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The music of change

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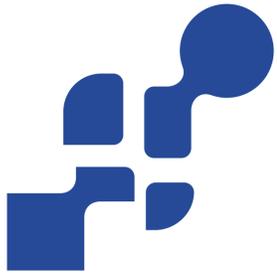
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The music of change

Transforming Radiohuset into the Royal Danish Academy of Music

Radiohuset (1934-1945) by Vilhelm Lauritzen is an icon of early Danish modernism. Designed as the headquarters of the Danish Radio, the building is a display of subtle, sensitive functionalism, where strict adherence to programme results in an unparalleled richness and variety of space. The history of the building is a one of adaptation and change to the continuously shifting needs of Danish Radio. The building was listed in 1994. In 2000 Danish Radio decided to move out. At that point it was decided that the building would become the new home of the Royal Danish Academy of Music, posing new problems of how to adapt a listed architectural masterpiece to a new programme, in which acoustic considerations would be the key to reinterpreting the building.

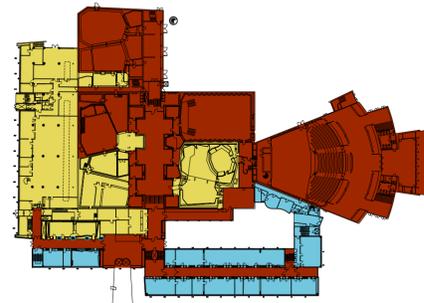
Vilhelm Lauritzen Arkitekter, now fourth generation of architects since the foundation of the office in 1922, won the resulting architectural competition in 2006. Building work has now begun, and is scheduled for completion by August 2008. This paper presents the work of reinterpreting the building, working with it to make spaces for the creation of music.

The original plan was a result of a contextual and functional analysis, separating the programme of journalism and administration from the programme of music and sound production. Changing the building to suit the needs of the Academy of Music was interpreted as an introduction of the music programme into the office buildings. As so many issues of acoustics and adaptability were addressed in the original design, only little innovation was required.

Conceptually the building has been tweaked ever so slightly, in a way allowing us, as architects, to work on the building as musicians do, when interpreting the ideas and emotions of a composition of music. Certainly Radiohuset proves its elasticity and its ability to live and shift, - the very sustainability of its original design.

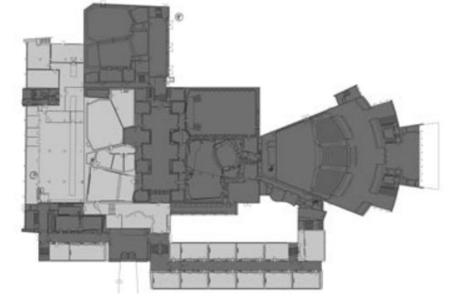
Clarifying the original ideas and concepts of the building was key to its new identity. The spatial hierarchy of the building was analyzed, charting the functional, structural and technical principles governing its shape.

