

Preface

From November 21 to 23, 2025, the 2025 7th International Symposium on Architecture Research Frontiers and Ecological Environment (ARFEE 2025) was held in Changsha, China. This symposium converged experts and scholars from various universities, research institutes, and industry to engage in in-depth discussions and jointly explore the innovative trajectories of green architecture, low-carbon technology, resource recycling, and ecological restoration.

The symposium upheld its purpose of exploring frontiers, disseminating findings, promoting practical application, and facilitating industry advancement to respond to the pressing worldwide demand for sustainability and green transition in the construction industry. During the three-day agenda, three high-quality keynote speeches and numerous oral presentations were delivered in an orderly manner. The content spans several frontier areas, such as high-performance eco-friendly construction materials, desalination and sewage treatment technologies, building energy conservation and carbon emission management, integration of traditional architectural wisdom with modern innovation, geotechnical and subsurface engineering, and solid waste recycling. From macro-level analysis of policy systems to micro-level regulation of material performance, from digital design methodologies to physical construction techniques, and from urban climate adaptation to the optimization of rural human settlements, these presentation topics not only demonstrate a broad academic horizon but also showcase the close integration of academic exploration and practical application.

This volume of proceedings consists of research achievements that have undergone a rigorous peer review. Researchers utilized contemporary technological approaches—including numerical simulation, life cycle assessment, big data analysis, and intelligent algorithms—to address specific problems in architecture and the ecological environment, which are evident throughout this volume. These works not only possess theoretical value but also provide a scientific basis and technical pathways for engineering practices and policy formulation.

We would like to express our sincere appreciation to all guests, contributing authors, organizing committee members, and supporting institutions. It is our expectation that the inspirations and dialogues generated at this symposium will exert a lasting impact; the publication of this volume will drive more interdisciplinary and cross-sectoral collaborations, thereby fostering the integrated advancement of architecture and the ecological environment.

In academia, exchange drives progress. We anticipate the ARFEE symposium series to continue to serve as a high-level platform for global scholars to exchange ideas, explore innovations, and inspire mutual enlightenment.

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