

Phnom Penh

ASEAN dual-city joint workshop

Ho Chi Minh City University of Architecture

Chulalongkorn University

Royal University of Fine Arts

Institute of Technology of Cambodia

National University of Singapore

National University of Laos

Yangon Technological University

Meiji University

PREFACE

by Hiroyuki Sasaki

“ASEAN dual-city joint workshop” was launched in 2017 by Meiji University with other seven universities in Southeast Asia, in pursuit of the ideal situation of Asian Urbanism as is described in the previous reports. As rapid globalization and urbanization progresses in the region, many Asian cities have been transformed into “Generic Cities” while losing their identities. Faculty members share the idea that William S.W.Lim addresses in his book *Asian New Urbanism*, that “we need to identify the strengths and weaknesses of the transformation of Asian traditions to modernity, and to examine the critical issues and challenges facing Asian urban centres today.” This leads us to expect that there exist common urban features among Southeast Asian cities. By identifying those features through workshops and discussions between faculty members and students, we could have a clearer perspective about the future of Asian cities and associated education within the field of architecture, urban design, and

planning. Based on such expectation, we selected a typical site that is thought to be common within Southeast Asian cities, and investigated common themes: “Waterfront Development”, “Regeneration of Post-Industrial Land” and “Housing”, for all four workshops. We selected these themes based on what we consider to be essential towards solving the urban problems that Asian cities are confronted with.

The third year of the workshop was organized jointly by the Institute of Technology of Cambodia, the Royal University of Fine Arts and Meiji University at Phnom Penh and Bangkok in summer, 2019. For this workshop, we reflected on the purpose and themes described above, and selected a post-industrial site along a river as with the previous two workshops. Consequently, many groups focused on the existence of Vietnamese slums across the river and explored how to take into account social, cultural, economic, and

spatial distances to the slum while incorporating the community into their plans.

Through the three workshops held so far, namely in Ho Chi Minh City, Yangon, and Phnom Penh, we have discovered a new perspective that appeared. We found that the initial goal of the workshop, to explore the ideal situation of Asian Urbanism, is not sufficiently appropriate, but instead we have been revealing distinct urban characteristics among Southeast Asian cities. During each workshop, we have found particular urban issues and identities of each city in relation to the context of its unique social, cultural, economic, historical and environmental circumstances, and presented specific solutions, rather than common solutions for each of them. This tendency is well documented, as many groups in this workshop focused on poverty and social disparities that are social problems peculiar to the project site as mentioned above.

William S.W. Lim further mentions that “Each urban centre is like a living organism, continuously changing and growing at different stages of its development. The outcome is unpredictable, as it reflects the city’s stage of economic development as well as its tradition, culture, values and ideology”. The final workshop is planned for 2020, and we are expecting to experience unique urban features of the city again. Through the three workshops conducted so far, we have realized that we need to focus on both common and specific problems of respective Asian cities whilst projecting on to the future of these cities. By the end of four consecutive workshops, if we could find both common and specific values of cities in the region that are relevant in defining Asian Urbanism, we would find this collaborative academic challenge successful.

References

Lim,W.S.W. (1998) *Asian new urbanism*. Singapore: Select Books Pte. Ltd.

UNIVERSITY

Ho Chi Minh City University of Architecture

Vietnam

Chulalongkorn University

Thailand

Royal University of Fine Arts

Cambodia

Institute of Technology of Cambodia

Cambodia

National University of Singapore

Singapore

National University of Laos

Laos

Yangon Technological University


Myanmar

Meiji University

Japan

PROFILE

in alphabetical order




Assistant Professor (non-tenure)

Katsushi Goto

Architecture, Urbanism

He is an architect/urbanist and researching on domesticity in ideal family home and public space allied to interior urbanism. He holds MArch from H&U, AA School. He is an architect at apartment co., ltd. Tokyo, director of design/research firm Squareworks, Mumbai and visiting associate professor CEPT University, Ahmedabad.




Lecturer

Hash Chanly

Engineering, Architecture and Urban Planning

He is a lecturer of Architecture and Urban Planning. He is responsible for Architectural Engineering Program at The Institute of Technology of Cambodia. His research focuses Landscape Design and Urban Planning. He received Master of Engineering from Toyohashi University of Technology, Japan.




Professor

Htet Htet Lwin

Architecture

She is a professor and studio master for undergraduate program, Department of Architecture, Yangon Technological University. Her current research focuses on vernacular architecture and she supervises the research work for Master students. She graduated and received Ph.D. from Mandalay Technological University.




Lecturer

Anousa Khammoungkhoun

Urbanism

He is a lecturer/practical teaching on urban planning and design in faculty of Architecture, National University of Laos, who is interested on urbanization control and urban development strategy. He received master of urban and regional planning from Khonkaen University, Thailand.



Associate Lecturer

Kim Sophanna

Architecture, Computer Lab Design

He is an architect and researching on low-income housing, public space, and informal resettlements. After 6 years working in VISPAN Construction firm, he moved, then teaching in Faculty of Architecture and Urbanism, also working in a computer lab to help students to intensive software skill using CAD, Revit, and 3D Lumion programs as a tool.




Professor

Masami Kobayashi

Architecture, Urban Design

He is a teaching scholar and an active architect/urban designer, who pursues strategy for preserving natural/built environment and promoting new development. He received a Ph.D. from University of Tokyo, a Master of Design Studies at GSD, Harvard University. He filled the post of vice-president of the university in 2016-2020.



Assistant Professor

Phan Lam Nhat Nam

Architecture, Urbansim

He is an architect/ urbanist and researches on traditional architecture, family housing, education and resettlement issues. He holds MArch from Ku Leuven, Belgium. He is a co-founder of architecture firm, k59 atelier in Ho Chi Minh city, Vietnam. His firm focus on housing, education and community project.



Associate Professor

Hiroyuki Sasaki

Urban Design, Urban Planning

He is a practicing urban designer promoting city restructuring and public space improvements. He is Principal of Freedman Tung + Sasaki Urban Design, Tokyo office. He received a Ph.D. in Design Engineering from Kobe Design University, a Master of City Planning from UC Berkeley.




Visiting Lecturer

Jun Takahashi

Architecture, Urban Design

He is an architect/urban designer exploring the design beyond rational and strategic thinking. After ten years work at Maki and Associates, he founded DESIGN FIRM in Tokyo. He received the Master of Science in Advanced Architectural Design at Columbia University and MArch in Urban Design at Harvard University.



Assistant Professor

Junko Tamura

Architecture, Urbanism

She is teaching in the Urban Studies Research Group at the National University of Singapore, with her research focusing on spatial analysis and designs for upgrading / community participatory processes in African and Asian low-income areas. She received a Ph.D from the University of Tokyo.



Professor

Tomoaki Tanaka

Architectural planning and design

He is teaching and researching on architectural design, architectural planning, and site design. He is a practicing architect as principal of FORMS. He received a Doctor of Architecture from Waseda University and a Master of Architecture from Yale University. He also served as a president’s staff of the university for 2016-2020.



Adjunct professor

Takanao Todo

Design Studio, Digital fabrication

He is an architectural designer, ceramic artist, design consultant and writer. He holds AAdipl from AA school and RIBA part2. He focuses on updating craftsmanship through branding and digital fabrication. He won several architectural competitions across the globe with design awards.

The Tonle Bassac Workshop Site

by Hash Chanly / Kim Sophanna

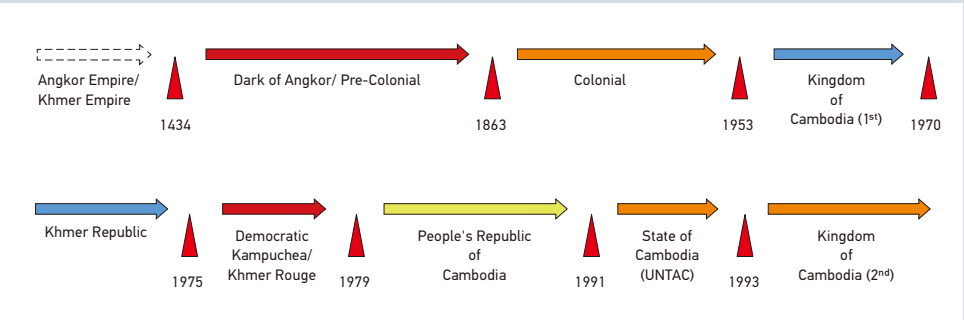


Fig.1: Evolution of Cambodia and Phnom Penh

For almost 600 years since the 15 century, Phnom Penh, with its significant phases in history (fig1), is the Capital of Kingdom of Cambodia. Only after the Cambodian government was stabilised, Cambodia was accepted into ASEAN in April, 1999. The capital, Phnom Penh, situated at the confluence of three rivers: Mekong, Tonle Sap and Bassac, covering an area of 678 square kilometres and consists of 12 districts (Khans) (fig2). According to Cambodia Systematic Country Diagnostic – Sustaining Strong Growth for the Benefit of All (World Bank, 2017), the gross national income (GNI) per capita tripled from 1994 to 2015, ranking sixth among the most rapidly growing economies of the world in 1994-2015.

Although Phnom Penh marks significant urbanisation and economic growth, at the National level, Cambodia is in an early phase of urbanisation i.e. 21% of the population lives in cities according to Urbanization Prospects, 2014 Revision. This urban population is remarkably lower compared to other counties in the region: Indonesia (53%), Thailand (49%) and Vietnam (33%). While urbanisation in Cambodia continues to progress at an average rate of 2.5%, due to fragmentation, weak regulatory and technical capacity, urbanisation is unplanned and unregulated. Whilst at the city level a Phnom Penh Master Plan 2035 has been developed with assistance from the French Bureau of Urban Affairs, the document remains a broad strategy without detailed land-use or phasing plans for its implementation, according to Urban Development in Phnom Penh (World Bank) Although World Bank’s recommendations1 towards a well-planned, well-managed urban growth for the city of Phnom Penh are satisfactorily stated for the government, policy makers and institution to act, it remains stipulatory,

Fig2: Phnom Penh Administrative Map (12 Districts)



Fig3: Site in Inner Phnom Penh

conditional and fundamentally lacks spatial characteristics of urban fabric, on which urban life and cultural activities rely. During the course of the workshop, multiple scenarios and strategies were discussed. They touched upon broad concern towards social and cultural development of the city, while design proposal tests physical and material changes critical to long term sustainable growth.

The Tonle Bassac Workshop Site

Phnom Penh was unlike any other sites of ASEAN dual-city joint workshop. The Bassac is away from the city centre, yet it is one of four central business districts (fig3) where urban experience had no clear land-use allocation, and has never been a real industrial zone. The dwellings and civic buildings along the bank of Tonle Sap in the north and riverbank of Tonle Bassac in the south are often intermingled with individual warehouses and factories. According to Vann Molyvann, such anarchic development threatens to consume all usable land in an urban setting (Vann Molyvann, 1994). Therefore, the usage of land was not maximised on the waterfront until the establishment of economic zones. The non-functional mixed-use buildings on the riverfront are found in the Bassac ward (fig4). Although the waterfront belongs to the government, privatising the use of the bank has taken away the potential of multi-purpose and accessible land-use. On the other hand, the insufficient land-use lead to the segregation of economic land resulting in the reduction of any further potential development and expansion. The misuse of land caused the loss of all productive land along the waterfront and resulted in the decay of the economic potential of those areas. The study site is about 5.4ha (450x130m), located at the riverbank of Bassac which is the heart of Cambodia’s economic



Fig4: Study Area in Sangkat Tonle Bassac

corridor since there is the French protectorate building as well as cultural, government, and embassy buildings. According to Phnom Penh Post, the trend of the current development, with high-rise buildings, leads the design phase of the area into a business and financial centre aimed at expanding foreign businesses (Phnom Penh Post, 2017) (Fig5).

