**HOUSING TYPOLOGY OF MODERN MALAYSIA**

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**ABSTRACT**

Modernization of cities and housing in Malaysia is a reflection of the history of the establishment of colonial trading ports for worldwide maritime trade and exchange. In cosmopolitan cities, new housing typology appeared from the influence of various ethnic immigrants and with the fusion of traditional Malay housing characteristics. This study is to focus on classifying the housing typologies of Malaysia that were formed through the modernization process of cities. Modern housing typology in Malaysia can be classified into two categories.

The first category is the houses that can be termed as a ‘transformation of traditional housing’. The representative typology of this group is the shophouse that was originally brought in by the Chinese immigrants from the south coast of China and transformed into the Malaysian urbanscape. The other typology is a detached-house known as the bungalow, which was the house style combining the Malay traditional timber house and the European villas. The second category is the ‘modern urban housing typology’ that was adopted widely after the independence from Britain in 1957. In the new suburban areas, the British terrace house typology was adopted and developed into unique Malaysian terrace house and semi-detached house based on the British system of land sub-division. In the central area of the city, high density housing in the form of apartment or flat was adopted due to the needs to accommodate new social and economic needs that required maximum utilization of land. Since 1980s, luxurious housing type in the form of condominium was a popular housing choice for the upper middle-class society.

*Keywords: Malaysia, Modern Housing, Housing Typology, shophouse, bungalow, semi-D house, condominium*

1. **INTRODUCTION**

Through the colonization and modernization process, the British brought in multi racial immigrants into Malaysia that resulted in the formation of a unique social and cultural background of a plural\(^1\) society that consists of Malay, Chinese, Indian and other minority ethnic groups.\(^2\) This phenomenon is the most important factor and characteristic of Malaysian modernization that prevail in its economic and housing policy since 1970.

The modernization of Malaysian housing typology is also the process of a fusion of the elements of traditional Malay houses with a variety of culture and architecture from China, India and European colonial countries. The international style trend became dominant in 1960s in the post-independence urban development. Therefore Modern housing typology in Malaysia has been developed and influenced by social and cultural exchange of various ethnic groups. As defined by Widodo (2003), the history of modern architecture in Asia was the history of how Asians had become modern due to its rapid economic development within the colonial urbanization process.

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1 'Plural society' could be defined as a society comprising two or more elements of social orders that live side by side, yet without mingling, in one political unit. This society is characterized by cultural diversity, politically organized cultural communities and the salience of ethnicity. Furnival, J.S. (1980) ‘Plural Society’ in Evers, Hans-Dieter(ed.) Sociology of South East Asia: Reading on Social Change and Development, Oxford University Press, Kuala Lumpur, quoted in Saari (1990) p3

2 The populations of Malaysia Kuala Lumpur consist of Malays (56.1%), Chinese (33.1%), Indians (10.29%) and other minority groups. MTR(Mid Term Review) of the Fourth Malaysia Plan 1981-1985, 1984
This study aims to expand the scope of housing research undertaken by Asian Research Centre for Housing (ARCH) by exploring the development of Southeast Asia housing provision. As an initial step, the research focuses on the evolution of Malaysia housing typology with the ultimate goal to understand Malaysian unique housing pattern. In order to do these, the study needs to firstly understand the evolution of the physical characteristics of Malaysia housing. In other words, the aim of the study is to understand the contemporary housing typology in Malaysia from a broader perspective, and to systematically summarize the findings in a general manner, before going deeper into specific focus of the research.

The methodologies adopted in this study are literature reviews\(^3\) and field surveys. Field surveys of housing typology in major cities of Malaysia have been carried out since 2008\(^4\) for three consecutive visits. To confirm the findings and understanding on Malaysia housing situation, interviews with local housing experts were also conducted.\(^5\)

The study was carried out in several stages. Firstly, the representative housing typologies were identified and selected through literature review and housing statistics. Secondly, interviews with experts were conducted to know how the evolution of the specific typologies have been evolved and formulated historically. Thirdly, field study was conducted to find out the representative cases for each housing typologies\(^6\). As a first step of the Southeast Asia housing research, the present housing typologies of Malaysia were identified into two major categories. The categories were based on the historical evolution of the colonial urban development that will be discussed further in this paper.

