UNIVERSITI TEKNOLOGI MARA

ECS 358
CIVIL ENGINEERING DESIGN PROJECT

REINFORCED CONCRETE BUILDING DESIGN PROJECT

PROJECT BASED LEARNING (CASE STUDY)

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ACKNOWLEDGEMENT

Praises to Allah SWT for giving me the time, strength and a good health to complete this project through out this semester.

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1.1.1 REQUIREMENTS OF BUILDING-BY-LAW & FIRE SAFETY REGULATION

1.1.1.1. Building by Laws

Building by laws are rules and regulations that were formed by the government to regulate the construction of the buildings. In Malaysia, The Street, Drainage, and Building Act of 1974 (Act 133) and its subsidiary, the Uniform Building By Laws of 1984(UBBL 1984), serve as the foundation for building rules. These legal documents lay out the procedures for approving building plans and other forms of development and construction supervision

1.1.1.2. SUBMISSION OF PLANS FOR APPROVAL

1. Submission of plans for approval.

(1) All plans for buildings submitted to the local authority for approval in addition to the requirements of section 70 of the Act shall--

(a) be deposited at the office of the local authority together with the fees prescribed for the submission of such plans in accordance with the First Schedule to these B-laws;

(b) bear upon them a statement showing for what purpose the building for which the plans are submitted is to be erected and used;

(c) bear the certification of the qualified persons on these plans together with Form A as set out in the Second Schedule to these By-laws for which they are respectively responsible; and

(d) have attached thereto a stamped copy of the relevant site plan approved by the competent planning authority and certified within twelve calendar months preceding the date on which the building plans are deposited unless otherwise exempted under any law relating to planning.

(2) Every plan, drawing or calculation in respect of any building shall be submitted by a qualified person.

In preparation of this report, students need to search for a complete architectural drawing according to the Uniform Building By-Laws, UBBL (1994). After the drawing has been obtained, student are required to prepare a project schedule by using Microsoft Project software. The function of preparing a project schedule is to estimate the time to complete the construction project. Therefore, from the project schedule that has been prepared, the estimated time take for this project to complete is 168 days.

After that, from the architectural drawing, we prepared a structural key plan for the house that consists of ground floor plan, first floor plan and roof plan by using AutoCAD. We proceed with calculating the permanent action and also variable action for each slab on each floor so that we can start with our designing.

From the structural key plan, student are able to designing building structure such as slab, simply supported beam, continuous beam, column, pad footing and staircase. We are required to do a manual calculation and also a software calculation by using PROKON. Following this, we are able two compare the value that we have obtained from manual calculation with the value that we obtained from PROKON.

In the meantime, student are required to find a solution for two case study, which is the first case study is about soil bearing capacity and pad footing size, and the second case study is about flexible pavement design. Hence, the chosen flexible pavement design is full depth asphalt pavement.