

NEW SMALL HALLS IN FINLAND

Henrik Möller, Tapio Lahti and Anssi Ruusuvuori

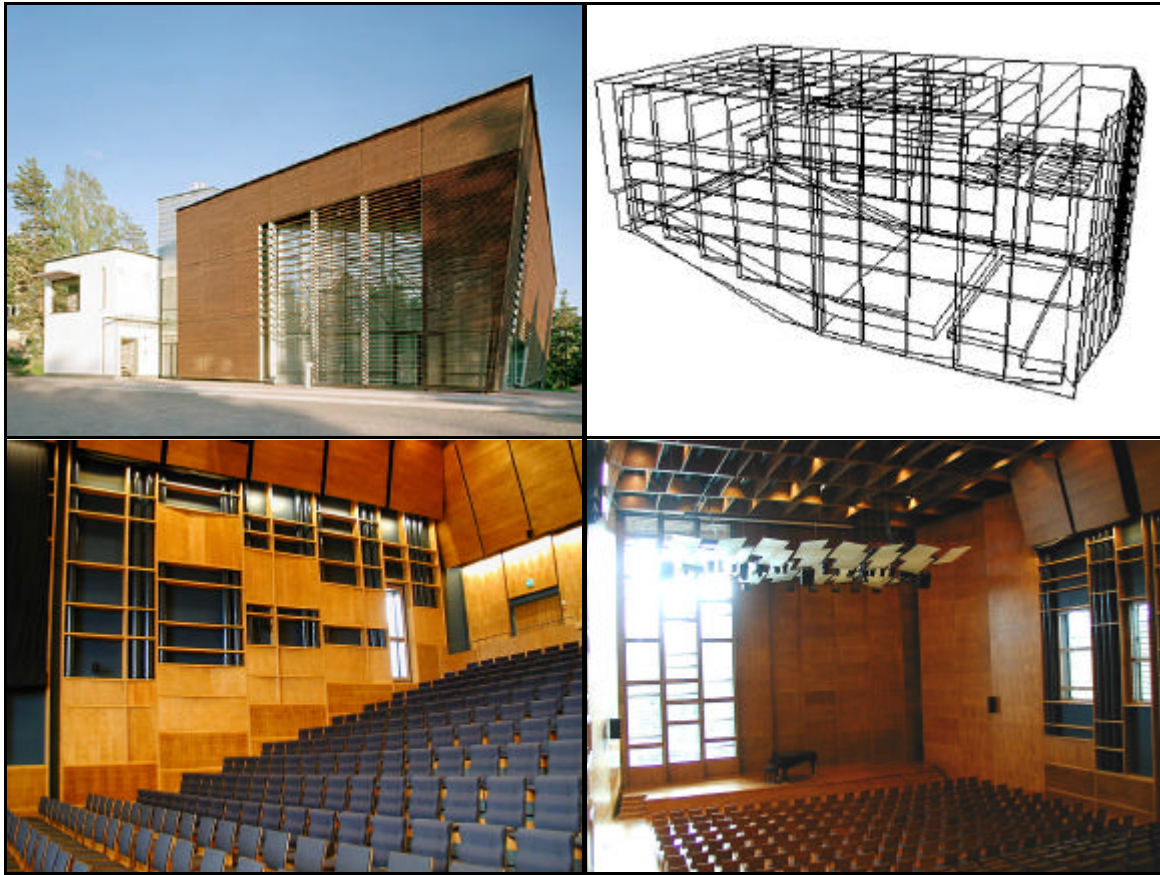
Akukon Oy Consulting Engineers
Kornetintie 4 A, 00380 HELSINKI
henrik.moller@akukon.fi

ABSTRACT

Two small multi-purpose halls have recently been completed in the greater Helsinki area. The paper will present the acoustic design of these two halls. Both halls have been designed with classical or rather acoustic music as the main purpose. The design of both halls had however a number of restrictions which made the design for classical music rather challenging.

1. NYA PAVILJONGEN

Nya Paviljongen is new building in connection the Swedish school center in Kauniainen (Grankulla). The building, which was completed in 2002, consists of a multi-purpose hall as well as normal classrooms for teaching. The name (New Pavilion) comes from the fact that the building stands on the place where the used to be a temporary pavilion. The hall is designed to serve both the school as well as the cultural-life of the community in general.



