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## **A CASE STUDY ON THE SPATIAL PRACTICES OF CONSTRUCTION SITE WORKERS' QUARTERS IN KLANG VALLEY, MALAYSIA**

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### **Abstract**

This paper examines the spatial practices of construction worker housing in construction sites. In recent years, several standards and guidelines, such as MS 2593:2015 and Act 446, were implemented to improve the living environment of workers' temporary accommodation. Despite that, there is a lack of focus on the sociality of spaces as the design of these accommodations adhered to only basic spatial requirements. This resulted in prolonged issues of workers' poor living environment being unresolved. A qualitative study using physical trace observation was conducted in a construction workers' accommodation located within an urban construction site in Klang Valley, Malaysia. Spatial observations were conducted in private areas, such as the bedrooms and the common areas, including the kitchen and dining spaces. This study reinforces the spatial practices of negotiation within the contested spaces of the temporary accommodation through the dynamic and fluid functional re-appropriation of spaces in the common and private spaces and the expansion of personal territory at both macro and micro levels.

**Keywords:** Construction centralised labour quarters, migrant workers, socio-spatial qualities, spatial practices

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## **INTRODUCTION**

The Malaysian government has embarked on a multifaceted approach to enhance the living conditions of migrant workers, with a particular emphasis on addressing challenges within the construction sector. In recent years, concerted efforts have been made to regulate and improve the quality of accommodation provided to workers in this industry. Notably, the introduction of MS 2593:2015 - the Code of Practice for Temporary Construction Site Workers' Amenities and Accommodation in 2016 - marked a pivotal milestone, although its enforcement remained voluntary. Despite its specific focus on construction site workers, MS 2593:2015 set a precedent by establishing the first comprehensive standard for workers' accommodation in Malaysia, laying the groundwork for subsequent legislative measures, such as the amendment to the Workers' Minimum Standards of Housing and Amenities Act 2019 (Act 446).

The revision of Act 446 in 2019 introduced legally binding minimum accommodation standards applicable to all worker housing throughout Malaysia. Simultaneously, the inauguration of Malaysia's pioneering Centralised Labour Quarters (CLQ) in 2018 exemplified purpose-built collective accommodations for workers designed following the provisions outlined in MS 2593:2015. Furthermore, the issuance of guidelines by the Kuala Lumpur City Council (DBKL) in 2020 regarding temporary quarters within high-rise construction sites reflects ongoing efforts to address accommodation challenges. These guidelines, primarily aimed at curbing the use of basement levels for temporary site accommodations and offering spatial planning directives, highlight the evolving regulatory landscape aimed at improving the living conditions of migrant workers.

Despite the implementation of various regulatory guidelines by authorities, the persistent challenges surrounding migrant workers' accommodations continued to feature prominently in news reports (Bernama, 2022; Govindarajan, 2022). The prolonged existence of substandard living conditions among migrant workers catalyses social issues (Uddin & Mohammed, 2020) and detrimentally impacts their work performance (Rahman & Albaity, 2014). Concurrently, the approach to designing construction workers' quarters remained predominantly top-down, often adhering solely to the minimum requirements stipulated by regulatory authorities, thus neglecting the nuanced living experiences and socio-spatial needs of migrant workers, given the transient nature of such accommodations. Contrary to the prevailing notion that migrant workers passively accept unsatisfactory conditions in temporary accommodations, recent accounts from these workers challenge this perception (Dutta, 2020).

The ease of meeting the key human needs increases life satisfaction significantly (Abu Bakar & Osman, 2021; Abu Bakar & Osman, 2022). To improve migrant workers' living environment, investigations of the actual socio-

spatial qualities within the context of temporariness are critical when discussions of human-centred design are on the rise. This paper examines the spatial practices in a selected Central Labour Quarter (CLQ) in Klang Valley and analyses how the spatial practices produce and shape its living environment.