Acceleration and impact of development head by overseas investments lead to urban planning regulations that are ineffective and unattainable, despite the government and private stakeholders propagating new regulation and community actions. For instance, many foreign projects have spelled inequality and threatened sustainability, in spite of voices from the surroundings concerned about spatial urbanism and social inclusion. In 2000, the government approved urban regulation which allows no limitation on the height of buildings in Phnom Penh. Consequently, the land prices started rising and all foreign investors could buy land and own upper floors of all such properties. To a certain extent, the urban skyline’s revolution was competitive amongst investors. Especially, in an area with high-density trends such as Tonle Bassac Ward, which includes Diamond Island extending towards the southern part of the Ward till the workshop site where industrial land has been converted into commercial buildings. According to the World Bank, such projects look aggressive and far from achieving biodiversity, dynamism, and socio-economic balance (WorldBank, 2017). Generally, new urban projects struggle over resources which lay between urban poor and developer, different social class holds its interest. Besides the social aspects of urban development, the local community should be involved in matters related to natural resources. Moreover, in consonance with Simon Parker mentioned that the urban poor

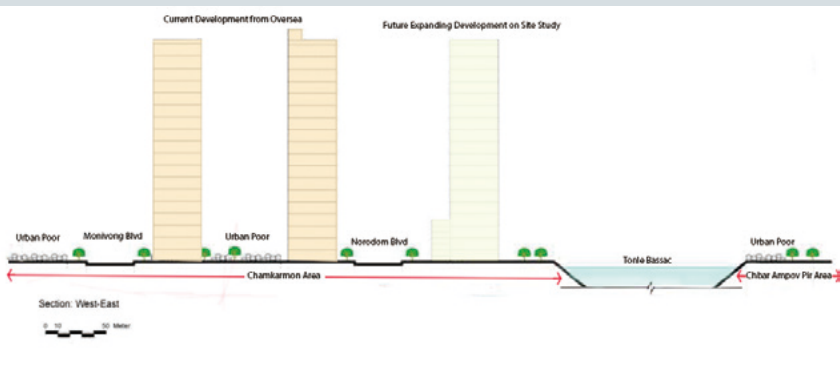


Fig5: Diagram shown how the new development trend from overseas relates to the neighborhood in urban existing surrounding the site study

is a “value-term” for a contiguous association which bears how, within society, humans should live in close involvement with new development. In addition, as Simon Parker also agreed to Urban Task Force, all the new projects should focus on how businesses and the city residents can co-exist harmoniously, and how it might tackle threats to the quality of urban life such as crime, poor public services, and social exclusion. All debates have a diverse range of urban experiences that have helped planners and policy makers understand the urban complex (Simon Parker, 2004). The Bassac Ward used to be a nurtured ecosystem with cultural, economic, and water sources-based identity. The new development in this area becomes more challenging, as it requires a shift from post-industrial land use into a new urban fabric and it is compelling to expand public space for the people. Therefore neither a single idea or its approach nor an adaptation of a historical background would be conducive for the new development. The proposal for the development must have diversity within its process, space and function rather than rely on a single specific function. Furthermore, a new architectural and urban design must be sustainable and environmentally friendly, while serving as multi-purpose use as well as local community-based in order to envision the riverfront cultural revolution.

References
[1] Van Molyvann, 1994, *Khmer in Modern Cities*, Reyum, p122-131
[2] Phnom Penh Post, 2017, *Prince Central Plaza Completes Construction*, Phnom Penh Website: <https://www.phnompenhpost.com/business/prince-central-plaza-completes-construction>
[3] World Bank, 2017, *Urban Development in Phnom Penh*, Cambodia Website: <https://www.worldbank.org/en/country/cambodia/publication/urban-development-in-phnom-penh>
[4] imon Parker, 2004, *Urban Theory and Urban Experiences*, Routledge, Taylor & Francis Group, LONDON AND NEW YORK, p 3-7[5] Tin Tin Kyi, *Yangon Zoning Plan*, 2018.

WATERFRONT

by Takanao Todo

CONTEXT

Waterfront is a threshold between land and water that functions as a trade base or redevelopments over the old trade base. During the industrialization of the city, accessibility to water was often lost due to the development of factories and warehouses. These facilities allowed the distribution of perishables and products faster than land routes. However, with the coming of motorization, there has been an increasing shift for logistics and the service industry towards using land routes, resulting in many warehouses and factories being abandoned. It was only after the 1980s amongst developed countries, a movement began to redevelop similar abandoned area with new commercial development. This attempt happened due to waterfront located by the city center preserving large flat plot, connected with transport infrastructure, and cultural assets of the historical architecture to be renovated, allowing to bring back the lost access to the waterfront.

From ancient time, the waterfront has offered much prosperity to Southeast Asian region. However, today, cities developed by the waterfront are detached from its waters. As industrialization came late to this region, many industries are still operating at the waterfront while some factories, warehouse, and architectural heritage are available for redevelopment. But there is also a positive side to the Southeast Asian context. Many of these cities still have kept its original waterfront scape, as opposed to other developed countries like Japan that filled the majority of waterfront, canal, and river, thus losing their historical continuation. Retaining the historical connection together with new development is the future of Southeast Asian waterfront.

BANGKOK

Bangkok has been demonstrating a transitioning period to revitalize waterfront along the Chao Phraya River while respecting the old architectural heritages. In the past, the waterfront was not very accessible nor attractive to visitors, except for the Palace area, Chinatown, and two luxurious hotels, Mandarin Oriental & Shangri-La. Recently, there has been a major development along Chao Phraya River triggered by Asiatique The Riverfront completed in 2012. The advantage to these developments has been the availability of heritage architecture, existing water transport system, escaping from traffic jam and enjoying a wide-open view of the historical waterfront, road network and new BTS rail-link system.

The waterfront at Bangkok is the most exciting place to visit today. There are significant commercial developments such as Iconsiam¹, Asiatique The Riverfront², and Lhong 1919³, cultural development such as Warehouse 30⁴, TCDC⁵, and Jam Factory⁶. Moreover, there are luxurious high rise condominium, and Old custom house⁷ waiting to be converted into a five-star hotel.

But all developments are not necessarily successful. As the main transport depends on private cars, some of these developments are not so convenient to access and are isolated whereas waterfront between Saphan Taksin to Talat Noi area are well activated, due to multiple choice of access, BTS, boat, and vehicle. Events related to design & art like Bangkok Design Week and Bangkok Art Biennale utilize empty architectural heritage as the venues and manage walkable access. Between each spot, there are café offering views of the river, artistic graffiti, narrow yet diverse & charming streetscape and hip restaurants with pedestrian friendly paths, which gives a sense of good placemaking. Providing these assets is inevitable to make a successful development along the waterfront.

¹
Iconsiam: a mixed use development completed in 2018 with the largest shopping mall in Asia with series of terraces offering a view towards the waterfront, and there is a large plaza by the river creating a new public platform to accommodate various events

²
Asiatique The Riverfront: semi outdoor market renovating large dockland originally built in 1897

³
Lhong 1919: Renovation of historic port and warehouse built in Chinese courtyard house built in 1850

⁴
Warehouse 30: Renovation of a warehouse built in 1940's accommodating various commercial and cultural events

⁵
TCDC: Center for Thai Design activities, attached to Grand Postal Building built in 1940.

⁶
Jam Factory: Renovation of an old warehouse functioning as a center for subcultural gathering

⁷
Old custom house: Built in 1888 designed in Palladian style

REFLECTION on Students' Work

DUAL CITY WORKSHOP

Group A proposed low rise development instead of building another high-rise, with view porosity, providing public green space for relaxation/recreation while purifying air pollution. Often on Southeast Asian waterfront, there is a lack of green and public landscape, while developers are competing to build private high-rise to monopolize the waterfront view. The proposal creates a good contrast to other developments by address a positive sense of the gateway. But, the project must correspond to a more complex urban issue. In Cambodia, despite the high economic growth, there are serious social issues such as low literacy rate, poverty, the economic disparity between city and countryside, and quality of education. Furthermore, due to the civil war, there is a lack of continuity in cultural development.

The site has a potential contribution to improve the quality of society. For Example, providing temporary shelter where street children obtain enough nutritious meal with proper education for the craft. The products which they would produce would be sold at the market within site. For the implementation of such a programme, it requires good dialogue and interaction between the various social status of people.

Group B dealt with water treatment which is another aspect of potentially a good development to improve water quality, which the visitors can engage with while providing awareness of the environmental issue. Since Southeast

Asia faces severe water pollution, it is their responsibility to overcome. About 24% of the population does not have access to safe water today in Cambodia. The issue of safe water is caused by a lack of restriction on sewage, felling of flooring forest, rapid development with an increasing in population and factories, contamination of underground water pollution. An Acceleration in polluting water causes serious diseases, especially for the people who use this water as a living, and drinking water, as well as those that consume fish from the river. While looking at macro scale water treatment in the project, it is equally important to improve daily life rituals of individuals. For Example, in Cambodia, NGO WaterAid provides sewage purification system, "Handypod" activating bacteria in the local plants to disintegrate waste. The system is made fully with local material, is low cost and has minimum impact on the surroundings. This kind of micro scale project helps people to engage with macro water issue over a period of time.

WATERFRONT 01 / GROUP A

New Gateway To Phnom Penh

Yi-Chun Lin (Meiji University)

Tianyi Wang (Meiji University)

Jeffrey Tio (Meiji University)

Ban Bunheang (Royal University of Fine Arts)

Sok Reaksmeay (Institute of Technology of Cambodia)

Myat Myo Maw (Yangon Technological University)

According to the urban development guidelines, Cambodia is starting to determine the density of development in the zoning plan. In spite of a general criticism of an increase in density of development, therefore public space has become lesser and lesser, the city has decided to follow the original zoning plan. We take this situation as a challenge and suggest a landmark for the development while following the original zoning plan and its density guidelines.

Urban fabric around the site was established with French colonial influences. It is understood that such historical urban fabric nurtures life and culture of the place. Therefore, within our proposal, the urban fabric is extended to the site to create a landscape that reminds people of their city.

In the current context, it is mandatory to address sustainability of the culture and people, as learned from Singapore, one of the leaders in Asia's waterfront development. With this in mind, we prioritise the development of local culture in order to help the locals to learn the importance of a good public space.

"...Public spaces are needed. The need for spaces of all types and sizes is obvious- from the little residential street to the city square". (Gehl, J. 1987, p51).

An article by Ben Willis in partnership with Common Edge, stated that public space is inviting for all ages and giving the opportunity for the people to reshape its function. Based on these thoughts, we minimize building-coverage ratio and divide the site into three distinct zones: the factory zone, the public zone, and the high rise zone. The factory zone is preserved and its role is changed to become a new terminal, as the new transportation route and the future possibility for water transportation. The public area serves people and gives freedom to the citizens to reshape it. We placed several retails and mixed it with the extended urban fabric landscape. The High rise zone serves as a generator of economic activity. As we limited the building coverage ratio to around 30%, it demonstrates that key to the developments is not just about the economy, but also citizens and their environment.

