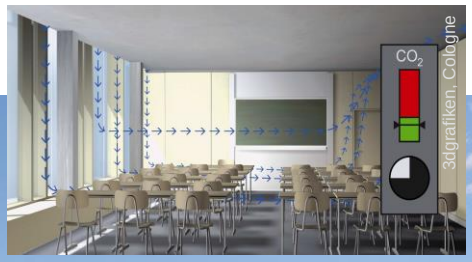
Seit 1877 Kiefer Luft- und Klimatechnik
Neue Wege mit Luft

Concrete core cooling with air CONCRETCOOL

Berufskolleg, Kreis Recklinghausen



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The Herwig Blankertz and Max Born Vocational Training College in Recklinghausen now has new premises in converted colliery buildings. Two compact, generously glazed buildings, with an effective area of 17,600 m², form together with a five-court sports building a central public space, the Campus Vest. For comfortable conditions in the rooms, which permit concentration while working at any season of the year and any time of day, an integral energy and building concept was developed in which the CONCRETCOOL ventilation system has a central role along with the dual-shell building envelope and a replacement-air system. By exploiting the internal loads, the thermal storage capacity of the structure, and the weather-dependent sun-blinds, the energy needs for ventilation and heating have been minimised in comparison with conventional building management systems.

Function of CONCRETCOOL

In contrast to conventional systems, in which supply air is fed directly into the working areas, the air first flows through aluminium cooling tubes cast into the ceilings. Thereby the supply air cools the ceiling. At the same time the gain of heat is used to warm up the supply air.

System advantages

- Optimum thermal comfort
- Additional ceiling cooling with water is not required
- Free cooling provides energy savings of up to 50%
- Full flexibility due to modular positioning of cooling tubes
- Cooling with outdoor air – no air circulation required
- Construction costs reduced due to low floor height

Building:	**Herwig-Blankertz- und Max-Born-Berufskolleg, Recklinghausen**
Architects:	**scholl architekten partnerschaft scholl.balbach.walker, Stuttgart**
Proprietor:	**Kreis Recklinghausen - Der Landrat**
Planner:	**Pfeil & Koch Ingenieurgesellschaft, Stuttgart**
Scope:	**17,600 m² conditioned area**
System:	**Concrete core cooling with air CONCRETCOOL** **The ventilation system is integrated into the ceilings so that it is invisible.**
Air flow rate:	**9 m³/hm² (exch. rate = 2.7 x /h)**
Features:	■ **High interior loads (users, equipment)** ■ **Replacement-air system for reliable ventilation and high air quality** ■ **Sealed building envelope to minimise effects of external noise**

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