



# Concrete core cooling with air – CONCRETCOOL



Seit 1877

## Kiefer

Luft- und Klimatechnik

Neue Wege mit Luft

## Claas Harsewinkel – New Building Atrium

### Maximum energy efficiency and resource conservation

People make CLAAS: With its new administration building at the company headquarters in Harsewinkel, the global manufacturer of energy-efficient farming machinery and developer of agricultural technology is certainly living up to this motto. The high-efficiency building provides a modern, comfortable working environment which encourages communication between employees.

The four-storey building comprises an elegant entrance area opposite the Technoparc, conference and meeting rooms from the ground floor to the top floor, plus a new computer centre and the historical archive in the basement.

A covered atrium provides space for events, exhibitions and presentations. As the office areas have flexible divisions, they can be arranged as individual offices or open-plan spaces. The building features daylight-dependent lighting which is controlled via movement sensors for optimum results. The thermal load generated by people, computers, lighting, etc. in the offices during working hours is used to heat the atrium. Both measures contribute towards minimising energy and heat loss.



Photo © Andrea Felske

The new Atrium building with comfortable, energy-efficient office and meeting rooms featuring flexible divisions, an atrium for events and an elegant entrance area. Maximum energy efficiency and careful use of resources are an absolute must.

<b>Building:</b>	<b>Claas Harsewinkel – New building Atrium Harsewinkel near Gütersloh</b>
<b>Proprietor:</b>	<b>CLAAS KGaA mbH</b>
<b>Architects:</b>	<b>Heitmann Architekten, Gütersloh</b>
<b>Lighting planning:</b>	<b>Scharkon Lichtkonzepte GmbH, Ahlen</b>
<b>Scope:</b>	<b>9,000 m<sup>2</sup> total floor area 12,500 m<sup>2</sup> conditioned area</b>
<b>System:</b>	<b>Concrete core cooling with air CONCRETCOOL</b>





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### Special climate control features

The new Atrium building features one CONCRETCOOL pipe module per 1500 mm construction grid. Each pipe module has a nominal width of 80 mm, approximately 5.5 running metres of active ribbed pipe and an air-side load of 50 – 75 m<sup>3</sup>/h. The specified quantity of fresh air (7.8 m<sup>3</sup>/h m<sup>2</sup>) which is pumped into the offices by the CONCRETCOOL system enters the pipes at an intake temperature of 12°C and is heated nearly to ambient temperature by the energy stored in the ceilings. When the ventilation technology system is operated for 12 hours, the CONCRETCOOL system can recool a stationary cooling load of 35 W/m<sup>2</sup> in the offices; with 20 hours of operation, it can even achieve 60 W/m<sup>2</sup>. The operational ambient temperature does not exceed 24.5°C in normal operation. The extract air is extracted centrally in the corridors via the INDUSILENT cross-flow elements which are integrated in the corridor walls and feature sound absorbers.

### Function 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:

- Optimal thermal comfort
- Additional ceiling cooling with water is not required
- Free cooling provides energy saving of up to 50 %
- Full flexibility due to modular positioning of cooling tubes

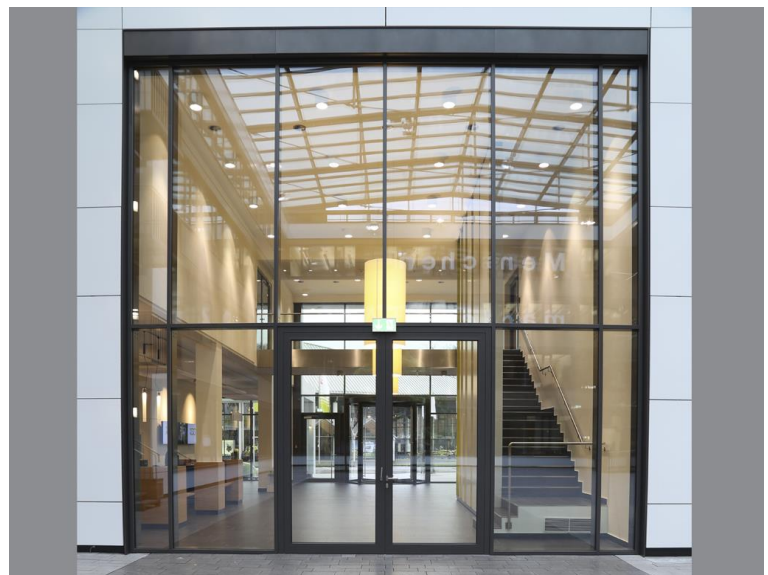


Photo © Andrea Felske

The elegant entrance area opposite the Technoparc



Photo © Andrea Felske

In the meeting rooms, the air from the CONCRETCOOL system is conveyed into additional quick-reacting, high-performance INDUCOOL Compact cooling panels with a water-side capacity of 300 W per running metre for additional air conditioning.

