

COMPARISON OF PORTAL FRAME AND TRUSS CONSTRUCTION

Project Report submitted by CHARICLIA LARCOU in part satisfaction of the award of Diploma of Technician Engineer in Civil Engineering of the Higher Technical Institute, Cyprus.

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SUMMARY

The purpose of this project was to design and detail a given warehouse in two ways, i.e. by using portal frame construction and truss construction and to compare the cost and benefits of the two designs.

In the case of portal frame construction, the moment distribution method for analysis was not used, since it is quite laborious. A simplified method was followed, by making use of formulae, which are provided through STEEL DESIGNERS MANUAL.

In the case of the roof truss construction, analysis was carried out by using the analytical joint resolution method, combined with the method of sections, for the analysis.

Design was carried out in accordance to BS 449 requirements.

Since the design of the foundations is not steel design but concrete design, it was considered as beyond the purpose of this project to show these calculations.

Also, only typical details were shown, because the complete detail calculations is detailer's job, which is done for pure constructional purposes.

Finally a comparison of the costs and benefits of the two methods was done.

The attached drawings show the partition walls, since the workshop is for the purpose of furniture making.

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