

UNDERSTANDING CULTURAL LANDSCAPES IN THAI URBAN CONTEXT: BANGKOK AS A NEGLECTING WATER-BASED CITY

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ABSTRACT

This article is attempted to explain the cultural landscape definition that should be appropriated with Thailand and why the cultural landscape should be in the category of Urban Planning study and analysis in Thailand. The cultural landscape study should provide more understanding of the old town and cities urban context in Thailand and increasing local knowledge and awareness to prevent destroying its cultural heritage and footprint in the past. The concept of "Cultural Landscape" should be part of "Building Culture" design for all architect and urban planner. One of the cases is Bangkok, the water city in the past that had been slowly eliminated by means of its rapid globalization & consumption development expansion while neglecting the city's cultural identity of water as heritage. Furthermore, the study introduced some Urban Planning policies and appropriated solutions for Bangkok: The Flood Zone.

Key words: Cultural Landscape, Thai Urban Planning Context, Water-based City, Flood Zone.

1. CULTURAL LANDSCAPE DEFINITIONS

The term "Cultural Landscape" is very new and recently introduced to the field of Urban Planning & Design study, also in the field of heritage conservation study too. In fact, while most of Urban Planner is more familiar to the word "Built Environment", conservationists should recognize the word "setting" in their sense. Those two words had partly the same meaning of "Cultural Landscapes" too. So we may say that "Cultural Landscape" is as a part of "Built Environment" and "setting". Sometime the explanation through the term 'Built Environment' did not cover some cultural issue and 'Setting' in the term of culture, forgot to explain about its natural relationship. To my opinion, the word "Cultural Landscape" has its specific meaning according to different parts of the world and needed different interpretation. Here are some definitions about "Cultural Landscape":

1.1 UNESCO 's term of Cultural Landscape (<http://whc.unesco.org/en/culturallandscape#1>)

The Committee acknowledged that cultural landscapes represent the "combined works of nature and of man" designated in Article 1 of the Convention. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.

The term "cultural landscape" embraces a diversity of manifestations of the interaction between humankind and its natural environment. Cultural landscapes often reflect specific techniques of sustainable land-use, considering the characteristics and limits of the natural environment they are established in, and a specific spiritual relation to nature. Protection of cultural landscapes can contribute to modern techniques of sustainable land-use and can maintain or enhance natural values in the landscape. The continued existence of traditional forms of land-use supports biological diversity in many regions of the world. The protection of traditional cultural landscapes is therefore helpful in maintaining biological diversity.

In this sense, UNESCO had mentioned generally a standard term of Cultural Landscape for the state parties to concern and interpret for their own term and meaning.

1.2 U.S. National park's term of Cultural Landscape

A geographic area, including both cultural and natural resources & the wildlife or domestic animals therein, associated with an historic event, activity, or person, or that exhibits other cultural or aesthetic values. 4 types recognized:

1.2.1 Historic site

1.2.2 Historic designed landscape

1.2.3 Historic vernacular landscape (everyday landscape)

1.2.4 Ethnographic (Indigenous) landscape

1.3. Australia ICOMOS's term of Cultural Landscape BURRA CHARTER

(<http://australia.icomos.org/wp-content/uploads/BURRA>)

RA-CHARTER-1999_charter-only.pdf)

For the purposes of this Charter:

1.3.1 Place means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

1.3.2 Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the *place* itself, its *fabric*, *setting*, *use*, *associations*, *meanings*, records, *related places* and *related objects*.

Places may have a range of values for different individuals or groups.

1.3.3 Fabric means all the physical material of the *place* including components, fixtures, contents, and objects.

After, Emeritus Professor Ken Taylor, a member of Australian ICOMOS and a visiting fellow to Humanities Research Center, the Australian National University in Canberra, had defined the term of “cultural landscape” as

We are surrounded by landscapes that people have settled, modified, or altered over time. These landscapes are “cultural landscapes”, the ordinary, everyday landscapes which surround us and in which we conduct our activities. They are the result of human intervention in the natural landscape and present a record of human activity, human values and ideologies. In this way they do not simply represent physical changes brought about by human intervention. They also represent evidence of material culture manifested in the landscape and thereby reflect human relationships with our surrounds. They are an inextricable and coherent part of our intellectual and cultural background.

Cultural landscapes are literally an imprint of human history. They can tell us, if we care to read and interpret them, something about an achievement and values of our predecessors. In this way cultural landscapes are symbols of who are and can serve to and remind us of the past. Because they are records of past and present actions, cultural landscapes are product of change. They embody physical changes which in turn reflect evolving attitudes towards the landscape. It is important that we learn to interpret cultural landscapes as living history and as part of our national identity. They contain a wealth of evidence of our social and material history with which we readily associate heritage value. (Taylor, _____: 3)

From the beginning, the Australian concern

more on ‘every day landscape’ of their way of living in the past after they landed on this continent a hundred years ago and lastly they founded that they should respected and take the world vision, way of living and culture of the Aborigine or “Indigenous” people, who lived before them, into account of the definition of cultural landscapes reflected in the definition of *cultural significance* in Burra Charter too. The Auluru-Kata Tjuta National Park is one of the cases of Cultural & Natural Heritage to applied using this definition in Australia



Figure 1: The Auluru-Kata Tjuta National Park and its almost 20 km. buffer zone

This definition had been applied to the universal value assessment of many world heritage cases such as Borobudur in Indonesia, Wat Pu Temple in Laos for example.



