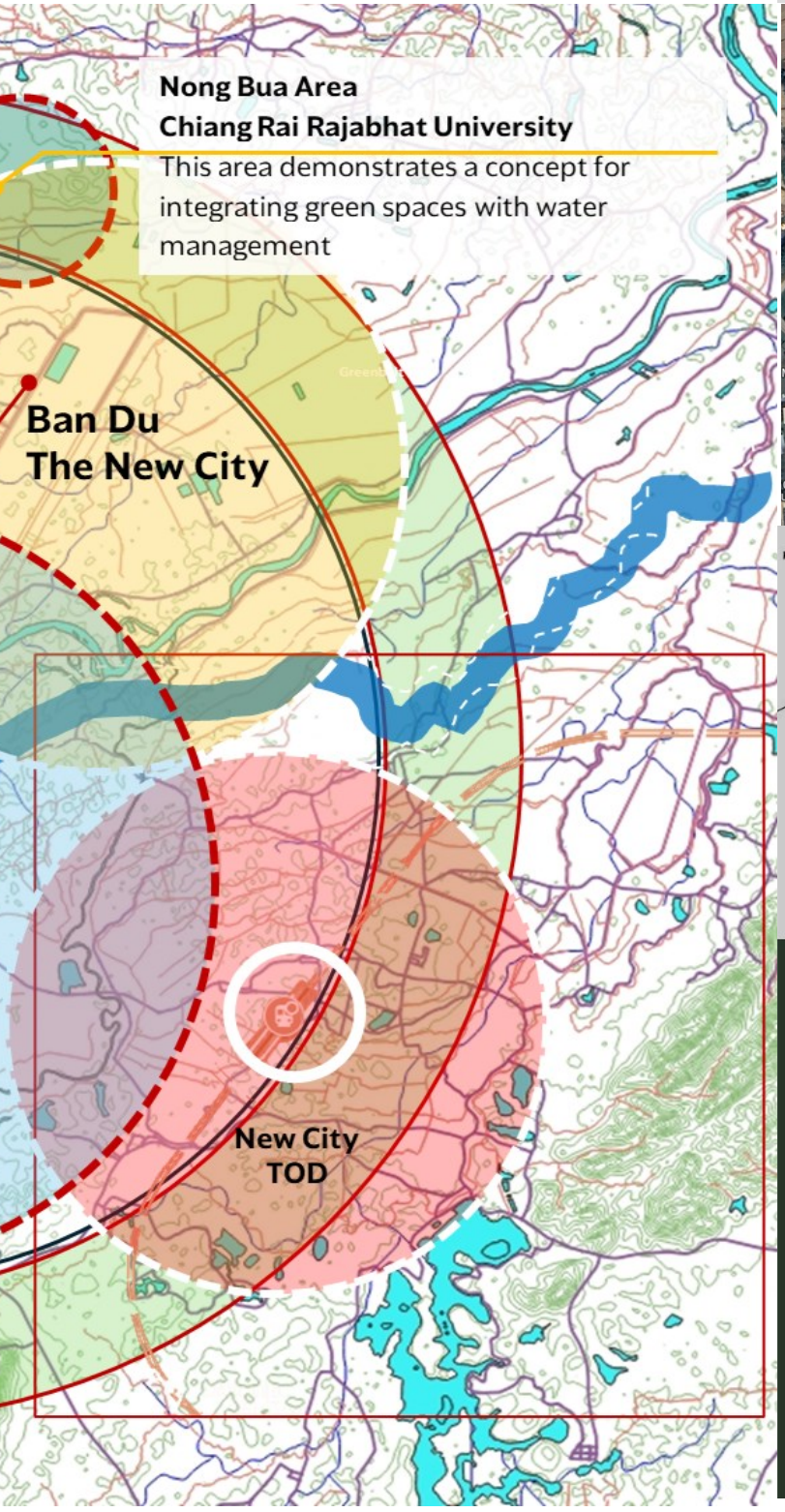
Construction of a Riverbank Protection Dam Along the Kok River
Wiang Kue Na Village, Rim Kok Subdistrict, Mueang Chiang Rai District, Chiang Rai Province
Project Length: 300 meters

Pilot and Urgent Project
Chiang Rai City

Example Concept for the Development of the Chiang Rai Riverside Area
A Green Area with Local Plants
Construction of a Riverbank Protection Dam Along the Kok River
Wiang Kue Na Village, Rim Kok Subdistrict, Mueang Chiang Rai District, Chiang Rai


Pong Phrabat Hot Springs
"Wellness City"
Promotes **wellness tourism** while supporting **ecosystem conservation** alongside **sustainable urban development**.
Mae Yao
Doi Hang
New City Development around the Airport (New City)
1.Innovation & International Business District
A newly established economic zone focused on:
•Innovation and technology-based businesses
•Becoming a hub for international business connectivity
•Convenient access via high-quality transportation systems
•Connected to the main city through **Transit-Oriented Development (TOD)** without passing directly through the city center
2.Chiang Rai Municipality Inner City
•The existing urban core that preserves the unique identity of Chiang Rai, including local culture and traditional lifestyles
•Functions as the center for government offices, education, and historically significant urban communities
3.Future TOD-Linked Development (Southeast Area)
•Located near key transportation networks (railway / ring road)
•Planned as a future hub for transit systems and emerging businesses
•Aims to reduce traffic congestion and decentralize development from the city center
4.Greenbelt City & Rural Countryside
•Acts as a transition zone linking the city to surrounding forest and water conservation areas such as:
• **Pong Phrabat Hot Springs**
• **Nong Bua Wetland** (adjacent to Chiang Rai Rajabhat University)
Chiang Rai Municipality Inner city

Pilot and Urgent Project
Ban Du , Chiang Rai



Pong Phra Bat Hot Spring and the Concept of Ecological Urbanization in Chiang Rai

Pong Phra Bat Hot Spring can play a key role in the ecological urbanization of Chiang Rai by integrating nature with urban spaces in a sustainable manner. Relevant approaches include:

Development of the Hot Spring as a Health and Eco-Tourism Destination

- Promoting the sustainable use of mineral water resources
- Developing environmentally friendly infrastructure, such as utilizing renewable energy on-site

Conservation and Restoration of Green Spaces Around the Hot Spring

- Planting native vegetation to maintain ecological balance
- Designing landscapes that enhance natural water drainage

Integrating the Hot Spring with the Local Community and Way of Life

- Encouraging community participation in the preservation and development of the hot spring
- Creating health-focused activities, such as therapeutic hot spring baths and yoga in natural gardens

Nong Bua Area, near Chiang Rai Rajabhat University

Concept: Transforming Indoor Gardens into Local and Medicinal Herb Gardens for Value and Benefit Creation

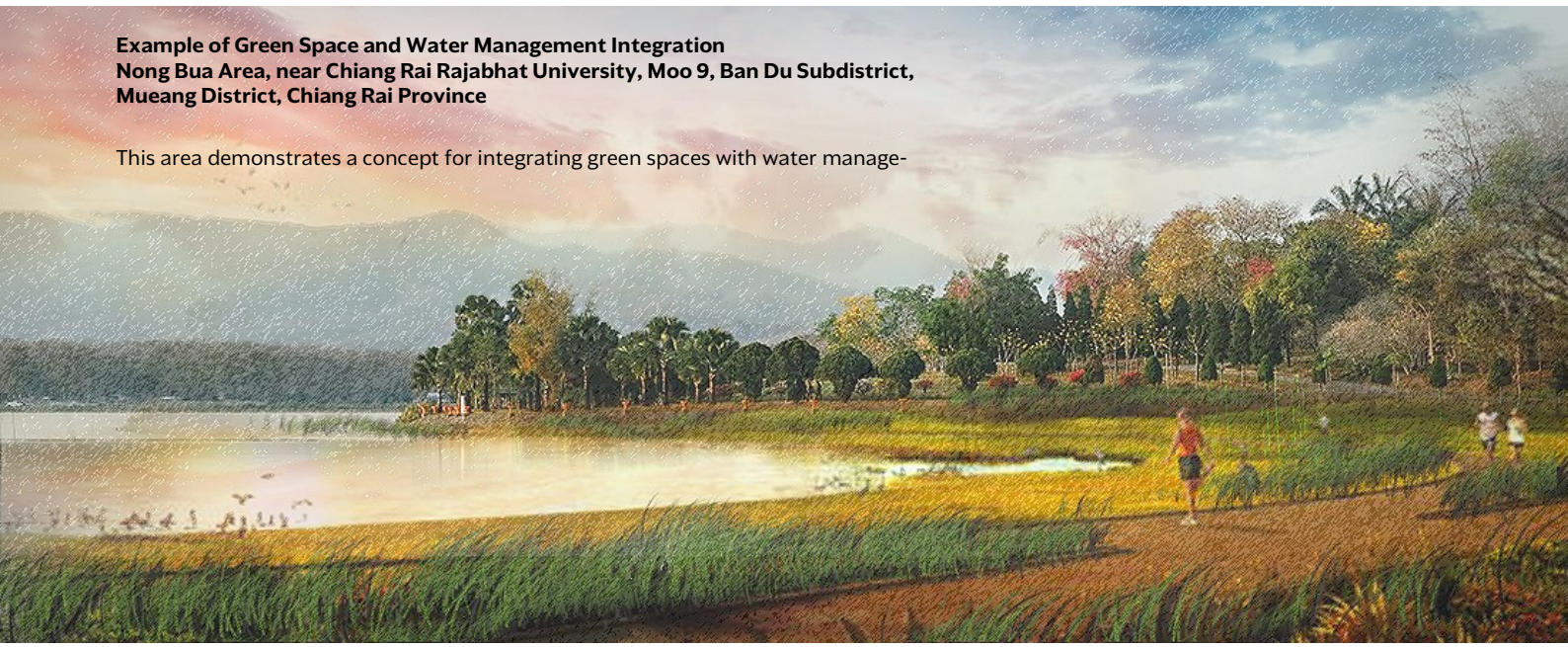
Case Study: Medicinal Garden, Novartis, Switzerland

This herb garden was inspired by the *Medieval Physic Garden*, a traditional healing herb garden from the Middle Ages. It is designed as a space for meditation and wellness promotion. The garden reflects the revival of interest in medicinal plants for disease treatment, immune support, and symptom relief. Its development aligns with the growing global attention to traditional medicine approaches. Although located within the headquarters of the pharmaceutical giant Novartis, this garden symbolizes a convergence of modern medicine and the future potential of herbal remedies.

Implementation Guidelines for Local Spaces and Buildings

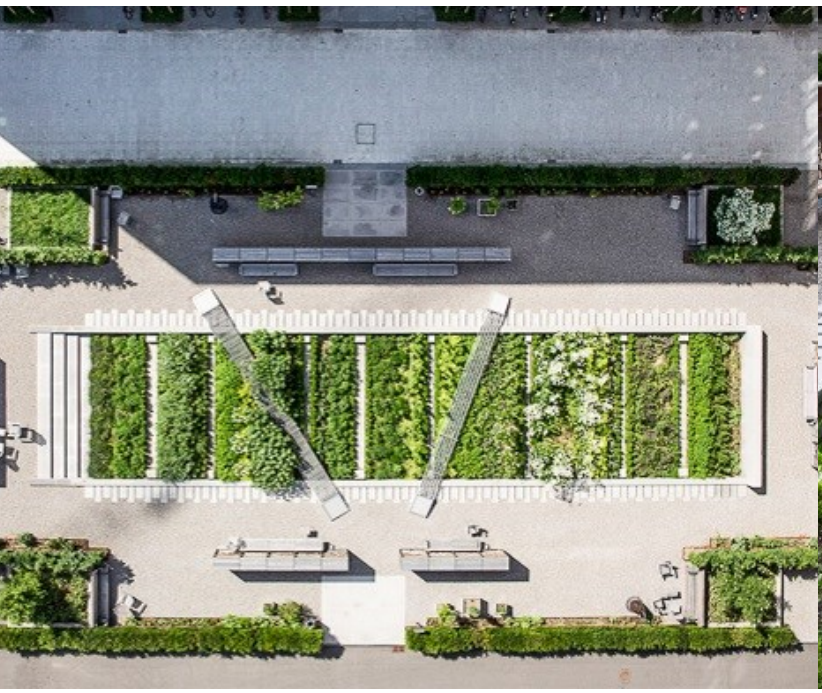
1. Convert existing indoor green spaces into gardens of medicinal and local plants.
2. Promote the use of herbal remedies to support the health of staff and the public.
3. Reduce garden maintenance costs by using plants suited to the local environment.
4. Integrate the garden's yield into organizational use, aligning with circular economy principles.

