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Editors' Notes

Chief Editor's Note

This June 2023 issue of the *International Journal of High-Rise Buildings* (IJHRB) comprises two parts: the major part with eight papers under the theme of "Sustainable Tall Buildings" guest-edited by Professor Peng Du who introduces this part in more detail later in the guest editor's note and another part with a paper on "Sustainable Green Space Design" first-authored by Professor Myung Sik Lee. The first part covers a wide range of sustainable tall building design solutions in terms of climate, energy and technology. The second part presents a study on sustainable green space design based on remodeling of an old apartment building.

Indeed, tall buildings have great potential for creating sustainable built environments by their own nature. Compared to the cities with low-rise buildings, those with tall buildings use land more efficiently. Tall buildings provide denser occupiable spaces using less land. Therefore, more land can be saved for environmentally friendly green spaces. A tall building with many vertical layers of spaces has less area of the exterior envelope directly contacting harsh outdoor environment than multiple low-rise buildings containing the same total floor area and space. Thus, energy consumption for environmental control can be less in tall buildings than in comparable low-rise complexes. Power in tall buildings can be served with shorter length distribution lines than in low-rise complexes, when identical total space served is considered. Hence, electricity can be delivered more efficiently in tall buildings. There are many other inherent sustainable features tall buildings can provide, which come from their compactness and higher density. Recognizing tall buildings as a natural architectural phenomenon due to their efficient urban land use as well as their inherent symbolic power, and appreciating sustainable design as a zeitgeist, this special issue of the IJHRB presents various state-of-the-art design strategies to produce more sustainable tall buildings and vertical cities.

With the rapid growth of population and urbanization throughout the globe, tall buildings are an essential building type today and even more for the future. The IJHRB promotes research and application of innovative technology and design to create more livable and sustainable vertical built environments with well-thought-out tall building developments. Papers making a seminal contribution to this important effort are always welcome.

Kyoung Sun Moon
Principal Editor-in-Chief

Guest Editor's Note

It was a great honor for me to serve the *International Journal of High-Rise Buildings* (IJHRB) as a guest editor the second time. Entitled "Sustainable Tall Buildings: Climate, Energy and Technology", this issue seeks innovative solutions to what makes tall buildings and dense urban environments sustainable from three aspects: climate, energy and technology. Eight papers were selected for this issue covering important topics such as net-zero carbon, natural ventilation, tall timber, structural performance, life cycle assessment and vertical transportation.

Specifically, Kheir Al-Kodmany from the University of Illinois at Chicago and Mir M. Ali and Paul J. Armstrong from the University of Illinois at Urbana-Champaign highlight vital energy-efficiency design principles and illustrate how they are applied in some of the best practices in the world. Mina Hasman, Jiejing Zhou, Alice Guarisco, Nicholas Chan, Alessandro Beghini, Zhaofan Li, Michael Cascio and Yasemin Kologlu from the Skidmore, Owings & Merrill propose the Urban Sequoia concept, and demonstrate its applications in a 40-storey building by reducing the whole life carbon emissions by more than 300% over a 100-year lifespan. Yohan Kima, Mahjoub M. Elnimeirib and Raymond J. Clarkc from the Illinois Institute of Technology discuss the implications of modified multi-story type double-skin façades on indoor airflow through a 60-story naturally ventilated tall office building. Giorgio Marfella from the University of Melbourne and Kimberly Winson-Geideman from the Arizona State University examine Engineered Wood Systems (EWS) as a primary structural material and a widespread solution in multi-storey buildings in Australia. Piyush Khairnar from the Illinois Institute of Technology discusses the application of mass timber and carbon fiber composites as structural materials in floor systems of tall buildings. Amirreza Ardekani and Matin Alaghmandan from the Shahid Beheshti University introduce their studies on the effect of plan shape and diagrid angle on structural efficiency of diagrid tall buildings. Lijian Ma from the Illinois Institute of Technology provides an overview of the literature on BIM-based embodied energy and environmental impacts of high-rise buildings. Kheir Al-Kodmany from the University of Illinois at Chicago also outlines elevators' technological advancements, and discusses how to harness new technologies and apply them to aging, modern, and future buildings.

I would like to thank all the authors for their excellent contributions. Special thanks to Prof. Sangdae Kim, former, and Prof. Kyoung Sun Moon, current IJHRB's Chief Editor, for their support and trust. I also appreciate the editing and coordinating support from the IJHRB staff.
Sincerely,

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