

Dementia-Friendly Public Housing in Hong Kong – A Case Study of Jat Min Chuen

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Abstract

According to the World Health Organisation, dementia is a public health priority. This cognitive illness that leads to disability and dependency of others has a socio-economic impact for carers, families, communities and societies. In Hong Kong, dementia is an alarming issue – it is projected that 300,000 of the city's population will suffer from dementia by 2039. A dementia-friendly community - which can support the prevention of dementia, alleviate its progression, and provide care and assistance for people living with dementia (PLWD) and their caregivers – is vital for Hong Kong. This study explores how Hong Kong's high density affects the dementia-friendliness of the community. Through the case study of Jat Min Chuen in Sha Tin, this research investigates how community design in Hong Kong can be more dementia-friendly. This work examines the spatial parameters that contribute to dementia-friendliness and analyses the strengths and limitations of the existing urban design conditions of public housing estates in achieving dementia friendliness. Based on the investigation, this work proposes urban design approaches for the future development of public housing estates in Hong Kong.

Keywords

Dementia, Ageing in Place, High-density Public Housing, Hong Kong

1. Introduction

An ageing population brings pressure to the healthcare system not only in Hong Kong but also in the world. Both physical disability and cognitive diseases affect the lives of the elder population. In 2017, the World Health Organisation declared dementia as a “public health priority” (WHO, 2017). According to the organization, “dementia is an umbrella term for several diseases that are mostly progressive, affecting memory, other cognitive abilities and behaviour, and that interfere significantly with a person’s ability to maintain the activities of daily living” (WHO, 2017, p.2). Dementia will lead to disability and dependency of older adults, with a socioeconomic impact on carers, families, communities and societies (WHO, 2017). However, there are inadequate positive interventions and support worldwide to maintain the quality of life and well-being of people living with dementia (PLWD) and their caregivers (WHO, 2012).

In Hong Kong, it is predicted that the population with dementia will increase from 100,000 in 2017 to 300,000 people in 2039 (Food and Health Bureau, 2017; Yu et al., 2012). However, there has been a lack of long-term, comprehensive and sustainable policies to provide support, resources and services for PLWD and their caregivers (HKCSS, 2012). In response to this, the Hong Kong Government has published the Mental Health Review Report (Food and Health Bureau, 2017) and suggested ten major policy interventions for dementia support services for the elderly. The recommendations range from

public education to social and medical services, as well as the advancement of infrastructure to enable PLWD in their community.

Rapid urban development has been taking place in Hong Kong in the past century. High building density and crowded living environments affect residents’ behaviours and well-being (McCay & Lai, 2018). Since the 1950s, a polycentric approach has been adopted to develop self-sufficient new town modules around the city. The new towns were further divided into neighbourhood units, including public and private residential units, and each unit was expected to support self-sufficiency to a certain extent (La Grange, 2014). Additionally, in response to the huge housing demand, modular public housing blocks are common in public housing estate development in Hong Kong to save construction time and reduce costs.

This study explores how this development approach affects the dementia-friendliness of the community. Through the case study of Jat Ming Chuen in Sha Tin, it investigates how community design in Hong Kong can be more supportive for dementia sufferers. The study examines the spatial parameters that contribute to dementia-friendliness and analyses the strengths and limitations of the existing urban design conditions of public housing estates in achieving dementia friendliness. Based on the investigation, it proposes urban design approaches for the future development of public housing estates in Hong Kong.

2. Methodology

This study discusses the causes of dementia, the needs of PLWD and their caregivers, and the significance of socio-spatial design in the prevention and alleviation of cognitive decline. Spatial qualities and principles for the design of a dementia-friendly community have been identified to formulate an analysis framework to evaluate the dementia-friendliness of Jat Min Chuen – a public housing estate developed by the Hong Kong Housing Society in the 1980s.

Interviews with staff from a local elderly services organisation and a primary health care specialist are conducted to understand the practical experiences during services or research with elderly, PLWD and their caregivers. These highlight their real-life situation of living in public housing estates, including the benefits and challenges that they have encountered in public housing estates. Existing spatial, social, and institutional interventions in achieving dementia-friendliness are also revealed. In addition, the study includes findings from the Users Habit Study conducted by Jockey Club Design Institute for Social Innovation (JCDISI) under the HKJC IG Play Space @JMC project. The project has collected over 400 residents' opinions on the existing design of public space¹.

This work analyses the existing strengths and limitations of the dementia-friendliness of Jat Min Chuen Estate, and attempts to bring new

insights for future public housing transformation and development in Hong Kong. Two additional case studies through literature review – including the world's first dementia village, the Hogeweyk, and the first dementia-friendly public housing estate in Singapore, Khatib Central – are included in this research to supplement this study and inform urban design recommendations.

3. Literature Review

Dementia-friendly community

Dementia is a “syndrome due to disease of the brain – usually of a chronic or progressive nature – in which there are disturbances of multiple higher cortical functions, including memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement” (WHO, 2012, p.7). Apart from age, there are also other risk factors for the onset of dementia, such as unhealthy lifestyle, physical and cognitive inactivity, social isolation, and mental illness (WHO, 2017). As introduced by Reisberg et al. (1982), there are seven stages of dementia, ranging from “no cognitive decline” to “very severe cognitive decline”. Ideally, dementia is treated in an early stage to slow down the progression and alleviate the symptoms. In the later stages of dementia, care and assistance are required (Livingston et al, 2017).

