

The Interrelations between Niemeyer's Works and the Concept of Typology: A Computer Based Analysis of Form and Structure

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Abstract : While the aim of the modernist movement was to deny known typology, the creation of a new formal language also gave it new meaning, which was now related to Form. This is specifically true in the modern capital of Brazil, where Niemeyer sought to demonstrate the manner in which the new materials available, such as reinforced concrete, were able to produce innovative forms. With this study, we aim to demonstrate the relationship between Niemeyer's forms and the topological typology known as tessellation, through the presentation of two case studies, the Monument to Caxias and the Saint George Orthodox Church. At a first glance, our purpose is to present the definition of Form, especially with relationship to the works of Niemeyer, seeking to identify in them the concepts presented by Moussavi. Afterwards, we will use a computer-based approach to study and model the forms of two of his buildings with the McNeel Rhinoceros program, where, with the aid of diagrams and renderings, we will be able to clearly and legibly represent their organic forms and further understand their structural systems. When we recognise the concept of typology as a starting point for structural form, it can be concluded that the case studies presented here are encompassed by the typology presented by Moussavi since they derive from his basic structural systems.

Keywords : form, Niemeyer, structure, typology, topology

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