

# HOUSING AS AN INTEGRAL DEVELOPMENT FOR HEALTH - CATEGORIES THAT DELIVER A HEALTHY HOUSING IN MALAYSIA

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**Abstract:** *Housing is increasingly understood that it is an important determinant of household health and success in life, affecting the productivity, emotion, education, also the opportunity for upward mobility. The condition of the housing can affect physical and mental health condition. COVID-19 endemic also required people to spend more than 80 percent of their daily time indoors. Therefore, research was conducted to deepen understanding specifically in the context of the categories of healthy housing in Malaysia, where it will affect the homeowners and also family members. The current research used a quantitative approach via a focus group involving homeowners and residents to gain in depth information. The major themes that emerged for findings of the healthy housing categories are ventilation, cleanliness, safety, security and privacy and also using Eco-friendly materials. We further demonstrate that these four pillars can adequately housing to protect individuals and families from harmful exposures and provides them "hub" for well-being as an important contribution to health. Thus, this*

research also hoped that the government, housing developers, architects, and interior designers will responsive to consider the health impacts of housing conditions, stability, and quality.

**Keywords:** *Housing, Healthy Housing, Health Problems, Homeowners, Community development*

## Introduction

Based on World Health Organization (WHO), home is a shelter where it provides protection of complete mental, physical and well-being to the residents. Housing become a crucial physical structure of the dwelling where it can impact us on daily activities such as working, playing, relaxing, teaching and learning, and also exercising. To assist in this underline, it is important to recognize that our homes is in a healthy housing context. It should be a therapeutic oasis that gives every resident good vibe and a healthy environment. This issues brief examines in many ways where housing can influence health and discuss the categories that can ensure all Malaysians have healthier homes.

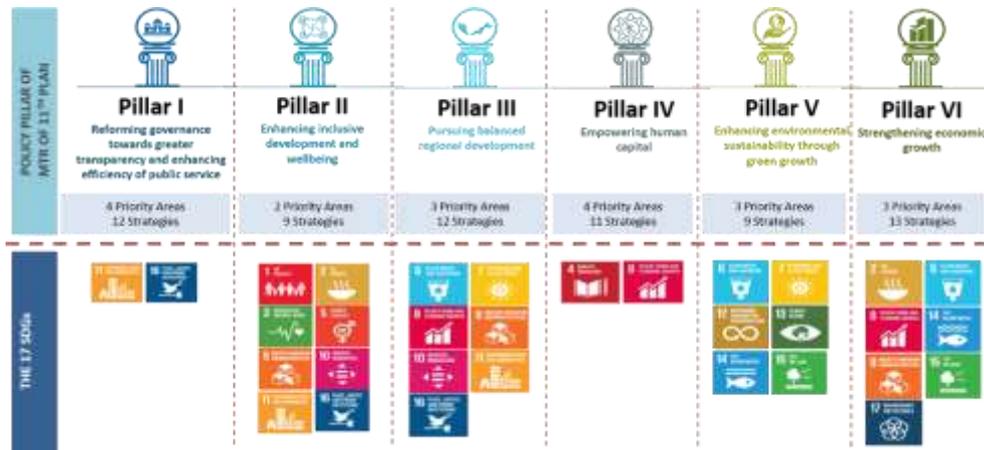
The design of our built environment affects our health and wellbeing, and can have vital implications for quality of life. We spend up to 90% of our time in buildings (about 70% in our homes), so it is inevitable that this environment can create significant opportunities for and threats to our health.

Improved housing conditions can save lives, reduce disease, increase quality of life, reduce poverty, help mitigate climate change and contribute to the achievement of a number of Sustainable Development Goals in Malaysia. The Sustainable Development Goals (SDGs) known as the Global Goals, were embraced from United Nations Member States in 2015 as an assemble to end poverty, protect the country and ensure that all people live peacefully and healthily by 2030.

There are 17 elements of SDGs where all of it related into between that is, they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.



**Figure 1: The SDG governance structure in Malaysia**  
(Source: Official Portal of Economic Planning Unit, Prime Minister's Department)



**Figure 2: Mapping of Mid Term Review of the 11th Malaysia Plan and the SDG**

(Source: Official Portal of Economic Planning Unit, Prime Minister's Department)

Based on Figure 2 above, policy of pillar II is most related with healthy housing. The area is prioritized on enhancing inclusive development and well-being. There are 8 goals that complement each other where it will enhance are: 1) SDG1 - no poverty, 2) SDG2 - no hunger, 3) SDG3 - good health, 4) SDG5 - gender equality, 5) SDG9 - innovation and infrastructure, 6) SDG10 - sustainable cities and communities and last one 7) SDG16 - peace and justice.

Ensuring everyone lives in healthy and safe dwellings has implications for national, regional and local governments, which set overall standards and determine the legal context for housing construction and renovation.

In contrast, low quality of housing will contribute to many health problems. There are respiratory problems, cancer, asthma, infection diseases, injuries, skin irritation and many more. Other consequences are also will affect emotional problem, poor educational attainment, children development, stress and not only that it will affect financial burden to the residents in recovering and repairing all these dwellings (Che Mohd Nasir, et. al. 2020).

In this introductory part we describe the context with respects to health conditions in homes, where it cover on four important categories. There are Ventilation, Cleanliness, Safety, Security and privacy and also Eco-friendly materials. With these research output, it will provide evidence-based recommendations on conditions and interventions that promote healthy housing, and facilitates residents in enabling health and safety considerations to underpin housing regulations.

The two main questions that the present study tries to answer are: (a) What are the factors influence health and safety in homes? (b) What are the circumstances that impact how our homes can make us feel better and live healthier? Therefore, this study aimed to deepen understanding specifically in the context the categories in producing healthy housing in Malaysia

## Literature Review

### **Development of Healthy Housing By Who**

Healthy housing is shelter that supports a state of complete physical, mental and social well-being. Healthy housing provides a feeling of home, including a sense of belonging, security and privacy. It also refers to the physical structure of the dwelling, and the extent to which it enables physical health, including by being structurally sound, by providing shelter from the elements and from excess moisture, and by facilitating comfortable temperatures, adequate sanitation and illumination, sufficient space, safe fuel or connection to electricity, and protection from pollutants, injury hazards, mould and pests. Whether housing is healthy also depends on factors outside its walls. It depends on the local community, which enables social interactions that support health and well-being. Finally, healthy housing relies on the immediate housing environment, and the extent to which this provides access to services, green space, and active and public transport options, as well as protection from waste, pollution and the effects of disaster, whether natural or man-made (Ficher, U. 2017).

### **WHO Housing and health guidelines rationalism**

The impact of housing on health and the prevalence of poor housing conditions around the world are need for globally acceptable and practical guidelines that will ensure healthy housing and human safety. The underlying principle of such guidelines is for housing to give adequate protection from all potential hazards prevailing in the local environment. This principle should apply to both the existing housing stock and newly constructed dwellings. Although a number of housing and health regulatory frameworks and guidelines exist, they are not comprehensively coordinated to address all aspects of housing, human health and safety (Wolff, C., 2016).

### **How does housing affect health**

Poor housing can expose people to several health risks. For example, structurally deficient housing, due to poor construction or maintenance, can increase the likelihood that people slip or fall, increasing the risk of injury. Poor accessibility to homes may expose their disabled and elderly residents to the risk of injury, stress and isolation (Foundation, M. 2017). Housing that is insecure, sometimes due to affordability issues or weak security of tenure, is stressful. Housing that is difficult or expensive to heat can contribute to poor respiratory and cardiovascular outcomes, while high indoor temperatures can increase cardiovascular mortality. Indoor air pollution harms respiratory health and may trigger allergic and irritant reactions, such as asthma. Crowded housing increases the risk of exposure to infectious disease and stress. Inadequate water supply and sanitation facilities affect food safety and personal hygiene. Urban design that discourages physical activity contributes to obesity and related conditions, such as diabetes, and poor mental and cardiovascular health. Unsafe building materials or building practices, or building homes in unsafe locations, can expose people to a range of risks, such as injury due to building collapse.