Pilot and Urgent Project
Ban Du , Chiang Rai



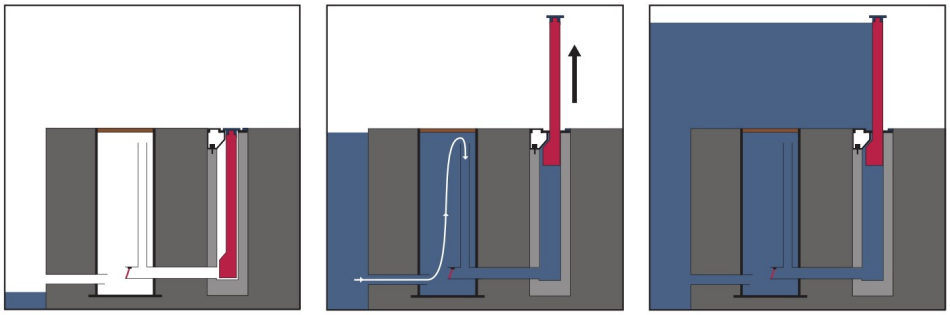
Example of Green Space and Water Management Integration
Nong Bua Area, near Chiang Rai Rajabhat University, Moo 9, Ban Du Subdistrict, Mueang District, Chiang Rai Province

This area demonstrates a concept for integrating green spaces with water manage-



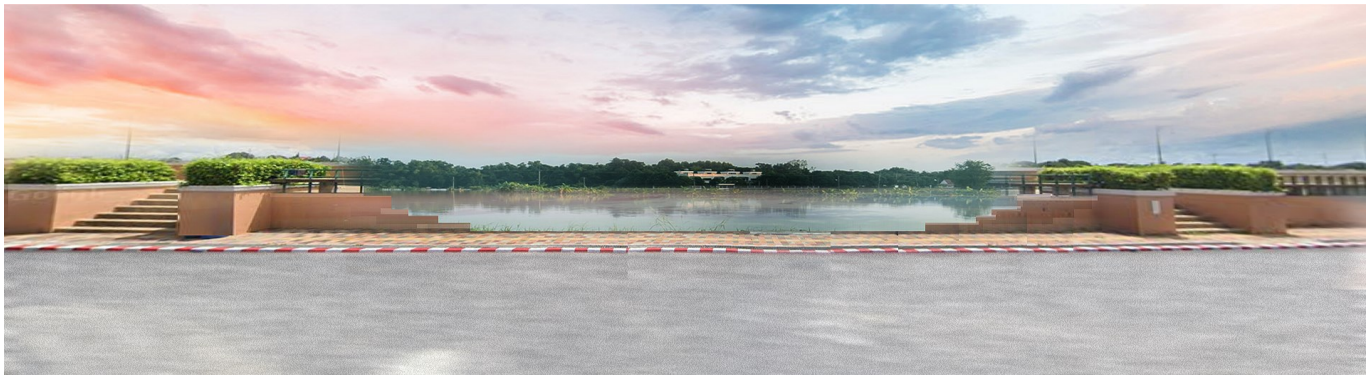
Application of Self-Closing Flood Barrier in Riverbank Contexts in Thailand
The Self-Closing Flood Barrier is an automatic flood protection system that can be adapted to the riverbank context in Thailand, particularly in areas where the goal is to minimize visual obstruction and where a non-permanent but highly effective solution is needed.

1. **Reduces Impact on Visual Landscape**
2. **No Pre-installation Labor Required**
3. **Suitable for Public Areas and Conservation Zones**
4. **Supports Installation in Various Area Sizes**
5. **Minimizes Impact on Traffic Flow and Riverbank Accessibility**



Saint John Decapitation Church (in Schellebelle)
WICHELEN / BELGIUM

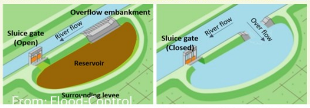
Current Floodwall and Riverbank Barrier along the Chao Phraya River in Singburi Province
The existing structure is a permanent concrete flood barrier that helps prevent flooding but obstructs the view and limits access to the riverbank.



A conceptual image of the Self-Closing Flood Barrier system during normal water levels.
The flood barrier is concealed underground, keeping the riverbank area open, easily accessible, and unobstructed, preserving the view.

A conceptual image of the Self-Closing Flood Barrier system during high water levels.
The system operates automatically, with the water barrier panels rising to counter floodwaters, preventing overflow without the need for manual installation.

Case Study



แผนพัฒนาพื้นที่ตามแนวคิด Green City

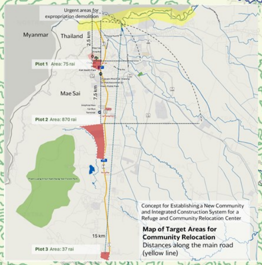
1.การใช้พื้นที่สีเขียวเชิงเกษตรพื้นถิ่น
- ส่งเสริมการปลูกพืชพื้นบ้านและเกษตรยั่งยืน
- เชื่อมกับระบบเศรษฐกิจชุมชนและตลาดท้องถิ่น

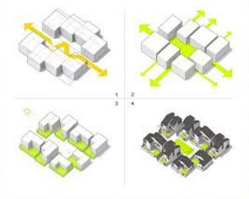
2.เศรษฐกิจชุมชน–สาธารณะ
- สร้างตลาดใหม่ที่สัมพันธ์กับภูมิประเทศดั้งเดิม
- พัฒนาเป็นพื้นที่สาธารณะรองรับกิจกรรมของชุมชน

3.โครงสร้างการสัญจร
- เชื่อมพื้นที่กับแนวเส้นทางพัฒนาใหม่และรอยต่อสะพาน
- จัดระบบสัญจรให้สะดวก ปลอดภัย และรองรับกิจกรรม

4.การจัดการพื้นที่และความปลอดภัย
- คัดแยกพื้นที่ที่อยู่ใกล้แนวกันน้ำให้มีระบบจัดพื้นที่จอดรถสาธารณะอย่างเหมาะสม
- วางแนวถนนตามพื้นที่ว่างเพื่อเชื่อมโยงการใช้สอย

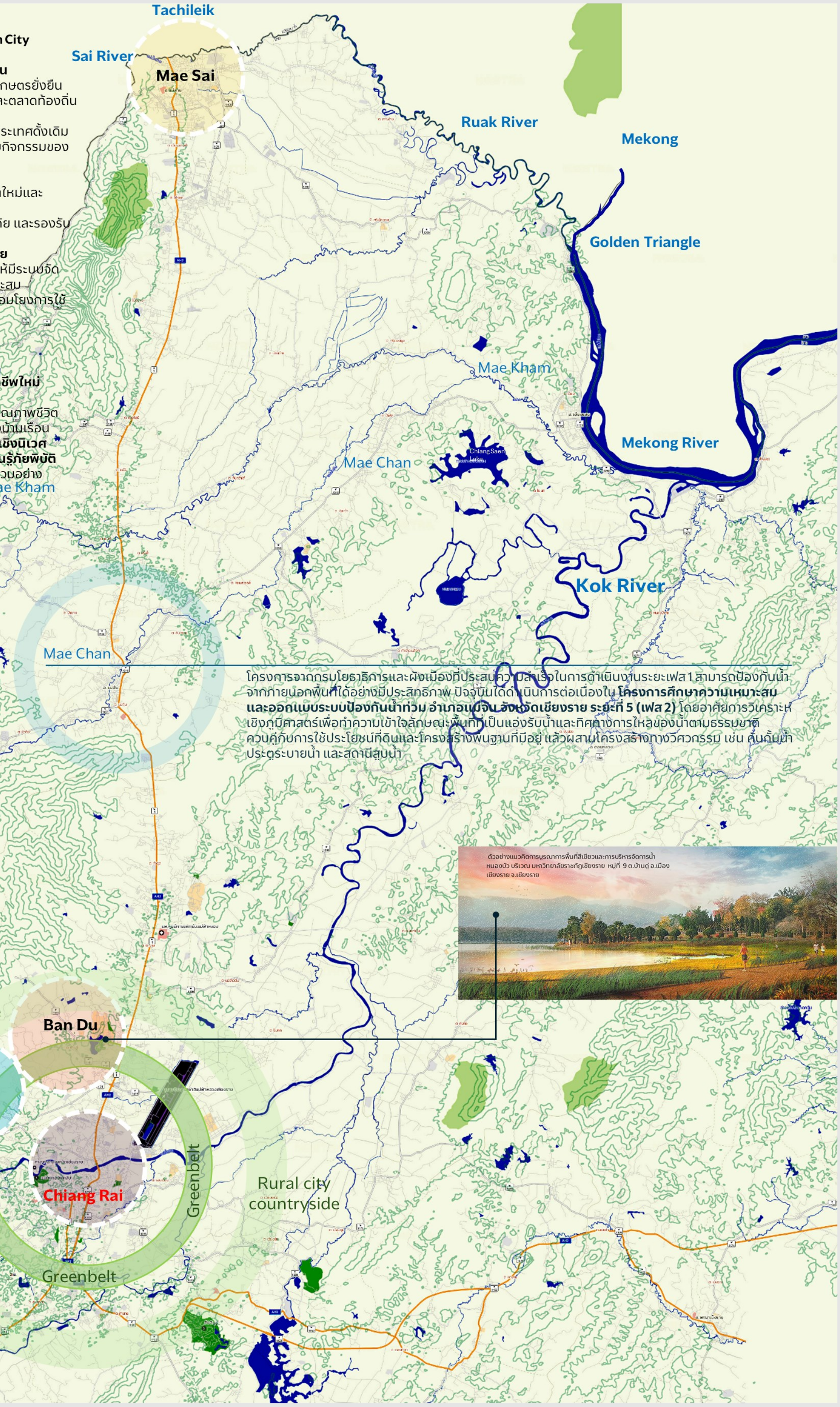
"ระบบนิเวศเชิงเกษตร–เศรษฐกิจ–สังคม" ที่ผสานการอยู่อาศัยปลอดภัยกับการสร้างอาชีพใหม่อย่างยั่งยืน.
การพัฒนาชุมชนใหม่ที่แม่สาย มุ่งสร้างพื้นที่อยู่อาศัยปลอดภัยจากภัยพิบัติ พร้อมยกระดับคุณภาพชีวิตและอาชีพของประชาชน เป็นพื้นที่ต้นแบบ กำหนดผังเมืองและโครงสร้างพื้นฐานที่รองรับทั้งบ้านเรือน ระบบสาธารณูปโภค ถนน และพื้นที่สาธารณะ เชื่อมกับเศรษฐกิจใหม่ทั้ง **เกษตรนวัตกรรมเชิงนิเวศ การท่องเที่ยวชุมชน และธุรกิจท้องถิ่น** เพื่อสร้างอาชีพยั่งยืน ขณะเดียวกันจัดตั้ง **ศูนย์เรียนรู้ภัยพิบัติ** สำหรับฝึกซ้อมและเตรียมความพร้อมรับมืออุทกภัย โดยเปิดเวทีประชาคมให้ชาวบ้านมีส่วนร่วมอย่างแท้จริง ร่วมกับภาครัฐและเอกชน





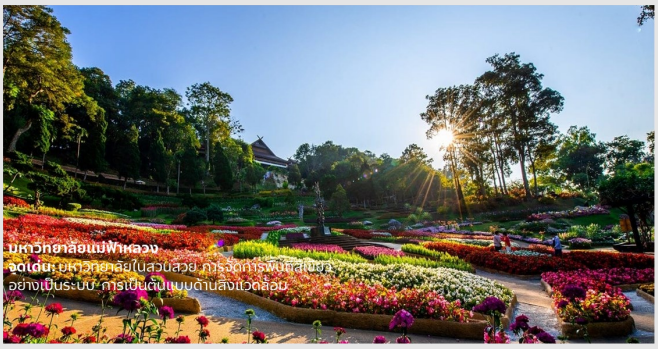
The continuation of water network clusters of settlement texture
New Village utilizes a stylized method of spatial combination. Four units form a courtyard combination, while six to ten units form a cluster in the five various unit styles. The public courtyard serves as the focal point of the combined layout, allowing for their organic clustering and formation into the growth mode of "monomer-courtyard combination-cluster-settlement".

