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**ECS358**

**CIVIL ENGINEERING DESIGN PROJECT**

**TECHNICAL REPORT**

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## ACKNOWLEDGMENT

As students of civil engineering, let me begin by expressing my gratitude to Allah, the Most Almighty, for giving us the ability to complete this assignment successfully. Even though it might seem difficult at first and take more time and mental strain to design all the components and complete this subject assignment, I am thankful that he gave us the tools and chances to complete it.

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Finally, I want to express my gratitude to my family for giving me the fortitude and encouragement I need to keep going forward on this path. They give me a sense of responsibility to keep fighting until this project is completed. I am grateful for their support in many ways, which has strengthened my resolve to see this project through to completion. They have provided ideas, money, and strength. A particular thank you to my mom, who has been my rock this semester. I hope that she is proud of me in part because of the results I have worked so hard to achieve. Their unwavering support and direction are what I owe them for this accomplishment.

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### 1.1.1 Requirement of building-by-law, fire safety regulations

#### CONSTRUCTIONAL REQUIREMENTS

##### **By-law 81. Building site.**

(1) No building shall be erected on any site which has been filled up with any matter impregnated with fecal, animal or vegetable matter, until the whole ground surface or site of such building has been properly treated based on geotechnical techniques conforming to MS 1754 and MS 1756.

[Amendment 2012]

(2) The ground to be built upon by any building shall be effectively cleared of turf and other vegetable matter.

##### **By-law 85. Nominal thickness of walls.**

For the purposes of this Part wherever references are made to the thickness of any brick wall, the maximum or minimum thickness of such wall shall not exceed the nominal thickness plus or minus the maximum tolerance permissible under any standard specification.

### 3.2 CONSEQUENCES ASPECTS OF STRUCTURE / BUILDING / PROJECT

In conclusion, it shows that the process of building designation affects the environment and society in several ways, such as safety, the feasibility of the construction process, cost, and the project's or structure's cost effective features. The process of designating this house has a negative impact on the environment. More materials are required at the construction site because of the overdesigning process during computation. The more materials that are used in the construction process, the more waste will be produced there. Because there is excess material, the cost of the building materials will go up. In addition to the increased cost of materials, it will be challenging to remove and move the waste from the construction site.

In addition, the disruption of traffic around the construction site would have a negative impact on the community. This is because more materials were used on the construction site, which increased the number of lorries and other vehicles that moved with construction supplies. The quantity of trucks needed on a construction site grows as more materials are needed. Traffic will move more slowly as a result. The traffic will worsen because this house is being built near a school, especially during rush hour. Because of the quantity of cars at the construction site and the potentially hazardous nature of materials like concrete, people's safety, particularly that of the students, may deteriorate. The water from the tainted river that the locals used. When people drink tainted water, it can cause illnesses, including diarrhea. Effect design can have beneficial effects on society in addition to negative ones. For instance, overly intricate computations may improve user safety. The building will last longer because the material is being used to its maximum potential. The maximum standard of the building will result in an increase in the cost of the housing.

Furthermore, the decisions made during the structural design phase can have a significant impact on all the project's components. Two facets of structural integrity that affect safety are material quality and selection. Structure failures, collapses, and potentially fatalities can result from the use of inferior materials, exceeding material capacities, or ignoring material compatibility. other flaws in the structural analysis and design. A structure's ability to withstand stresses encountered in the real world can be weakened by imprecise calculations, leaving out significant loads, or ignoring dynamic factors like wind and earthquakes. These might lead to possible failures. Providing details and encouragement for connections is another one of the outcomes. A lack of detailing or not enough reinforcing of