



DESIGNING CO-EXISTENCE OF SOCIAL-CULTURAL-ECONOMIC SPACES IN TRADITIONAL SETTLEMENT: LEARNING FROM BANG-PHLI, THAILAND

Laila Siddiqua^{1*}, Abdullah Al Zubaer Evan², Abu Towab MD. Shahriar², Arifa Hossain
Moni², Afroza Parvin¹

¹*Architecture Discipline, Khulna University, Khulna-9280, Bangladesh*

²*Department of Architecture, Hajee Mohammad Danesh Science and Technology University, Dinajpur-5200, Bangladesh*

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Abstract

Integrating socio-economic development-led spatial-physical design intervention in traditional settlement needs a deeper understanding of the social-cultural-economic dimensions of the people, place, and environment. Such intervention at the settlement level involves the challenge of context-sensitive placemaking concerning the existing social-cultural-economic space systems that contain the social way of life and livelihood. This research explored this challenge taking Bang-Phli, Samutprakan, Thailand, a successful water-integrated placemaking project. With a mixed research approach that combines methods from design ethnography and built environmental design, this study focused on exploring the spatial-physical design approach, process, and considerations behind the context-sensitive placemaking. Outcomes of this research suggests how people-place-environment sensitive placemaking can nurture the co-existence of socio-cultural way of life, environmental stewardship, and economic development in traditional settlement in a socially and environmentally sustainable manner.

Keywords: Spatial Design, placemaking, water-integrated landscape, social space

Introduction

Traditional settlements are influenced by cultural beliefs based on “cosmologic interpretations” of human-nature relationships (Surjono, 2011), where both nature and humanity sustain in unison. This harmony is rooted in the age-long co-existence where every human action (social, cultural, or economic) is directed by “ecological allowances” (Hager et al., 2013). As a result, traditional settlements have successfully survived for several generations, benefitting the civilizations without producing any adverse impacts on the people and nature (AlQahtany & Abubakar, 2020). Therefore, prior to any built environmental interventions initiated from the need for socio-economic development in those settlements, it is necessary to explore the socio-cultural-economic dimensions of people, place, and environment. It is essential to learn how ecological wisdom has

*Corresponding author: <lailasiddiqua@arch.ku.ac.bd>

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been appreciated and utilized to shape society, in other words, how the economic need has been integrated with prerequisites of social and environmental balance instead of sacrificing them through age-long development practices in traditional settlements. However, the fast-growing need for modernization followed by rapid urbanization often limits the scope of a more profound understanding of place-makers context.

Consequently, several intensive and unresponsive spatial-physical intrusions occur in the name of development (Harun & Jaffar, 2018). A semester-long post-graduate design-research studio was conducted in the Architecture Discipline, Khulna University (ArchKU), to explore the challenges of context-sensitive placemaking. This studio took the Bang-Phli Ancient Market, Samutprakan, Thailand, a successful water-integrated placemaking project, as the case study area. This market, previously known as “Si Sophon Market,” was first established in 1857 along the Samrong canal when the Chinese shippers formed their settlement in the region (Siddiqua et al., 2019). Over time, it has gradually evolved in tune with the socio-cultural and economic lifestyle of the local people for over one and half centuries. Every day, thousands of regular users and tourists get allured by the traditional ambiance of the marketplace and its surrounding settlement (Siddiqua et al., 2019). While a developing country like Bangladesh is entering the fourth industrial revolution era, rapid urban growth is a considerable fact that is already causing unplanned urbanization. As a result, modernization is taking place at the cost of degradation of the age-long socio-ecological living system of the traditional settlement. Out of this consideration, this article investigates the role of placemaking in preserving such a traditional atmosphere.

