



Master thesis assessment

Student: Javier Martinez Peragon
Thesis Title: Dwelling House – Structural Project
Thesis Supervisor: Doc. Ing. František Kulhánek, CSc
Reviewer: Ing. Ivan Misar, Ph.D.
Date of Thesis Submission: 8.1.2018

I. Evaluation Criteria

Evaluation Criteria	A	B	C	D	E	F	Not Rated
Objectives and thesis assignment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suitability of used methods	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Formal and graphic level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thesis clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student's ability to apply engineering approach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: The fields in the table are checked by double-clicking the mouse on the box (select "Default = checked"), or place an X in the appropriate cell of the table.

II. Comments

Subjected thesis contains partial project documentation of most probably existing/already realized house. Seems the initial design served as a base for the first variant for the study of structural systems in two variants as it was requested by the specification of objectives. Second variant is done by partial modification of loadbearing scheme, substitution of the staircase system, addition of the lift and minor changes in the disposition.

1/ From my point of view author fulfilled the thesis objectives, except of required 2 construction details. There are 2 details accessible in the given project but they are more less the same. The difference is just minor. On the other side there are two 3D cross sections which are over the specification of objectives of thesis. Design of envelop structure is not complete as some structures are missing – at least the structure of the basement waterproofing – ground floor structure. The flat roof above the laundry room is or failed or missing.

2/ Level of expertise could be classified as a satisfactory as author showed, partly, the ability to adapt originally Spanish project for the conditions of Czech Republic. It is quite difficult for the foreigner, working above originally foreign project, to understand the standard level of requirements for the buildings especially correlated with different climatic conditions and local habits.

However there are still some questions, like wrong design of the flat roof above the laundry room, useless façade system in the inner space of laundry room, unclear foundation system designed etc, which don't allow to classify this part higher.

3/ No comments to static part. For the part of evaluation from the point of thermal protection of the building I would like to say that I could imagine more structures being involved in this evaluation. On the other side we should appreciate the ability to understand and to absorb Czech methodology for the U value and vapor diffusion assessment of the structures.

4/ Concerning the formal and graphic level of subjected work we should take into account that there are different manners and habits of graphic and text expression of the project throughout the World. Nevertheless we should evaluate the work on the base of local habits relevant to the region of country of graduation, than compared to standard attitude in Czech Republic, I have to say that I would expect more complete technical report of the project with more detailed description of structures and more detailed and precise technical drawings – traces of floor plans, cross sections. Foundation plan is extra, over the specification of thesis objectives, so it is not subject of evaluation (just a remark – foundation plan, given, is little bit misleading). We can find positive aspect of the graphical part in 3D cross sections, which are more explanatory and helping to understand the architectural vision of the house.

5/ Thesis clarity should be classified as a sufficient, but it is hard to say that I can count it as satisfactory. There are unclear possibility of window and door framing fixation in the floor plans. No gullies or any other rain water outlet system clear at the roof plan. Waterproofing against the ground water or moisture is in unclear position at cross sections. There is an unclear structure of fundament or supporting/preparation structure in cross sections. No rainwater outlet system solved on the terrace of the ground floor, when presuming the level of waterproofing at the blue dashed line....etc.

6/ Regarding the ability to apply engineering approach I just can say that it will need, still, certain practice in project design for improvement. We have a few of construction details which seem to be less practical or let say problematic. Like mineral woolen thermal insulation on the outer side of external walls going under the adjacent terrain without protection against the rain water flowing on the terrain level, no protection of ventilation gap of the façade against the insects, problematic position and usage of the concrete prefabricates on the roof parapets (less watertight – but I can accept the different habits, despite of still having certain doubts, however not able to accept their position or scheme of fixation when half of the element lays on the mineral woolen boards and only half of element placed on the fixed load bearing structure of external wall prolonged to the roof parapets). The external staircase on the vegetation roof (roof garden) leading and collecting the rain water towards the exit door is also problematic. The usage of the upper PVC-P foil of 1.5 mm in inverted roof scheme (in the details) is as well less reasonable. The absence of any slope under the flat roof waterproofing as well. In these details it seems it is little bit misleading the way of graphic expression of the connection of concrete load bearing horizontal monolithic RC slab with the supporting, I presume, monolithic RC beam. It seems like these structures are not connected or slab doesn't lay on the beam.

In general despite of certain, above mentioned, remarks we should appreciate the ability to absorb different Spanish and Czech manner in the way of project documentation preparation and in the approach to technical specification and level of detailed design. We should understand that the scheme of technical education in Spain could be different, with different emphasizes and approaches. Therefore I suggest to accept the thesis for the presentation in front of committee.

III. Debate topics

For the debate I suggest to discuss and to be prepared by the author/student following points:

- the overview of commonly used schemes for the basement waterproofing (waterproofing against the ground water/moisture) in Spain – trying to apply in the subjected project design in variants.
- what are typical demands for thermal building protection, if any, in Spain, compared to the demands in Czech Republic. Especially Spanish attitude to the energy consumption in housing – projected into the design requirements
- to explain the interaction of the RC beam and RC roof slab, I presume the reinforcement bars are connected but it is not clear from the drawing.

VI. Overall Assessment

As a reviewer I evaluate the submitted thesis with the grade:

E - sufficient

Grading scale used:

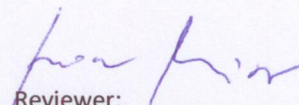
<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
<i>excellent</i>	<i>very good</i>	<i>good</i>	<i>satisfactory</i>	<i>sufficient</i>	<i>failed</i>

V. Result

Based on the above as a Reviewer:

<input checked="" type="checkbox"/>	I recommend the master thesis for defense
<input type="checkbox"/>	I don't recommend the master thesis for defense

In Prague, 12.1.2018


Reviewer:
Ing Ivan Misar, Ph.D.