GLOBAL MINDS OPEN FACULTY PROJECTS

Project Title

An interdisciplinary and transdisciplinary exercise in co-design: Initiating a process of design for a metropolitan park system to address Ho Chi Minh City's socio-ecological crisis

Promotors (both with expertise in landscape urbanism and urban design, two decades experience in research and consultancy in Vietnam)

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Project Team

3] Bart Muys, Faculty of Bioscience Engineering, Forest, Nature and Landscape Division, KU Leuven (expertise in urban forestry and tropical forestry)

4] Patrick Willems, Faculty of Engineering Science, Department of Civil Engineering, Hydraulics & Geotechnics, KU Leuven (expertise in hydraulics and experience in Vietnam)

5] Bruno Notteboom, Faculty of Architecture, KU Leuven (expertise in landscape architecture/urban ecology)

6] Tuấn Phạm Anh, Faculty of Architecture, Hanoi University of Civil Engineering (HUCE) (expertise in landscape architecture)

7] Trinh Tu Anh, Faculty of Urban Management, University of Economics HCMC (UEH) (expertise in urban management)

8] Trần Mai Anh, Faculty of Architecture, University of Architecture HCMC (UAH) (expertise in urban planning)

Faculty/Faculties involved

Faculty of Engineering Science, Department of Architecture, KU Leuven

Faculty of Engineering Science, Department of Civil Engineering, Hydraulics & Geotechnics, KU Leuven

Faculty of Bioscience Engineering, Forest, Nature and Landscape Division, KU Leuven

Faculty of Architecture, KU Leuven

Faculty of Architecture, Hanoi University of Civil Engineering (HUCE)

Faculty of Urban Management, University of Economics HCMC (UEH)

Faculty of Architecture, University of Architecture HCMC (UAH)

Non-academic partner(s)

1] VIUP: Vietnamese Institute of Urban and Rural Planning (based in Hanoi with expertise in urban planning and management in Vietnam)

2] VSLA: Vietnamese Society of Landscape Architecture (based in Hanoi)

3] HCMC Department of Planning and Architecture (DPA)

Description of the project

Global warming necessitates a **drastic socio-ecological shift in urbanism for sustainable and global development**. However, in fast developing metropoles in the South, galloping urbanization and hyper-speculation are preventing the integration of strong ecological structures—also required for social equity and inclusion.

This project, **an inter- and transdisciplinary collaboration between Flemish and Vietnamese academia** and **with Vietnamese non-academic partners**, aligns itself with the 'working group on a blue-green structure for Ho Chi Minh City' of AVSE (Association of Vietnamese Scientists and Experts (AVSE)). It proposes to **initiate the co-design of a metropolitan park system for Ho Chi Minh City through collaboration between disciplines such as urban design, urban ecology, tropical forestry, hydraulics, urban management and landscape urbanism** and with a **number of key actors** such as the AVSE, the Vietnamese Institute of Urban and Rural Planning (VIUP), Vietnamese Landscape Architecture Association, and HCMC Department of Architecture and Planning. **SDGs**, including **10** (reduced inequalities: increasing open space provision to all citizens), **11** (sustainable cities and communities: balancing urban development and ecologies), **13** (climate action: preserving and creating carbon sinks and space for flooding, addressing the urban heat island), **14** (life below water: protecting and expanding water bodies and mangrove systems to increase aquatic biodiversity), **15** (life on land: protecting and reweaving 'natural' ecological systems to increase the quality of human and non-human terrestrial life), **17** (partnerships for the goals: creating new alliances between academia with non-academic partners in an inter- and transdisciplinary collaboration) will all be significantly addressed.

Metropolitan parks are a necessity for the livability of (tropical) metropoles (like HCMC). In the contemporary times of global warming, they are as well essential in relation to **adaptation and the taming precondition for sustainable urban development**. The nation's largest city (approximately 10 million inhabitants) is located in the Đồng Nai - Sài Gòn - Vàm Cỏ Estuary, which abuts the Mekong Delta and for much of its existence was part of a large quagmire. Fast forward to today, in the past decade, and projected to continue for the foreseeable future, every five years, the city increases by 1 million inhabitants [HCMC DPA 2019]. However, the city and its inhabitants are more than ever vulnerable to the consequences of global warming (urban heats island effects, intensified and more regular flooding, extended droughts, etc.)

and simultaneously lack the public space (that is not provided through the regular, market-based mode of 'global development'). HCMC ranks among the world's lowest ratio of public open space per capita—with the city a mere 0.55 m^2 per capita [VNE 2023].

The proposed project begins from the premise that there is a **collection of existing traces for an inhabited tropical park**. At the regional scale, the ever-expanding footprint of the megacity is bookended by two enormous low-lying, wet and vegetated areas. To the west is a canal system connecting the Sài Gòn River with the Vàm Cỏ River. The canal system not only irrigates 9000 ha of agricultural and forestry land but, more importantly, diverts a potentially enormous water flow from the Sài Gòn River and in that sense works as a flood protection system. To the southeast (50 km from the city center) is the majestic Cần Giờ Mangrove Biosphere Reserve (UNESCO-recognized since January 2000) with a total area of 75,740 hectares, at the confluence of the Đồng Nai, Sài Gòn and Vàm Cỏ rivers and which drains into the East Sea. The area has a bi-diurnal tidal regime, with a seasonal variation of 2-4 meters tidal amplitude during spring tides. It hosts a high diversity of mangrove plant species, mangrove-dwelling invertebrates and mangrove-associated fish and shellfish species and is regarded as the 'green lungs' of the city.

However, the **vast expanse of such ecologically rich open spaces is literally disappearing by the day**, as large industrial areas (polluting factories in the west and a huge port container terminal in the southeast) and speculative real estate projects fill lowlands (with 2-3 meters of sand, often imported from Cambodia and Laos, where overexploitation causes severe erosion) to develop large-scale impenetrable platforms. **The project will explore ways to, on the one hand, divert urbanization to naturally higher lands and, on the other hand, develop new densities and typologies that either requalify the existing or live in and amongst wetlands (with buildings on stilts, for example).** As all mangrove areas, Cần Giờ, functions as a natural water cleaning machine and as protection system (against tropical storms and seasonal flooding). It does this better than the (World Bank financed) megalomaniac dike project around HCMC ever will. Both the canal system and the mangrove areas are inhabited by what can be considered a mainly rural population, that has an intergenerationally acquired knowledge of ways of living with and within such environments. The project would **test the hypothesis that the metropolitan region has an opportunity to create a regional park system** that spans from the western Thầy Cai-An Hạ canal system to Cần Giờ and includes a necklace of very different low-lying flood plain areas along the Sài Gòn and Đồng Nai rivers and their multitude of tributaries. The region indeed boosts an amazingly fine-mazed water system that covers more than 70% of the metropolitan area of HCMC [RUA 2019]. Such a regional park system could **form a blue-green framework and functions as the spatial register for the city**. It could not only weave an ecological fabric to conserve landscapes and safeguard biodiversity, but also become the frame *within* which future urban development is embedded. It could—across scales from the territorial to the neighborhood—accentuate the water mosaic. Evidently, it would require both massive tree planting and an intense program of water

cleaning. It is obvious that this regional park system, besides an ecological asset, would also be a necessary and major social asset, a compensation for the hectic and hyper speculative city in which public space, calm and green are as good as absent.

The project would test the possibilities to rearticulate the water system safeguarding space for water in flood events, forming the backbone of **an underlying ecological system** (working as a mega sponge to clean stormwater) and, as complement of the mineral city, **generate/create public space**. The functional aspect of water storage could be complemented by water as an attractor in terms of strategically located water-related development. Water-oriented properties of all scales and programs would indeed become important new elements in the public space system. The expanded green cover in the urban areas could not only sequester carbon, offset the urban heat island effect, improve air quality, enrich habitats and biodiversity, but also provide more/the absolute minimum of public and recreational spaces. While trees are key to humanizing the climate of a tropical city, they are also responsible for its pleasant atmosphere, hence livability. The monumental green figure, as a counter-figure of urbanism, is a natural gathering space.

The proposed open faculty project would **develop a first outline for such a metropolitan park system,** in parallel to a design studio didactic activity of the Master of Human Settlements (MaHS) and Master of Urbanism, Landscape and Planning (MaULP) in the second semester of the academic year 2024-25 (February-June 2025). It would include activities in Leuven and in HCMC. The project involves students and faculty from KU Leuven and from Vietnam in **a process that initiates the definition of a Metropolitan Park System (MPS) for HCMC, that can be the start of a discussion with the public, including public authorities of HCMC and national government.** The intensive cooperation between Leuven and Vietnamese students (in both cases from different faculties) in the project will give the Leuven students a unique exposure to global south issues and, more importantly, into methods and process that address these issues. The project also stimulates interfaculty cooperation of both Leuven and, at least as important HCMC-partners, a concrete interdisciplinary cooperation, leading to tangible (even if modest) outcomes that are a necessity to address the social and ecological crises. The cooperation with non-academic partners in Vietnam strengthens the transdisciplinarity (VIUP, for example, has ample experience with implementation strategies). The project starts from an existing initiative of the working group ‘green-blue structure of HCMC’ of AVSE and intends to co-produce a concrete tangible co-designed project for this MPS by means of the urban design studio of advanced masters, MaHS and MaULP, in cooperation with Vietnamese university students (and their respective staff). The project begins with understanding the innate potential embedded in existing traces. It will study and design across different scales and develop implementation strategies which will go hand in hand with the development of strategic interventions. The concrete long-term objective is a concrete and substantiated plan for a MPS of HCMC that can catalyze a timely discussion with the public, and to begin with, the public authorities in HCMC on a necessary MPS. Exposing KU Leuven and Vietnamese students of

different faculties to the conception of this type of global development projects in the South (and the needs they are addressing), by participating in this inception phase of the MPS of HCMC surely has a high awareness value. The project will, through a concrete action/project, stimulate interfaculty cooperation within KU Leuven (until now far too often missing, surely when it comes to projective work), while setting up transdisciplinary co-design processes with non-academic partners in Vietnam.