2. MODERNIZATION OF MALAYSIA

The maritime trade and exchanges with Arabs, Chinese, and Indians served as a momentum that initiated changes in Malay Peninsula from about the 5\(^{th}\) century. Due to active economic trades that centered on coastal kampong (village), these traditional villages were later developed into the early towns in Malaysia. The major towns are Melaka, Alor Setar on the west coast, and Johor Bahru to the south. Kota Bharu, Kuala Terengganu and Pekan are on the east coast of the peninsular. The main physical features of early towns were the istana (palace), the mosque and a market. However, those early towns still had rural images and can be considered as big villages.

2.1. Establishment of Early Town

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\(^3\) For the general understanding and framework of the study Chen’s Encyclopedia of Malaysia Vol.5; Architecture was reviewed. For the detailed information on each chapter, the references were as follows;
- Development of Kuala Lumpur; Gullick’s Old Kuala Lumpur
- Shophouse, URA (1995), Chinatown Historic District
- Bungalows; Jenkins & Waveney’s The Planter’s Bungalow; A Journey down the Malay Peninsula and Davison’s Black and White; The Singapore House 1898-1941
- New Town Development and Urban Housing; Saari Bin Omar’s Class, Ethnic Relations and the Unconventional Housing in Malaysia and Lee Boon Thong’s New Towns in Malaysia: Development and Planning Policies

\(^4\) 20–27\(^{th}\) January 2008, 6–12\(^{th}\) August, 2008 and January–April 2009

\(^5\) We met and interviewed a lot of local housing experts. The persons who are mainly related with this article are as follows.
- General Information: Ar. Helena Aman Hashim and Associate Prof. Ar. Saari Omar of University Malaya
- Traditional Malaysian Housing: Emeritus Prof. Ezrin Arbi and Adnan HJ. Abdullah of University Malaya and Honourable Secretary Shamsuri B. Suradi of Members Boards of Management/Representative of Kg. Baharu
- Shophouse: Ar. Lim Take Bune of University Malaya and Ar. Law Siak Hong of Perak Heritage Society
- New Town Planning: Associate Prof. Saniah Ahmad Zaki of Universiti Teknologi Mara
- New Town Development: Chief Executive Officer Koe Peng Kang of Bandar Eco Setia Sdn Bhd, Project Manager Tan Siow Chung of Setia Alam Sdn Bhd and Assistant Vice President Firdaus Shah of Sime Darby
- Condominium Architect: Ar. Zami Mufti

\(^6\) The detail case studies were not explained enough in this article. But for the next article, it will be studies according to its typology.
The three western colonial powers; the Portuguese from 1511, the Dutch from 1641 and the British from 1824 ruled the country consecutively. Throughout the colonial period, the fabrics and shapes of the town had gradually been changed. Well-aligned streets, town squares, shophouses, churches, bungalows, monastery, hospitals, palaces and administrative buildings were introduced. The colonial power has changed the style of architecture and its decorative elements that resulted in the earlier established town such as Melaka became an exhibition of various architectural styles of the colonialist.

With the British occupying Penang in 1786, it was developed as the trading post of the East India Company. As trade flourish, the various ethnic groups such as Europeans, Chinese, Indian and other sub-ethnic Malay group established their own settlement within the town center and built their unique style of buildings. British churches, Chinese temples, Hindu temples and Indian Muslim mosques appeared at the same period. The town was planned according to a planning pattern influenced by Britain colonial urban form that was developed in India. Beautiful architecture such as Classical Churches, administrative halls, hotels and bungalows were built which reflected the wealth and power of the colonial government. The religious buildings and shophouses were mostly built in the form of the eclectic classical style with various ethnic characteristics and traditions were assimilated.

2.2. Development of Capital City: Kuala Lumpur

Kuala Lumpur (KL) was established as a little inland tin mining town in the 1850s. However, within a period of 60 years, it has grown as the largest city in the Malay Peninsula. The city was developed as the collection center for tin mines along the Klang River. KL experienced rapid changes in 1880 when it became the state capital of Selangor that was previously located in Klang. The Colonialist constructed a new government building, bungalows and garrison in the European quarter on the west side of the river, and the Chinese traders constructed shophouses in the east bank. The streets in the commercial zone were laid in a grid pattern and building blocks were divided with narrow front plot. It had narrow lanes for service at the back between the shophouses that were called 'sanitary lane'. After the establishment of Sanitary Board (town council) in 1890, the sanitary and safety issues became important criteria in the development of the city. In 1896, Kuala Lumpur was made as a capital of newly formed Federated Malay States.

During the colonial period, the colonial government built European classical style buildings. However, the style were adapted and recreated in the vernacular architectural style of diverse immigrants’ ethnic architecture. The Bangunan Sultan Abdul Samad (1897), an important landmark of KL was built in a British ‘Raj’ style that was first evolved in India in the 1870s. The style was a combination of the principles of Gothic architecture, with its arches and strong vernacular lines, and the decorative features of buildings of Muslim India and the Middle East. The style also combines the grand proportions and classical symmetry of European historic buildings with the decorative Indo-Islamic features of the Mogul courts (Chen, 1998).
The important decorative elements of this building were bulbous domes with copper covering, stepped pediment topped by an ogee arch, spiral staircases of clock towers and twinned arches. To accommodate the tropical hot climate, it applied the deep verandas surrounding the buildings. Chen (1998) mentioned this eclectic architecture as a ‘Strait Eclectic’.

Important changes were made in architectures of KL in the 1920s and 1930s with strong influences of European architecture style. Art Deco style buildings were introduced to replace Strait Eclectic Style. Anglo-Oriental Building (1936), as an example, was built in reinforced concrete structure and masonry walls, had strong horizontal and vertical banding device and were plastered with Shanghai plaster. Art Deco style was applied primarily in new commercial buildings, cinemas and shophouses.

With the independence in 1957, the strong desire to define the architectural identity of a new nation brought worldwide trend of International Style for the architecture of government buildings, schools, hospitals, offices and universities. The international style of Malaysia was not much different from the globalized internationalism based on new technology and functionalism. However, modern architecture in Malaysia attempted to design a more socially and historically relevant buildings with the sensitivity to hot and humid tropical climate.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1786</td>
<td>A British settlement is established on Penang by Francis Light</td>
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<tr>
<td>1791</td>
<td>The East India Company (EIC) and Sultan Abdullah of Kedah sign an agreement on the cession of Penang</td>
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<tr>
<td>1818</td>
<td>Melaka is returned to the Dutch</td>
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<tr>
<td>1819</td>
<td>Raffles established a free port on Singapore island</td>
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<tr>
<td>1825</td>
<td>Formation of the Straits Settlements (Penang, Singapore and Melaka)</td>
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<tr>
<td>Year</td>
<td>Event</td>
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<tr>
<td>1840</td>
<td>The importance of tin increases, bringing an influx of Chinese tin miners to the west coast of the peninsular</td>
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<tr>
<td>1858</td>
<td>The Strait Settlement are passed from the control of EIC to the British government</td>
</tr>
<tr>
<td>1880</td>
<td>Kuala Lumpur becomes the state capital of Selangor</td>
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<tr>
<td>1880s</td>
<td>Large-scale expansion of the mining in Perak</td>
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<tr>
<td>1885</td>
<td>The first railway line, between Taiping and Port Wels, is opened</td>
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<tr>
<td>1890s</td>
<td>The first rubber estate are planned in Malay Peninsula</td>
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<tr>
<td>1891-5</td>
<td>Uprising by Malay chiefs in Pahang against British rule</td>
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<tr>
<td>1895</td>
<td>Johor's constitution, the first for a Malay estate, is adopted by the State Council</td>
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<tr>
<td>1896</td>
<td>Selangor, Perak, Negri Sembilan and Pahang are united as the Federated Malay States (FMS) with a Resident General in Kuala Lumpur, the capital and a High Commissioner in Singapore</td>
</tr>
<tr>
<td>1909</td>
<td>The Federated Council is established as a legislative body for the Federated Malay States</td>
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<tr>
<td>1914-18</td>
<td>World War I.</td>
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<tr>
<td>1923</td>
<td>The Labour Code makes it compulsory for estates to provide schools for the children of their workers</td>
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<tr>
<td>1941-45</td>
<td>Japanese invasion occupation of the Malaya Peninsula</td>
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<tr>
<td>1945</td>
<td>British reoccupy Malaya</td>
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<tr>
<td>1957</td>
<td>The Federation of Malaya was granted independence from the British government</td>
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<tr>
<td>1962</td>
<td>The formation of Malaysia with the incorporation of British North Borneo territory of Sabah and Sarawak</td>
</tr>
<tr>
<td>1965</td>
<td>Singapore leaves Malaysia and becomes an independent nation</td>
</tr>
</tbody>
</table>

