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HEALING INDEPENDENT ELDERLY VILLAGE IN KOTA KINABALU, SABAH

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ABSTRACT

As Malaysia's ageing population continues to rise, many elderly individuals particularly in Kota Kinabalu face challenges such as loneliness, declining health and inadequate care environments. Existing facilities often lack cultural sensitivity, emotional warmth, and proper support for independence, leading to isolation and loss of dignity. This thesis proposes a new architectural response through the design of *Walai Healing Elderly Village*, inspired by traditional Sabahan house typologies such as the Rumah Bajau, Rumah Dusun Lotud, and Rumah Panjang Rungus. The proposal integrates universal design standards, passive environmental strategies, and healing landscapes to promote autonomy, cultural belonging, and social connection. The aim is to create a healing environment that enhances well-being by embracing the cultural familiarity, nature, and the community living.

Keywords: *Elderly, Village, Healing, Kota Kinabalu, Sabah*
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INTRODUCTION

The enhancement of facilities for the elderly has become increasingly important in response to the rising aging population, as highlighted by the Department of Statistics Malaysia (2022). Globally, the World Health Organization (WHO) predicts that by 2030, one in six people will be aged 60 years or older, with the number rising from 1 billion in 2020 to 1.4 billion. By 2050, this figure is expected to double, reflecting a significant demographic shift that calls for age-responsive environments and services.

In Malaysia, this trend is already becoming evident. A report released by the Department of Statistics Malaysia (DOSM) on August 29, 2024, identified seven administrative districts as "ageing districts," where more than 7% of the population is aged 60 and above. These include Kuala Selangor (Selangor), Johor Bahru (Johor), Kota Bharu and Kuala Krai (Kelantan), Seberang Perai Utara (Penang), Kota Kinabalu (Sabah), and Miri (Sarawak), as noted in the news at Harakahdaily (2023).

Sabah mirrors this national trend, with its elderly population steadily increasing. As of 2023, approximately 217,000 individuals in Sabah are aged 60 and above, making up about 6% of the state's population. In Kota Kinabalu specifically, an estimated 37,300 elderly residents account for 7.1% of the city's population, qualifying it as one of Malaysia's ageing districts.

Kota Kinabalu is also marked by its ethnic diversity. According to Wikipedia (2022), the largest ethnic group in the city is the Kadazan-Dusun (25%), followed by the Bajau and Chinese (20% each), Malays (15%), and other indigenous groups such as the Murut and Rungus (10%). The remaining 10% includes expatriates and minority communities. This multicultural context plays a crucial role in shaping inclusive, culturally sensitive elderly care facilities that meet the varied needs of its aging population.

THESIS ISSUES AND PROBLEMS

This thesis is driven by three key issues that highlight the urgent need for a new approach to elderly care design.

a. Loneliness of Elderly

Based on statistics, 23 percent or 538,000 of the 2.4 million elderly in Malaysia experience Empty Nest Syndrome, which is the feeling of loneliness and sadness from living alone due to being far away from their children (Noor et al, 2024). Noor et al (2024) shown from her studies out of 644 respondent in Kota Kinabalu stated that numbers of respondent who Stay alone (11.5%), Stay with spouse only (15.1%), Stay with family (69.1%), Stay with relatives/friends (2.2%), Elderly care center (2.2%).

Human life expectancy has increased dramatically (Lutz et al., 2008). Estimates suggest that in a pre-modern world, life expectancy was around 30 years in all regions of the world. Since 1900 the global average life expectancy has increased by more than 50%, and is now above 70 years (*Physiopedia, n.d.*)

Most commonly the cause of loneliness experienced by the elderly is often exacerbated by the abandonment or loss of family members due to neglect or the death of loved ones. These factors significantly impact their emotional well-being, leading to feelings of isolation and grief that can affect their mental and physical health (Nour et al, 2024).

Loneliness of elderly can contribute to mental health challenges such as depression, anxiety, and cognitive decline, especially in cases of empty nest syndrome. It also elevates physical health risks, including high blood pressure, weakened immunity, and inflammation-related illnesses, underscoring the need for stronger social and emotional support systems for the elderly (Bakri & Che Rose, 2021).

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b. Health and Mobility Amongst Elderly

As stated by World Health Organization (WHO), ageing occurs because of the gradual accumulation of molecular and cellular damage over time, leading to a progressive decline in physical and cognitive functions, heightened vulnerability to diseases, and ultimately, death. Furthermore, Malaysia is going towards the ageing population based on World Health Organization (WHO) latest statement. Thus, it shown that people need to pay more attention regarding the ageing population in Malaysia.

The most common health issues reported in Kota Kinabalu were impaired vision (26.2 %), knee pain (19.6 %), high blood pressure (15.7 %), diabetes (12.2%), heart disease (12.0 %), exhaustion (10.9 %) and other illnesses such as stroke and Alzheimer (Noor et al, 2024).

c. The Need For Proper Facilities

There is an insufficient number of existing elderly care centers in Sabah to meet the growing demand for such services (Isa et al., 2020). The statement highlights a pressing concern about the inadequacy of elderly care centers in Sabah, which poses significant challenges given the region's aging population.

However, there is a noticeable lack of focus on providing housing that is specifically designed for the needs and preferences of elderly in Sabah. In comparison to other industrialized nations, notably Singapore, elderly housing arrangements were well-maintained, particularly by the government (Xin, 2024).” Figure 1 shows the news articles on elderly group wants retirement village in Sabah.



Figure 1: The need for retirement village for Sabah's elderly

According to The Star News Stephanie Lee (2018) a group, comprising healthcare professionals, social workers, and community leaders, Retirement Village for Sabah's Elderly” likely highlights an initiative by a group or organization proposing the development of a retirement village to cater to Sabah's aging population “With changing family dynamics, such as increased migration for work, traditional forms of elderly care are diminishing. This has led to an increasing need for professional elderly care facilities” (Isa et al, 2020). Figure 2, 3 and 4 shows the conditions of the elderly care homes in Sabah.



Figure 2: Residents in elderly care homes in Sabah are forced to sleep accompanied by mosquitoes' due lack of proper facilities. Sri Pritchard Old Folks Home, Kinarut. (Source: Hassan ,2013. The fate of elderly orphans in nursing homes, Borneo Post.)



Figure 3: Normal Residential Home change into elderly care Comfort Aged Care Centre, Kota Kinabalu (Source: comfortagedhome.com)



Figure 4: shows elderly care Standard in Sri Pritchar Old Folks Home (Source: Source: Hassan, 2013. The fate of elderly orphans in nursing homes, Borneo Post.)

THESIS AIM

The goal is to provide a safe, accessible and therapeutic space for elderly individuals, particularly those with mobility challenges and chronic illnesses. It focuses on enhancing physical well-being through supportive design, promoting mental and emotional health with calming, nature-inspired environments and providing holistic medical care.

THESIS OBJECTIVE

1. Exploring ways to optimize communal space to create a more inclusive and interactive living environment for seniors.
2. To identify the architectural design elements that best support mobility and enhance safety for elderly residents that promotes independent living.
3. To identify and analyze key infrastructural and design deficiencies in elderly care centers, and how they influence the quality of care provided.

THESIS THEORETICAL FRAMEWORK

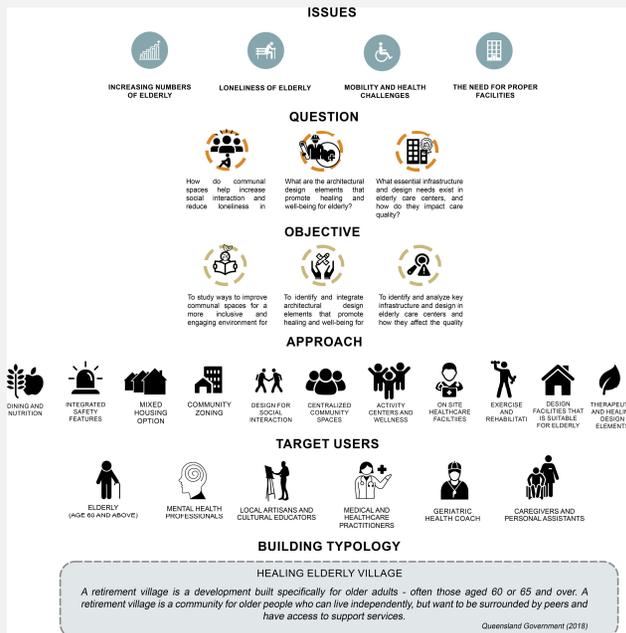


Figure 5: Design Thesis Theoretical Framework. (Source: Author)

METHODOLOGY

This design thesis aims to explore the spatial, cultural, and environmental needs of an aging population by proposing a healing elderly village in Kota Kinabalu, Sabah. The objective is to develop a design that integrates cultural identity, natural elements, and care-oriented architecture, contributing to a new typology for elderly living in Malaysia. The study adopts a **qualitative research approach**, involving both primary and secondary data collection.