Figure 2: The Borobudur in Indonesia with buffer zone that covered the surround mountain

Recently In Thailand, The Ministry of Culture had informed the term and definition of “Cultural Landscapes” both local and central government agencies. In December 2010, The sub commission of conservation and development of cultural heritage in Thailand (Sub CDCH) in the Commission of Religion, Merit, Morality, Arts & Culture, Senate (RMMAC) together with

ICOMOS Association of Thailand had developed a draft Thailand Charter for Cultural Heritage Management and prepare to apply for the whole country and after will send to UNESCO through ICOMOS International Committee for declaration. Their definition of the term of “Cultural Landscape” is very interesting.

1.4 Thailand Charter on the Management of Cultural Heritage Site (3rd Commission Office, Secretary to Senate Office. 2010: 18)

“Cultural landscape” means

The geography had been affected by human intervention and changed the natural landscape. This imprint indicated the relationship between human and nature and reflected human’s way of living, belief and religious faith where formed the unique identity through time.

To my opinion, most of the significance of “Cultural Landscape” in Thailand related more to ancestor’s world vision & wisdom and religious believed, especially Buddhism and Hinduism not only the ‘ordinary or everyday landscape’.

2. OLD TOWN & CITIES CONTEXTS IN THAILAND AND URBAN PROBLEMS

Like others Asian country, many big cities in Thailand had been developed, growth and expanded on top of their ancient town or settlement. According to the studied of Thiva Suphajanya, the geologist, in the book of 225 years of Krung Rattanakosin referred to his found of the important evidences that the ancient settlements in the central plain of Chao Phraya river were located in the area comprised water courses that provided convenient access to the sea and suitable land for agriculture. He also found that those of manmade canals linking some ancient settlements to the transportation water courses (BMA City Planning Department, 2009: 54). This local wisdom had been applied until Ayutthaya period. We can assumed that Ayutthaya was founded in the strategic location for controlling trading route by waterway and acted as the ancient important port town, a water based commercial center, a self protect fortify town surrounded by waterway with an unique water way of living that inherited to Bangkok in later period.

This shown how Bangkok’s cultural landscape was inspired from Ayutthaya settlement with lots of water way or canals and its setting and that had been called “Bangkok: Venice of the East” (see Fig.3) by the westerner who visited in early Rattanakosin period. But when you look at Bangkok today, you will found Bangkok had a lot of changed like other big city. Bangkok has become a modern city in economic and social terms. Modernization has taken place of many good things including traditional culture, historic & old urban fabric and also the old sewage system. They neglected their local cultural heritage and replace with westernize modern physical form and without concerned with ‘Built Environment’ or ‘Setting’ in the past, may I

called ‘Cultural Landscape’, since Bangkok had been launched the first Urban planning designed by Litchfield Whiting Browne and Associates called Greater Bangkok Plan 1991(see Fig.4) or Litchfield plan.



Fig. 3 Shown Bangkok “Venice of the East” in the past and present in old canal (Old Chao Phraya course)(Source of photo: “Naga: Cultural Origins in Siam and the West Pacific”, p. 49)

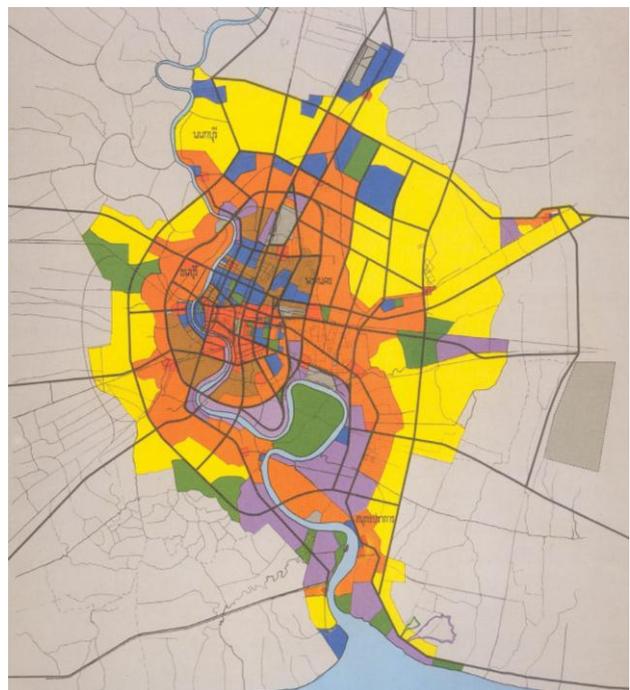


Fig. 4 Greater Bangkok Plan 1991 (Source of figure: “225 Years Krung Rattanakosin”, p. 232)

This plan was developed from the study and analysis under the Western modern urban planning academic basis practice concern geography, climate,

population and changes, socio-economic, traffic and transportation and land use planning study (BMA City Planning Department, 2009: 232) but without the cultural aspect study. No one understood values of cultural heritage by that time and denied conservation. May this effected the disappearing of Bangkok local heritage in later stage.

Recently, The Faculty of Architecture and Planning, Thammasat University had released a final report on Study & Research on Housing and Community Standard for Town Identity and Value sustainability for the Housing Authority of Thailand which indicated that most of the 140 Traditional communities with habitat living until today in Thailand were rather situated next to river & canal and railway than road (Thammasat University, 2010: 9). This is to confirm that Ancient towns in Thailand mostly are water-based community.

Flooding is a critical issue in Thailand. Each year, flooding caused a severe damage throughout the country. The government had spent more and more billion baht every year for the water way blocking roads repair and box culvert. Imagine how we have to pay for it every year. To my point of view, most of the water barricade along the upper part of Chao Phraya River basin constructed by several local administration authorities caused the serious flooding in Singburi and Sukhuthai province many years ago. Because of those barricade that blocked and narrowed down the river slow down the flow rate of the water from the north and turn to be flooding over the Chao Phraya basin. If every town along the river did the same barricade to maintain the embankment of the country, then Chao Phraya River will turn to be a great sewage pipe in the world! Those against-natured technology should be solve the problem in short term only but it will lead to the more bigger problem and the more complicate , expensive technology to be solve continuously forever. How to prevent the water flow from the north turn to be water flood? We had to take effort and all our strength to preserve and develop the ecology system to maintain the annual water flow and comply with the contemporary Thais way of living. By preserving canals, dike, natural pond and swam area to provide the water flow way and distribute the water quantity not to over flow to the living basin nearby (Shinawatra, 2002: 242).

Again, a water diversion mission from Chao Phraya River to Ayutthaya West bank and Nakorn Phrathom province last year for Bangkok flooding protection helped Bangkok saved but instead, created flood problems to local communities and their crop fields surrounded Bangkok and got severe damaged to local infrastructure with lot of budget for repair. This is the absurd solution to resolve flooding problem!

3. CASES FOR UNDERSTANDING & INTERPRET THE CULTURAL LANDSCAPE IN THAI URBAN CONTEXT

3.1 Case in the North: Chiang Saen: The

originated Capital City with Muang Fai, an ancient irrigation system, that formed Lanna Kingdom.

In Shinawatra's dissertation about "The Cultural Landscape Associated with The Old Town of Chiang Saen: The Interpretation and Conservation of a Forgotten Heritage" in 2007, he found the physical clue or traces of evidences that indicated the importance and significance of Chiang Saen's cultural landscape elements worth to be conserved

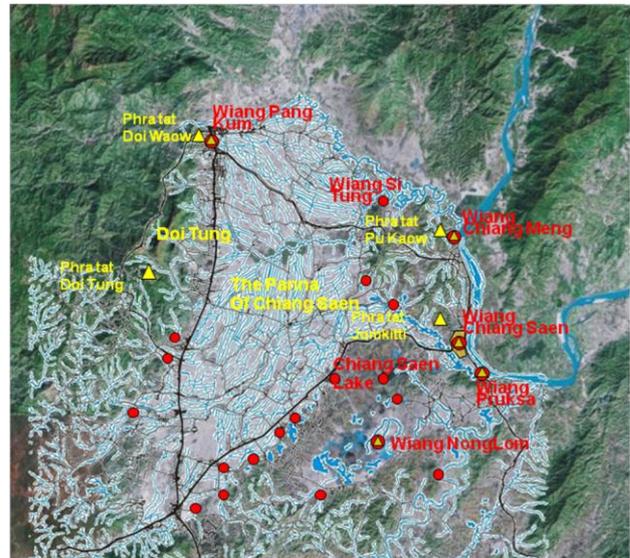


Fig. 5 The elements of cultural landscape In Chiang Saen basin associated with the old chronicles and literatures(Source of figure: "The Cultural Landscape Associated with The Old Town of Chiang Saen: The Interpretation and Conservation of a Forgotten Heritage", p. 84)

and should be integrate into the comprehensive plan for Chiang Saen by studied through Lanna ancient chronicles, physical surveys, seminar and interviews.

"...The cultural landscape embodies the symbolic and conceptual views, shaped by spiritual beliefs and infusion with the site's surrounding nature, of the ancient society that built the site. It reflects the thoughts and beliefs of mankind that were implemented in every day events as the so called 'culture' of the people, and that were imprinted on Mother Earth, allowing them to remain until the present day. Such an explanation pertains to the various structures or locations that led to the formation of the Lanna state, such as those of Doi Tung and Phra That Doi Tung, the Muang Fai irrigation system of Panna Chiang Saen, and the old town of Chiang Saen, as well as the structures and locations that reflect the area's natural diversity and identity, including Wiang Nong

Lom, Chiang Saen lake, and the Mekong River. Together these sites make up the cultural and natural heritage of the Chiang Saen basin that should be reinterpreted for present day understanding and conservation.”(Shinawatra,2007:133)

By means of the stories of the Buddha relics on Doi Tung, Borom That Jedi, and his miracle journeys described in the Lanna chronicles, it can be said that the above five elements of cultural landscape in the Chiang Saen basin were spiritually connected to each other in a way that transformed the Chiang Saen basin into a sacred place that sustained Buddhism for the next 5,000 years, in accordance with the Buddhism Prophecy.

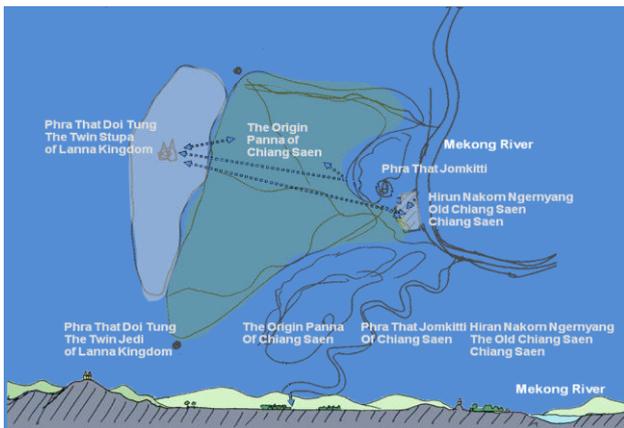


Fig. 6 The association of the Cultural landscape elements in Chiang Saen basin (Source of figure: *“The Cultural Landscape Associated with The Old Town of Chiang Saen: The Interpretation and Conservation of a Forgotten Heritage”*, p.122)

This is the secret of the Chiang Saen basin that must be used to provoke today’s local people and stakeholders to attempt to understand and consider the lessons of the chronicles in today’s conservation and development. And finally, both the surviving and non-surviving heritage that shaped the cultural landscape in the Chiang Saen basin can be translated into a ‘cultural map’ format in order to assess its significance and conservation value in present day. Such a map is a potential tool for town planning, identity conservation and developing strategies to revitalize the local cultural heritage using collective decision making to bring the stakeholders together, make the town more livable, and attain a balance between conservation and development in the near future.

3.2 Cases in E-Sarn (Northeast) area

Associate Professor Dr. Thada Sudhitham from the faculty of Architecture, Khonkhaen University had said in her book *“the settlement plans in Thailand: the land use and change in Khmer settlement in the Northeast”* about the birth of ancient community in the Northeast mostly related to the wisdom of appropriated selection of community’s location. The evidences from

legends indicated that in the past the appropriated selection of community’s location, so called “Chaiya phum” in Thai word means good location, related to the vision or cast lots which can be said that the selection of community’s location depended on both physical and mentality factors (Sudhitham,2009: 15).



Fig. 7 Aerial photo shown the shape and the concept of selection location of Lamphoon old town following “chaiya phum” or Geomancy. (Source of photo: *“Settlement Plans in Thailand: The Land Use and Change in Khmer Settlements in The Northeast”*, p.22)

Sudhitham also mentioned that the selection of town’s location by means of mentality factor seemed to related between the physical characteristic of the place that had some energy and sense by the founder of town then transferred into vision and tells, so called Geomancy (Ibid, 2009:15-16).

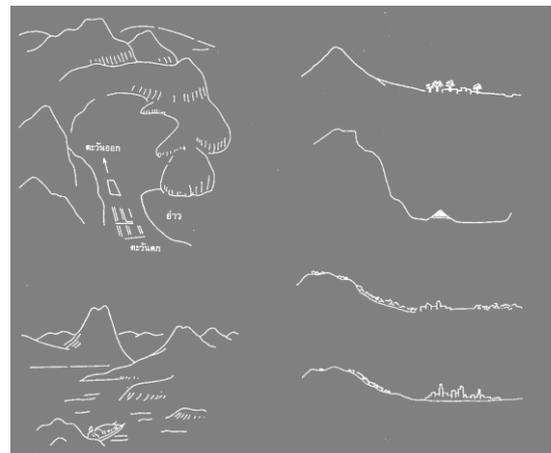


Fig. 8 The example of the selection of town’s location by

These all indicated the “Cultural Landscape” significance of the places that connected to the world vision of Thavaravadee and Khmer Empire through time. You may find traces of those of cultural landscape elements, both tangible and intangible, that worth to

conserve in most of the town and cities in E-Sarn (Northern part of Thailand).

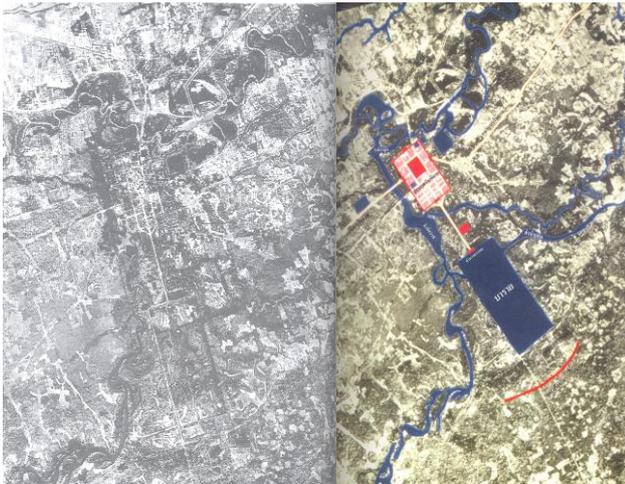


Fig. 9 Shown comparative photo between the present location (left) and the existing ancient old Khmer town (right) of Pimai city. This is to confirmed that most of the old town in Thailand was developed on top of traces of ancient settlement or so called “Cultural landscape” (Source of photo: “Settlement Plans in Thailand: The Land Use and Change in Khmer Settlements in The Northeast”, p.126-127)

3.3 Case in Bangkok: The Water-based City in the past and Kadeechine: A small unique cultural setting of “3 religious 4 beliefs”

Bangkok’s original settlements extended eight and ten dwellings-units deep into the river. There were tens of thousands of such floating houses strewn along the river in the first part of the nineteenth century. Floating houses could be moved from place to place along the river. This arrangement was ideal for fighting fires. This was perhaps not the healthiest environment, however. Many families found the river an unsuitable place to maintain a residence and moved inland along the banks of agricultural canals. Water was probably the most obvious feature of life in early Bangkok. These picturesque were reflected in the second and third out of 6 statement that UNESCO gave to Aythaya, the old capital city, as a World Heritage referred in the book of Rattanakosin and Chao Phraya river front (see Fig. 10):

“...Ayutthaya’s location was superbly selected to be at the junction of three rivers, and the city planning was sophisticatedly designed for the water-based nature of traditional Thai settlements. Such features also facilitated the city’s defense and infrastructure planning which promoted prosperity in times of peace.

