



Troldekt® Ventilation

Healthy learning environment in Aabenraa

University College South Denmark runs three study programmes as well as all its further and continuing education at its campus in Aabenraa. The campus buildings have been designed by Henning Larsen Architects with a key focus on creating robust classrooms with lots of daylight, ventilation and good acoustics.

The new Campus Aabenraa is home to the study programmes in educational sciences, social sciences and health sciences. Henning Larsen Architects has designed a college which, with its transverse wings and saddle roofs, matches the South Jutland market town of Aabenraa in both size and profile.

The building is shaped like a small town within the city, with various streets, squares and the administration as a centrally located 'town hall'.

Black and dark grey brick have been used for the exterior façades, while natural materials such as concrete, linoleum and Troldekt acoustic panels in the colour natural wood are used inside.

Light and air from above

In order to fully exploit the daylight, all the classrooms are on the same level so it is possible to draw light down into each room. In the sloping ceilings, Troldekt ventilation has



been established which, at low pressure – and without visible air inlets and/or ducts – distributes the air which is blown in via active acoustic panels. This so-called diffuse ventilation saves energy and ensures there are no draughts because the air is so evenly distributed.

“In designing the college, part of the vision was to remove as many technical installations as possible so that the building is as clean and uncluttered as possible. In this respect, the ventilation ceilings are a fantastic component which provide an attractive architectural finish because the ceiling appears very unambiguously as a single recurring material,” says Kasper Dige Larsen, project manager at Henning Larsen Architects, adding:

“The solution gave us considerable freedom to place skylights between rafters, where it would be difficult to install traditional ventilation. From a practical aspect, it is an advantage that there are no ducts, as they collect dust and have to be cleaned.

Outstanding reverberation

In addition to the ventilation, the ceiling also helps to regulate the acoustics in the classrooms because, with the sloping ceilings, there are fewer parallel surfaces to reflect the sound back and forth. Combined with the Troldekt acoustic panels, this ensures a low reverberation time in each room.

“The client is very impressed with the sound quality in the rooms. And because the acoustic ceiling works better than the simulation, it has been possible to use less sound dampening on the walls,” says Kasper Dige Larsen.

Facts about Troldekt ventilation

Troldekt ventilation uses the entire ceiling as a ventilation surface. Therefore, there are no visible ventilation ducts which can otherwise gather dust and obstruct the daylight.

The ventilation ceiling ensures even air distribution which is neither noisy nor draughty. The sound-absorbing properties of the Troldekt acoustic panels ensure optimum acoustics in every classroom. The air is distributed at low pressure, which means that the solution can reduce energy consumption by more than 50 per cent compared to conventional ventilation solutions.

Troldekt acoustic panels are cement-bonded wood wool panels made from the natural materials wood and cement. The acoustic panels have good acoustic, indoor climate and fire-protective properties, and are Cradle to Cradle-certified in the silver category.

FACTS

Project: Aabenraa Campus, Denmark

Architects: Henning Larsen Architects A/S

Client: University College South Denmark

Ceiling: Troldekt acoustic panels and Troldekt ventilation

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