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Finding a Balance Between Public and Private Spaces in Student Housing Design in Thailand

Sajid I Awal

Faculty of Architecture, Chulalongkorn University, Thailand
E-mail: 6278003325@student.chula.ac.th

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ABSTRACT

Public and private spaces are of equal importance in promoting social interaction and ensuring self-contemplation for users of student housing. This research aims to establish the right balance among the public and private spaces as it is arguably one of the difficulties in housing design. A housing design is proposed for students of Chulalongkorn University in Bangkok, analyzed, and justified following the research findings to derive the desired balance between the public and private spaces. Several sets of literature of related work are undertaken as part of the qualitative design. At the same time, space syntax is used as a quantitative method to justify and finalize the findings. Accessibility, inclusiveness, visibility, and use of the space are the factors found responsible for identifying the degree of publicness of the spaces. Here the questioned balance could not be determined merely by using quantitative methodology. The reason lies with the inability of the spaces that could be called solely private or public, followed by the findings in a qualitative way. Henceforth, the balance exists through the in-between public and private spaces, which are also found to be responsible for creating a link and detachments between adjacent spaces. The factors and definitions found in the research can also be used to identify these in-between spaces. Furthermore, the scale used to study each space is also responsible for defining their publicness and, ultimately, the balance.

Keywords: architecture, design, housing, publicness and privacy, in-between public and private spaces

INTRODUCTION

Public and private spaces in student housing are equally important in promoting sociability and self-contemplation. Neufert (1980) pointed out that one of the most significant difficulties in designing any housing layout is creating the right balance between public and private spaces. This research aims to find an appropriate balance between the public and private spaces in university student housing. The definitions of public and private spaces in this study are derived from the literature review and the study aims, ultimately, to provide an appropriate student housing design with the desired balance in the context of a public university in Bangkok, Thailand.

Hsia (1968) and Sommer and Peterson (1966) revealed that students spend a considerable amount of their free time inside this building type. Since these students are nowhere near their homes, interaction is essential in influencing sociability among students (Gram-Hansen, 2012; Heilweil, 1973; Kenyon, 1999). A successful public space enhances this social interaction and increases the demand for such spaces in student housing (Danisworo, 1989; Whyte & William, 1985). In contrast, Van der Ryn and Silverstein (1967) argued that privacy is not prioritized in the design when the room is shared. In support of this argument, Vale and Khajehzadeh (2014) found that students are unlikely to claim the whole room as their own when it comes to sharing with others but tend to re-arrange the furniture to create privacy (ibid). This phenomenon demonstrates that privacy should also be a priority in student housing.

The re-arrangement of furniture highlights the adaptable nature of the space inside this building type. Here 'adaptability' refers to a space that can accommodate multiple functions based on the user's needs (Groak, 1992; Maccreanor, 1998; Schnieder & Till, 2007). It should also be noted that the term 'adaptability' is preferred over 'flexibility' because of the potential changes in use rather than modification of the space through architectural elements like structure(ibid). Several studies claim that the adaptable nature of space provides a sense of belonging in terms of privacy for its inhabitants (Hertzberger, 1991; Scalbert, 2004). On the other hand, in some exceptional circumstances, it is also possible to take advantage of these adaptable spaces to, for example, promote social distancing, which has become mandatory in public spaces during the current COVID-19 pandemic. Under these recent restrictions, privacy has been, in part, ensured for individuals by using adaptability of public spaces to help control the spread of the disease.

In this research, along with the adaptable spaces, there is discussion of how two other in-between spaces (common and privatized public) can be used to maintain the desired balance. Again, this desired balance cannot be determined quantitatively since these in-between spaces are neither entirely public nor entirely private in student housing. Therefore, a student housing design in the context of Bangkok is proposed in this paper, supported by the research findings to establish the desired balance using all three types of space.

METHODOLOGY

Due to the versatile nature of the issue, this study uses both qualitative and quantitative methodologies. Firstly, to understand the various dimensions of student housing, three sets of literature reviews were conducted, considering both the micro and macro scales. On the micro-scale, this paper explores the works of Evans (1997) and Aureli (2017), who examined the issue of housing design from the socio-cultural perspective. The definitions of public and private spaces are then reviewed according to the urbanist perspective adopted by authors such as Mehta (2014) and Madanipour (2010) at the macro level since the term 'public' is more relevant to the urban scale. Lastly, student housing issues are studied, considering the work of sociologists and the architect Neufert (1980). This final set of literature also helps to analyze the cases qualitatively. Here, the aim is to identify gaps in the existing research and offer different perspectives and potential ways of bridging them. From the findings, clarity on public, private, and in-between spaces is established and subsequently employed to analyze the project design by identifying the use of such spaces.

The project design is then qualitatively analyzed according to the initial definitions. However, following previous studies, such as that conducted by Alitajer and Nojoumi (2016) on privacy in housing schemes, both qualitative and quantitative methods are utilized to clarify the public, private, and in-between spaces. Space

syntax through the DepthmapX program, following the work of Turner (2001), is then used to quantitively analyze the connectivity of spaces by ignoring the viewer's height. Here, the blue area in DepthmapX denotes the least connected space, while red indicates the most connected space.

Although qualitative analysis alone is limited to providing information based on the project program or function, quantitative methods can be used to analyze the connection between the spaces under study. Consequently, a balance is derived between public and private spaces by employing and comparing both qualitative and quantitative analysis. In this paper, the research findings are analyzed to propose an appropriate design for student housing. Finally, the questioned balance between the public and private spaces is clarified through the project design analysis. However, other issues relating to creating student housing, such as structure, feasibility study, programs, service, regulations, parking, etc., are omitted from this research since they divert the focus from the main argument.

FINDINGS FROM THE INITIAL RESEARCH

The initial research involves a review of the existing literature and analysis of case studies, with the results used to analyze the student housing design to derive a balance between public and private spaces. Following review of two selected sets of literature, public, private, and in-between spaces are defined, mainly from the urban and socio-cultural perspectives. These definitions are then used to design and analyze appropriate student housing in the context of a public university in Bangkok, Thailand. Although these definitions can be related to the general notion of public and private spaces on the urban and domestic scales, scholars have not previously used these definitions to identify the privacy and publicness of spaces in student housing.

Although the definitions are clearly stated in the initial research by Awal, 2021, only the main arguments essential to the design are employed to analyze the proposed student housing. In prior studies, public and private spaces have tended to prevail on various scales, from an urban public plaza to study spaces inside dwelling units. Here, the factors influencing the privacy or publicness of spaces also vary, depending on the similarities between scholars, and this affects how they are used to identify the space types in student housing. Therefore, in this research, to analyze the design project, it is worthwhile categorizing the spaces according to the essential factors mentioned by the scholars in various studies. The initial identifying factors derived from analyzing the cases are set out in Table 1.

Although the definitions for public, private, and adaptable spaces in Table 1 are prominent, common, and privatized, public spaces are yet to be clarified, using these four factors, the public, private, and in-between spaces can be divided into common, privatized public, and adaptable spaces. In attempting to define common spaces, Aravena (2009) and Møller (2016) pointed out that in terms of student housing, spaces that can accommodate social interaction among the students can be termed common spaces, which often act as a buffer or transitional space from public to private. For example, the corridor in a typical housing design can act as a common space since it is accessible to all residents and is a means of both separation and connection between the lift lobby and adjacent units.

On the other hand, referring to the issue of privatized public space, Nasution and Zahrah (2011) argued that privatized public spaces bring physical segregation into public spaces, where people are ensured privacy despite being in a public space. For example, public spaces occupied by vendors can be termed privatized public spaces. Salman (1968) discussed that privatized public spaces are often found in medieval European cities, among others worldwide, where spaces are privatized through the extension of the individual's private realm, and the results leave a minimum space for passing public. Hence, in this research, spaces occupied by people for a certain amount of time, whether public or common, are defined as privatized public spaces.

Table 1

Factors used to define public, private, and in-between spaces

Identifying Factors	Definition by Scholars	Reference
Accessibility	Accessibility improves the publicness of a space. Apart from physical access, the social accessibility of a space must also be considered.	Birch, 2007; Carr et al., 1992; Francis, 1989; Jackson, 1974; Karacor, 2016; Madanipour, 2010; Madden, 2010; Mehta, 2014
Inclusivity	In limiting access to private spaces, inclusivity plays a crucial role in defining the publicness of the space and who is authorized to use it. The more people allowed into the space, the more public it becomes.	Awal, 2021; Carmona, 2010; Carr et al., 1992; Danisworo, 1989; Gehl, 2002; Kaplan & Kaplan, 1982; Madanipour, 2010
Visibility	Public spaces should be visible and accessible. In contrast, private spaces should be restricted and protected.	Brighenti, 2010; Madden, 2010
Use	Access can be divided into two parts: being able to reach and then use the space. A single space that can support multiple uses makes it adaptable. Unlike 'flexible,' the term 'adaptable' is preferred since it relates only to the use of space rather than structural alterations or other design elements.	Ercan, 2010; Gorak, 1992; Kumar, 2012; Maccreanor, 1998; Schnieder, 2007

Furthermore, in terms of student housing, three identical scales traditionally used -- public, common, and private -- are considered to help understand the complex notion of public and private spaces. Here, scales are mainly used to analyze spaces from the perspective of student housing design. It should also be noted that despite using the same terminology, the derived in-between space varies according to its purpose and characteristics when considering the different scales involved. For example, common space in public spaces differs from those inside private spaces. To be more precise, common spaces on the ground floor, which are identified as public due to the scale of the project design, are not the same as the common space inside dwelling units, which is termed as private space in the project design under study.

