

Identifying Movability Contributions to Creating Interacting, Responsible, and Adaptive Architectural Spaces

Seyedehfatemeh Kamali¹, Saied Haghghi², Han-Hsiang Wang³

¹Graduate Research Assistant, Civil Engineering Department, National Central University,
Taoyuan, Taiwan

²Instructor, Art & Architecture Faculty, Islamic Azad University of Hamedan, Hamedan, Iran

³Associate Professor, Civil Engineering Department, National Central University, Taoyuan,
Taiwan

kimia.kamali16@gmail.com

ABSTRACT

The capability of users' welfare provision is a crucial criterion for evaluating an architectural phenomenon. Kineticism application in architecture is one of the many innovations suggested to fulfill the need. However, since a structure is usually static and unable to adjust itself to climate changes or inhabitants' requirements, it is almost impossible to achieve the goal through the old immovable architecture style. Thus, to provide inhabitants with a higher welfare level, movability enables constructions to interact with the surrounding environment and accredit them to better respond to ever-changing users' needs. Moreover, the inclusion of kinetics in an architectural project can serve diverse purposes, like adaptation & interaction with climate changes, responsibility to users' needs, comfort enhancement, optimization, plus hazard mitigation. This study aims to determine how movability has contributed to creating spaces to respond, adapt and interact considering climate/users demands and to investigate what are the potentials for further contributions based on relevant literature review. To serve the purpose, a brief history including movability & kinetics main definitions plus their backgrounds are provided. Finally, a case study was conducted to highlight movability application trends, kinetic fundamental elements, and their effectiveness in the design process. Expert consultations were done to validate the results. The main-key elements of kinetic architecture plus its means are provided as the study conclusion, also different algorithms and frameworks for categorizing movable architecture components and trends are comprised. Moreover, although it's less than a century since an official definition for movable architecture is stated, it is derived from a literature review that movability application history is long and kinetics have highly contributed to users' architectural experience during times, this field has strong potential from many aspects for further contributions, especially aiding of consistent technology upgrading.

Keywords: *Moveable Architecture, Movability in Architecture, Kineticism in Architecture, Environmentally responsible Spaces*

NISDCE'22 – 219