

A Study of Experiment in Architecture with Reference to Personalised Houses

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Abstract: This research is an enquiry into architectural design and construction. It is an examination on how architects experiment and innovate. Research identifies ‘design intervention’ as the critical and profound feature common to Sri Lankan architecture. Having established that, the question arises as to ‘why’ this ‘richness’ has not extended into interventions with building materials and technology? This leads to two key hypotheses; “Architects are not sufficiently involved in experimenting with building material and technology” and “the limited experimenting is due to cost issues”.

The research looks at the architecture of personalised houses designed by Chartered Architects in Sri Lanka. This sector receives the most active contribution from the professionals but the approaches are confined to a limited set of practice conventions. Therefore, this segment of the industry is identified as the most appropriate to carry out the research.

The research is carried out according to a theoretical framework formulated in relation to materials and technology. The study investigates the effects of ‘cost’ in relation to experiment and attempts to establish the notion of ‘experiment’ in architectural design process and practice in Sri Lanka.

Keywords: Experiment in Architecture, Materials and Technology, Building Process, Conventions, Cost

1. Introduction

This study is about experimenting in architecture. Experimenting is important to any field. It is the same for architecture. Architecture is a process where the end product or the final outcome is a ‘built product’. This ‘product’ is made using materials and technology. Experimenting is stepping aside the convention and attempting to go beyond, deviate or innovate in practice. In architecture, experimenting leads to;

- Bring economic benefits to the building industry
- Expand existing knowledge and add new knowledge to the industry and its practices
- Innovate, develop materials and technologies
- Satisfy academic, intellectual curiosity and research.

Building construction is a heavily cost driven industry and any attempt to deviate from the standard modes of practice will have considerable cost implications. This situation seems to have restricted experiment and innovation by the architect. The study intends to investigate into this condition and find out what key factors define the

scope of their practices in terms of engaging in experiment.

2. Background to the study

“Buildings are not achievements in individual entities. Social development, social cultural Infrastructure, Technical system, Material Investigation, Labour Training has become act of Flexible creative synthesis that brings problems and solutions...” [1](Pathiraja, M, 2014).

The above statement indicates how architecture becomes a product of social, economic and material process. According to ANC Arquitectos, it is a process that combines aesthetic and social issues with economy of means, tectonic research and sensory comfort.

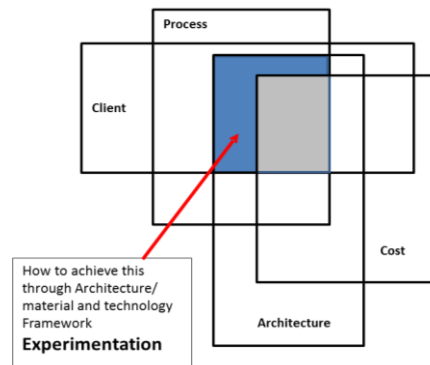


Figure 1: Building Process Framework

The scope of experiment in architecture is a matter of the behaviour of the process, the client and the cost. This framework (Figure 1) provides the scope and limitations of experiment. The research intended to investigate the following in relation to architecture;

1. Investigate the Experimental approach to architecture
2. Investigate what is meant by architectural experiment in material and technology.
3. Find out the architectural community's perception about architectural experiment.
4. Find out about time – cost implications in Architectural Experiment.
5. To find out what are the advantages and benefits of experimenting?
6. To find answers to what makes architects' practice experiment.

3. Methodology

This study is carried out 'combining qualitative and quantitative data to best understand and explain a research problem' [2] (Creswell, 2002, p. 59) and therefore follows a 'Mixed Method Research' procedure.

The following methods were used to gather information and data for this study.

1. Pilot survey
2. Survey on published architectural work
3. Selection of case studies and Interviews
4. Findings and Data analysis

The study will conclude by summarising the findings of the survey and answering the key questions.

4. Significance of the study

The research acknowledges that experimenting is fundamentally to the advancement of the practice

and the profession. It is also noted that there is limited research done within the field in relation to the research area. Hence, the research intends to gather knowledge into experiment in architecture.

The lack of awareness of the significance of the research area may also lead to vast amount of valuable knowledge 'getting lost' in practice and such may be noted as a loss of opportunities. Raising awareness of the significance of experimenting as well as the benefits of doing the same may encourage and promote initiatives in that direction.

