

MASTER'S DISSERTATION AT ENGINEERING ACOUSTICS

DEPARTMENT OF CONSTRUCTION SCIENCES | FACULTY OF ENGINEERING LTH | LUND UNIVERSITY



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PRESENTATION

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THE DIV. OF ENGINEERING
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INVESTIGATION OF STRUCTURE-BORNE SOUND IN BUILDINGS



Picture from <https://www.pexels.com/>

BACKGROUND

Popularity and market share of wooden multi-story dwellings has increased in the recent years. However, wood is a light material, compared to e.g. concrete, and it makes it more sensitive to vibrations, as well as low-frequency noise. As population increases, densification of cities is required and consequently transportation hubs are built next to buildings. More specifically, rail tracks are constructed close to buildings made of lighter materials, and it is thus of great interest to have understanding of the factors that can trigger annoyances for the inhabitants. Just in that manner, it will be possible to, as early as possible in the design, accurately find those vulnerabilities and counter measure them so that vibroacoustic comfort can be achieved.

AIM AND OBJECTIVE

The goal of the dissertation is to develop and evaluate an adequate measuring method well suited for a multi-story building in Campus Helsingborg built in the vicinity of a railway track and subjected to high levels of structure-borne noise at certain locations. A literature review studying, inter alia, similar projects will be performed during the dissertation. Moreover, with the data acquired from the measurements as input, a numerical model to predict certain aspects of structure-borne sound could ultimately be developed. The latter is of crucial importance in the early design state of a project, in order to create a pleasant indoor environment in the building in question.

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