Primary Data: Field observations were conducted on-site at selected locations in Sabah to examine the elderly care in Kota Kinabalu, Sabah. These observations were systematically analysed to arrive at typical designs' features and local characteristics of Sabah's elderly villages. End-users' needs were also deduced from this primary data.

Secondary Data: Literature reviews, including scholarly journals, news articles, and reports related to aging, healing environments, vernacular architecture, and elderly care in Malaysia were also gathered. However, access to certain elderly living spaces and villages are hindered due to privacy and remote distance between one location to another. Additionally, the research was self financed with no research grant.

SITE LOCATION

The site for the proposed elderly village is carefully selected based on several key criteria to ensure the comfort, safety, and well-being of its residents. Proximity to hospitals, clinics, and emergency services is crucial. A site that is part of or near an established community can help residents feel more integrated and provide opportunities for socializing and engagement. Flat and easy-to-navigate terrain is ideal for ensuring comfort and safety for older residents. Access to grocery stores, pharmacies, banks, and other essential. Nearby public transport options (e.g., bus stops) are important for elderly. Figure 6 shows the proposed site location.



Figure 6: Proposed Site location (Source: Author)

Proposed location: Jalan Penampang, Kota Kinabalu Sabah

Area: 4.7 acres (205,940 sqft)

LAND USE AND ZONING

The site is zone under zoning Local Centre Zone which is fall under Commercial zoning. According to Planning Act 2016, The purpose of the Local Centre Zone is to provide for a limited variety of commercial, community and retail activities to service local residents and other uses and activities that integrate with and enhance, the Local Centre. Figure 7 shows the site land use and zoning.

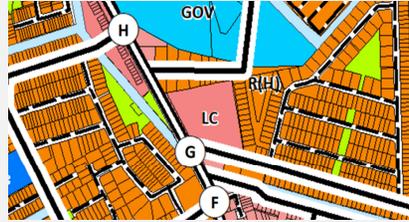


Figure 7: Site land use and zoning.
Source: DBKK Zoning Map

SITE AERIAL VIEW



Figure 8 Aerial view of site from west
(Source: Author)



Figure 9: Aerial view of site from south
(Source: Author)

DESIGN BRIEF

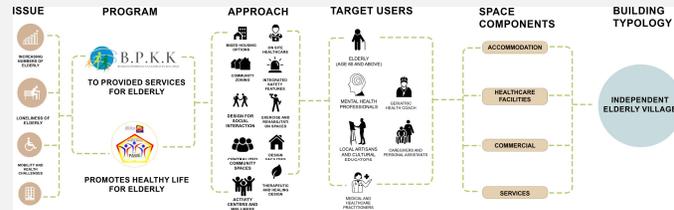


Figure 10: The Design Brief for Healing Elderly Village.
(Source: Author)

The design brief was derived based on the research methods employed in the design thesis that aspired to achieve design that are healing-oriented and independent living village for elderly in Kota Kinabalu, Sabah. The study adopts a qualitative approach, combining **field observation** and **literature review** as the primary methods in arriving at design thesis project.

DESIGN CONCEPT

“**Serenity of Continuity**” is a healing architectural concept that emphasizes the seamless connection between past, present, and nature, rooted in the cultural soul of Sabah and the lived experiences of its elderly. It promotes mental, emotional, and spiritual well-being through continuity of environment, cultural memory and ritualistic daily rhythms. Within the concept, the design would encourage propagate communal and independent living. In the context of Kota Kinabalu, this village becomes a living landscape where tradition, community and healing spaces flow as one. Figure 11 shows the design concept for healing elderly village.