### **Why Sustainable Interior Design Matters**

People spending less than a half-day per week outside which means that the role interior design plays in our homes is incredibly significant, for a couple of reasons, actually. Its obvious sustainable interior design is important to us but it also plays a significant role in the overall health and safety of those who manufacture the materials as well as for the contractors who complete demolition and installation.

Environmentally sustainable interior design is probably the thing that came to mind first. As a designer, it is the Architect's responsibility to design a building consciously. An interior designer plays a huge role in selecting materials, appliances, fixtures for your home. Their role is to maintain the indoor environment and to create elements with an awareness of eco-friendly materials and techniques (Aziz, S., et. al. 2020). This category emphasizes the use of eco-friendly materials, reductions of indoor pollutants and improvement of the quality of air, lighting and thermal comfort. Interior designers have the power to influence and educate their clients about the merits of sustainable living and promote this practice for a healthier future. The 3 important elements of Interior designing that determine the extent of sustainable living are material, lighting, furnishing,

### **Study Context – Types of properties and houses in Malaysia**

There are quite a number of residential properties in Malaysia to date. In the recent years, many new types have mushroomed which then creates more confusion for homebuyers especially first-timers. The types are:

- Individual house that builds on their own land. For example: Bungalow and terrace house.
- Rumah Mesra Rakyat (RMR). For example: PRIMA, Syarikat Perumahan Negara Berhad (SPNB), Rumah Mampu Milik Wilayah Persekutuan (RUMAWIP), Perumahan Penjawat Awam Malaysia (PPAM) and Rumah Selangorku. The types of this house mostly are service apartment, apartment, terrace, bungalow, semi- D, Small office home office (SOHO), Shop lot and shophouse.
- Low-cost house. For example: Program Perumahan Rakyat Termiskin (PPRT) and Program Perumahan Rakyat (PPR)
- Houses under private developers
- Abandoned house
- Houses that are still under construction and having problems to complete.

### **Research Method**

The review process involves of data selection, data analysis and reporting. Review process focuses on the data selection. The analysis attempts to review on presenting the existing knowledge related to the application and use of healthy environment in Malaysia context, current issues, problems faced amongst Malaysians on these healthy home environments. The research will be employing a method that approach also by questionnaire. The selection of this methodology is important since this kind of research requires details explanations and understandings within the context strategies. Furthermore, to obtain the required information from the data collection need to propose the steps that should be taken to propose a healthy home with intelligent system and then translate the data well.

### **Participants**

The respondents were 30 Malaysian adult and mostly from west Malaysia and from various state such as Selangor, Kuala Lumpur, Kelantan and Terengganu. Data collected through an online questionnaire survey using Google Form that's conducted to a group of Malaysian people that's live in Malaysia. These respondents were selected based on their age and all of them who already have their own house to live whether it is rented or their own. The selected potential respondents were age between 20 -70 years old and from the data received most of the respondents age are between 31-40 years old. The list below showing half of the respondents' data.

**Table 1: Demographic profile of respondents (Source: Author, 2022)**

No	Pseudonym	State	Type of Home	Household
1.	Yuni	Kelantan	Bungalow	Spouse and children
2.	Intan	Selangor	Terraces house	Spouse and children
3.	Arllyn	Terengganu	Terraces house	Spouse and children
4.	Asyizz	W.P Putrajaya	Apartment	Spouse and children
5.	Nurul	Terengganu	Semi D	parents and siblings
6.	Zaki	W.P Putrajaya	Apartment	Spouse and children
7.	Asmaa	Negeri Sembilan	Quarters House	Spouse and children
8.	Fadzli	Kelantan	Semi D	Alone
9.	Huda	Kelantan	Terraces house	Alone
10.	Dee	Kelantan	Bungalow	Alone
11	Zati	Kelantan	Bungalow	Spouse and children
12.	Noor	Melaka	Terrace house	Spouse and children
13.	Woasaifu ddin	Terengga	Semi D	Spouse and children
14.	Hanani	Selangor	Apartment	Spouse and children
15.	Nik	Selangor	Apartment	Spouse and children

The other demographic data provided in the questionnaire are about state and city that they live in, household monthly income, type of home, and also who the respondents stay with. This additional data will help researcher to obtain more information in this research.

