

## “Factors Contributing to More Sustainable Approach in Handling Final Year Interior Design Student Project”

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**Abstract.** The role of interior designer has now becoming increasingly more important than ever in the construction industry. At the same phase, the clients now seem to keen on having their home or building being designed with loads of sustainable interior effects as well as the sustainable exterior envelope. Looking into the early process in teaching these interior designers in the academic sectors are as important as in getting them to apply that green factors into their real projects at a later practice stage. This paper is focusing on the study of the factors in effecting a group of thirty three, year three interior design students in applying the sustainable issues into their final studio project. Among the objective of this study is to evaluate the degree of sustainable input done by the students throughout the final semester in order for us to ensure the green factors has properly been injected at this academic phase. The findings explored without really focusing in this sustainable issues scope, we never certain that the green interior aspects can properly being done nicely at the much later practice stage. The study established that more systematic aspects of ensuring thus analyzing green interior scale factors to be more proactively put in the forefront of the final year studio syllabus in making more effective green impact interior designer for the future practice can be achieved.

**Keywords:** Sustainable Interior, Green Interior, Studio Projects, Green Projects, Teaching Sustainable.

### 1. Introduction

It is important to note that recent trend indicated that the client beginning to recognize the important role the interior designer play in construction process scenery. At the same time, studies show that more house or project owner beginning to eager in having their houses or buildings having the green or sustainable impact as to act as a responsible citizen to the fragile world. We must make aware that climate change and global warming have no borders [1]. With the global warming awareness issues at the center stage of the world media, having sustainable interior as well as the exterior building envelope begins to have greater impact in construction industry worldwide [6]. Furthermore, there is evidence on designer' lack of sustainable knowledge and experience on the diverse complex problems of human responses to the climate changes [2].

It is a good idea to do a little survey on the early stage at the academic level on how these green design factors have been introduced and how the factors been accepted by the students into their studio projects. It is important to do the notification exercise at the learning and teaching level on identifying the level of sensitivity on the sustainable interior ideas captured by these third year final students before they enter the real world practice.

### 2. Method & Material

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For this survey, 33 students have been identified to be involved in the exercise. All of them are final year students in their 3<sup>rd</sup> year of interior design bachelor degree studies in Universiti Sains Malaysia. The time frame is during their Semester 1 and Semester 2 during the academic year of 2010 and 2011. It is interesting

Table 1: students list with the project title for group 1

<i>No.</i>	<i>Students Name</i>	<i>Proposed Project</i>
1	CHO YEN CHIN	Hair Cut Center, Penang
2	DARAB SALAMAT	Guitar Center, Penang
3	DIYANA DIN-A	Nickelodeon Center, Penang
4	FANNIZA BINTI ZULKIFLI MALIK	Spa Center, Kuningan, Jakarta
5	HO SIAO FEN	National Geographic Exhibition, Damansara, PJ, Selangor
6	JOSEPHINE ONG MING HUI	Meditation Center, Ipoh
7	JULIANA ONG XING YU	Van Gogh Starry Night Exhibition & Café, Georgetown, Penang
8	KHAIRU UMAYYAH BINTI MOHAMED	Children Care Center, Georgetown, Penang
9	KHOR PHEI VOON	Wushu Training Center, Penang
10	LAILATUL ZULAIKA BINTI MOHAMAD	Graffiti Art Center, Georgetown, Penang
11	LEE CHAW LING	Japanese Cultural Center, Melaka

Table 2: students list with the project title for group 2

<i>No.</i>	<i>Students Name</i>	<i>Proposed Project</i>
1	LEE WANG LING	Cantonese Culture & Restaurant, Penang
2	LEW SHU NI	Brain Exhibition Center, Penang
3	MARYAM ABHARI	Apple Computer Center, Georgetown, Penang
4	NG SENDY	Rhino Conserve Center, Kuching, Sarawak
5	NUR AIN BINTI AZMI	3D Animation Center, Penang
6	NURAZITA BINTI AZIZ	Save Malayan Tiger Center, Penang
7	NURUL NADIA BINTI MOHAMED	Retro Music Center, Kuala Lumpur
8	PEIJIE XU	I -Life Center, Damansara, Selangor
9	RADHIYA BINTI ABD RAHIM	Animation Center, Putrajaya
10	RADZIAH BINTI A RAHMAN	Malay Cultural Center, Penang
11	SALLY CHOONG SIEW MEI	Children Fun Center, Johor Bahru
12	SIM KIEN POH	Planetarium, Penang

