Spatial Analysis of Traditional Thai Dwellings in the Phra Pradaeng District

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Abstract
Owing to the accelerated pace of modernization and urbanization, traditional Thai dwellings, or ruan thai, and mode of living not only lose their multidimensionality, but also are dramatically displaced by modern housing and lifestyle. The premature, unsustainable, developments result in serious dwelling problems, particularly in and around the Bangkok Megalopolis. This research is a proxemic study of Thai dwellings in three evolution periods; the "old," the "transitional," and the "old and new" tradition. In order to understand how Thai dwellings respond to the ever-shifting contexts, the research focuses on the reexamination of the interrelationship between the broad, natural and cultural, context and the intimate, spatial, content and the reintegration between the horizontality and verticality of the ruan thai's lived space. The in-depth research selects eight ruan thai located in the Phra Pradaeng District, Samutprakarn Province as the case studies. Methodologically, this research includes the socio-cultural and spatial analyses, while Hall's PMS study is employed to explicate the contexts of the ruan thai's lived space. Through the analyses of spatial and sectional diagrams, the study reveals the spatial contents of ruan thai as integral parts of the Thai ecological and cultural context.

Keywords: proxemic study; traditional Thai dwelling; ruan thai; lived space; cultural aspects

1. Introduction
Given that "dwelling" is a physical manifestation of the multifarious whole between humans and our existential space, a traditional dwelling unmistakably reveals the image that manifests the "proximity,"1 the microcultural level of our existence.2 Formal articulation of the traditional Thai dwelling—the amphibious tensile architecture consisting of small dwelling units encircling an outdoor terrace—has evolved to satisfy the specific natural-cultural settings of the Chaophraya River Plain, i.e. seasonal floods, abundant forests, extended families, and fortune-related beliefs. Nonetheless, owing to the stunning pace of modernization and urbanization, traditional Thai dwellings and the intertwined relationships between the ecological, cultural, and spatial spheres, the physical and psycho-poetic aspects, and the horizontal and vertical dimensions of the lived space irresistibly give way to nascent modern villas. An insufficient understanding of everyday life generates a functional one-dimensional space that has no relation to the Thai context, or respect for the use of space—the world's finite resource.

This research is a proxemic study of the lived space of traditional Thai dwellings, or ruan thai, from the early Modern Age to the present day. Its central goal is to examine the interrelationships between the environmental, socio-cultural, and spatial aspects as well as the horizontal and vertical dimensions of the lived space of traditional Thai dwellings and to clarify their spatial essence and transformation processes in a line of tradition—be it, the "old" tradition, the "transitional" tradition, and the "old and new" tradition, thus filling the gap between the polar ends—that is, the traditional and the contemporary dwellings. Based on phenomenological and psychological approaches, this in-depth exploration takes on a small set of comparative case studies. With regard to the dynamic and diverse discourses that play a vital role in the evolutions of the everyday life of Thai dwellings, the research selects Phra Pradaeng District, Samutprakarn Province, in the east of Bangkok as the area of study (Fig.1.-2.).

2. Ruan thai in the Phra Pradaeng District
2.1 Phra Pradaeng District
Enclosed by the Chaophraya River and a historic short-cut canal, the Khlong Lat Bodhi, Phra Pradaeng District is noted as the last green area situated exceptionally close to the bustling capital and thus has served as the "urban lung."5 The unique geographic

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setting of this little oasis offers a glimpse of not only the "past," but also the "present" values—the pristine nature, existing aquatic networks, and old style houses that coexist with intensive suburbanization, advanced transportation, and mushrooming real estate.

Based on the premise that a balanced combination between the "old" and "new," for example, the differing degree of urbanization, contrasting density of land utilization, shift in city's orientation, transportation network, and architectural typology, would illuminate a clear understanding of the ever-changing context of Thai society and its dwelling phenomena, the research selects two neighborhoods from Phrapradaeng — Songkanong, an old and compact neighborhood in the west where the majority of the households have maintained the traditional style dwellings and old customs amidst intensive urban developments (Fig.3.), and Bang Namphueng, a revived agriculture-based neighborhood in the east where cooperative programs, e.g. eco-cultural tourism, have brought lives and liveliness back to the area (Fig.4.), as the sites of the case studies.

2.2 Case Studies

In its search for the balanced constituents of the periods of construction and habitation, dwelling typologies and their orientations and with regard to the in-depth accounts of life and lived space, the research selects eight ruan thai from these neighborhoods as case studies (Table 1.).
The Songkanong cases consist of the Sawai house, a single-unit dwelling with its well-preserved condition since its construction in the early Bangkok period; the Manee house and Maew house, double-unit dwellings built in the same period as the Sawai house, which have been modified and resided in by families up until the present day; and the Pratum house, a single-turned-double-unit dwelling built in the past five decades.