4.1. Scope and limitations

The main scope of this study is to inquire in to approaches in experimenting in architecture in Sri Lanka. This inquiry focuses on experiment in materials and technology within architectural field. The inquiry extends into finding out the nature of such experimentation. The study also attempts to find;

- The Perception about experimenting among architects.
- Implications of experimenting with materials and technology in architecture.
- Find out the approaches, into experiment in architecture in Sri Lanka.
- Implications on cost and plan of work in experimenting.

The experimenting approach and undertakings, carried out on personalized house projects by the local architects will be the focus of this study. However, the study is not looking at specific detailed experiments for their technical and architectural value. The study will enquire about the intentions, will recognize and record such attempts that have been made.

The key limitations of the study are;

- The study does not consider 'Designing' as a form of 'experiment' in Architecture.
- The samples of projects are limited to published personalised houses in Sri Lanka.
- The case studies are selected from the above-published samples and based on data gathered from survey.
- Experimental architects are selected according to architects' judgment and word survey.
- Case studies are limited to three projects.
- The aspect of experiment is taken, as the focus but not the actual experiment.

- The aspect of ‘cost’ is taken as a key determinant in experiment in architecture, but the actual monetary costs of projects are not considered.
- The implications on fee and architects’ plan of work are noted but the effects are not quantified.

5. Experiment in architecture.

The research investigates implications in architecture in relation to experiment by looking at;

- Modes of interventions and the types of outcomes
- Where such interventions take place
- The significance of studying such interventions in experimental housing designed and supervised by individual practitioners.

5.1 Interventions of experiment in personalised houses.

To research about experiment in Architecture, this study focuses on personalized house sector in Sri Lanka. As the available published information indicate, it is believed that at this segment of the market is where the architects have experienced the least amount of commercial pressure and as a result to have enjoyed most amount of ‘design freedom’ as opposed to other types of projects. This design freedom, intimate and informal relationship with the client that most architects have enjoyed while working in this sector, has given them the best opportunity to experiment and speculate. Without a specific survey, such assumptions may be difficult to establish but this study intends to justify these assumptions based on its findings.

The glorification of the architectural product as a function of scenographic communication – as opposed to a system of socio-technical production – has certainly had a detrimental impact in those countries considered as developing in terms of socio-economic capabilities... [1](Pathiraja, M, 2014, p. 31)

The research highlights the important efforts in experimenting hidden within the projects published, selected on the basis of current readers’ expectations on the basis of the obvious ‘seductive picturesque quality’. In depth, nature of such attempts and achievements in experiment may get its due recognition through the textual and image analysis that.

“The current professional architectural education in Sri Lanka steeped in a cultural framework that is, at best, context-selective, impinging on a specific narrative celebrating the picturesque alongside nostalgic representation of traditional building products and processes that reflect aspirations of high craftsmanship.” [1](Pathiraja, M, 2014, p. 34)

6. Field surveys and case studies.

The research reflects how certain architects have managed to engage in experiment in architecture within the current system and important features of their experience.

The research is carried out in four main stages.

1. Pilot survey and questionnaire
2. Survey on published architectural work
3. Selection of case studies and Interviews
4. Findings and Data analysis

7. Research outcomes.

The standard design process as given in RIBA plan of work was considered against case studies to observe any variations due to mode of operation.

The outcomes are shown in figure 2, 3 and 4.

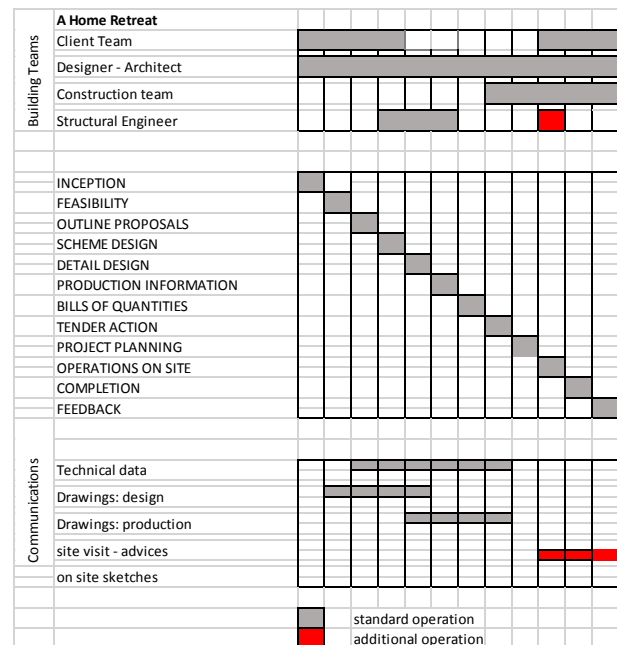


Figure 2: Case study 01 – Relationship between RIBA plan of work and the involvement of the building team and the methods of communication