Dementia-friendly Community is “a place or

¹ Site engagement data was collected when the author was part of the JCDISI team. The specific data and findings included in this research has been reviewed by JCDISI. Further analysis conducted, and recommendations proposed in this research, only represent the points of view of the author.

culture in which people with dementia and their carers are empowered, supported and included in society” (ADI, 2016, p. 10). The idea of a dementia-friendly community emphasises that dementia is not only a health issue but also a social issue. It encourages partnerships between stakeholders, inclusiveness of businesses and organisations, and enhancement of the community environment (ADI, 2016). Both the social and physical environments should be taken into account when we are promoting a dementia-friendly community (WHO, 2021). Existing research on the topic focuses on the interior living environment, while active participation of PLWD in their local communities is also crucial (Mitchell & Burton, 2006). An enabling physical environment should be created to support the needs and encompass the abilities of PLWD to positively influence their health, activeness, mobility and well-being (ADI, 2016; Sun et al., 2018; WHO, 2021). As the ageing process of the elderly and PLWD is usually accompanied by frailty, reduced mobility and other health issues (Bhuyan et al., 2020), it is beneficial for both elderly and PLWD to live in neighbourhoods that support active living to maintain their cognitive and physical health (Jiménez & Cancino-Contreras, 2021). A more familiar environment for elder people and PLWD with adequate support can achieve this purpose (Lewis, 2020; Mitchell & Burton, 2006). An age-friendly environment and ageing-in-place are key concepts for the study of dementia-friendly community.

Five Spatial Components for A Dementia-friendly Community

Existing literature has identified five spatial components that support dementia-friendliness in the community. These components are essential in achieving social and physical environments that support ageing-in-place and prevent and alleviating dementia. Additionally, there are six urban design principles for a dementia-friendly environment that can be achieved in the five spatial components, namely familiarity, legibility, distinctiveness, accessibility, comfort and safety (Burton et al., 2004; Mitchell et al., 2004) (Figure 1).

i. Housing

Place identification and familiarity are constructed through a long period of residence in the community, and this benefits the well-being of PLWD (Sun, Phillips & Wong, 2018). For this reason, secure housing tenancy is important for positive mental and physical health impact (Jiménez & Cancino-Contreras, 2021). As the elderly and PLWD generally spend notably more time in their homes, well-planned and quality housing are crucial to their quality of life and can support ageing-in-place (Gabriel et al., 2014; Lewis, 2017; Lewis, 2020). Adjacency with family care, in addition to adequate extra care housing, residential care, nursing care or end-of-life care should also be considered when the existing housing can no longer support their daily living (Gabriel et al., 2014; Hyde, 2012; Lewis, 2020).

ii. Networks

Internal and external networks both contribute to dementia-friendliness of the community.

PLWD are usually restricted within a certain walking distance from their neighbourhood. A walkable environment within the neighbourhood with accessible resources can support their daily living (Mitchell & Burton, 2010). A good and walkable pedestrian network can also encourage PLWD and other community members to engage in physical and social activities (Guo et al., 2019). Connection with well-planned and accessible roads and public transportation networks are also beneficial for people with or without dementia (Biglieri & Dean, 2022; Lewis, 2017; Wu et al., 2019), bringing convenient access to resources such as medical services, public institutions and recreational spaces outside of the neighbourhood.

iii. Amenities

Access to amenities, such as local shops, social services and recreation facilities, is vital in supporting daily needs, while encouraging more active living. Amenities should be provided within 5–10-minute walking distance from the dwellings as some elderly and PLWD are frail with reduced mobility (Lewis, 2020; Mitchell & Burton, 2006). Mixed-use and compact neighbourhoods are preferred by PLWD (Mitchell & Burton, 2006). A local study conducted by Sun et al. (2018) has indicated that the local elderly centres have a critical role in offering activities that are affordable, accessible and diverse for older people. Local businesses and services should also be more dementia-friendly as another form of community support (WHO, 2021; Wu et al., 2019)

iv. Wayfinding

Spatial disorientation is common among PLWD due to the loss of their sense of navigation and their declined memory functions (Marquardt, 2011). Wayfinding measures including signages, landmarks and building design have a significant role in positioning and providing direction for PLWD. Adequate signage with a simple design and clarity should be placed at critical locations, while complicated signage with overwhelming information should be avoided (Mitchell & Burton, 2010). PLWD also create their own landmarks such as distinctive buildings or street furniture at junctions, as well as decision-making situations to locate themselves (Biglieri & Dean, 2022; Mitchell & Burton, 2010). As a result, designing a familiar environment with distinctive visual identities – through size, shape, texture, and colour – can improve wayfinding and bring a sense of safety to PLWD (Kuliga et al., 2021; Mitchell & Burton, 2010).

v. Open space

Accessible and diverse open spaces for physical activities in the community – which reduces cognitive decline – are beneficial in alleviating dementia symptoms (Andreucci et al., 2019; Guo et al., 2019; Mitchell & Burton, 2010). Spatial devices such as walking trails, fitness equipment and landscape features could provide a more enabling outdoor environment and encourage physical activities for PLWD, their caregivers and other community members. Additionally, open space is also a place for social encounters that introduces social experiences, enhancing social connectedness and cognitive ability (Fleming, 2011; Gan et al., 2021; Mitch-

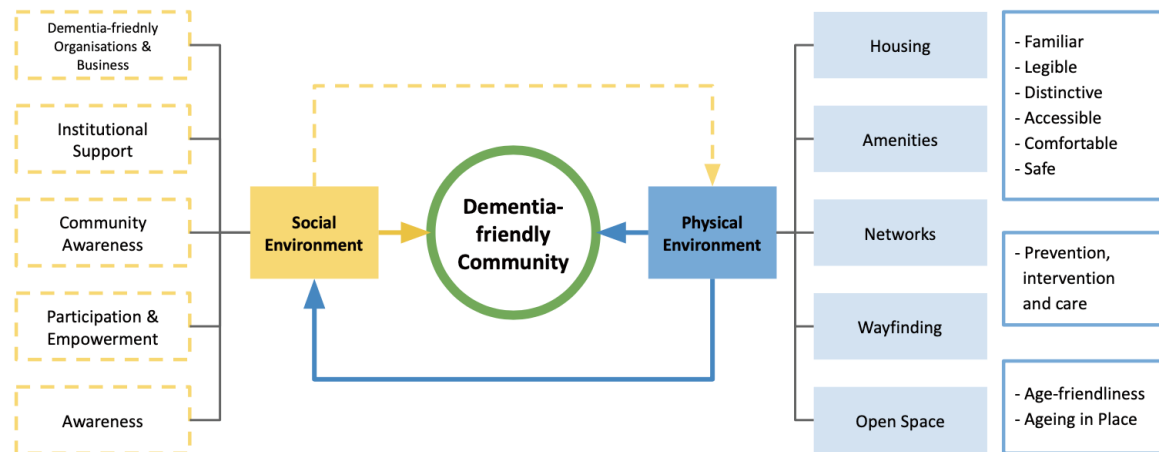


Figure 1. Theoretical Framework of the Dementia-friendly Community

ell & Burton, 2010).

Public Housing Development in Hong Kong

There are studies worldwide exploring the role of physical design in enhancing the dementia-friendliness of the community. However, studies on the subject in high-density urban environments in Asian cities are sparse (Fung, 2020; Guo et al., 2019). In Hong Kong, the rapid increase in population since the last century has resulted in its dense urban development, with crowded living environments and complex, mixed neighbourhoods that pose both opportunities and challenges to the elderly and PLWD. A study on the performance of high-density urban residential environments in achieving dementia-friendliness is essential for new insights for Hong Kong's future urban development.

In Hong Kong, over 2.1 million people (29.1 % of the total population) live in public rental housing (Census and Statistics Department,

2016). The development of public housing in Hong Kong can be traced back to 1954, when there was a drastic inflow of immigrants from the mainland (Hong Kong Housing Authority, 2019). With the growing demand for public housing and rapid urban development, the government introduced the Ten-year Housing Programme in 1972 to provide self-contained accommodation for 1.8 million people (Hong Kong Housing Authority, 2019). Early public housing development in Hong Kong emphasised cost-effectiveness and efficiency in order to meet the government's housing target. Different forms of public housing modules have been developed to reduce construction time and improve land use efficiency (Siu & Soyinka, 2018). However, the needs of the elder population are usually not foreseen and addressed in the community design (Jayantha et al., 2018). This research focuses on the early public housing development in Hong Kong, exploring the

strengths of the existing spatial design and the opportunities for spatial transformation in addressing dementia-friendliness.

4. Case Study

Introduction

Jat Min Chuen is located in the Sha Tin Wai along the Shing Mun River. It is a public housing estate – among others in the area – developed by the Hong Kong Housing Society in 1982. In recent years, transformations have taken place in the neighbourhood, including the new connection with the Tuen Ma MTR line, repainting of the estate façade, and renovation of the recreational spaces. The median age in Jat Min Chuen is 56.5, with over 37% of the residents 65 years old or above (Census and Statistics Department, 2021). 32% are retired and 35% have only primary education or below (Census and Statistics Department, 2021). The ageing population with a high retirement rate and relatively lower education level is prone to the onset of dementia. Within this context, the Hong Kong Housing Society (HKHS) has adopted a relatively innovative approach to housing development and revitalisation, including the Ageing-in-place scheme in 2012 and the Caring Engaging Smart scheme in 2021.

Physical Environment

i. Housing

Jat Min Chuen is a neighbourhood formed by three residential blocks, Ming Shun Lau, Ming

Yiu Lau and Ming Yan Lau. There is a total of 3747 flats for 9424 residents (HKHS, n.d.). Standardisation of multi-storey concrete public housing blocks can be seen in Jat Min Chuen, with three T-shape and L-shape blocks similar in appearance. Each building block consists of a 33-storey high block and an 8-storey low block. Most flats are for households of five to six, and there are some elderly flats in the low block. In 2021, HKHS announced the construction of Chun Yuet Lau in Jat Min Chuen, which is a 10-storey new building providing 64 flats with an age-friendly design (HKHS, 2021). Other housing schemes such as “Elderly Person’s Flats”, “Cross Generation Living Scheme” (HKHS, 2019; HKHS, 2022), and regular financial and technical support for housing renovation² are also implemented in the estate to improve living conditions of the elderly, promoting intergenerational integration and facilitating family care in the households.

ii. Amenities

In Jat Min Chuen, different kinds of amenities can be found in the neighbourhood, including a wet market, restaurants, grocery stores, clinics, a youth centre and an elderly lounge. In terms of spatial arrangement, most of the amenities are agglomerated in the central commercial blocks, with the remaining distributed on the ground and first floors of the residential blocks (Figure 2). Amenities can be reached from each residential block in a 5-minute walk without significant barriers. With the increasing num-

2 Information was provided by the staff from the local elderly services organisation during an interview.

ber of elder residents, elderly services are inadequate in the neighbourhood. The residents and PLWD have to access other parts of the district for specific resources³. In the case of Jat Min Chuen, most of the public healthcare facilities and elderly centres can only be reached within 10- to 15-minute walking distance, or even further. Obstacles for PLWD to access these facilities are undesirable given their declining ability

of memory and difficulties in navigation due to cognitive impairment (Mitchell & Burton, 2006).

iii. Networks

There is a unique elevated walkway in Jat Min Chuen connecting different parts of the neighbourhood (Figure 3). The elevated platform links the first floor of the residential blocks to the