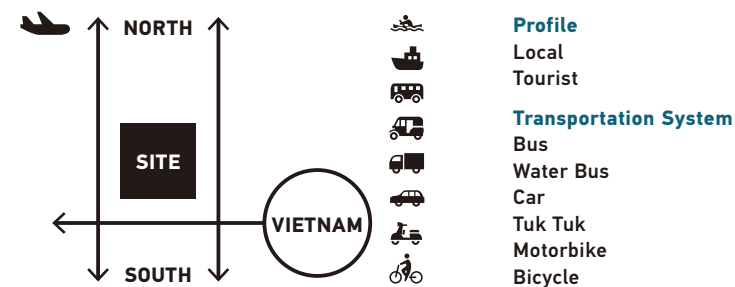
These three zones are characterised based on the extension of urban fabric which is similar to the concept of urban zoning. The factory zone supports people who are attracted to The Gateway. The Tower serves as the foundation for the economy. The Public place is the melting pot where the locals and travellers will meet. People will see how Cambodians live and use their spaces, while foreigners will inspire a new possibility of a new shape of public space.

GATEWAY Concept



DIAGRAM

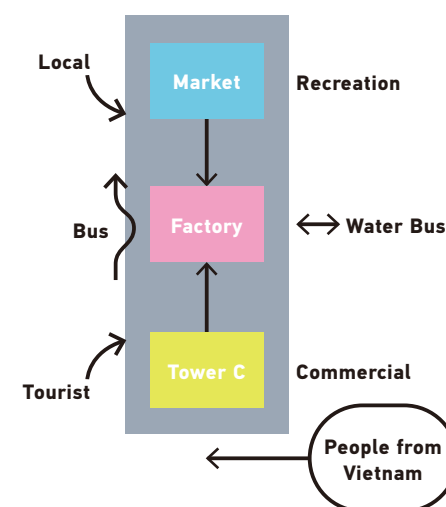
Transportation Intersection



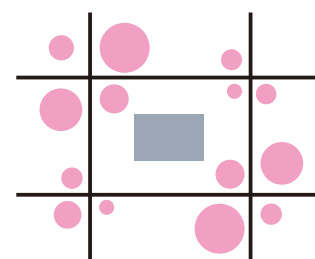
City Grid Pattern in Phnom Penh



Potential Site Strategy

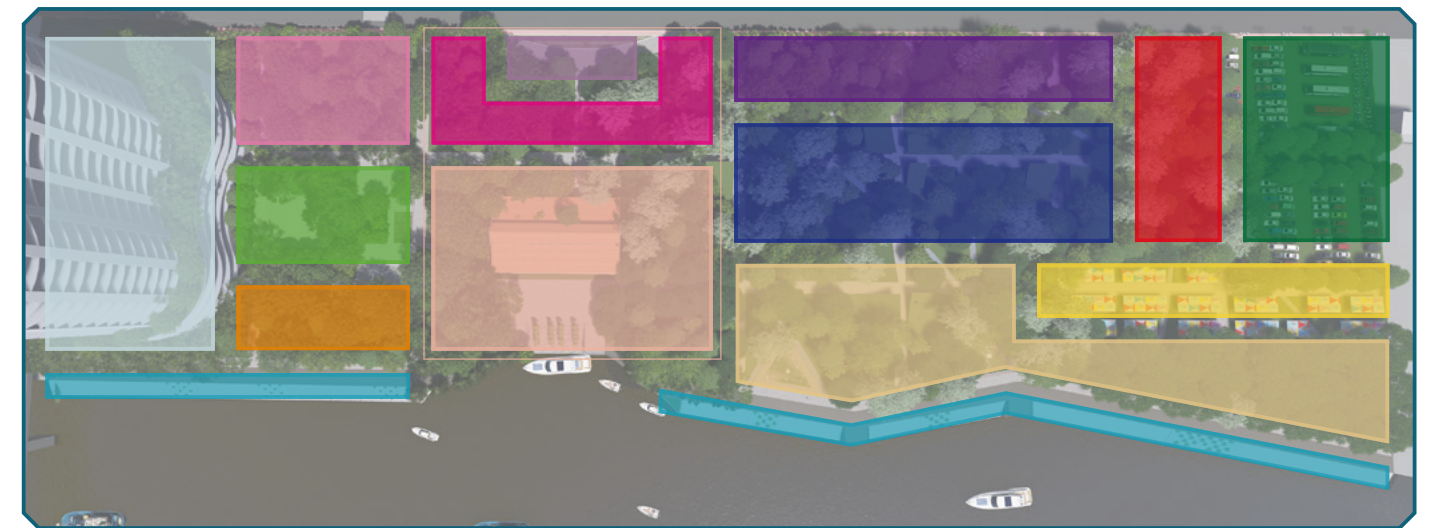


Our Site Grid Concept



Elements of the City

Grid
Path
Edge
District
Node
Landmark



Commercial Tower

Bar
Restaurant
Hotel
Office
Food Court
Retail
Parking

Factory

Terminal
Culture Center
Drop Off Area
Pedestrian and drop off entrance

Market

Day Market
Night Market
Street Vender

Activity

Activity Around Node
Create Community
Cafe
Shop

Forest Park

Trees
Lawn
Garden

Parking

Car
Tuk Tuk
Bike

Picnic and Play Ground

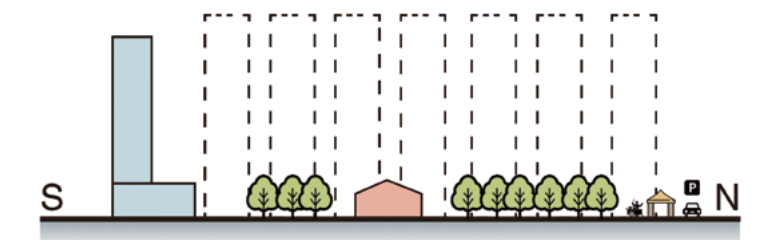
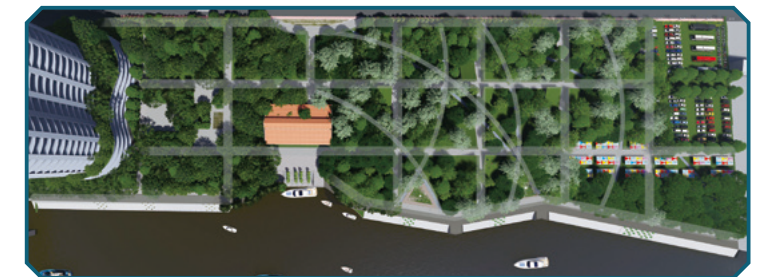
Pomenade

Sight Seeing Area

Car entrance area

Green barrier

Children's park



WATERFRONT 02 / GROUP B

Water Culture Museum

Ayah Sibai (Meiji University)

Jun Yashiro (Meiji University)

Meng Qingyuan (Meiji University)

Vattany Sok (Institute of Technology of Cambodia)

Anulath Souninmarvong (National University of Laos)

Mon Mon Shwe Yi (Yangon Technological University)

Research & Objective: The river is the spine for the city's trade, transportation and one of the main sources of its food. During Cambodia's biggest festival "Oum Tuk" or "The water Festival", it is celebrated and is inseparable from a Cambodian's daily life. With this consideration, we pursued this project with the river as its main inspiration: to revive and celebrate the water culture. The function of the project is to propose a water museum with markets that portrays the importance of these waters.

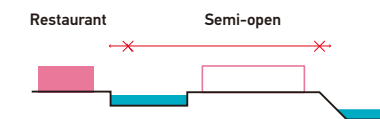
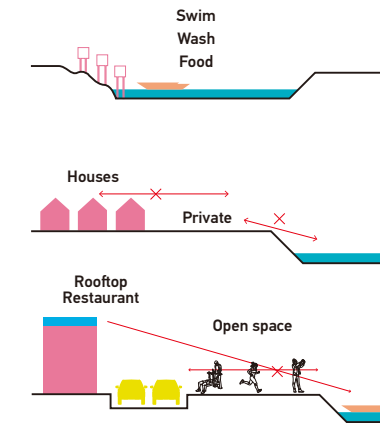
Water pollution was one of the biggest visible issues in Phnom Penh. It is a natural habitat for many species of animals and plants, and many are deteriorating because of the pollutants in rivers. It affects the society and economy by increasing health risk, decreasing recreational activities and drawing away tourists. Proposing a water purification system within the museum enables the city and its population to address the importance of the issue and raise awareness.

This system brings together markets with the educational objective of the museum. The design aims to make "water purification process" with machines to showcase the process and portray the importance and value of clean water.

Process of Design: Mapping different sections and scenarios along the river revealed that the water is far below the plain ground on the bank and there is no connection with the surrounding built environment. The only active use of the river water was amongst informal settlements, where the water is used for cleaning. Our aim is to provide and integrate leisure and water activity into the waterfront facility whilst the design allows a connection between water and the built environment.

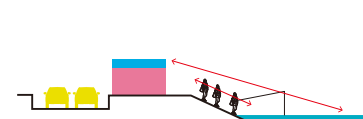
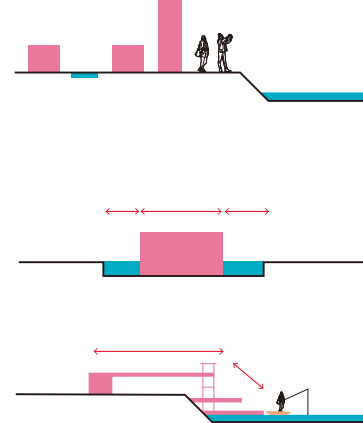
Concept & Strategy: The design strategy focuses on the flow of the water with the purification system and its connection to public space as well as the market. We deployed the canal as part of the purification system, which interweaves in a nonlinear pattern between structure and public space. It disperses the public space into smaller pockets bringing better spatial quality and creating a directional pattern between the different functions. The "Water Museum" focuses on the culture, built environment and public space that surrounds the river. The main content of the museum is exhibitions showcasing boats, water culture vocations, markets and the water purification system that runs through the site. Our strategy is to achieve a new meaning for public space in Cambodia by providing an interactive waterfront that links the built environment and the river. We designed a project that contributes to both education on the importance of respecting river cleanliness and a leisure place for everyone to enjoy.

Current River and Built environment sections



Sectional studies of the connection between the river and the built environment at different places along the rivers in Phnom Penh. The sections on the left are studies of the existing condition and to the right are proposals of how we can achieve a better connection.