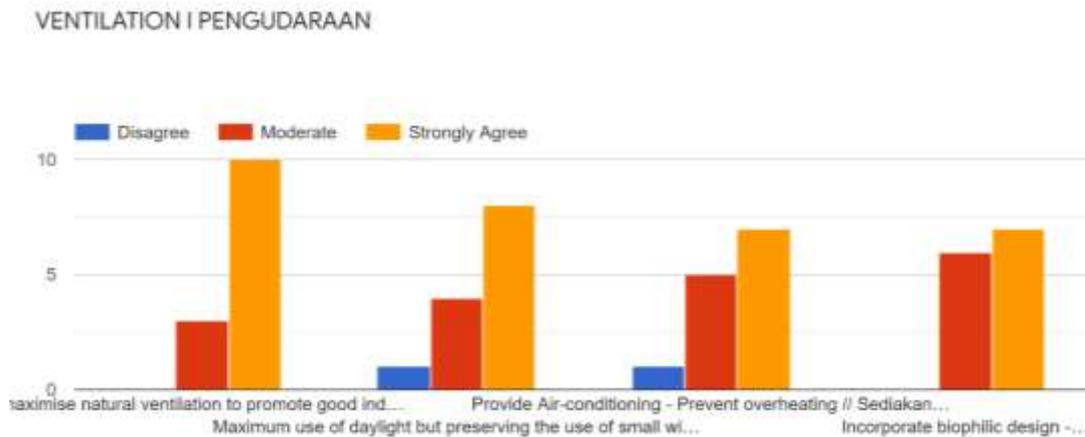
### Data Analysis

The questionnaire is focusing on four emerge categories that plays most important part in this development of healthy home environment. There were ventilation, cleanliness, safety and privacy and also eco - friendly building materials.

**Tab. 2: Summary of findings about healthy home categories (Source: Author, 2022)**

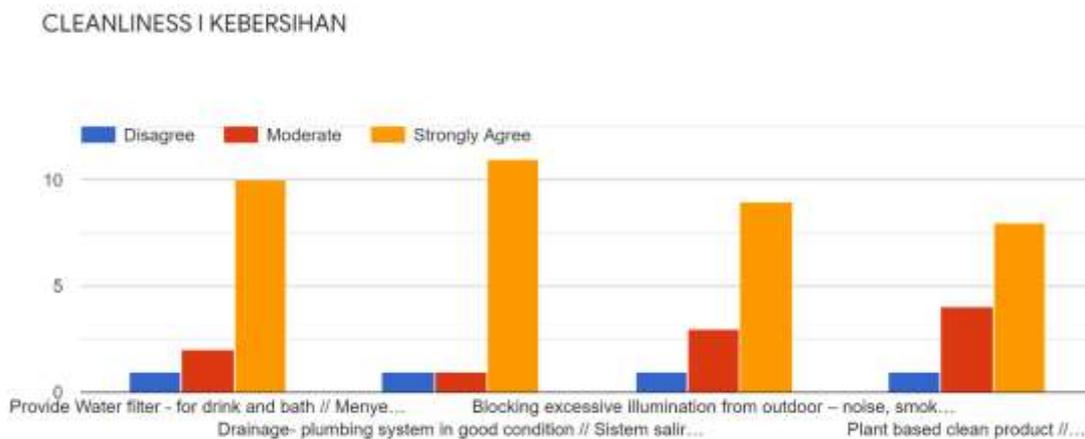
No	Main categories	Sub themes - strongly agree
1.	Ventilation	Maximize natural ventilation to promote good indoor air quality
2.	Cleanliness	Blocking excessive illumination from outdoor – noise, smoke, dust Drainage- plumbing system in good condition Provide water filter - for drink and bath
3.	Safety & privacy	Spatial planning - area for living, dining, kitchen, work and study, bedroom and also toilet Space privacy - for parents, and children Safety sensor - smart system application
4.	Eco-friendly building materials	Prevent water infiltration through the roof, foundation to prevent mould growth and lead to potential asthma triggers Reduce use of chemicals

