[CON 16] GREEN CONSTRUCTION SERVICE MANAGEMENT FOR COMMUNITY WELL BEING SOLUTION: AN EDUCATIONAL SERVICE PERSPECTIVE

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ABSTRACT

The green construction as well as green building’s sustainability depends on the future generation’s knowledge and participation of the community, including with understanding the consequences of individual behavior. Green Construction industry aims to enhance win-win situations among societal, environmental, and economic values. These win-win situation measure into three parts, namely sustainable construction, building, and planning. However, there is a lacking that, how the mentioned three parts can work together in improving societal, environmental and economic values. Therefore, our hypothesis that, there is need to make a beneficial relationship between service providers and recipients. In this research, we develop a relationship system framework amongst three parties which is construction industries, educational service provider, and end users considering as recipients in the view of academic service. The data are collected thorough interview method and explained it by descriptive analysis. This research can help with overcoming the environmental challenges and enable it to succeed in the educational service by ensuring well-being value through knowledge and resource co-creation.

Keywords: green buildings, construction, educational service, awareness, community, value creation

INTRODUCTION

Green building is a holistic concept that starts with the understanding of building environment and it has profound effects, both positive and negative, on the natural environment, as well as the human-life. The green building is generally accepted as the planning, design, construction, and operation of buildings with several contemplation such as an energy system, water system, indoor environmental quality, material section and the building’s effects on its site. However, the main purpose of green building is to provide beneficial services aimed at protect environment and improve quality of human life. Now a days, Malaysia is focusing to increase the efficiency of resources using such as energy, water, and materials. While reducing building impact on human health and the environment during the building’s lifecycle, through better siting, design, construction, operation, maintenance, and removal. Green Buildings should be designed and operated to reduce the overall impact of the built environment on its surroundings. Thereby ensure benefits for recipients and increase life quality as social well-being solution.
Thus to build a green building, it is essential for construction firms, to know the benefits toward surrounding environment, users expectations, and their operational knowledge. In addition, construction company should share their skills, technology, and expertise to recipients regarding the benefits of using green building which are save energy and resources, recycle materials, and minimize the emission of toxic substances throughout its life cycle etc., and same time about its right utilization through beneficial relationship amongst construction company, service providing organization, and recipients as well as community. Green building practices involved environmentally action and resource efficiency to sustaining and improving our quality of human life and maintaining the capacity of the ecosystem at surrounding area

Problem statement
It is stated that, the beneficial relationship making is important for getting well-being solution oriented outcomes from green building. Nevertheless, there is no enough practice to determine recipients’ value by the service providers. The service providing companies’ are only thinking about the delivery of scheduled products to their customers. Though, the service providers do not realize that, is it really making value for recipients or not. Therefore, to justify the true customer’s value and meeting market demands in the aim of sustaining their business, they need to make a relationship system with recipients. As, there are few research regarding beneficial relationship among service providing organization (e.g., UUM), collaborative industries (e.g. construction firms) and end user or community (e.g., students, staff) in the viewpoint of green field. Hence, the main purpose of this article is to highlight and identifying the relationship among construction firm, educational service provider and end user to implementation green building in Malaysia and addressing the awareness of the government and involving responsible others parties.

As a result, all parties can stay in link and share knowledge for on-time solution to recipients in the aim of improving life cycle, increasing quality of human life, and maintaining the capacity of the ecosystem. According to the problem statement, we designed our research with the objective of developing a relationship system framework amongst three parties namely; construction industries or company, education service provider (UUM) and end user (student and staff). In addition, to translate our main goal, we need to meet the following areas as well;
1. To blend resources amongst collaborative partners for meeting designed common goal
2. To involve construction industries to aware the education services towards the future benefits regarding green building.
3. To send the right message about green building among education service providers about betterment of benefit to our surrounding and maintaining ecosystem in UUM
4. To examine the feedback of end user about the green building towards their satisfaction as a user of the green building rather than the existing building.