2.3. New Town Development

The trial to modernization of Malaysian architecture gave a significant implication to the urban planning. The new township development started with Petaling Jaya (PJ) as a satellite town at the pre-independence period. It was designed to relieve the concentration of population of Kuala Lumpur resulting from the post-war economic recovery, and to resolve the problem of illegal squatter settlements that have grown rapidly due to rural-urban migration.

PJ was designed in accordance to the British town planning principles (Lee Boon Thong, 1987). The township was a complex of residential, industrial and commercial purposes, government buildings, public and religious facilities, and other uses. A variety of housing typologies such as walk-up flats (limit of 4-story in height), detached houses (also known as a bungalow), semi-detached houses and terrace houses were built. The houses were mostly built with pitch roof and wide openings to facilitate cross ventilation similar to the vernacular houses. However, the houses were built in a simple modern style using reinforce concrete structure rather than load bearing structure. The commercial buildings in this new township were mostly built according the shophouse plot pattern but in the simple style of the modern architecture. Bigger lot sizes were allocated in Industrial zones for new factories and warehouses.

Similar planning principles and building designs of PJ were adopted in later development of other suburban areas of KL in 1970s. The most well known projects were Subang Jaya, Taman Tun Dr. Ismail, Taman TAR, Bandar Utama, Bandar Sunway and Cheras in Klang Valley. These townships were designed to provide mass housing for the middle-class population that has increased rapidly during the export-substitute industrial development of post-independence period. The planning of these townships was not much different from PJ's whereby similar housing typologies were applied. However, the housing styles were much more sophisticated and seemed like an exhibition field of new housing prototypes.
Based on the literature review and interviews with local housing experts in Malaysia, the typologies of modern housing in Malaysia can be classified into 2 categories. The first category is the one that derived from the “transformation of traditional housing”. With the arrival of the colonialist and the new ethnic groups, they brought their own housing styles and adapted it to Malaysian vernacular material and customized it to the tropical climatic condition. The example is the shophouse that was brought by the Chinese immigrants from the south coast of China and transformed into the Malaysian housing of early town. The bungalow was another typology built by the colonialist that combined the Malay traditional timber house with the characteristics of the European villas.

The second category is the “modern urban housing-type” resulted from rapid economic and urbanization process after the independence. Modern urbanization emphasized the maximum utilization of land. To accommodate new social and economic needs, the new typologies were developed in the various forms of medium and high-density housing typologies within the new townships. Walk-up flats, apartment, detached houses, semi-detached houses and terrace houses were developed in the architectural style of international functionalism modified for the tropical climate and using new materials and technology.