Following the scale, these three main space categories can be further divided into five sub-categories: public, common, privatized public, adaptable, and private. For instance, the ground floor as the public space would be found to consist of common, privatized public, adaptable, and private spaces based on accessibility and inclusivity. Similarly, common, and private space from the scale would also include these sub-categories. The exception is the public space sub-category, which is for the public and is not authorized to be used as any other type of space, except for the ground floor. However, the characteristics of privacy in these sub-categories would vary due to the difference in scale. Table 2 presents the derived definitions with the examples used to analyze the project design.

Table 2

Clarification on public, private, and in-between spaces

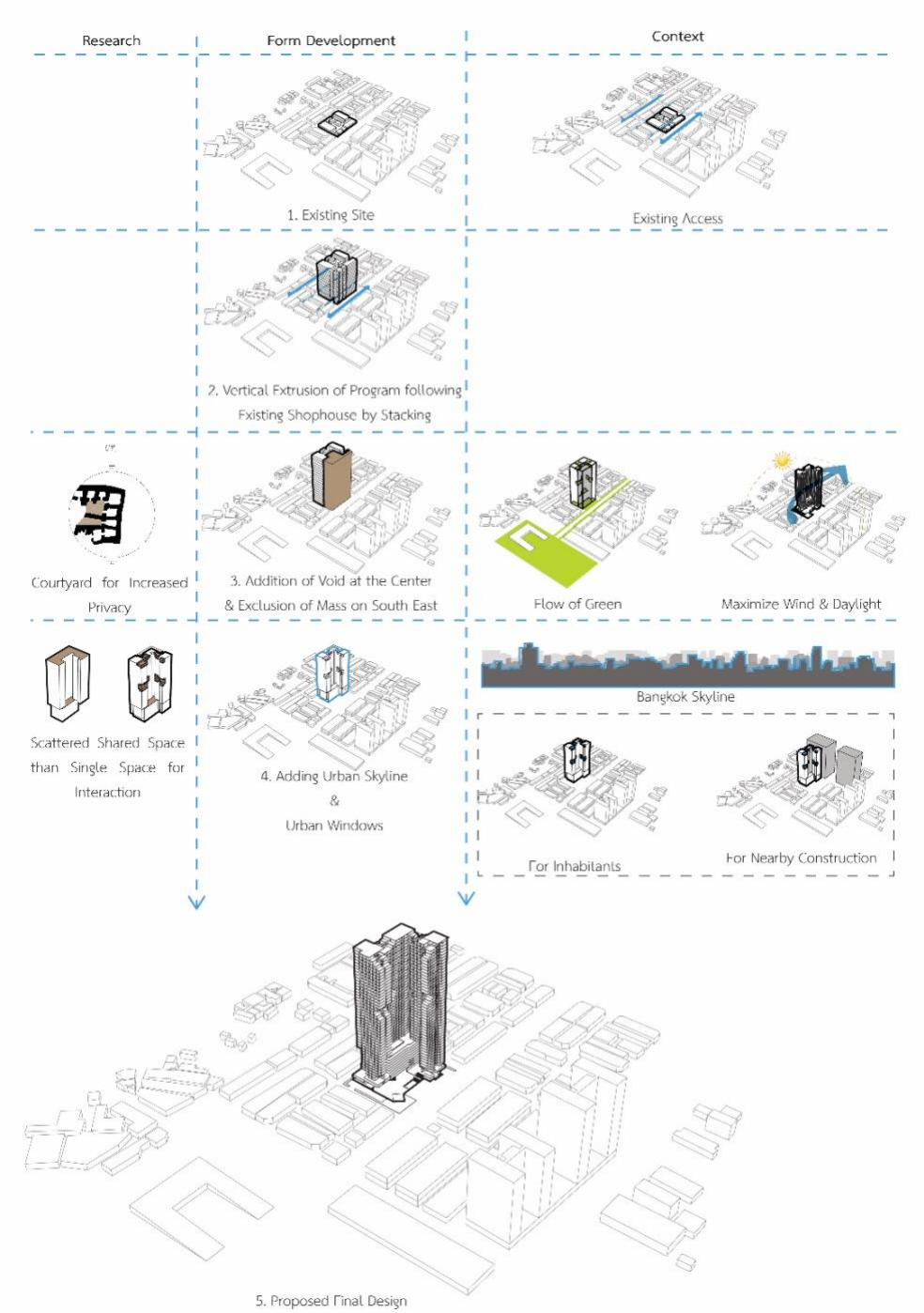
Scale/Study Perspective	Sub-categories	Derived Definition	Example
Public	Public	Accessible and usable by everyone, including the inhabitants and visitors	Plaza
	Common	Accessible by only inhabitants and authorized persons	Lobby, Office
	Privatized Public	Visible but not accessible when in use	Benches, Vendors
	Adaptable	A space that can accommodate multiple functions, although accessible and usable by everyone	Vendors in plaza, Benches
	Private	Space with restricted access and limited to users only	Toilets, Services
Common	Common	Accessible by users or inhabitants only	Corridor, Lift
	Privatized Public	Accessible by inhabitants only and when in use, others cannot access it	Lift lobby
	Adaptable	Visible to inhabitants only but not accessible when in use	Seating in the lift lobby
	Private	Accessible by inhabitants but not visible, and when in use, others cannot access it	The common toilet, Changing room
Private	Common	Accessible and shared between authorized inhabitants inside the dwelling units	Balcony or entrance of the unit
	Privatized Public	Visible but not accessible when in use by authorized inhabitants	Balcony
	Adaptable	Space that can accommodate multiple uses with access restricted to authorized inhabitants only	The balcony can be used as a terrace, kitchen, etc.
	Private	Space with restricted access to the authorized individual only	Bed, study space of each inhabitant inside the unit