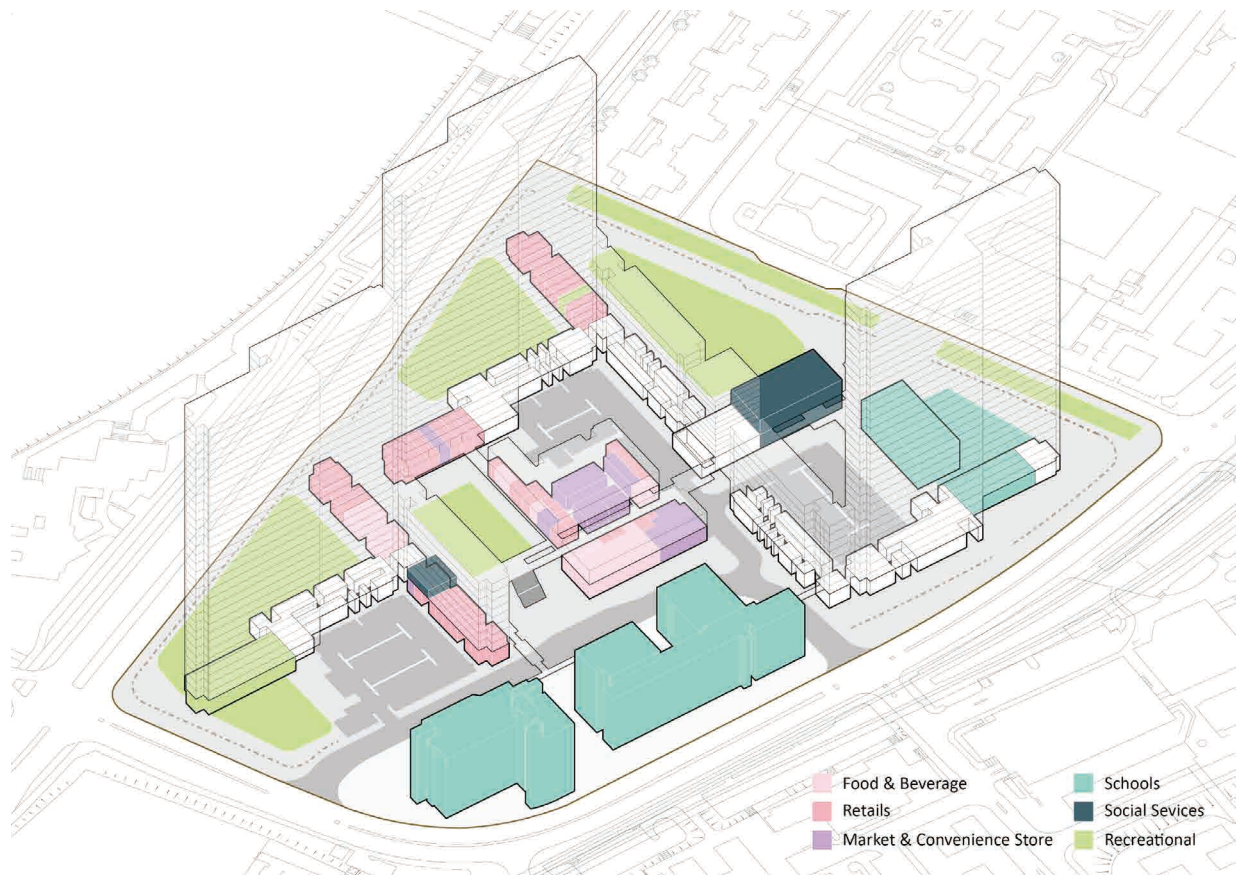


Figure 1. Theoretical Framework of the Dementia-friendly Community

³ Information was provided by Dr Lo, a local scholar specialising in primary health care, during an interview..