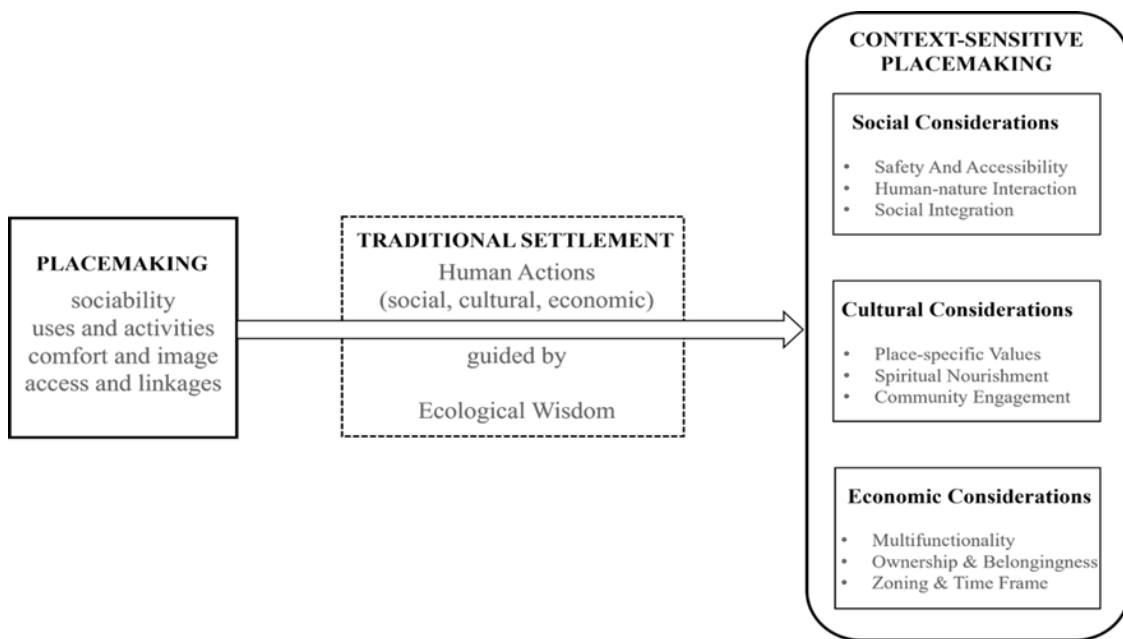


Figure 1. A conceptual framework for placemaking in the traditional marketplace (source: author).

While this research aims to investigate and learn the approaches, processes, and considerations of context-sensitive placemaking, the focus remains on the spatial practices prevailing in the Bang-Phli ancient market along the Samrong canal. The specific objectives aim to,

1. Unfold how a healthy and resilient socio-ecological system has been maintained in the settlement.
2. Explore how economic development is integrated with place-based needs and environmental balance.

3. Identify sets of spatial design attributes/indicators/considerations for context-sensitive placemaking in a traditional settlement.

Literature Review

Traditional settlements are shaped by topography and the natural environment, giving specific distribution, scale, hierarchy, and morphology (Li et al., 2018; Tao et al., 2017). The socio-economic development of a traditional settlement is deeply related to people's social, cultural, and economic dimensions, and people's collective activity constructs its significance, configured by geographical, geomorphological, and spatial criteria (Vythoulka et al., 2021). Many researchers have concluded that most socio-economic development-led design interventions have isolated buildings and places from social-cultural-economic significance instead of connecting them, and those transformations affect the settlements' morphology, natural resources, and infrastructure needs (Hes, Hernandez-Santin, et al., 2020). Such development of places hardly addresses people's needs and aspirations, which is vital for the existence of people's way of life in traditional settlement.

Placemaking shapes spaces with four key elements: sociability; uses & activities; comfort & image; and access & linkages that connect people with the space and enable socio-culturally meaningful experiences (Mateo-Babiano & Lee, 2020). In the continuous social process of placemaking, 'People' are the fundamental agents for place-based changes, and projects are products. Programming connects people and places through social bonding across communities, but it requires evaluation to understand the interventions' place values and outcomes (Mateo-Babiano & Lee, 2020). This paper studied the case in light of indicators for identifying place-shaping interventions (Table 1) and the interlinkages of people, process, product, program, and place evaluation from the case study area within social, cultural, and economic domains.

Social domains of place making

Safety enables inclusion and accessibility among various communities that link place-based activities with the natural environment (Hodgetts et al., 2008). In the social domain, the physical aspect of safety ensures a secure layout for the place to thrive (He et al., 2019); which nourishes people's sense of rootedness with the place. Accessibility makes a place equitable, enabling everyone to enter via a transportation system (Hes, Hernandez-Santin, et al., 2020); it increases public ownership of a place (Hopkins, 2020) and age-friendliness, which brings balances among ecology, culture, and economy of placemaking programs (Mateo-Babiano & Lee, 2020).

Social systems isolated from ecological systems cannot operate individually because these two are interlinked naturally across multiple aspects (Bush et al., 2020). Human nature interactions reflect ecosystem services, which emerge from relations between the human body, mind, culture, and ecology (Buijs et al., 2018); spirituality, and emotional nourishment (Hensher & Wang, 2016); that lead people towards minimum anthropogenic disturbance and facilitation of ecological processes (Garrard et al., 2018). Social integration reduces stratification among cultural groups and creates more extensive social networks and robust social support with excellent personal development and contentment (Carmona, 2018). Adaptive design strategies suggest implementing multi-functional programs for designing co-existence and better integration of multiple cultural groups for placemaking (Palazzo, 2020).

