

I. IDENTIFICATION DATA

Thesis title:	Calculation and evaluation of U-value of construction by Add-in in Autodesk Revit
Author's name:	Bc. Horacio Kašpar
Type of thesis :	master
Faculty/Institute:	Faculty of Civil Engineering (FCE)
Department:	Department of architecture engineering
Thesis reviewer:	Ing. Petr Matějka, Ph.D.
Reviewer's department:	Department of Construction Management and Economics

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>How demanding was the assigned project?</i>	
<p>The assignment is very timely, responding to modern trends in construction and anticipating future ones. The work addresses the topic of digitization in construction, specifically the use of Building Information Modeling (BIM) tools to enhance functionality in the Czech Republic, considering Czech legal regulations and other requirements. The assignment can be considered demanding, perhaps exceptionally challenging, especially due to the demands on the author's knowledge and skills. In this work, the author must not only apply their knowledge from their education but also incorporate additional expertise in programming, knowledge of relevant software tools, and a connection to practical applications.</p>	

Fulfilment of assignment	fulfilled
<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>	
<p>The work includes an introduction where the author explains their basic motivation, formulates the problem addressed by the work, and establishes the objectives. The thesis also encompasses a literature review (Chapter 1.5 - which could be a separate chapter), an introduction of the project for the applied solution, and an explanation of the Dynamo scripting language's principles. All of these aspects are summarized in subsequent chapters of the thesis. The work includes a general definition of goals (or goal), with clear methods formulated for solving them. The results are summarized in the conclusion, which contains an evaluation of the objectives and a follow-up discussion. However, the digital version of the thesis lacks the original assignment and has not been uploaded as an attachment.</p>	

Methodology	correct
<i>Comment on the correctness of the approach and/or the solution methods.</i>	
<p>From a professional perspective, the overall impression of the work is average. The author clearly defines goals and works towards achieving them throughout the thesis. Almost all parts (chapters) of the thesis have their justification in relation to the addressed issues. The theoretical part is well-processed, and the practical part of the work is of excellent quality. The orientation of the work towards a practical tool is evident, making the textual part more of a supporting documentation and, at times, a manual for solving specific issues. While some text chapters may seem somewhat redundant (e.g., Chapters 3 and 4), they are personally interesting within the context of the thesis output. The chosen methods for the work are appropriate and lead to goal fulfillment. One noteworthy aspect is the author's focus on the established goals and solving a specific problem. The text remains consistent, without unnecessary filler passages. The literature review conducted is highly appreciated, as such comparisons can be challenging but are crucial for the work.</p>	

Technical level	A - excellent.
<i>Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?</i>	
<p>The technical level of the work is excellent, and the solution functions properly. Given the specialized nature of the work, the solution is judged primarily based on its functionality. Specific verification of outputs (i.e., whether the Add-in</p>	

functions entirely in line with the declared requirements of the standard) cannot be conclusively assessed from my perspective. The solution is not professional, which, however, is beyond the standard requirements for a master's thesis.

Formal and language level, scope of thesis

D - satisfactory.

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 formal structure of the thesis could be improved at times. From a graphical perspective, occasional unusual indentation (Chapter 1), the use of color elements (references to literature), and underlining are noted. While these are formal critiques, they do not significantly impact the quality of the work. The work sometimes contains peculiar phrasing, and the text's flow is somewhat terse. In terms of grammar, the work is average, with no major errors or typos, although some phrasings may seem peculiar. Consistency in person (e.g., "I have tried" versus "is dedicated" in 1.5.1) should be maintained. The text's style in certain passages (e.g., the beginning of Chapter 2) is overly informal. Introductions to individual chapters, where the chapter's focus is well summarized, are positively evaluated.

Selection of sources, citation correctness

C - 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 work is practically oriented, so it does not include a large number of sources. Citations are in line with conventions. The use of a language AI module for processing the work, particularly in this context, is highly appreciated.

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.

Considering the nature of the textual part of the work, serving as a guide to the main output (Add-in), it is expected that a sample .rvt project for testing the tool would be included in the appendix. From a formal perspective, this is not considered a problem, as it was not the aim of the work. However, in the case of publishing the work elsewhere, this would be recommended. The appendix could be bundled in one archive, divided into parts, instead of two independent but related archives. Additionally, it is appreciated that the author included installation instructions, though the form and clarity of the instructions could be improved.

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

A detailed assessment is available in the above categories. In summary, the thesis is predominantly practically oriented. The textual (theoretical part) could be significantly improved, but in the final evaluation, it was given less significance. It serves more as a complement to the main output of the work, which is a functional extension to the Autodesk Revit program. This extension demonstrates the author's practical orientation, professional level, and the ability to engineer a solution to the given task. It is evident that the author was exploring some topics for the first time, but it should be highlighted that these are topics that the author mastered beyond the standard profile of a graduate from our school (programming, working with modern tools – BIM/AI). The author's courage to delve into a topic demanding increased effort and knowledge is highly appreciated. I am convinced that this decision propels the author significantly forward toward successful practice and elevates the master's thesis to a very good qualitative level. I recommend the work for defense.

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

Date: **27.1.2024**

Signature:

