EVALUATING THE USE OF MODERN METHODS OF CONSTRUCTION FOR THE PROVISION OF AFFORDABLE HOUSING IN DEVELOPING COUNTRIES

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INTRODUCTION

This dissertation focuses on investigating the use of Modern Methods of Construction (MMC) for the provision of sustainable, affordable housing in developing countries. The methods used in MMC include Off-Site Manufacturing (OSM) techniques, which include the use of panelised units, volumetric (or modular) units and hybrids of the aforementioned methods.

SUSTAINABILITY AND MMC

Sustainability in construction is the practice of creating structures and using processes that are both environmentally responsible and resource-efficient throughout a building's life-cycle. MMC has a direct effect on at least five out of six sustainability indicators, shown below:

- Low levels of waste production
- Efficient water use
- Low operational energy
- Low Carbon Dioxide emission
- Low embodied Carbon Dioxide

The primary construction material addressed in this dissertation is Timber. The use of timber frame construction has produced construction times that are typically 30% shorter than equivalent projects constructed using traditional methods of construction and buildings with 34% less embodied carbon than equivalent masonry structures.

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