

Admin. Building envelope Design Economics to Achieve Thermal

Comfort

Applied Study in Cairo Climate using one of the applications of information technology

ملخص البحث (باللغة الإنجليزية):

One of the main causes of the scientific and cultural gap between the Arab world and the developed world in the current time - is the speed of receiving, accommodated and applying modern revolutions and developments in the fields of science, economics, culture, and other, and even translated quickly in the form of daily applications and a variety of service requirements of both the public and professionals.

There is no doubt that the "globalization" era of comprehensive concept, coupled with economic growth, revolution in information and digital development, which appeared through its applications in both fields of the environment, contemporary architecture and construction - But it is a clear example of this technological mutation and great intellectual. The specialized digital information systems which based on databases and a variety of input information, Assisted the modern designer architect on take many complex decisions design, which made up to him great confusion in the past, because it dependence on the results of accurate calculations which affect the choice of materials and construction techniques for various projects, And in accordance with the economic dimension of the project budget (design - establishment - functioning "),trying to achieve the efficiency and sufficiency of design together.

In this research, through the use of an information technology applications, trying to reach a methodology designed to help architect in the selection of alternatives solutions for the type, components, and materials for building and the outer skin of administrative buildings type materials by studying each interface separately Or in order to achieve the required thermal comfort for users, And through suitable framework economically and technically to participate in reduction of mechanical operating costs as much as possible.

As it is clear that the relationship between economic cost of external envelope and the level of heat comfort achievement for users of the internal space Not necessarily being absolute direct correlation or inverse relation but depends on several factors and multiple conditions of the most important mass composition, direction and characteristics of materials used for the outer skin.

the research has found that the change in the outer wall segments between the solid wall and curtain Wall, Its impact is different to bring the thermal comfort in the inside space in

accordance with the outer skin, Where it is the least at the North front as no more than of nearly 5% percentage while reaching in the southern facade to nearly 30%,This refers to the importance of attention to the thermal characteristics of the outer skin components especially in the southern facades than in the northern and in an medium for Eastern and Western facades.