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WISDOMS IN HUMAN SETTLEMENTS: LEARNING FROM SOUTHEAST ASIAN CULTURAL & ENVIRONMENTAL HOLISTIC SUSTAINABILITY⁹

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ABSTRACT

The morphogenesis of the human settlements initiated by the human habitation and articulated by design, following a certain ordering principles. Universally human believes that they live at the middle in-between two poles of the universal order: the divine and the evil, upper and lower, mountain and sea, sunrise and sunset, conceptualized as the tripartite divisions of space – horizontally and vertically. Settlement morphology in Southeast Asia follows this cosmological pattern in different scale levels, from urban scale to urban-segment down to building/dwelling scale.

Southeast Asian cities, which developed around the “Mediterranean of Asia” (coastal areas around South China Sea, Java Sea, and Malacca Strait) since the beginning of inter-insular and inter-continental trades from the 1st century until today, are formed by complex layers of various cultures, ideologies, economics, and ecosystems, manifested in the hybridity of urban morphology and architectural typologies.

For more than two millennium of its urban history, many cities in Southeast Asian region have demonstrated their ability in preserving some of its primary elements, basic morphological patterns and layers, both tangible and intangible (such as: the cultural collage, interweaving of community diversity, hybridity in the built-forms and the material culture, persistence and permanence of urban patterns and artefacts, etc.).

The wisdoms of building traditions in Southeast Asia is the rational outcome of local climate, available building materials, development of construction techniques, manifestation of beliefs and rituals, and lessons of sustainability learned over many generations. Common vernacular typologies like shop-houses and bungalows in Southeast Asian urban areas are the product of the cosmopolitan communities, the articulation of the multi-layered tangible and intangible traditions, and the direct response to local microclimate of this tropical region, which has been developed and re-developed over long historical period.

The keynote will discuss various examples on different scale levels of urban environment (morphologic, sociologic, symbolic) and will focus on how we can learn from history, real experiences, and local wisdoms on tangible efforts to achieve environmental, cultural, and economic sustainability in holistic way. It will present some sustainability lessons and design wisdoms learned from Southeast Asian urban environments, and how we may be able to respond to the current problems through examining our behaviours towards nature and culture.

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I. CONCEPTION OF “MEDITERRANEAN SEA OF ASIA”

Looking from the sea towards the land, Southeast Asia is seen as a continuum of physical and cultural environments. Sustainable cosmopolitan settlements in Southeast Asia have been developing around the “Mediterranean Sea of Asia”, referring to the coastal regions around the South China Sea, Java Sea, and Malacca Strait, since the establishment of the inter-insular and inter-continental maritime trading activities from the first century until today.

The cosmopolitan culture has been formed through complex layering processes of various cultures, ideologies, economies, and ecosystems sustained over a long extended historical period and clearly manifested in the complexity and hybridity of the production of its settlements’ morphology and architectural typologies. Southeast Asian societies and cities are characterized by rich and complex collage and interweaving of cultural diversity, hybridity in the built-forms and variety in material culture.

In Southeast Asia the cultural and geographical boundaries are always blurring, overlapping, or intersecting, and cannot clearly be defined. People in different places, islands or continents have kept moving, communicating, and intermingling from past till present, influencing each other and producing hybrid, fused, diverse architecture and material culture.

In the 1980s, SutanTakdirAlisyahbana – an Indonesian esteemed scholar – proposed a geographical term for this dynamic region “Bumantara”, literally means “region in between”, located at the centre of international maritime and commerce, and in-between corridors for trades, migrations, and exchanges, between Asia and Australia continents, and between the Pacific the Indian oceans. For centuries, this region was politically unified under Funan, Srivijaya, and Majapahit, and now ASEAN¹⁰. It was continuously shaped and enriched by various cultural layers, constantly nurtured and developed along its long and intermingling historical timeline.

II. PROTECTION OF NATURAL RESOURCES AND INTEGRATION OF HUMAN SETTLEMENT INTO NATURE

Early cosmopolitan settlements that bore the seeds of urbanity in coastal Southeast Asia appeared at the connection point between the outside worlds with the interior hinterland. This waterfront settlement in many areas in Southeast Asia is known as *Kampung*. According to local resources, “Kampung” (in Malay or Indonesian), or “Kompong” (in Cambodian) originally refers to the area on the riverbank near the landing point and on the path to the settlement a bit further uphill from the waterfront.

The forested hills and mountains provided steady supply of fresh water through the rivers to the community living in these settlements for their daily life and cultivations. Therefore, to ensure the continuous flow of this lifeline, the forests are protected against violations and destructions, through rituals and social rules. The choice of location for the built-up area of the settlement is carefully considered against natural and supra-natural factors, in order to ensure the harmonious relationships between human, nature, and the spirits. In rational sense, it is to ensure the survivability of the community’s existence and its livelihood.