Point of departure 2006

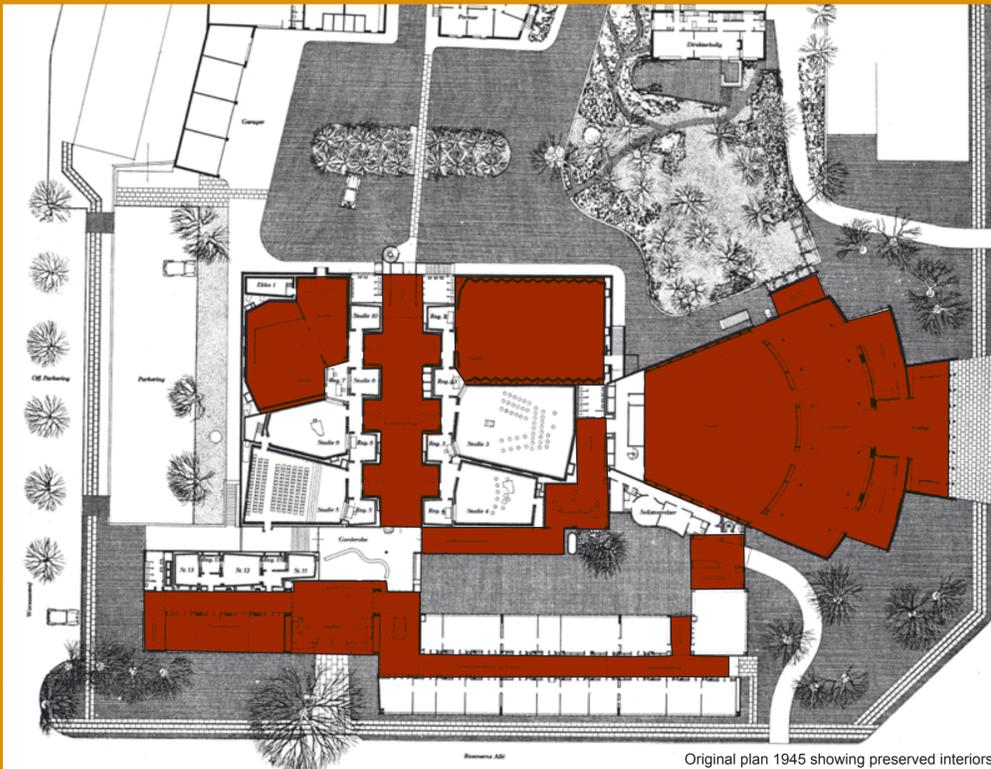


- - Original interiors, slightly modified
- - partly modified interiors
- - heavily modified interiors

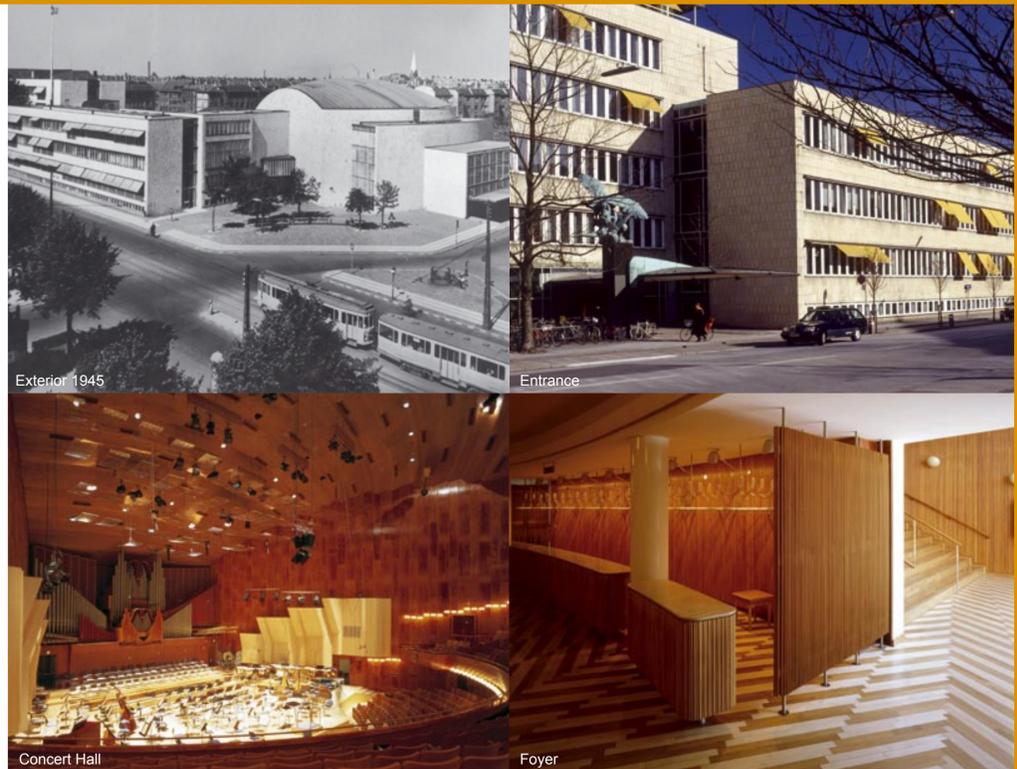
Interventions 2008



- - No modifications
- - Reinterpretation of functional properties



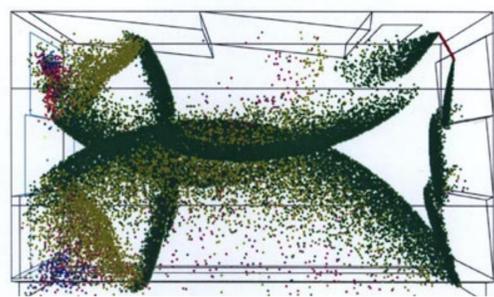
Original plan 1945 showing preserved interiors.