Ayutthaya was an archtype for the later establishment of Rattanakosin (Bangkok), where the beauty and grandeur of Ayutthaya was recreated in all aspects including urban planning,

layout, place names, architectural styles, dwelling and lifestyle....”
(Shinawatra,2010: 36)



Fig. 10 Shown the comparative identical outline shape and concept of major elements of town location following “Chaiya Phum” between Ayutthaya and Bangkok. (Source of figure: “225 Years Krung Rattanakosin”, p. 71)

It is to acknowledge and a well proven for the significance cultural landscape of the area on both side of Chao Phraya River including the old course or Chak Phra to Bang Luang canal opposite Rattanakosin Island are our national level cultural heritage and should be conserve for the next generation. But due to the rapid changes of Bangkok, one physical element of Bangkok’s cultural landscape is vanished is “Floating house” along both side of Chao Phraya river and left only some illegal stilt dwellings instead. Road cutting is the most crucial threat to the old settlement along the canal network after Bangkok had changed their way of living rather on ground than on water some 70-80 years ago. We may say now that Bangkok is a water-based city in the past (see Fig.6).

And if we focus more in the Thonburi side, found the outstanding community that had been settled opposite Rattanakosin Island since before the King Taksin reign, the Kadeechine community. The Cultural Landscape significance of Kadeechine community is that the community shown the unique diversity of cultural setting of 3 religious and 4 beliefs that inherited continuity for more than 200 years and changes through time. The cultural landscape elements that are still existed include St.Cruz Church, Gea Un Geng Shrine, Wat Kalayanamitr, Wat Prayoonwaraviaharn and Kudeekaow Mosque together with diversity of communities that live happily. Each heritage building was well conserve by the local people and government. Although old people of the communities in Kadeechine had pasted through time and some migrated from elsewhere but all of them still had their collective memories together for inherited their heritage both tangible and intangible together. Some old families are still continued earn their way of living here i.e. Baan Kanom Farang, Baan Padtayakosol – Classical Thai music, Gea Un Geng shrine owner, Kadeekaow community - Muslim people (Floating Muslim - Jam Malayu or Kak Pae in Thai final pronounced letter)

migrated from Ayutthaya since King Taksin era (Leelawadee,2011: 34). Considering the potential and the important of Kadeechine community through the cultural aspect, found some historical and cultural linkage in among those of traditional communities lied along Chakphra and Bang Luang canal area which was once the old Chao Phraya River course some 300 years ago. By using three layers of cultural mapping; one by local kids, local gurus and expert on cultural heritage together indicated their own cultural heritage in the form of cultural map or atlas. And the outcome was more successively, a good response from several stakeholders in the area take place including monks and priest from religious aspect (even though there still had some confliction in the area between local people and some monks), local people, schools and local administrative unit together with academic and NGO to carry on this cultural activities. The team was successful in continuing revitalized and upgrading the community walking alley as a result.

The revitalization of watering Buddha relic tradition in a circle water route last year reflected the relationship of Chao Phraya River communities that is worthy conserve.

In the case of Bangkok: the Water-based City in the past explained the significance picturesque of “Cultural Landscape” of Bangkok , Rattanakosin Island,

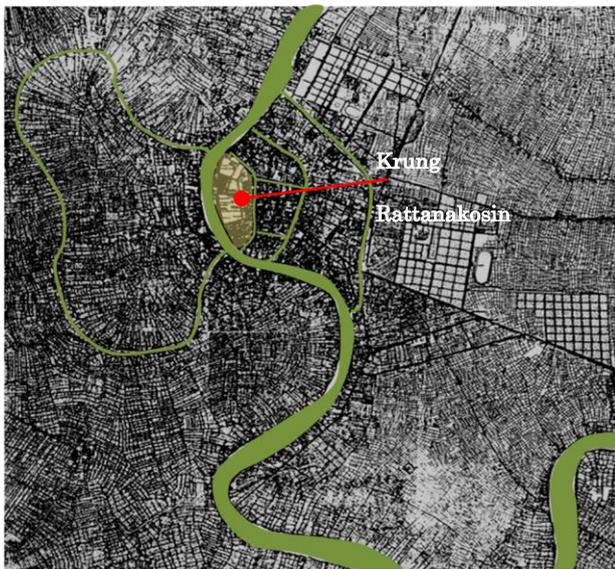


Fig. 11 Shown Cultural Landscape of Bangkok in the past. Canals network, orchards and communities along waterway were the major landscape.

represented the cultural landscape that related to Ayutthaya and their belief of the great kingdom settlement and Thonburi that related to traditional cropland and canals network while Kadeechine case focused on local cultural landscape issue that lead to the operation of local cultural heritage awareness, conservation and community-based revitalization.

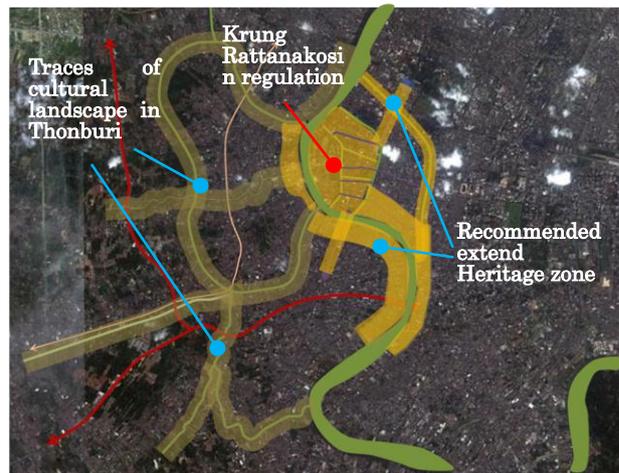


Fig. 12 Shown the existence traces of old cultural landscape recommended to be conserved

4. CONCLUSION

What were those cases indicated something about important cultural issue(s)? *Firstly*, we (people) should realize the existence of the cultural landscape components of traditional places and worth values to conserve in different interpretation and need appropriate tool(s) or guideline for approaching and solving their community’s problems. *Secondly*, it is found out that in most every town or city in Thailand are developing on top of the old settlement in harmonized with nature and environment in the past. But after the rapid globalization development, we neglected those of social norms, local wisdom related to our way of living, religious and culture both in architectural design and urban planning level. *Thirdly*, in Kadeechine case and other cases, focused on a community level, found an appropriated concept and tool to convince local awareness; we may say that the concept of a community-based participation in every stages together with proper cultural mapping techniques as a tool to find out what are their cultural heritage elements is an appropriate practice in conservation and community level planning.

Recently, the nostalgia about the almost vanished cultural way of living in the past together with the outcome of some academic research about traditional communities & old market places and their action plan with local people helped ignited the idea of revitalization and conservation of old building, old community to be alive again such as Amphawa old community in Rachaburi, Samchuk old market in Supanburi and even the design idea related to the old market style like Plernwan place, a small, design in old fashion style, retail shop in Hua Hin, were becoming popular place in among teenager and got a very successfully investment. These are examples of ingeniously attempt using the local heritage capital to worth economic values.

Thus in this sense, it should be a starting point for urban planner and designer to include those of cultural issues and interpret through “Cultural Landscape” study

in their practice. Should it appropriate to address the “Cultural Landscape” concept as part of urban planning and design process yet?

5. SUGGESTIONS FOR SAFEGUARDING CHAO PHRAYA BASIN CULTURAL LANDSCAPE BY MEANS OF URBAN PLANNING POLICIES AND REGULATION

Lastly come to the final chapter, according to my study about zoning allocation in Bangkok and its neighborhood provincial comprehensive plan, indicated threats to change lots of local cultural heritage places and districts in various edge zone areas surround Bangkok.

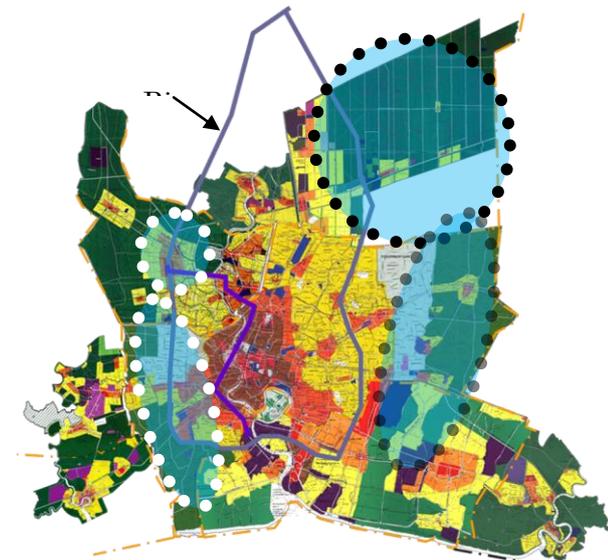


Fig. 13 Shown the water flood blocking problem zone when combine comprehensive plan surround Bangkok together. On the west side of Nonburi area shown the unlogic zone of town center located on both side of ring road while agriculture and water storage zone located underneath on the south side. On the east side there are no zoning plan apply on northwest side of Bangkok and

If we realize the cultural significance of Bangkok as the water-based city, may we can be convert these cultural capital and values to support economic value by safeguarding Chao Phraya basin and Bangkok to remain as the water-based city before it is too late. I would like to propose to include the “*Building open ground*” concept and “*Flood Zone*” on to Bangkok and surrounding province comprehensive plan:

5.1 The “Building open ground” concept of ‘Living with Water’

Following Thai local wisdom of adaptability to live with water in the past i.e. the old Thai traditional stilt house and Bang Li (see Fig. 14), a vanished amphibian traditional community in the past, every building in the flood zone should leave ground level open or flexible as much as possible. Finishing materials should sustain the

water flood and easy to clean up. All electric wire and socket should be raise up above the maximum water flood level for safety. Also need to have a proper eco-waste water septic system during flooding instead of the traditional one. The important part of this concept is not allowed 100% of landfill for new development to prevent water flood blocking. At least more than 50% of land, depend on each district agreement, should be maintain as original or with pond. A proper high ground for community should be consider depend on require. Recommended to have a proper urban study to provide “Living with water” zone both side of Bangkok Metropolitan as a guideline for specific zoning of each area.

