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| <b>Thesis Title</b>          | <b>Numerical Simulation of Thermal Performance of Buildings and Improvement Proposals Using Revit</b>   |
| <b>Programme of Studies</b>  | MSc in Energy Engineering   |
| <b>Course</b>                | MEE 540 - MSc Thesis  |
| <b>Area of Study</b>         | Computational Building Physics – Energy Simulation and BIM  |
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| <b>Supervisor</b>            | Dr.-Ing. Paris A. Fokaides, Associate Professor, Mechanical Engineering Department  |
| <b>Supervisory Committee</b> | Dr Byron Ioannou, Assoc. Professor, Architectural Department<br>Dr. Gregoris Kalnis, Asst. Professor, Architectural Department  |
| <b>Semester</b>              | Fall Semester 2024  |
| <b>Short Description</b>     | The objective of this thesis is the improvement of building thermal performance using Building Information Modelling (BIM) tools. A case study building was digitally reconstructed and simulated in Autodesk Revit to assess baseline energy performance. Various retrofit measures—including enhanced insulation, passive design features, and renewable integration—were simulated for their thermal and economic impact. Results emphasize both energy and cost savings, supporting data-driven decisions for sustainable building renovations. |