3. TRANSFORMATION OF TRADITIONAL HOUSING

There are two type of architectural form that makes up this category i.e. the shophouses and the colonial bungalows. The definitions of this category of housing was derived for the prevailing urban house forms that make up the early colonial towns and has its root in the vernacular architecture of the indigenous Malay population. For the new immigrants that populated the early towns the basis of their architecture were from the shophouses typology of the south coast of China. For the colonial administrators and official, the detached house derive from India Bengal area was the preferred choice.

3.1. Shophouse

The shophouse is a unique urban housing form found in Southeast Asian colonial cities. Typically, shophouses consist of shops on the ground floor which open up to a public arcade or "five-foot way", and which have residential accommodation upstairs. The shophouses would abut each other to form rows with regular facade, firewalls and adherence to street alignment.

The shophouses have a narrow, small-scale terraced structure that provides business for a ground floor and residential purpose for an upper floor. Shophouses were built in rows with uniform facades in grid pattern networks of roads and back lanes. Elongated with a narrow frontage, the standard width of the building ranged between 4 and 6 meters, and the depth ranged at least 2 to 3 times longer than the width. The shophouse is generally two or three story-high. There are masonry party walls between units to prevent fire. Internal courtyards (air wells) and jack roof provided natural ventilation for the house. The street facade of the ground floor has continual arcades, what is called the 'five-foot way' for the sake of regularity and conformity and they provide a shelter for pedestrians from the hot sun and torrential rainfall.

The derivatives of the shophouse were the elongated Melakan townhouse. Although a shophouse was analogous in an architectural style, a house without shops like in case of Melaka could be classified as a townhouse. The archetype of shophouse was originated from Chinese immigrants who came from the southern coastal provinces of China in the 19th century, and it became a common housing
typology in early towns. The early Malaysian shophouse started from the colonial town of George Town in Penang.

The shophouse was originally constructed with timbers and attap roofs. However, after a big fire in KL in 1881, the shophouses were required to be built with bricks party walls and tile roofs. The decorative style that appeared on the facades of shophouses evolved chronologically according to the influence of the design style in Europe, such as Neo-Gothic, Baroque and Neo-classical, Dutch Patrician, Art Deco and International Style. However, the style could be adapted by ethnic or personal taste, fashion and technological circumstances.

Figure 3. Shophouses, Jalan Nogor in Penang

3.2. Bungalow

The word, 'Bungalow' is derived from Bengal house that is found in India. It means a timber structure with a thatched roof and a veranda (Chen, 1998), while King (1995) defined 'Bungalow' as a peasant's hut in rural areas of Bengal in the 17th century India. The prevalent meaning of it is a detached house with one-story that aims to offer leisure or to be a holiday house. The meaning varies depending on ethnic, cultural and political circumstances. In Malaysia, the British colonist who used it for spacious homes or official lodgings of officers and planters originally made the term bungalow popular. It is now used to refer to a detached, single-family residential dwelling usually of two to three stories with its own compound.

The early usage of the word ‘Bungalow” in Malaysia is found in Francis Light's testament of 1793 that “he would leave his Garden House and Bungalow in George Town to his wife” (Chen, 1998). The commercial agriculture (e.g., rubber, coffee or tea plantation) was reinvigorated at that time, and the word, 'bungalow' had always been a common term for any staff's house on the estate. The bungalow was named "Garden House" or "Planter's Bungalow" at that time. Bungalow was also named "Colonial Bungalow" which functioned as dwellings for government officials (Jenkin & Waveney, 2007).

The typical Malaysian bungalow is a spacious, airy, detached, two-story house constructed with timbers or bricks. The facade of bungalow has full-length windows with molded reveals, timber shutters and balustrade rails. These features were derived from the vernacular Malay timber house that was adapted to hot and humid climates. The early immigrants who indigenized the various housing traditions from their hometown to various urban centers of Malaysia also developed these bungalows.

The oldest bungalow in Penang was built in early 1800s, adopting the Anglo-Indian Style that was characterized by combining the European and the Asian Style. The ground floor was built with bricks
and the upper floor was built with timbers. The walls of upper floor had full-length windows with louvered and paneled shutters for ventilation. The steps or staircase connected directly to the upper floor, which was similar to a feature of vernacular house. It can be called Indo-Malay or Jawi Peranakan Style.

