

Challenges of implementing Sustainability in Malaysian Housing Industry

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ABSTRACT: Housing industry is one of the main drivers in nation development. The Malaysian government is actively promoting policies to ensure quality and affordable houses to all nations. Thus, this scenario shows that sustainability is becoming prominent in Malaysian housing industry. This concept was recently introduced in Malaysia; however, there is a lack of interest among industry stakeholders. This paper discusses a research that identified the challenges of implementing sustainability in Malaysian housing industry by, firstly, understanding the issues related. Semi-structured interview approach is employed to few housing developers in the southern region of Malaysia due to the concept is still new and fewer implementations in the industry. Through the interviews, industry stakeholders provide their different views on the barriers of implementing sustainability and strategies to promote sustainable housing in Malaysia. Findings of the interviews help in increasing awareness of industry stakeholders about the importance of sustainable concept in housing development.

1 INTRODUCTION

Houses are known as the built assets that consume natural resources and cause negative impact to the natural environment. The position of houses, building materials, occupancy demands, energy and water consumption contributes to major environmental implications (Said et al., 2010). According to Zakaria et al (2009) these negative environmental impacts are air pollution, water shortage and deterioration of the ecological system. This situation is due to uncontrolled development in housing growth (Bakar et al. 2009).

Malaysia is a developing country which heading toward industrialization. A good and comfortable housing area is necessary for all Malaysians. Sustainability initiatives in housing development have been introduced and highlighted by the governments recently. However, present law and legislation give more focused on physical development of housing rather than social and cultural aspects (Said et al., 2010). Most of the policies or programs in housing concerns in affordability rather than sustainable development. Therefore, there is a need to promote sustainability in housing development to cope with environmental problems in Malaysia.

According to Ofori (2007), Singapore and Australia are putting great efforts and incentives in sustainable housing development. However, the implementation of sustainability concept in housing development in Malaysia is still in early stage (Abidin, 2009). This problem is due to the lack of knowledge among industry stakeholders in sustainable housing development. Lack of government incentive is also one of the problems that hinders industry stakeholders to implement this concept as profit margins are still the main agenda for housing development (Alias et al., 2010). Hence, there is a need of this study to identify the challenges of implementing the sustainability concept in housing development in Malaysia.

2 LITERATURE REVIEW

Sustainability is still a relatively new concept in most developing countries, including Malaysia. Most of the industry stakeholders such as contractors, developers and architects do not understand the benefits of sustainable development; therefore, the driving of its implementation in the housing sector is limited.

Lack of knowledge and expertise is another hindrance to implement sustainable development (Williams and Dair, 2007). Most of the parties in construction have no expertise in sustainable housing design. In addition, another reason is the shortage of professionals and tradesman with the appropriate qualifications, skills and experience in this area.

Another barrier of implementing sustainable development in housing is lacked of sustainable materials, method and technologies (Shafii et al., 2006). Although the government promotes sustainable housing development in Malaysia, but some of the sustainable materials and technology used in a sustainable house cannot be obtained in Malaysia. For example, technology used to build low-flow water system and grey water recycling system is from overseas (Alias et al., 2010). These sustainable materials needed to be imported from foreign countries. This can significant increase the price of a sustainable house if compare with conventional house.

Besides, another barrier is higher cost of sustainable building option. Findings from existing studies indicate that only large developers are beginning to take heed towards sustainable implementation in their projects. Strong financial due to the higher costs need to implement the sustainable development in building (Shafii et al., 2006).

Malaysian government is putting great effort in promote sustainable development, yet there is still lack of incentive given. Policies and regulation in Malaysia do not show must interest in incorporate the sustainable concept in housing development. Inconsistent government incentives are also constraints to the adoption of sustainable housing development.