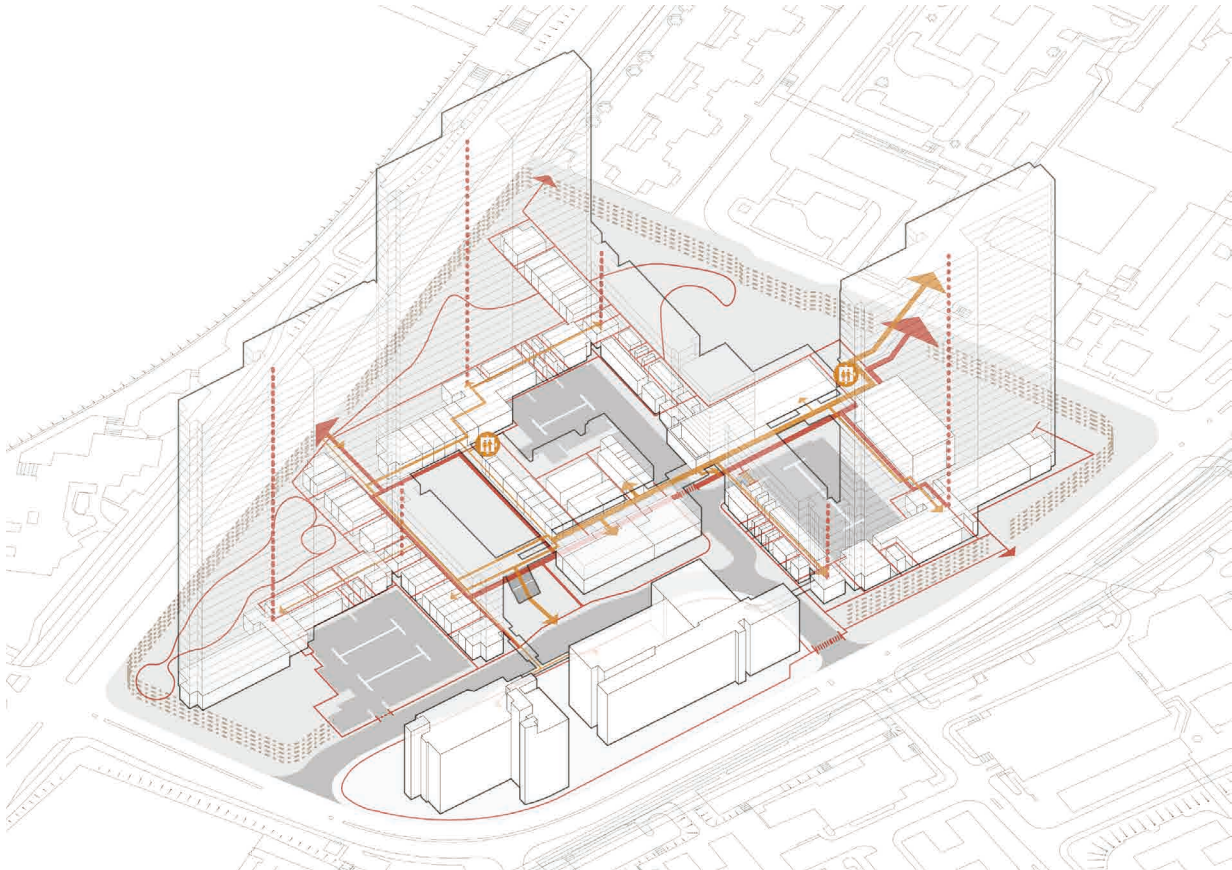


Figure 3. Ground level and elevated pedestrian network in Jat Min Chuen

commercial blocks, the youth centre, schools in the estate, and the shopping centre in Sha Kok estate. It provides an alternative passage that is open, connective and legible for the residents. On the ground level, Jat Min Chuen has an extensive pedestrian network within the neighbourhood. The neighbourhood is bounded by fences except for several entrance spots, which can be helpful to prevent PLWD from wandering out of the estate. Wind corridors can also

be found on the ground floor of each building, which allows residents to walk through and increases permeability of the pedestrian network. In terms of external public transport connection, the Sha Tin Wai MTR station and several bus stops can be reached within a 5-minute walking distance from the estate. Residents can travel to other parts of Sha Tin such as Sha Tin Town Centre, Tai Wai and Mai On Shan, and even other districts. Residents can then partici-

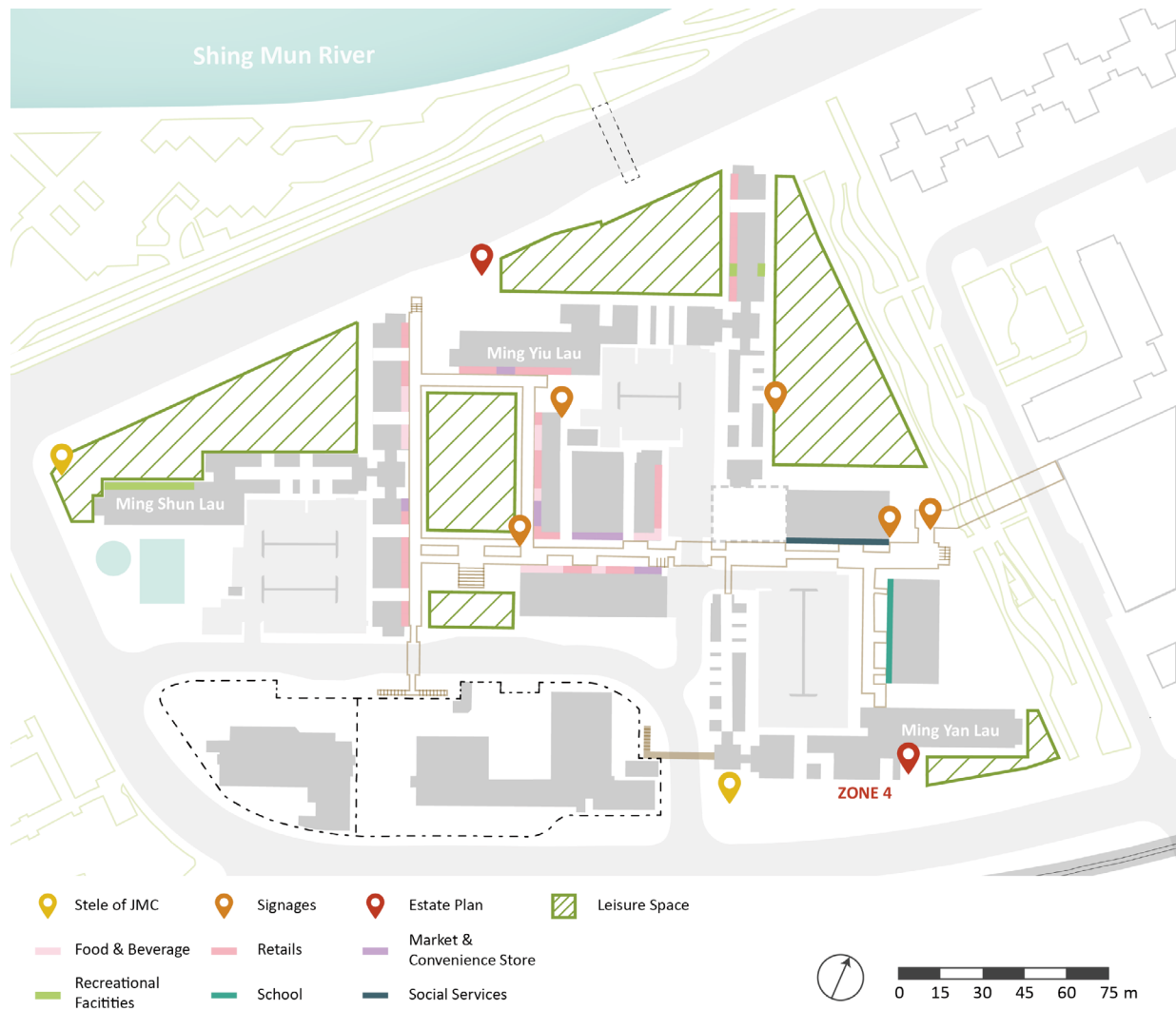


Figure 4. Signages, shop frontages and landmarks in Jat Min Chuen

pate in a wider range of activities and access different external resources such as medical and social services.