Cultural domains of place making

Essential Place Values are historical identity, equity, emotional connection to nature and culture, place attachment and stewardship, economic viability, and alignment with nature (Chapin & Knapp, 2015; Hes, Mateo-Babiano, et al., 2020). Place-specific values are identifiable from people's affection for their places regarding social connections, redevelopment initiatives, ecological considerations, climate change schooling, technology practices and communications, and indigenous knowledge transfer (Carmona, 2018; Hes, Hernandez-Santin, et al., 2020). Spiritual nourishment is correlated with the social-ecological system of a place

Table 1. Thematic Indicators of place-making in traditional settlement (source: author)

Theme	Indicator	Interlinkages	References
Social domains	Safety	<ul style="list-style-type: none"> • sense of rootedness • community inclusion 	(Akbar et al., 2020; Buijs et al., 2018; Bush et al., 2020; Carmona, 2018; Creagh et al., 2020; Darchen et al., 2020; Follett & Strezov, 2015; Garlick, 2014; Hensher & Wang, 2016; Hes, Hernandez-Santin, et al., 2020; Hes & du Plessis, 2014; Hodgetts et al., 2008; Hopkins, 2020; Mateo-Babiano & Lee, 2020; Nordberg, 2020; Nursey-Bray, 2020; Palazzo, 2020; Silvertown, 2009; Sipe, 2019)
	accessibility	<ul style="list-style-type: none"> • public ownership • age-friendliness 	
	human–nature interactions	<ul style="list-style-type: none"> • ecosystem services • emotional nourishment • anthropogenic activities 	
	Social integration	<ul style="list-style-type: none"> • wide social networks • robust social support • multi-functional programs 	
Cultural Domains	Place-Specific Values	<ul style="list-style-type: none"> • historical identity • place stewardship • redevelopment initiatives • ecological considerations 	
	Spiritual nourishment	<ul style="list-style-type: none"> • non-human custodianship • nature–culture connectedness 	
	Community Engagement	<ul style="list-style-type: none"> • place awareness • place maintenance • place development 	
Economic domain	Multifunctionality	<ul style="list-style-type: none"> • socio-ecological benefits • program plurality 	
	Ownership	<ul style="list-style-type: none"> • green space maintenance • Community entitlement • Graduality and temporality 	
	Capability	<ul style="list-style-type: none"> • enterprising opportunity • low political influence • social capital network 	
	Zoning & timeframe	<ul style="list-style-type: none"> • Maturity period • Adaptive governance • incremental transformations 	

where the connectedness of culture with the natural environments serves as a source of nourishment (Akbar et al., 2020). The place that permits the deep embeddedness of people with natural resources; nourishes the community spiritually and leads to non-human custodianship and natural stewardship (Bush et al., 2020; Palazzo, 2020). Community engagement creates the opportunity for more inclusive places and facilitates a deep connection with people (Scruby et al., 2017). It opens possibilities for increased awareness and participation among people and builds ownership of the place for maintenance and development (Follett & Strezov, 2015; Silvertown, 2009).

Economic domains of place making

Place economy needs multifunctionality to integrate place-based social and natural processes for optimized land development (Palazzo, 2020). Ecological infrastructure development plays a key role in attaining multi-

functional land use and contributes to placemaking (Ahern et al., 2014; Vernon & Tiwari, 2009). Green network-based multi-functional practices allow socio-ecological benefits with the fruitful outcome of cultural ecosystem services, where program plurality brings strong community engagement (Palazzo, 2020). With this, ownership encourages the maintenance of green spaces (Nurse-Bray, 2020) and builds social capital (Kelkar & Spinelli, 2016). Incremental intervention processes and temporary functions gradually engage more local people and increase ownership of long-term change-making (Esposito De Vita et al., 2016). In that case, community titling of a project enhances ownership and place maintenance (Darchen et al., 2020).

Moreover, Human capability is a significant spatial determinant of place-based economic development where people's cognitive ability to maximize enterprising opportunity, supportive environment, and institution-based knowledge transfer works as essential elements of actualization (Garlick, 2014). Lowering political influences improves social bonding, bridges social capital, and supports people's workability, enhancing place-based capabilities (Nordberg, 2020). The economic impact of a placemaking project depends on the time frame because project costs are incurred at the start but accrue for many years for maturity (Sipe, 2019). That is why adaptive governance supports time-framed planning to nurture long-term maintenance of place (Hopkins, 2020). Moreover, incremental transformations facilitate the process with advanced negotiation, leading to expected results over a longer perspective (Palazzo, 2020).