Table 3: students list with the project title for group 3

<i>No.</i>	<i>Students Name</i>	<i>Proposed Project</i>
1	SITI FARZIAH BINTI ATTARIMA	Eco-Center, USM, Penang
2	SITI ROHANI BINTI JAAFAR	Futsal Center, Shah Alam, Selangor
3	SITTI AZSIZSA BINTI SOFYAN	Lat Art Gallery, Jakarta
4	TEH LYNE LYNE	Modeling Center, Bayan Lepas, Penang
5	URWATIF BINTI MOHAMAD	Mango Center, Perlis
6	WAN NOR WAHIDAH SYUMAIYAH	Ferrari Display Center, Shah Alam, Selangor
7	BINTI W KAMAR WAN NUR LIYANA BINTI WAN MOHD	Borders Bookstore, Subang Jaya, Selangor
8	YAP CIAO PING	Sustainable Center, Terengganu
9	ZHANG BEI	Chinese Classical Music Center, Penang
10	NESYA CHAIRANI	Mini Cooper Car Showroom, Jakarta

to notice that the list of students is range from local Malaysian Malay and Malaysian Chinese students as well as international students from Peoples Republic of China, Iran Islamic Republic as well as the neighboring countries i.e. Thailand and also from Indonesia.

To ease-up table manipulations, the whole group has been divided into three groups consist of 11, 12 and 10 students per group. Please refer to Table I, II and II for the list of students and their project title for cross reference. The group division is just based on according to alphabetical order. Please note that the syllabus indicated that the project is an adaptive re-use project thus makes it proper to be analyzed with ASID's REGREEN guidelines comparative survey.

During this period of about 12 months, the students have been notified that the green design factors are among one of the design criteria to be considered on tackling their design issues. The summary of this process can be derived from Fig. 2 above. Two full time interior design lecturers have been involved in this design studio process. The sustainable interior impacts have been put into priority concern for all the thirty three projects exercise.



Fig. 2: Relationship flow on studio syllabus and final drawings issued.

At the end of the exercise stage, it seems that the use of ASID & USGBC REGREEN 2008 version on Residential Remodeling Guidelines issued by American Society of Interior Design with U. S. Green Building Council is picked as the most appropriate survey implication studies. It seems like this 2<sup>nd</sup> Edition of the REGREEN guidelines are the most suitable impact evaluation method as the REGREEN referring to the adaptive reuse projects as mentioned in the studio syllabus. Furthermore, ASID and USGBC are among the most active and relevant entities in producing guideline dealing with the sustainable issues in interior design world.

## 2.1. Findings & Discussions

Among the important REGREEN guidelines mentioned that the important on having Building Assessment being done. There are six elements to access which are building –site interface, home performance, mechanical systems, interior spaces, materials and hazards. 11 students scheme were selected to examine these criteria as shown in Fig. 2. A scale from 1 -10 has been identified to justify the green factor input given by the students. 10 scale gives the most sustainable related inputs where 0 or 1 being the least impact.

## 2.2. REGREEN Building Assessment Analysis

From the graph above (see Fig. 3), it seems like the students giving quite a good response to all the 6 points as stated in the REGREEN guidelines. For point number one in building-site interface, most of the schemes have introduced natural sunlight and natural wind move across the property. For the second point on home performance; quite a good range of schemes have given a positive indication not to have a leakage floors thus ensuring the wet areas located within the interiors being taking care-off. The next point in mechanical systems seems well managed by this group of students as the usage of green impact air-conditioning being specify as shown in their bill of quantity report exercise.

The factor on specifically interior spaces issue with good flow of bar graph seems giving indication on quite well manner the students given in ensuring the safety and comfort of the interior layout in regards to

the selected furniture and safe movement to its occupant. It is interesting to note that most of furniture selected to be used for the typical houses in Malaysia seems still lacking on the user safety and ergonomic factors [3]. The second last point in this Building Assessment factors having recycle usage of the building materials seems been made aware to most of the refurbish projects.

