



Troldtekt® ventilation

Fresh air with pleasant acoustics and aesthetics

There is clean air and superior acoustics at the kindergarten Børnebyen Christianshavn in Copenhagen, which welcomes more than 700 children daily. COBE and NORD Architects chose ventilation ceilings from Troldtekt to avoid any visually disruptive technical installations.

Børnebyen Christianshavn occupies a triangular plot on Prinsessegade in central Copenhagen. The 710 children attending the institution are aged 0 to 15, and go to either the nursery, kindergarten or after-school recreational club – but together the buildings form a single community with its own identity.

COBE and NORD Architects were behind the project, which was inaugurated in 2016. The premises cover a total

area of approx. 4,600 square metres, making it the biggest daycare institution in Denmark. 'Børnebyen' is Danish for 'kids' city', and like in real cities, Børnebyen Christianshavn has its own city gate, fire station, restaurant, squares and city hall. The city hall is a large multi-purpose hall, which is used extensively by both the kindergarten and the after-school club.



In all the rooms, Troldtekt ventilation ensures good acoustics and fresh air. A major advantage of the solution is that the air is blown in at low pressure through the acoustic ceiling panels – silently and without any draughts or exposed installations.

“We deliberately went for architecturally uniform ceilings. Troldtekt ventilation gave us an aesthetic freedom, because the solution is good for the indoor climate without introducing disturbing visual elements. The air is distributed evenly throughout each room, so we don’t have to plan ventilation ducts in a particular way,” says Mikkel Morris MAA, an architect and senior project manager at COBE.

Silent architecture free from technical installations

COBE and NORD Architects designed Børnebyen Christianshavn with different ceiling heights. The ducts which supply the individual rooms with air run above the ceilings in the corridors. This means that the communal rooms are kept free of pipes, and therefore have higher ceilings. Several rooms even have double-height ceilings.

“The principle of placing ventilation ducts in the corridors makes sense, because it creates so much more light and air in the communal rooms. We wanted to avoid the feeling of being in an institution, so the architecture is characterised by the absence of air-conditioning noise and intrusive technical installations,” explains Mikkel Morris.

In addition to Troldtekt ventilation enhancing the air quality, the acoustic panels also reduce reverberation times. So, even when the rooms are filled with noisy games and children’s laughter, the acoustics are always good. The acoustic ceilings make a particularly big difference in the high-ceilinged rooms.

FACTS

Project: Børnebyen Christianshavn in Copenhagen, Denmark

Architects: COBE, NORD Architects, PK3/BOGL

Client: City of Copenhagen

Ceiling: Troldtekt Plus acoustic panels and Troldtekt ventilation

Troldtekt® ventilation

Troldtekt 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 Troldtekt acoustic panels ensure optimum acoustics in every room.

The air is distributed at low pressure, which means that the solution uses more than 50 per cent less energy compared to conventional ventilation solutions.

Troldtekt 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.

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