iv. Wayfinding

Signage in Jat Min Chuen is inadequate in supporting wayfinding in terms of quantity and their respective locations (Figure 4). Additionally, the colour, size and position of the signage are not

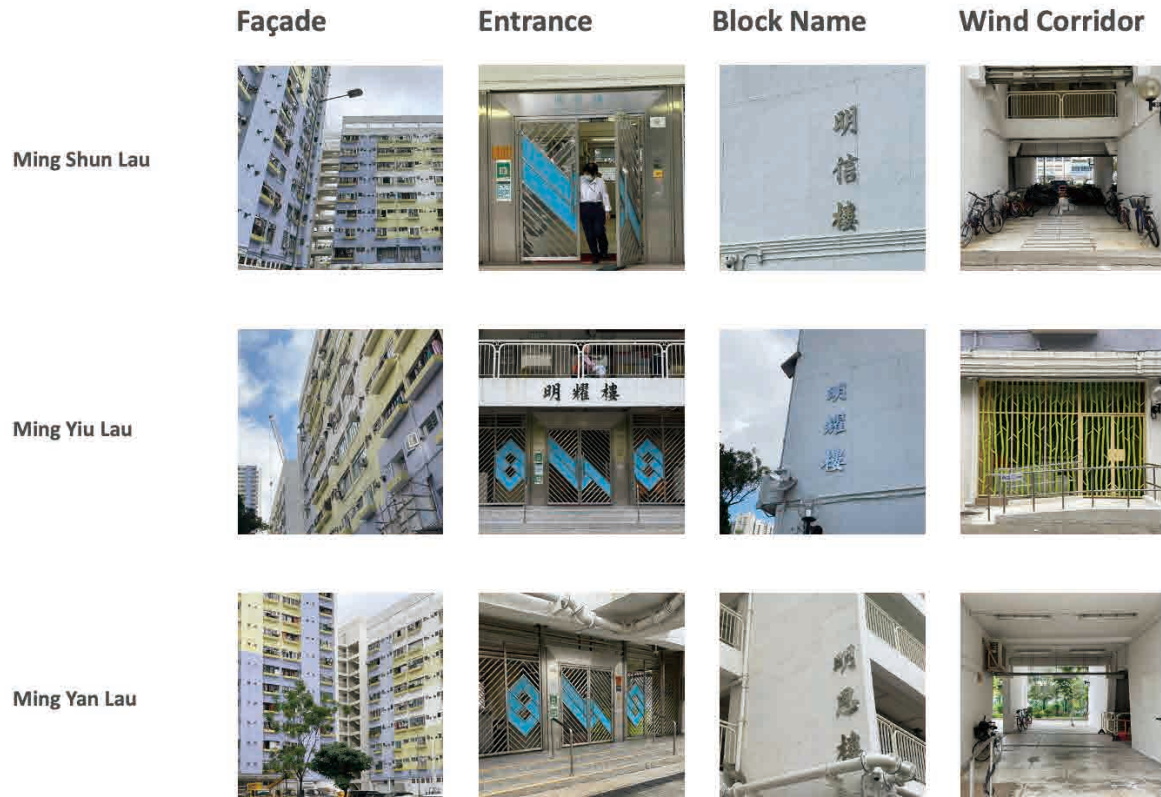


Figure 4. Signages, shop frontages and landmarks in Jat Min Chuen

obvious enough to be spotted, while limited directional guides are provided. However, ground floor shops and amenities can act as identifiers for PLWD to locate themselves, while assistance and monitoring can be provided by the shopkeepers.

This study has compared the façades, entrances, block names and wind corridors of the residential blocks to analyse the estate's visual identity (Figure 5). The synergetic combination of yel-

low, blue and white colours on the building blocks has made the estate identifiable in the district. However, the buildings also then look identical, which brings challenges for PLWD to differentiate between buildings. The small block names in the entrances and on the façade of residential blocks further contribute to the issue.

v. Open Space

There are plenty of open spaces between the buildings in Jat Min Chuen, with different fa-

cilities such as a swimming pool, a basketball court, children's playground and elderly fitness zones. According to a survey⁴, over 40% of the respondents visit leisure space every day, and over 80% visit leisure space more than once a week. There are other open spaces such as the central plaza, and vacant areas next to Ming Yiu Lau and Ming Yan Lau, where the elderly gather regularly in the morning to do Tachi, stretch and dance. Wind corridors and the central plaza are also places for social interactions, with groups of elderly gathering around the benches to chat, rest after buying necessities, and have their meals. A recreational area adjacent to Ming Shun Lau and a wind corridor has been transformed by HKHS into Nordic Walking Trail and Newsports zone, and Toy Bank (HK01, 2021). These interventions that introduce less-intensive activities aim to encourage intergeneration and interaction. Open spaces are important in enabling physical and social activities, which are also facilitated by long-established community networks. These elements can retain the cognitive ability of people with mild dementia and encourage active lifestyles for other community members.

However, the provision of facilities is still inadequate in terms of quantity and age-neutrality according to a study⁵. Most of the existing facilities are more children-and elderly-oriented, with insufficient quantity of equipment to serve the population. The Central Plaza and the el-

evated walkway have not been used effectively to provide more diverse experiences for the community. For people with mild or no cognitive decline, it is still essential to access diversified open spaces. The proximity to nearby open spaces such as Sha Tin Rock Garden, Shing Mun River Promenade Garden, Tsang Tai Uk Playground and Shing Mun River Promenade provides more opportunities for physical activities and social interactions (Figure 6).

Social Environment

In Jat Min Chuen, the institutional and social services sectors have a key role in providing social support and encouraging social participation. The estate developer and manager, the Hong Kong Housing Society (HKHS), has been implementing different policies in the estate to support ageing-in-place, elderly care, and inter-generational living. The measures can promote active ageing and indirectly provide support to the community in the pre-onset stage of dementia. There is a close connection with the social organisations in the nearby neighbourhoods such as Sha Kok Estate and Pok Hong Estate to utilise district resources to support the residents' and PLWD's well-being.

As an old public housing estate with 40 years of history, the community network has been developing as the residents stay in the community. Led by the elderly services department in HKHS, young and old volunteers participate

4 Data was collected from site engagement by JCDISI when the author was part of the team.

5 Local opinions were collected from site engagement by JCDISI when the author was part of the team.

in different social services and activities in the community and act as a supplementary force for community care. It gradually forms a reciprocal social network that is self-initiated by the active residents to provide daily and mental support to the neighbours. Although there is no particular service and policy for dementia-friendliness in the estate, the long-established and supportive community provides opportunities to achieve dementia-friendliness in the neighbourhood. Community resources can be further leveraged to raise awareness of dementia and support dementia care.

5. Discussion

Dementia-friendliness in Jat Min Chuen

Analysis of the spatial components in Jat Min Chuen reveals the dementia-friendliness of the built environment in a typical public housing estate. This case study sheds light on some existing strengths and limitations of the urban design of public housing estates in Hong Kong.

i. Housing

The modular housing development approach focuses on efficiency and building cost. Jat Min Chuen has not been specifically designed for the aged community, and the flexibility of the building and flats is relatively low to cater to future elderly needs. Approaches has been adopted to promote ageing-in-place, including interior renovation of residents' flats, allowance of family co-living, and construction of the new

age-friendly Chun Yuet Lau. More dementia-related housing strategies, such as dementia-friendly interior design, should be done to assist the living of PLWD in mild stages and their caregivers. There should also be opportunities for PLWD to stay in the existing community when their situation becomes severe, instead of moving them into remote institutional care centres with an unfamiliar environment.

ii. Amenities

The utilisation of the ground floor for shops and facilities is a common feature of old estates developed decades ago. These amenities, which can be accessed within a 5-minute walking distance, can support daily living within the estates. The local businesses have also become part of the community. They can potentially be the community carer and provide assistance to PLWD wandering in the estate. Most of the community centres in the neighbourhood have started providing dementia care services in recent years⁶. However, with the additional demand due to the ageing population, the capacity of these centres may not be enough to support their needs. Sha Tin is a self-sufficient new town, and there is a wide range of resources at district level to support living. Therefore, a two-pronged approach is needed - spatial planning should be transformed to provide extra spaces for elderly services that improve their cognitive ability, and physical connection with nearby social organisations and facilities should be strengthened. A well-planned estate and

6 Information was provided by Dr Lo, a local scholar specialising in primary health care, during an interview.

menities is crucial for PLWD and their caregivers to stay in the neighbourhood.

iii. Networks

Jat Min Chuen is situated in a relatively urbanised area with a close connection to the surrounding developed area. Nearby public estates, such as Sha Kok Estate, Pok Hong Estate and Chun Shek Estate, form a larger residential cluster that allows inter-neighbourhood circulation, which frequently takes place for residents to reach different resources and amenities⁷. In addition, the connection of the Tuen Ma MTR line has introduced a new transportation option to the neighbourhood. Connections at district and territorial levels can encourage the community to engage in more diverse physical and social activities. This helps PLWD to retain the cognitive reserves and offers new commuting options for PLWD and their caregivers when they need services outside of the neighbourhood. At the estate level, the multi-level pedestrian network enhances walkability and connectivity. However, it also brings complexity, especially for PLWD. A planned route can be introduced to help with PLWD wayfinding.

iv. Wayfinding

In Jat Min Chuen, a well-planned wayfinding

network for residents and PLWD is absent. The high-density modular public housing design has worsened the situation, as the buildings lack distinctiveness. However, residents have expressed that they are very familiar with their living environment and wayfinding cues are unnecessary⁸. According to an elder female, she has been living in the estate since the completion. She is very familiar with the neighbourhood and there is no need for signage and wayfinding cues⁹. However, as people age, cognitive decline may lead to loss of abilities such as memory and orientation. A future-proved approach should be adopted to cater for the potential needs of the residents, especially PLWD. A comprehensive and clear wayfinding system should be implemented to aid daily navigation in the neighbourhood and prevent PLWD from getting lost or involving in other unsafe conditions.

v. Open Space

In Jat Min Chuen, there are plenty of open spaces, with several designated recreational areas. Proximity to the public parks and Shing Mun River Promenade has brought more recreational choices for the residents. The open spaces encourage residents in the neighbourhood to participate in more physical and social activities.

For PLWD and the elderly, it is preferable to

7 Local opinions were collected from site engagement by JCDISI when the author was part of the team.

8 Local opinions were collected from site engagement by JCDISI when the author was part of the team as an intern.

9 Local opinions were collected from site engagement by JCDISI when the author was part of the team as an intern.

stay in their proximate neighbourhood. However, planning policy in Hong Kong that focuses more on quantity has resulted in an inadequate provision of equipment and a lack of diversity. Dr Lo has expressed in the interview that the provision of equipment can hardly fulfil the demand as the residents is ageing more rapidly¹⁰. Modular open spaces with similar equipment and design are not attractive to older people and thus not favourable to the development of multiple physical and cognitive abilities.

The introduction of an intergeneration community design in Jat Min Chuen offers an opportunity for transformation. The potential of open spaces should be explored to provide a more engaging and enabling environment for residents to have diverse and self-initiated activities. A more active lifestyle and social bonding can help slow down the cognitive decline of PLWD and promote a more dementia-inclusive neighbourhood.

