

Understanding sustainability in architecture



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Chapter 1: Understanding Sustainability in Architecture

Project Objectives

The essay primarily intends to investigate inclusion of the sustainable environmental design by architectural professional and school of architecture in their practice and academics. Sustainability has been buzz word from late 60s and continuously becoming and will be important in field of built environment. Let's see some of the definitions of sustainability in built environment.

“ Sustainable design is described as a philosophical approach to design that seeks to maximize the quality of the built environment while minimizing or eliminating the negative impact to the environment” (McLennan, 2004, P. P. 10). Sustainability in architecture has many facets such as Natural Resource planning, Environmental, Social, Technological and Adaptability/flexibility to the changing world.

“ In practice, design is better able to respond quickly to the here and now and to envisage the future, than is policy development (Williamson, Radford & Bennetts 2003).”

However the implementation of the aspects of the sustainability is quiet debatable in the professional practice at mass level. For the mass level implementation policy level intervention is necessary as the policy is indirectly affecting the project.

There are certain aspects of sustainability such as the economic and impact on the environment might be considered to a certain extent. Probably impact

on the environment is considered due to statutory requirement for obtaining the development permissions for typically larger development projects.

There are no set formula to achieve sustainability in architecture, but a proper balance of appropriate technologies, energy efficient, eco-friendly architecture would show the way us direction. Along with this, the social and cultural aspects should not be overlooked.

The answer is probably that we shall never find single satisfactory definition but the searching is more important than finding (Bryan Lawson (2002)

Sustainability in the built environment is unremitting process. Therefore we (Architect) need to update our self about all aspect in order response the situation . The conscious evaluation of the buildings should be done with respect the energy efficiency, economy, user response, and impact on the environment. There is need to promote sustainability in all the possible ways, one then would be by designing the sustainable building and transferring, maintaining ethic by educating our future vice versa .

Background

In 2007, the UK government declared that all new housing and schools should be zero carbon' by 2016 and all buildings are expected to be ' zero carbon' by 2019. So students admitting in this year (2009) should equip with sustainable design tools at the time they graduate. The architectural practice as well as academics should be ready for the situation.

Students entering architecture programmes in 2009 need to have all the skills necessary to meet these requirements by the time they graduate. The

two questions facing the design community are: how can we enable architectural educators and students to respond appropriately to the challenge of climate change and what are the new pedagogic paradigms that are required to facilitate this? The last UK review of architectural education in relation to sustainable design teaching revealed a major split between studio teaching and academic lecturing in technology. At the same time, Guy and Moore have identified that there are many plural approaches to sustainable design in architecture, making it difficult to formulate any changes unless these are directly responsive to the modes and cultures of teaching involved. They have called for 'symposia and other dialogical spaces' that can address matters pragmatically. This paper identifies key barriers and opportunities within the UK architectural education system in relation

Problem identification

- Problem at academic level
- Problem at practice level
- Problems at social level

The essay intends to find out whether the professional architects and academics believe in sustainable environmental design in their thought process in practice or academics. This would give clue why this not happening in practice and academics, further this build foundation for what should be done to cultivate values sustainable environmental design in the practice as well as academics. This essay also intends to find out what is actually helping or retarding the implementation of the sustainable environmental design.

This findings of attitudes at practise level is very important in a way, as at professional level architects tends to obtain specific knowledge about sustainability without caring the ethical issues aside

There are different views regarding inclusion and exclusion of the sustainable environmental design in practices as well as also in academics. Following relevant arguments from the advisory board meeting which postulates views of architect regarding sustainability in architecture and process of academics as well the accreditation.

“ I am surprised when other practices do not take environmental design and sustainability in to account ” (Bill Gething RIBA and Feilden and Bradely Studios)

Further he argued that sustainable environmental design is personalized approach for design, professionals often learn this from case studies, courses, books, articles.

Mr. John Pringle “ people do not value energy efficiency and carbon reduction it has to come from the legislative framework”. I kind of partially disagree on this argument. In my view we cannot change people’s thinking by the legislative framework although its one way of doing it. I partially I feel it’s partially architects responsibility educate the client.

As per Mr. Mario most important aspect is to understands relation of building with environment and teaching the creativity, sensitivity in Architecture. We may have Broad range of interpretations for the word creativity and sensitively.

In my view creativity is really something that cannot be taught what the best we can do is we can environment which provoke creativity . Further urges to look at the vernacular architecture and understand the unseen environmental design reasons.

The accreditation process in European countries differs in terms of durations and process of accreditation. The environmental design is optional but still possibility of the students to opt. According to him the building regulations are compromising the implementation of the environmental design. In Germany the syllabus is similar to European rules i. e. 4 years degree followed by 2 years of practice.

“ Environmental design is not measurable concept” (Mr. Oliver Heiss). This quiet valid argument in way environmental is truly non quantifiable it is developed thru experience and practice

In Belgium the structure of architecture quiet different in way they have two diplomas i. e. architect engineer and engineer architect, years of study is 5 years academic and 2 years of professional practice. The evaluation of accreditation takes place after every 6 years. According to him there is not enough understanding and knowledge about the subject.