Methodology

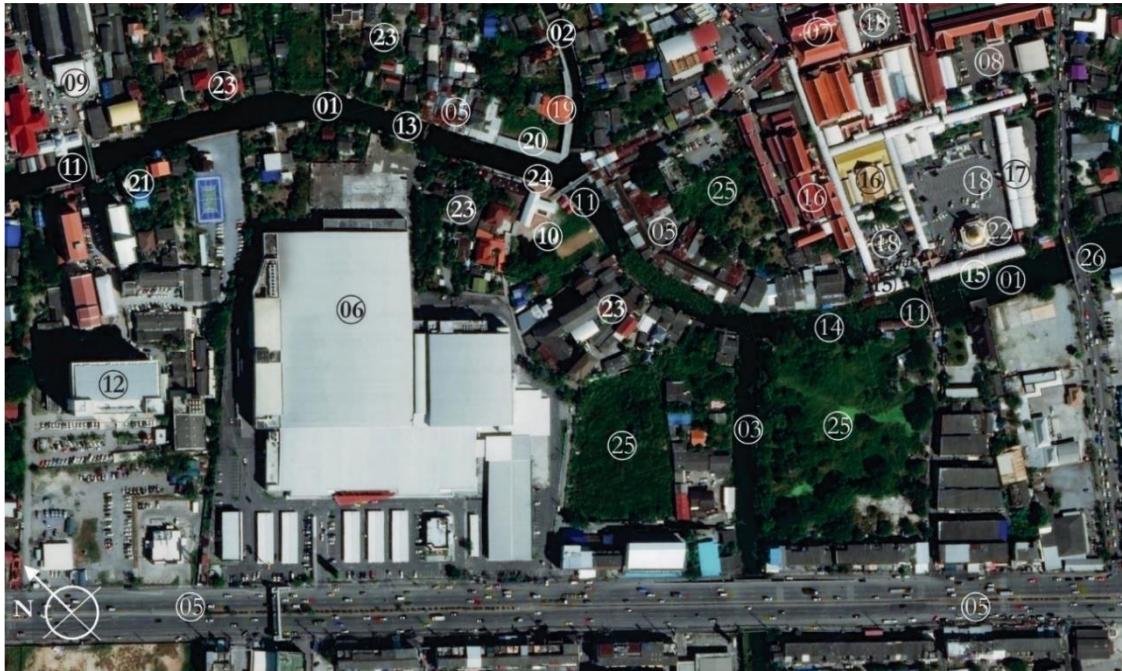
The research methodology is developed according to the conceptual framework (**Figure 1**) where three core themes are the sociability of the marketplace, the cultural way of living, and the economic capability for placemaking. To investigate the co-existence of social-cultural-economic spaces in a water-integrated traditional settlement, this research chooses a case from Bang-Phli, Thailand, a vibrant traditional marketplace within the settlement with an existing ecological landscape.

The study area

Bang-Phli Ancient Market, previously known as "Si Sophon Market," was first established in 1857 along the Samrong canal when the Chinese shippers formed their settlement in the region (Siddiqua et al., 2019). The traditional settlement is developed along the Samrong canal (**Figure 1**). Over time, it has gradually evolved in harmony with the socio-cultural and economic lifestyle of the local people for over one and half centuries. The market is integrated with the canal water and natural landscape surrounding the canal. Being well connected with the communication lines at district and city levels, the market has become a vibrant socio-economic place and a popular tourist attraction of the city. Every day thousands of regular users and tourists get allured by the traditional ambiance of the marketplace and its surrounding settlement.

Data collection; type of data: issues, sample, and methods

The selected settlement is enriched by its traditional components and cultural way of living. The contemporary components enriched the settlement and living in a unique way where the technological advancement and contemporary achievement uphold the traditional settlement by cooperating and creating a lively and vibrant socio-cultural place along with the ecological backdrop. To identify the unique socio-ecological system, cultural way of living, and economic development with technological advancement, the research developed a sequential method under the three themes: sociability of the marketplace, cultural way of living, and economic capability for placemaking. The number of the sample is selected by using the convenience sampling method. This study conducted semi-structured interviews with respondents from government officials (mayor 1 no's, deputy mayor 1 no's, government official 1 no's), personnel from local safety-security authority (policeman 1 no's), shopkeepers, local community people (monk 2 no's, boatman 2 no's, shopkeeper 5 no's, retailer 7 no's,) and passerby (7 no's).



1. Samrong Canal; 2. Suan Canal; 3. Bua Khli Canal; 4. Thepharak Road; 5. Bang Phli Yai Ancient Market; 6. Big C Market; 7. Wat BangPhli Temple; 8. School; 9. Bang Phli District Office; 10. Art & Culture Center; 11. Pedestrian Bridge; 12. Bang Phli Hospital; 13. Boat crossing; 14. Boat station; 15. Vendor Shed; 16. Buddhist Temple; 17. Temporary food shops; 18. Parking Area; 19. Floating Market Dining Area; 20. Resting & Water Ritual Deck; 21. Solid Waste Transfer Station; 22. Stupa; 23. Residence; 24. Rab-Bua festival Deck; 25. Green Area; 26. Vehicular Bridge

Figure 2. Bang-Phli old market and surrounding neighborhood places (Base-map source: ArcGIS Online).

Theme I: sociability of marketplace

The sociability of the marketplace is explored in terms of three major issues, which are safety and accessibility (walkability, sittable, welcoming, convenient), human–nature interactions (continuity, cleanliness, stewardship), and social integration (participation, cultural identity, diversity, neighborly). The issues are taken to understand the social relations between people, place, and environment. To investigate the process of sociability SSQS (semi-structured questionnaire survey), NPO (non-participant observation), and Spatial mapping is conducted. Views from the different levels of stakeholders (mayor of Bang-Phli, deputy mayor, monk, government official, shopkeeper, local passerby, boatman, policeman, and retailer) enriched the evidence to understand the traditional placemaking.