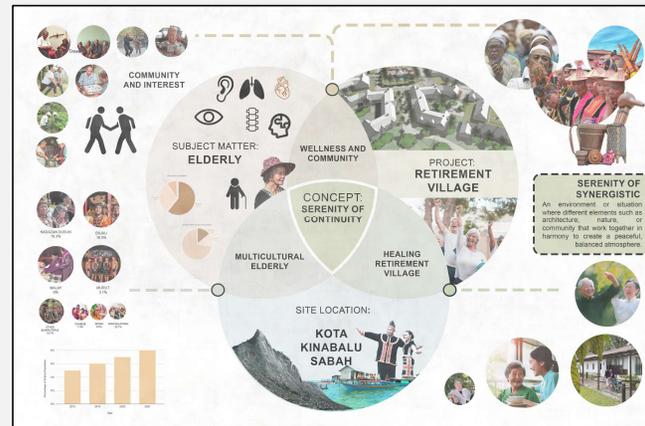


Figure 11: The Design Concept for Healing Elderly Village.
(Source: Author)

CLIMATE AND SENSORY

Kota Kinabalu have a warm, tropical climate with relatively stable environmental conditions throughout the year. According to data from IQAir and Meteoblue, the city typically records air quality ranging from **good to moderate**, with PM2.5 levels occasionally exceeding WHO guidelines but generally remaining within a safe range for outdoor activities. The **temperature** hovers between **24°C and 29°C**, accompanied by high humidity, while **wind speeds** are mild, averaging between **6 to 13 km/h**, mostly coming from the southeast to southwest directions.

These environmental conditions, combined with consistent sea breezes, support a comfortable outdoor atmosphere, making the area suitable for elderly-friendly developments that emphasize natural ventilation and shaded outdoor spaces. Figure 12 shows the site wind speed and sun path analysis and Figure 13 shows the temperature and amount of rain in Kota Kinabalu.

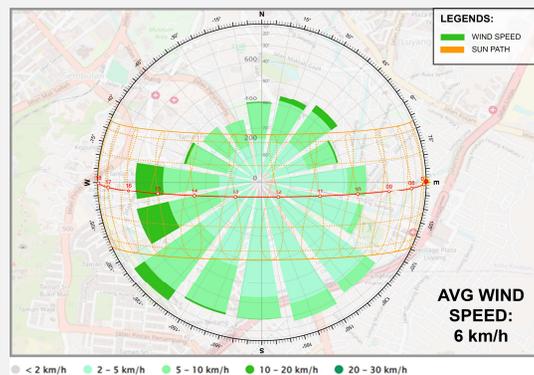


Figure 12: Site Wind Speed And Sun Path Analysis in Kota Kinabalu
 Source: Meteoblue.com

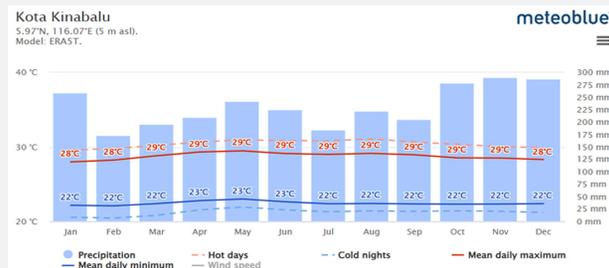


Figure 13: Kota Kinabalu Temperature And Amount of Rain
 Source: Meteoblue.com

SITE NEIGHBOURHOOD CONTEXT

According to Bahauddin et al (2016), Maranjak Longhouse is one of a place that is used as accommodation with the cultural theme of the Rungus tribe who are also the majority population in the Kudat district. The Rungus Longhouse, known locally as Vinatang, is a traditional communal dwelling of the Rungus people, an indigenous ethnic group in Sabah, Malaysia. It serves as both a home and a social hub, reflecting the Rungus people's strong emphasis on community living.

The Rungus lifestyles require traditional living environment, many Rungus live in longhouses, with each family having its own room along the common hall. At the end of the communal hall, a platform of split bamboo with a sloping walls provides a place for socializing and communal work. Usually, the house are on stilts but only a few feet above the ground (Bahauddin, 2016). Figure 14 shows the Traditional Rungus Longhouse and Figure 15 shows the Maranjak Longhouse.



Figure 14: Maranjak Longhouse, Kudat.
 Source: The Rungus Longhouse of Sabah, Malaysian Borneo, A Dying Architecture, Bahauddin et al (2015).

