

An investigation into the climactic impact on design:
A comparative study of 21st century iconic architecture in Arctic and Equator
cities

Introduction

Architecture designed for global areas of extreme climactic conditions is likely influenced by the meteorological conditions of its surroundings. Conventional architectural considerations will also always be present, that is, those of design, innovation, technology, materiality, sustainability, and finance and wealth. Connections between these former and latter aspects, and particularly comparisons and contrasts of design in architecture for extreme conditions appear under-researched.

Methodology

This will be primary, qualitative, empirical research. I intend to design online qualitative questionnaires to distribute, ideally to the (English speaking) architects of each of the six selected buildings of study. The data will be analysed in order to identify comparative patterns and contrasting differences to the norm across both extreme climactic areas.

Aims and objectives

Six iconic 21st century buildings have been selected that are comparable in terms of climactic factors. Three of the selected buildings are located on the equator (Equatorial Guinea, Eastern Kenya and Singapore), to represent a hot climate, and the other three selected buildings are located in the arctic circle (Norway, Greenland and the United States) in order to represent the extreme opposite; a cold climate. I will attempt to investigate into the six selected buildings and what factors have influenced the architecture. The main focus will be how the varying climates affect the design and build process pertaining mainly to the materiality and technologies used. The search will identify any prominent differences and look into why they have arisen. Alongside this, the study will consider any prominent connections in the different collective buildings. The study will investigate differing cultural and socio-economic influences and how these factors affect the architecture. The study will consider, where possible, how the differing designs were conceived and how this has affected the overall process including the function of the building following completion of the projects.

Literature review

I will look into the background context of these buildings, starting with the use of leading texts to inform the main areas of the study. ArchDaily and the Architectural Journal will be used for general information about each of the buildings. Another text, by Bjarke Ingles, will be 'HOT TO COLD'. This book presents 60 case studies in extreme climate conditions. 'Experiencing architecture' by Henty Plummer will inform some of the analysis of the selected case studies.

Limitations

Two of the selected buildings have not yet been constructed, though there is substantial information about the proposal, this may present some issues. Travel to the selected buildings is not feasible in the current situation owing to the current and foreseeable corona

virus restrictions. Potential participants from selected architectural practices will ideally speak English.

Ethical considerations

I will provide a participant information sheet for all participants as well as a consent form, together this will become their informed consent, and I will get ethical approval. I will consider reputation and respect.

Timeframe

I will plan, begin writing and design my questionnaire for the dissertation during the summer period 2021 in order to be organised.

Conclusion

This research will connect the determining aspects of architecture for extreme conditions, which incorporate architectural design factors, and will result in contributing to a research gap and highlight a fascinating area of global architectural interest.

References

Gambino, M. (2015). Designing Buildings for Hot Climates, Cold Ones and Everything in Between. <https://www.smithsonianmag.com/innovation/designing-buildings-for-hot-climates-cold-ones-and-everything-in-between-180954003/> [date accessed, 27 April 2021]

Ingels, B. (2015). HOT TO COLD: An Odyssey of Architectural Adaptation. 1st ed. [date accessed, 01 May 2021]