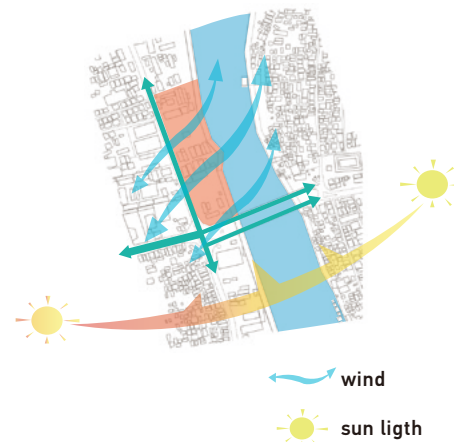
Proposed River and Built environment sections



1: User Analysis



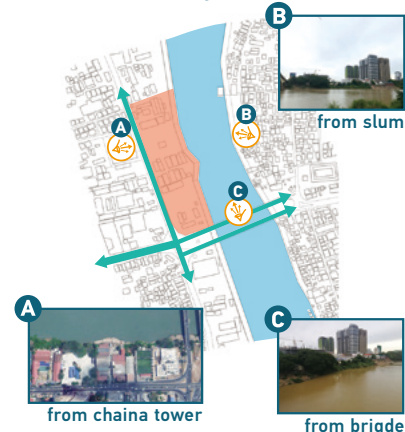
2: Sun and Wind Analysis



3: Sound Analysis

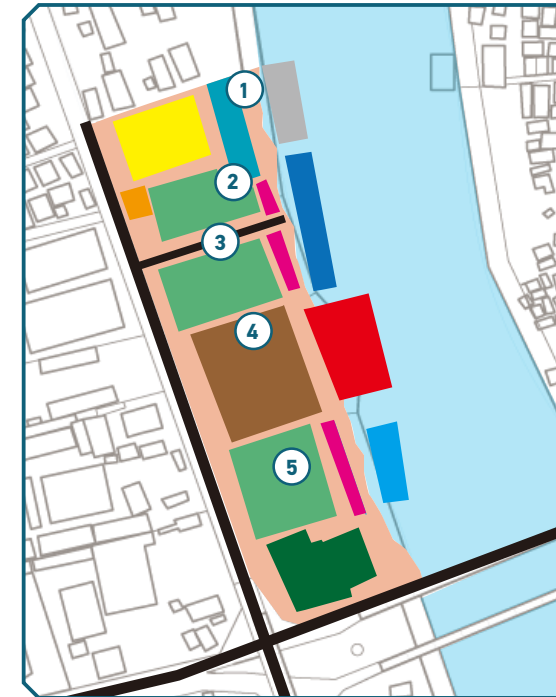


4: Views Analysis



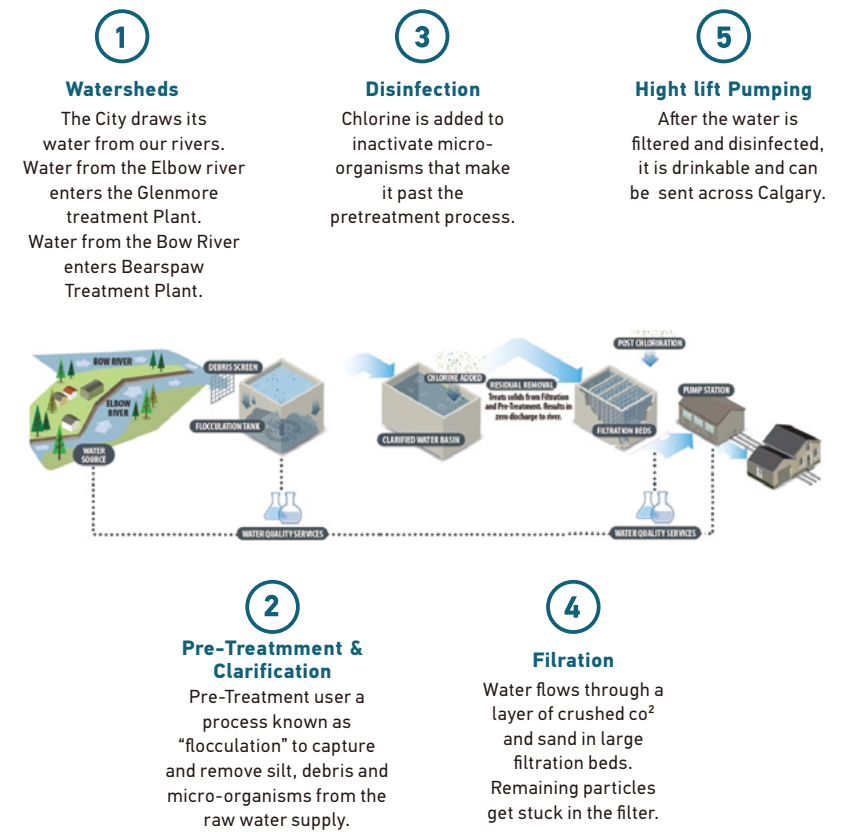
In our research we did regional, district and site analysis. The diagrams above show some of our site analysis on the smallest scale.

Diagram showing the distribution of functions and the placement of the main Water Purification Process rooms on site.

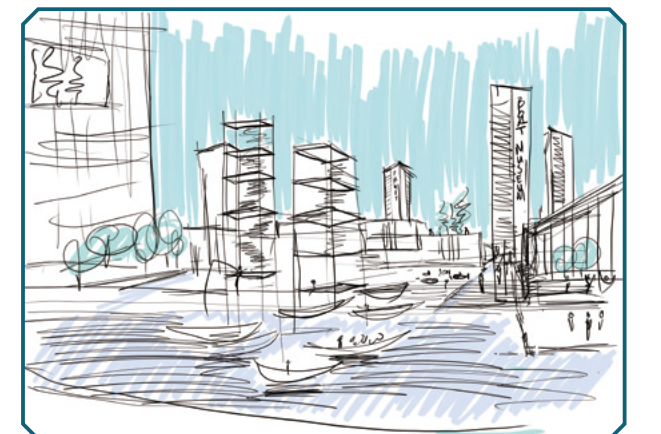


Parking **Bus Stop** **Terminal** **Market** **Museum** **Hotel** **Restaurants** **Water Taxi Port** **Fishing** **Outdoor Theater** **Water Market**

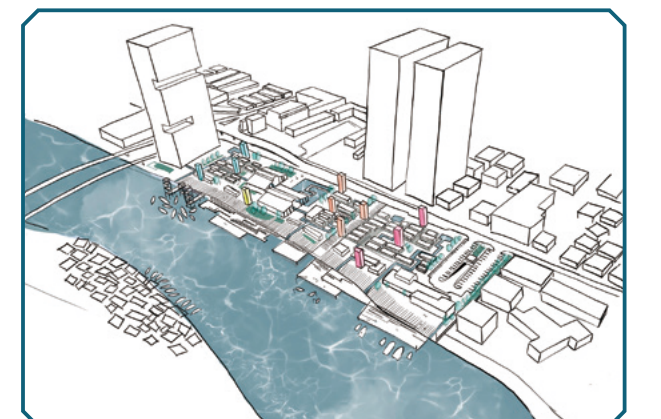
Water purification process simplified with numbers on site.



Masterplan Design proposal. The design placement of markets and decks on the site are shown. The yellow blocks are the towers that act like lighthouses directing people from the river side and landside where each market is located, and the orange blocks resemble the main water purification process rooms where machines are located along the site.



perspective sketch of showing directional towers, markets and water boat market decks.



Birds eye view perspective sketch showing a full view of the site and the design and distribution of functions on site and the connections between the river and built environment within the site and with the surrounding environment.

POST INDUSTRIAL

by Htet Htet Lwin

Since post-industrialism became the advent of complex information age, service industry and the knowledge worker, this argument turns towards defining characteristic of underlying condition of complexity. In the Southeast Asian context, especially CLMV counties have been experiencing early stage of post-industrial development, such as preparation of long term strategic plan for greater urban regions and redevelopment of remnant industrial areas in the periphery of the city. Process of defining challenges and problems within such complex circumstances is dependent on individual perception of underlying driver and/or agent. In order to partake in the process of the development as professionals and academics, it is useful to remember the distinction of indeterminate or wicked problems of design as described by Rittel and Webber (1973 Particularly, development in relation to environmental issues, as stated by Stephen Howes and Paul Wyrwoll brings to attention "...the complexity and significance of Asia's environmental challenges, and also their nature as wicked problems". The characteristics of wicked problem can be briefly described as ill-structured problems with incomplete beginning parameters, no consensus about the resources available or the desired outcome, no hope of complete knowledge about the interrelated aspects of the factors involved, and no real stopping point or ultimate means of evaluation. Consequently, each attempt to solve a wicked problem iteratively changes our understanding of what the problem really is and what the solution should be. Herbet Simon (1991) defines the appropriate coping mechanism as 'satisficing' with decision that is good enough to achieve acceptable accuracy without the

paralysis of waiting for complete and precise information or complete analysis. The complexity of developments in the current environment does not only lay in the identification of problems, but it appears in the process of making planning decision between stakeholders, including local authorities and communities. In the post-industrial context, for example, adaptable use of old industrial sheds may be understood as an interim use of existing resources while waiting for additional FAR allowance on the land or minimizing risk of large single investment by keeping some portion of the parcel for future development. From this point of view, to gain maximum profit from the project may not appear to be the right decision. But these thoughts are all plausible scenario for more number of stakeholder to agree on. Practice of professional and academic discourse in design must partake in such processes to demonstrate independent and alternative approaches. During the workshop and its theme of post-industrial development, the work of students presented unique approaches to the problem and unorthodox proposals.

There are three main parts in post-industrial emergence: Planning, Practice and Design. These three parts can be categorized into further branches as follows:

- Planning -
- (1) Ecological Sustainability with Nature

(2) Biocentric Cosmology

(3) Cyclical Flows

(4) Strategic Goal

(5) Long-term Plan

(6) Continuous Change

- Practice -
- (1) Process and discipline oriented

(2) Globe effects of interaction

(3) Systemic relationships

(4) Nature as the icons

(5) Cybernetic integration

(6) Analogue simulation modeling

(7) Mass Customization

- Design -
- (1) Holistic and non-linear

(2) Embrace technological complexity

(3) Self-emergent intelligent form

(4) Design of future scenarios

(5) Transdisciplinary teams

(6) Designer-as-collaborator model

(7) Design for social justice

(8) Intelligent auto motion

(9) Robust dynamic solution)

Design concepts change due to transformation within theories of post-industrial architecture towards an information-based era. Architects and specialists should consider concepts concerning mental development for human rather than excessive physical development. Spaces are basically designed to fulfil requirements of physical needs. Today, besides physical development, spaces are designed with consideration of mental development, such as sharing and sympathy which plays important roles. Such spaces and its design must lead to mental development of human, for instance, green, active, safe and prosocial spaces that enforce sharing, kindness and coordination. Public and community spaces are important to achieve this. Besides, eco-friendly and sustainability in development save the valuable resources of the earth.

REFLECTION on Students' Work

The project site is surrounded by Asia highway, commercial zone, residential quarter, market and slum ward. Economic development should be considered due to the adjoined commercial zone and Asia highway. Shared community space for market and residential quarters is key to the integration of the concepts of mental development. In this community space, people can share, communicate with each other and even use it as a relief space for relaxation. Space must become alive, lively and pleasant. Community slum ward is important for this project. Challenges of incorporating the ward are providing career opportunities and educational programs. Reviewing works of students, Group C presented a proposal based upon concept around public communication. Within the design concept, there is continuity for preparation and consideration for future development. Renovating of existing industrial buildings is a great and reasonable idea for the design work. Group D presented concepts of sharing and transparency which can support mental development of the people. The concept of sharing is a very important idea for design work and is admirable. Transparency in the design work attracts community to enforce coordination. Even if it is based on a good concept, a design cannot become functional without coordination with community. This type of concept, welcomes coordination with community, and makes the idea stronger.

References
Postindustry Architecture, Dynamic Complexity and the Emerging Principles of Strategic Design by Leonard BachmannUniversity of Houston.ARCC Journal /Volume 4Issue/

POST INDUSTRIAL 01 / GROUP C

Starting Point

Bui Thi Nhung (Ho Chi Minh City University of Architecture)

Sopharoth Morn (Royal University of Fine Arts)

Makara Long (Institute of Technology Cambodia)

Hideyuki Osawa (Meiji University)

Mariana Velez Ordonez (Meiji University)

Nowadays, the polarization between rich and poor in Phnom Penh city is evident due to the migration of people from different regions of the country as well as other countries within Southeast Asia. According to Pierre Fallavier in his article, The case of Phnom Penh, most of these illegal immigrants have no other choice than to establish illegal settlements. It becomes clear that the city needs a place where people from all socio-economic strata are welcome to stay and make them feel part of the city's planning.

The site's location, in front of these settlements and close to the future Central Business District (CBD), provides the perfect situation to create a connection willing to integrate the citizens and activities around them. Such integration could be possible through an educational environment which includes basic and higher education, up to university programs.

