UNIVERSITI TEKNOLOGI MARA

ECS 358
CIVIL ENGINEERING DESIGN PROJECT

REINFORCED CONCRETE BUILDING DESIGN PROJECT & PROJECT BASED LEARNING (CASE STUDY)

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ACKNOWLEDGEMENT

In the presence of Allah swt, the most beneficent and merciful who has given us energy and understanding to accomplish this final year project. This project or assignment is my Final Year Project (FYP) for subject ECS358 that will be evaluated for the fifth semester of my diploma. Throughout the process of finishing the project it has been too tough and many experiences that I faced during the overall procedure. Next, not forgetting my parents for providing my basic needs such as money and motivation to purchase & pay for anything that relevant to this work and completed my project. They helped me as my mental support and keep on inspiring me to accomplish my final year project. Plus, in the meantime, I used to stay in UiTM Pasir Gudang as my shelters and a place that provided free wifi student and books as references.

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1.1.1 **Requirements of Building-By-Law, Fire Safety Regulations**

1.1.1.1 Uniform Building by Law (UBBL)

Malaysia's building code, the Uniform Building By Laws 1984 (UBBL 1984) is a subsidiary law under the Street Drainage and Building Act 1974 (Act 133). even though Act 133 is federal law and gazetted by the Federal Government, UBBL 1984 is gazetted by the Federal Government. These legal instrument stipulate the procedures for building plans approval and other means of development and construction control.

Next, the structural concrete that been design for every concrete structure is using the Eurocode 2. Eurocode is a standards that used in construction and designing the concrete structure.

Eurocode 2 : Design Appendix For Structural Concrete Design.

From the design appendix, it already specifies technical rules for designing the concrete structures of slab, simply-supported beam, continuous beam, column, staircase and pad footing using the limit state design. It also can be used in design concrete, reinforced concrete and prestressed concrete. As the formula stated is already standardized, from the design appendix it can calculated the main reinforcement, deflection and cracking of the structure in order to built a safe building without crisis.

1. *Preliminary*

i. Citation

These By-laws maybe be cited as the Uniform Building By-Laws 1984.

ii. Interpretation

- "Act" means the Street, Drainage and Building Act 1974
- "alterations" includes additions and extension.
- "approved" means approved by the local authority.

2. *Submission of plans for approval*

All plans for building need to submitted to the local authority for approval :-

I. Be deposited at the office of local authority together with the fees prescribed for the submission.

II. Showing for what purpose the building to be erected and used.

3.1 Summary Of Design Works

At the end of the course learning, students would be able to have the knowledge in using the Prokon Software. Other than that, students learn on how to design each structure by using the manual calculation design. In comparison between the manual and the software calculation, students now can understand that the calculation can be done in both ways but still will have difference answer. This is because the formula and method used in Prokon is a bit differ from the manual method. From the software design student can reach to the help section to read more information on the ways of calculation that been used in the software so that it can be compared with the manual calculation.

3.2 Recommendations / Reflections

In this final year project students learn a lot of new knowledge on how to be an engineer on years that will come. Form this course there too much information that been exposed to the students that can be taken as new knowledge for the future use. Next, I would like to recommend that students should use the same lecturer for the studio class and the lecture class. This is because in my opinion, it is best to have the same lecturer so that student can only focus on only one lecturer. Other reasons is because different lecturer has different technique of teaching even though it is the same method of calculation.