



اُونِيُوَرَسِيْتِي تِيكْنُوْلُوْجِي مَارَا  
UNIVERSITI  
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MARA

**ECS358**  
**CIVIL ENGINEERING DESIGN PROJECT**  
**TECHNICAL REPORT**

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Hoping the futures of those mentioned above be filled with goodness, fulfilment, and joy.

### **1.1.1 Requirements of building-by-law, fire safety regulations**

As a required standard for security safeguarding, the federal government uses and underlines the Uniform Building By-Law (UBBL), which is public view necessary paperwork. A constitutional code known as UBBL governs and requires construction projects and designs in Malaysia.

The 1974 Street, Drainage and Building Act (Act 133) and its predecessor, the Uniform Building by Laws 1984, the Uniform Building By-Laws 2006 (UBBL 1984), are the foundation of Malaysia's UBBL building code and it is all changes up to May 2006. Legal documents of that type supply for the authorisation for structure designs as well as other construction and project management procedures, including the fire suppression services requirements outlined by the Fire Service Department in Part VII and Part VIII of the UBBL. Certain criteria in Malaysia are now mandatory due to special laws.

## **Part II: Preparing plans for approval**

### **1. Submission of plans for approval**

(l) All building plans that have been submitted to the local authority for approval under section 8 of the Ordinance must:

- a) be placed at the local authority's office along with the fees specified for their application available under the First Schedule to these By-laws;
- b) have a statement on them outlining the intended use and construction of the construction for which the plans are submitted;
- c) have a stamp copy of the related site plan that has been approved by the appropriate planning authority and certified within a 12-month period attached;
- d) the certification of the qualified individuals on these plans and Form A as specified in the Second Schedule to these By-laws, for which they are each responsible before the date of the building plans' funds unless there is a particular exception under planning law.

**2. Any building's plans, drawings, or calculations must be filed by a qualified individual.**

### **3.1 Summary of design works**

In the design of structural concrete, there are several critical aspects that ensure the safety and durability of such concrete structure functionality. During the working of this project, students can understand the design codes and standards, as Eurocode 2 is important in ensuring that the structural design meets safety and performance criteria.

Students also know the structural analysis, which includes the consideration of the load when designing various loads that the structure will experience including dead and live loads. There are various techniques of analysis to determine how structures react to these loads.

Besides that, the design of structural elements such as beams and slabs presents detailed design procedures for beams, either simply supported or continuous, and slabs, one-way or two-way, with essential emphasis on their safe carriage of anticipated loads. Column and foundation designs cover axial loads and bending moments in columns, while foundations shall be designed to safely transmit the loads into the ground.

Student also can know the detailing requirement such as proper detailing of reinforcement bars (rebar) is important to be done in order to make sure structural integrity is guaranteed, specifying bar sizes and spacing, and getting limits on crack widths. The detailing requirements help mitigate the potential issues related to durability and aesthetics. Students also need to make sure that deflections remain within acceptable limits, something quite critical for user comfort and structural performance.

Lastly, analysis of real-world applications of the design in reinforced concrete helps in the understanding of practical challenges and solution. Familiarity with software tools for modeling and analyzing concrete structures will increase the accuracy of the design. Each component mentioned above is important to complete a successful structural concrete design assignment, providing not only a basis of safety but also usability in effective and sustainable construction.