The first category is about ventilation where it is necessary to keep the fresh air and healthy indoors. Letting fresh air into indoor spaces can help remove the air that contains virus and prevent harmful particles like coronavirus (COVID-19). Most of the respondents (21 of 30 respondents) are strongly agree about maximizing natural ventilation to promote good indoor air quality as per Figure 1 below.



**Figure 1: Ventilation categories that affecting a healthy home**  
 (Source: Author, 2022)

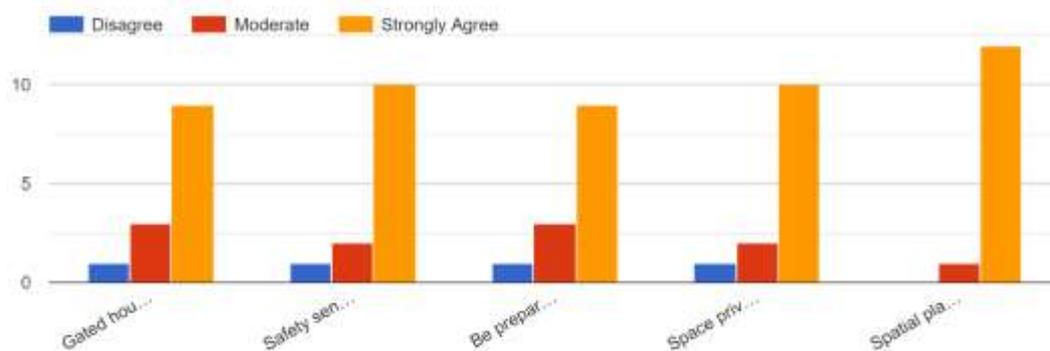
The second category is about cleanliness. A clean home leaves fewer places for germs and bacteria to hide and regular cleaning will keep our home healthy. In addition, it is more crucial during this pandemic COVID-19. From several issues highlighted on this category, most of the respondents (18 of 30 respondents) are strongly agree about making sure the drainage and plumbing system is in good condition where it will affect whole household daily activities.



**Figure 2: Cleanliness categories that affecting a healthy home**  
 (Source: Author, 2022)

Next is the safety and privacy for home that concerning to healthy home. When these categories are highlighted, it consists a lot of things. Homes are meant to make us feel safe and protected where the different circumstances in the home could contribute to unhealthy environment. Thus, most of the respondents (23 of 30 respondents) are chosen good spatial planning where it consists of all area in the house and related to space privacy.