In United Kingdom the course duration is 7 years i. e. 3 years under graduate studies 2 years' diploma and 2 years of the professional practice. RIBA has introduced minimum requirement environmental design in Architecture but it has been interpreted by each school differently.

You need registration to practice but you don't need registration for designing building. In Spain its architectural course duration is 6 years. The major hurdle is student lack of interest and lecturer's lack of knowledge, further the new regulation approved in Spain is drafted by engineers so doesn't include architectural components.

Mr Mario states suggested continuous professional development is a key. While Mr. Simos stressed on sensitivity of the subject. Mr . Geathing spoke about the gap between the code prediction and actual energy used. Mr Simos postulate need of evaluation of the building critically. According to Mr. Sabestian simplification of basics for architecture and can have specialist for environmental design. Mr Jolan urges to consider the heritage conservation in the environmental design. Mr. Brian stressed need built up knowledge at undergraduate level and in his opinion students must get the basics right at undergraduate level.

These views expressed are diverse, important and practical. I feel it's a collective responsibility of universities; accreditation councils and most importantly need from our society. Although boundary is quiet between these stakeholders.

Research question

Do Professional Architects and Academics consider sustainable environmental design in their Practice and academic curriculum?

Since the sustainable environmental design is broad subjects with many facets to it, for ease of understanding lets grouped this aspects as shown below

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Ecology and Energy aspects

1. Passive environmental design
2. Energy efficiency and carbon neutrality
3. Renewable energy system
4. Ecological management of resources

User aspects

1. Occupant comfort and well being
2. Social sustainability

The question investigates the attitudes of the Academics and architectural professionals. Subsequently question would require evidences from the both the worlds that is from the academics and professionals. By answering the question would lead to unveil the changing outlook of the potential architects regarding the sustainable environmental design.

The section we would detail out the evidences and draw some hypotheses from the research methods. These hypotheses later tested on the secondary information.

In order to answer the question research, the research method cannot be as simple or really straight forward due to the complexity of the problem to address. For the ease of understanding let's divide the question in to two parts. The first part deals with the understanding the thought process and design process of the design professionals. This would give the clue regarding what is going wrong at what level.

This can be primarily be done through Semi- structured interviews of Building professionals to know their views and aspirations about the Sustainable environmental design and would also investigates whether they practice the Sustainable environmental design in their practice . Testing their view by analyzing the case studies

Second part would be of academics these involves knowing the attitudes of the tutors via semi structured interview and also analyzing the course curriculum for inclusion of the sustainable environmental design in curriculum. Later the I intended look at the list of the thesis of the architecture thesis and dissertation in order understand whether budding architects attitudes towards sustainable environmental design.

The further this study intends to reveal if there is differences between the academics and professional world. This would be necessary because professionals relay on their theoretical knowledge in the initial years and their analytical skill.

This process of investigation would also revel if architects feel that inclusion of SED may marginalize their creative ability. Lastly the answering of the research question would exposed the changing attitudes of the new generations towards sustainable environmental design.

Chapter 2: Literature review

In order to solidify the argument of this essay, I have done some literature study of the similar topics. One of which is Learning from practice: a model for integrating sustainable design in architectural education by Maureen Trebilcock Where author has prepared the theoretical model for the

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integrating the sustainable environmental design in the architecture education. As part of methodology author had selected five case studies from Architects who are well known in the field of sustainable design. Here all the selected buildings were non Residential nature. Reason selecting non residential building is not clarified. Further my opinion there should be at least one residential building to get flavour of the Domestic as well as non domestic building. Reason for this is quantitatively housing forms major portion of any development.

The case studies suggest that architectural education requires the development of attitudes, knowledge and skills crossing over intuitive, analytical and social dimensions in order to face the uniqueness and complexity of sustainable design.(Maureen Trebilcock 2008).

There has been series of work shop held on the architectural education on climate change . The design of human settlements is a key factor for addressing carbon emissions, finite resource availability, ecological deterioration and climate change. The role of architectural education in promoting the principles and practices which address these issues is significant. New pedagogic paradigms are required to produce graduates endowed with holistic competences including environmental knowledge related to sustainable design.(FIONN STEVENSON¹, ANDREW ROBERTS², SERGIO ALTOMONTE)³ pertaining to this paper would form input to the essay in terms of understanding the barriers to the successful implementation of the Sustainable design in to the curriculum.

Primary aim was to contribute to the development of environmental responsibility as a creative factor in the practice and pedagogy of architecture.

As concept of the implementing sustainability (envisaging it would be transform in to practise) this paper reviews inferences learning form the workshops and , and discussing the new methodologies and curriculum and also conflict between the sustainability between the other building sciences and in higher education and professional practise . As concept I like the idea of the representative built environments schools of different universities come together discuss the strength and weakness of the curriculum and form strategies for new teaching methodologies and syllabus which would probably reduce the conflict bet sustainability and other building disciplines in way if feel this concept as the as partially isolated in terms involvement of practise, which are the producer of the building stock. Involving the professions in to the workshop only can get ideal views so in way as concept I feel it kind of stitching and what is required much more intensified to achieve the deadline.