Figure 4. Indio-Malay Style Bungalow, Jalan York in Penang

From the late 19th to the early 20th century, many luxurious bungalows were built for wealthy immigrants in early towns. This style was called ‘Strait Eclectic’, due to the combination of the Chinese, Malay, Indian and European architectural styles (Chen, 1998). The various styles were built from the memories of immigrant builders and adopted from pattern books. Bungalow is also another typology that shows how vernacular timber houses were transformed into a new dwelling typology that is suitable to hot and humid climate.

Figure 5. Teh Bunga’s House with Strait Eclectic Style at Lorong Hutton, Penang

4. URBAN HOUSING TYPOLOGY

With the rapid post-independent urbanization of all major cities in Malaysia, the government under different five-year development plans, attempted to provide sufficient housing for all income groups. The provision of house types is divided into three broad categories i.e. low-cost, medium-cost and high-cost housing. Medium and high-cost housing is entirely produced by the private sector. Low-cost housing is mainly provided from government housing programs. The housing regulation requires private developers constructing new housing development to allocate 30 percent of the units as a low-cost housing for the poor as defined by the government and allocated through the government agencies (KLSP 2020).

Since the scope of this study is to find out the representative housing typology, the housing supply, delivery and distribution issues were excluded.

7 Who is half-Indian and half-Malay child.
8 Chen (1998) defined the bungalow that was built from late 19th and early 20th century as a "mansion". But in the light of meaning of 'a detached house', it can be classified the same as bungalow.
9 KLSP 2020(Kuala Lumpur Structure Plan 2020) is the planning discipline of the local authority to explain the vision and goals for the development. It proposes the policies and regulations for economics, land use, industry, transportation, housing and environment of administrative district.
According to the recent statistics, illustrated in Fig. 4, the most common housing typologies are terrace house (40%), flat (19%), detached house (10%) and semi-detached house (6%)\(^\text{10}\). Typically, terrace house is a medium-density housing style that exists within a row or cluster of identical structures that share sidewalls. The adoption of terrace house style in Malaysia came during the early days of British colonization when housing provision on economy of scale required. Similar to British terrace house design, the layout for the Southeast Asian variations see living quarters on the front and top floor, with the kitchen at the back. Terrace house design is the most popular form of houses in Malaysia, although contemporary design sees more emphasis on air circulation and inner courtyard to accommodate the humidity of local weather.

### 4.1. Medium and Low Density Housing

The medium and low-density housing is generally developed based on the new township planning principles. Commercial and public facilities, schools and mosques are located in the center of the town. Streets were systematized in a grid pattern with main roads and feeder roads. The planning layout consisted of housing blocks. In general, each block consisted of one typology of house i.e. one block for terrace houses and one for detached houses or semi-detached houses. The house lots in a block were linearly divided and service lanes were placed in between linear lots. Figure 7, the layout of the new township of Setia Alam the with housing blocks layout can be clearly observe to illustrate the above statement.

\[\text{Figure 7. Town Plan of Setia Alam, KL}\]

**Detached House**

\(^{10}\) In Fig. 6, there is a category of low cost house. But the scope of this study is to find out the representative housing typology. Therefore the housing supply, delivery and distribution issues were excluded.
The word of detached house means a single unit of house built of reinforced concrete structure with bricks infill walls, and surrounded by its own garden. It is generally known by local people as a bungalow. It may be single or multiple stories in height. If it is more than 2 stories, there is a living room, a kitchen in the ground floor, more than 4 rooms in the 2nd and 3rd floor, and well-arranged parking lots and landscapes garden. The minimum lot size for this type is 360 square meters. There are many varieties within this typology according to the size of lots, the built-up area, and the scale of housing and the extent of facilities. New bungalows are developed as a gated community that are equipped with a security system and convenient facilities and shared amenities.