LITERATURE REVIEW

In this section, we explore the literature to examine the beneficial relationship in making important for getting well-being solution oriented outcomes from green building. As a new field, campus sustainability does not have a long tradition of robust empirical research, article and books most explain the implementation of environmental
sustainability efforts in education service perspective (Corcoran & Wals, 2004; Wright, 2010). This literature will view part of an educational service perspective in green constructions. Building a relationship through system framework amongst construction industry, education service and end user that can exemplify the intersection of green buildings to reduce the ecological footprint of the built environment, produce healthy, vibrant places for people to live and work then make sound economic sense by reducing the cost to operate and maintain these spaces (U.S, 2009). Increasingly, universities campus are the primary place where student will be a role for future leaders to provide with the information, tools, and skills needed to secure long term well-being for community in this world. Educational service plays a unique and critical role, in making a healthy, and sustainable society within a stable climate a reality. Students will be a professional people to develop, lead, manage, teach, work in and influence society for implementing green building in our daily life. Progress activities to implementing green building in campus operation has grown at an even faster rate. Education service already aware this sustainability like has create a lot of programs for energy and water conservation, renewable energy, waste minimization and recycling, sustainable building and purchasing, alternative transportation (public transportations), green (organic) food growing and local purchasing. Unluckily, education service have their own ways for educating their students about sustainable building, but these resources are not being fully utilized.

Buildings and communities are very important foundation in increasingly modernization for global population. In basic level, people need buildings structure as their shelter and protection in life. In term of to fulfill green buildings commitments and to achieve “go green” concept, universities are adopting sustainable design, construction, operation and maintenance as main elements. Immediate and critical actions are needed to shift thinking and practice to implement our environment. Namely, the location, design, construction, operation, maintenance and as well the communities in which they are located, communities can implement all the nature operation in ways how to renewable energy, the concept of waste for eliminating, or using renewable non – toxic materials and fix with natural system. We must change principle for building practice towards communities to minimize environmental effects, protect public health and improve environmental quality and strongly implements all sustainability building. Increasingly universities and communities should work together as one team to make sure the concept of sustaining building will be implementing today and for the next generation. Construction industry in Malaysia plays an important role in generating profit to country and development of social and economic infrastructures and buildings.

The Construction Industry Development Board Malaysia (CIDB) is a body to develop and modernize the Malaysia construction industry to take a maximum action to stress the issues in sustainable and assists the construction industries. All construction industry need to implement all the recommendations for develop green buildings towards education service to achieve the aims of involving relationship construction industry within education service (CIDB, 2006). There are lots of responsible within construction industries to aim what we need to sustainable building among education service for community well-being. A new framework is created to know linkage three parties construction industry, education service, and end user. To make sure this sustainability of green building will include staff, faculty and student (N. Davis et al., 2010). CIDB found that, construction industry and stakeholder need to find the
alternative how to implement green building to education service and public to change from conventional building to the sustainable. The focus of aim to alternative is establish eco-labelling task, formulate a new roadmap green construction industry, standardization of provision and legislation on green building and create education awareness. In Malaysia green building widely use since 2009 and rating using Malaysia Green Building Rating System (GBI) with six criteria indoor environment quality, sustainable site planning, energy efficiency, material and resource, water efficiency and innovation (CIDB, 2006). Involving many people including faculty, staff and students can achieve our aim to develop concept for green building for now and future.

Moreover end user cooperation is needed that was created by the education service and construction industry to make it happened and success. End user need to give full commitment to environmental sustainability for maintaining a green image in education service perspective. In a nutshell, the discussion as presented in literature, concept of this framework starting from construction industry to education service and end user responsibilities we can retain our environment area. Within the concept in implementing green campus practice the process can be understood when all parties involving doing their role part to save a whole word environmental surrounding. Effective leadership in institutions needed to implementing green construction building campus and this is the initiative to be successful to the end user. Universities approach much stable because we educate person to be a better and give the positive side in their life and provide rich education to the surrounding communities.

**METHODOLOGY**

In this study we use qualitative method and data is collected by the ways of interview and observation. Interviewee was based on UUM students, staff and campus community to give the feedback for this research. Three parties mentioned are responsible to take part to reduce our environmental issue by implementing green building in education services.

**Primary data**

Primary data are very effective to collect information in the real situation based on experience of the user or respondent. Researcher also can get the data in easy way and it will reduce our time to collect the information using the interview and observation.

a) Observation

Observation can be time consuming because of period to collected data are very limited and by doing observational we can see into a different perception or situation reflect on this study. Observation also can give a minimal impact involving judgment about this study to influence observation behavior and experience of the nature. We may enable see the differences within time to time to get the information by doing the observation.

b) Interview session

This interview for collect more information among UUM respondents based on the question are given to them for this study. This interview will divide by three aspect which is Demographic, Performing green building and Opinion perspective aspect. Respondent need to answer all the question based on their knowledge and experience starting their in UUM.
Before start the interview we need using protocol interview to make sure carefully manage limited time and decide the best answer in an interview situation. This guide also make our interview session more systematic and effectively based on an interview question and make the respondents more comfortable during the interview session. The interviewee people are around UUM and divide by three aspect to the interviewer for this research through Table 1.