Picture 1: *Kauniaisten Nya Paviljongen.*

Architects Lehto–Peltonen–Valkama plan the building. Architect Tarmo Peltonen has named the three parts of the building House, Machine and Music-Box (Talo, Kone and Soittorasias). In the House are the classrooms and in the Machine part houses all the technical installations. The Music box holds the new hall, which is intended to be the new living room for the people of Kauniainen.

The starting point was a hall, which was to fulfill the requirements as set by classical acoustic concert-music without compromises. But it should also be possible to transform the hall into flat-floor sports hall or gymnasium. As for other types of performances, the hall is also intended for reinforced music. So from the beginning it was clear the some sort of changeable acoustics was necessary.

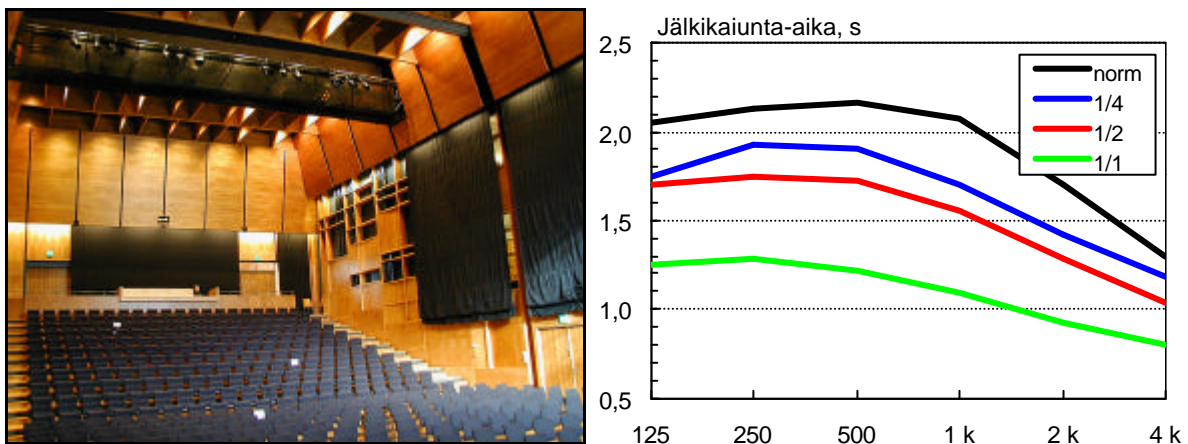
The sloped audience area has 252 fixed seats and for concert use a further 160 seat can be placed on the flat floor.

The compromises made to incorporate all the types of performances was as follows:

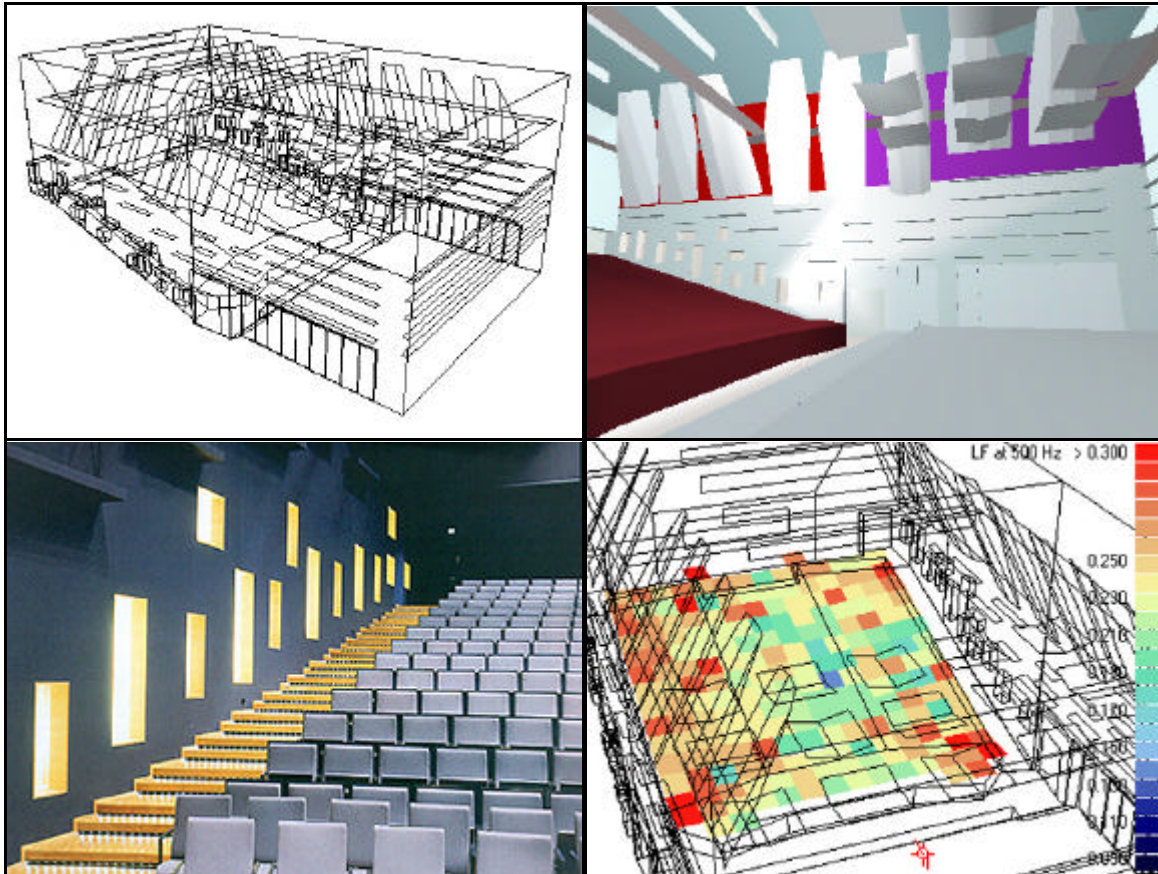
- the hall has a small fix stage for chamber music. The stage can be enlarged by moveable element to seat a total of about 50 musicians.
- the slope part of the audience area is retractable and the chairs in the front part are removable.
- The acoustics can changed by large curtains which can rolled down to cover most of the walls.