Future Design for Dementia-friendly Public Housing in Hong Kong

The case study of Jat Min Chuen demonstrates some of the common spatial characteristics and qualities of public housing in Hong Kong. Based on this case study, this work makes recommendations for future public housing transformation and development in Hong Kong.

i. Comprehensive and future-proofed design for

dementia-friendly neighbourhood

In Hong Kong, there has been a lack of long-term, comprehensive and sustainable dementia policies to provide adequate support, resources and services for PLWD and their caregivers (HKCSS, 2012). The current approach in Hong Kong focuses on the provision of social and institutional services, and seldom explores the role of the built environment in building a dementia-friendly community. As in Singapore, an increasing number of people with dementia has led to an urgent review of the design and planning of public housing neighbourhood (Fung, 2020). A dementia-friendly neighbourhood should prevent the onset of dementia, assist the daily living of PLWD, and alleviate their cognitive decline, and provide institutional care and support in the neighbourhood for people suffering from the later stages of dementia. The consideration of the spatial components suggested in this study can lead to a more holistic understanding and planning of public housing in Hong Kong.

ii. Ageing-in-place approach for public housing management and development

According to Dr Lo, there is insufficient space in our city for elderly residence like what foreign countries are practicing. Promotion of Ageing-in-place is inevitable in the high-density Hong Kong¹¹.

10 Information was provided by Dr Lo, a local scholar specialising in primary health care, during an interview.

11 Information was provided by Dr Lo, a local scholar specialising in primary health care, during an interview.

The case of Jat Min Chuen has demonstrated a transition towards ageing-in-place in old public housing estate. Spatial and social interventions have been implemented to improve the well-being of the elder residents in the community. As the residents have built up strong social ties to the community after years of residence, a more familiar environment with adequate support can encourage more active and independent living of the elderly and PLWD (Mitchell & Burton, 2006). Redevelopment, relocation, and new development of public housing in Hong Kong force residents to live in new and remote areas that are unfamiliar and disconnected from the community. The principle of ageing-in-place should be upheld, providing adequate services, reducing social isolation, and improving the well-being of PLWD and elder inhabitants.

iii. Humanistic and people-centric planning for dementia

There are studies investigating the morphological and functional aspects of urban environments through quantifiable data. However, the actual challenges, experience and social needs of people are usually overlooked in the reductive approach to understanding the community (Cao et al., 2022; Fung, 2020). Humanistic and people-centric planning is needed to develop a dementia-friendly community. Integrated and collaborative efforts can be made among stakeholders, including healthcare professionals, community workers, local residents, and especially PLWD and their caregivers. Inclusive and participatory design is essential to gather community and professionals' knowledge that

can inform the planning and design of the community.

iv. Incorporation of physical and social environment

Design can result in an enabling and assistive environment for people with and without dementia, which improves their well-being, supports independent living, and provides places for social life. In parallel, the social environment is also essential for the dementia-friendly community. The awareness, understanding, and care from the community can support PLWD and their caregivers. More social interactions and activities can result in a more inclusive and integrated community. The development of public housing estates in Hong Kong usually starts with the planning and designing of the hardware structure and layout, which is followed by the plug-in of amenities and social services. However, there is a mutually supportive relationship between the two, and incorporation of the physical and social environments should be promoted in public housing transformation and development. Design of spaces can bring social impact, such as raising the awareness about dementia, providing opportunities for people with and without dementia to interact, and promoting dementia-inclusiveness. Spatial needs of the community, including PLWD and their caregivers, should also be reviewed to inform a more user-oriented physical environment.

6. Conclusions

In the decades-long history of public housing development in Hong Kong, over 400 public

house estates have been built to provide dwellings for nearly 45% of the total population (Census and Statistics Department, 2021). Modular planning and design have been adopted to public housing to reduce construction time and increase cost-efficiency. The 2022 Policy Address (HKSAR, 2022) has paid substantial attention to fostering public housing development in Hong Kong, introducing policies such as “Light Public Housing”, “Public Rental Housing Advance Allocation Scheme”, “Wider adoption of Modular Integrated Construction” and “Continuing redevelopment of public housing estates” (HKSAR, 2022). It is believed that such efforts can potentially relieve the housing pressure in Hong Kong. However, we should also pay attention to the livelihood of the senior citizens. Modular and identical blocks, lack of infrastructural support, and relocation of the elderly to unfamiliar environments may lead to loss of place identity, social isolation, and sense of insecurity for PLWD and elderly.

In face of the threats of “double ageing” and the alarming projected numbers of PLWD (Ling & Lee, 2019; Yu et al., 2012), this study aims to bring to light the concept of “Dementia-friendly Community” in relation to public housing development in Hong Kong. The work investigates the role of urban design to shape a more enabling environment and supportive community for PLWD and their caregivers. The study proposes a more humanistic and participatory approach to community design for public housing estates in Hong Kong, in which PLWD’s needs and experience are addressed, understood, and supported. The research accentuates the signif-

icance of a holistic consideration of both the physical and social environments in promoting a more dementia-inclusive society.

Further studies on more public housing estates in Hong Kong can be conducted to investigate how different typologies of estates have shaped the living patterns and behaviours of PLWD, and how the living of people with dementia can be supported. Dementia-friendly urban design is a crucial and urgent issue in Hong Kong. Collaborative efforts and interventions are needed to support PLWD and prevent the onset of dementia, enhancing the social resilience of the ageing society.

Acknowledgements

Site engagement data was collected when the author was part of the Jockey Club Design Institute for Social Innovation (JCDISI) team. The specific data and findings included in this research has been reviewed by JCDISI. Further analysis conducted, and recommendations proposed in this research, only represent the points of view of the authors. Interviews were supported by Dr Sally Lo from the Nethersole School of Nursing at The Chinese University of Hong Kong, and staff from a local elderly services organisation in Sha Tin Wai.