A RETROSPECTIVE ANALYSIS ON THE THERMAL REHABILITATION OF A SCHOOL BUILDING - CASE STUDY

(O ANALIZA RETROSPECTIVA PRIVIND REABILITAREA TERMICA A UNEI CLADIRI PENTRU INVATAMANT - STUDIU DE CAZ )

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ABSTRACT

The increasing of energy efficiency of buildings, including public buildings, represents an important aim of last 10 years. Among the total public buildings, the school buildings represent a special category due to their specific requirements concerning the indoor environment quality regarding the thermal comfort, indoor air quality, visual comfort, ventilation rate, and acoustic comfort.

Education buildings represent 17% of European stock of buildings and approximately 12% of average, non-residential, energy consumption in Europe and in many countries the existing school building stock is generally characterised by poor quality regarding energy efficiency. The energy retrofit of existing school buildings in recent years is part of the policies of the European Union and, consequently, of the Member States.

In Romania the majority of school buildings are built before 1990 and therefore they do not respect the present requirements on energy consumption and environment protection and a lot of them are subjected to thermal rehabilitation process.

The thermal retrofit of schools using the same constructive solutions as for dwellings is less efficient, because the specific features of this type of building (large glass surfaces, high density occupancy of the indoor spaces, discontinuous occupancy).

The paper presents a retrospective evaluation of a school building concerning the effects on energy performances of increasing the thickness of the thermal insulation in the peculiar case of a building with a higher size of glazed areas.

Keywords: schools buildings, thermal rehabilitation, energy efficiency, critical analyse.