3 METHODOLOGY

This research employs a qualitative approach to identify the challenges of implementing the sustainability concept in housing development in Malaysia. A qualitative interview aims to understand the world from the subjects' point of view and to unfold the meaning of people's experiences (Kvale, 2007). The interview was guided conversations rather than structured questions (Yin, 2009). It is the conversation where knowledge is produced through the interaction between interviewer and interviewee.

Steps involved in conducting interview in this study are:

3.1 *Step 1: Designing interview*

In this study, the 'blueprint' of the interview consists of four problems: what question to study, what data are relevant to the sustainable housing concept, what data to collect, and how to analyze the result.

This study employs semi-structured interview. The interviewees are developers, contractors and architects involve in the sustainable housing project, aiming to identify the challenges of implementing sustainable housing development in Malaysia.

Besides, through this type of interview, it can probe or ask more detailed questions in which the barriers to implement the sustainable housing concept. It also enables the researcher to explain or rephrase the questions if respondents are unclear the questions.

3.2 *Step 2: Design Questions*

The design of the questions in this semi-structured interview reflects the sustainable housing concepts that are embedded within the research question of the study. The coherence between the research questions and interview questions was checked to ensure its validity. To refine these questions in the semi-structured interview, a pilot study was accomplished with three industry experts. This resulted in several improvements and changes to improve participants' understanding of the questions.

3.3 *Step 3: Data Collection*

The population of this study consists of all the developer's companies around the Johor Bahru areas. A carefully drawn sample is a basis for estimating population parameters. After getting the developers list from Malaysian Real Estate and Housing Developers Association, the sample of the study is identified. Out of a total of 60 developer's company in the Johor Bahru areas (Southern Region of Malaysia), five developer's companies were the main focus of this study due to their implimentation of sustainable de-

velopment in housing projects. Ten interviewees are selected in this study due to the sustainable concept is still new in Malaysia and less implementation in this country. Thus, this study focuses on the key players who involve directly in the sustainable housing project, including contractor, architect, and developer.

3.4 Step 4: Analysis Data and Writing Report

In this study, data analysis of the rich resource is based on examining, categorizing and tabulating evidence whether the evidence supports the objectives of the study. The data collected from the interview was analysed using content analysis. The data which analyzed is written into the report.

4 DATA ANALYSIS AND DISCUSSIONS

Table 1 shows the details of the barriers to implement sustainable housing concept in Malaysia:

Table 1: Different Barriers to Implement Sustainable Housing Development

Barriers	Annotation
High cost of sustainable housing	<p>“Higher cost of sustainable technology...” (R2& R6)</p> <p>“Sustainable materials are more expensive than normal construction materials...” (R1, R3, R7and R9)</p> <p>“Buyers are not interested in sustainable housing due to it higher prices...” (R3, R4, R5 & R10)</p> <p>“People think twice to put extra money for sustainable design...”(R8 & R10)</p>
Lack of awareness and understanding	<p>“Many stakeholders do not understand sustainable housing concept...” (R5, R7 & R10)</p> <p>“Buyers do not feel it is necessary to implement sustainable or green concept in their houses...” (R2 & R3)</p>
Lack of expertise and technology	<p>“There is no expertise in sustainable design...” (R3)</p> <p>“Construction industry in Malaysia depends on foreign workers...”(R6 & R7)</p> <p>“Green technology need to import from other countries, it is difficult to get in Malaysia...” (R8)</p>
Lack of enforcement	<p>“There are no any regulations or laws to implement sustainable housing concept...” (R1-R10)</p> <p>“Governments do not set rules to use sustainable concept in housing...” (R2)</p> <p>“Housing design plans need to take longer time for planning approval; it is a waste of time and money...” (R5)</p>
Lack of training and education	<p>“Academician do not emphasized on sustainable development as a core subject...” (R1, R5, R8 & R10)</p> <p>“Companies are not willing to provide training in sustainable skills...”(R2 & R3)</p>
Lack of commitment from organization	<p>“We feel comfortable with the way we work now, and we don’t like to take on additional jobs or responsibilities, we don’t like new changes...” (R4 & R9)</p>
Lack of requirement and demand form stakeholders	<p>“Limited suppliers of sustainable materials...” (R1 & R6)</p> <p>“Developers are not interest to participate in any unfamiliar development ...” (R3 & R10)</p>