Theme II: Cultural (way of living)

This section explores place-specific values (historical, indigenous), spiritual nourishment (spiritual, celebratory, stewardship), and multiculturalism to comprehend the living pattern and culture of the land. NPO (non-participant observation) and RC (reflexive Conversation) are conducted with government officials, shopkeepers, local passersby, boatmen, and retailers to diagnose the way of living.

Theme III: Economic capability for placemaking

The theme of the economic capability of the marketplace is investigated with multifunctionality (alternative benefit, useful, active), ownership and belongingness (hedonism, capability, stewardship), and zoning & timeframe (diverse pattern, activity, active economy, mixing of time, overlapping) sub-theme. SSQS (semi-structured questionnaire survey), NPO (non-participant observation), and spatial mapping are conducted with the deputy mayor, temple monk, government official, shopkeeper, local passerby, and retailer to gain insight from the case study area to understand the economic position for placemaking. An analytical framework is used to relate to the issues, research question, objectives, methods, and outcome based on the survey data and background study about the social-cultural-economic spaces in the traditional settlement.

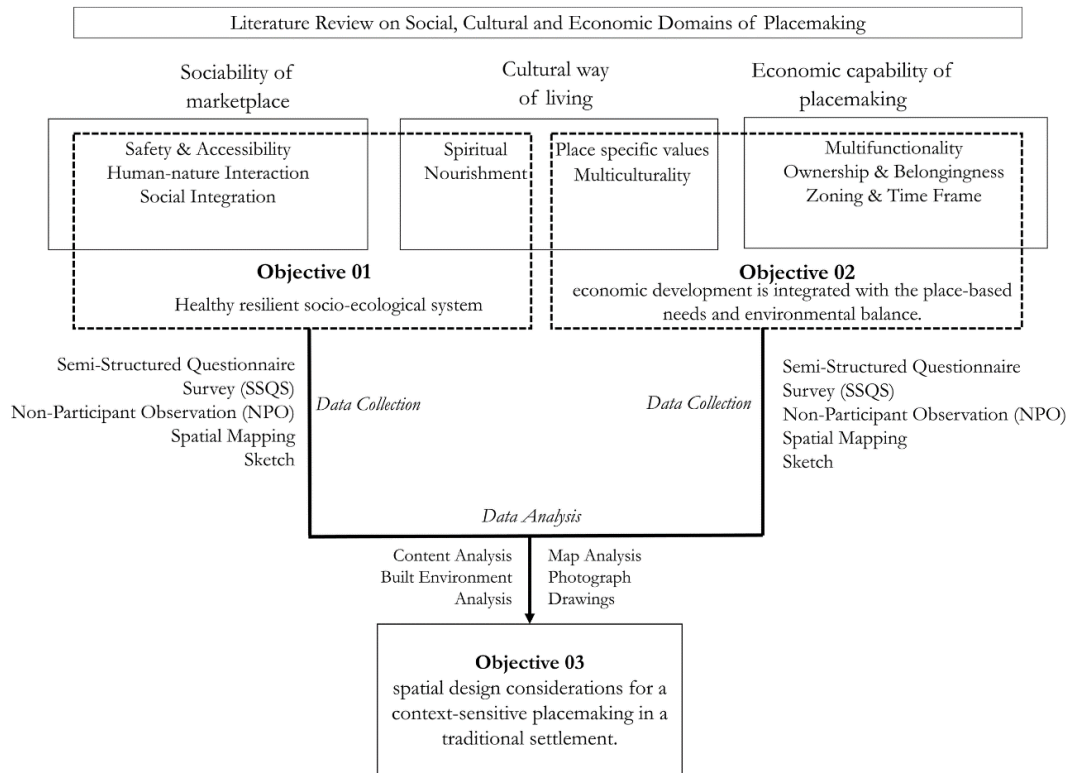


Figure 3. Analytical Framework (source: author).

Findings

Sociability of marketplace

The physical planning and development of the ancient market and its surroundings have three noticeable aspects. Firstly, for 160 years, the peoples of Bang Phli ancient market have been living in the place by generations who shared collective social norms and beliefs. Under that, they have developed a mutual trust and occupational networks where everyone plays their role in maintaining the broader socio-economic balance of the community. While creating the marketplace as one of the prominent tourist attractions of Samut Prakan,



Figure 4. (a) accessibility around the old marketplace and surrounding places; (b) municipality boat collecting garbage; (c) people using boats as means of transportation; (d) wastewater drainage pipe beneath the floor. (Source: author).

these shared values have been recognized, facilitated, and upheld by the place-makers. Along with several contemporary structures like concrete dwellings, roads, walkways, and a supermarket called Big Sea, several temporary dwellings made of fragile wooden poles and worn-out tins, even polythene on the roof, have been found along the subbranch of the Samrong canal. The informal dwellings have not been removed in the name of modernization but instead integrated with formal development interventions.