A block of studios is surrounded by a concert hall and office buildings, offering protection from the noise of a major street. At the top of the spatial hierarchy are the representative rooms, the concert hall, the council hall, the foyer, etc. The communication areas are next: stairways and corridors. At the bottom of the hierarchy are the offices and rooms of a technical nature. But behind the spatial hierarchy there is a functionally-based separation of rooms for sound production and music from other rooms, expressed in the division between the studio block and the office wings. The office wings are designed to be generic, using a sophisticated modular system to ensure flexibility and ease of adaptation. The studio block is specific, each studio designed for a certain type of sound or music production, exploring the effects of materials and geometry on the acoustics of the spaces. The irregular shape of the studios derives from acoustics, as sound has to be broken up in order to achieve a pleasant, diffuse sound quality. The materials also determine the sound quality, as every material employed affects the way the rooms respond acoustically.

Instead of introducing new compositional elements to the building, the focus was shifted towards an effort to preserve the proportions and generous ceilings of the rooms and give existing elements new function and meaning, while retaining the formal language of the building. In many locations the original interiors of the building had been changed beyond recognition, if not physically removed. The transformation of the building gave possibility to reintroduce some of the spatiality and components of the building that had been sacrificed by earlier interventions.

The challenges of applying the program of DKDM throughout the building included fitting out a music library, an auditorium, rooms for ensemble and organ teaching, rehearsal rooms and space for the management. Funds were extremely limited and the building program and functional requirements had to be adjusted accordingly. However, it was possible to arrange the building program in such a way that there was considerable accord between the requirements of DKDM as users and the con-



Standard educational space, acoustic simulation.



Standard educational space, plan and section.

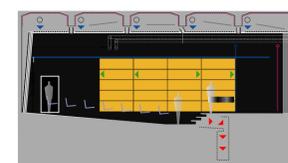
servation values. The interventions could be carried out with no changes to the buildings' structure and no changes to the facades, with a change in glass properties for sound isolation being the sole exception. The vast majority of requirements could be handled by changes to the interior walls, fixtures and technical subsystems.

The utility walls onto the corridors were upgraded not only to house new, soundproof ventilation ducts, but also to help to regulate the acoustics of the rooms themselves. Corrugation breaks the direction of the sound, so that after a few hundredths of a second we hear it pleasantly diffused, with no flutter echo. The wall panels can be opened to reveal fabric-covered sound absorbers, so that the reverberation time of the room can be regulated from short and analytical to longer, and more vivid. Similarly, cupboards with sloping fronts and a board concealing yet more sound absorption panels share responsibility for acoustic regulation. The floor is in beech parquet on soundproof joists, and the cupboard fronts are laminated with Oregon pine. New mahogany doors have been fitted but the original hinges and Greenland marble details have been retained.

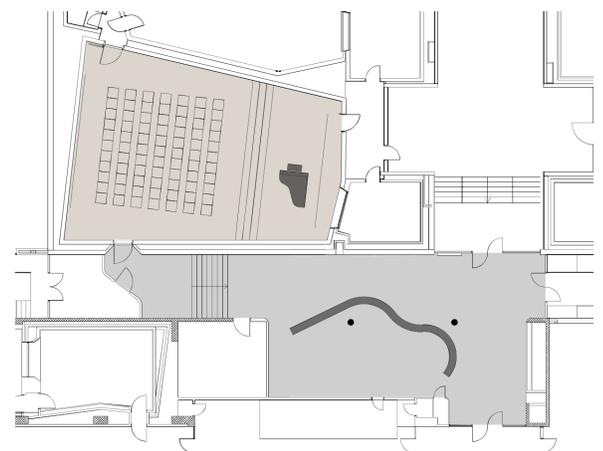
An example of a space restored that was previously lost is Studio 5, which was once the first permanent television studio in Denmark. It had been demolished and turned into a storeroom; in the audience cloakroom partitions had been erected which destroyed the original room. DKDM wishes to install an auditorium there, which can also be used for music, and to turn the cloakroom into the pivotal point in everyday life at the academy.

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Lauritzen, V., 1945, "Radiohuset - Statsradiofonibygningen" Arkitekten Månedshæfte 1945 10-11, 121-152.



Reintroducing Studio 5



Reintroducing Studio 5, plan and sections.



Standard educational space mockup and competition renderings.