**Terrace House (Link-House or Row-House)**

The terrace houses are the most prevalent housing typology in Malaysia and constructed linearly linked in rows, sharing common bearing walls and can be in the form of a single or multiple stories. It is also known as a ‘link-house or row-house’. The extent of each row cannot exceed 96 meter according to fire department regulations, so a maximum of 16 houses can be constructed in a row. The width of the individual unit is more than 6 meter for high-cost housing and 4.3 meter for low-cost housing. Normally, the built-up area of each unit is 130~170 square meters. For low cost house, the minimum built-up area is 50 square meters (Saari, 1990).

The plot size of the end unit is bigger than the intermediate units in the middle of a row. Design and planning of a unit are nearly monotonous due to the limitation of space and for economic of scale. Typically, there are a combination of living and dining space and a kitchen on the ground floor. On the second floor, there are the main bedroom at the front and two bedrooms at the back. These restricted planning often resulted in the extension of buildings into the setback space by the owner in order to increase the living space. One local expert explained that this phenomenon was regarded as a resident’s freedom of self-transformation and also showed one of the reasons for the general preference for terrace house.

**Semi-detached House (or Duplex House)**

The semi-detached house is two units of houses sharing one bearing wall, with each having a part of the garden. It is generally called ‘Semi-D’ in local term, and it combines the benefit of a detached house and the effectiveness of land use of a terrace house. The minimum lots size of a semi-detached house is 288 square meters and is built in the form of a 2 or 2.5 story building (Saari, 1990). Semi-detached houses are generally classified as a medium to high-cost house with a minimum of 3 bedrooms, 2 bathrooms, a kitchen, a combined dining and living space with 1 utility room at the ground floor. In recent development, this type of houses tends to share the bearing wall back-to-back rather than side-by-side. This type of arrangement, if viewed from the main road, will give the appearance of a detached house or a bungalow.

<table>
<thead>
<tr>
<th>Table 2. Middle and Low Density Housing Typology</th>
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<tbody>
<tr>
<td>(Setia Alam and Setia Eco-Park Town, 2008)</td>
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<table>
<thead>
<tr>
<th>Typology</th>
<th>Detached House (Bungalow)</th>
<th>Terrace House (Link House)</th>
<th>Semi-Detached Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plot Plan</td>
<td><img src="image1" alt="Detached House Plan" /></td>
<td><img src="image2" alt="Terrace House Plan" /></td>
<td><img src="image3" alt="Semi-Detached House Plan" /></td>
</tr>
</tbody>
</table>
4.2. High-density Housing

High-density housing is a recent phenomena in Malaysia where the increase in land prices require the developer to maximized units numbers on a plot of land. It was also encourage by the government with the introduction of Strata Title Act of 1985.

Cluster House (Quadrant Double Story House or Cluster-Link House)

Cluster houses typology is basically a much higher density row or link houses where the two row houses are butted together thus eliminating the back lane in order to achieve maximum unit numbers of more than 123 units of a house per hectare. It is also known as 'cluster-link double story house' or 'quadrant double story house' (Saari 1990). This typology can be classified as a cluster of four units of houses attached together regardless of density and sometimes, with an internal circulation space or breezeway in the center. It can also be understood as an application of 'Semi-D' in more high-density setting to provide a low-cost housing.

The cluster house is not a common typology\(^{11}\). It was developed as a pioneer project by the architect Tay Kheng Soon in Cheras, KL in 1976. The government planned to build houses for low-income group in an urban area costing not more than RM5,000 per house, which was a very low price at that time. Total households were 676 and the density was 60 units per acre. The houses are 2 stories and in back-to-back clusters of four units around 2.5 meter wide 'breezeway’ in the center (refer to Figure 8). The ground floor consists of a living, dining, kitchen and bathroom. The first floor consists of two bedrooms.

\(^{11}\) It constitutes 1% of houses built as in Fig.6.
However, in a recently developed township in Setia Alam (2008), this typology was being applied again but for high-cost housing.

**Flat / Apartment House**

Flat is generally defined as a walk-up four-story housing block (without lift) or a high-rise housing block equipped with lifts. Flat is developed as a high-density housing type for low-income people. It is a mass housing mostly provided by government agencies such as City Hall of Kuala Lumpur and equipped with basic facilities for the community. There are not many differences between a flat and apartment in the aspect of housing typology. However, flat is regarded as low-cost housing with a maximum floor space of 60 square meter, whereas apartment is considered as medium-cost housing with an area above 60~80 square meter (Saari, 1990).

**Condominium**
The Condominium is basically a “gated and guarded” mass housing typology and very popular among higher income urban dwellers who demanded better living condition, more privacy, security and crime prevention features with high quality finished. From the viewpoint of housing typology, a condominium is similar to an apartment. But the prevalent meaning in general is a higher cost urban mass housing with shared facilities and amenities provided by the private developer.

In the 1980s, the general types of condominium were developed as a 3 to 4 story flat-type building with well designed landscape and facilities. However, as land price escalated, medium and high-rise condominium are more prevailing in the 1990s and 2000s. The medium-rise (less than 10 story) apartment type equipped with shared facilities such as outdoor swimming pools, barbecue equipment, tennis courts, gymnasium and so forth were built in the fringe of the city. Some condominiums were built together as a complex or located nearby shopping malls, offices, or hotels. The high-rise, skyscraper type of condominium is usually located in the premium district of the city. Recently there have been many high-end condominium projects under construction in the prime area around the Petronas Twin Towers, KL.

The characteristic of a condominium unit in Malaysia is not much different from the globalized unit that was planned for an international life style of an expatriate in another country. However, the units were designed with consideration of local tropical climates, culture and lifestyles of Malaysian. Cross-ventilation is the most important issue in designing a condominium or apartment unit. The corridors were open for natural lighting and air-wells were provided between corridors and units to achieve desired comfort level. Windows facing the corridor are designed with blinds, so as to provide visual privacy when it is opened. Utility space is opened to air-wells to dry laundries and provided ventilation for all the internal bathrooms. Figure 11 is a typical example of the layout of a condominium project.

Figure 11. Villa Pavilion Condominium, Serdang (Top Left) with air-well along the corridor (Top Right) Designed by Zaini Mufli Architect, 2007
5. CONCLUSION

As part of an on-going research in Malaysian housing, this study explores and identifies the evolution of urban housing typologies by understanding the urban development of Malaysia colonial cities through analyzing historical writings, more precise statistics, literature reviews, and interviews with housing experts. The main outcome of this study summarized that the typologies of modern housing in Malaysia can be classified into 2 categories. The first category is the ‘historic housing prototypes’ developed in the early part of the 20th century from the colonial influence and the migration of various different ethnic groups. The most representative examples for this category are the shophouse and the bungalow.

Second category of Malaysia housing typology is the ‘modern urban housing prototypes’ that was developed with the rapid industrialization and urbanization in the post-independence period. Mass housing typologies were needed and developed to provide housing for the rapidly increase urban population with an escalated land prices. The low-density housing such as detached-house, terrace-house and semi-detached house were developed in the 1960s and 1970s with the establishment of suburban townships that was based on the British town planning principles. High-density flat, apartment and condominium are typologies of the international style architecture that was introduced in the 1980s and 1990s together with the development of new material and technology.

The current housing development in Malaysia is driven by the rapid economic development of the country as part of the globalization process. Unfortunately the vestiges of traditional shophouse disappear gradually from the historic city centers. However, comparing with other high-density global cities, Malaysia is still able to keep the socio-cultural value of low and middle-income community that has benefited from, eco-friendly and community-friendly urban mass housing development.

This study is the first step of the Southeast Asia housing research undertaken by the Asian Research Centre for Housing (ARCH) group of Kyung Hee University. Through the broad understanding of general typologies of modern housing, future research will continue and will go deeper to understand unique life patterns inside each housing typologies.

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