The hall has been designed for an orchestra of max. 50 players. In other words the surfaces of the hall are design in accordance with the demands of acoustic music. The retractable and removable moveable seating areas however meant that the upholstering of the chairs is thinner than optimal and the difference of the acoustic conditions in a full hall and an empty hall are big. This is however compensated by using the acoustic curtains in the rehearsal situation.

The hall has been in use about 2 years and the in general it has received positive comments. The changeable acoustics works well and the hall has been used for just about all that was the initial intention. The acoustic measurement done in the hall, also confirms that the acoustic conditions are in accordance with the specifications. The sound field of the hall is very “lateral” and the clarity sufficient. The reverberation time of the full hall are in accordance with our design criteria’s, but the reverberation time in the empty hall is too long. As can be seen from picture X, the reverberation time can however be easily adjusted by the acoustic curtains, so the lack of absorption in the empty hall can easily be compensated.



Picture 2: The reverberation time of Nya Paviljongen with the acoustic curtains in different positions



Picture 3: *Espoon Leppävaaran Sello.*

2. SELLO

The 381-seat Sello-hall in Leppävaara, Espoo, was completed in august 2003. It is a part of the Sello shopping mall, which has been planned by architects Helin&co. In connection with the hall, is Juvinali music school and also in the same complex the new library for the Leppävaara area.

The primary use of the hall was specified as classic concert music, from solo performances to a 50-person orchestra. As the secondary use, Music Theater was specified. The hall was also to be used for conferences, reinforced music, dance and drama performances. Also it should be possible to shown films in the hall.

In this case the wide range of the use of the hall, meant that changeable acoustics had to be provided. The fact that theater performances had high priority, inevitably led to a situation where the stage was very large compare to the audience areas.

As in Kauniainen, the changeable acoustics was done with curtains, both on the stage, in front of the back wall and vertically down from the ceiling. The results were however not as satisfactory as in Kauniainen, mainly due to the fabric of the curtains.

As the stage as mentioned earlier was “oversized”, the volume per audience was too large, hence the reverberation time would have been too long. In order to compensate for this, additional absorption was installed behind the “sails” on the upper part of the sidewalls. During tuning of the hall we were able to adjust the amount of absorption to the desired level.

The hall has been in operation for just about a year and the review has in general been very positive. In particular the hall is like for chamber music and for smaller orchestras.

3. CONCLUSIONS

Both halls are examples of small or medium sized halls where acoustic conditions to serve a large span of activities have been successfully implemented, still without major compromises of the acoustic conditions for classical music. When comparing the acoustic measurement results of these two new halls to other halls in Finland, it is clear that the greater Helsinki area has gotten two good new halls.

4. REFERENCES

- [1] Möller H, Lahti T & Ruusuvuori A, *The acoustic conditions in Finnish concert spaces*. 17th ICA, International Congress on Acoustics, Rome, 2-7.9.2001. Presentation 3C.10.04.