## **RESEARCH BACKGROUND**

Recent studies have focused on the link between socio-spatial qualities and migrant's living environment, highlighting its poor social conditions. For example, the study on migrant dormitories in the UAE revealed that cramped and crowded conditions affected workers' sense of belonging and enhanced feelings of exclusion (Reber, 2021); studies that highlighted social problems that arise from built environment qualities such as the lack of space, poor housing facilities, deteriorating conditions and unsuitable building materials (Beckford, 2016; Saldanha, 2022; Wang et al., 2016); and the case study and prototype workers' dormitory unit in Singapore by Agency Design (n.d.).

Local studies on construction site migrant workers' accommodations are limited and mostly focused on compliance with authority guidelines. There is a lack of detailed observations and analysis of socio-spatial qualities, with a few exceptions. Zubir and Rahim (2021) observed three locations of temporary construction workers' accommodations to study construction workers' living environment quality. This included an off-site CLQ, an on-site accommodation in a multi-storey structure and an on-site "rumah kongsi", representing typical accommodation typologies in the construction industry. Although few details of these accommodations are disclosed in the study, the lack of facilities, poor cleanliness and unsuitable building materials were observed in the "rumah kongsi" (Zubir & Rahim, 2021).

Also, scholarly investigations have been conducted to scrutinise the intricacies of public-private partnerships at micro-spatial scales, focussing on spatial practices and their implications for enhancing liveability through spatial appropriation. "Spatial violation" as a form of spatial practice in Palestinian refugee camps (Maqusi, 2021), homemaking experiences in the everyday living environments of migrants and refugees (Beeckmans et al., 2022), re-appropriation of public space such as car parks into private spaces shown in Chua's study on migrant workers in Geylang (2017), Singapore. In a Qatar labour camp, spatial practices of migrant workers include small gestures such as decorating and customising the sleeping room, adding extensions to beds, or hanging a piece of fabric due to the lack of privacy (Bruslé, 2012). Spatial practices were also investigated in refugee camps to understand refugees' spatial negotiation strategies (Misselwitz & Stegeman, 2021). Annisa (2020), in her work on Oman's labour camps, also discussed makeshift mosques, informal vending stalls, vegetable farming patches and the self-funded television as spatial practices or spatial appropriations.

## **THE SOCIAL PRODUCTION OF SPACE**

The study of spatial practices is underpinned by Henri Lefebvre's 'The Production of Space' seminal work, which theorised space as a social product. Lefebvre argued that the relations between conceived-perceived-lived spaces are not fixed and are constantly changing, correlating to his preposition on the trialectics between spatial practice, representation of space, and spaces of representation. Lefebvre emphasised the gap between "designed space" and "used space", which rendered the inevitable differences between the planners/architects and the users. Spatial practice was seen as a bridge to the "mediate" between the "conceived" and "lived" space (Merrifield, 2006).

With his book "The Practice of Everyday Life", Michel De Certeau extended Lefebvre's spatial production theory by highlighting spatial practices as tactics employed to negotiate the power structures inherent in the everyday. Spatial appropriation is related to the users transforming their space to produce "different spaces" according to their purpose (Stanek, 2011). Stanek (2011) continued by positing that appropriation of space is a form of spatial practice performed by individuals or collectives, marking, modelling, and shaping space on various scales. This was further adopted by Misselwitz and Steigemann (2021) in their theoretical framework for investigating refugees' communicative construction of spaces in shelter camps. Using the term "concrete spatial practices", Misselwitz and Steigemann (2021) described that these spatial appropriation processes are the result of conflictual spatial negotiations with the authorities/ technocrats/ planning regimes which regulate the daily routines and dismiss the manifestations of identity and sense of social belonging.

This corresponds to migrant workers' accommodations, where the residents are to settle down in a living space adhering to the regulatory spatial standards and design planning. In the context of this research, the representations of space (referred to here as authority regulations and spatial requirements) are prioritised in the production of migrant workers' accommodations, thus affecting the everyday practices of the resident workers. From another point of view, investigating spatial practices provides important clues about the compatibility of the implemented spatial standards.

