UNIVERSITI TEKNOLOGI MARA KAMPUS

PASIR GUDANG

ECS 358

CIVIL ENGINEERING DESIGN PROJECT

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

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ACKNOWLEDGEMENT

Praises be to Allah Subhanahuwata'ala for providing me the time, good health and strength to work in completing this final year project in subjected Civil Engineering Design Project (ECS358). With all the knowledge that already given by my respective lecturer am able to complete this final year project in successful.

First of all, I am grateful to have Sir Ahmad Idzwan Bin Yusuf as my lecturer for this semester. I also like to thank for his kind attention, great advices, brilliant ideas, and his guidance for helping me to complete this project from the beginning until the end of this project even just through half semester of Online Distance Learning.

Not forgetting to my class member for helping me throughout this semester even thought I struggled a little bit when some of the calculation that I made was fail and I had to recalculate again until the comparison with the actual and provided is pass.

Last but not least, big thanks go to Dr Lee Siong Wee as my another lecturer for studio class because he also taught us some knowledge when designing and calculating for the manual calculation and also for PROKON.

Without helps of the particular that mentioned above. I would face many difficulties while doing this project. I also want to express my gratitude to all of those who have assisted and contributed, whether directly or indirectly, to complete this evaluation. I wish everyone happiness and prosperity in their life. May Allah Bless our lives with loved ones in this world and the hereafter.

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REQUIREMENTS OF BUILDING-BY-LAW & SAFETY FIRE REGULATIONS

Uniform building by laws 1984 (UBBL 1984)

Uniform Building by Law is a Malaysia's building regulations that were mainly focused on the street, drainage and building act. These legal regulations stipulate the procedures for building plans approval and other means of development under their control.

a) All plans submitted shall be signed by the qualified person by the owner or his agent and shall bear the full address of the owner. The local authority may, satisfied the owner of the premises has refused to or has failed to execute any work which is required under the Act to be executed by him, direct owner of the premises in writing to execute such work.

It is mentioned that all types of plans which consist of architectural drawing, structural drawing, layout plan and etc. must be signed before proceeding any construction.

This is important because plans that were not signed were counted as illegal construction.

b) All plans for building submitted to the local authority for approval in addition to the requirements of section 70 of the act shall be deposited at the office of the local authority together with the fees prescribes for the submission of such plans in accordance with the first schedule to these By-laws; Every plan, drawing, or calculation in respect of any building shall be submitted by a qualified person.

A drawing mentions in By-Law 6 and calculation must be submitted by a qualified person such as engineers, architect or project manager otherwise the plans and calculation will not be accepted.

c) The local authority may be examining and in so doing may reject any structural plans or calculation which are not in accordance with these By-Laws and if it rejects such plans and calculation it may require such qualified person to resubmit new structural plans or calculation in respect of the rejected portion.

In this final year design project, I realized there are many calculations to design some structure. For example, in my project I design a double-storey house that are located in Segamat, Johor. Many aspects that we are looking for example the project background, architectural drawing, and soil investigation report before I want to proceed to the next stage which are prepared the structural key plan using the AutoCAD, design the manual calculation for two - ways slab, rectangular simply supported beam, continuous beam, column, staircase and also the pad footing based on the soil investigation report. After that, I need to make a comparison between the manual calculation and PROKON calculation. In the comparison we looking the value that more than thirty percent and it will consider as failure or on another side is using the different formula so will provide the different value for both calculations.

Next, about on preparing the Microsoft project to show at the client to make some agreement between each other. The Microsoft project good for the client because it will help them to know how long the project take time and when the project will finish. Next, for the engineer it will help them to estimate the time and complete the project with the time given to prevent from the company to pay more based on the agreement.

Last but not least, for the architectural and structural drawing are important to the designer. The structural drawing must show all the value clearly because it will help the designer to find and take the value to make a calculation for the manual calculation and also PROKON. For manual calculation, there are many risks that may occur while designing a project. Most of the risks imposed are due to human error such as accidentally calculate the outputs wrongly, using the wrong data, and applying the wrong formula by accident. This will cause differences to occur between the manual and software calculation which may be difficult to detect. Hence, the overall duration of the design process will be delayed. This is the reason why it is important for civil engineers to have the knowledge on designing individual structural parts to provide efficiency in the design process.