INTRODUCTION

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Architecture brings together the beautiful and the tectonic, making it inhabitable at a human scale. Once again, in this seminar are gathered thoughts on the indispensable correspondence between these two matters, one a pure abstract thought, the other concrete synthesis on Form, Space and Order (Ching, 1989).

The Estejo Research Group, from the Research Center in Territory, Architecture and Design [CITAD], in association with the School of Architecture and Arts of the Lusíada University, held in Lisbon in November 2019 the 4th International Seminar on Architecture and Mathematics - "Formulas in Architecture".

This year the conference panel featured the special participation of three internationally acknowledged figures, namely:

- Professor Nikos Salingaros of the University of Texas San Antonio, known as one of today's leading urban planning theorists, which has contributed to the development of concepts such as Fractal City and Biophilia. Professor of Mathematics, he worked with the visionary architect and urbanist Christopher Alexander for twenty years, and has applied science-based techniques to confirm the essential importance of traditional building approaches for human health and wellbeing;
- Professor Renato Saleri of the École Nationale Supérieure d'Architecture de Lyon, Head of the Research Unit's UAV (Unmaned Aerial Vehicles) platform and Director of Architecture Research (including the top 5 "prix de la jeune architecture" in Lyon). His research interests mainly refer to the 3D modeling of heritage artifacts;
- Professor António Araújo of the Universidade Aberta, MSc in mathematics in the specialty of Geometry and Topology, and member of the Center for Applied and Fundamental Mathematics of the Lisbon University since 2015. He was awarded with the Gulbenkian Prize for Research Encouragement in 2000.

Considering the interest of the matters that these seminars have been

addressing, the organization opened the participation to a wider spectrum of presentations, within the Lusíada University and throughout the academic community with interest in the field. For this purpose, it was organized a Call for Papers within subjects that relate mathematical thinking and architectural matters, and was undertaken a process of Peer Review with the Scientific Committee, ensuring the interest and quality of the presentations and the scientific standard of the articles of the now published Book of Proceedings.

This year's seminar once again integrated an architecture field visit, to the construction site of the Ajuda National Palace, the completion of the unfinished early 19th century building meant at the time to become the Portuguese royal palace. The new design of the work today in progress was presented by its author, architect João Carlos dos Santos - currently Subdirector of the Cultural Heritage Governmental Department -, who also guided a tour through the building site.

Along with the seminar's works, an exhibition on the thematic of the current interpretation of the Temple of Solomon was also held, by the students of the architecture program of the Faculty of Architecture and Arts, under the guidance of Professor Mário Chaves. It was also exhibited a film about the Geometry of Architecture, presented by Professor Suzana de Nápoles.