

University of Nairobi,
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21st CENTURY BRUTALISM: *THE AESTHETIC RENAISSANCE OF CONCRETE.*

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B02/0906/2013

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DECLARATION

This thesis is my original work and has not been presented in any other University or Institution for the purpose of awarding a degree to the best of my knowledge.

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This thesis is submitted in partial fulfilment of the examination requirements for the award of the Bachelor of Architecture degree, in the Department of Architecture and Building Science at the University of Nairobi.

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DEDICATION

Mum

For all you did to send me to school.

I reminisce the moments, the story books, the love.

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ABSTRACT

Both loved and loathed, concrete is forever at the diverging point of popular opinion. Having evolved for hundreds of years, the material has witnessed periods of rife usage and admiration alternating with years of disregard and disdain. While its strength in compression and durability is embraced by all, the appearance of concrete is the subject of unending disagreement. During the immediate post war years, the style Brutalism rose, espousing the use of unadorned concrete and the exposure of building functions. For a short while, the ism dominated world architecture only to wane not long after its inception by the likes of Le Corbusier. Why did brutalism fall out of favour with most people, and does the failure of brutalism signal the failure of concrete? The recent advancements in concrete research and technology are a tell-tale sign that concrete is reemerging as the façade material of choice, this time backed by innovations from different parts of the world and ingenious technological advancements. It is up to architects to push concrete to the limit, it always has more to offer.



CHAPTER 1: INTRODUCTION

1.1 INTRODUCTORY BACKGROUND

Concrete is on one hand stigmatised and reviled and on the other hand celebrated and revered. It is the most widely used material in the construction industry, and the second most consumed product globally after water. The widespread use of concrete not only comes from its durability, resilience and strength in compression, but also from the availability of the raw materials required in its production. The strength and durability of concrete has led to its utilisation in vast areas of construction, from roadworks to marine works and all kinds of buildings. On the other hand, concrete is heckled for its supposed visual unease and repetitiveness in standardised products (Fehling et al., 2016).



Figure 1.1: Orange County Offices showing massive, blocky brutalist architecture. Source: bbc.com

The use of concrete as the primary façade material prevailed in the heyday of Brutalism in the years following World War II. Concrete was the favoured material for Brutalism due to its dynamism of form, its versatility of function and its appearance (Ramsey, 2015). Brutalist buildings dominantly featured unadorned concrete surfaces on their facades and were usually blocky and massive (Figure 1.1). After a spate of popularity, brutalism gradually fell out of favour with the people. Although concrete continues to be the most widely used material in construction

today, the decline in the appreciation of exposed concrete as a façade material is apparent. For many, architectural concrete is summed up by the Brutalist architecture movement of the immediate post war years and, all too often, this modernist style epitomises all of its 'negative' undertones: cold, grey, graffiti ridden, stark, angular forms. As a result of exposed concrete falling out of favour with the people, it has been relegated to construction of structural components mainly.

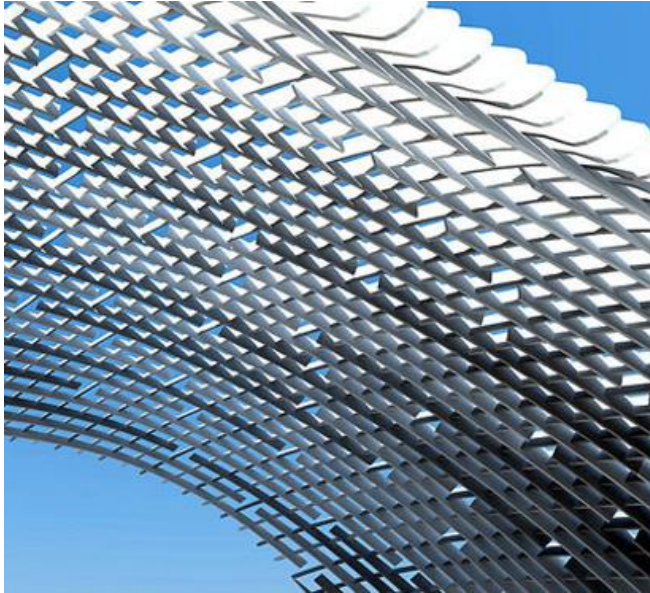


Figure 1.2: The Space pavilion in London. Source: architonic.com

Today, however, concrete is back in vogue, driven by new innovations and technological developments. New concrete types are producing a new generation of concrete buildings. The buildings elicit a sense of lightness, airiness and transparency, despite having concrete as the predominant façade material, such as the Space pavilion in London, constructed using fibre reinforced concrete (Figure 1.2). Concrete is resurfacing as the façade material of choice, and this time, it is supported by a wide array of innovations and technological developments.

1.2 PROBLEM STATEMENT

The utilisation of concrete in buildings has mainly been on structure, owing to its strength, durability and relatively low cost. Conversely, the architectural potential of concrete as an aesthetic façade material has received lesser attention, especially following the decline of Brutalism. In recent years, however, advancements in technology have enabled architects and engineers to fully exploit the aesthetic capabilities of concrete, thus heralding a resurgence of the Brutalism movement. This thesis explores the aesthetic potentials of concrete as used in the 21st century and puts forward recommendations that could be used in growing cities like Nairobi and elsewhere.

1.3 RESEARCH OBJECTIVES

- i. To highlight on innovative ways of using concrete on building facades.
- ii. To investigate, by way of case studies, how concrete has been used on building facades in the 21st Century.
- iii. To put forward recommendations on the use of concrete on building facades.

1.4 RESEARCH QUESTIONS

- i. What innovative ways for the use of concrete on building facades have emerged after the decline of brutalism?
- ii. How have innovative concrete types in the 21st century been used on building facades?
- iii. Moving forward, how can concrete be used in creating aesthetically appealing buildings?

1.5 JUSTIFICATION OF THE STUDY

The innovativeness in designing concrete facades over the years has waned, resulting in repetitive shape grammar, the ubiquitous grey colour and reliance on outdated construction technology. There is need to explore newer ways of architectural expression using concrete as the material comes back in vogue.

1.6 SIGNIFICANCE OF THE STUDY

The study contributes valuable insights on the aesthetic capabilities of concrete, which would significantly improve the appearance of buildings. The resurgence of concrete as a veritable façade material is happening at a time when Nairobi is experiencing a boom in large scale building projects and the revelations herein could help in designing better concrete facades.

1.7 SCOPE AND LIMITATION

The study is conducted in a short, four-month period, and while every effort has been made to include all new advancements in concrete, there is room to research every item in greater depth.

1.8 ORGANISATION OF STUDY

Chapter 1 contains the introduction to the study, problem statement, research questions and objectives, justification, scope, as well as limitations of the study.

Chapter 2 explores brutalism as a universal style and looks into the new innovations that are bringing concrete back into relevance.

Chapter 3 is a description of the methodology used in the study.

Chapter 4 contains the four case studies analysed to shed light on the use of concrete in 21st century buildings.

Chapter 5 has the summary of findings sourced from the literature review and the case studies, followed by conclusions and recommendations.