The Bang Namphueng cases include the Rart house, a small-turned-extra-large ruan thai built in the early Modern Age and continually lived in by a family; the Mali house, a triple-turned-double unit dwelling with its original condition; the Suleporn house, a single-unit orchard dwelling built approximately a century ago; and the Prayut house, a transformed double-unit dwelling built in the same period as the Pratum house. The oldest case study is approximately two hundred years old; the most recent one is about fifty years old (Fig.5.).

3. Spatial Transformations: Historical Development

Methodologically, integrative research approaches; field survey, observation, oral history, and visual comparison, are employed for the analysis of the multidimensional space of traditional Thai dwellings. The study concerning the ruan thai’s spatial transformation consists of two parts; the historical development and the proxemic study.

For a clear understanding of the development of traditional Thai dwellings, eight ruan thai are divided into two categories—the single-unit ruan thai, i.e. Sawai house, Rart house, Suleporn house, and Pratum house, and the multi-unit ruan thai, i.e. Mali house, Manee house, Maew house, and Prayut house. Based on field surveys and oral histories including physical evidence of the case studies, the research presents the planemetric as well as sectional transformations of these ruan thai as shown in Table 2.-3.
The proxemic study of traditional Thai dwellings includes two aspects; the cultural analysis, or "context of life," and the spatial analysis, or "content of life." The study of the Primary Message System, or PMS, is employed as a means to explicate the socio-cultural aspects of the ruan thai's space. Together with the analysis of spatial diagrams of basic activities; living (L), receiving (R), sleeping (S), dining (D) and cooking (K), and sectional diagrams, the study presents the spatial essence of the ruan thai's space as integral parts of the broader cultural context.

4. Spatial Transformations: Cultural-Spatial Analysis

4.1 The Old Tradition

"Small trails lined with coconut trees were a very common scene of this neighborhood. Deep inside the village walkway, there was a wide variety of fruit trees; mango, orange, betel nut, marian plum, jackfruit, banana. On the outdoor chaan next to the kitchen, we also had home-grown vegetables; sweet basil, mint, lemon grass, and spices. In the previous days, our family was genuinely a big and warm family. Around the neighborhood, we all knew each other quite well."

"In my grandparents' time, we grew both rice fields and gardens. When farming season comes, we grow rice; when it is time for fruit growing, we switch to do orchards." Based on the PMS study and oral histories, the "old" tradition of traditional Thai dwellings constituted the "living with nature," the "living with others," and the "self-sufficient living" context of life (Fig.6.). Such condition originated the spatial characteristics of ruan thai; (1) the integrated-interchangeable receiving and living space, (2) the (semi) fixed sleeping space (as manifested in the Songkanong cases) and the flexible sleeping space (as in the Bang Namphueng cases), and (3) the integrated-intimate dining and cooking space together with an intimate relationship between the served and service quarters (Fig.7.).

4.2 The Transitional Tradition

"Later in my parents' time, we were engaged solely in fruit growing and released fields for rent. In our generation, most of us work for governmental service and companies and do garden work only on weekend. Agriculture thus became our secondary source of subsistence." The polluted environs and the decreasing farmlands caused by the construction of industrial plants across the river began to affect our agricultural commodities. Especially in the Phrapradaeng district, we can no longer grow a large number of coconuts as did before.

The "transitional" tradition of Thai dwellings unveiled gradual changes in the natural and socio-cultural conditions; the "beginning of diminishing nature," the "downsizing household structure," and the "diverging walks of life" (Fig.8.). This accordingly resulted in the change in the content of the lived space; (1) the integrated receiving and living space, yet with the transformed spatial characteristic of the dwelling core, from the open-to-sky and out-of-door to the semi-outdoor chaan, (2) the shared sleeping space (as for the majority of case studies) and the emerging separate sleeping unit, yet still very much of the communal sleeping tradition, and (3) the intimate dining and cooking space vis-à-vis an emerging distant relationship between the served and service quarters (Fig.9.).
4.3 The Old and New Tradition

"During 1987-1995, it was the period that the neighborhood faced crises. There were no fruit trees or orchard growers. People changed their occupations, from traditional farmers to government officers, office's employees, and industry's workers. It was not until the construction of embankment around the entire six neighborhoods in 1997 that the neighborhood is better protected against floods and the agricultural activities have been revived."

