

## **Effect of The Envelope on The Energy Consumption of Typical Types for**

### **Moderate Income Housing in Cairo**

#### **ملخص البحث (باللغة الإنجليزية):**

The national project for housing of the most important projects adopted by the state and its institutions concerned to provide adequate housing for special categories of middle-income and low-income people by providing them with adequate housing, as appropriate for their abilities and their level in particular economic level. The State shall provide appropriate support in accordance with the economic needs of the target group, and therefore there were many themes and strategies to provide that housing between the providing land with specific surfaces (built your home) or the provision of housing units for ownership of different surfaces according to social needs and economic possibilities and other strategies and axes .

And the question remains: Is the subsidized housing policy has succeeded by providing residential modules, which are executed in large numbers in the same schematic design and style in several different areas of the properties, in particular climatic characteristics to achieve the desired success rate?

no doubt that the main objective is to raise the economic burden on groups with low and middle income, and with the attention of the State to achieve that in titling unit residential stage the question remains how much economic impact on the family during the period of occupancy of the typical units, especially with regard to the cost bring convenience thermal with increasing energy consumption to achieve thermal comfort requirements.

The research aims to analytical study of how to rationalize energy consumption, one of the stereotypes of housing units (average housing project) for those groups to the scope of the territory of Greater Cairo, which are still under presentation and customization, and that by studying the impact of components and the design of the outer skin of the units of energy consumed, with consideration of alternatives design available technology economically and outer casing and its role in improving the efficiency of energy saving consumption of these units by improving the thermal performance of housing units, with a special study of the payback period for those alternatives to extract economic viability with viability design

the research reach to the different effects of directing the outer skin of the design for basic housing units on energy consumption, rationalization, where the walls and ceiling contribute by rationalization can be up to 25%, but in the external openings to approximately 38%, However, the effect payback period with a direct impact on the evaluation of those alternatives and differentiation between them where the glass is characterized by some of the

alternatives limiting payback period, while up recovery of the walls and ceiling period of relatively larger period.