PHD defence

Residential Renovation Assessment for Near Zero Energy

15 November 2021
9:00 – 12:00

PHD DEFENCE
by Yovko Ivanov Antonov

Organised by
DEPARTMENT OF THE BUILT ENVIRONMENT
AALBORG UNIVERSITY
**THEESIS SUMMARY**

The majority of the building stock is aged and energy-inefficient. Considering that buildings are the single largest contributor to greenhouse gases and energy use, renovation of existing buildings is crucial for meeting future energy efficiency and environmental targets. Recent EU Directives require national long-term renovation strategies for a cost-effective transformation of all buildings into nearly-Zero Energy Buildings (nZEB). There are several available methods for assessing renovations with respect to nZEB. An “optimal” renovation often integrates multiple evaluation criteria with costs and energy savings as a minimum. The central focus is on evaluating packages solutions, whereas a shortage in selecting the contents of a renovation package is noted. The motivation for the PhD project is to develop and exemplify a flexible assessment method that respects regulatory frameworks, building specifics and local conditions. The target users of the method are stakeholders dealing with the selection of “what to renovate and to what extend.” The method is developed for residential buildings, which attain more than 75% of the EU building stock.

*For a copy of the thesis, please email inst.build.phd@build.aau.dk.*

**ASSESSMENT COMMITTEE**

- Assoc. Prof. Kjeld Svidt, Dept. of the Built Environment, Aalborg University (chairman)
- Prof. Hendrik Jacob Visscher, Delft University of Technology
- Prof. Francisco José Sánchez de la Flor, Universidad de Cádiz

**PHD SUPERVISORS**

- Supervisor, Assoc. Prof. Michal Zbigniew Pomianowski, Dept. of the Built Environment, Aalborg University
- Co-Supervisor, Prof. Per Heiselberg, Dept. of the Built Environment, Aalborg University

**MODERATOR**

- Assoc. Prof. Rasmus Lund Jensen, Dept. of the Built Environment, Aalborg University

**HOW TO PARTICIPATE**

This PhD defence will be carried out in hybrid format, meaning you can join on location or online:

- **Location**
  - Aalborg University
  - Auditorium
  - Fibigerstræde 10
  - 9220 Aalborg Ø

- **Online**
  - Zoom
  - [https://aaudk.zoom.us/j/67017992394](https://aaudk.zoom.us/j/67017992394)
  - Meeting ID: 670 1799 2394
  - Passcode: 502701

**REGISTRATION REQUIRED**

Registration required for both participation formats at inst.build.phd@build.aau.dk

Sign-up deadline: 14 November 2021

---

**PROGRAMME**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Welcome by moderator</td>
</tr>
<tr>
<td>9:05</td>
<td>Lecture and presentation by Ph.D. student</td>
</tr>
<tr>
<td>9:50</td>
<td>Break</td>
</tr>
<tr>
<td>During the break, participants can email questions to the moderator, Rasmus Lund Jensen <a href="mailto:rije@build.aau.dk">rije@build.aau.dk</a> or contact him personally in room. The moderator presents any questions received after the Q&amp;A session with the assessment committee.</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Q&amp;A session with the assessment committee</td>
</tr>
<tr>
<td>12:00</td>
<td>End of defence</td>
</tr>
<tr>
<td>The assessment committee enters another &quot;room&quot;, evaluates and writes the final assessment.</td>
<td></td>
</tr>
<tr>
<td>12:45</td>
<td>The assessment committee re-joins the “Defence room” and announces its decision.</td>
</tr>
<tr>
<td>13:00</td>
<td>End of event</td>
</tr>
</tbody>
</table>

---

**GRADUATE PROGRAMME:** Civil Engineering