Moreover, to maintain socio-economic equity in the neighborhood, the municipality permits these impoverished dwellers to cultivate and harvest fish from the canal in front of their respective houses, which is prohibited for privileged others. Secondly, different types of accessibility options coexist in a harmonized way. The vehicular circulation and parking placement in synchronization with canal-oriented infrastructural development permit easy access to every significant function, including the market area, schools, monastery, and shopping mall, without hampering the safe walkability throughout the marketplace (Figure 4a). Traditional wooden pathways through the old shops, newly constructed pathways along the canal, and pedestrian crossing bridges are primary elements that make Bang-Phli walkable. Moreover, people use the different boats as a prominent means of transport through the Samrong canal. Finally, the 160-year-old ancient market has balanced traditionality and contemporary needs. Replacement of the traditional wooden posts with prefabricated concrete and metal posts does not replace traditional building systems but makes the structures more durable, and people can easily replace the planks of the wooden floors if necessary (Figure 4c). These structures are fully equipped with modern urban living facilities, connected with central supply water pipes, electricity lines, and wastewater drainage systems installed beneath the floors (Figure 4d). Every day a boat

collects garbage from the canal side decks of each shop and carries it to the nearby transfer station (Figure 4b). Canal-side pathways are constructed with precast concrete posts, beams, slabs, and metal safety rails. These pathways enhance the place's Canalside human walkability, not interfering with the movement of non-human neighbors (animals and reptiles). These pathways allow water-based boat transportation by gaining heights at boat access points to houses. Prefabricated construction systems minimize anthropogenic disturbances in the place intervention process.

Cultural way of living

Bang Phli has a great historical significance as a sacred place. It is situated at the bank of the Samrong canal, one of those old transverse canals dug during the Ayutthaya and Ratanakosin periods of Siamese history. The canal-oriented traditional way of living in Bang Phli nourishes the spirituality of strong co-existence of the built and natural environment. Generation by generation, the local people are bringing their devotion and beliefs. Moreover, this prospect has been a key reason behind the establishment of Bang Phli as a field of cultural richness. The canal systems were developed to use the annual floodwaters effectively as supplemental irrigation for wet rice cultivation, in addition to the watercourses of the natural drainage system. At the same time, the watercourses have been important to the traditional government economy and rural society for their daily watercourses have been important to the traditional government economy and rural society for their daily communication and economic activities (Figure 5e). The system has been in place since then, and as a result, Thailand is now the world's second largest rice exporter.

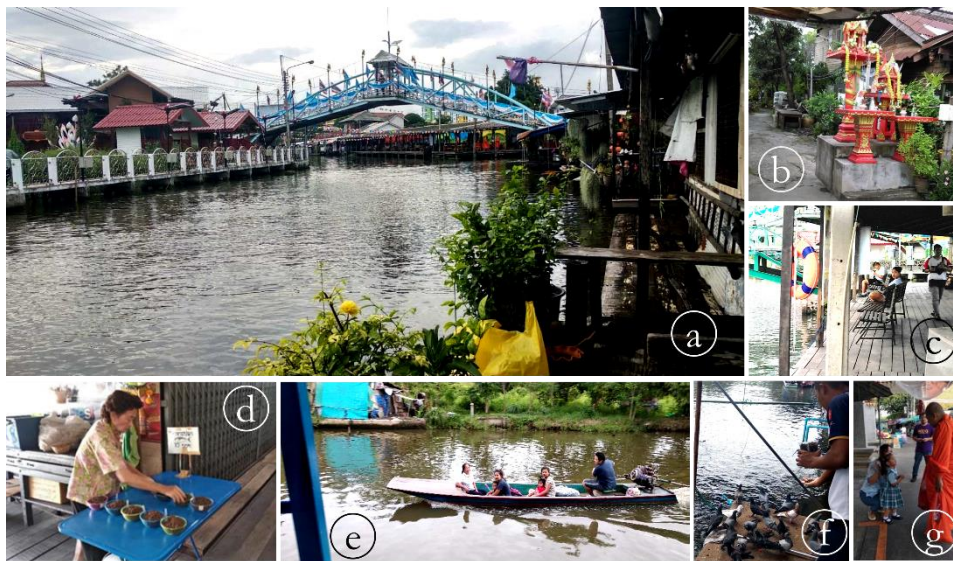


Figure 5. (a) orientations of infrastructure to the canal; (b) worship place in front of a house; (c) canal-side walkway and gathering space; (d) vendor selling food for fish and birds; (e) boat carrying passenger and goods; (f) devotees giving alms to the monk (source: author).