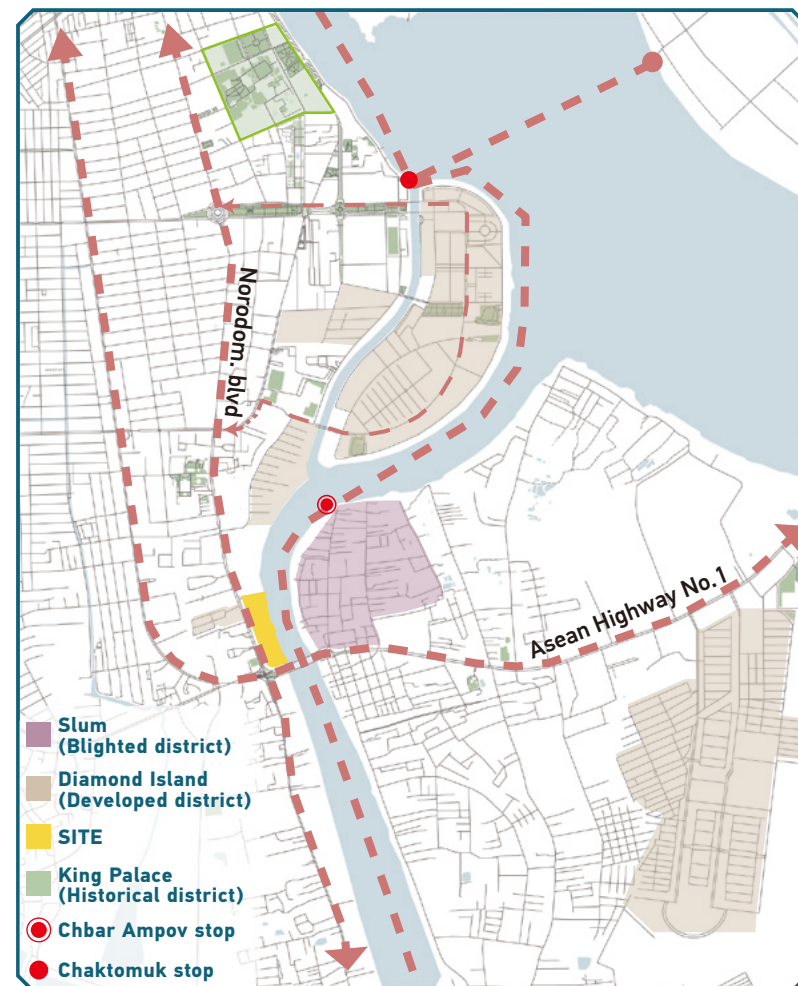
In order to achieve this, we identified that the main challenge within this proposal is to create an educational environment where the rich and poor can come together within an Educational complex, responding to both, the current situation as well as the future developments around the site.

The purpose of the project is to become a cyclical grassroots program which will begin by working with the children (the most vulnerable population) and transcending into a program that can provide the citizens with a place to study, live and work by creating new job opportunities. Such challenging vision, require the support of a major organization such as United Nations University, capable of reinforcing the project's academic intentions as well as providing guidance to the community.

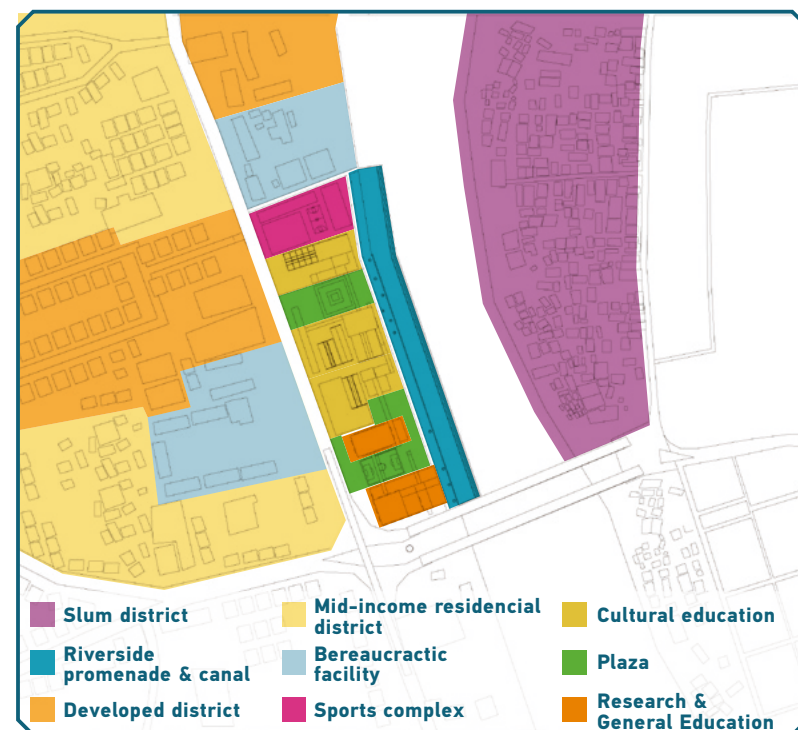
In recent years real-estate groups have embarked on mega plans to create Phnom Penh's CBD in Chamkarmon area. There are some vacant Post-Industrial era structures, some of which can be recycled, refurbished and reused for the teaching activities, while we will introduce new structures and buildings. All the structures will be educational oriented, and they will include basic teaching activities such as centers for food preparation with cooking workshops and other skills programs, up to higher education buildings for everyone.

The project is conceived in stages: within each stage, the UN University will lead and guide the strategies in order to build the first University in Southeast Asia. The first stage will be 'magnet programs' with short term courses. The second consists of introducing of long term education, including primary, secondary and high school. The final stage is research and higher education where we propose to build a University supported by the UN, and aiming to attract people from Phnom Penh, other countries.

In this way, the site can become an asset to the city and citizens.



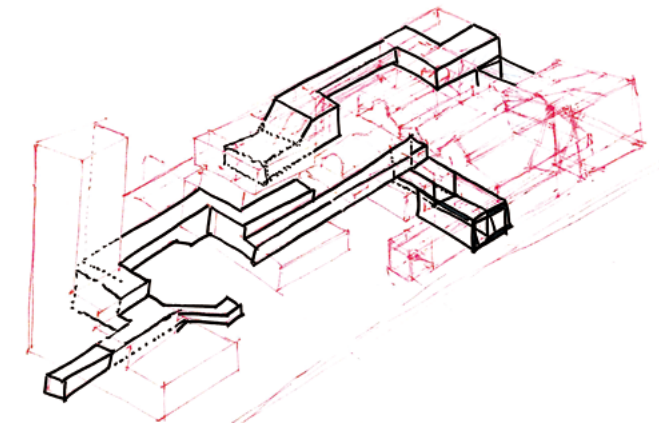
Situated around a lot of arterial transportation systems such as the ASEAN Highway No.1 and Norodom Blvd. During rush hours there is rough traffic jam because there is only one bridge connecting the east west sides



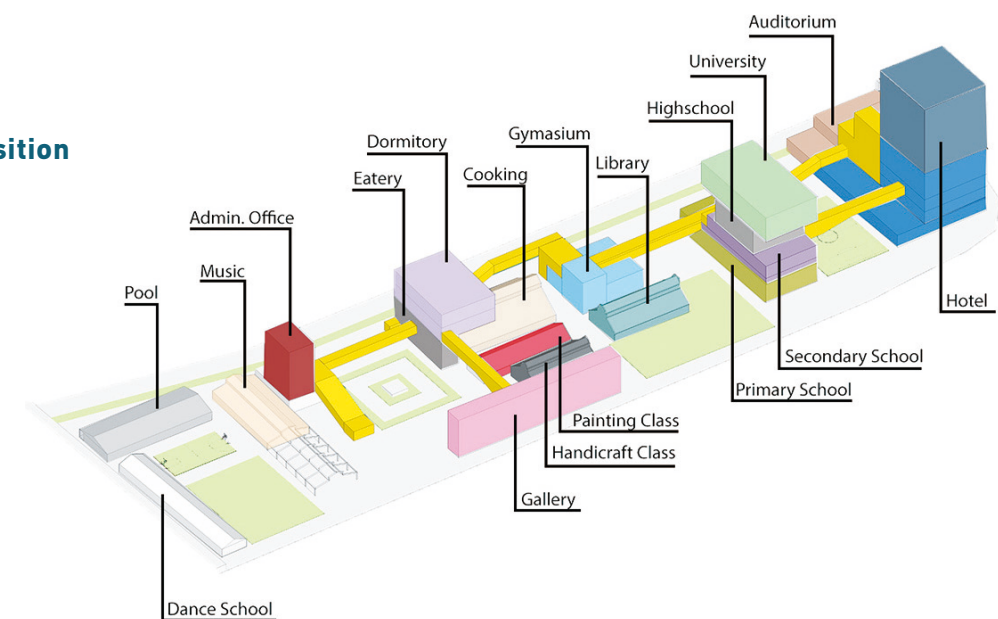
Land uses of surroundings and proposal.

Program Scheme

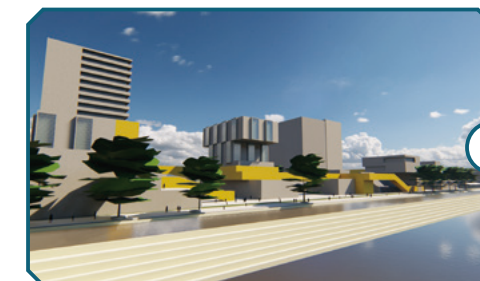
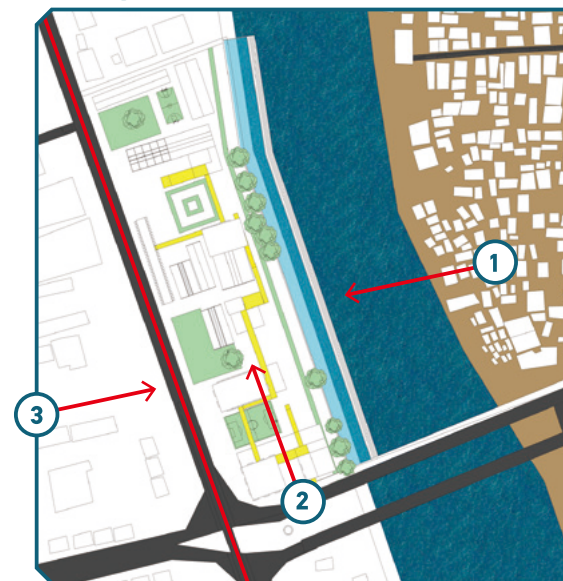
Existing buildings as magnets, New buildings for new educational activities and tubes to connect the buildings and public spaces with each other.



