DEPARTMENT OF ARCHITECTURE AND
CIVIL ENGINEERING
Chalmers University of Technology

CHALMERS
UNIVERSITY OF TECHNOLOGY

Kandidatarbete
Examenskod ACEX11

Optimization of hygrothermal performance of massive timber panel

The construction industry has been a major contributor to the Green House Gas emissions. Larger timber structures are becoming more and more common in Sweden thanks to the carbon neutrality and renewability of timber. Cross laminated timber (CLT) has been a major contributor to the expansion of the technical possibilities. While CLT has advantages, it has been pointed out that the production of CLT has too much raw material input compared to the actual required performance.

The project explores the possibility to optimize the hygrothermal performance of CLT panel by introducing airgaps. The optimization parameters are heat resistance and moisture safety under Swedish climates. The project will validate an analytical model by lab measurements, and the model will be applied to parametric optimization calculation.

Target group of students
Civil Engineering

Group size
3

Special requirements

Suggestion from
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Can the project be duplicated?
No

If any of the following aspects to be integrated
☐Digitalization
☒Sustainability
☒Climate change
☐Gender equality, equal treatment and diversity