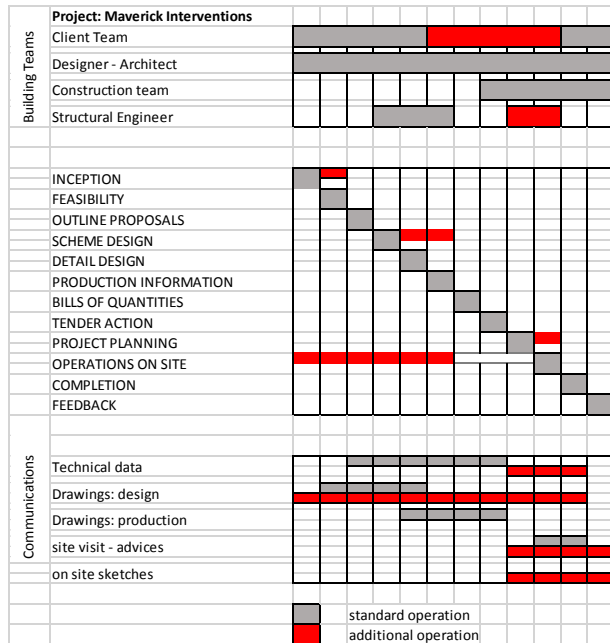


Figure 3: Case study 02 – Relationship between RIBA plan of work and the involvement of the building team and the methods of communication

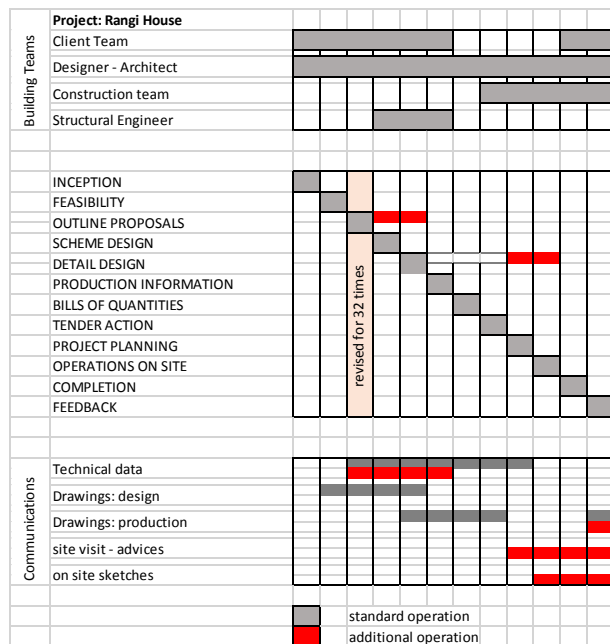


Figure 4: Case study 03 – Relationship between RIBA plan of work and the involvement of the building team and the methods of communication

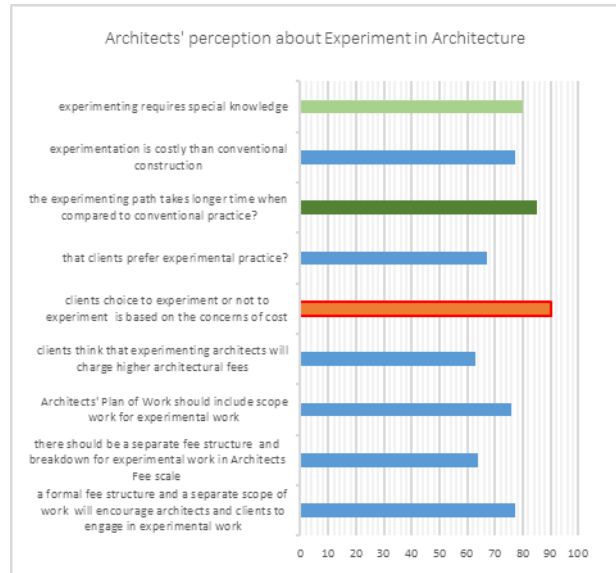


Figure 5: Architects' perception about Experiment in Architecture

The architectural practice in Sri Lanka is based on the SLIA (Sri Lanka Institute of Architects) Plan of Work which is modelled on the RIBA (Royal Institute of British Architects) Plan of work. The cost distribution of the professional services fee is based on the stages of the plan of work. (Figure 5)

This fee distribution allows minimal provision for architects to engage in any experiment work. This condition is reflected in the additional works carried out in the case studies.