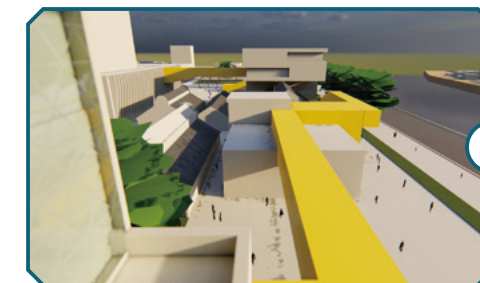
Mass composition



Floor plan



1 View from slums



2 Tubes and new buildings



3

POST INDUSTRIAL 02 / GROUP D

Revitalization Through The Experience Of Morality

Ngor Chinheab (Institute of Technology of Cambodia)

Nguyen Thien Thanh (Ho chi Minh City University of Architecture)

Kenjo Nishizuka (Meiji University)

Asuka Mogi (Meiji University)

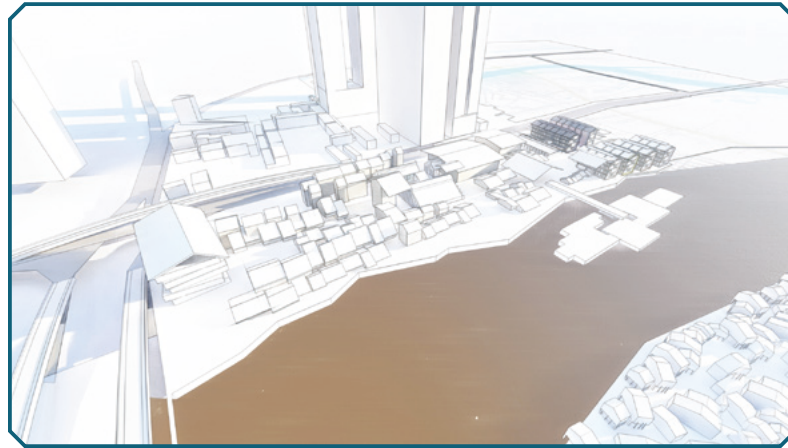
Oo Wai Yan (Meiji University)

Phnom Penh city is experiencing a revival of tourism in the city. It faces a challenge to protect its cultural values and the environment as a whole. Within the course of the project, the proposal aims to create a hub for inheriting Phnom Penh's original culture which has been abandoned by developments in the city. The culture must be visible for future generation and be part of their everyday life as a nurtured and realized heritage of Phnom Penh city.

Since Cambodia's socio-economic growth has increased very rapidly, especially between 1998-2007, rapid urbanization in Phnom Penh has created commensurate improvements in the living condition, job opportunities, and reduction of poverty. However, according to the Asian Development Bank Cambodia poverty analysis, 12.9% of the population live below the national poverty line in 2018. Deficiency in literacy causes significant differences in poverty incidence in urban areas. The location of new developments are arbitrary and conflicts with traditional settings, thereby damaging the general character of the town. The unplanned developments have disastrous economic effects such as job opportunities for young Cambodian. Our project conceived as a place to nurture young local people, so that future Cambodian generations are more active and confident. In order to overcome the aforementioned situation, we intend to encourage self-esteem and morality through education. To encourage self-esteem, we aim to create a sense of ownership. Subsequently, local people become more responsible towards the site with practical actions such as keeping the environment clean and maintain public facilities. Inhabitants can feel a sense of ownership by becoming parts of the project, while being involved in the process of building. The form which realize such process is an informal and self-built structure, which brings up the feeling of affinity. To encourage morality education, firstly, we come up with a functional program, which provides schooling and working facilities. We also want to raise awareness of local culture and its conservation, while implementing traditional Khmer house structure alongside renovated old factories. In order to create consistency within informal buildings, it is proposed that modern and vernacular style architecture are inserted in-between them.

It is essential to deal with their original lifestyle and traditional community networks, as it is observed in the slum on the other side of the river. While keeping such soft elements and respecting hard elements for the creation of opportunities, the project permits to hybridize them and new technologies. Such a process would make better living conditions along with a continuing their original lifestyle.

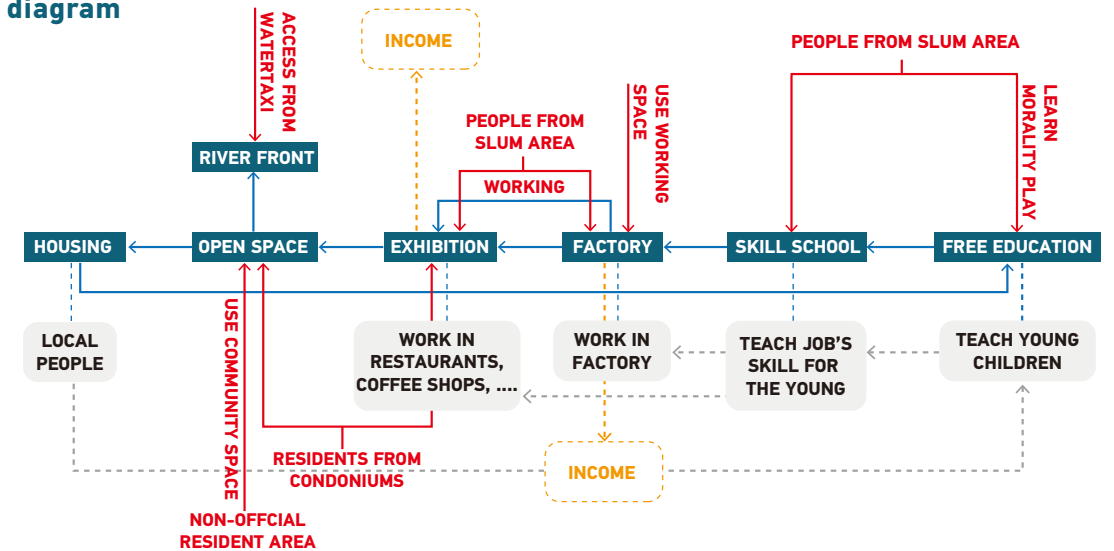
The proposed development of the post industrial buildings



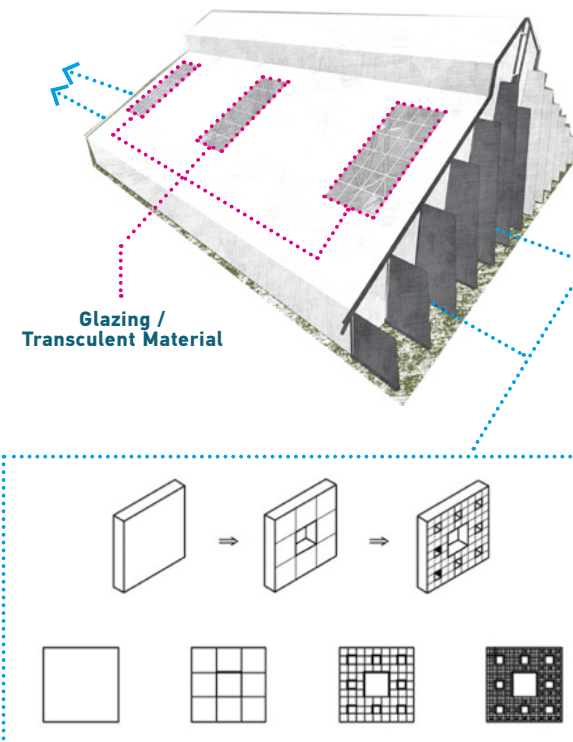
The relationship of the buildings within the development zone and its surrounding



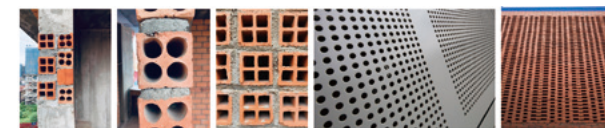
The functional diagram



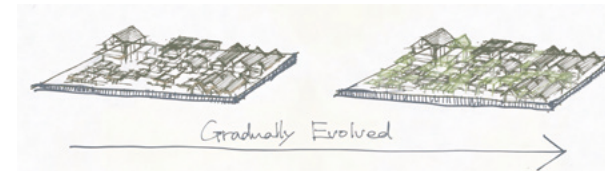
Transforming from opaque building into transparent



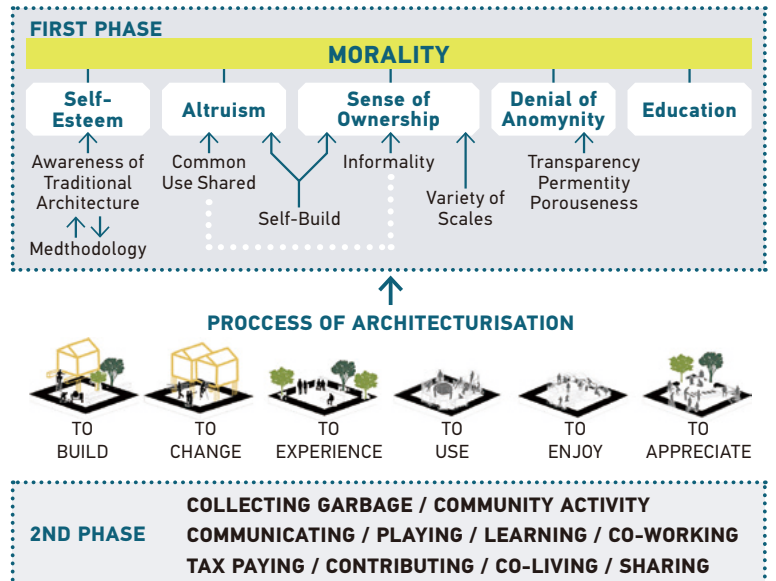
Local Material(Porosity)



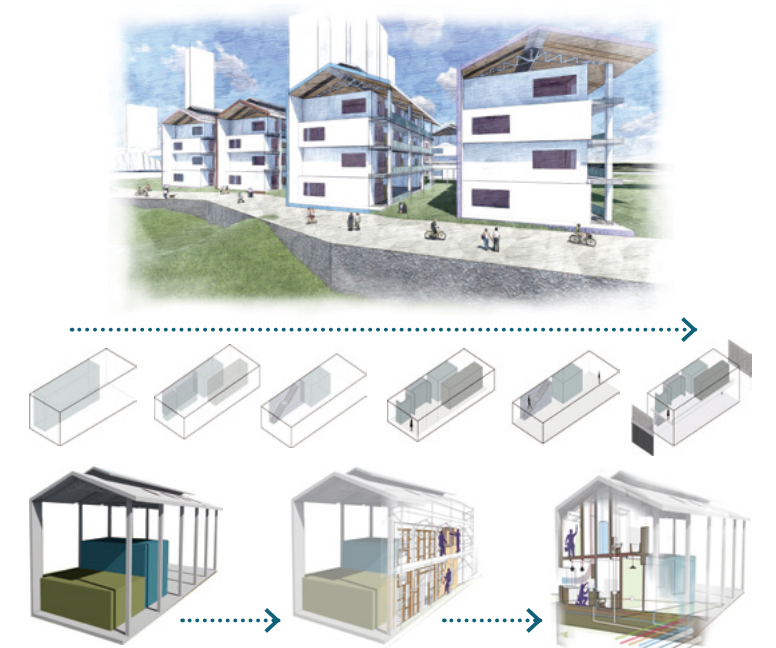
Self-evolving of the project



Stages of development



The concept of residential design



HOUSING

by Anousa Khammongkhoun

Cambodia has recognized the lack of affordable housing as a problem and has released the National Housing Policy (2014), which states that all citizens have the right to adequate housing. The guide provides options to ensure land tenure and security. The policy aims to provide low- and medium-income households and vulnerable groups with access to adequate housing, however, implementation has been slow, and many urban poor and slums remain exposed to vulnerable conditions (The World Bank).

Rapid urbanization and the influx of Foreign Direct Investments has led to real estate development in Phnom Penh. Large scale private sector developments such as the Platinum City Project, Diamond City Project, Camko City Project, and the Grand Phnom Penh Project have significantly increased housing and commercial real estate supply to the market. However, affordability remains a key challenge for urban housing in Phnom Penh where matching supply to demand of low-income households is necessary.

According to a literature review on urban housing, it is found that social, economic and environmental sustainability are key issues that need to be taken into account when designing urban housing in the capital.

