

X-BEAM: AIR-WATER INDUCTION UNITS



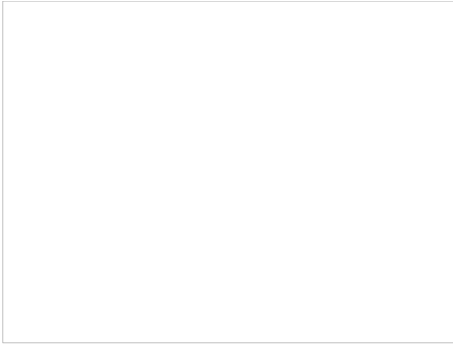
TMB Headquarters, Istanbul, Turkey

In rooms where high thermal loads prevail, air-water systems are the energyefficient alternative to all-air systems. Since they heat or cool the room air with air-to-water heat exchangers, the heating and cooling capacity can be provided independent of the required fresh air flow rate. Air-water systems may be installed 'openly', e.g. not concealed by suspended ceilings; a good example is the SMART BEAM, which was designed by Hadi Teherani. The most common installation, however, is in suspended ceilings.

With DID active chilled beams fresh air from the air handling unit is supplied to the rooms in addition to water-based cooling or heating. As the system relies on the principle of induction, the supply air flow can be considerably reduced when compared to all-air systems. No additional fans are necessary to transport the secondary air, which results in less energy consumption and only minimal noise.

Active chilled beams save space because they are comparatively flat and require only a compact air handling unit and smaller ducts. Since they can be operated in both cooling and heating mode, no static heaters are needed. An additional advantage is the fact that lighting, loudspeakers, smoke detectors and sprinklers may be integrated.

Freely suspended active chilled beams from TROX, such as the SMART BEAM, may be visibly installed and are an aesthetically pleasing solution; they can also be



induction units for underfloor or for

façade installation.

From left to right: Norwich Union, UK; Charles Avison Building (City Library), Newcastle, UK



Active chilled beam Type DID632
Primary air:
6 - 85 l/s
22 - 306 m³/h
L: 900 - 3.000 mm
B: 593, 598, 618 & 623 mm
H: 210 mm
Cooling capacity: up to 3,100 W
Heating capacity: up to 2,330 W



Active chilled beam SMART BEAM
8 - 33 l/s

30 - 120 m³/h
 L: 4.500 - 5.200 mm
 B: 750 mm
 H: 291 mm (plus services)
 Cooling capacity: up to 1,000 W
 Heating capacity: up to 750 W



VAV terminal unit LVC for low airflow velocities
 8 - 300 l/s
 30 - 1.080 m³/h
 Ø 125 - 250 mm
 Δp: 5 - 600 Pa
 Casing air leakage to EN 1751, class C



Zone control X-AIRCONTROL can be combined with façade ventilation units to provide demand-based ventilation and extract ventilation and enable the control of the water-side components of the heating and cooling circuits.