UNIVERSITI TEKNOLOGI MARA

ECS358

CIVIL ENGINEERING DESIGN PROJECT TECHNICAL REPORT

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## JECT BACKGROUND

In this project, a double-story office building is to be built at Jalan Kuala Krai, 15050 Bahru, Kelantan Darul Naim. The extensive architectural drawings comprise a cut section ), detailed elevations (front, rear, and side), and the three main floor plans (ground floor, floor, and roof plan).

The interior plan is detailed in detail in the architectural designs, which also indicate e important spaces like the vehicle porch, restrooms, laboratory, and different office rooms ld be located. The drawings also specify the precise sizes, shapes, and materials that will be during the building process. A structural key plan is suggested as an additional means of mlining the project. The construction of the essential structural components—beams, nns, slabs, foundations, and staircases—will be the exclusive emphasis of this plan. The tural key plan will function as a point of reference for the design calculations that come after. is project, I used both AutoCAD and ESTEEM software to make sure the purpose-built ing is safe to operate and complies with the client's specifications. To acquire the best ome when building structural elements, I will use ESTEEM software and manual lations to design trusses, two-way restrained slabs, continuous beams, columns, foundations, staircases. I analyse the building's plan view, front view, and site view by floor using the ectural drawing that was provided. Therefore, I offer structural drawings for the structure nclude specifics about the beams, slabs, and columns. My hand calculations were done to ne structure's capacity for slabs and beams. Column is used to assess how well a structure thstand load and shear.

To guarantee the best possible structural integrity, the concrete grade and material h must be determined before beginning the design calculations. This important stage hes the framework for a strong and dependable structural system. The seamless transition esign to construction is ensured by this approach, which also improves the project's efficiency and quality. The architectural drawings are integrated into the structural key d the concrete grade and material strength determinations are implemented.

# CONCLUSION

Our primary objective in this project is to closely adhere to the Uniform Building By-Laws (UBBL) regulations in order to ensure that the building is safe and dependable, particularly with regard to fire safety. Following these guidelines is essential to avert mishaps and safeguard the structure and its environs. During the architectural phase, I collaborate closely with an architecture firm to collect comprehensive drawings and design structural features such as beams, columns, stairs, and footings. For important parts like two-way slabs, flanged beams, short columns, and landing-equipped staircases, I utilise design calculations.

I validate our designs to make sure they are accurate by comparing computer-generated data with calculations made by hand and correcting any inconsistencies. I use ESTEEM software to create sturdy foundations throughout construction, and Microsoft Excel helps me be clear when I estimate prices based on quantities. My goal is to create cost-effective, dependable, and safe constructions that adhere to all safety regulations.