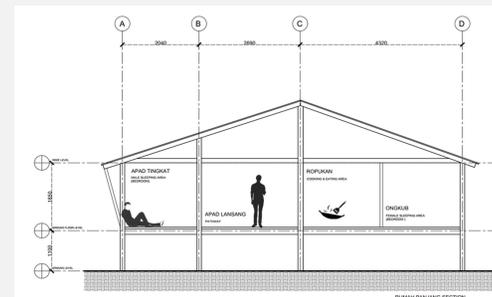


Figure 15: Maranjak Longhouse, section of space components.
 (Source: author)

Bahauddin et al (2016) also explain that the design and architecture of the Rungus longhouse reflect both practical and cultural wisdom. Elevated on stilts, the structure is built primarily from natural materials like bamboo, mangrove wood, and palm fronds, offering protection from flooding and wild animals while blending seamlessly with the environment. A distinctive feature is its slanted walls, which provide comfort for sitting and resting without the need for modern furniture. The longhouse supports communal living, with multiple families residing under one roof, fostering strong social bonds and intergenerational support.

Traditional Bajau house

The traditional Bajau Laut house is composed of functional spaces that reflect their maritime lifestyle and communal culture. Key components include the Pentan, a semi-outdoor deck used for socializing, drying fish and daily chores; and the Diom Luma (Interior space), the main interior space where sleeping, eating, and gathering occur in a flexible, open layout. Supporting spaces like the Lantai Luar serve as extended platforms for sea access and transitions, while the Dapur (kitchen) is usually located at the rear for safety and ventilation. These spatial elements are simple yet efficient, promoting natural ventilation, family interaction, and connection to the sea, the qualities that can be reinterpreted in elderly village design to foster healing, accessibility and cultural continuity (Ismail,2018). Figure 17 shows the Bajau Laut Spatial Layout.



Figure 18: Shows Traditional Bajau House (Rumah Marilaut). Source: The Spatial Extensions of Traditional Coastal Sama-Bajau Houses. Ismail (2018)

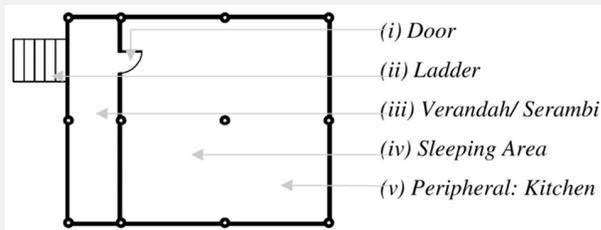


Figure 17: Bajau Laut Spatial Layout (Source: The Spatial Extensions of Traditional Coastal Sama-Bajau Houses. Ismail (2018))

Traditional Bajau house



Figure 16: Maranjak Longhouse, Kudat. (Source: Lim (2012), Traditional Suang Lotud house of Sabah Borneo, Malaysia. Kampung Panjut.)

Lim (2012) explains, that the entire house is constructed without the use of nails, as these were once difficult to obtain. Instead, the structure relies on ingenious joinery techniques, where beams are fitted together using slip-in methods and secured with rattan bindings. A typical longhouse unit includes several key spaces: a sleeping area (*Kawas*), a kitchen (*Soriba*), an attic (*Tilud*), and a corridor (*Olod-Olod*) that separates the enclosed living quarters from the shared veranda (*Solio*). The number of poles or stilts supporting the house corresponds to the overall length or the number of individual living units. This traditional design is commonly found in the Tuaran district. Figure 19 shows the section of Lamin Kopio (Dusun Lotud House).

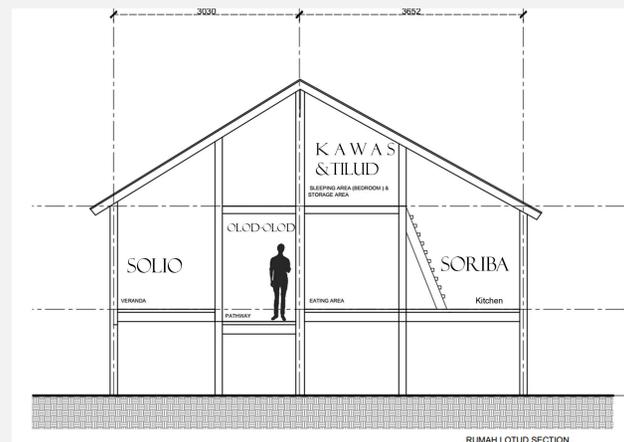


Figure 19: Section of Lamin Kopio (Dusun Lotud House) (Source: Author)