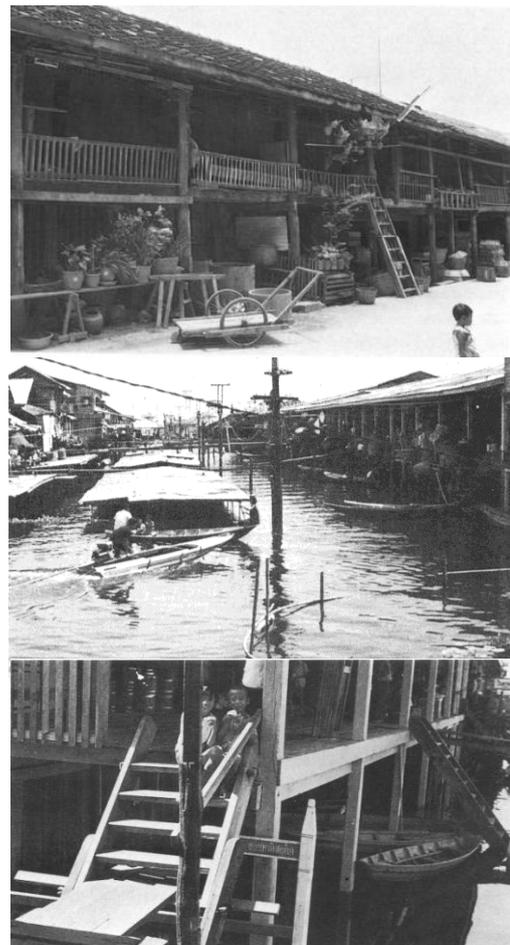
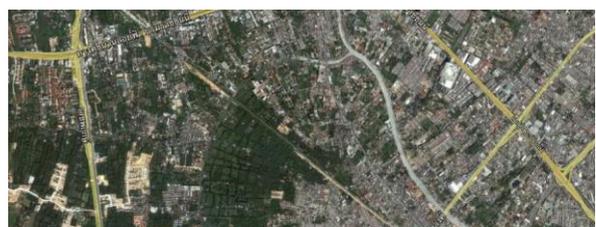


Fig. 14 Shown the old wisdom of ‘Living with Water’ that led to the concept of “Building open ground” to be propose in Bkk. comprehensive plan.)(Source of photo: “*Naga: Cultural Origins in Siam and the West Pacific*”, p. 102)

This regulation can be apply to Thonburi and Nonburi area to comply with their original topography and to maintain local cultural landscape. And also in Meanburi on the east side of Bangkok including Prathum Thani province in the northeast area where the biggest irrigation canal had been constructed for over 100 years in King Rama 5 era still be existed, The Rangsit irrigation canal system (see Fig.15, 16).



Bangkok with water gate. So it is worth cultural value to be conserve too. Lately, more development on housing estate with low cost investment had been shifted to the area with a concept of landfill without understanding this specific cultural environment. How can we maintain the cultural heritage value of this place while allowing proper development? The answer is we must keep the fabric pattern of these canals and maintaining its hydraulic properties and control land use as a water garden city with low density community for today use with some incentive to land owner.

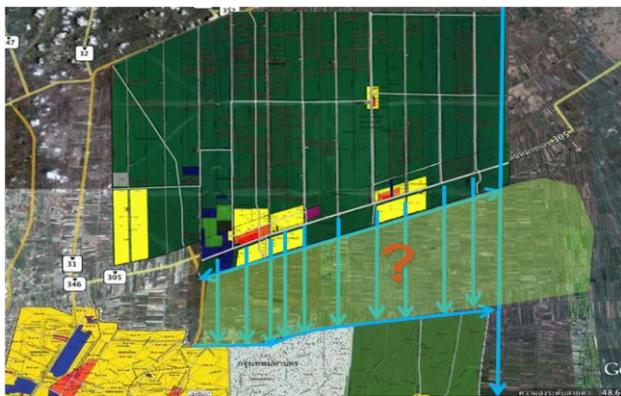


Fig. 16 Shown the significance of King Rama 5's cultural landscape that was the almost 125 years old biggest irrigation system for rice fields. Indicated a new technology in canal digging in that era. The comprehensive plan zone shown in the picture did not had proper regulation to protect all this area as heritage and allow landfill that cause blocking water flow from north to south.

These canals system represented the history and evidence of new technique in canal system design for irrigate rice fields for mass production in the late 19th century of the world. But today function for those canals system served only control water flood from the north of

