



## MULTIPLE CRITERIA ANALYSIS OF THE LIFE CYCLE OF THE BUILT ENVIRONMENT

**Editors: Artūras Kaklauskas, Edmundas Kazimieras Zavadskas**  
**Publisher: VGTU Press TECHNIKA, 2015**

The monograph addresses the highly topical and innovative area of multiple criteria analysis of the life cycle of the built environment. Authors of the monograph analyze the life cycle of the built environment as follows: the built environment, the stakeholders involved in its life cycle as well as the micro, meso and macro environments, in terms of their particular impact on making it an integral whole.

The structure of the monograph is well thought-out, comprising seven chapters. Each chapter serves its own purpose. The objectives the authors lay down at the beginning of the research have been effectively achieved in succession.

*Chapter 1* (authors: Artūras Kaklauskas and Edmundas Kazimieras Zavadskas) focuses on multiple criteria analysis of the life cycle of the built environment. *Chapter 2* "Facilities Management" (author: Natalija Lepkova) presents the following aspects: the origin and analysis of the definition of facilities management; facilities management goals and tasks; and the facilities management process. Special attention is paid to facilities management services quality assurance. *Chapter 3* "Retrofit of buildings in urban neighbourhoods" (authors: Saulius Raslanas, Arturas Kaklauskas and Edmundas Kazimieras Zavadskas) analyse modernisation and retrofit of buildings as one of the forms of urban development. Modernisation of apartment houses is a particularly relevant issue both in Lithuania and many other countries. To make it more efficient, the modernisation of apartment houses must be integrated – an entire block or residential area must be renovated and the principles of sustainable development must be followed. *Chapter 4* (author: Jūratė Šliogerienė) reviews academic research papers which discuss the role of values in the energy sector and then presents a set of criteria and an automated decision support system for the assessment of the environment of energy generation technologies with emphasis on the dimension of social issues and values. *Chapter 5* "Knowledge management in the built environment" (authors: Artūras Kaklauskas and Lina Bartkienė) gives background to the different approaches to knowledge management, analyses air pollution, noise, and illnesses they cause and real estate prices. *Chapter 6* "Built environment life cycle process and climate change" (authors: Artūras Kaklauskas and Lina Pečiūre) introduces the climate change mitigation and adaptation in the built environment's quantitative and qualitative aspects. *Chapter 7* "Distance Learning Experience in Construction and Real Estate at VGTU" (authors: Natalija Lepkova, Silva Rimkuvienė) contains the general information about distance learning development in the World, Lithuania and Vilnius Gediminas Technical University (VGTU).

This monograph represents a large body of work. It is well presented, and very interesting to read. The work is highly innovative in several areas, and will encourage other researchers to take the authors' ideas forward themselves. The results make the monograph much more usable and extendible, and may have direct impact on the actual life cycle of the built environment processes. The list of researched literature is extensive; the sources were chosen with the purpose in mind and correspond to the issues discussed in the monograph.

The monograph has been prepared for researchers, practicing engineers and managers, MSc and PhD students of civil engineering, construction and the real estate sector.

The conclusion of this review is that the monograph meets the highest requirements applicable to the relevancy, originality, theoretical and practical significance, which will certainly be evidenced in the dissemination of its research results.

**prof. Ing. Miroslav Žižka, Ph.D.**

Technical University of Liberec

Faculty of Economics

Department of Business Administration and Management

miroslav.zizka@tul.cz