4.1 Higher Cost of Sustainable Housing

All the interviewees stressed that the cost to build a sustainable house is more expensive if compared with conventional house, it is cost around 40% higher than normal. They believed that sustainable housing development is economically non-viable. Sustainable housing concept can increases project cost because they need to have higher capital upfront. For example, solar panel system is not implementing in the housing project due to the high installation cost of this system.

Moreover, sustainable materials are difficult to obtain in Malaysia. Prices of sustainable materials such as low volatile organic compounds (VOC) paints are higher than normal paints. Sourcing sustainable technology is difficult and expensive. All developers aim to maximize the profit and not willing to waste any money in this concept. Client would only adopt sustainable features that would lead to immediate payback.

The interviewees mentioned that developers always emphasized of the instant payback rather than the return in a long run. Sustainable housing can save long run costs, but developers are not getting any benefits from it. Additional cost is caused from many aspects such as the higher purchase costs of technology, the learning curve cost, and employing skilled labor for the sustainable project.

4.2 Lack of Awareness and Understanding on Sustainable Development

Sustainable housing concept introduced in Malaysia many years ago, but the development of sustainable development is still in an infancy stage. Many stakeholders in the construction industry are not aware of this concept.

In addition, there is also the low level of understanding about the topic and benefits of sustainability among construction professionals. It is found that only large developers in Johor Bahru area take heed toward sustainable implementation in their housing projects. Due to the limited understanding and the budget constraint, many developers are still reluctant to incorporate this concept in their projects.

Another barrier is due to low awareness of societies in sustainable concept. The demand for sustainable house is low because the societies are still preferred to buy a conventional house since the price is cheaper. Many residents are not caring about the benefits of sustainable houses, and they are not willing to pay more. They do not feel the necessity to incorporate any sustainable concept in their houses because Malaysia has been abundant with natural resources such as water, oil and energy. Thus, there is the lack of urgency of this issue.

4.3 Lack of Expertise and Technology

The construction professional faces a lot of barriers when developing sustainable house in Malaysia. One of the barriers is lack of technology in Malaysia. Some of the green technology and materials are difficult to obtain in Malaysia. For example, technology used to build solar panel and the grey water system needs to import from overseas. As a result, it increases the difficulty to develop sustainable housing. Lack of expertise on sustainable design is one of the barriers of implementation sustainable housing development. Sustainable housing requires another area of sub-specification for architects and engineers. Most of the designers and architects are short of knowledge and experience in this area. Hence, the understanding of this concept is limited and takes longer time to learn and design sustainable houses. The limited numbers of professionals who are expert in this concept prohibit the company to incorporate this concept in their project development. They are lacking of expertise that can give effective suggestions and advise of sustainable housing design.

Labor shortage is another important barrier that leads to the implementation of sustainable housing development. Employers are facing difficulties in finding qualified people to undertake certain jobs in the projects. Sustainable technologies and practices keep changing and different from the previous skills. Thus, the precious satisfactory skills workers are not longer adequate on this new sustainable skill.

4.4 Lack of Enforcement

Sustainable development concept was introduced in Malaysia since many years ago, but the parties in the construction industry are still less focused on this concept. Public policies and regulatory framework do not encourage the sustainable housing development in the construction sectors. Local authority only enforces the developers to install rainwater harvesting systems in the semi-detached house and condominium. Although the Malaysian government has to take initiatives to encourage sustainable housing development, there is still the lack of enforcement and monitoring of laws and legislations.