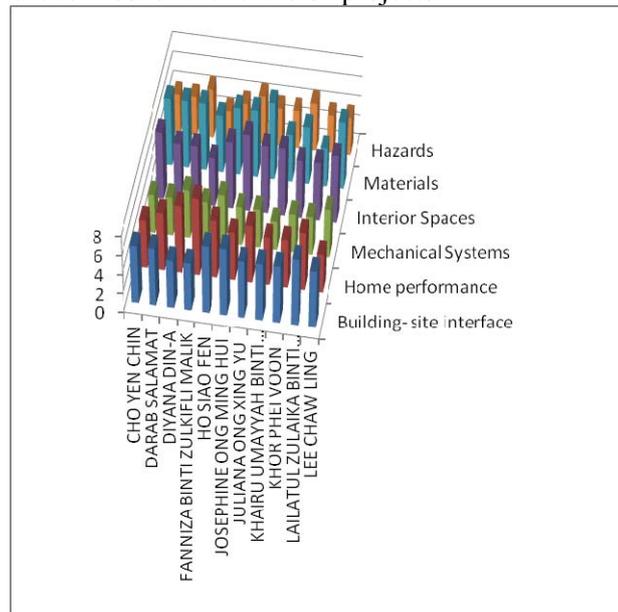


Fig. 3: REGREEN Building Assessment factors in relation to students interior project tasks.

Most of the students ensuring the usage of the salvaged architectural details removed. The last important point of the assessment is on hazards which can be mold, poor air quality up to using lead-based paint. Most of the schemes showing positive indication on not having health hazard i.e. usage of asbestos or even molds within their interior projects.

### 2.3. REGREEN ASID's Six Principal References

For the next finding (see the next Fig. 4), the exercise is to use ASID principles of environmental stewardship as indicated in the preface part of the REGREEN Residential Remodeling Guidelines. Twelve

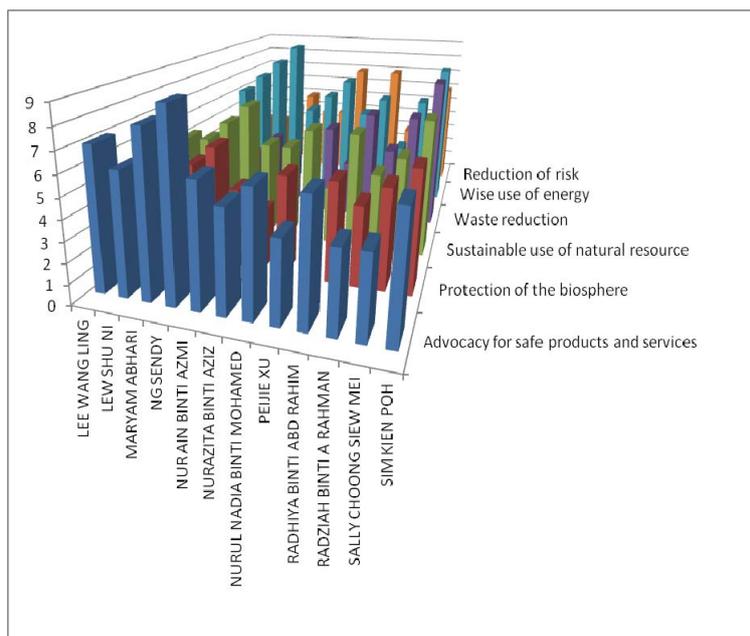


Fig. 4: ASID 6 principles of environmental stewardship in relation to student's schemes.

student schemes named in Group 2 have been chosen for this survey exercise. Again, the rating done from the highest 10 to the least 1 or nil. Those first elements are to ensure interior designer advocate with their client for safe products and services. It seems most of students tasks showing good indication on ensuring the products and the spaces being chosen and designed in the safely manner. It is important to the students on having proper and right interior layout with appropriate details in order to secure the safe side of the design.

The next principle to ensure the interior designer should eliminate the use of any product that known to pollute the air, water or the earth. This second principle is in response to the increasingly warmth weather occurred within our biosphere property and it is very much important to control the effect before it become much worse. Again, the survey indicated most of the student projects showing indication of using harmless products for their interior. They seem indicate the use of natural resources for their interior design materials thus giving protection to the wilderness. The fourth principles stated by ASID are again to recycle the existing materials wherever possible. Again, most of the schemes clearly aware on the issue and try to salvage any materials whenever needed.

Next, most of the students did have the strategies in having right renewable energy sources to be implemented within their scheme. For example some schemes using recycle rain water to water the interior lobby poll. Lastly, the final principal is to ensure interior designer should eliminate the environmental risk to the health of the client. However, for this group of students, very few really aware on the important of this issue.