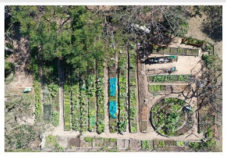
The New Rural Community of Mugou Village Atelier Zhouling



โครงการจากกรมโยธาธิการและผังเมืองที่ประสบความสำเร็จในการดำเนินงานระยะเฟส 1 สามารถป้องกันน้ำจากภายนอกพื้นที่ได้อย่างมีประสิทธิภาพ ปัจจุบันได้ดำเนินการต่อเนื่องใน **โครงการศึกษาความเหมาะสมและออกแบบระบบป้องกันน้ำท่วม อำเภอแม่จัน จังหวัดเชียงราย ระยะที่ 5 (เฟส 2)** โดยอาศัยการวิเคราะห์เชิงภูมิศาสตร์เพื่อทำความเข้าใจลักษณะพื้นที่ที่เป็นแอ่งรับน้ำและทิศทางการไหลของน้ำตามธรรมชาติ ควบคู่กับการใช้ประโยชน์ที่ดินและโครงสร้างพื้นฐานที่มีอยู่ แล้วผสานโครงสร้างทางวิศวกรรม เช่น คันกั้นน้ำ ประตูระบายน้ำ และสถานีสูบน้ำ

Mae Sai – Subdistrict Municipality of Mae Sai
เทศบาลตำบลแม่สาย
Ban Du – Subdistrict Municipality of Ban Du
เทศบาลตำบลบ้านดู่
Chiang Rai – Chiang Rai City Municipality
เทศบาลนครเชียงราย
Mae Suai –Mae Suai Subdistrict
องค์การบริหารส่วนตำบลป่าแดด
Mae Yao -Mae Yao Subdistrict
องค์การบริหารส่วนตำบลแม่ยาว
Doi Hang - Subdistrict Municipality of Doi Hang
องค์การบริหารส่วนตำบลดอยฮาง




Belo Horizonte, Brazil: Greening Belo Horizonte


Tel Aviv-Yafo, Israel: Tel Chubez and Lira Shapira


Barranquilla, Colombia: BAQ-Cultiva


Dubai, UAE: Underground Water Sustainability


Chengdu, China: Urban Green Heart Programme


Baia Mare, Romania: Smart Post-Industrial Regenerative Ecosystem

กรรมการส่วนกลาง

- รองศาสตราจารย์ สุรศักดิ์ กังขาว
- รองศาสตราจารย์ ดร. ระวีวรรณ์ เจริญทรัพย์
- ดร. เมธินี ศรีวัฒนาเกษม
- รองศาสตราจารย์ ดร. จตุรงค์ เลาหะเพ็ญแสง
- ดร. รัฐติการ คำบุศย์
- โกวิทย์ ขวัญศรีสุทธิ์

ต้นแบบการแก้ปัญหาน้ำท่วมและขจัดสารพิษในเมืองเชียงราย

แนวคิดนี้ใช้ภูมินิเวศ (Ecological Infrastructure) และระบบน้ำธรรมชาติเป็นเครื่องมือจัดการน้ำและมลพิษในเมือง

1. ระบบรับ–กักเก็บน้ำ (Sponge City Model)

- จัดสร้าง **บึงรับน้ำ (Urban Retention Ponds)** และ **แก้มลิงเชิงนิเวศ** ในพื้นที่ลุ่มต่ำรอบเมืองเชียงราย
- ใช้ **คลองชะลอน้ำ (Bioswale)** และ **ถนนสีเขียว (Green Street)** ที่ปลูกหญ้าและไม้ท้องถิ่นเพื่อชะลอและซึมซับน้ำ
- ออกแบบพื้นที่ **ทุ่งรับน้ำชั่วคราว (Floodplan Park)** ที่เป็นสวนสาธารณะในฤดูแล้ง และเป็นแก้มลิงในฤดูฝน

2. ระบบบำบัดน้ำและสารพิษ (Pollution Filtering)

- ใช้ **พืชน้ำและหญ้าท้องถิ่น** เช่น หญ้าแฝก กก ธูปฤาษี และไม้น้ำพื้นถิ่นอื่น ๆ ในบ่อพักน้ำเพื่อตกตะกอนและกรองโลหะหนัก
- พัฒนา **Wetlands เชิงนิเวศ (Constructed Wetlands)** รอบพื้นที่อุตสาหกรรม–ชุมชน เพื่อบำบัดน้ำเสียก่อนเข้าสู่แม่น้ำกก
- ส่งเสริม **เกษตรอินทรีย์และวนเกษตร** รอบชุมชนเมือง เพื่อดูดซับสารเคมี ลดการใช้ปุ๋ย–ยาฆ่าแมลง

3. ระบบพื้นที่สีเขียว–สีน้ำเงิน (Green–Blue Network)

- สร้างเครือข่าย **สวนสาธารณะ ริมน้ำ และป่าเมือง** ที่เชื่อมต่อเป็นโครงข่าย (Green–Blue Corridor)
- ส่งเสริม **เส้นทางจักรยาน–เดินเท้า** ที่เชื่อมกับแนวคลองชะลอน้ำและพื้นที่สีเขียว เพื่อเพิ่มคุณค่าการพักผ่อนและการท่องเที่ยว
- จัดทำ **ศูนย์การเรียนรู้เรื่องน้ำและสิ่งแวดล้อม** ในพื้นที่สวนสาธารณะเพื่อสร้างการมีส่วนร่วมของประชาชน

4. คุณค่าที่ได้ (Co-Benefits)

- ลดความเสี่ยงน้ำท่วมในเมืองเชียงราย บำบัดสารพิษในดิน–น้ำ ลดผลกระทบจากการเกษตรและอุตสาหกรรม
- เพิ่มพื้นที่สีเขียวและแหล่งเรียนรู้ สร้างเมืองสุขภาวะ
- ส่งเสริมเศรษฐกิจใหม่ด้าน **เกษตรนิเวศ–ท่องเที่ยวชุมชน–ธุรกิจสีเขียว**

Geo-Agri-Urban

Transforming Urban Futures through Geo-Agricultural Assets and Systemic Innovation


HARC.ASIA
Heritage Asia
Research
Community

Strategic approach to solution development

Re:Geo

Proposes an urban planning approach that leverages the original geographic features as a foundation for development. By integrating natural elements such as rivers and mountains, the aim is to reduce the environmental impact caused by urban expansion. This strategy fosters a balance between urban growth and environmental conservation, focusing on sustainable resource use and enhancing quality of life through green space preservation and community participation.

Urban Ecotone

Proposes the development of transitional zones between natural and urban areas that serve multiple functions: as community gathering spaces, safety buffers, and ecological connectors. These ecotones can link communities with nature, promote sustainable resource use, and mitigate disaster risks such as floods and pollution through design solutions that integrate ecological, social, and safety dimensions.

AgriCore

Revitalizes areas unsuitable for permanent structures (e.g., floodplains or former agricultural zones) into multi-functional **Urban Agricultural Zones**, aiming to:

1. Restore urban ecosystems by absorbing excess water, mitigating urban heat island effects, and increasing environmental moisture;
2. Enhance food security by enabling the local cultivation of vegetables, herbs, and fresh produce within the urban radius (low food miles);
3. Support local economies and cultural heritage through activities such as growing native rice varieties, organizing organic farmers' markets, or implementing agricultural learning programs in schools;
4. Align with the principles of “Living with Water,” which embraces natural water systems and coexists sustainably through ecological wisdom and innovation.

InnoWeave

Integrates urban systems through technology to create seamless urban functionality. Emphasizes interconnected networks such as:

1. Smart Water Grids;
2. Transport systems that link producers directly with consumers;
3. Community-based renewable energy;
4. Edge computing communication networks;
5. Urban agri-innovation such as vertical farming, precision agriculture, and automated food production in compact spaces—supporting food security while efficiently managing limited resources.

แนวทาง บทบาท และสถานการณ์ปัจจุบัน

เมืองที่ไม่รักษาระบบนิเวศเดิม เสี่ยงภัยพิบัติเพิ่มขึ้น 60% และมีค่าฟื้นฟูสูงขึ้น 2.3 เท่า (World Bank, 2021) กว่า 70% ของพื้นที่น้ำท่วมรุนแรงเคยเป็นพื้นที่ลุ่มดั้งเดิม (IPCC, 2022) 80% ของความเสียหายเกิดจากการพัฒนาในพื้นที่เสี่ยง เช่น เขตน้ำหลาก (UNDRR, 2020) กรณีฟุกุโอกะ ญี่ปุ่น ใช้แนวกันชนสีเขียว ลดน้ำท่วมได้ 35% และเพิ่มรายได้จากท่องเที่ยว 28% ภายใน 3 ปี

เมืองที่พัฒนาโดยไม่คำนึงถึงภูมิศาสตร์และระบบนิเวศเดิมมีความเสี่ยงภัยพิบัติเพิ่มขึ้นกว่า 60% และต้องเสียค่าใช้จ่ายฟื้นฟูสูงขึ้นถึง 2.3 เท่า โดยมากกว่า 70% ของพื้นที่น้ำท่วมรุนแรงในเมืองเคยเป็นพื้นที่ลุ่มดั้งเดิมที่ถูกพัฒนาเป็นเขตเมือง และกว่า 80% ของความเสียหายจากภัยพิบัติเกิดขึ้นในพื้นที่เสี่ยงทางธรรมชาติที่ถูกใช้ประโยชน์โดยไม่เหมาะสม (World Bank, 2021; IPCC, 2022; UNDRR, 2020)

เมืองที่บูรณาการเทคโนโลยีด้านพลังงาน น้ำ ขนส่ง และข้อมูล สามารถลดต้นทุนภาครัฐได้ 18% และลดคาร์บอนได้ถึง 25% (MIT, 2021) การใช้ IoT และ AI ช่วยลดพลังงานอาคาร 30% และลดเวลาการเดินทางลง 20–25% (WEF, 2020) นวัตกรรมชุมชน เช่น urban farming และแอปพลิเคชันสาธารณะ ช่วยเพิ่มความพึงพอใจของประชาชน 22% และการเข้าถึงบริการ 35% (Smart Cities Report, 2022)การใช้เทคโนโลยีดิจิทัลช่วยลดการใช้น้ำ 25–30% และเพิ่มการรีไซเคิล 20% (McKinsey, 2018)

เมืองที่มีพื้นที่สีเขียวต่ำกว่า 9 ตารางเมตรต่อคน มีความเสี่ยงสูงต่อปัญหาสุขภาพจิตและความเครียด โดย 80% ของเมืองใหญ่ทั่วโลกขาดพื้นที่สีเขียวเพียงพอ (UN-Habitat, 2023) การเพิ่มพื้นที่สีเขียวในเมือง 10% สามารถลดความเครียดได้ถึง 20% (WHO, 2016) และช่วยลดอัตราโรคซึมเศร้าและความวิตกกังวลได้ 15% (Stark & Brennan, 2019) ขณะที่ 65% ของคนในเมืองที่มีพื้นที่สีเขียวต่ำกว่ามาตรฐานมีปัญหาสุขภาพจิตจากความเครียดและขาดการเชื่อมโยงทางสังคม (Kabisch & Haase, 2014)

Accelerated Urban Expansion and the Lack of Spatial Directionality

การพัฒนาเมืองอย่างรวดเร็ว

การขยายตัวของเมืองที่รวดเร็วเชิงระบบ นำไปสู่ “Urban Fragmentation” (การแยกส่วนของเมือง) ซึ่งส่งผลให้เกิดการใช้พื้นที่โดยไม่คำนึงถึงภูมิศาสตร์ดั้งเดิม เช่น ทางน้ำธรรมชาติ พื้นที่รับน้ำ และพื้นที่เกษตรกรรมเดิม โดยเฉพาะในเมืองขนาดกลางและในประเทศกำลังพัฒนา

Disconnection Between Urban Growth and Human-Centered Public Spaces

การเติบโตของเมืองกับพื้นที่สาธารณะที่เน้นมนุษย์เป็นศูนย์กลาง

การเติบโตของเมืองในเชิงกายภาพไม่ได้มาพร้อมกับพื้นที่คุณภาพสำหรับการใช้ชีวิต เช่น พื้นที่เปิดโล่ง (open spaces), พื้นที่สาธารณะ (public spaces), หรือพื้นที่สื่อสารทางสังคม (third spaces) ส่งผลต่อภาวะสุขภาพจิตและคุณภาพชีวิตของประชาชน

Neglect of Geo-Cultural Capital Leading to Increased Vulnerability

ทุนภูมิศาสตร์และวัฒนธรรมกับความเปราบางของเมือง

หลายเมืองในปัจจุบันมุ่งพัฒนาเชิงกายภาพที่ต่างกับภูมิประเทศและภูมินิเวศดั้งเดิม เช่น ที่ลุ่มน้ำ ทุ่งรับน้ำหลาก หรือแหล่งผลิตอาหารพื้นถิ่น ซึ่งถือเป็น ทุนภูมิศาสตร์และวัฒนธรรม (Geo-Cultural Capital) ที่มีคุณค่าทั้งในด้านระบบนิเวศ วัฒนธรรม และความยั่งยืนของเมืองในระยะยาว การพัฒนาพื้นที่เหล่านี้เพื่อการพัฒนาเมือง จากการถมที่ดินหรือสร้างอาคารในเขตน้ำหลาก ส่งผลให้เมืองเปราะบางต่อภัยพิบัติทางธรรมชาติ โดยเฉพาะน้ำท่วมที่รุนแรงและเกิดถี่ขึ้นจากการเปลี่ยนแปลงสภาพภูมิอากาศ

Integration of Socio-Technical Innovation for Resilient Urban Systems

การบูรณาการนวัตกรรมทางสังคมและเทคโนโลยีเพื่อสร้างระบบเมืองที่ยืดหยุ่น

แม้จะมีการพัฒนาเมืองอย่างต่อเนื่องในหลายพื้นที่ แต่ในปัจจุบัน เมืองส่วนใหญ่ยังขาดการบูรณาการนวัตกรรมทางสังคมและเทคโนโลยีอย่างแท้จริงเพื่อสร้างระบบเมืองที่ยืดหยุ่นและยั่งยืน โดยเฉพาะในด้านการจัดการทรัพยากรสำคัญ เช่น พลังงาน น้ำ คมนาคม ขนส่ง และสิ่งแวดล้อม ที่ยังคงดำเนินการในลักษณะแยกส่วน ขาดการเชื่อมโยงอย่างเป็นระบบ แนวคิดเกี่ยวกับ “วิวัฒนาการของเมือง” และ “นวัตกรรมแบบองค์รวม” ซึ่งเน้นการบูรณาการเทคโนโลยีกับวิถีสังคม ยังไม่ถูกนำมาใช้อย่างแพร่หลายหรือเป็นระบบในหลายเมือง ทำให้ศักยภาพในการพัฒนาระบบเมืองแบบไร้รอยต่อ (Seamless Urban Systems) ยังไม่เกิดขึ้นอย่างชัดเจน ส่งผลต่อประสิทธิภาพในการจัดการทรัพยากร การลดผลกระทบจากภัยพิบัติ และการยกระดับคุณภาพชีวิตของประชาชนในระยะยาว

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การพลิกโฉมอนาคตเมืองผ่านฐานทรัพยากรภูมิศาสตร์-เกษตรกรรม และนวัตกรรมเชิงระบบ

1. พื้นที่รอยต่อระหว่างเมืองและธรรมชาติ (Urban Ecotone)

เน้นการจัดการความเสี่ยงจากภัยพิบัติ ด้วยการพัฒนา “พื้นที่กันชน” ระหว่างระบบนิเวศธรรมชาติกับเขตเมือง เพื่อรองรับและบรรเทาผลกระทบจากอุทกภัย มลพิษ และคลื่นความร้อน พร้อมทั้งส่งเสริมบทบาทของพื้นที่ดังกล่าวในฐานะพื้นที่สาธารณะสำหรับพักผ่อนและสร้างปฏิสัมพันธ์ระหว่างประชาชนกับสิ่งแวดล้อม

- เป็นพื้นที่ฟื้นฟูระบบนิเวศที่สามารถดูดซับน้ำ ลดอุณหภูมิ และบรรเทาผลกระทบจากการเปลี่ยนแปลงสภาพภูมิอากาศ
- มีบทบาทเป็นพื้นที่สีเขียวที่สนับสนุนทั้งด้านนิเวศวิทยา สังคม และความปลอดภัย
- สร้างความเชื่อมโยงระหว่างมนุษย์ เมือง และธรรมชาติ เพื่อความสมดุลในการพัฒนาเมือง

2. การฟื้นฟูภูมิทัศน์ดั้งเดิมตามบริบทท้องถิ่น (Re-Geo)

มุ่งเน้นการพัฒนาเมืองโดยสอดคล้องกับลักษณะภูมิประเทศดั้งเดิม เช่น ทางน้ำโบราณ ลุ่มน้ำ หรือพื้นที่เนินเขา เพื่อลดการรบกวนระบบนิเวศและป้องกันปัญหาที่เกิดจากการถมดินหรือสร้างสิ่งปลูกสร้างทับลักษณะภูมิประเทศเดิม

- ผสานภูมิปัญญาท้องถิ่นกับเทคโนโลยีสมัยใหม่ในการอยู่ร่วมกับน้ำอย่างยั่งยืน
- ลดความเสี่ยงจากภัยธรรมชาติ เช่น อุทกภัย ดินถล่ม และปรากฏการณ์เกาะความร้อนในเขตเมือง

เพิ่มพื้นที่เปิดโล่งและแหล่งน้ำธรรมชาติ เพื่อส่งเสริมสมดุลของระบบนิเวศเมืองและคุณภาพชีวิตของประชาชน

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3. เกษตรกรรมเมืองเพื่อความมั่นคงและการใช้ประโยชน์ที่ดินอย่างยั่งยืน (Urban Sustainable Agriculture)

ฟื้นฟูพื้นที่ที่ไม่สามารถพัฒนาเป็นโครงสร้างถาวร เช่น เขตน้ำหลาก หรือพื้นที่ว่างรอการใช้ประโยชน์ ให้กลายเป็นพื้นที่เกษตรกรรมเมืองที่ส่งเสริมความมั่นคงทางอาหารและเศรษฐกิจของชุมชน

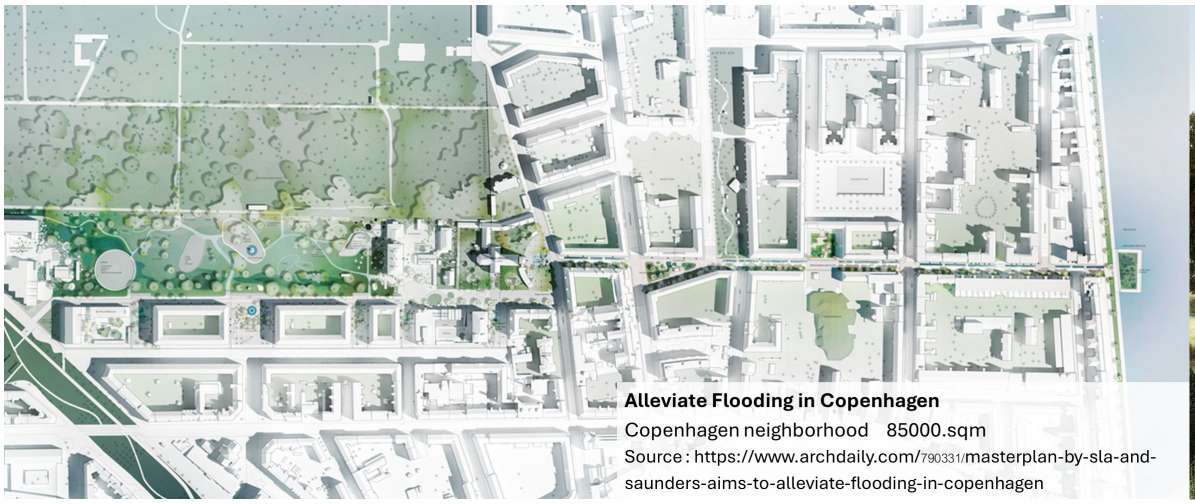
- ส่งเสริมการปลูกพืชผัก สมุนไพร และผลผลิตสดภายในเมือง เพื่อลดระยะทางการขนส่งอาหาร (Food Miles)
- พัฒนาเป็นศูนย์กลางกิจกรรมเศรษฐกิจชุมชน เช่น ตลาดเกษตรอินทรีย์ หรือกิจกรรมเกษตรในสถานศึกษา
- สนับสนุนการรวมกลุ่มเป็นสหกรณ์ วิสาหกิจชุมชน หรือรูปแบบเศรษฐกิจฐานรากที่สอดคล้องกับกฎหมายและข้อกำหนดภาครัฐ

เป็นกลไกในการสร้างการพึ่งพาตนเอง และเสริมสร้างความเข้มแข็งในระดับครัวเรือนและชุมชน

4. การบูรณาการนวัตกรรมเพื่อการบริหารจัดการเมืองแบบไร้รอยต่อ (Integrated Urban Innovation)

ส่งเสริมการใช้เทคโนโลยีเพื่อเพิ่มประสิทธิภาพในการจัดการเมือง โดยเน้นการเชื่อมโยงระบบต่าง ๆ ของเมืองอย่างเป็นองค์รวม

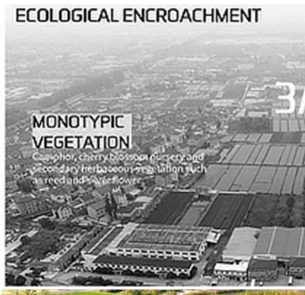
- ระบบบริหารจัดการน้ำแบบอัจฉริยะ (Smart Water Grid) เพื่อควบคุมการใช้น้ำ น้ำเสีย และน้ำฝนอย่างมีประสิทธิภาพ
- ระบบขนส่งที่เชื่อมโยงผู้ผลิตและผู้บริโภค เพื่อลดต้นทุนด้านโลจิสติกส์และการปล่อยก๊าซเรือนกระจก
- การส่งเสริมพลังงานหมุนเวียนระดับชุมชน เช่น พลังงานแสงอาทิตย์หรือชีวมวล
- ระบบการสื่อสารแบบ Edge Computing ซึ่งกระจายการประมวลผลใกล้ผู้ใช้งาน เพื่อเพิ่มความเร็วและลดภาระของศูนย์ข้อมูล

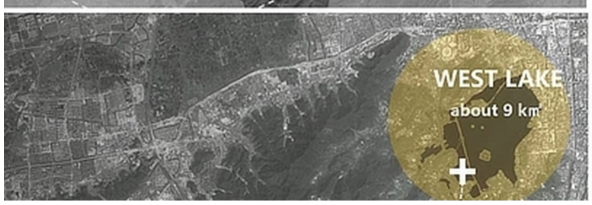


Alleviate Flooding in Copenhagen

Copenhagen neighborhood 85000.sqm

Source : https://www.archdaily.com/790331/masterplan-by-sla-and-saunders-aims-to-alleviate-flooding-in-copenhagen





Urban Farming – Detroit

Mobile Garden City, Queen Elizabeth Olympic Park, London, UK

Rationale Background

Sustainable urban greening practices are on the agenda for the AIPH Green City Conference 2025

'Nature, Culture, and City Life' is the theme of the AIPH Green City Conference, which will be held on Tuesday 11 February in Chiang Rai, Thailand. Divided into three sessions, the Conference will consider model knowledge, continuing green sustainable development, and creativity for a green sustainable future.

This Conference forms part of the AIPH Spring Meeting 2025, organised by the International Association of Horticultural Producers (AIPH) with the support of Host Partners, Chiang Rai, the Thailand Department of Agriculture, the Horticultural Science Society of Thailand, and the Thailand Convention & Exhibition Bureau (TCEB) and Headline Sponsor Biblo.

The first session, titled 'Model Knowledge', will present examples of Nature-based Solutions (NbS) currently being implemented in Thailand. Speaker Prof. Dr. Vanchai Sirichana of the Mae Fah Luang University, Thailand, will showcase the University's journey to becoming a green campus. Next, landscape architect Ms. Kotchakorn Voraakhom of Landprocess Co.Ltd., Thailand, will explore the use of NbS to increase urban adaptability.

In session two, titled 'Continuing Green Sustainable Development', speakers from different universities will present their insights into the ongoing development of urban green spaces. Assoc. Prof. Surasak Kangkhao from King Mongkut's Institute of Technology Ladkrabang, Thailand, will explore how architectural design can shape the future of ecological urbanisation. Offering a perspective from a different part of the world, Prof. Dr. Jakob Brandtberg Knudsen, Dean of Architecture at the Royal Danish Academy, Denmark, will discuss the impact of architectural education on sustainable design practices.