PROPOSED STUDENT HOUSING ANALYSIS

Referring to the definitions derived from the initial research, the analysis of the proposed student housing aims to justify the balance between public and private spaces. In accordance with the scale, context, and research relevance, the project is considered as a single design. Referring to the existing access to the site, a buffer from the public Banthat Thong Road, as argued by Evans (1997) can be related to the corridor used as buffer found in typical multi-story housing. Then, the flow of greenery from the existing park in the south with a courtyard to enhance privacy is designed (Aureli, 2017). Finally, following the argument of van der Ryn and Silverstein (1967), to maximize interaction, several scatted shared spaces are provided rather than one larger space. All these steps form the basis of the proposed design and address the issue of privacy in student housing. The following section analyzes the student housing design according to the three scales mentioned in the initial research: public, common, and private.

Figure 1

Development of the proposed student housing design



Public Space

As illustrated in Table 2 and considering the scale involved, the public spaces in this project are accessible to people in the neighborhood and the city's inhabitants. Here, both qualitative and quantitative methods are used to generate the design following the research findings.

On the ground floor, the most public spaces are the pedestrian walkways, drop-off areas, plazas, and shops, which are designed explicitly with city users in mind. Prevailing access provides a connection at the center of the plaza. Many vendors operate along the existing access route since privatized public spaces are the least accessible, as proven by the DepthmapX blue

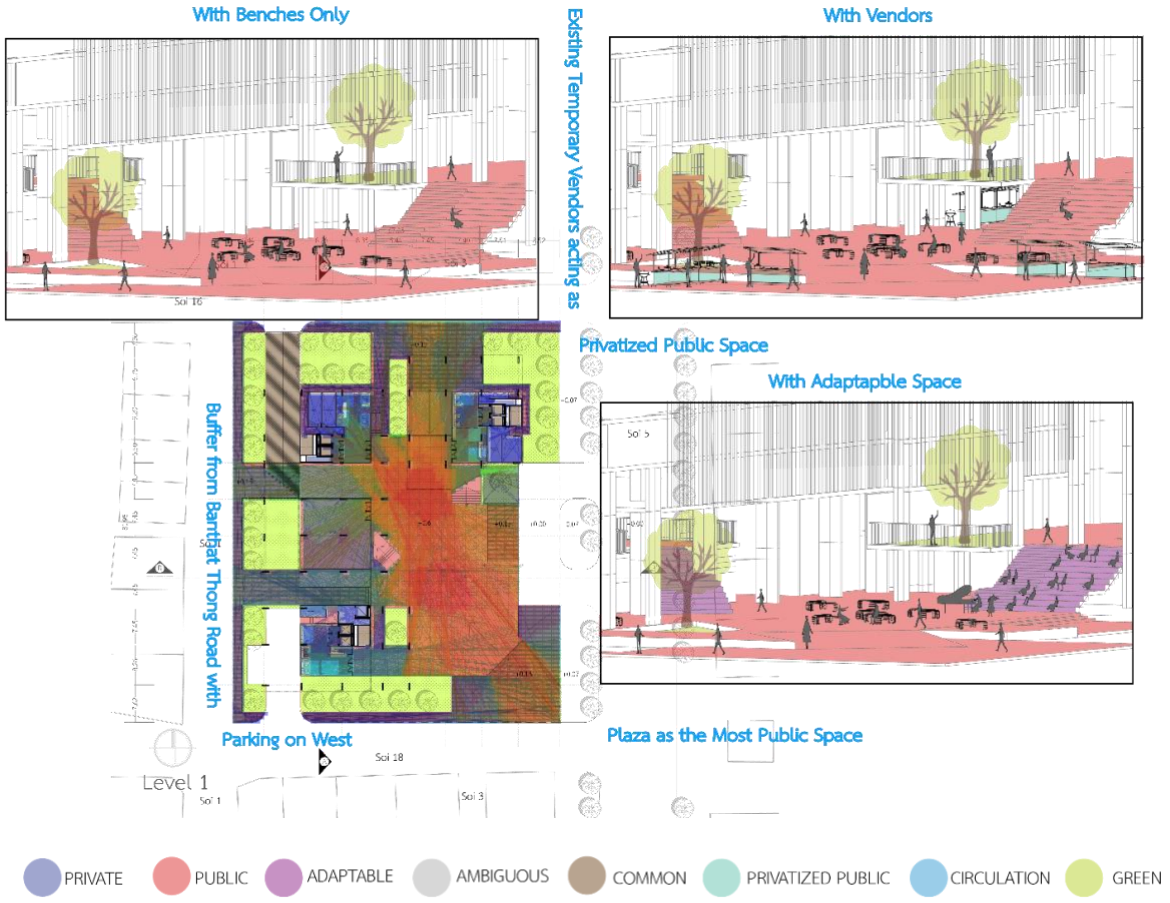
zones and their adaptable nature. Furthermore, the accessibility of the plaza is also justified using DepthmapX as it emphasizes the most connected space in the design.

An open-air theater, outdoor games area, terraces, and a café are situated on the first floor due to the publicness of their use. These functions have more privacy than those on the ground floor; hence, they are positioned above the public plaza to restrict access and provide a certain level of privacy for users. Accordingly, individuals can access these secondary public spaces only when necessary. Additionally, these spaces are connected to the primary public spaces on the ground floor by two grand staircases, which can act as open-air theatre seating for special occasions like open-air concerts in the plaza, emphasizing their adaptable nature. Furthermore, these stairs face the existing shrine, creating a diagonal axis to provide for the smooth flow of people during religious festivals. Clearly, these staircases can be defined as adaptable spaces as they are initially public, but become privatized public when used by someone, and they can be used to accommodate multiple functions. During the current pandemic, these types of adaptable space can play an essential role in ensuring the privacy of individuals despite being in public spaces.

Apart from these principal functions, the green area in the setbacks acts as a transitional space from the road to the housing, eventually prioritizing the entrance. Here, it is essential to note that all the public and private spaces are interconnected, and often buffered by the landscape or when using the stairs to enhance privacy or reduce the publicness of the space.

Figure 2

Analysis of the ground floor as a public space



Common Space

In the design, common or shared spaces can also be considered one of the in-between spaces, depending on the scale involved. However, common spaces are typically shared among inhabitants, and act as transitional areas from public spaces to private dwelling units. As argued by Evans (1997), floors typically serve as a means of linking and detachment between the two opposite realms of public and private spaces. The primary purpose of the shared common spaces, apart from interaction, is to create a transitional space that acts as the in-between space from public to private.

According to the derived definition in Table 2, common spaces are the spaces in which accessibility is restricted to the inhabitants. However, the dilemma of common spaces goes further because some specific spaces are shared between the public and the users; in this research, these are identified as secondary public spaces like restaurants or outdoor games zones. The reason for such complexity lies with the scale or perspective used to study the spaces, which is the surrounding neighborhood. In contrast, the lobby on the ground floor is a common space since anyone visiting the building for a specific purpose would be allowed to enter it. But the lift core inside the lobby can be claimed as a private space based on the limited inclusivity of the space. This phenomenon proves that any specific boundary cannot determine privacy as it relies on both the way the space is being investigated, and, secondarily, by the scale.

According to the selected scale, shared or common spaces can be categorized into three major types depending on use, namely circulation, activities, and social spaces. Parking areas, connecting bridges, corridors, and vertical circulation are all considered to be common circulation spaces. Arguably, these circulation spaces also provide evidence of being transitional spaces. Activity spaces consist of such areas as swimming pools, gyms, study areas, kitchens, laundry facilities, and similar spaces that provide necessary activities for the students. Lastly, social spaces include the lobby, vertical voids, urban windows, and terraces. These spaces are designed specifically for promoting social interaction among the students.

To derive a typical floor or common space, double-loaded corridors maximize the number of units. Double-loaded passages are also used in the building of shophouses, with a series of units on adjacent sides of the corridor. Moreover, the use of transitional spaces, such as from the courtyard to individual rooms, as mentioned by Evans (1997), can also refer to the interlocked masses in a typical unit. Furthermore, the work of Frank Lloyd Wright in the Zimmerman house revealed that interlocked spaces act as shared, or in this case, common spaces between two adjacent areas. Hence, a vertical void with an internal vertical connection is designed near the lift lobby to support several functions such as the lobby, seating, and a shared kitchen, which are the common spaces in the typical floor. As evidenced by the quantitative analysis, the lobby is the most connected space, and thus, more public in nature. However, it is only identified as a common space because of its overall scale. Since the only public space is located on the ground floor, there is no restriction regarding user access.

However, when privatized public space in these common spaces or the derived typical floor is in use by one person, others cannot use it despite having visual access. In addition, some pocket spaces in the corridors are also designed at the entry to certain units in order to create a transitional space from the passage to those units. Arguably, the opposite is true when defining voids created especially for natural ventilation, maximizing daylight, and providing a visual connection for users. Because they are visual than physically accessible and do not have any proper use, voids that are not connected vertically, such as inside parking and bridges connecting the parking area to the unit mass, often fail to support this argument. As a result, the void in the proposed design cannot be considered a common space despite the fact that it creates separation from the parking area to the unit mass in an effort to promote privacy for the inhabitants. Here, it should be noted that the use of the space plays a crucial role in segregating this set of spaces from the arguable transitional spaces.