The vernacular building tradition in Southeast Asia is the results of adaptation to local climate, innovation in building materials and techniques, and creative integration of belief, function, and form. Pitch roof, wide eaves, raised floor, breathing roof, and porous walls are the responses against the

¹⁰ Association of 10 Southeast Asian Nations, comprises of Singapore, Indonesia, Malaysia, Thailand, Philippines, Brunei, Vietnam, Cambodia, Laos, and Myanmar

equatorial tropical warm-humid climate, affected by monsoon with plenty of rain, and to ensure comfort for people who lives within it. The timber construction system using flexible joints are reactions against earthquakes, especially in the Indonesian archipelago, which are continuously rocked by active volcanoes and the movement of continental plates.

On the land based farming settlement in Southeast Asia, there is a strong indication that the vernacular stilt-house was developed out of the rice growing culture in the warm-humid tropical region, originated from granary architectural typology, which was then further developed into dwelling places. The attic under the roof works as a storage for rice, goods and valuables, while the middle space is meant for living. It is a direct respond to the forces of nature, creative innovation in using available resources, and manifestation of belief in supra-natural powers by special ornamentations placed on the roof.

From the earliest vernacular traditions of Southeast Asia, we learned that local architecture and native urbanism are able to offer the best and integrated solution towards human needs in their relation with nature, social, and supra-natural environments. It is the medium for human survival in both physical and spiritual worlds, for reconciling the power of nature and the desires of human being.

III. HARMONIOUS COEXISTENCE: ORDER, HYBRIDITY, AND CULTURAL SUSTAINABILITY

People of Southeast Asia had been learning from Indian philosophy and cosmology since the first century, and applying the formal and spatial ordering principles – known as *Mandala* to their architectural typology and settlements morphology. This is understood as the tri-partite divisions of the cosmos in macro-, meso-, and micro- levels. This tri-partite cosmological divisions or hierarchy corresponds to the metaphor of the human body (the head, the torso, and the feet), and to the metaphor of the universe: the sky where the divine spirits reign, the ground where the human lives, and the underworld where the evil spirits dwell. It may be seen in two-dimensional plane, or applied to three-dimensional space and form.

Traditional planning of the settlements in many local contexts in Southeast Asia follows this ordering principle, by situating the village in between the mountain and the water body (sea, lake, or river). The most important building or function (like temple of origin, chieftains' house, or ancestral graves) is placed on the vantage point of the village or towards of the mountain. Functions associated with death or impurities (like temple of death, or waste disposal) are placed down towards the opposite direction. In many cases the rice barns – the most important function for the rice growing community – are situated on the eastern side of the village facing the sunrise, symbolizing life.

Islam entered and spread throughout Southeast Asia through two different main trading routes: through the Asian mainland (“Silk Road”) and through the Indian Ocean (“Ceramic Road”). The fusion process of the new Islamic design principles and environmental ethics with the pre-existed buildings and urban spatial typology was evident. The transition and transformation processes took place peacefully and naturally through absorption of the old craftsmanship and building traditions and integration with the new architectural, structural, and environmental vocabularies. The artists and builders from different racial and cultural groups worked together and blended their artistry and skill into new and unique building tradition and architectural totality. Community groups of different religions and origins lived together side by side in close-knitted settlement fabric.

The Chinese Diaspora had been passing through and many had settled down in Southeast Asia since the establishment of the maritime trading route between China, India, Arabia and Africa. During the cyclone periods of the changing monsoon seasons, the traders stayed in Southeast Asian ports, while waiting for their trading partners from other parts of the world to come. During their stay here the crew and passengers of the ships populated the city and mingled with the local population. Many of them settled down and formed early waterfront towns and coastal cities with a cosmopolitan character.

Trade came together with the promulgation of Islam in this region. Therefore it was a common phenomenon in coastal Southeast Asia that an old Chinese temple was situated adjacent to an ancient mosque within the historical urban core, in close proximity to the waterfront in the middle of a multi-racial community.

The Chinese Diaspora's building typology and construction method were of the southern Chinese origin, but the roofs, open veranda, timber material, and its flooring were definitely local. In other cases of the same locality, visible and easily recognizable elements of Arab, Indian, and even European origins were blended into the Chinese and local-vernacular fusion typology. In many instances, the Chinese simply used and adopted the local architectural typology for specific functions, such as temples, association halls, or dwelling. The new building typology has an eclectic nature especially in details and ornamental levels. These complex layering and blending processes in architectural typology, style, and physical manifestation did not change but definitely enhance the environmental properties and performance of the buildings.