Although Green Building Index has been introduced in Malaysia as a benchmark for energy efficiency and others sustainability criteria, but most of the developers refuse to refer to this assessment guideline in project development. They mentioned that most of the parties in the construction industry are not caring for this sustainable housing concept due to the government policies keep changing and makes them con-

fuse about the industry's real condition. Thus, they are not willing to take a risk to implement an unconfident concept in the housing development.

Besides, most of the development plans take a long period of times to gain the approval from local council. This causes the industry stakeholders reluctant to implement this sustainable housing development. Normally, process to obtain approval for sustainable housing development is complicated, thus the developers are not willing to waste the time and money in implementing this concept.

Lack of Training and Education

Through this interview, interviewees mentioned that less education within the stakeholders in sustainable development is one of the main barriers of implementation sustainable housing concept in Malaysia's housing industry. Environmental issues were not pertinent and were not given a priority in education since many decades ago. Hence, most of the stakeholders in the construction industry are facing the problems to implement this concept in their project.

Education of the stakeholders about sustainable development is still at the low level. The main factor is because the sustainable designs are not studied while they were at university. As a result, they are reluctant to incorporate this unfamiliar concept in their housing development.

Deficiencies in training of sustainable technology make it difficult for those employees who are interested in this new technology to attain the necessary skills. Due to the sustainable and green technologies that being introduced is always something innovative, it causes the lack of understanding among the employees regarding the technical specifications and operation of the technologies.

4.6 Lack of Commitment from Organization

According to the opinion from interviewees, construction industry is well known for its diverse, conservative and short term nature. This industry often underperforms in terms of time, cost and quality. Most of the construction companies are familiar in using the traditional concept for housing development. They have not prepared to use inadequate, unfamiliar and unreliable sustainable concept and materials. They mentioned that implementing sustainability is inconvenient and cause a project to exceed the contract period. They are not willing to pursue any new changes in their policies, goals and objectives.

Lack of organizational commitment is another barrier to implement the sustainable housing project. Construction organization is the body that governs the actions towards sustainable movement. To incorporate the sustainability agenda in an organization, it should be included as one of the core business objectives to ensure it is taken seriously. With sustainable movement as top priority, all actions within the organization, including managing resources and formulating policies, rules and strategies are focused on achieving that goal.

4.7 Lack of Requirement and Demand from Stakeholders

Stakeholders in construction industry usually involve a diverse range of individuals and organizations, which including clients, governments, contractors, architects and the community. Lack of implementation of sustainable housing development in Malaysia is because the stakeholders are not putting sustainability as their priorities in their decision making. Lack of market and demands from the community also has been identified as a major obstacle to implement the sustainable housing concept.

The population of the developers is also one of the reasons that discourages the implementation of the sustainable housing project in Malaysia. This population ranges from large-scale to small and medium-scale companies. The numbers of the small and medium-scale company are more than large-scale companies. The parties that are currently interested in sustainable practices are well-established big companies that have large capital in hand. Small and medium companies are still not ready for this paradigm shift.

It can be said that there are still many barriers prohibit the development of sustainable housing in Malaysia. The main reason is the high cost for building sustainable houses. As a result, many companies do not have a strong financial background to build it. Low and medium income groups are not afforded to buy sustainable houses due to expensive prices. The lack of involvement of government in providing incentives enhancing policies and regulation is also the main hindrance to the implication of sustainable concept in housing development.

5 CONCLUSIONS AND RECOMMENDATIONS

Housing development can be more environmental and social friendly, if with the consideration of sustainability. Different criteria of sustainability need to incorporate in housing developments to allow future generations to be able to meet their needs. To date, this research found that the implementation of sustainable housing development in Malaysia is in a sluggish level. According to them, there are still barriers that needed to address before improving the overall involvement of industry stakeholders in pursuing sustainability. Relevant authorities should provide sufficient initiatives to encourage more efforts in applying sustainability concepts. Therefore, it is not a practice of a single party; involvement between the nations is crucial to sustain quality of life.

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