Figure 3

Derivation of a typical floor as the common space

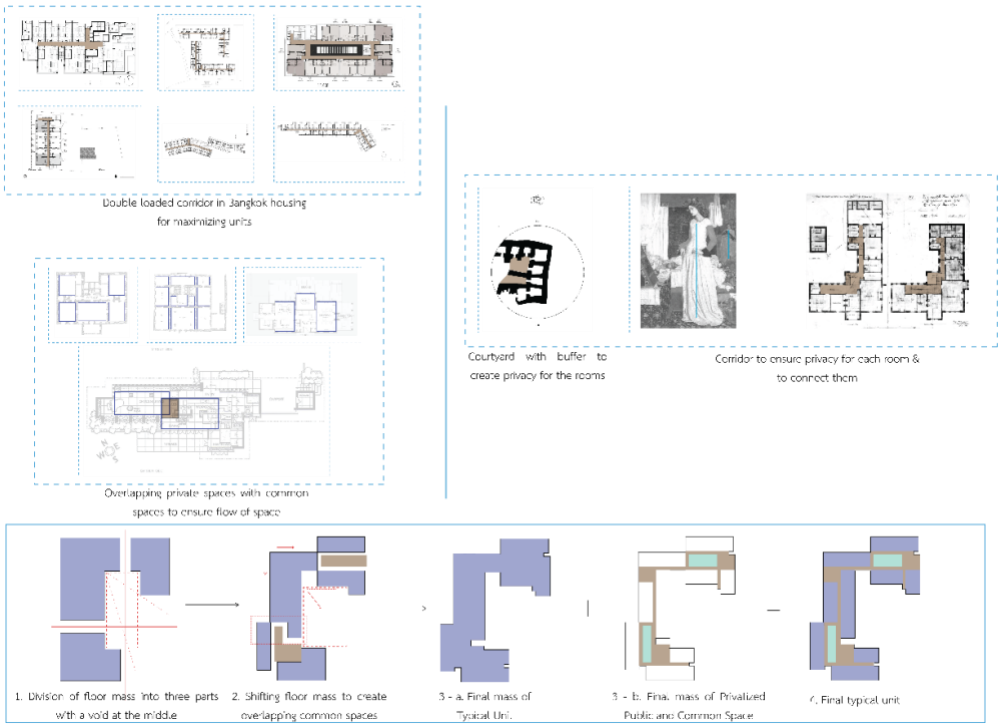


Figure 4

Analysis of a typical floor as the common space

Private Space

Adjacent to the corridors on a typical floor, the units are the most private space, according to Table 2, due to the access, inclusiveness, and use of the space. Although the toilets (or even lift lobbies) on the ground floor could arguably be considered private spaces, privacy can exist in privatized public spaces such as shared studies or the kitchen in the lobby of a typical floor. Considering the scale, the units are the only potentially private space in the design. However, since these are designed to be shared by two students, no space can be identified as solely private space in this building type.

Aureli (2017) argued that inside private realms, the most private ones are the study areas. Hence, they can also be identified as the most private spaces in this proposed student housing design due to their use, accessibility, and inclusivity. An 'L-shaped enclosure' created by the walls offers privacy, so that, despite having circulation on one side, privacy is still ensured by the enclosure. Therefore, the same pattern is proposed in terms of the dwelling unit design, following the proportions used by Le Corbusier in La Tourette as pointed out by Ariza (2014). A single bed lower than the height of the study table is placed adjacent to the other bed, alongside the wall, with circulation facing the balcony in an effort to maximize the natural light and ventilation. The toilets are placed on the side of the corridor adjacent to the entrance, with mechanical ventilation to prioritize the view. The enclosure for the study is created by the wall, bed, and closet. As evidenced by research, the issue of noise is solved by placing furniture against the shared wall to ensure privacy for the inhabitants of each unit (Neufert, 1980).

This prototype has an adaptable wall that can be utilized according to users' needs to enhance privacy when required. Inspired by the Japanese shoji (sliding doors), this partially opaque wall can be adapted to control the level of visibility and personalization by displaying clothes, curtains, storage boxes, or posters. Furthermore, when occasionally entertaining guests, the wall can be folded to maximize the space. The quantitative analysis shows that the level of publicness or connectivity changes with the modification of these adaptable partition walls.

Apart from this wall, the balcony or the terrace can also act as an adaptable space. Initially, as defined by its characteristics, it is a private space, but it is shared between the users and becomes a privatized public space when one of the dwellers uses it. In addition, it can be used for multiple functions like cooking, gardening, etc. Furthermore, a part of the building is connected vertically on the exteriors through these terraces. Privacy is ensured by placing a small fence as evidenced from case studies. The landing acts as a space for social interaction for students living on different floors. Additionally, these outdoor stairs also serve as the supporting structure for specific columns. However, it is evident that the privacy inside this housing type changes with the adjacent spaces.

