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Foreword

The Australia and New Zealand Architectural Science Association (ANZScA) is an international organisation, the objective of which is to promote architectural science, theory and practice primarily in relation to teaching and research in institutions of higher education. ANZScA is a membership-based non-profit organisation that was formed on the initiative of Professor Henry (Jack) Cowan, Derrick Kendrick and other Architectural Science academics to enable them to meet, discuss, and exchange information about their research and teaching. The membership is drawn from architecture schools in Australia and New Zealand and is open to students and professionals who also contribute to the research and teaching of other technical subjects.

ANZScA has a membership of several thousand professionals, academics and students from many countries. The first meeting was held in 1963 in Adelaide. A few years later, annual conferences were introduced, hosted by one of the universities in the region. The annual conference brings together Architectural science researchers, educators, students, and industry from Australasia and other regions, and provides them with a robust platform for knowledge sharing, collaboration, disciplinary reflections, institutional exchange, and collective growth.

The 54th International Conference of the Architectural Science Association (ANZAScA) 2020 was held virtually, from 26th to 28th November 2020, under the auspices of the School of Future Environments, Auckland University of Technology, New Zealand. The conference theme was 'Imaginable Futures: Design Thinking, and Scientific Methods'. The theme explored various facets of explicit relevance and tangible contribution to the interdisciplinary areas of architectural design, building science and technology, healthy and intelligent buildings, digital environments, urban design, and future cities. The topic categories include: 'Acoustics', 'Architectural Science, Design and Environment Science, Urban Science', 'Building Case Studies and Post Occupancy Evaluation', 'Building, Tectonics and Energy', 'Carbon Reduction in Built Environments', 'Construction, Building Materials and Integrated Technology', 'Daylighting/Lighting', 'Design Education and Research', 'Design Thinking and Innovation', 'Digital Architecture, BIM and City Information Modelling (CIM)', 'History and Theory in Architectural Science', 'Modes of Production and Mass Customisation', 'Natural Ventilation', 'Practice-Based and Interdisciplinary Design and Research', 'Simulation, Prediction and Evaluation', 'Smart and Intelligent Cities', 'Thermal Comfort and Indoor Air Quality', 'Slow Urban Environments', and 'Social Cities - Inter-Generational Cities.

Each paper in these proceedings has undergone a rigorous peer review process. Following the call for abstracts in March 2020, a total of 291 abstracts were submitted for review. Each abstract was blind peer reviewed by two members of our International Scientific Committee, made up of 158 experts from 15 countries, across four continents. Of these, 188 abstracts were accepted for development into a full paper. Following this, 188 full papers were submitted, each of which was again blind peer reviewed by two to three members of our International Scientific Committee. Based on the reviewers' recommendations, 143 papers were accepted for presentation at the conference, and 140 are included in this publication.

To maintain and assure the quality of the conference proceedings, each abstract received was peer-reviewed. The authors received anonymous reviewers' comments on their abstracts and were invited to submit their initial full papers. All the initial full papers were peer-reviewed with anonymous reviewers' comments before final acceptance to the conference. The accepted final papers were included in the conference presentation programme and the proceedings.

Ali Ghaffarianhoseini, Amirhosein Ghaffarianhoseini and Nicola Naismith

Auckland 2020

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