"However, since the development reached the neighborhood, people from other areas have increasingly settled down here. As our descendants are today no longer engaged in agrarian activities, they do not associate with each other. Nor do the new comers."

The "old and new" tradition illustrates the ever-speedy and dramatic changes in the natural, socio-cultural, and economic conditions as a result of intensive developments during the past five decades. Based on the case studies, this period observes the "(sub) urban encroaching symptom" in the Songkanong neighborhood (Fig.10.) and the "regenerating living environs" in the Bang Namphueng neighborhood (Fig.11.), together with the "ever-disintegrating household family," and the "omnipresent modern lifestyle" in both neighborhoods.

These enormous changes in the context of life have generated the complicated and contrasting spatial essence and evolution. The transformed contents of the lived space include (1) the separate and stabilized receiving and living space that is an unfavorable side-effect of the modifications of the dwelling core of the old ruan thai vis-à-vis the (re) integrated receiving and living space, yet subtly separate by the verticality that is a result of limited residential lot—the situation common in recently built residences, (2) the separate and fixed sleeping space, which is a consequence of ideological change, from "privacyless" to "private" lifestyle, and the change in the use of spatial enclosures and components, and (3) the various types of service space, i.e. the integrated dining and cooking space and the separate dining and cooking space. At this point, it is remarkable to note that the separate dining and cooking space, to a great deal, accounts for the emergence of the new content of dwelling core—the integrated living and dining space—of contemporary Thai dwellings.

Apart from changes in the spatial arrangement, or plan, the research depicts a continual and conspicuous decline in the notion and utilization of the verticality of traditional Thai dwellings. To clarify, the "old" tradition of ruan thai constituted various attributes of the verticality: the vertical interchangeability between upstairs and downstairs space that, when incorporated with the flexible horizontal space, created the worthwhile use of the entire lived space; the "on-earth/under-sky" vertical orientation of the dwelling core that offered the dwellers a sense of space and time; the vertical elements, such as unfinished wall and partial partition, that served simultaneously as an extensional functional space, and the vertical steps between ruan, palai, and chaan that functioned as "pre-furniture" for sitting or lying on. The "transitional" tradition and the "old and new" tradition, however, reveal the decreasing role of the vertical dimension of ruan thai's space.

In other words, although the lived space of the "transitional" tradition was largely identical to that of the "old" tradition, the modification of the spatial core, from the outdoor to the semi-outdoor chaan, unfortunately caused the dwelling to lose its vertical orientation. Despite the heightened elevation of the dwelling compound, the interior space of the "old and new" tradition not only becomes lower in section, but also, in several cases, becomes ultra flat.

The construction of roof structure over the spatial core and its integration into a part of interior space together with the installation of flat/finished ceiling contribute to the absence of the vertical orientation and hence the loss of the "parts-of-the-larger-whole" essential characteristic of traditional Thai dwellings. During the transformation process, the loss of vertical steps—the "pre-furniture"—accounts for the extensive use of household furniture, which consequently makes the floor space less flexible. In
Fig. 7. The "Old" Tradition: Spatial Content

Fig. 9. The "Transitional" Tradition: Spatial Content

Fig. 12. The "Old and New" Tradition: Spatial Content

Fig. 13. The "Old and New" Tradition: Spatial Content
addition, such unfavorable side-effects as the poorly-lit and ill-ventilated space altogether cause the dwelling core underutilized and somehow lifeless. Though additionally equipped with such new type of vertical circulation as indoor stair, it is evident that the use of the upper floor and the lower floor spaces are rather fixed and somewhat separate from each other, thus revealing a clear contrast to the vertical interchangeability of the old ruan thai (Fig.12.-14.).

5. Conclusions

The proxemic study of traditional Thai dwellings began with the core premise that architecture is an integral part and thus a potential manifestation of culture. Given that architecture is at the "service of totality," the research expounded not only the dialogical relationship between the cultural and spatial realms of Thai dwellings, but also the multidimensionality, i.e. horizontal and vertical dimensions, of the ruan thai's lived space.

