Sustainable Architectural Designs

Research & Development(R&D) –Perception & Concepts

Experimental Analyses

(Outline)

Smith Arthur

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Contents

Executive Summary

Sustainable Architecture has established contemporary methodology in the engineering of material selection planning and sustainable designs. This section of the paper presents an exclusive summary of the material's productivity for sustainable architecture (Ekins, 2007). Economic developments, social effects, ecological impacts and environmental issues will also be presented in this section. The main contents of the paper include;

- The concept of research
- The adopted methodology of research, and
- The influential parameters covered in the report.

Chapter – 1; Introduction to Sustainable Architectural Designs

This section of the paper presents the Background of study; constituent materials details and advantages of materials such as ferro-cement, concrete and steel will be discussed in this chapter. The following subject headings will be presented;

1. **Statement of the Problem:** The problem statement will be elaborated and an explanation of what areas of the study it will cover will be included.

2. **Objectives of the study:** Aims and objectives of this research will be presented in detail.

3. **Limitations:** Limitations related with respect to the materials applications

4. **Research Methodology:** An overview of each part/chapter of this dissertation will be outlined.

Chapter – 2; Literature review

The details of the available literature from previous research papers including journals, experimentations and publications in the form of books related to the presented study are to be included.

General

1) Basic principles for the design and behavior of materials used in the construction industry

2) Properties of materials of constructions, such as steel and concrete

3) Construction procedures

4) Finite Element Modeling elements; Back ground of finite element modeling and its significance will be covered under this section.

5) Artificial Neural Network Modeling used in the literature to predict shear strength, durability and other characteristics for concrete elements and others elements.

Chapter – 3; Methodology

General

1) Modeling Steps; ♦ Elements used in this study ♦ Element types ♦ Real constants

2) Material Properties

3) Analysis of selected materials ♦ Use of units ♦ Modeling ♦ Meshing ♦ Numbering controls

4) Analysis type ♦ Load, boundary durability conditions

Experimental Program

General

1) Construction Procedures ♦ Life cycle analyses ♦ Mortar of wire mesh ♦ Smart materials applications ♦ Curing

2) Test procedures

3) Experimental data analyses

Parametric Study

Introduction

1) Parametric study using Ansys and Matlab

2) Result and Discussion of Ansys Study

Chapter – 4; Findings (Results and Discussion)

The Findings will be presented through attainment of results and discussion in this section of the paper. Analyses on key information presented will be completed, and qualitative as well as quantitative data will be included, in tabulated as well graphical forms. In order to strengthen the argumentations included, appropriately referenced prospective will be included from the previous research articles to compare the finding of the research completed

Chapter – 5; Conclusions

Conclusion will be included at the end of the research, which would include the primary findings of work completed. Through specific inclusion of developed arguments from the

previous chapters, detailed finding will be presented. This section would further include future prospective with respect to recommendation for further work.

References

Sources of the materials used will be provided here with Harvard Referencing style.

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Appendices

o APPENDIX A:

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