PROJECT FINDING

DESIGN DEVELOPMENT

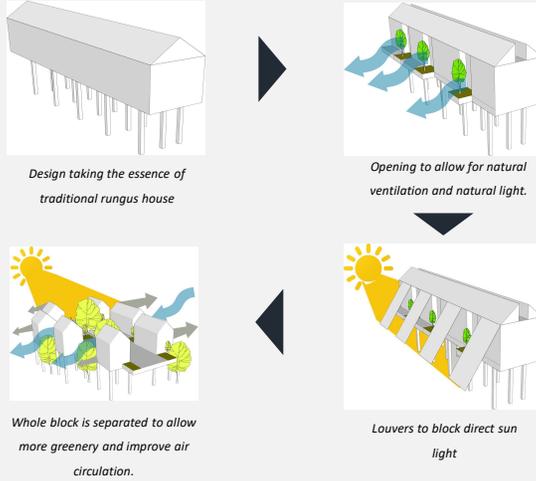


Figure 20: The Development of Form for the Healing Elderly Village. (Source: Author)

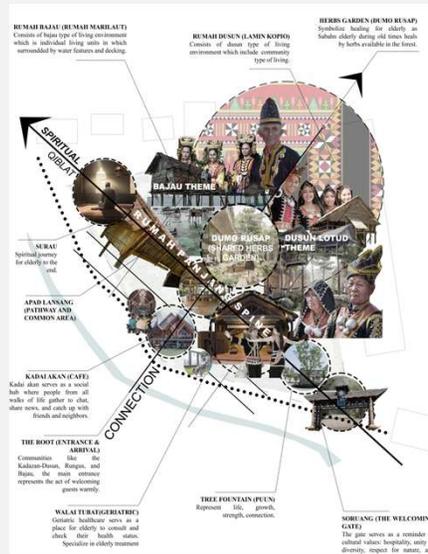


Figure 21: Abstract art for the Elderly Village. (Source: Author)

SITE PLAN



Figure 22: Site Plan of Healing Elderly Village (Source: Author)

FLOOR PLANS



Figure 23: Ground floor plan for Healing Elderly Village. (Source: Author)

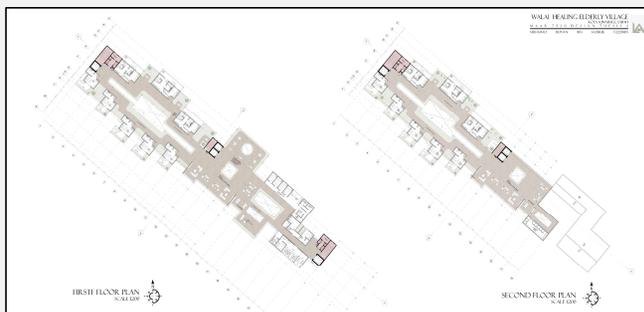


Figure 24: Layout plan for Healing Elderly Village.
(Source: Author)

The Healing Elderly Village in Kota Kinabalu, Sabah, is envisioned as a culturally rooted and wellness, focused on residential community that supports the physical, emotional and social well-being of elderly residents. Inspired by the rich architectural traditions of Sabah's indigenous groups, the village features various types of housing units that reflect familiar cultural forms while being adapted for modern elderly care.

SPACE COMPONENTS

The Rungus-inspired units include Apad Tingkat, a compact room unit designed for individual living with privacy and ease of access and Ongkub, a larger room unit suitable for couples or residents requiring more space. These units retain elements of the traditional Rungus longhouse. Figure 25 shows the internal pathway towards the Apad Tingkat and Ongkub units Healing Elderly Village.



Figure 25: Internal Pathway towards the Apad Tingkat and Ongkub units Healing Elderly Village.
(Source: Author)

The Rumah Marilaut, modeled after the Bajau house, is raised on stilts and designed to offer openness, sea-breeze ventilation, and a strong connection to nature. Its spatial arrangement supports calmness and visual clarity, beneficial for cognitive health. Figure 26 shows the view of Rumah Marilaut from Apad Lansang. Meanwhile, the Lamin Kopio, inspired by the Dusun Lotud traditional house, features a prominent gabled roof and central communal area, symbolizing warmth and family-like togetherness. Figure 27 shows the view of Lamin Kopio from Apad Lansang.