The World Bank's survey of urban citizens in Phnom Penh in recent years showed that households that are occupied in service sector cover a large proportion of

urban inhabitants, while those working in agriculture remain small. It is understandable that plan of urban housing in the capital city must transform from a traditional plan to contemporary social and economic functions.

In response to social change from agriculture to a commercial community and an industrial society, design has also transformed, from typical detached house on stilt to shophouses and later on multi-storey collective house. The White Building is a good example of collective housing in Modern Phnom Penh. According to Sokly Yam and Seo Ryeong Ju (2016), the shophouse in Phnom Penh can be classified into two types: private courtyard shophouse (PCS) and shared courtyard shophouse (SCS). The former PCS maintains most of the characteristics of early shophouses while being transformed into a modern multi-story apartment within a limited one bay plot. However, SCS refers to shophouses adapted from indigenous forms of PCS that evolved into multi-storey and multi-family housing typology that includes features which might have been adapted from Western apartment buildings such as sharing a big courtyard, staircase and corridors. It is concluded by Sokly Yam and Seo Ryeong Ju that shophouses have positively adopted a Western building typology, adapting it to local traditions, and finally formulated a new building type that are indicators of a modernization process gradually accepted by society.

From an economic perspective, affordability for the urban poor stands as a core housing issue. The privatization of land in the Cambodian capital has gathered pace and is taking on diverse forms. For instance, the conversion of agricultural plots to residential uses in and around Phnom Penh is leading to enormous increases in land value (Bruno Friedel, 2020). Although real estate development projects across the city can provide housing units, yet affordability barrier remains for lower income habitants. This challenge calls for both, inclusive land governance to provide more equitable housing land access and better affordable housing for low income households.

In the context of climate change, flash flood is a challenge for urban resilience. Typically, traditional houses in Phnom Penh just like in other parts of Cambodia are built on stilt to preventing flooding and humidity. Settling in flood prone areas in the lower Mekong basin, housing needs to be resilient to urban floods

In short, housing design needs to address three key issues: First, housing design should adapt to social change, that from an agrarian community to an industrial and service oriented society. Second, housing should be made affordable for households with low income. Third, environmental sustainability needs to be considered while adapting to climate change.

REFLECTION on Students' Work

Group A aims to create housing that maintains the ethos of rural communities while addressing new human productivity for the future economy. They proposed a housing complex resilient to flooding. The stack buildings are designed to be built on stilt, making use of ground level as a common commercial space which connects to green open spaces. The design also provides cross ventilation in order to benefit from natural wind from the river. At the upper level of the building, they provide space for social work activities, which help to create a sense of community. Overall, the project transforms traditional horizontal community into a vertical urban housing complex, addressing concerns of social capital, adapting to the environment while maximizing land value.

Group B students came with a socially inclusive approach. In parallel with the physical design of the housing complex, they proposed an inclusive housing development; encouraging participation of local community, academia and/or experts. In order to grasp the social structure, the group first analyzed housing typology, particularly those of low and medium-income households. They propose three types of house plan to meet the needs of different sized households. Housing stacks are designed into two parallel buildings, separated by a common space in between. This common space is where people can meet and work together. The students tried to create mixed community by letting experts and community people live together and collaborate, enabling local skilled workers to learn from these experts. The housing complex will become not just an accommodation for people, but it will act as a self-supporting institute that creates an opportunity for the people to improve their quality of life.

HOUSING 01 / GROUP E

The perspective of Khmer Urban Village

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Muhammad Rahmat Bin Khairudin
(National University of Singapore)

Seiko Baba (Meiji University)

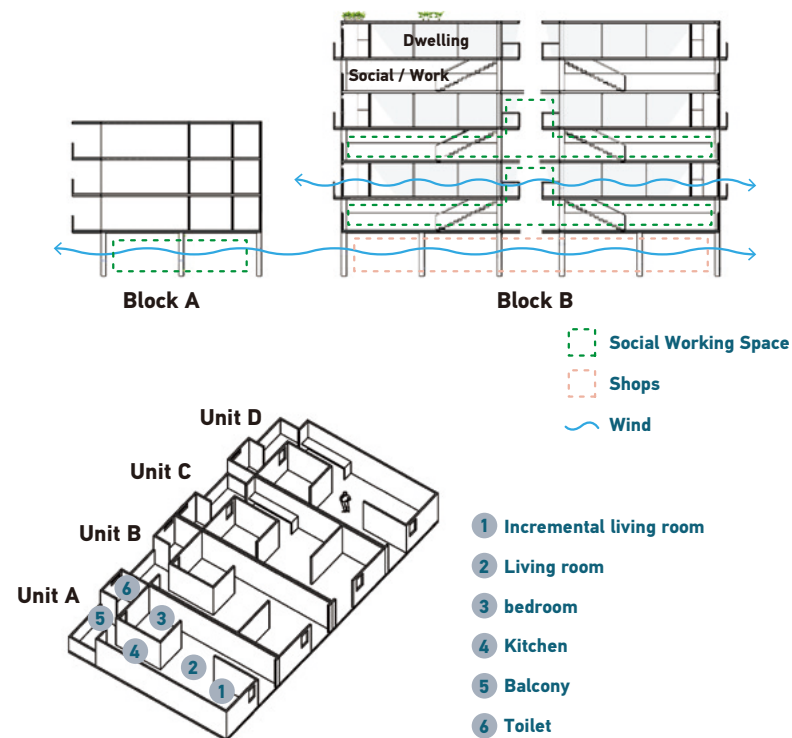
Yuto Kato (Meiji University)

Lee Ka Chun (Meiji University)

Phnom Penh is the economic center of Cambodia and attracting many foreign capital investments, especially Chinese. Its population is increasing as Cambodians from other cities are migrating into the city. Urban developments that rely on foreign capital may achieve economic growth, however, it creates a gap between these developments and urban structures built by low-income locals. Observing such urban growth may indicate successful growth indexes, but the quality of life for the local people is not growing properly.

In response to such disparities, productive and uniform public housings are often developed for low-income groups. But does providing such simple housing really contribute to the endurance of the region and city? Development focused only on immediate economic efficiency deprives the region of its identity and the ability to proactively develop it. Incorporating a design that follows the locality and customs observed on the site into the housing will lead to independent growth. Our proposal aims to become a public housing area that encourages a new generation of Khmer people who are responsible for the future of the economy, customs and the community. We focused not only on housing but also on the economy and education. We thought that keeping close distance between living and economic activities was essential to follow and foster regionality. Education attracts new players within local economies and cultures. Our plan integrates local customs, activities and the surrounding space into the project.

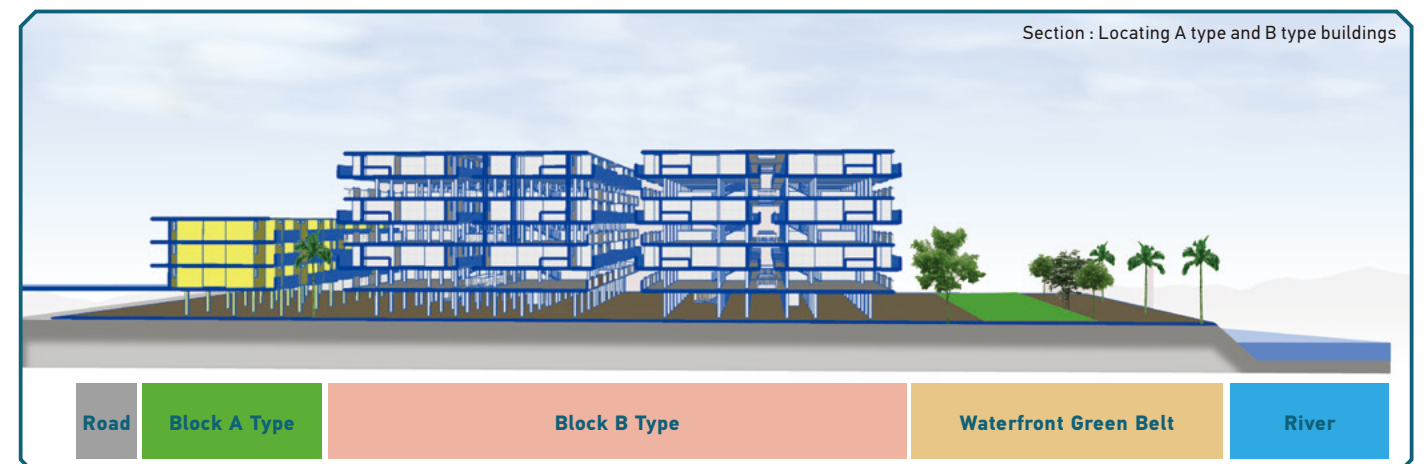
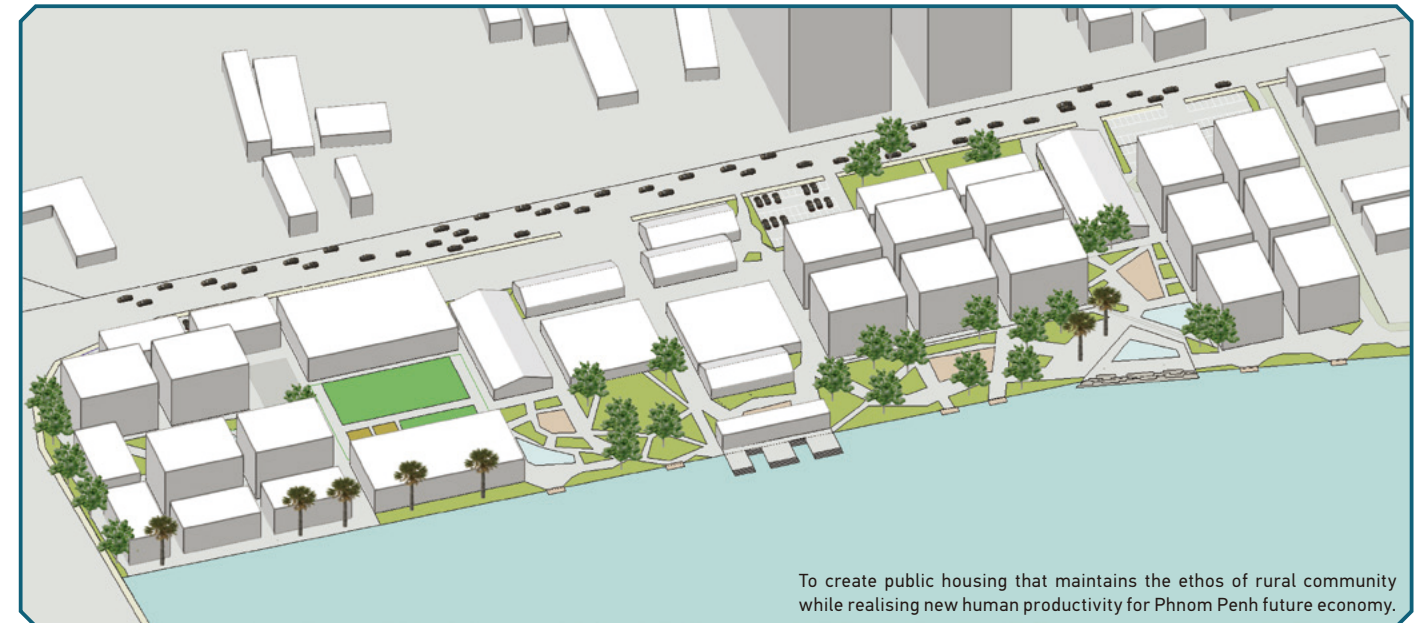
We surveyed Khmer lifestyle and think that the design of apartments should come from traditional housing styles in Cambodia. Especially, in terms of replicating the floor plan of traditional dwelling units, we have incorporated stilt designs into our apartments. The survey suggests that stilt level space act not only as a flood margin but also is used as a daily social space. We design the two types of apartments, creating a small social space where low-income and diverse people gather and coexist. The stilt space adds economic and communal activity into housing. Additionally, we paid attention to the road situation in Phnom Penh, where we observed a vibrant street life with economic activity. Seamless linkage of traffic on the main street adjacent to the site would be necessary to increase economic activity on the site. Our proposal is not a conventional mixed development, without integrity towards tradition, rather it promotes quality development by creating an interaction between program and space.



