

ARCHITECTURAL COMPARISON OF CHOSEN PASSIVE BUILDING STANDARDS

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Abstract

The building sector consumes one-third of global final energy and emits nearly 40% of total CO₂ emission. To decrease those numbers, it is necessary to design sustainable buildings, which have low heat and cooling demand. The Passive House standard was designed to meet these requirements however, some imperfections were observed. Therefore, a new approach the “be 2226” standard was put forward. This paper presents major architectural differences of those concepts and discusses their advantages and disadvantages. The main purpose is to develop guidelines how to design energy-efficient passive architecture. The Author used own mixed research method that included literature studies, analyses of technical documentation, in situ examinations, own measurements, and infrared tests. The comparison of two passive standards established strong, proven solutions, as well as incompatibilities and flows of each standard. The research main findings are that all buildings should be built in the passive manner and it would be beneficial to implement mixed standard. The main conclusion is that architectural creation has a great impact on passive solutions in buildings.

Keywords: Passive House buildings; Be 2226; Utility buildings; Design; Sustainable buildings; Architectural expression.