Figure 26: View of Rumah Marilaut (Bajau House) from Apad Lansang (Pathway).
(Source: Author)



Figure 27: View of Lamin Kopio (Dusun Lotud House) from Apad Lansang (Pathway).
(Source: Author)

Serdang Garden in the Healing Elderly Village is thoughtfully designed to reflect and celebrate the cultural traditions of Sabah's indigenous communities, while supporting the well-being and healing of its elderly residents. Drawing inspiration from the Bajau community, who are traditionally coastal dwellers with a deep connection to water, the garden incorporates water features such as ponds and small streams.

FLOOR PLANS



Figure 28: Layout plan for Healing Elderly Village.
(Source: Author)

Beyond residential units, the village includes key amenities tailored for holistic elderly care. The Rompukan dining area serves as a communal space for shared meals and daily interaction, fostering a sense of belonging. The Monomoli Hall functions as a multipurpose hall for cultural activities, celebrations, and group therapies. A fully equipped healthcare clinic ensures residents have access to regular medical support and emergency care. Additionally, facilities such as a gym designed for low-impact physical activity support mobility and health maintenance.

INTERNAL GARDEN



Figure 29: View of Lamin Kopio (Dusun Lotud House from Apad Lansang (Pathway) .
(Source: Author)

SPACE COMPONENTS



Figure 30: Aerial View for Healing Elderly Village.
(Source: Author)

STRUCTURE SYSTEM

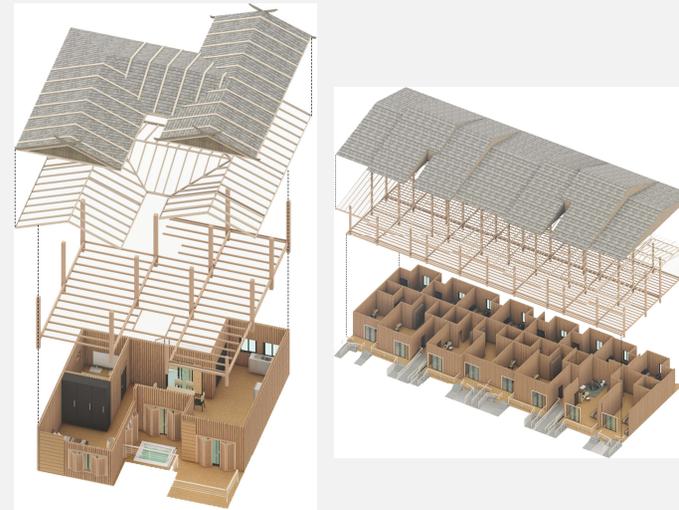


Figure 31: Rumah Marilaut (left) and Lamin Kopio (right) structural construction.
(Source: Author)

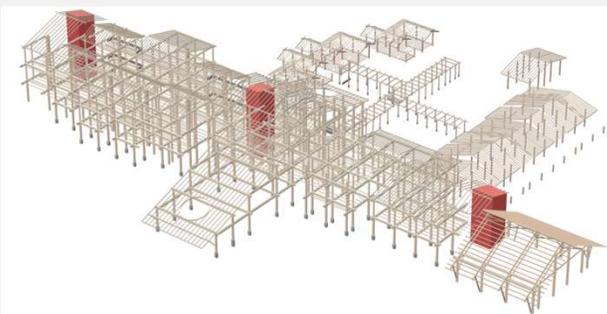


Figure 32: Overall building structure.
(Source: Author)

CONCLUSION

The proposed design for healing elderly village in Kota Kinabalu do resembles the quality and essence of Sabah's traditional homes such as Rumah Panjang Rungus, Rumah Bajau and Rumah Dusun Lotud into a unified care environment that honors cultural identity. Each vernacular house type offers familiar spatial qualities that foster social interaction, emotional well-being, and a sense of belonging. By blending these cultural elements with modern healthcare principles, passive design, and natural landscaping, the village becomes a restorative sanctuary that supports both the physical and emotional needs of the elderly, setting a new benchmark for elderly care design in Malaysia. Additionally, the design promotes communal and independent living for elderly care combating the negative perceptions of loneliness and dependency.

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