## **METHODS**

Lefebvre described spatial practices as "empirically observable" and "readable and visible" practices of material transformation of space that mobilise productive forces within a given economic and social system. (Lefebvre, 1991). Thus, building upon this notion, this research adopted a physical trace observation and architectural drawing methods to investigate the spatial usage and appropriation of the construction workers' accommodation. According to Zeisel (2006), observing physical traces is a systematic search for reflections of previous activities in physical surroundings to examine the relationship between

the environment and its users. It is less obtrusive and will minimise the influence of the participant's behaviour compared to direct human observations (Zeisel, 2006).

This approach has been used in related studies on migrant workers' living environments. For example, in Lucas's (2020) case study on the Namdaemun market in Seoul, architectural ethnographic representations of existing spatial context (Yaneva, 2018), Tayob's (2018) discussion on the potentials of architectural drawings to illustrate the narratives of spaces used by marginalised populations and Hall et al.'s (2015) social research which used architectural plans to illustrate migrant-shaped infrastructure on Stapleton Road, Bristol.

This approach is further exemplified by a detailed case study of Bangladeshi migrant workers in Oman, which includes illustrations of sleeping cabins and public spaces of labour camps presented through annotated plans (Annisa, 2020). Similarly, spatial layouts of sleeping and public spaces in migrant workers' quarters were also examined in another study (Bruslé, 2012). Besides architectural layout plans, Misselwitz & Stegeman (2021) documented refugees' "adaptation of space" in axonometric illustrations, including soft furnishings and loose furniture. Although not all these studies are architecturally based, they presented a variety of possibilities for illustrating observation in temporary accommodations, indicating the need for a sophisticated method to represent detailed narratives of migrant workers' dwelling spaces.

This research selected a Centralised Labour Quarters (CLQ) as a case study, focusing on construction site workers' quarters in the Klang Valley region of Malaysia. Due to spatial constraints at the construction site, this accommodation is situated within the building structure currently under construction, with the explicit approval of local authorities. Housing approximately 180 workers, the facility comprises bedrooms, a kitchen, a dining area, a rest area, toilets, a prayer space, and a canteen. The resident workforce primarily hails from Bangladesh, supplemented by individuals from Pakistan, India, Nepal, and Indonesia. The compact nature of these quarters necessitates meticulous spatial planning and is a prevalent strategy in urban locales to minimise expenses and commuting durations.

Employers favour such compact accommodations due to their ease of management and maintenance. In contrast to more permanent residential structures like apartment-style quarters commonly found in the manufacturing sector, the transient and adaptable nature of construction site workers' quarters presents a fertile ground for examining the spatial practices of migrant workers.

Observations and photography records were conducted in three different migrant workers' bedrooms and common areas, including the kitchen, dining, prayer room, laundry, and toilets. The three bedrooms housed varying Bedroom A accommodated eight individuals, while Bedroom B and Bedroom C

accommodated twelve and thirty individuals, respectively. The case was conducted according to Zeisel's (2006) criteria for physical trace observation.

1. Everyday practices through the by-product of use encompass various aspects such as Usage of space, Display of public messages, Personalization of space, Litter areas in public indicating gathering spots, Erosion of buildings indicating human usage, Placement of objects, Furniture placement, Storage space and Personal items.
2. Space appropriation includes aspects such as Added space, which is new furniture or item placement; Altered space, which is signs of furniture not in its original place; Abandoned space, which is the absence of furniture or items in its original position; and Litter due to abandoned space.

Visual methods in qualitative research are often examined to create powerful illustrations to inform the understanding of occupied space and architecture and its transformation (Troiani & Ewing, 2020). Drawings are a form of critical visual practice (Hall et al., 2015), a mode of knowledge production that offers a unique understanding of academic texts (Lucas, 2020). Following the physical trace observation, the studied spaces were illustrated and acted as a form of critical visual text for analysis.

