ABSTRACT

Thailand is situated in a hot and humid climate. Heat gain through building depends on many factors such as building envelope material, outdoor weather, solar energy building orientation, size and shape of building. In considering the heat gain, the main factors that have greater influence is building envelope material so this project study about the efficiency of thermal performance of autoclaved aerated concrete energy which we implement in the proposed system because our purpose is to find the solution to reduce heat gain through the building envelope.

The project study considers and determines the index value which can be representative thermal performance of proposed system compared with conventional system that we called OTTV. We also determine cost and investment benefits if we are going to implement proposed system by using financial tools such as Payback period, iNTV and IRR as these financial tools can be answer the proposed system is worth investment or not.

Finally, the results of the study of thermal performance of Autoclaved Aerated Concrete by determination OTTV of three example building models shows more thermal efficiency of construction materials compared to conventional materials and it gives more benefit such as the electricity cost reduction, cooling load cost reduction and others