UNIVERSITI TEKNOLOGI MARA

PROJECT 1 – REINFORCED CONCRETE BUILDING DESIGN PROJECT

CIVIL ENGINEERING DESIGN PROJECT (ECS358)

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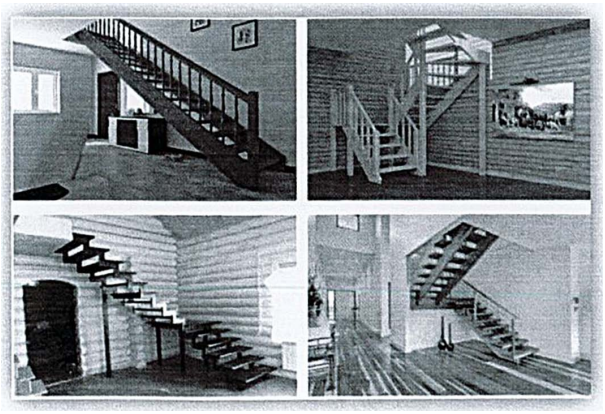
INTRODUCTION

1.1.1. Requirements of building by-law and fire safety regulations

Staircase	❖ **BY LAW 106 - RULES ON STAIRCASES** ➢ Risers' ≤180mm max & treads 255mm min. ➢ To save on space BHA advocates ±170mm risers' & min 260mm treads for fire stairs. However, 275mm treads and slightly over 150mm risers or about 29 degree incline would give a nicer to walk stairs. ❖ **BY LAW 107 - RULES ON HANDRAILS TO STAIRCASES** ➢ Min four riser's stairs to have handrails. ➢ Min 2225mm width stairs to have intermediate handrails spaced equally. ➢ Handrails to be ≤100mm from face of walls, ➢ Stairs handrail: 825mm ≤ height ≤ 900mm, measured from Nosing Steps. ➢ Handrails height at landing min 900mm. ❖ **BY LAW 108 - MAXIMUM FLIGHT** ➢ Residential - stairs landings of no less than 1.8m depth at max 4.25m height interval. 

CONCLUSION

3.1. Summary of design works

In summary, designing can be determined as the process of creating a solution to a project brief and then preparing instructions allowing to be constructed. Design is the realization of a concept, idea or theory into a drawing, plan, specification, model in order to achieve the goals of the project. Basically, there are three steps in project's construction which are planning, designing and constructing.

For planning, firstly the owner or client gives their all requirements on how to design their building. After that, project manager will hired the architect to make a layout for that building due to client's requirements. Then, as for designing, after layout have provided, details of the project have to be worked by consultants. Then, structural engineer will separated the tasks such as providing the key plans of the building including the sizes, types and dimensions of the materials that have been used in the building.

Moreover, after all the calculating process has been done, quantity surveyor will take responsibility to carry out the bill of quantities in order to make a bid tender for contractors. Further, the selected contractor will start the project by following the planning schedule of the project. In addition, the Figure 1.0 below shows the all parties that involved in the project constructions due to the three steps above.