As Bang Phli has a long legacy of water-based transportation and water-oriented religious festivals, they keep functioning boats, canal-side walkways (of both traditional and contemporary materials) and gathering spaces (Figure 5c). Every day a large number of tourists and local people visit the place to shop from stalls and vendors. They come here to feed fishes and birds as rituals (Figure 5f) and to give alms to monks

(Figure 5g). These foods are also bought from some of the vendors (Figure 5d). Students at a nearby school and the monks of the temple complex also come here after class for food facilities and gossip at the canal bank. Bang Phli is celebrated for the yearly Lotus Flower festival, called 'Rap Bua,' which is eventuated on the fourteenth day (the last day of Vassa) of the waxing moon in the eleventh lunar month, the full moon in October commonly. A replica of the Buddha statue, 'Luang Pho To', is carried on a boat from the temple Wat Bang Phli which moves along the central canal of the district ((Kotthanoo et al., 2016)).

Although temples and monasteries are marked as sacred spaces belonging to two different religions, no conflict of interest or caste discrimination exists. In their religious beliefs, temples have become a full-fledged social gathering space. There are places of worship found to very small extents in front of every property (Figure 5b). Those sacred spaces are provided by the owner of the land and open for the convenience of the local people. The conception of Thai space depends on specific beliefs attributed to the correct orientation. As the Samrong canal has great historical religious significance, the people of the Bang Phli Ancient market respect it as auspicious and maintain its correct orientation. As a result, they do not orient built forms facing back to the canal and try their best to keep the canal water clean (Figure 5a). The Thai government prioritizes the religious belief of the people and, through this, involves them in the maintenance system of the canal and the historical Bang Phli market. To ensure participation of various economic, age, and social groups, the circulation pattern and choice of various activities make this area well accessible and vibrant.

Economic capability

There are two sorts of traders in this market. Some are domestic; they always live in the marketplace and keep trading from home. Their household activities like cleaning, child-rearing, and making breakfast are sited with the marketplace. The rest are outsiders, including both lasting shopkeepers and transitory sellers. Residents of the market show a cohesive attitude to the non-resident shopkeepers and vendors, and they and the monks serve all the visitors, passersby, and devotees with all amenities. As the area is the source of both their living and livelihood, it opens possibilities for increased awareness and participation among them and builds ownership of the place for maintenance and development. Bang-Phli ancient marketplace is one of the vibrant floating marketplaces with the unique heritage of Thai culture. The socio-cultural and economic activity (Figure 6b) of the ancient marketplace keeps a strong impression on the way of living, creating a harmonious relationship between people (Figure 6c), place (Figure 6e), and environment (Figure 6a). The unique layout of the economic livability and activity is boosted by the multifunctionality (Figure 6b) of different economic motions, the hedonism of the people towards the place, the capability of economic skills, and stewardship development within the market community and with the surrounding development. The place accommodates different activities (Figure 6f) at a time in the same place, ensuring publicness by offering multifunctionality of the place and keeping it vibrant all the time. Mixed use increases the marketplace's social and cultural value, which benefits the economic activities and ensures the place's social safety and visibility (Figure 6f). The traditional appearance of the old marketplace increases the economic value of the products, and at the same time, it assures the social integration and inclusiveness of the place. By balancing everyday life and economic activities together, the market assures the ownership and belongingness of the shopkeepers and visitors inclusively. Socio-cultural and religious events inspire the people to be active hedonically in the marketplace and activities. Most shops are run by family businesses where family members contribute necessary support and services spontaneously (Figure 6f). The young female members serve the cooking zone, shops, restaurants, and dining, while the handicraft business and workshop are run by the elderly and the young male members. Children are raised in the same place with the support of their families. The environment is thus in harmony with the dwellers' everyday family and work lives (Figure 6b). In the very morning, the marketplace wakes up with the offering of rituals by the monks, and they walk all through the marketplace barefoot. This provides the place with tranquillity enriched with the local culture and tradition. All the stakeholders, government actors/agents, dwellers, shopkeepers, monks, and visitors possess a sense of ownership of the place that helps nourish the socio-cultural-economic activities of Bang-Phli's ancient marketplace in a culture-sensitive manner.



Figure 6. Canal and sacred spaces-oriented way of living. (a) ecological settings surrounded by the marketplace; (b) socially and economically vibrant multitask area; (c) breaking out and social space; (d) waterways; (e) canal and water-integrated settlement; (f) the overall section of the market activity along the canal (source: author)

Discussion

Traditional settlements are the construct of people's way of living, culture, and tradition. In the journey to flourishing as a safe and vibrant public place, the Bang-Phli ancient market has adopted context-sensitive spatial-physical interventions where traditional practices, customs, and social-ecological systems are entirely nurtured. These place-shaping interventions are interlinked with people, processes, products, and programs and are key learnings from Bang-Phli.

Social-ecological system supportive place interventions

The Bang-Phli ancient market's sociability is improved by ensuring safety, accessibility, ownership development, and balancing the social-ecological system with culture and economy through adaptive spatial-physical interventions. Social spaces of the floating market and the Samrong Canal-side ecological systems are inherently interlinked across multiple facets nurtured with place-making interventions. Sacred spaces, water-based ritual spaces, gathering and recreational spaces, household spaces, and shopping spaces are interlinked with canal-based ecology and landscape, and every part of that social-ecological system is sensibly updated and nurtured in interventions.