In summary, the omnipresence of the "parts-of-the-larger-whole" concept vis-à-vis the absence of the formality of the "old" tradition of Thai dwellings served as a crucial frame of orientation in the creation of the polychronic, flexible, sharable, interchangeable spatial characteristics of the old ruan thai (Fig.15.). As its name suggests, the "transitional" tradition showed the transition from the interconnected whole to the independent entities of Thai dwellings. During this period, it is noteworthy that although the spatial orientation remained almost unchanged, the spatial identification, particularly that of the dwelling core, i.e. the half-open/half-enclosed, semi-outdoor, terrace, and the house boundary, i.e. the "soft" territorial identifier, were somewhat modified (Fig.16.). By contrast, the dramatic changes in the natural and socio-cultural contexts of the "old and new" tradition of Thai dwellings bring about changes in the ruan thai's spatial essence; the cut-off, separate, and fixed space externally and internally as well as horizontally and vertically (Fig.17.).
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Glossary
1) Ruan house or pavilion
2) Ruan thai traditional Thai house
3) Taitoon ground space
4) Chaan elevated wooden terrace
5) Palai verandah

References

Notes
1) Proxemics is the interrelated observation and collection of theories of the human use of space as a specialized elaboration of culture. The proxemic pattern thus reveals the hidden cultural frame that determines the structures of a given human's perceptual world, personal distancing as well as the unstated rules for laying out houses and towns. For "proximity," see Hall (1969), pp.3, 163, Hall (1983), p.231.
2) Anthropology of space is composed of three levels; the infracultural level, which is the lower organizational level that underlines culture; the precultural level, which is physiological and very much in the present; and the microcultural level, the one on which most proxemic observations are made, Hall (1969), p.101.

This line of tradition was mentioned in Pussadee's study of houses in Bangkok and Piyalada's study of traditional Thai houses. The first examined the development of residential architecture in Bangkok, while the latter focused on the experiential aspects of Thai houses.

The canal reduced the journey by 17 kilometers, but as the Chaophraya is tidal-affected, it had the unfortunate side-effect of allowing saline water to go up the river damaging the ecological system along the waterway. As a result, a dam was built across its mouth in 1784 to halt salt water intrusion, S. Van Beek (1995), p.39.

In 1977, this agriculture-based district was registered as a green area, which helps provide fresh and clean air to the urban people.

According to Ruthai (1975), p.161, Songkanong residences are acclaimed as one of the finest examples of ruan thai in the central region plain. Based on the field survey done by the author in 2007, almost eighty percent of the houses located in the compact neighborhood of Moo 8 and Moo 9 are ruan thai.

The eco-cultural program includes not only the popular weekend market along Bang Nampruea canal, but also home stay, which allows visitors to gain cultural experiences.

Grounded in the knowledge of environmental psychology, the Primary Message System (PMS) consisting of interactions—association, subsistence, bisexuality, territoriality, temporality, learning, playing, defense and exploitation—is a fruitful means by which to understand the formation of culture, Hall (1973), pp.37-57.

Given that, in the Thai language, the basic term for the act of dwelling—"yua + kin"—connotes the notion of "living and eating together," these activities imply their interrelated functions. To clarify, the term "living" includes the act of "receiving," or "greeting guests," in the public-outside realm and "sleeping" in the family's private realm. The term "eating" or "dining" comprises the "cooking" (-related) functions. Therefore, the analysis of the functional diagram will be based on these fundamentals—living, receiving, sleeping, dining and cooking—all of which contribute to the creation of culture.


Mali Phoonsawadi, interview August 2007.

Prathanphong Devakupta, interview August 2006.

The establishment of new served sleeping units around the spatial core and the subsequent relocation of the service dining and cooking space, from the upper to the ground level, as in the cases of Manee, Maew, Pratum, and Saleeporn houses, result in the increased distance between the served and service quarters and thus the distant relationship between the served and service activities.

Mali Phoonsawadi, interview August 2007.

Kanika Phantae, interview August 2006.

"Privacyless," or the least sense of privacy and territoriality, involves several aspects in the Thai way of life. In the past, the traditional Thai household always slept and had meals together. One ruan, or room, served as a shared sleeping space for the whole family. During meal time, the family members sat together on the floor forming a family circle with shared meals at the center. Without a "hard" territorial divider between the house and its surroundings, the ground space was open for the public to pass by. However, the modern life style reveals reversed perspectives to that of the "old" tradition. Each room has come to serve as a private space for individuals. In addition, enclosed on all sides by a high fence and, in several cases, elevated high above the original ground level, the boundary between the house and its neighbors has become clearly demarcated, thus suggesting a strong sense of territoriality.


Despite changes in the everyday life space, it is noteworthy that the spiritual realm has played an important role in Thai dwellings. As the "high place," the Buddha room/corner influences the spatial orientation and the use of household furniture. When the spiritual and the everyday life spaces share a single area, the dwellers are not allowed to sit/sleep on a level higher than that of the "high place."