Figure 5

Derivation of a typical unit as the private space

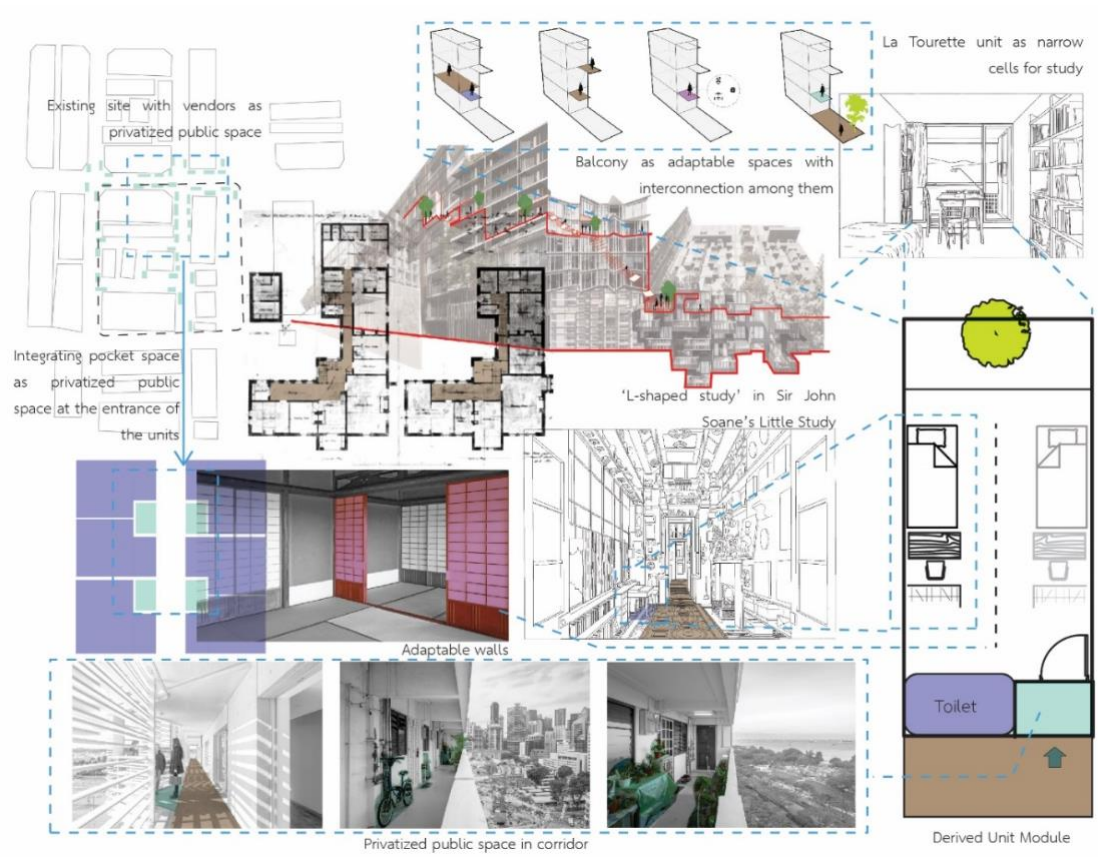
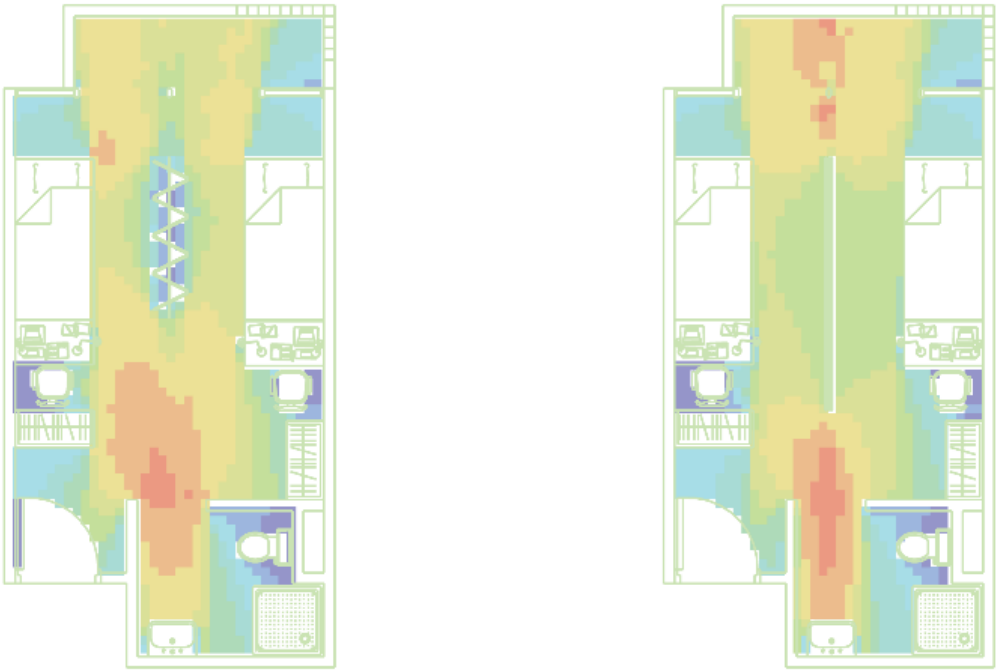


