TOWARDS LOW COST GREEN BUILDING WITH LOW ENERGY CONSUMPTION

Case study: North Sinai El-Arish

By

Marwa Nossier Hamdan Nossier

A Thesis Submitted to the

Faculty of Engineering at Cairo University

in Partial Fulfillment of the Requirements for

the degree of

DOCTOR OF PHILOSOPHY

IN ARCHITUREAL ENGINEERING

FACUKTY OF ENGINEERING - CAIRO UNIVERCITY

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Title of Thesis:

TOWARDS LOW COST GREEN BUILDING WITH LOW ENERGY CONSUMPTION (Case study: North Sinai El-Arish).

Key Words:

Economic Green Building; Green Building; External Envelop Construction; Energy Efficiency; Green Material.

Summary:

In this thesis has been focused on primarily cost of green building. The main element impact on primary cost is construction of the building. Additionally, decreasing the primarily cost of green building has been given attention to the energy consumption inside building and selecting the stabile material. Therefore, has been suggestion new construction system for green building made of plastic. Also, it has been tested the durability of it and studied ability use recycled plastic in the construction to save the environment. The cost of new block has been calculated and comparative with use traditional brick in the building. Additionally, it had been analyzed main geometric shapes which can decrease the total solar radiation on the external envelope of the building. The result approves that the cost of new construction lower than traditional building. Also, it helps on decrease heat transfer through the wall. Finally, the circle is satiable shape in Sinai building.

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