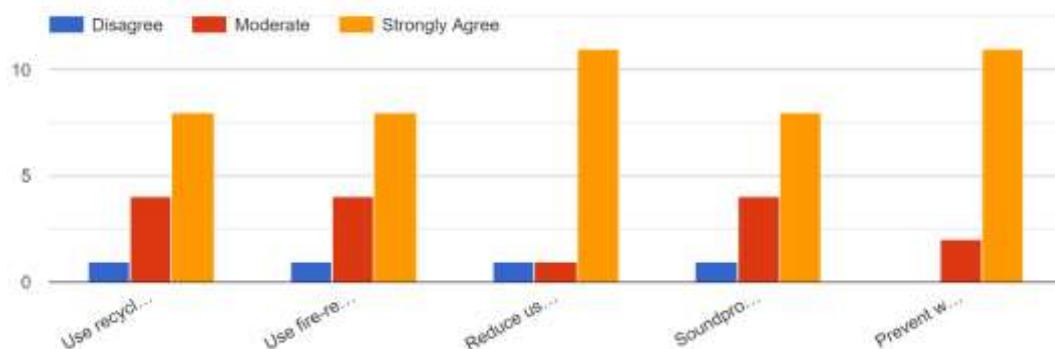
**SAFETY & PRIVACY | KESELAMATAN & PRIVASI**



**Figure 3: Safety and privacy categories that affecting a healthy home (Source: Author, 2022)**

Lastly, the other important categories that relate to healthy home is eco-friendly building materials. This is applicable to interior finishing where consists of using a recycle material, use fire-resistant and natural material for wall finishes, use fire-resistant and natural material for wall finishes, soundproofing sprayed on the wall and ceilings to prevent excess noise. Besides, to prevent water infiltration through the roof, foundation to prevent mold growth that led to potential asthma triggers. Most of the respondents (22 of 30 respondents) are strongly agree with in reducing usage of chemicals inside the house.

**ECO-FRIENDLY BUILDING MATERIALS | BAHAN BINAAN MESRA ALAM**



**Figure 4: Safety and privacy categories that affecting a healthy home (Source: Author, 2022)**

## Discussion and Conclusion

Generally, when it comes to health improvement, people tend to focus on nutrition meal, exercise and workout, and taking care of hours of sleep. People are taking no notice on focusing about home environment that actually affect their mind, body and health. Thus, it is crucial to figure out ways to make home are healthier. Anyhow, in easiest way occupants can cleaning up more often than usual, removing all harmful and toxins items, focusing at all area in the house where it can have an effect on not only for a long-term health, yet how the residents feel in the moment. Our home, both the location and the physical building itself, affects almost every aspect of our activities, from how well we sleep, to how often we see friends, to how safe and secure we feel. If we want to improve the health and well-being of individuals, families, and communities, there can hardly be a more essential place to start than the home. It is where majority of people allocate most of their times. (Alter, 2016).

Healthy home may be pivotal as eating healthily and practice exercising for people to prevent disease and stay energetic and fit. Besides, the place or venue where people sleep, live, work, or even drive is a large proportion of the factors that can determine our health. Based on Alter, 2016 said that the quality of the air people breathes inside the home as fresh and non-toxic. The molecule such as dust, mites, bacteria, and mild can be sneaking into our house and can cause destruction to our health even our immune system is in a good condition. Thus, it is important to understand that our home environment is one of the critical elements and can impact our overall health.

Based on research, have several categories concerned to structure of the housing. There are housing issues – potential solutions to address structural housing issues and sustainability in the context of housing and health. The main categories are related to housing issues, evident in the experts account of existing issues with housing structure. Next is housing value. Based on the related research, some of the participants are social scientist, housing research expert are expressed housing is a fundamental determinant of health. Thus, irrespective occupants' income is claimed housing were generally poor quality, damp, cold, mouldy, poor ventilation and isolated also not maintained after construction. Meanwhile, other experts consist of community housing provider, energy experts and social scientist are stated that the condition of current housing have low assumption towards people ability to look for better living environments and condition (Zulkafli., 2020).

The social scientist, housing research expert and health promotion experts said that preference are given to determine the built environment because it is not relied on demanding of changing human behavior. Although technology and manners were personally related, behavioral therapy was secondary and relate to advancements of current technology. The central findings on that study are stated that physical structure of the house/ building and how residents' associates with their house plays a vital role in authorize of minimal health and environmental outcomes. According to experts, structural housing inadequacy should be highlighted and then it complements by behavior change interferences.

In achieving healthy environmental outcomes, it is fundamental in getting the interaction between occupants and their home to enhance wellbeing. By exploring experts view, it is identified that there has a possible strategy to support occupants to enhance energy efficiency of their house. (Wood, L. 2019).

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