If we compare the connection of function within the house before and now, we see the reverse of balcony and kitchen. The entry point of the house before is from the living, but now we enter from kitchen.



Community Plaza : A new village core in urban Phnom Penh.



Drowning out Structural Poverty One Citation at a Time

Lay Lichheav (Royal University of Fine Arts)
Hong Terng Wei Nijel (National University of Singapore)
Yuichiro Sugiura (Meiji University)
Gaku Mukano (Meiji University)
Liwenze Zhao (Meiji University)

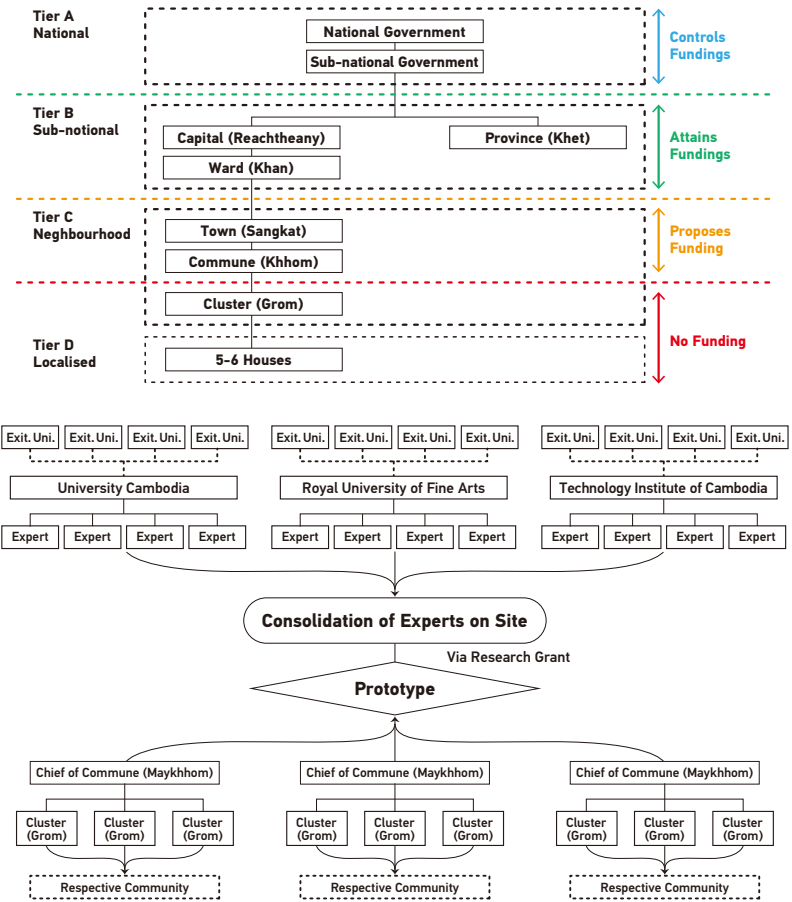
Phnom Penh is facing a housing shortage problem in recent years. Causes of the problem could be understood from many aspects. Many constructions rely on international assistance due to lack of government budget for affordable housing. Secondly, even the government provided some affordable housings, it is unaffordable for the poor. In this proposal, we focused on integrating education with improving the economic situation of the poor. We observed that some of the poor people have skills, such as maintaining the second-hand appliances or engines. We proposed a self-support institute, where experts and local skilled workers live together and collaborate. Such a mixed environment would enable the local skilled worker to learn living skills from experts, permitting them to start earning more, thereby improving their life. We investigated local housing typology and proposed three types of housing unit. The basic unit can meet the needs of a family with 1-3 members. The floor height is 4.5 meters and has provision to add a mezzanine in the future. The second type is the middle-size unit, for a family with 3-5 members. It has a much bigger living room which connected to the outside. The residents can open retail units in the living room. The third type is the biggest unit, for a family over 5 members with a separate workshop/parking space. The workshop/parking space is at the entrance of the housing and completely open to the corridor. Experts and local skilled workers can work together in this space, to produce and improve their products. We designed social spaces with different scales at every second and fifth floor to create public space. We also keep the potential of creating a spontaneous corridor over the access floorfor another public space for the residents. According to Phnom Penh Master Plan 2035¹ the city is envisioned as a multi-polar city keeping the historic fabric at its core, this area will become a secondary district linked to the core. Therefore, the proposed institute must become the center of the secondary district. It achieves accessibility and connectivity by keeping the first floor open to the road and the riverside. While the institute is located at such a transport junction, people from the city will have easier access to the institute. To conclude, a common affordable housing program is no longer valid. It cannot improve the structural poverty in Phnom Penh. The situation of poverty can only be changed when the poor are educated with reliable living skills. The institute introduced into the project could provide a foundation for education, that will change the current situation, and push the Cambodian Society to achieve economic development.

Master Plan

The north side is housing, and the south part is a laboratory and parking space.



Cambodia's Social Structure Structural Tiers

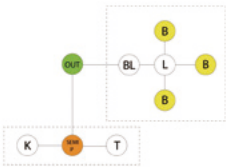


We studied the social structure in Phnom Penh, and we found that the management of Phnom Penh's society is a kind of Up to Bottom model, which can be the breeding Bottom to Up Social Structureplace for corruption. Thus we want to create a Bottom to Up community. What we want to introduce the experts to our community, make them as bridge of new technologies and management. They can teach the poor people and help them support themselves.

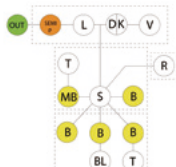
¹ Phnom Penh Master Plan 2035 is a strategic development planning approved by the government. (The strategies of this planning have covered many aspects, including zoning, traffic network planning, ecological planning, etc.) In the zoning map, the shore of Bassac River (Including the project site) is defined as the "high-rise building area", and will become the development base of Phnom Penh city. Also, the traffic network planning indicates that a 60-meter beltway is planned near the project site, and it will become the arterial road in the traffic system.

Housing Typology of Phnom Penh

We studied the housing typology in Phnom Penh, and generate three types of housing units, which can implement different uses.



Cambodia Low In-come

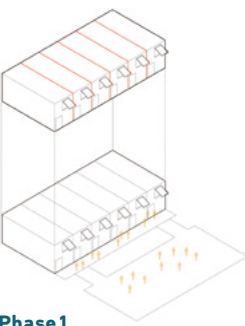


Cambodia Mid In-come

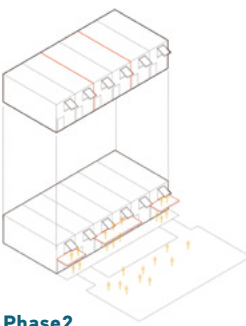


Spatial Features

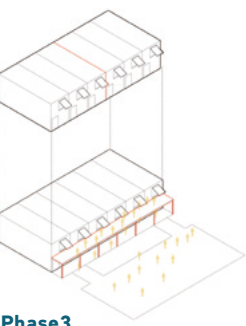
Spatial Transition



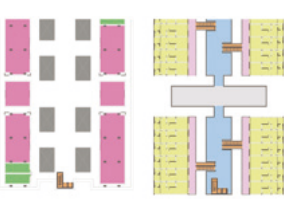
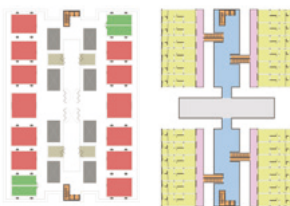
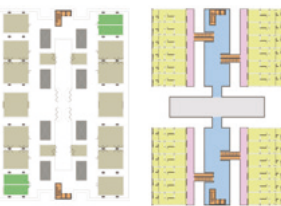
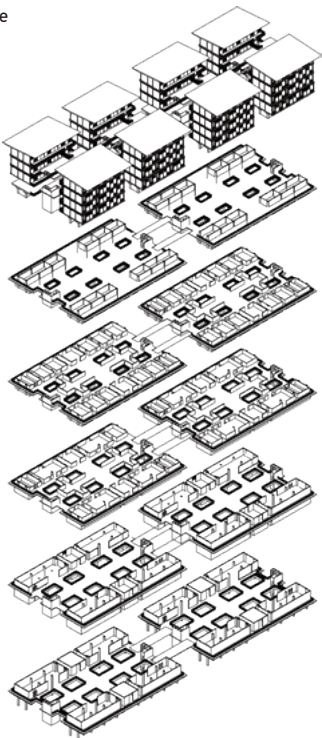
Phase 1



Phase 2

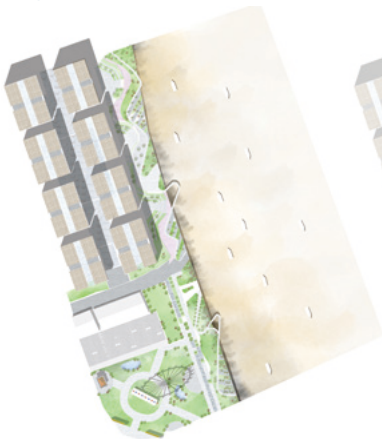


Phase 3

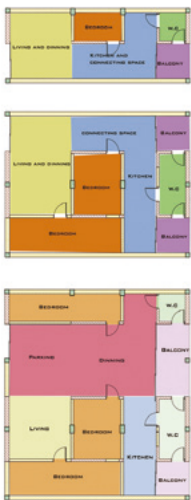
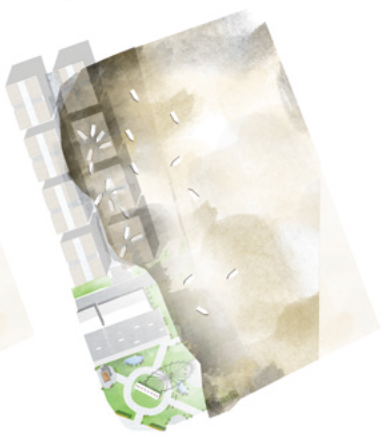


Typology-Small

Dry Season



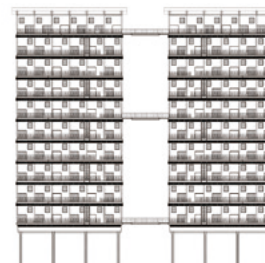
Rainy Season



Typology-Middle

Wall Brick (Not Statable Demolish)
Wall Reinforced Concret

Section



CONTENTS

- 01 PREFACE**
Hiroyuki Sasaki
- 03 ESSAY “The Tonle Bassac Workshop Site”**
Hash Chanly / Kim Sophanna
- 05 WATERFRONT**
Takanao Todo
- 07 “New Gateway To Phnom Penh”**
- 09 “Water Culture Museum”**
- 11 POST INDUSTRIAL**
Htet Htet Lwin
- 13 “Starting Point”**
- 15 “Revitalization Through The Experience of Morality”**
- 17 HOUSING**
Anousa Khammonngkhoun
- 19 “The Perspective of Khmer Urban Village”**
- 21 “Drowning out Structural Poverty One Citation at a Time”**

ASEAN dual-city joint workshop 3 | Phnom Penh, Cambodia

Project team

Partner institutes :

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