The 160-year-old traditional pattern of wooden floating shop structures and living spaces are gloriously revitalized with small-scale place interventions. Replacing old wooden posts with prefabricated concrete posts made structures more durable. Installation of modern water supply facilities, electricity lines, wastewater drainage, and plumbing systems meet people's needs for basic services and utilities without disrupting their traditional way of space use. An efficient solid waste collection system with boat networks through the canal enables participatory, energy-efficient, and healthy solid-waste management of the marketplace.

The ancient place is accessible from surrounding areas with walkways, vehicular roads, and traditional waterways. The traditional waterway is maintained as a safe and efficient communication line for transferring

community people, goods, and tourists. Vehicular and pedestrian routes are overlapped; however, the pragmatic design of bridges and culverts give way to the boats like gateways. The floating pier of the boat landing stage is used for social, religious, recreational and tourist activities such as community interaction, child-rearing, worshipping, fish-feeding, sightseeing and so on. These multiple activities take place while maintaining proper safety and cleanliness. Traditional Wooden pathways, prefabricated stilted pathways, and pedestrian bridges make Bang-Phli more walkable for both people and pets. This infrastructural harmony offers people choices and flexibility of movement and living along with the canal ecology and makes the place layout more secure, safe, and equitable.

Cultural nourishment/place-specific interventions for maintaining environmental stewardship

The historical identity and emotional connection to canal oriented living systems added essential place values in the development strategies of Bang Phli Ancient Market and its surrounding community. The canal system was developed by the historical leaders of Thailand and afterwards it became the key element of their livelihood and beliefs. It gave Bang Phli its cultural uniqueness that had economic viability. Most importantly, indigenous knowledge has been transferred to today's redevelopment initiatives. The initiatives like modern schools with historical monasteries, contemporary transportations, connections with traditional canal-oriented systems, proper orientation of the built forms to both the new and traditional auspicious spaces have created the embeddedness of people with nature integrated and integrated and spiritually driven living environment. Interventions have taken place prioritizing the legacy of cultural-ecological interfaces of Thai people and enhancing the connections between contemporary and traditional gathering spaces, like markets, temples, festival spaces, spaces for art-culture and daily activities. Being participatory and inclusive, these spatial-physical interventions have created increased belongingness and participation in maintaining the quality of the places.

Incremental-temporal-multi-functional interventions for a thriving place economy

Two types of traders in the Bang-Phli marketplace are accommodated with incremental, temporal, and multi-functional places. Domestic traders of the place got opportunities to connect their homes with the extended marketplace, which helped them to maintain their home and business simultaneously. They can simultaneously trade and rear their children and serve tourists with homely services. Shopping spaces and homes are blended with the new infrastructures for place development. Besides, it does not disconnect the home from the canal.

Moreover, the place provides opportunities for transitory sellers with a dedicated trading place with temporary infrastructures like parking areas and a washing and toilet zone. They come daily to the marketplace from their home and make the place more vibrant. Due to spatial and infrastructural flexibility, multi-functional spaces along the canal are turned into festival spaces during festival seasons. These multi-functional infrastructures promote place-based social and natural processes such as community-driven fish cultivation and plantation. Inclusive place-making with conducive and incremental infrastructure, services and facilities has contributed to nurturing the sense of ownership among both the traders.

Conclusion

This study explored the spatial-physical design approaches, processes, and considerations behind the context-sensitive placemaking in the Bang-Phli ancient market. It concentrated on identifying the spatial design strategies with regard to the social-cultural-economic dimensions of the water and nature-integrated way of life in Bang-Phli. It also explored how inclusive development interventions enable the co-existence of people from different socio-economic, cultural, and religious backgrounds. This inclusion safeguards the sense of ownership and belongingness among the local people, who have been the core element of a traditional settlement. Significant findings suggest that the infrastructural developments ensured safety and accessibility for the diversified users through a balanced combination of traditional and modern infrastructure, services, and facilities. The traditional practices of canal-oriented living, which include several economic activities, religious

customs, cultural festivals, and means of transportation, are not only preserved but also rejuvenated as prime attractions for the visitors. At the same time, several technological measures like prefabricated construction systems, central water and electricity supplies, and wastewater drainage system are adopted that enhance the preexisting human-nature interactions. In order to enhance economic vibrancy and usability of the marketplace, several spatial strategies like enabling multi-functional spaces, allowing mixed activities and maintaining need-based flexible timing have been adopted.

Major learnings from the research reveal the know-how toward people-place-environment sensitive placemaking that can nurture the co-existence of the socio-cultural way of life, environmental stewardship, and economic development in a traditional settlement in a socially and environmentally sustainable manner. However, further research is needed to explore the applicability of these know-hows in other traditional settlements from different socio-cultural-economic contexts.

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