With the results obtained from the questionnaire, it was possible to make further analysis about the architects who participated in the survey. Majority of the respondents were individual practitioners (Figure 6)

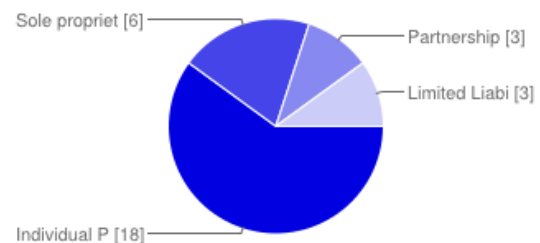


Figure 6: practice type of the respondents

Table 1: practice type of the respondents in percentage

| | |
|---------------------|-------|
| Individual Practice | 58.1% |
| Sole proprietorship | 19.4% |
| Partnership | 9.7% |
| Limited Liability | 9.7% |

The preference for experiment from the 30 architects who participated in the questionnaire survey, the majority expressed they were already involved in some form of experiment (figure 7) but did not follow a formal approach. Hence, they stressed the importance of developing an approach that will lead to success in experimentation that can be followed by all.

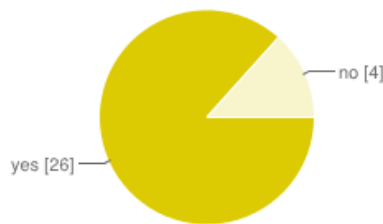


Figure 7: Involvement in Experiment

Table 2: Involvement in Experiment in percentage

| | |
|-----|-------|
| yes | 83.9% |
| no | 12.9% |

8. Conclusion

The research findings answered key research questions and reviewed the effect on the architects Plan of Work against experiment mode of architecture. The final analysis of the study clearly showed that majority of surveyed architects believed that they 'did experiment' in practice. This was clearly reflected with the questionnaire survey findings where 83% of architects claimed that they do experiment and only 17 % claimed that did not experiment. This finding was based on their own perception of their work practice.

From the case studies, two out of three architects (67%) stated that they were experimenting and the remaining architect (33%) claimed that whatever he did, he did not consider that as experiment.

Therefore, in conclusion, it can be noted that on contrary to the claim in the hypotheses, 'that architects do not experiment' majority of architects believed that they did experiment in materials and technology.

The analysis of the image survey, carried out on the published projects however revealed that majority of architects continued to operate within conventional use of materials and technologies Confirming the claim that made by the research question. However, it can be concluded that image survey was carried out with limitations as compared that of questionnaire survey and the case study survey.

From the questionnaire survey findings it can be concluded that majority of architects believed that that experimenting was beneficial to the practitioners and to the profession. The majority who took the questionnaire survey indicated that cost and time as the key challenges and factors that discouraged experimentation. However, this finding was comprehensively disputed by the case study interviews. Those architects concluded that 'cost' was key determinant to engage in experimentation and the extension of time was not as critical as perceived. The gains on cost effectiveness seemed have off set the difficulties of time extensions incurred due to experiment.

The findings of the case studies indicated the considerable changes and variations to the standard, Architects Plan of Work, in relation to experimenting. However, most of these variations in architects extended scope and engagement occurred within the conventional building programme. The case study survey justified that extended involvement as an essential feature to the success of any experimental intervention although it was not supplemented with additional professional fee. It may be concluded that architects were aware of these facts from the inception of the projects and they continued to engage in experimenting without any monetary reward.

The findings of the study further indicated that experiment in architecture might be encouraged where cost limitations are critical. The experimental case studies justified this fact and

established that greater cost benefits can be achieved with experiments, although these projects may require additional time to complete.

The case studies gave valuable insight to salient factors specific to experiment. These findings indicated that, for successful experimenting and to encourage experimenting, certain simple methods can bring positive outcomes. The study findings are concluded with the following list of ten key propositions to achieve a successful approach to experiment in architecture;

1. Develop a plan of work and a fee scale that can facilitate experiment in architecture
2. Carry out background studies
3. Keep the records
4. Before implementation, discuss ideas with the engineer and the builder
5. Educate the client about what you are going to do as 'experiment'
6. Pre-plan alternatives in case of an un-successful experiment
7. Pre-think about the maintenance process
8. Educate the client about the maintenance
9. Get feedback from the client
10. Execute the improvements immediately

Acknowledgement

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References

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