**Table 1**  
Interview questions

<table>
<thead>
<tr>
<th>Demographic Aspect</th>
<th>Performing Green Building Aspect</th>
<th>Opinion Perspective Aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>What does “Green Building” in a university setting mean to you? What does it look like in practice?</td>
<td>Who would you say are the key individuals or construction industry on campus that are involved with implementing environmental sustainability initiatives?</td>
</tr>
<tr>
<td>Age</td>
<td>How well do you think this campus is performing in terms of Green Buildings? Optional: Would you consider UUM to be a &quot;green&quot; campus? Why or why not?</td>
<td>What do you think are the main obstacles and/or challenges to implementing a comprehensive, green building initiative on campus?</td>
</tr>
<tr>
<td>Occupation</td>
<td>Is there anything that you think UUM needs to do in order to improve our environmental sustainability efforts? What can we do better?</td>
<td>As you know, every institution has limited financial resources to invest in sustainability programs. What do you think are the most important environmental sustainability programs for UUM to invest financial resources in?</td>
</tr>
<tr>
<td>School &amp; Course</td>
<td>Is there anything I didn’t ask that you would like me to know?</td>
<td></td>
</tr>
</tbody>
</table>

**FINDINGS**

As we explained that data gathered using interview and observation among students and staff because of the experience and what they are seen is the real situation. The feedback gave us some idea to improve our awareness how to implement green building in effectiveness ways. Total respondents was seven persons for interview session and completed by interview based on that the respondents says. Generally interview session has taken time 10 to 15 minutes. The interview questions divided by 3 aspect which is demographic, performing green building and opinion perspective aspect.
Table 2
Feedback and result from respondents

<table>
<thead>
<tr>
<th>Total of respondent are total 7 persons and age between 20 until 42 years old most of them is student from various school such as STML, SEFB and TISSA also including administration staff of UUM.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performing Green Building Aspect.</strong></td>
</tr>
<tr>
<td>• Green building will benefit to our environment and can protect our ecosystem in UUM and the concept of green building not totally use in this campus.</td>
</tr>
<tr>
<td>• When university implement green building it can reduce our electricity and other facilities, as we know green building will reduce lot of energy and with green building concepts we can help our ecosystem in campus.</td>
</tr>
<tr>
<td>• In UUM, there no concept of green building and most of the building is conventional, but UUM still can implement the green building concept because the environment surrounding of UUM is still thick forest area.</td>
</tr>
<tr>
<td>• UUM did well to control our ecosystem with the green landscaping, but in physical structure UUM need consultant construction industries how to implement the green building and yes UUM can adopt green campus to save our environment.</td>
</tr>
<tr>
<td>• UUM known as “universiti di rimba hijau” and this is good, but for the building UUM not completely using a green building concept. Yes UUM can be a green campus because of the surrounding is forest.</td>
</tr>
<tr>
<td>• UUM should impose a basic compulsory requirement and standards to increase community awareness and knowledgeable about green building concept.</td>
</tr>
<tr>
<td>• UUM need to findi a knowledgeable and professional skill developer so that it can make or advise the suitable green concept to UUM and also UUM can create subject regarding green concept to make the students aware about green concept to sustainability environment than sharing the knowledge to the community.</td>
</tr>
<tr>
<td><strong>Opinion Aspect.</strong></td>
</tr>
<tr>
<td>• Administration management are the individual responsible to implementing environmental sustainability.</td>
</tr>
<tr>
<td>• UUM workers also have responsibility to adopt concept green building to sustain our environment.</td>
</tr>
<tr>
<td>• Students also need to take part in implementing green concept to make sure it can be continued to a new generation.</td>
</tr>
<tr>
<td>• The cost of green building is too expensive and need huge contribution from professional people.</td>
</tr>
<tr>
<td>• Green buildings need specializes construction process from top-to-toe approach.</td>
</tr>
<tr>
<td>• The awareness of our government are minimize and public people don’t know how to start the initiative in implement green construction.</td>
</tr>
<tr>
<td>• Does program like 3R Recycle, Reduce and Reuse to get the fund because we can make money and from that we can create a program to involving</td>
</tr>
</tbody>
</table>
people to join the sustainability program like green construction talk, seminar green construction and etc.