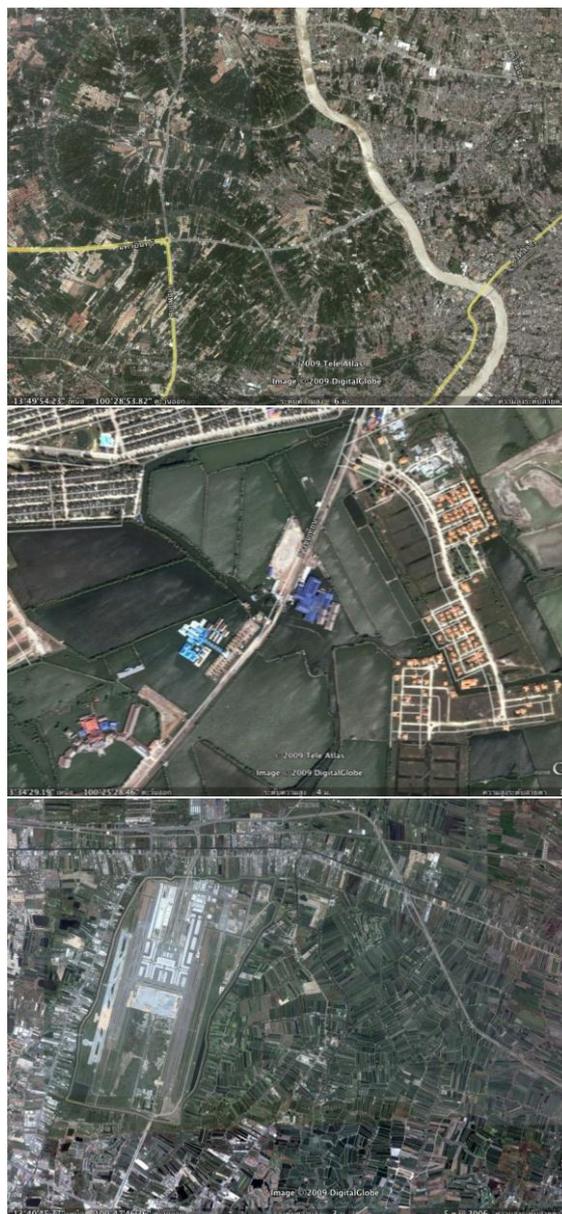


Fig. 17 Shown another three areas that are in threat because of development intrusion into the orchard area -Nonburi (left), wetland area -Bang Khunthien (middle) and east side area of Suwannabhumi airport (right). Those areas should have a proper regulation that related to their original topography character in order to protect flooding without blockade by 100% land fill

5.

Similar to the Earthquake Zone, the **Water Flood Zone** concept for Chao Phraya basin town and

Bangkok as the water-based city to catalyze the ideas. The ideas are as followed:

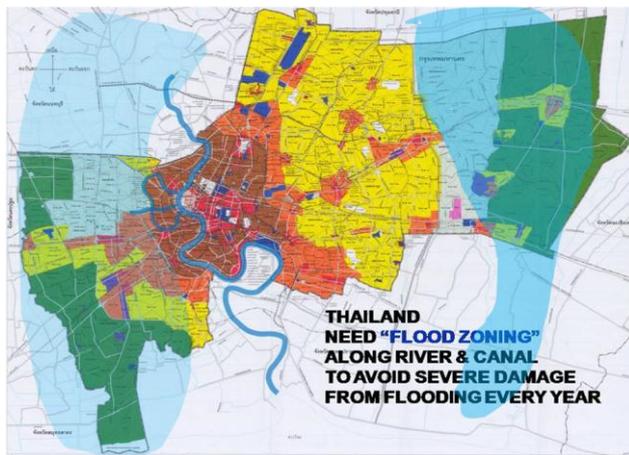


Fig. 18 Shown the idea for adjust the comprehensive plan both side of central Bangkok include neighborhood area to have “Flood Zone” regulation related to their original topography by avoid land fill for 100% to let water flooding in rainy season with some incentive.

5.2.1 Propose The Survey and Assessment Evaluation: Status of Inhabitants Settlement Area effected by Water Flood

in both national and provincial level under the responsibility of the government sector. The mission is to identify the water flood problems in each area and classify into Water Flood Zone, for example: All year round Flooding area, Annual embankment Flooding area (or we can called Amphibious zone), Swamp Zone etc. All these information should be keep in the form of GIS database that can be easily use and quickly update, analyze the water flood area status for further planning and management.

5.2.2 Propose the Water Flood Zone in the Urban Comprehensive Plan nationwide. This Zoning should be set up in term of Zoning Guideline for each Municipal or District administration office incorporate with private sector and local people. They can use this guideline for their Specific Area Master Plan for Flooding protection in further detail.

5.2.3 Preparation of Water Flood Zone Policy both in short term and long term planning, management and action plan. The concept is to prevent the communities from flooding and reduce the maintenance budget after flooding. The examples for this action are the Evacuation plans for the In-Danger Flood Zone, the Protection plan for Annual Flood Zone i.e. identify the parking area on nearby dry land for the community during flooding, building materials use and repair in flood zone or land re-adjustment action plan with incentive policy on in-danger flood zone. Allow limited Floating houses with eco-waste system in flood zone area.

5.2.4 Evaluate and Pilot Project selection in various zone for implementation and evaluation. If the final outcome is acceptable, expansion of flood zone would be possible even though it will take more time.

5.2.5 Propose the Monitoring methodology apply to each project or each zone.

To support the above suggestion, Government state & agencies should provide proper infrastructure and incentives to those of local people - community who sustain their cultural identity. In order to implement, Government should provide some incentives to the property owner to support their economic to sustain their land ownership. In the last sentence, as an architect, I will leave the questions of how possible for architect to create some new design that collaborated with Thai local wisdom in the past with a present day life’s function? For example, a modern innovation Thai floating house and Thai stilt house for to ‘live with water’, the situation we may confront with in very near future.

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NOMENCLATURE

- Baan* : House or a home of.
Borom That : Stupa, the Buddha worship
Jedi statue.
Doi : Mountain epic.
Lanna : An empire settled in Northern
Thailand 800 years ago.
Khmer : An ethnic group lived in
Cambodia more than thousand
years ago.
Panna : A group of Thousand rice field
counting system to identify how
big of a town or city in ancient
Lanna empire.
Thavaravade : An empire settled in central
Thailand 2,000 years ago.
Wat : Temple.
Wiang : Town or city.



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