

The building material constitutes a fundamental element in the architectural creation process. In an era of constant technological development and the search for innovation paths, we wish to explore achievements and challenges that, with the account to the broader cultural context, will influence the future development of architecture. We can already observe that innovative building materials not only provide the essence of the structure, but also serve as an inspiring tool for the creation of modern architectural aesthetics. Recognising their properties paves the way for a full understanding of how modern technologies can drive evolutionary change in architectural aesthetics. They introduce new dimensions to the visual, functional and social experience in architectural space, both at the scale of the building itself and the city as a whole. The proposed division of issues into five thematic areas covers the following aspects:

- I. HUMAN AND THE ENVIRONMENT**  
**Biophilic building materials**
- II. AESTHETICS OF THE ARCHITECTURAL FORM**  
**in the context of innovative materials**
- III. INTELLIGENT MATERIALS**
- IV. ECONOMISATION OF PROCESSES**  
**production of materials for the future**
- V. RESPONSE TO CIVILISATIONAL CHALLENGES**  
**modern materials in architecture and urban planning**

I. The latest developments in the field of materials engineering not only influence technological developments within the construction industry, but also contribute to the quality of life and shape a new quality of the living environment, rooted in a sustainable approach to designing.

II. Innovative building materials as a catalyst for architectural aesthetics. An analysis of the impact of advanced materials such as “smart” glass and translucent concrete on the visual and aesthetic aspects of architecture. Discussing the potential for creating unique forms, lights and structures that emphasise the aesthetic dimensions of modern architecture, while remaining both functional and sustainable. Innovative approaches to building materials, including the use of natural materials such as hemp, straw and mycelium, inspire the creative development of original architectural form, contributing to the development of contemporary architecture.

III. Innovative building materials (smart, biomimetic, nanotechnology-based, etc.) provide opportunities with regards to monitoring, controlling and optimising key building parameters, as well as supporting innovative facility maintenance strategies.

IV. Advanced technologies applied/used in production processes within the construction industry, by focusing on the optimisation of solutions, aim at increasing productivity and reducing losses that result from the construction process.

V. The conceptualisation of building material solutions and the widespread implementation thereof in architecture and urban planning remain a persistent challenge that will provide an integral part of future policies of enhancing resilience for the sake of maintaining sustainable development.