## **ANALYSIS AND DISCUSSION**

In general, Act 446 provide minimum standards for living conditions, namely bedroom size, toilet numbers, and other public facilities. For areas that are not regulated, options are limited to relying on the initiatives of employers or resident workers to ensure a comfortable, liveable environment.

### **Changing Common Spaces**

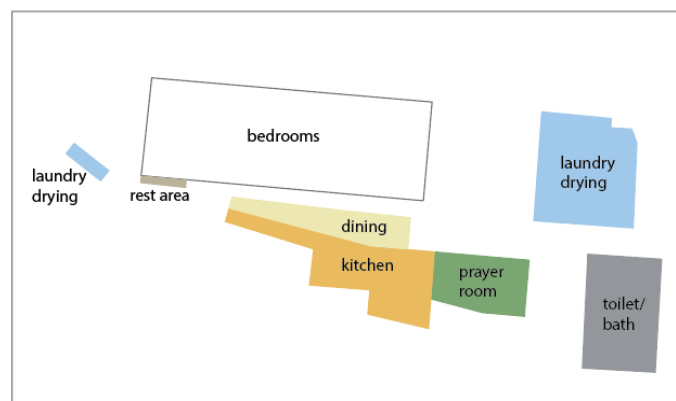
Common areas are equipped with supporting infrastructures for community living, essential for the workers' social life. By comparing the original spatial planning (Figure 1) with the layout mapped during field observation, it is discovered that some common areas have been rearranged and expanded (Figure 2). The kitchen extension indicated the need for a larger cooking space, as migrant workers tend to cook individually or in smaller groups rather than sharing cooking hobs. Rice cooking stations were also allocated for many individually owned rice cookers.

The dining space has been relocated beside the kitchen, improving the connection between these two areas. During lunchtime, it was observed that the workers placed their personal belongings in the rooms before heading to the kitchen to warm food, then settled down for lunch at the dining tables. Prayer rooms were relocated to near the toilet and bath area. A shorter distance between

the washing area and prayer rooms is more convenient for migrant workers to perform ablution before praying rituals. The location of the rest area also differs from the original layout plan. The only “rest area” observed was three plywood platforms between the bedrooms and the dining area. A few workers were seen sitting at the resting platforms to take a break during lunch hours, but most were in the dining area instead.



**Figure 1:** Original spatial planning  
*Source: Second Author*



**Figure 2.** Current layout with expanded common areas  
*Source: Second Author*

In Act 446, the spatial standards for common areas are not detailed and only require ventilation and lighting. However, the socio-spatial qualities of common areas in this case study indicated that further considerations should be made when designing these areas. The layout changes observed suggest the importance of migrant workers’ participation in the production of space to ensure a better living environment apart from adhering only to spatial standards.

The utilisation of empty, unplanned corners of the case CLQ indicates possibilities that could have been ignored by the original design. User-led designs are generally implemented in individual housing projects, not temporary, collective dwellings like migrant workers' accommodations. However, as seen in the case of CLQ, these spaces are critical for living spaces that host inhabitants from various backgrounds and cultures.

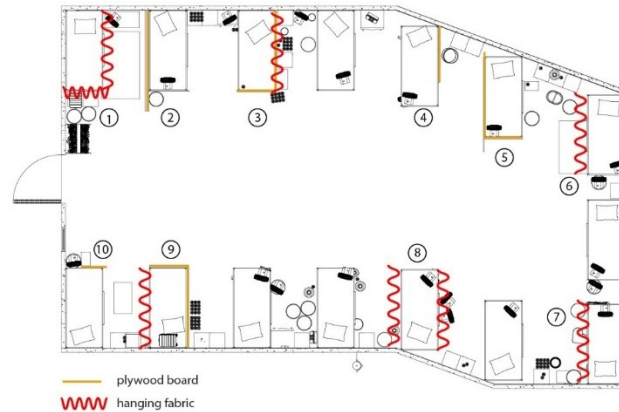
Similar scenarios have also been observed in Gulf countries' labour camps, where migrant workers utilise empty spaces to build make-shift living areas and common prayer spaces (Annisa, 2020; Bruslé, 2021). "Neutral" spaces enhance the possibility of a better living environment in migrant workers' accommodations.

