

# THESIS SUPERVISOR FORM



## 1. Identification of the student:

Student:	Athina Papadiamanti
Thesis:	Evaluation of the Broumov parish house failure, its causality, and some ideas of remediation
1 <sup>st</sup> Institution:	Universidade do Minho, Portugal
2 <sup>nd</sup> Institution:	Czech Technical University in Prague, Czech Republic
Academic year:	2022/2023

## 2. Identification of the supervisor:

Name:	Martin Válek
Institution:	Czech Technical University in Prague, Czech Republic
Position:	Assistant Professor

## 3. General comments

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I have been in contact with Mrs. Athina Papadiamanti since April 2023. At this time, she started working on her master's thesis "Evaluation of the Broumov parish house failure, its causality, and some ideas of remediation".

The thesis consists of several parts. At the beginning of the thesis, it is briefly described the history of the region with a short view of geological and climatic conditions. Then it was introduced the parish house, its history, and current stage and was created an interactive 3D model of the building.

The main part is focused on numerical analysis using ATENA 2D finite element software. The analysis focuses on the inner load-bearing wall, which shows the greatest signs of failure. Several hypotheses of the causes of the cracks are tested and the results are compared with the real state. In the last part of the thesis, a further work procedure is proposed.

Mrs. Papadiamanti suggested repairs that can start now. Additional testing to obtain more accurate mechanical properties of the wall materials and methods to investigate the underground conditions of the building to refine the calculation model. Then in the longer term, a procedure for further monitoring of cracks, subsoil, and moisture.

I would like to highlight the positive approach to problem-solving. E.g., the interactive 3D model, which greatly facilitated the comparison between the model and the actual state of the building, was created entirely on her initiative. Also, the timing of the project was excellent. Despite initial delays caused by illness and a subsequent change of supervisor, the student managed to schedule the work well and completed it a few days before the deadline. She consulted regularly on the progress of the work. She came to the consultations well-prepared.

Individual project objectives were met except for determining the probable cause of the building failure. Several hypotheses were tested and none explained the observed cracking patterns completely satisfactorily. Although, the settlement analysis model demonstrated promising results. The individual hypotheses their calculation and comparison are well explained. The proposed procedure for subsequent work and measurements is reasonable.

The thesis is technically well written with sufficient citations. Only, there was an omission to cite the literature [26]. This is a minor oversight in an otherwise well-written paper.

I can state that Mrs. Papadiamanti in her thesis work successfully coped with the tasks assigned to her. I have known Mrs. Atina Papadiamanti as a hard-working young professional who is able to solve the issue of renovation of buildings and care for monuments and therefore, I recommend her admission to the state exam and to process the defending act of her thesis.

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4. Grade:    A (excellent)   

Use the following scale

A (excellent)	B (very good)	C (good)	D (satisfactory)	E (sufficient)	F (fail)
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CTU in Prague, Faculty of Civil Engineering, Department of Mechanics

July 20, 2023

The Supervisor,

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Martin Válek