***Abstract:***

*In the first phase of the project we calculated direct cost for all elements (excavation, concrete work, steel work, finishing work. mechanical work. electrical work. labor cost) .*

In the second phase redesign this building .

This building is classified as an office building but it includes other type as stores and this is very bad on the cost of building and the way in which motion and privacy ,so the building was modified to become more comfortable cheaper and safe .

Things that have been at work re design***:***

* Added parking to serve the building
* Enlarge some area in function.
* Directing building for maximum heat gain .
* Re distribution of structural elements in making the building more resistant to earthquakes.
* Added shear wall to more rigidity and distributed to make eccentricity nearly zero.
* Enlarge the area of windows especially in south elevation.

 three dimensional analysis and design, which introduces the final and practical structural analysis and design of the structural elements with the practical structural drawings that are ready for construction.

Mechanical systems include hot and cold Water System , Drainage System

Electrical design: By using dialux program

In the final phase of the project Comparison the cost of project before and after the seismic design:

Cost analysis (before re-design):

\*Total cost per square meter.

|  |  |
| --- | --- |
| *823.5* | *total area SM* |
| *786647.9* | *total cost (NIS)* |
| *955.2494* | *cost per SM(SM/NIS)* |

Table 16: total cost per square meter.

3.4-cost analysis (after re-design):

\*Total cost per square meter.

|  |  |
| --- | --- |
| *1704* | *total area SM* |
| *1786152* | *total cost (NIS)* |
| *1050* | *cost per SM(SM/NIS)* |

Table 18: total cost per square meter after seismic design.

3.5: Result

Increase the proportion of cost between the two projects (10 %)

This increase is distributed on these elements

1. Excavation
2. Concrete work
3. Steel work
4. Finishing work
5. Mechanical work
6. Electrical work
7. External work
8. Labor for structural elements

I have been a redesign of all of these elements within engineering cods of that was increased this ratio costs.

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