### **Negotiating spatial privacy**

In the bedroom, the bed was re-appropriated for spatial privacy. Overcrowding issues were commonly discussed in research focusing on migrant workers' accommodations, and one of the consequences of overcrowding in bedrooms is the lack of privacy, leading to poor mental health and well-being (Reber, 2021). However, no spatial standard addresses privacy concerns in Act 446. The only relevant clause indicates that a minimum of 3 sqm shall be allowed for each worker in the dormitory rooms to avoid overcrowding. Nevertheless, the minimum distance between beds and the placement of beds is not regulated, while there is no limitation on the maximum number of workers hosted in one bedroom.

Vertical plywood boards were added to lower bunk beds to block views towards the sleeping area. In the largest bedroom observed, 6 of the 15 beds have vertical partitions on the lower bunk beds, each with different configurations (Figure 3). Some covered two sides of the beds, forming a cave-like space, while some covered only one side. Some workers used soft fabric partitions, including a type of Bangladeshi cloth known as "Lungi", bedsheets or towels hung on ropes tied to the bedframes. The placement of metal lockers also acts as a visual barrier. Although the practices of securing privacy vary among workers, they indicate the importance of visual privacy, especially in larger bedrooms.





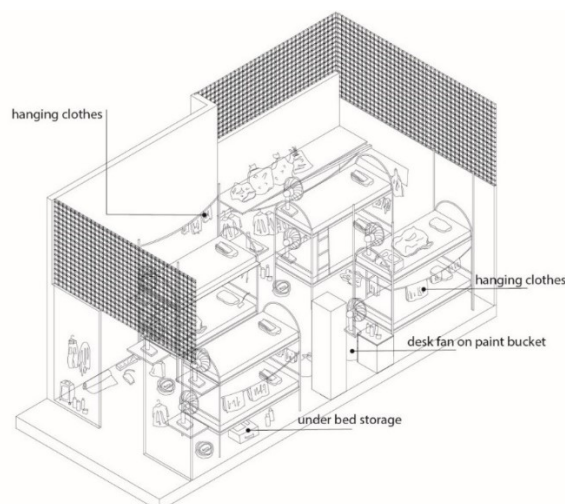
**Figure 3:** Bedroom plan indicating visual barriers initiated by resident workers  
*Source: Second Author*

The findings suggest that privacy is a significant requirement even in temporary living environments, especially in rooms with more occupants. Similar observations were made by Misselwitz and Steigemann (2021), which indicated spatial appropriation by refugees in camps to establish physical boundaries for privacy.

### Expanding personal territories

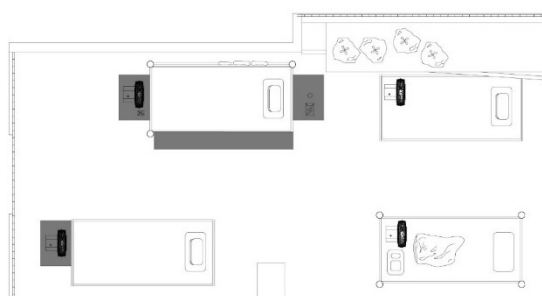
The placement of objects defines space and forms the spatial experience of users in a living environment (Paramita & Schneider, 2018). In the context of workers' accommodation, such acts could even expand personal territories to achieve better environmental comfort.