The proposal is conceived as an iterative and interactive process of 1] Design research; 2] Consultation of stakeholders; 3] Interdisciplinary debate, co-design and feedback. Students and staff from different faculties are systematically involved in the different components of the process through both (preparatory) workshops, an intensive fieldwork session in HCMC, an urban design studio of MaHS/MaULP, presentation, discussion and evaluation both in Vietnam and on the 12th World Urbanism Seminar (WUS) in Leuven. In this concluding presentation of WUS, the process of co-design and production, the resulting content (plan for MPS-HCMC) and future steps will be discussed. They concern both the educational endeavor (and integration of lessons in future courses/seminars) and the project itself (that will also become thesis-topics for both MaULP-KU Leuven as HCMC-students).

The process intertwines the activities of the mentioned AVSE working group and MaHS/MaULP studio. The processed materials will help AVSE and HCMC-DPA to substantiate the necessity and design of a MPS. This will happen through sessions in their yearly conference and regular activities of the other partners as VIUP and VSLA. Most importantly, the project is a test for a long-term collaboration with HCMC-DPA, and publication within the professional canals of Vietnamese and European trade and peer-review journals.
A 2-week field-work-shop with MaHS/MaULP students (open to students and faculty from project partners) will occur in February-March 2025 with three Vietnamese universities: 1] **HUCE** (Hanoi University of Civil Engineering) with Vietnam's first program in landscape architecture and with experts of urban forestry; 2] **UAH (**University of Architecture HCMC) with the urban design program; 3] **UEH** (University of Economics HCMC) with ICSM (Institute of Smart City & Management) with expertise in urban management.

Provisional timeline: November 2024 – June 2025

WP1: (technical support during the process) Organization, Documentation and Drawing Preparation (by Vietnamese architect, service contract) November 2024-June 2025, 8 months

- November 2024: preparation of existing documents online and base drawings for potential park system for Leuven Workshop 1 (WP2)
- January 2025: preparation of HCMC workshop 1 (WP3: meeting with Vietnamese academic and non-academic partners) and field-work-shop (WP4) based on results of WP2
- February 2025: processing of field-work-shop results (WP4) with feedback from Vietnamese academic and non-academic partners
- May-June 2025: processing of studio results and preparation of HCMC (WP3) and Leuven Workshop 2 (WP2)

WP2: Leuven inter-faculty Workshops (directed by K. Shannon, B. De Meulder, B. Muys, P. Willems, B. Notteboom with partners online)

- December 2024 (workshop & exchange, with online participation of Vietnamese partners to review the preparatory work and formulate the academic (MaHS/ MaULP with Vietnamese universities) studio project with input of all the mentioned disciplines (tropical forestry, urban forestry, urban management, urban design, landscape urbanism, urban management)
- End June 2025 (MaHS/ MaULP studio reviews + one full day workshop & exchange with interdisciplinary and transdisciplinary experts from KUL and Vietnam, will function as entry point for a synthesis document that will be shared with AVSE, VSLA, HCMC DAP and other partners. It will be an instrument for a dialogue with public authorities in Vietnam. The workshop during World Urbanisms will not only be open to students of MaHS/MaULP and MIRA (both Department of Architecture) but also for students from the partners from the Faculty of Bio-engineering Sciences, Department of Civil Engineering and the Faculty of Architecture. It will not only expose students to the co-designed project (Metropolitan Park for HCMC), but also give insights into the way international cooperation projects for global development unfold, integrate international and local expertise from various disciplines and agencies.

WP3: HCMC Workshops (including KUL promoters, Vietnamese academic and non-academic partners)

- January 2025: Agreement on brief for fieldwork (February-March 2025) and for studio (February-May 2025)
- February – March 2025: Review of Field-work-shop and adjustment of the studio brief
- Beginning June 2025: Evaluation of studio results

WP4: Awareness-building and Dissemination

- November 2024 – June 2025: Creation of a project website/ data and drawing bank to allow open access across stakeholders
- June 2025: KU Leuven Department of Architecture World Urbanisms Seminar, open to all project partners (with co-financing)