

I. IDENTIFICATION DATA

Thesis title:	The assessment of the water transport in the masonry-soil complex of the 18th century churches
Author's name:	Joe Chalhoub
Type of thesis :	master
Faculty/Institute:	Faculty of Civil Engineering (FCE)
Department:	Department of Landscape Water Conservation
Thesis reviewer:	Doc. Ing. Michal Sněhota Ph.D.
Reviewer's department:	Department of Landscape Water Conservation

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment <i>How demanding was the assigned project?</i>	challenging
<p>The main goal of the thesis was to interpret the data on the moisture of soil and masonry collected by monitoring systems at two churches during the past years. The assignment can be viewed as challenging because the student needed to pre-process large amounts of data, understand the monitoring system and physical functioning of various sensors used at the site, and at the same time become familiar with principles and theory of the water flow in variable saturated porous media. The additional major challenge was imposed by the fact that due to COVID-19 crisis Joe Chalhoub could not travel to Czech Republic and visit the sites in person.</p>	

Fulfilment of assignment <i>How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.</i>	fulfilled with minor objections
<p>The main goal of the thesis was accomplished. The data from both sites have been summarized and presented in the form of graphs. The data has been interpreted and the basic numerical model of steady-state flow of water in the masonry was done. The student emphasized the introductory part of the thesis, but in-depth discussion and analysis of the results are less developed.</p>	

Activity and independence when creating final thesis <i>Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.</i>	B - very good.
<p>Joe Chalhoub is a student with positive approach and willingness to learn. We met regularly for consultations via teleconferences, mostly weekly. In between consultations, the student was working in the meantime quite independently. This included the development of own scripts in Matlab to efficiently process the measured data or learning Hydrus 3 software for modeling of water flow in variably saturated porous media. The progress of the work was fastest at the beginning of the semester and towards the thesis deadline. The last chapters of the thesis, including conclusions and recommendations, have been unfortunately written in hurry during the last days before the deadline, and could not be treated with the care that these important parts of the thesis would require. However, given constraints of the past semester affected by COVID19 crisis, I rate the activity and independence of Joe Chalhoub as very good.</p>	

Technical level <i>Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?</i>	B - very good.
<p>The student extended his previous knowledge of structural analysis of historical buildings and groundwater hydraulics to assess the water behavior in the masonry-soil complex. A significant amount of time was dedicated to datasets validation and filtering, which is an extremely important activity, which student accomplished very well but did not emphasize in the thesis.</p>	

Formal level and language level, scope of thesis**C - good.**

Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?

The thesis organization is logical, the extent of the thesis is the standard for a master thesis. The overall formal level and language are acceptable, but I believe that the language level of the second half of the thesis could be improved if not finalized in hurry.

Selection of sources, citation correctness**B - very good.**

Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?

The literature review was built on reputable sources and citation standards are fulfilled, with only small formal issues.

Additional commentary and evaluation (optional)

Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.

The main contribution of the thesis is that it summarizes outcomes of complex monitoring of two churches degraded by increased moisture.

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

I am sure that up to recently, very few master theses written for the Czech Technical University were prepared entirely remotely from Portugal. I am glad that despite the uneasy circumstances I could work with Joe Chalhoub on the research that brought new knowledge on the moisture regime of two churches from Broumov group of churches. In respect to the mentioned, I grade the thesis from the point of view of the supervisor as very good.

The grade that I award for the thesis is **B - very good**.

Date: **24.7.2020**

Signature: