BUILDING ACOUSTICAL DESIGN OF THE EXTENSION OF THE CONCERT HALL AARHUS

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The extension of the Concert Hall Aarhus (Musikhuset Aarhus), opened in September 2007, comprises of a new Symphonic Hall, Rhythmic- and Chamber Halls, a children's theatre and in excess of 100 other music rooms. The extension houses facilities for Aarhus Symphony Orchestra and the Royal Academy of Music.

Expectations have been high, despite the project being restricted on time, building area and funds.

Amongst the many challenges concerning the building acoustical aspects of the project; the fact that the whole building is enveloped with single skinned glass façade, has required a high level of planning in order to achieve acceptable results.
In addition to sound insulation requirements of 70-75 dB in all music rooms, special requirements where defined for the 63 and 100 Hz frequency bands. Calculations have been made using ISO 12354 to optimize structures and design.

The interplay of building- and room acoustical requirements has also been a main part of the design of the music rooms, where issues concerning the use of parallel wall elements has had to be resolved.

This paper describes the building acoustical requirements, challenges and results of the project, and a realistic view of what can be achieved in the building acoustical design of music rooms under restrictive conditions.