Finally, session three, titled 'Creativity for Green Sustainable Future', will explore different approaches to creating sustainable green environments utilising available resources. Examples from the Economic Corridor of Innovation project in the Wangchan district of Rayong province, Thailand, and the Gardens by the Bay in Singapore will illustrate future-proofing principles. Speakers include: Mr. Prabhakorn Vadanyakul, President, Architect Council of Thailand, Thailand Asst. Prof. Perrine Hamel, Asian School of the Environment, Nanyang Technological University, Singapore Prof. Emeritus Dr. Geoffrey A. Cordell, Natural Products Inc., and College of Pharmacy, University of Florida, USA Mr. Whoo Kiat Heng, Project Director (Infrastructure) / Bay East Project Office and Senior Director/ Conservatory Operations, Gardens by the Bay, Singapore

2025 GREEN CITY CHIANG RAI

Culture Nature & City Life

Planning for sustainable living is essential for our past, present, and future. Our ancestors' wisdom in geography and resource management created thriving cities rich in natural resources, an absolute truth that underscores the importance of sustainable practices. Today, we must continue learning from the past to maintain a strong connection with nature. This connection is crucial for our survival and the planet's, a relative truth reflecting the varying degrees of environmental impact. Embracing sustainability is a responsibility that supports innovative economic models, such as Green City, Wellness City, MICE City, Creative City and others, which combine economic growth with environmental care.

Event Venue,

9-13 Feb 2025

Chiang Rai, Thailand

Day 1: Sat 8 Feb	Arrival of AIPH Board member
Day 2 :Sun 9 Feb	Arrival of delegates AIPH Board meeting Welcome Dinner by CEI
Day 3 : Mon 10 Feb	Expo Conference AIPH General Meeting (AIPH Member only) Expo Conference Dinner
Day 4: Tue 11 Feb	AIPH Industry Meeting Green Conference Focused Group Workshop: Green City for Chiang Rai
Day 5: Wed 12 Feb	Green City Tour & Site Visit (Full Day)
Day 6: Thu 13 Feb	Tour of the Area for industry and tourism Farewell Dinner
Day 7: Fri 14 Feb	Departure to home country

GREEN CITY CHIANG RAI 2025 AIPH

AIPH

Essential components for creating Green City

SDGs

Green City Thailand

		Model PAST	Develop PRESENT
1	การจัดการพื้นที่สีเขียว: • Green Space Management	The Doi Tung	Promote the planting, restoration, and maint forests and community forests, with a focus by the local population. DPT **Doi Saket Community Learning Center,** Chiang Rai Municipality's community has a ke the city with high potential for sustainable u
2	การเลือกพืชที่เหมาะสม: • Appropriate Plant Selection	The Doi Tung	Using suitable plants is key to forest restorat water plants that filter air, reduce soil erosio moisture, such as coffee, macadamia, local t
3	การเพิ่มพื้นที่สีเขียวในเมือง: • Urban Green Space Expansion		DPT **"Kok River Riverside Park Dev** The project involves creating a river River for recreation and increasing the development of bicycle paths a walkways.
4	การบูรณาการระบบน้ำ: • Water System Integration	Model area development project According to the royal initiative	DPT **Geo-social Map** "Project to Develop a Geo-Social Map for Water Management" DOI IN C
5	การส่งเสริมการมีส่วนร่วมของชุมชน: • Community Engagement	The Doi Tung Model area development project According to the royal initiative	**"Doi Tung Development Project**: Sustainab DOI IN C Change For Good กระทรวงมหาดไทย ศูนย์ศาสเชียง
6	การพัฒนาเทคโนโลยีการจัดการสวน: • Green Technology Development		MFU HARC **Medicinal Innov of MFU** Missions · To develop r of **herbal innovation**, traditional **medicine** a
7	การส่งเสริมการศึกษาและการสร้างความตระหนักรู้: Education and Awareness Promotion		MFU (Medicinal Innovati
8	การจัดการขยะและการรีไซเคิล: • Waste Management and Recycling		DOI IN C HARC **upcycling** of ma areas through **re**

Creativity
FUTURE

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Renewal:

and

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on active participation

, Kiri Chai Yama
ey natural forest area within
rban development.

ion, focusing on low-
n, and increase soil
ea, and vetiver grass.

elopment Project"
rside park along the Kok
green space, including
nd pedestrian

ลิกรรมธรรมชาติ
ร์พระราชาดอยอินทรีย์
ราย

vation Center

esearch in the field
Thai
nd alternative **medicine**

on Center of MFU)

terials and the enhancement of water-absorbing
cycled materials.

Future Green City World 2024

Utrecht, Netherlands
Purpose: Future Green City World 2024 aims to explore and promote innovative approaches for developing sustainable, green cities. The event focuses on integrating advanced green technologies, environmental sustainability, and community engagement to create urban environments that are resilient and adaptable to future challenges.

DPT Light Green Zones: Designated for open spaces aimed at recreation and environmental conservation.protection

RWL- Rawiwan Lab - VERTICAL HEARB GARDEN

KPA- VERTICAL HEARB GARDEN

Tak Silent Garden and Nature Trail, Pop Phra District, Tak

DOI IN C

"The Royal Initiative on Wet Forest Restoration Theory"
The theory focuses on conserving and restoring forests by maintaining moisture as a key factor, which helps keep the forest lush and green throughout the year, making it less susceptible to wildfires.

DPT Connecting and supporting activities with local communities according to urban zoning colors involves:

Light Blue Zones: Designated for open spaces along rivers for the purpose of environmental protection.

"Check Dams at Wat Phutthayotkan Doi Insee"
King Rama IX's royal initiative emphasized the importance of constructing small check dams to slow down water flow and retain water in the soil. This approach aims to create moisture and restore degraded forest areas.

le Development through Planting People and Planting Forests"

MFU HERBAL VALLEY WELLNESS CITY
ศูนย์นวัตกรรมสมุนไพรครบวงจร มหาวิทยาลัยแม่ฟ้าหลวง

THAILAND MICE MEET THE MAGIC | TCEB

Chiang Rai CREATIVE CITY OF DESIGN unesco

Beyond Green City

1. Transportation
- •Smart Tech: Digital traffic management.
  Example: Automated traffic lights.
- •Eco-Friendly Transit: Promote green transport.
  Example: Electric vehicle chargers.
- •Connectivity: Develop bike paths and walkways.
  Example: Bicycle routes.

2. Food Security
- •Urban Farming: Use vertical gardens.
  Example: Urban vertical gardens.
- •Food Waste: Recycle into compost.
  Example: Composting food waste.
- •Local Food: Support local markets.
  Example: Farmers' markets.

3. Urban Development
- •Resilience: Design for climate change.
  Example: Flood prevention.
- •Circular Economy: Reduce waste.
  Example: Closed-loop systems.
- •Social Equity: Affordable housing.
  Example: Mixed-use spaces.
- •Green Tech: Enhance green areas.
  Example: Green roofs.
- •Planning: Integrate land use and transport.
  Example: Mixed-use developments.

The global city theme called **"City Cluster"** serves as a hub for a global network of expertise from specialists in areas such as energy, water, waste, transportation, and human experience. Its goal is to achieve the Sustainable Development Goals **(SDGs).**

โครงการระดับเมือง
Logistic + Smart City

Discover GMS Greater Mekong Subregion Asia's Natural Hub

ASEAN Herbal Innovation

Chengdu International Horticultural Exhibition 2024
Showcasing Thai Gardens on the Global Stage

The **International Horticultural Exhibition 2024 Chengdu** (Expo 2024 Chengdu) is a world-class event held from **April 26 to October 28, 2024**, under the theme **"Park City, Beautiful Habitat."** The event was inaugurated by **Vice President Han Zheng** of the People's Republic of China at the Chengdu Eastern New Area in Sichuan Province.

The Grandeur of the International Horticultural Exhibition

This prestigious event highlights Chengdu's potential, with strong support from the Chinese government, underscoring the importance of the horticultural industry. Spanning over 1,500 rai (approximately 240 hectares), the event features:

- **Main Venue:** Chengdu Eastern New Area
- **Additional Venues:** Wenjiang District, Pidu District, Xinjin District, and Chongzhou City
- **Exhibition Spaces:** Six indoor exhibition halls and 113 outdoor gardens

International Gardens: 39 gardens, including a notable Thai presence

Thailand's Role in the Exhibition

The Horticultural Society of Thailand was invited by the Chengdu local government to participate in this grand event. Their garden, designed under the theme **"Siam Royal Lotus,"** showcases the beauty of Thai lotus flowers in a **1,002 square meter** area. Designed by **Assoc. Prof. Surasak Kangkao,** the garden's unique blend of

architecture, plants, and artistic elements earned it the **Silver Award in the International Garden category.**

Thailand’s Success and Long-Term Impact

Thailand's awards at this global event highlight the country’s capabilities in garden design and cultural r epresentation. The exhibition also positions Thailand as a leading hub for horticulture on the global stage.

Conclusion

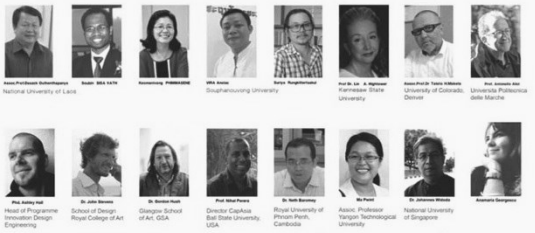
The Chengdu International Horticultural Exhibition 2024 exemplifies China’s leadership in the floral industry while offering a platform for Thailand to shine internationally. With its award-winning gardens, Thailand has demonstrated its excellence in design and international cooperation, leaving a lasting impression on the global horticultural community.

Sources

- Horticultural Society of Thailand
- Reports from Expo 2024 Chengdu

HARC members and collaborators

HARC international collaborators

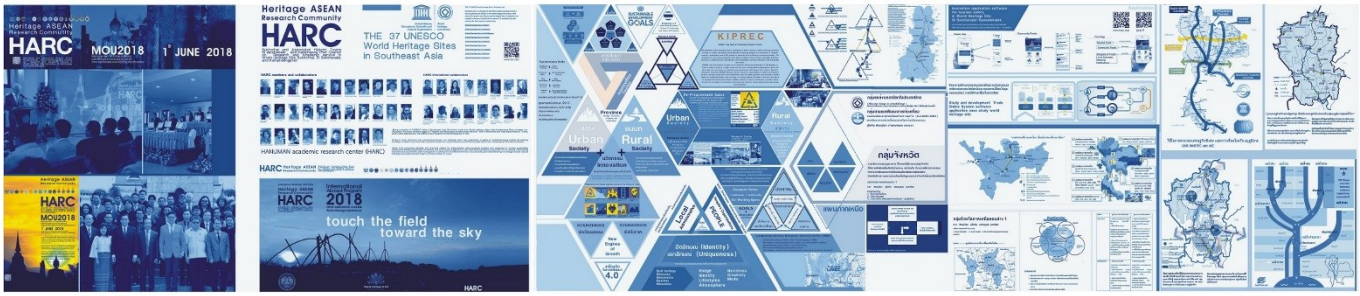


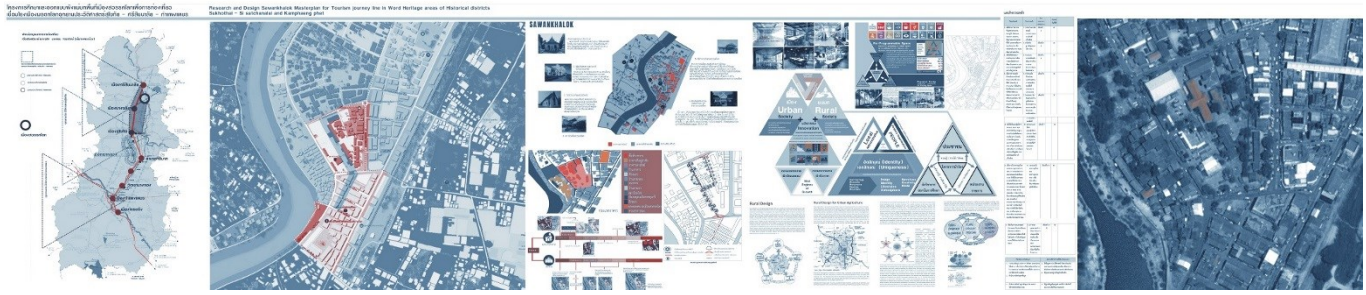
HANUMAN academic research center (HARC)

Being a handful of UNESCO cities in Southeast Asia, Sukhothai hosts two World heritage sites, while Kamphaeng Phet contains one. Situated in the lower northern region of Thailand, the three areas constitute the Historic Town of Sukhothai and Associated Historic Towns, which were registered by the UNESCO as a tripartite World Heritage site in 1991.

Owing to such historical and cultural impotences, our research team has undertaken a series of multidimensional studies developing strategic models to accommodate creative tourism for communities around Si Satchanalai, Sukhothai, Kamphaeng Phet historical parks.

Aside from proposing sensible and practical means for implementing well-conceived policies and measures to pursue sustainable developmentswhile preserving the identity and socio-cultural legacies of the triad historical sites in proportion to the accept international standard and practicethe said investigations could lead to multilateral efforts in accumulating and disseminating knowledge shared cultural heritages among Southeast Asian countries in times to come.





HARC.ASIA

Heritage Asia Research Community

The establishment of HARC marks a significant step forward in promoting mutual acceptance and appreciation of cultural heritage among ASEAN member states. This initiative aims to preserve and enhance the historical and natural areas of cities,
acknowledging the rapid growth in cultural identity, environmental concerns, and global changes. However, these advancements also bring challenges, such as the commercialization of cultural heritage and land use changes, which threaten the authenticity and uniqueness of these places.

To address these challenges, HARC conducts interdisciplinary research to ensure that economic development aligns with cultural conservation. The program strives to bridge the gap between policymaking and grassroots initiatives, fostering a balance between economic benefits and cultural and environmental sensitivity. HARC is dedicated to preventing historical areas from becoming mere tourist attractions and instead aims to create the best version of cities, fully prepared for global changes in all dimensions.

This preparation includes managing water resources, developing green cities, preventing natural disasters such as wildfires and PM2.5 pollution, and promoting agricultural cities focused on herbal medicine. These efforts aim to balance biodiversity with cultural diversity, forming the foundation for sustainable urban development in ASEAN.

As we move forward, the concepts and initiatives championed by HARC serve as a blueprint for developing sustainable cities across ASEAN. By integrating economic progress with cultural and environmental preservation, we can create cities that not only thrive in the face of change but also honor their unique heritage and identity.

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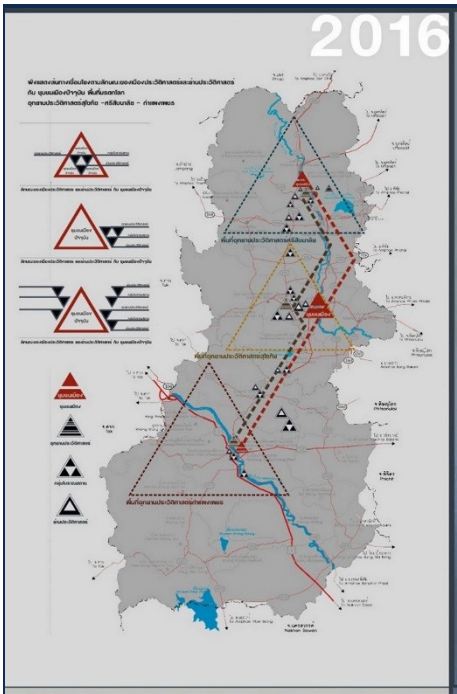
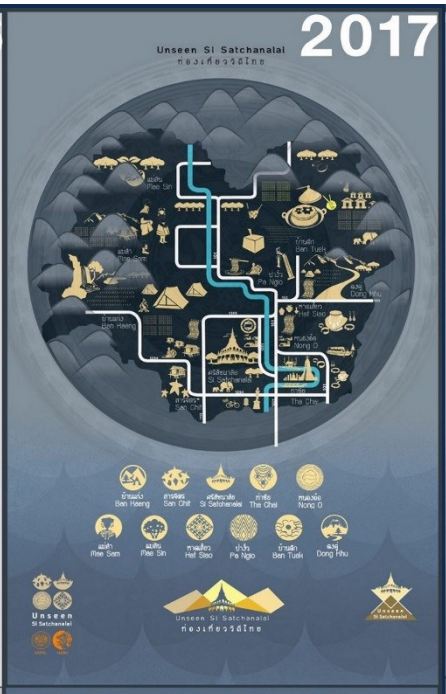
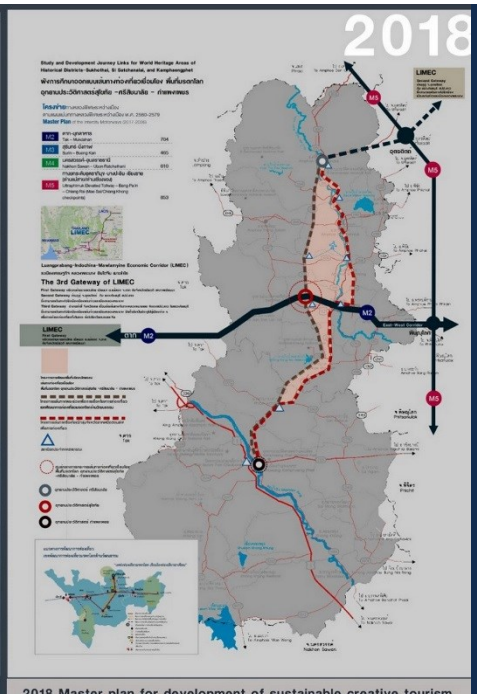


2016 Master plan for development of sustainable creative tourism at Sukhothai, Si Satchanalai, and Kamphaeng Phet historical parks, funded by the National Research Council

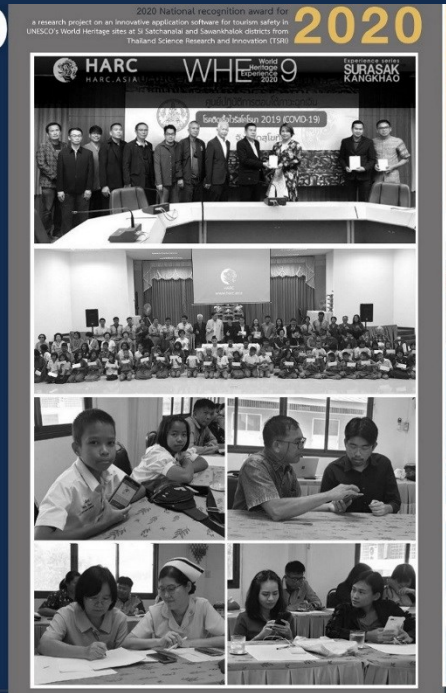


2017 Comprehensive plan for destination links among Sukhothai, Si Satchanalai, and Kamphaeng Phet historical parks, funded by the National Research Council



2018 Master plan for development of sustainable creative tourism at Sukhothai, Si Satchanalai, and Kamphaeng Phet historical parks as integral constituents in the network of UNESCO's World Heritage sites in ASEAN community, funded by the National Research Council

2019 Master plan for urban redevelopments in Sawankhalok city to promote tourism links with Sukhothai, Si Satchanalai, and Kamphaeng Phet historical parks, funded by TSRI



2020 Innovative application software for tourism safety in UNESCO's World Heritage sites at Si Satchanalai and Sawankhalok districts, funded by TSRI

2016-2020
World Heritage Experience
Sukhothai, Si Satchanalai, and Kamphaeng Phet historical parks
WWW.HARC.ASIA

MOU 2018

Heritage ASEAN

Research Community

The Study Streetscape Case study on Creative Tourism Strategy of World Heritage Cluster Sukholthai Historical Park, Master Plan Development on Creative Tourism Strategy for Specialized Monumental Areas of Historical Districts, Study and Development Journey Links for World Heritage Areas.

KMITL สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง

CRCD

HARC.ASIA

MOU 2023

Chiang Rai

The Chiang Rai MOU is a sustainable development initiative in collaboration with educational institutions and Chiang Rai Municipality. It aims to integrate research and innovation to systematically address various community problems and develop a network of community practitioners under the province's comprehensive development strategy. The goal is to become a starting point for Chiang Rai's development by improving the quality of life for disadvantaged groups and marginalized communities, fostering community-driven economic growth, and serving as the foundation for the province's and the country's future economy. This is achieved through the coordination of academic knowledge and its practical application, leading to sustainable development success.

THAI - DUTCH SESSION IN HORTI ASIA 2024
INNOVATIVE & SUSTAINABLE HORTICULTURE;
A THAI - DUTCH INSPIRATION IN GLOBAL CONTEXT

WEDNESDAY 22ND MAY 2024 (14:00 – 16:00 HR.)
ROOM NILE 3, BITEC, BANGKOK

UKRIT WONGTHONGSALEE — CHANTHABURI PROVINCIAL CHAMBER OF COMMERCE
MENNO KEPPEL — AGRI SOLUTIONS ASIA
METINEE SRIVATANAKUL — HORTICULTURAL SCIENCE SOCIETY OF THAILAND
GIJS THEUNISSEN — THE NETHERLANDS EMBASSY
BERT DESMET — KLASMANN
SURASAK KANGKHAO — KMITL
MIRJAM BOEKESTIJN — DUTCH GREENHOUSE DELTA
ROB RIPPENS — HOPPERT
MARCUS VAN HEIJST — PRIVA

REGISTRATION FREE

KMITL King Mongkut's Institute of Technology Ladkrabang
DUTCH GREENHOUSE DELTA
Netherlands Agricultural Network
NL Netherlands

HARC: Thai-Dutch Session at Horti Asia 2024

"Innovative & Sustainable Horticulture: A Thai-Dutch Inspiration in a Global Context"

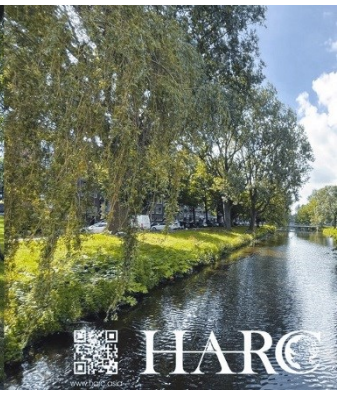
On May 22, 2024, Associate Professor Surasak Kangkhao (National Outstanding Lecture) and the team from the Community of Practice Network in Arts and Culture (Heritage Academic and Research
Center: HARC), recognized as experts in architecture and culture with significant contributions to agricultural lifestyles, will present their ideas at this event. Organized by the Netherlands Embassy in Bangkok, in collaboration with the Horticultural Science Society of Thailand, King Mongkut's I nstitute of Technology Ladkrabang (KMITL), Chanthaburi Chamber of Commerce, and Dutch Greenhouse
Delta, the "Thai-Dutch Session in Horti Asia 2024" will see international key players in horticulture and agriculture from the Netherlands and Thailand share their expertise.

international network


HARC


HARC
ARCAM
Amsterdam Centre for Architecture


HARC


HARC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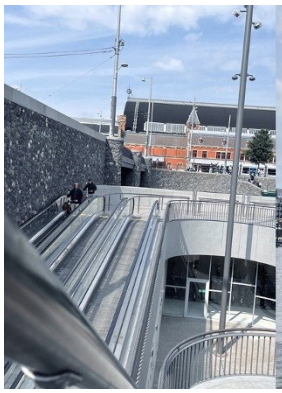
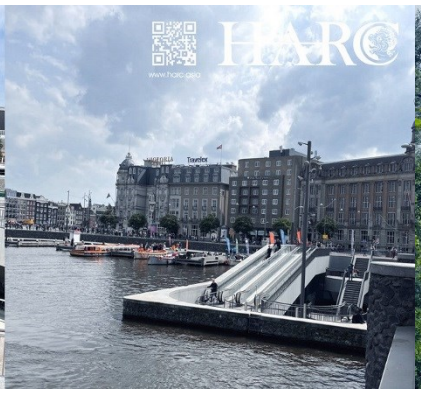



HARC


Utrecht
HARC

2024

HARC : international network

HARC : international network through cooperation and learning from model cities to integrate and elevate urban development, developing strategies for sustainable

From June 8-25, 2024, Assoc. Prof. Surasak Kangkhao, a National Outstanding Lecturer, led a team from the Heritage Academic and Research Center (HARC) in collaborating with educational institutions both domestically and internationally. Their aim was to conduct research and establish global networks focused on developing strategies for Thailand's sustainable urban development, aligned with international standards. During this period, they engaged with experts from Finland, the Netherlands, and Denmark to explore and synthesize diverse development concepts applicable to Thailand's future sustainability.

Their research in the Netherlands provided significant insights into Transit-Oriented Development (TOD) and urban area management within city limits. They particularly focused on Utrecht Centrum’s development plans, emphasizing integrated transportation systems such as trains, buses, and bicycles to promote environmentally friendly commuting. They also studied the Zuidas project, a major business and financial center in Amsterdam, where they examined the integration of public transport systems to enhance convenience and stimulate economic growth.

Educational institutions in the Netherlands

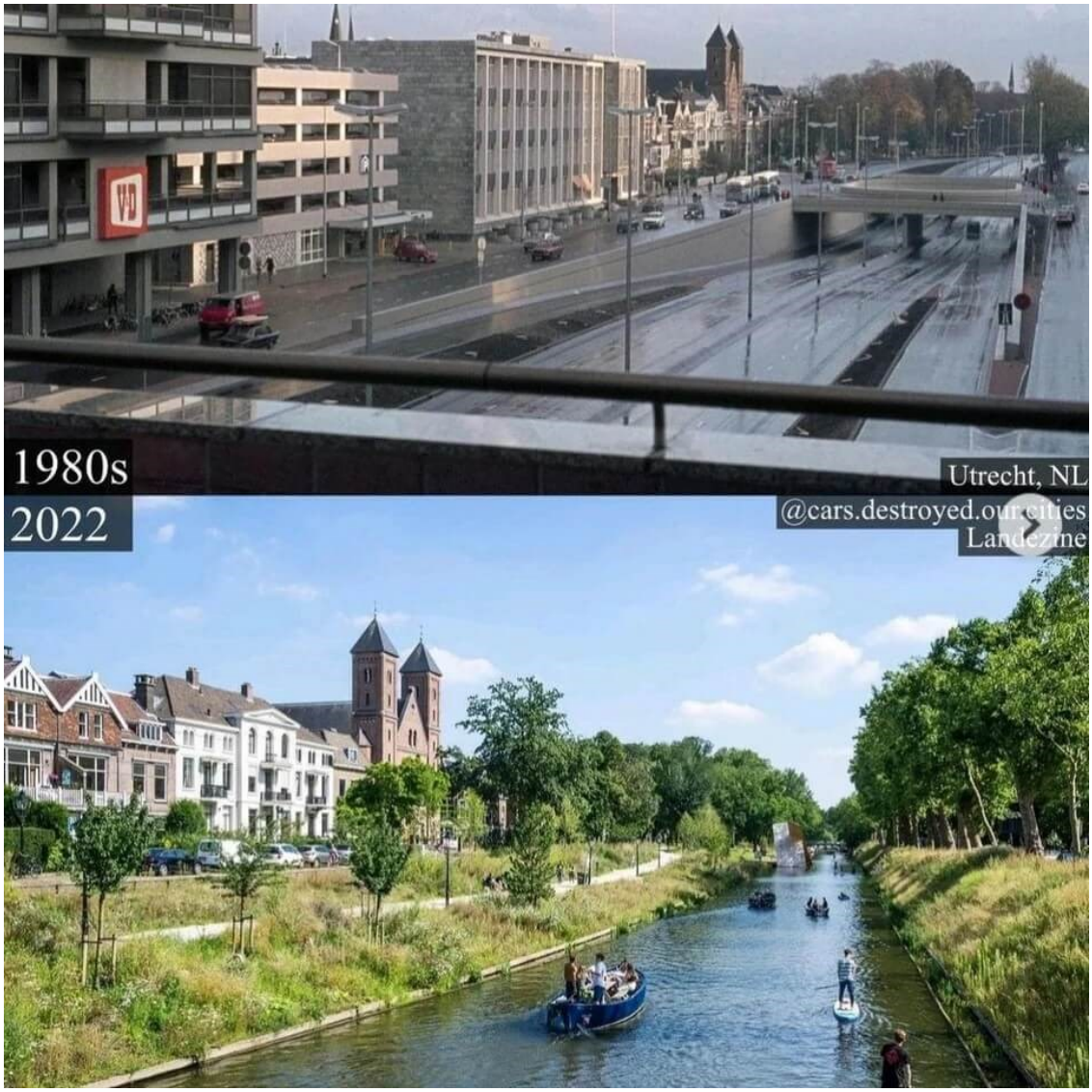
Visiting and studying the concept of Green Cities through leading educational institutions in the Netherlands presents a valuable opportunity to learn about sustainable urban development and management. The focus is on integrating educational programs that emphasize innovation in architecture and urban planning, alongside the implementation of urban management ideas centered on sustainable development and environmental conservation at the city level.

This study tour goes beyond exploring the design and development of Green Cities in terms of architecture and urban planning; it also involves examining collaborations between educational institutions, government agencies, and the private sector in creating sustainable infrastructure. Key areas of focus include natural resource management, the use of renewable energy, the expansion of green spaces in urban environments, and the promotion of community involvement in urban development processes.

Learning from the Netherlands' approach during this study tour will provide valuable insights that can be applied to urban development in Thailand. Specifically, it will contribute to the development of cities that prioritize sustainability and improve the quality of life for citizens, while also addressing the challenges of manag-

Framework for Collaboration between HARC and ARCAM

ARCAM serves as an important information center for both new and historic architecture in Amsterdam. It has transformed Dutch architecture into one of the most interesting in the world by actively engaging the public in the development of Amsterdam's architecture and collaborating with architects and institutions to influence city . architecture, particularly focusing on young architects who will lead future developments. Each year, ARCAM organizes five exhibitions that emphasize contemporary architectural advancements and historical contexts. A standout feature of ARCAM is the ARCAM panorama, which provides an overview of the city's architectural evolution over the past 1,200 years. This approach can serve as a guiding framework for developing the architecture sector in our country.



City of Utrecht: growing with green ambitions | Network Nature

AIPH
The world's champion for the power of plants

WORLD GREEN CITY AWARDS 2022

Utrecht, the Netherlands:
Utrecht Green and Healthy City

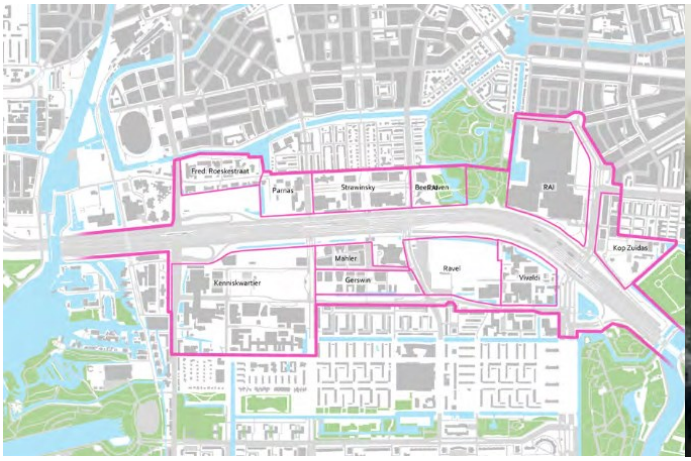
HARC : international network

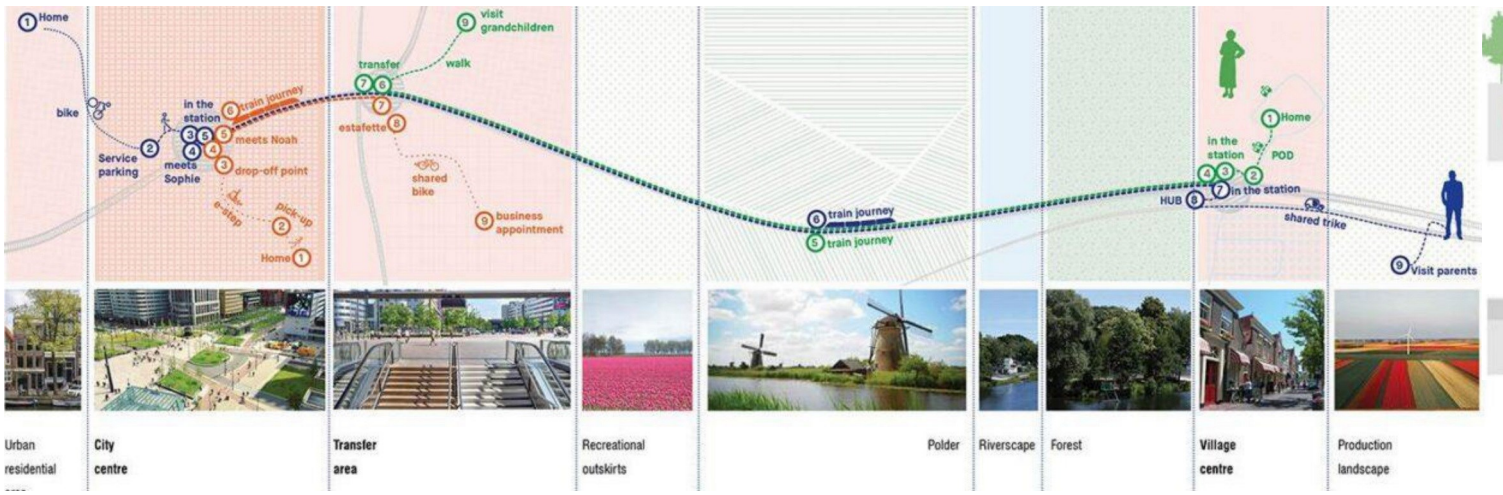
https://aiph.org/floraculture/news/utrecht-is-crowned-the-netherlands-greenest-city

The study tour to the Netherlands—covering cities like Amsterdam, Rotterdam, and notably Utrecht with its "Green and Healthy City" initiative—offered valuable insights into sustainable urban development through integrated water management, green space design, use of local plants, renewable energy adoption, and Transit-Oriented Development (TOD). Utrecht serves as a standout case, combining public health, ecology, and mobility into city planning. These approaches, which also promote community participation and eco-friendly infrastructure, offer practical frameworks that can be adapted for Thai cities to enhance resilience, livability, and sustainability in the face of future urban growth.

City of Utrecht: growing with green ambitions

Zuidas Transport Hub - Planning and Developing





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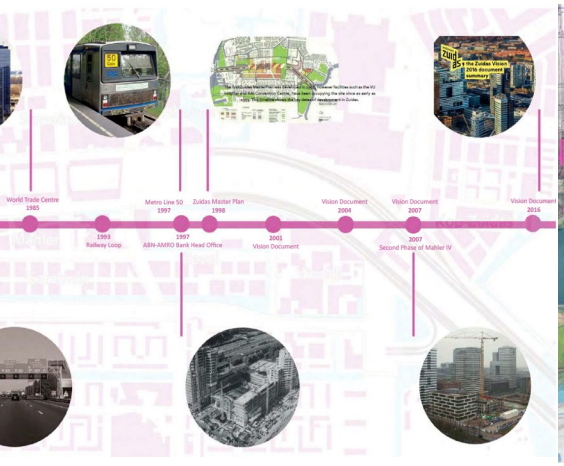
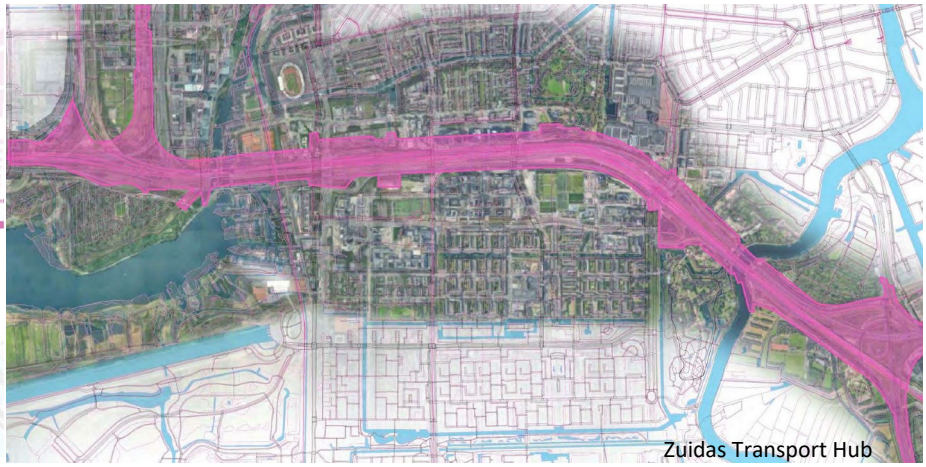
TOD Study, Nether-





MVRDV+ Local Community Propose Plans for Lost Canals in The Hague collaborated with local neighborhood organizations to propose regenerating the canals of The Hague, Netherlands. Originally filled-in during the 20th century, these canals will be reopened to revitalize the historic center and enhance the city's sustainability, economy, and infrastructure.

Jakob Brandtberg Knudsen Royal Danish Academy,

Lasse Gerrits, HIS Erasmus University

HARC : international network

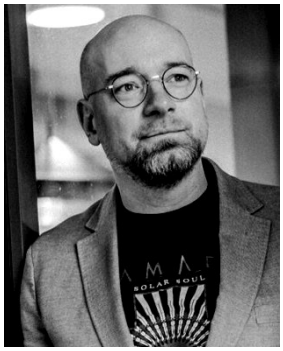
Jakob Brandtberg Knudsen

Royal Danish Academy,

During their visit to Europe, these individuals played pivotal roles in our collaborative efforts. HARC delegates engaged with:

- Prof. Dr. Jakob Brandtberg Knudsen, Dean of Architecture at the Royal Danish Academy, whose extensive experience and leadership in architectural education enriched our discussions on urban development and sustainable design practices.

- Prof. Dr. Lasse Gerrits, Academic Director at IHS, provided invaluable insights into urban planning and development strategies, bridging academic research with practical applications to foster sustainable urban environments.



Lasse Gerrits,

HIS Erasmus University

The expertise and collaboration arising from this intense exchange of ideas have enhanced understanding and application of international best practices for sustainable urban development. This cooperation has laid a strong foundation for future initiatives focused on sustainable and comprehensive urban planning.

Moreover, their involvement plays a crucial role in advising and developing new urban structures centered around people and communities. Particularly in the context of Thailand, this sustainable and inclusive urban development will strengthen communities, promote equality, and improve the quality of life for citizens.

This collaboration is not only a knowledge exchange but also an inspiration for various projects in Thailand, potentially leading to development that aligns with local

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2024

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JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Thai Dutch Session Horti Asia 2024 22 may 24

Netherlands
Denmark
Jun 2024

10/08/24

SING BURI MOU 2024
SIMPLICITY OF WATERS
"EXPLORING UNITY AND BALANCE IN THE CITY OF WATER MANAGEMENT AND TRADITIONAL LIFE IN A HISTORICAL CITY."

URBAN-DELVERLOP
Landmark

TADE 5
(THE 5 th THAILAND ART AND DESIGN EXHIBITION)
3-15 SEP 24

AIPH World Green City Site Visit : CHIANG RAI NOV 2024

2025

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EXPO 2025 KMITL 6-8/03/25

9-13/02/25

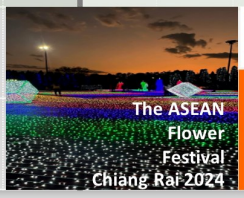
DPT
Go Green is Sustainable

CHIANG RAI GREEN CITY Preparation Meeting for the AIPH International Green City Conference, 2025

CHIANG RAI GREEN CITY OUT PUT **05/2025**

01/05/25

February 25, 2025,Bangkok: the press conference for the Udon Thani International Horticultural Expo 2026.



Netherlands
Green City contributions agricultural HARC+BAS+AIPH
Netherlands Embassy 13 /05/ 2025

Outcome Follow-up Meeting
CHIANG RAI GREEN CITY 2025
26-28 /05/2025

Strategic roadmap outlines a path forward through collective action

Partners and Collaborators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Workshop Group:

GREEN CITY 2025 Workshop: Nature, Culture, and City Life

HARC (Heritage Asia Research Community):

1. Assoc. Prof. Surasak Kangkhao – Executive Committee Member, (KMITL)
2. Assoc.Prof.Dr.Chaturong Louhapensang Executive Committee Member, (KMITL)
3. Mr. Kowit Kwansrisut - Researcher, Architect, HARC
4. Ms. Sunisa Meenarin - Urban Planner, City Planning and Development Department, (BMA)

Urban-Rural Planning:

1. Mr. Chanwit Sirisoonthornnan - Chief Architect, Department of Public Works and Town & Country Planning
2. Mr. Prapakorn Watanayakul - President, Council of Architects
3. Mr. Norasak Suksomboon - Deputy Governor, Chiang Rai Province
4. Dr. Rattikarn Khambut - International Relations Officer, Department of Public Works and Town & Country Planning
5. Mr. Pichet Rueansorn - Urban Planner, Chiang Rai Provincial Public Works and Town & Country Planning Office
6. Mr. Teerayut Kukamsai - Senior Architect, Chiang Rai Provincial Public Works and Town & Country Planning Office
7. Mr. Narongsak Tuanaskul - Deputy Mayor, Chiang Rai Municipality
8. Mr. Waradisorn Onnut - Deputy Governor, Sing Buri Province
9. Mr. Chaiyon Srisamut - Mayor, Mae Sai Subdistrict Municipality
10. Mr. Boonyapan Phutthachotanan - Ban Du Subdistrict Municipality
11. Ms. Phromporn Jindawong Naethan - Chairperson, Chiang Rai City Development Co., Ltd.
12. Mr. China Suthathanachoti - Vice President, Chiang Rai Chamber of Commerce
13. Mr. Apipan Phupakdee - President, Federation of Thai Industries, Chiang Rai Chapter
14. Ms. Patcharee Saemsan - Director of Strategy and Budget Division, Chiang Rai Municipality
15. Mr. Chakrapong Saengbun - Head of Planning and Budget Division, Chiang Rai Municipality
16. Dr. Jakob Brandtberg Knudsen - Dean, Royal Danish Academy
17. Ms. Kotchakorn Voraakhom - Managing Director, Landprocess Co., Ltd.

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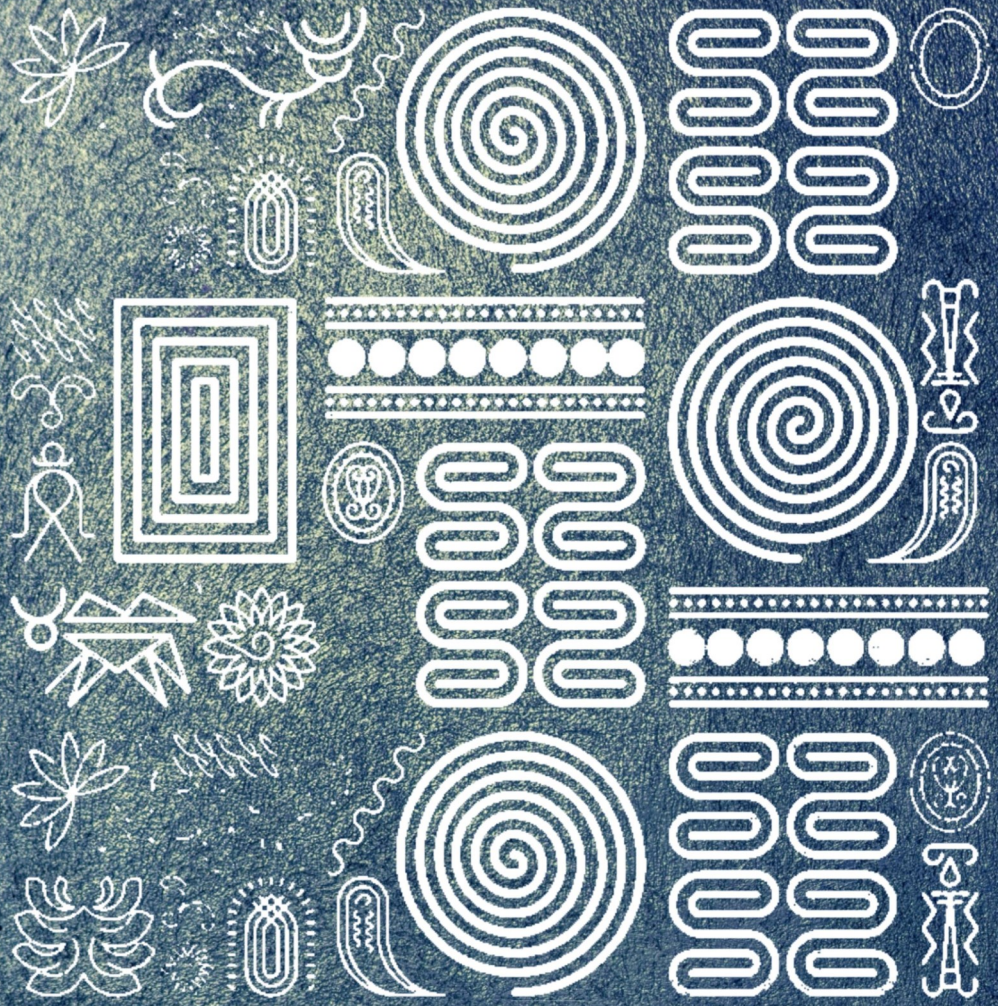
Agriculture:

1. Asst. Prof. Dr. Sunthorn Pipitsangchan - Botanical Association of Siam (BAS)
2. Dr. Metinee Srivatanakul-- Botanical Association of Siam (BAS)
3. Ms. Perrine Hamel - Nanyang Technological University
4. Mr. Felix Loh - CEO, Gardens by the Bay, Singapore
5. Director, Research and Development Office Region 1
6. Director, Highland Agricultural Research and Development Center, Chiang Rai
7. Director, Horticultural Research Institute
8. Director, Chiang Rai Horticultural Research Center
9. Mr. Kitipong Ongsuwan - Kaset 32 Farm Co., Ltd.
10. Mr. Pichet Kantawong - Ozone Farm
11. Mr. Panthapat Khumwichian - Air Orchid Farm

Wellness:

1. Prof. Dr. Sujitra Wongkasemjit - Vice President, Mae Fah Luang University
2. Asst. Prof. Dr. Rawiwan Charoensup- Medicinal Plants Innovation Center, Mae Fah Luang University
3. Mr. Chatchawan Pringpuangkaew - Chairman, Dr. Sem Pringpuangkaew Foundation
4. Ms. Phusanee Pringpuangkaew - Doi Chaang Coffee Company
5. Prof. Geoffrey A. Cordell - College of Pharmacy, University of Florida
6. Assoc. Prof. Dr. Polawat Prapattong - Head, Mekong River Basin Civilization and Cultural Center
7. Mr. Vinai Soni - Advisor to the Mayor, Chiang Rai Municipality
8. Mr. Chakrapong Saengbun - Head of Planning and Budget Division, Chiang Rai Municipality
9. Dr. Apiwat Thongprasert - CEO, Visup Co., Ltd.
10. Mr. Sorawit Chaiwongsurarit - Visup Co., Ltd.
11. Ms. Thitiporn Saensurirangsikul - Visup Co., Ltd.
12. Dr. Thamonwan Woraruethai - CEO, GreenGen Biotechnology Co., Ltd.
13. Dr. Chandhanai Tirapanampai - GreenGen Biotechnology Co., Ltd.
14. Asst. Prof. Dr. Tharakorn Maneerat - Medicinal Plants Innovation Center, Mae Fah Luang University
15. Asst. Prof. Dr. Thidarat Duangyod - Medicinal Plants Innovation Center, Mae Fah Luang University



Next 2026

Blue-Green

Agro-cultural Geography and Blue - Green Landscape :

A Holistic Approach to Sustainable Development

ภูมิศาสตร์เกษตรวัฒนธรรมและภูมิทัศน์น้ำเงินเขียว

Agro-cultural Geography to explore the interplay between humans, agriculture, culture, and ecosystems. The Blue-Green Landscape integrates water systems (rivers, lakes, wetlands) with forests, agriculture, and urbanrural green spaces, creating a balance among **Green Water Energy Culture .** Blue on Green Agriculture links traditional practices, like Thailand's **"Forest Rice Paddy Water"** model, with modern innovation, while **Ban Chiang** illustrates how agricultural and water systems shape resilient cultural landscapes.

Udon Thani
INTERNATIONAL
HORTICULTURAL
EXPO 2026

DEPARTMENT OF AGRICULTURE

AIPH

TCEB
THAILAND CONVENTION & EXHIBITION BUREAU

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Private Sector & Business

1. Chiang Rai City Development Co., Ltd. (CRDC)
2. Chiang Rai Chamber of Commerce
3. Federation of Thai Industries, Chiang Rai
4. Landprocess Co., Ltd.
5. Suvarnapingkarat Co., Ltd.
6. VISUP Co., Ltd.
7. GreenGen Biotechnology Co., Ltd.
8. Seya Technology Co., Ltd.
9. Kaset 32 Farm Co., Ltd. (Suan Kaset 32)
10. Ozone Farm
11. Air Orchid Farm
12. Divana Spa
13. Macro HRD Pte. Ltd.

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Dr.Rattikarn Khambud

Assoc Prof Dr. wijitbusaba Marome

Sunisa Menarin

Kowit Kwansrisut

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