In bedrooms, personal items were placed in different areas of the room, although metal lockers were provided (Figure 4). For example, empty buckets can be used for storage or a table. The underneath of the lower bunk bed was also used to place objects. PVC poles or rebars were also used as frames for hanging laundry. There were self-made racks at the entrance of each bedroom to store shoes and personal protective equipment (PPE), such as safety boots and safety helmets.



**Figure 4:** A bedroom axonometric drawing indicating various object placements and laundry hanging in the room  
*Source: Second Author*

The bed was also re-appropriated to extend space. Plywood boards were added to the horizontal edge of upper bunk beds to form a platform for placing personal items, such as fans, chargers, and so on (Figure 5). As the CLQ did not provide fans, resident migrant workers bought their desk fans, and most were placed on the bed, reducing the sleeping space. Thus, extending platforms horizontally resolved the issue of tight sleeping space.



**Figure 5:** Bedroom plan indicating plywood bed extensions for object placement  
*Source: Second Author*

In the dining space, seven long dining tables with benches made of recycled plywood boards were placed next to the kitchen area. There was no clear demarcation of dining areas, and the seating was far below the number of cooking stoves. Some workers brought plates of food to a further area with plywood platforms labelled as “rest area”.

In the dining space, a row of self-made cabinets between the bedrooms and dining area was built to store kitchen utilities and food items. As a result, only minimal food items (for example, rice, cooking oil, flour) or cutlery were observed in the bedrooms or scattered in the kitchen/ dining area. As seen in other workers' quarters, the lack of storage space in the public kitchen may lead to the scattering of kitchen utensils and food packages. In comparison, the existence of such self-built cabinets reflects the storage requirement of resident workers and improves the quality of the environment.

Observing object placement and storage spaces in bedrooms and common areas suggests that minimum spatial standards in Act 446 are insufficient to ensure a comfortable living environment for temporary workers' quarters. The tidiness of these quarters relies on the spatial appropriation of resident workers.

Overall, the observations and drawings illustrated spatial appropriation at varying scales by the workers. As a collective, they made changes to the layout of the common spaces, and at an individual level, they negotiated spatial privacy. This finding concurs with Stanek's (2011) position that spatial appropriation occurs at varying levels and scales.

## **CONCLUSION**

From a Lefebvrian perspective, spatial practices and the production of spaces are an act of spatial negotiation between the used and the conceived space. In this case, the architectural plan has been altered to suit the different requirements of resident workers and has varied from the original spatial planning. Minor alterations not involving functional planning were also observed, especially within the bedrooms. This includes the claim of spatial privacy, expansion of personal territory and utilisation of undefined public areas. The spatial practices within the contested temporary accommodations of the workers prompt us to recognise how the material aspects of infrastructure co-constitute social relations.

Contradictory to some beliefs that migrant workers are ignorant of the quality of living in these temporary environments, there are indications of attempts to achieve a better environment. The investigation reveals that the case workers' accommodation spaces are dynamic and fluid. Improvisations constantly happen despite this being a temporary living quarter. The provision of 'neutral' informal spaces at a public scale, considerations of the interface between private spaces, and the allocation of small functional spaces at a personal scale may improve its living environment.

The everyday spatial practices observed through the physical settings illustrate the resilience and ingenuity of construction workers navigating regulatory constraints. By highlighting these specific instances, the research highlights the challenges these communities face and emphasises the importance of comprehensive policies and guidelines. The limitations of regulatory spatial

standards can only be overcome by architectural design considerations due to the complexity of such accommodation contexts. The diversity of workers' backgrounds and site conditions requires a design framework adaptable to the changing socio-spatial needs. It advocates for policymakers and stakeholders to consider the lived experiences of migrant workers in crafting more effective accommodation regulations.

### **ACKNOWLEDGEMENTS**

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### **ETHICAL STATEMENT**

The Ethics Committee of Taylor's University (FRGS/1/2021/SS0/TAYLOR/02/2) approved this study's ethical consent and protocol.

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