Figure 6

Quantitative analysis of a typical unit with an adaptable partition wall



DISCUSSION OF THE DESIRED BALANCE BETWEEN SPACES

It is evident from this research that no single space found in this designed student housing can be called solely private or public when considering the factors along with the definitions. Instead, both public and private spaces reside together and are often interchangeable depending on how they are used. It is also evident that publicness or privacy has various levels of prevalence that can be identified following the scale of the study as well as the adjacent spaces. For instance, the units have the most privacy on a typical floor, and much more than the adjoining lobby or corridors. Likewise, inside the units, the study space has the most privacy, followed by adjacent spaces.

However, adaptable spaces utilized as in-between spaces make a significant difference in identifying the publicness of the space. Adaptable spaces are often privatized public spaces occupied by a person for a particular purpose, but which were initially public or common space. This phenomenon of changing the nature of space through multiple uses, known as adaptability, is an example of how in-between spaces can be used to create the desired balance between public and private spaces in student housing.

Seen this way, it is impossible to measure the desired balance with the ratio of the functions as they coincide. The factors mentioned and the definitions generated help to identify the in-between spaces, which eventually create the balance qualitatively instead of quantitatively. These in-between spaces also contribute to maintaining harmonious relationships between public and private spaces. For example, on the typical floor, the circulation space acts as a shared space and transitional space that ultimately creates the balance between the lobby and units. Without these in-between spaces serving as transitional spaces, the balance could not be maintained in this project.

Figure 7

Diagram revealing the interconnected in-between spaces, creating a balance between public and private spaces

CONCLUSION

From this research, it can be concluded that, in terms of student housing, public and private spaces depend on the various scales or perspectives of the area under study. Since the public and private spaces are interconnected, and the balance between them prevails through the existence of in-between spaces, namely common, privatized public, and adaptable spaces, this balance cannot be determined by quantitative methods. However, four significant factors: accessibility, inclusivity, visibility, and use can be considered in an effort to identify and categorize these spaces. These in-between spaces can promote social interaction or isolation as required, especially in the context of a pandemic such as COVID-19. However, the right balance, achieved through the adaptability of in-between spaces, will eventually bring satisfaction to the students and the neighborhood's development.

Limitations and Recommendations for Future Research

To identify the publicness and privacy of the spaces under study, this research was limited to four factors: accessibility, inclusivity, visibility, and use. Further research could explore whether any other factors are responsible for creating the publicness or privacy of a space. In addition, alternative scales other than urban and domestic could be considered in the initial research. Virtual accessibility with the use of social media, as argued by Colomina (1994), could also provide another topic for future research. Also, other housing types or urban projects could be analyzed to see if these factors are applicable in these different contexts. The hierarchy of these factors could also be studied to establish whether one factor is more important than another. Furthermore, several other scales could be considered to justify the desired balance. The in-between space, claimed to be solely responsible for creating the balance between public and private spaces, could be explored further to see if any additional in-between spaces exist other than common, privatized public, and adaptable spaces.

Although the desired balance could not be determined through quantitative analysis due to the limitations of DepthmapX, the levels of access were identified in this research as vertical and horizontal. Also, the space syntax software was unable to determine the visibility issues through transparency; however, the upcoming 'DepthSpace3D' could potentially solve this issue of transparency and enrich the research outcome.

Furthermore, the term “inclusivity” used in this research could be studied from another perspective that addresses the adaptive planning strategies often found in the community-led design following the 'bottom-up' approaches where the inhabitants are prioritized over the authority. Studies on ensuring safety and security in the neighborhood through inclusive planning could be considered for the wellbeing of the inhabitants.

In addition, the green area, which is addressed only as transitional space in this research, could further be elaborated from the environmental perspective regarding water-sensitive urban design to promote urban heat island reduction, air quality improvement, and localized flood reduction. Needless to say, these ecological aspects also raise issues related to sudden disease outbreaks and urban floods caused by climate change, evident from recent history in the dense urban context of Bangkok. To provide necessary maintenance and access, studies can be conducted concerning relevant green areas.

Finally, the long-term effects of COVID-19 create future research possibilities, with a focus on the quarantine space inside dwelling units; in such future studies, the amenities needed to maintain the well-being of individuals in quarantine should be considered.

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