

FAB ACADEMILL

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ABSTRACT

The Academill building holds the new facilities for Åbo Academy University in Vaasa. The premises are mainly built inside an old mill building and have a TV-studio and a large auditorium in a new building in the courtyard. The paper will present the different solutions needed to accommodate acoustically critical spaces inside an 11-story high old industrial building.

1. INTRODUCTION

The Academill is an old brick building in Vaasa, which consist in many parts, built within many years. Earlier the building was a mill, and now it is renovated for Åbo Akademi's use. The oldest part of the building was designed by architect C.A. Setterberg in 1857. The facades of the building were under protection, so any larger changes were not possible.

The facilities expand far beyond those of a normal university building. Apart from the normal university facilities, with offices and seminar rooms, there are facilities for the teacher's education, including normal classrooms, a gym, room for musical education, a small drama hall as well as wood and metal workshops. Furthermore there is a large auditorium, which is also intended for outside use. To further complicate matters there is a large TV-studio.

Most of the facilities are located in the old buildings, parts B, G, D, E and F (see picture 2). These are from 2 stories up to 11 stories high. Needless to say that the floor level in the different parts of the building is not the same, making the whole complex into somewhat of a nightmare for the elevator designer.

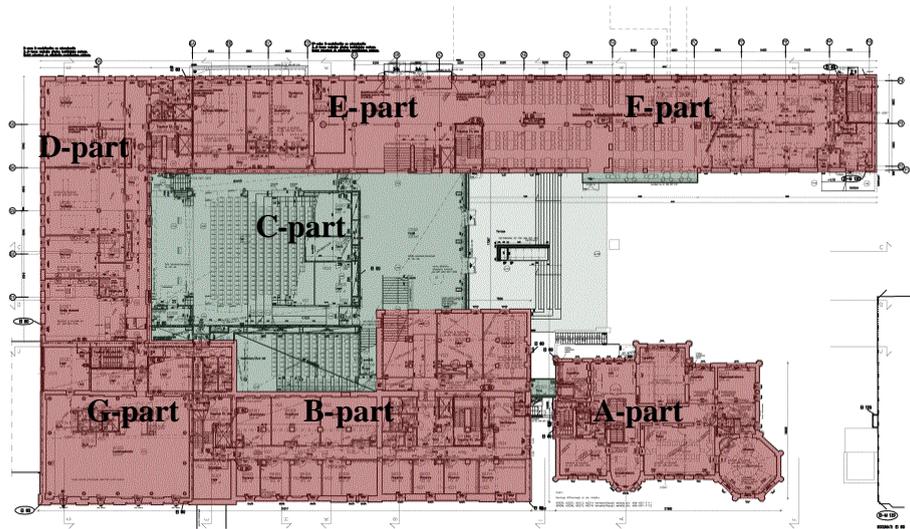
The administration is located in the A-part

The TV-studio, the auditorium and the drama hall are located on top of each other in the C-part, which is a new building in the middle of the old building complex.

The heart of this new part is the auditorium. The auditorium is designed for speech and AV-presentation. The auditorium is located directly on top of the TV-studio, and the drama space on top of the auditorium.

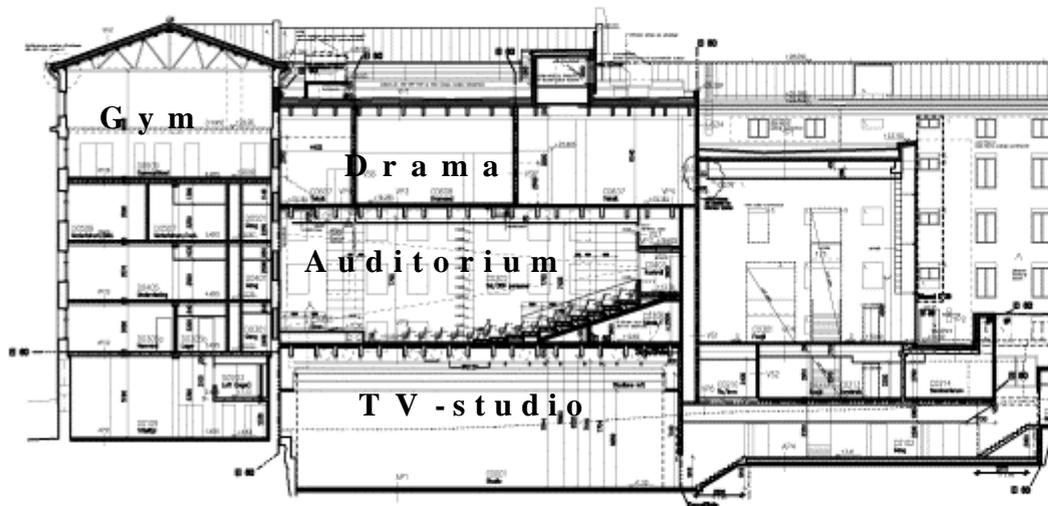


Picture 1: *The old mill before renovation*



Picture 2: General plan of the facilities

2. GENERAL BUILDING ACOUSTIC DESIGN



Picture 3: Elevation of the C- and D parts.

The main building acoustic challenges came from the fact that so many different facilities are placed on top of each other. It should be clear that this is in no way a recommendable solution. Unfortunately, in this case there were no alternatives. This means that a large part of the building has floating structures.

The gymnasium placed on the top floor of the D-part, with normal educational facilities beneath. In order to maximize the impact noise isolation, the wooden counter floor is floating on rubber isolators. The system gives enough isolation for normal gymnastics classes but not for ball games like basketball.

In the E-part there are a music-class, mainly for acoustic music, with a small recording room connected. There are also some ten piano rehearsal rooms.

Also the wall structures they are for the most part gypsum board structure. This was chosen both acoustic as well as for building time reasons.



Picture 4: *The entrance-hall. The wooden sculpture is actually a preserved “sack-transport”*

3. ROOM ACOUSTIC DESIGN

3.1. Auditorium

As stated earlier, the auditorium is designed for speech and AV-presentations only. As it is located on top of the TV-studio, all constructions are basically designed as floating. But it was also stated from the beginning that with this placement full “free use” of the auditorium and the TV-studio is not possible. In other words, the design goal was that it would be possible to have seminars etc in the auditorium at the same time as a recording in the TV-studio.

The interior of the auditorium is a combination of wood surface and the old red brick surfaces of the old buildings. Most of the wood surfaces are perforated, providing a reverberation time of about 1 s. Still there are enough construction structures on the sidewall to avoid any flutter-echoes.



Picture 5: *Interior view of the auditorium*

3.2. Media City facilities

The Media City facilities located in the basement, contains a 500-m² TV-studio as well as control rooms and editing facilities both for video and sound.

The TV-studio has been designed as a “black box” where essentially all surfaces, have acoustical treatment. The exception is the old brick-wall to the D-part, which both the architect and the user wanted to keep visible. For room acoustics there is the possibility to hang a curtain in front of it to provide absorption when needed. From a building acoustic point of view, very high sound isolation is needed, as the wood and metal workshops are located on the other side of the wall. With floating structures and extra gypsum board cladding on the workshop side, this has not been a problem.



Picture 6: *The TV-studio. In the left picture, examples of acoustic treatment elements are seen.*



Picture 7: *The control rooms, Video control room to the left and audio to the right.*

4. CONCLUSIONS

The new spaces are now in full use, however still in the “trimming” period. Most of the measurements, show that the acoustic specs has been met, but even so it is also clear that the initial limitations of the use are still valid.