IV. MODERNITY: CONTEXTUALIZATION, MODERNIZATION, AND INNOVATION

From the fifteenth century onward, various European colonial powers (Portuguese, Spaniard, Dutch, British, and French) entered Southeast Asia. Numerous new typologies and functions were introduced into the urban infrastructures, urban design, and architecture, such as boulevards, streetscapes, façade, building techniques, and new functions (military establishments, public buildings, churches, urban squares and plazas, markets, railroads, stations, plantation houses, and many more).

At the very beginning, the European design was directly applied into tropical Southeast Asia with minor modifications, resulted in a not so comfortable living condition within the building. Responding to this, then a more responsive design solutions were invented, by adapting building and urban design into local climatic, aesthetic, and social-cultural conditions. European style buildings with deep veranda and ventilation holes, mixed with Chinese, Indian, Malay, Arab, and others design features, evolving into unique and rich regional styles. Similar to the previous process, the European influences were naturally and openly accepted and absorbed into the vocabulary of Southeast Asian architecture and urbanism.

During the late colonial period, segregation policy of dwelling areas according to different races was implemented almost in all colonial cities in Southeast Asia. In many cases there was no clear physical boundary which separated the different racial zones, although in some cases there were rivers, walls, or roads which functioned as the physical boundaries. In any case the segregation policy had caused an internal densification process within each restricted zone especially in the non-European quarters. The over-densification would later push the colonial cities into environmental disasters and worsening of public health conditions.

In early twentieth century the colonial governments' policies shifted to a more ethical approach towards their colonies, parallel to the rise of ethics and socialist movements in Europe. New housing areas were planned and developed inside and around the city, to accommodate the rapid increase of urban population. Infrastructure and housing improvement programs were implemented to improve the well being of all segments of the urban population. Garden cities and hygienic housing typologies were developed in the capital cities, municipalities and smaller towns. Modern building codes and regulation were introduced in order to improve sanitation condition and public safety in the inner city. New building types were invented and old building typologies were improved following the new regulations to provide pedestrian arcades, open backyard with utility functions, fire escape, etc.

With the opening of new architecture and planning schools in Southeast Asia by the colonial governments, new tropical-regionalism discourses were actively debated and practiced by young architects and urban planners in the region. Fresh ideas from modern urban planners and architects

were manifested into city plans, urban designs, and architectural styles – blended with the elements from the local, natural and cultural contexts. A large dose of idealism and hopes were put into the transformation and the future of the coastal cities in Southeast Asia in early twentieth century.

The Second World War and the invasion of Japanese Imperial army to East Asia and Southeast Asia brought end the colonialism history in Southeast Asia, and changed the course of urban history and morphology of this region. A new chapter of the Southeast Asian history began to emerge, riding the waves of decolonization and the spirit of national independence. The International Style and the ideas of Modernism were used to express the breakaway from the colonial past and the emergence of the new spirit of Nationalism by the leader of the newly independent countries of Southeast Asia.

Modernist urban plans and locally developed modern architectural styles were produced and implemented in the cities across the region. International style buildings with strong tropical character (such as sun-shading, façade screen, monsoon window, etc.) are widely implemented in various building typologies, from low rise detached houses into multi-stories offices. Response to local climate, functionality, and efficiency are considered as the expressions of the spirit of modernity, nation building, and independence.

Fifty years after the World War II, the wave of globalization and consumerism sweep across Asia and the rest of the world. Many of the national and regional capital cities in Southeast Asia have risen into metropolis, megalopolis, and world city, which play indispensable roles in the interconnected global market and economy. Unfortunately this rapid growth has accelerated the cultural and physical transformation process, which often speeding up the fragmentation and destruction of old urban fabrics and creating serious problems of cultural identity of its citizens. Gross ignorance of sustainable environmental and cultural practices has created many problems, including extremely large carbon footprint, wasteful and irresponsible lifestyle, fragmented identity, cultural break down, social conflicts, and other ethical issues.

V. BEAUTY RADIATES FROM TRUTH¹¹ -EXAMINING OUR CONSCIENCE

At the heart of the ancient city of Yogyakarta, RomoMangun¹² in 1983 to 1985 transformed a slum and squatters settlement on a site used to be a rubbish dump under the bridge and along Code River into an environmentally and culturally sustainable settlement.¹³ He worked together with the local community leaders and slum's inhabitants of about 40 families to persuade the government for not to demolish the kampung¹⁴, but to gradually improve the infrastructure and architecture of the settlement instead. The project was gaining momentum and wide-spread support from the community. He asked special permission from the Bishop to settle down and to live in the slum to carry out his mission. The whole planning and building processes were carried out with the help from local carpenters and masons, the kampung occupants, and volunteers.

Building process is a community event and effort, and as require the architect to immerse himself completely into the community and into the transformation process. The existing and living kampung became the site of the improvement and development project. The steep slope – which was formed by compacted rubbish for many years - was strengthened by stone retaining walls. A light-weight “A”

¹¹ “Pulchrum Splendor Est Veritatis” (Aristoteles), which often quoted by RomoMangun to express his perspective in Architecture.

¹² RomoMangun (Yusuf BilyartaMangunwijaya, 1930-1999) is a Catholic priest, architect, humanist, writer, novelist, social worker, human right activist, and recipient of Aga Khan Award in 1992 for his project in Kampung Kali Code, Yogyakarta, Indonesia.

¹³ See: <http://www.akdn.org/agency/akaa/fifthcycle/indonesia.html>, and http://archnet.org/library/sites/one-site.tcl?site_id=999

¹⁴ Kampung in this paper refers to an urban village, an enclave, or a rural-like settlement located at the middle or at the fringe of a city, characterized by low-rise high-density and organic growth.

frame stilt house structure system supported by a simple concrete block footing is used to produce a great variations of building forms and functional spaces, and at the same time creating an earth-quake resistant construction.

Bamboo is used extensively for the construction and finishing, because it is locally available, inexpensive, strong, durable, and already used in vernacular buildings by the locals. It is used for walls, floors, sun-screens, etc. which allowing cross ventilation and environmentally friendly building. Assisted by student volunteers, the whole community was involved in painting and decorating the exterior of their houses with vibrant and cheerful colours.

According to him the role of the architect or designer is to give form in its totality to ambience, personality, and spirit of space which is generated or intended by the human and the community. The building we construct is a house for human, and therefore is spirited by human life. It gives to human spirit Function and Form (Mangunwijaya 1981: 2-9). Function refers to usage or services that man gets, and capacity that increases human capability. Form refers to image, meaningful reflection for human who lives in it. Form is related to level of culture, while Function is related to level of civilization.

Design process is problem solving that moves from inside to outside. Therefore it is fundamental to gain understanding about the fundamental problems and potentials from the inside, before we can generate the resolutions through Architecture. Every material has its own language, and we have to be sensitive to the message it conveys and to its characteristics.

The Aga Khan Award in Architecture jury gave this project a global recognition by giving him an Award in 1992. The jury found that although *"the scale is small, yet the achievement within the given constraints is immense and humane - a compelling model for the world at large."*

VI. RE-ARCHITECTURING OUR FUTURE

Architecture is the materialization of culture, the physical-spatial articulation of social-cultural inhabitation processes, which is continuously transformed and enriched along historical periods. It is a process rather than a product – “Architecturing” rather than “Architecture”.

Human, fauna, flora and the environment is one entity like a human body with its limbs. Everything is interrelated and interconnected. Planet Earth is one ecosystem, a sum of unified and interconnected organic and integrated life. Therefore nature, flora, and fauna should become the integral part in designing building (Mangunwijaya 1981: 379-383). Our building has to bear common responsibility to manage and to preserve our environment. We should not consider nature, flora, and fauna as enemies, but to include them as organic members in the creation of buildings within the culturisation process of the whole Planet Earth.

Ancient building tradition is the outcome of local climate, building materials and techniques, also indigenous believes and rituals. In traditional sense, architecture is offering the best and integrated solution towards human needs, in their relation with the nature, the community, and the supra-natural beliefs (Widodo 2004: 1-5).

The traditional practices, knowledge, and knowhow which have been tested and implemented for generations for its efficiency, effectiveness, and sustainability should be pushed forward into wider public debates, academic discourses, and political processes on sustainability and climate change. Possible socio-political-cultural barriers which prevent the integration of cultural heritage paradigms into the current urban planning and development discourses should be understood and properly responded, so local wisdoms can be effectively repositioned in the current architectural design and urban planning praxis.

For more than two millenniums of its urban history, many cities in Southeast Asia have been demonstrating their ability in preserving its primary elements and basic morphological patterns, tangible fragments and intangible traces, linkages, and connections, while continuing to be transformed and reborn. All of these can be learned, understood, adapted and appropriated, decoded and reconstructed, to enrich our inventory and vocabulary to educate future generation of scholars and professionals. It may provide the keys to common understanding of the sustainable nature of architecture, urbanism, and environment, which may serve as the starting point to change our paradigms towards a more sensible, sensitive, and contextual actions.

“We had to re-evaluate our concepts and practices of “architecturing”. We had to abandon the role of being mere epigones of the architectural world of thinking and designing that was based on foreign principles and ways of life.”

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