- UUM can make profit with green landscaping that already have and with the profit build one green building concept to attract other educational services, private organizations or public people follow the concept, as we know green building is a creative building and lot of advantages in reducing energy.

- UUM should start creating the green building to remain our ecosystem and continuously expose our student about the important to save our ecosystem in Forest Sintok.
- Make a one subject regarding our environment or green building concept and its compulsory for all students.

Based on the interview questions, the participants were diverse to get a many perspective from students and staff. The 3 of the interviewees are students come from School of Technology Management and 2 of them from other Schools. The 2 interviewees come from staff UUM that working more than 5 years in UUM. It was important to capture staff are working more than 5 years because we need to know directly who person that’s responsible for managing the implementation of a green campus initiative for community well-being. The interviewees come from varying backgrounds so we might get a unique opinion. Before proceeding to collect data by interview we developed an interview protocol to make sure the session of interviewing utilized a proper words question to the respondent. Regarding observation we use for this research to see the effort of campus for sustaining our environment with green building concept and we spent about 3 month of formal observation for this study to get the result for this study. As shown in the table, we can conclude that contribution to the green building is still at minimum stage. Implementation of green building in UUM will created industry drive and demand for green building in Malaysia. This result will increased of demand for sustainable building and awareness to community in positive ways by using the green buildings as an achievements. Community should be expose and educate about the importance of green building and its contributions to the environment to make a big demand on the implementation of green building in Malaysia.

**Relationship system framewok and implementation**
The framework in figure 1 is showing the relationship amongst construction industry, educational service provider, and end user. Here the all parties have core and systematic relationship to driven conceptual changing leading towards implementing green building in the social well-being community. In this co-operation construction industry sharing their technology, Human Resources skills, knowledge of educational service provider (e.g., UUM). Then, the educational service provider will implement the input from the construction firm and combining with this kind of resources including with the educational service provider’s ability and end user’s experience the educational service provider becoming able to produce better quality well-being service for end user (e.g., students, staffs) that is creating win-win value among three parties and this input will fulfill the demand and needs our social well-being community by creating a platform to them in sustain our environment surrounding.
Construction firm is platform for educational provider services to give knowledge and skill based on the demand and also financing of the educational service provider to build green building construction. In advance, as we know educational provider service is the best platform to enhance knowledge and information to the public or students in implantation of green building for reducing our energy. Educational service also will benefited with it by the construction firm and will determine the quality of life to the end user. When educational or other parties are implement the green building so the user can feel and experiencing what their feelings towards the green building and it’s also as a needs for our community to taking care of our environment for better quality of life and for future generations. Linkage of this three parties will give benefited to the society by being responsible to environment surrounding, it’s also as a social needs for community, improving the quality of our graduated university, increasing economy and awareness among public community and make knowledgeable to the community for taking care of our environment and better life quality.

**Figure 1**
Relationship system framework

**DISCUSSION AND CONCLUSION**

In Malaysia, the green construction industry is not very new but still there are small scope of implementation. Based on the objective to blend resources among collaborative partners for meeting designed common goal in the implementation of green building with cooperative parties. We need more cooperation each other’s to achieve our goal in reconstruct a green building concept in the aim of sustainability environment and social service. Parties, like construction firms need to share the
appropriate knowledge about green building to educational institutions (e.g., UUM) and end users (e.g., students and residence) to benefited or better action to our surrounding maintaining ecosystem in UUM. Involvement construction industries to aware the education service towards the future benefits regarding green building are very important to give impact in local and world place. The humankind has effective way to twist worldwide stability in a natural environment and stressing the challenges or obstacle in effective ways and positively. Therefore everybody needs responsible in order to open up our mind set and perception of transforming the way of living life cycles in implementation green construction concept. In this research, university is the best platform to develop an attitude for public awareness to transform a conventional building to green building concept and it is importance to protect our environment for future generation. The awareness campaigns need to be intensified to educate and gives knowledge about the importance of the green building projects and its benefit to the environment in addition to restore the world for future generations.

However, this research needs some consideration forward to accelerate the adoption green construction management for community well-being in the perspective of education service. Future research needed to maximize and expand knowledge and technology to educational provider in remain sustainability environment. The effective of cooperation among construction industry, educational service, end user and other parties shall be enhanced to achieve green construction management. Our concept could be implement in practical field like raised the level of public awareness, create an education program and make it compulsory for all students, government need develop more research and development in green construction (Kriss, 2014). In addition, the transition to green campus by UUM may effect to provide better educational service and can build quality students to lead society and economy.

REFERENCES


