

Fayoum University
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Value Architectural Programming for project

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requirements of the PHD in Architecture

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ABSTRACT

The architectural spaces is considered one of the sections of the final architectural programming report that is determine the necessary spaces according to the requirements of project, and the area is the main factor affecting the quality measurements of the project represented by the high efficiency and low initial cost of the project. A huge variety of data, which are currently being analyzed through traditional methods that rely only on analysis by the human mind, depending on the traditional methods used to analysis with big data may entail taking into account some of them and ignoring other data, which may result in calculating inaccurate spaces that lead to a decrease in the efficiency and an increase in the initial cost, the purpose of achieving the highest quality requires finding an optimal solution for net and gross area and including not exceeding the budget limits and adjust the relationship between them, so the research used linear programming as one of the methods that depend on mathematical analyzes of some linear equations that are specially formulated for the purpose of determine the optimal solution for area, the research aimed at a minimize function of the gross area so respect of constraints such as minimum and maximum limits for each area, the limited budget and the minimum & maximum efficiency , design standards, requirements for the project site, and others, the mathematical model was prepared for calculating the optimal areas according to requirements of applying linear programming and testing its applicability to architectural projects, the proposed approach was applied to an office building at fayoum university , The results showed positive measurements resulting from suggested application methodology and measurements of the optimal solution for each component of the area, and also showed significant saving cost and increase efficiency values than those of the Current building program And the possibility of using the mathematical model within the stages of the proposed approach to prepare the value architectural programming for project