## 2.4. REGREEN’s Kitchen remodeled case study comparatives analysis

The last part of the survey involved the final group of students consist of 10 of them. Again, ASID’s REGREEN guide being used with its first case studies of kitchen project used for this survey. There are ten case studies being shown in the REGREEN guidelines with kitchen is the case study number one. It seems choosing kitchen looks like the right scenario as most of the schemes in this group have had a café with a nice size of kitchen in their interior scheme. The lecturers has had given critics to all the schemes by encouraging the students to have the café idea as a side effect to the centers in creating business activities.

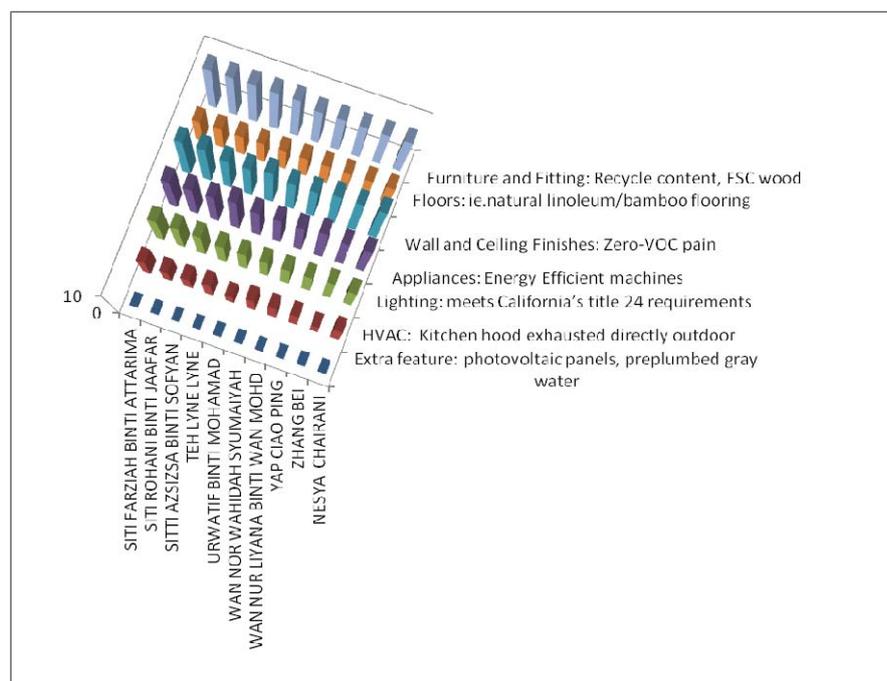


Fig. 5: ASID’s REGREEN case study no.1 : kitchen remodeled in response to students work.

The café also had a nice size of kitchen to support it activities thus ensuring having a sustainable kitchen is a way to do. This means that kitchen provides the most opportunities for “greening” the space. From lighting and appliances to plumbing fixtures and interior finishes, the kitchen is full with ways to maximize the form and function of the space while optimizing the environmental impact.

However, it seems the first feature of the survey which is to have extra features such as the photovoltaic panels or preplumbed gray water have been neglected by the students. None of the schemes introduce the ideas into their interior task (see Fig. 5). Even though those feature can be considered as part of the building envelope criteria however the justification to include these feature as per and parcel of the REGREEN interior project by ASID seem inviting the attention. The rest of the points in the kitchen case studies survey seems been received quite a good marks from the survey. The students seems making it important to use zero-VOC paint up until to have the lighting features that meet the established California's title 24 requirements.

### 3. Conclusion

Having buildings loaded with sustainable green factors in them is a great thing to do. Ensuring the students making awareness in usage such a green features into their studio projects can at least help these young designer the importance to conserve fragile earth. It is a waste if we have wonderful green guidelines just for us to ignore it. Identifying the sustainable factor inputs into the academic stage seems quite important as lacking of these attitude may seems to give certain impact later on during their real practice [5]. Having made the survey on this group of students using the current well-known sustainable guidelines indicating that the final year students are generally giving tremendous good response in applying the green factors into their studio projects. However, certain principles are still lacking i.e. usage of solar panels which are quite common nowadays and lacking of using dedicated plumbing to reuse the gray water.

Again, the green approach is simply 'responsible design'. Having a responsibility to sustain life and land with every design decision made are the great things to do. As we see bigger role playing by the Interior Designer in contributing the process of designing the built environment; 'green' is an umbrella term for a myriad of elements considered as part of the design process [4]. With the option we have now of having no planet B, future generation of Interior Designer must well equip and well aware how important to have sustainable green design.

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