

A Concept to Assess the Economic Importance of the On-Site Activities of ETICS

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Abstract : Construction technology and on-site construction activities have a direct influence on the life cycle costs of energy efficiently renovated apartment buildings. The systematic inadequacies of the External Thermal Insulation Composite System (ETICS) which occur during the construction phase increase the risk for all stakeholders, reduce mechanical durability and increase the life cycle costs of the building. The economic effect of these shortcomings can be minimised if the risk of the most significant on-site activities is recognised. The objective of the presented ETICS economic assessment concept is to evaluate the economic influence of on-site shortcomings and reveal their significance to the foreseeable future repair costs. The model assembles repair techniques, discusses their direct cost calculation methods, argues over the proper usage of net present value over the life cycle of the building, and proposes a simulation tool to evaluate the risk of on-site activities. As the technique is dependent on the selected real interest rate, a sensitivity analysis is anticipated to determine the validity of the recommendations. After the verification of the model on the sample buildings by the industry, it is expected to increase economic rationality of resource allocation and reduce high-risk systematic shortcomings during the construction process of ETICS.

Keywords : activity-based cost estimating, cost estimation, ETICS, life cycle costing

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