

I. IDENTIFICATION DATA

Thesis title:	Mlynske Nivy Bus Terminal
Author's name:	Patil Durgesh Sakharam
Type of thesis:	master
Faculty/Institute:	Faculty of Civil Engineering (FCE)
Department:	Department of Concrete and Masonry Structures
Thesis reviewer:	Ing. Milan Petřík
Reviewer's department:	Mott MacDonald CZ, spol. s r.o.

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment <i>How demanding was the assigned project?</i>	challenging
Student dealt with design of Dilatation A5 of Mlynske Nivy Bus Terminal civil building. Two design technologies are presented on chosen part of the structure, the precast concrete and prestressed concrete. The assignment was challenging.	

Fulfilment of assignment	fulfilled with minor objections
The assignment of the thesis was fulfilled, exceeded even in some areas. The text part is quite comprehensive, and it includes introduction, basics of building description, research, and the design. The text part ends with a summary and conclusions. There are several sketches attached to the thesis in form of a preliminary design drawings. I have several minor objections to the deliverables of drawing part – structural outlines are not really shown, and reinforcement and prestressing details are more sketches than drawings, however, the outlines are dimensioned in the RC details and the sketches show most of the necessary information.	

Methodology	outstanding
The methodology of the design part is correct. Student first tested several modelling options in software and concluded the optimal method. Then complex structural model is combined and described in detail. The loads are shown and applied to the model with various checks of the displacements and internal forces distributions. Design is presented in form of commented report supported by sketches, hand calculations and force distributions. These is done for two options – reinforced concrete option and prestressed option (post-tensioned). The design shows all the necessary assessments, including both reinforced concrete and prestressed concrete option. The design includes one floor design, check of columns, shear wall, foundations and temporary secant pile wall design.	

Technical level	A - excellent.
The thesis technical level is excellent, student demonstrated both software and engineering skills. The design is quite clear and show both software and manual checks and assessments.	

Formal and language level, scope of thesis	B - very good.
The text part of the structure is clear, and the texts are combined in logical way. The design part includes standard information in proper logical way. The notations are used where necessary. The terminology is in some cases slightly misused and technical terms are not perfect, however, the text is sound, readable, and understandable without problems.	

Selection of sources, citation correctness

A - excellent.

The references and sources are shown in the reference chapter and citations are used in the texts. Student used adequate sources on various challenges he faced.

Additional commentary and evaluation (optional)

The thesis extent is quite uncommon, student proved excellent understanding of the problem, shown very good knowledge of the engineering issues and demonstrate all in the report. The overall level is very good in both the theoretical and formal way.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

As summarized above the thesis is excellent. The extent, student's knowledge and its usage in structural design are clear and sound and demonstrated in very good way.

I have following questions on the student to answer in his final presentation:

- 1, Please clarify why did you chose in-situ concrete instead of precast one? What are advantages and disadvantages of these technology in civil structures?
- 2, In which cases would you consider reinforced concrete over prestressed concrete and vice versa when designing civil structure? What are the limitations of these technologies?
- 3, What problems you need to solve and focus on when designing prestressing anchorage/end blocks in post-tensioned structure?

Thank you,

Milan Petrik

The grade that I award for the thesis is A - excellent.

Date: 26.1.2023

Signature: