Waldmann

ENGINEER OF LIGHT.

TWIN-C REPORT

ARCHITECTURE | THYSSENKRUPP ESSEN

CURRENT INFORMATION ON INTELLIGENT
LIGHTING CONCEPTS THAT ARE
MADE BY WALDMANN

ENTERING A NEW EPOCH

The new group headquarters of ThyssenKrupp in Essen is the base for various administrations of the steel group, which were previously scattered over several locations. This closer cooperation between these administrations aims to encourage the dialog and exchange of knowledge among the employees. The architectural appearance of the ThyssenKrupp Quarters is defined by materials such as glass and the company's typical steel. The campus-style complex was built based on plans of JSWD Architects from Cologne and Chaix & Morel et associés from Paris. Currently, a child daycare center is being built on the spacious site. Around 2,000 employees have already moved into the striking Q1 headquarters and the surrounding buildings. The office design is based on a concept that was developed together with the Fraunhofer Institute for Industrial Engineering (IAO).

Flexible office worlds

The offices should provide space for concentration when working alone, as well as for creative teamwork. The concept supports this with a wide range of rooms and spaces for discussions or meetings. Furthermore, the ThyssenKrupp employees have individual offices through to open-space areas at their disposal and can choose an office world to suit their particular task. The rooms should be easy to change so that they can flexibly adapt to changes of use. The implementation requires an innovative and sustainable solution in all areas of building engineering. ThyssenKrupp thus prefers mainly cable-free technology of a room automation system. This enables room temperature, glare protection and lighting to be repeatedly and cheaply adjusted by software.

The right TWIN-C solution – ATARO free-standing luminaire

Flexibility, efficiency and connection to the building engineering were thus key criteria for the search for the right lighting. Furthermore, the lighting concept is based on natural light, which is only complemented by artificial light if needed.

ThyssenKrupp opted for Waldmann's ATARO free-standing luminaires. The communicative indirect luminaires automatically regulate the amount of light as needed. This means they have a daylight and presence sensor. This makes the solution extremely efficient. In addition, the flexibility of the free-standing luminaires enables them to adapt to the desired versatility of the rooms. This wouldn't be possible with conventional ceiling-mounted luminaires or suspended luminaires.

1 | 2 A symbol for efficiency: the illuminated ThyssenKrupp Quarters in Essen. Photographer: Lukas Roth.

3 If required, ATARO free-standing luminaires with PULSE light management system can be used to complement artificial light.

4 Every luminaire is connected to the building engineering via an integrated LON interface.

ThyssenKrupp headquarters Awarded with the DGNB Gold certificate

2

3

4

Extensive user comfort

For the individual adjustment of the lighting direction, the luminaire head can be rotated in both directions by 45 degrees. The user-friendliness is also demonstrated by the fact that the luminaire can be operated both in sitting and in standing. Ideal in conjunction with the height-adjustable desks of the ThyssenKrupp employees.
The innovative AMBIO glare-free technology ensures that the luminaires offer high-quality lighting. The direct share of the light is approx. 30 percent and provides a high illuminance on the desk surface without direct or reflective glare on monitors or other working materials. The main share evenly and pleasantly illuminates the whole room via the ceiling.

Efficiency by Waldmann

ThyssenKrupp studied the lighting solutions far in advance. Not least because around 30 percent of the entire energy requirements of an administration building are attributed to lighting. ATARO's efficiency is convincing. Particularly by the jointly performed energy monitoring with the Rosenheim University of Applied Sciences. Over the course of 12 months, a comparative field study was held to examine the energy consumption of artificial lighting systems in offices in a building of ThyssenKrupp Real Estate in Essen. The result showed that Waldmann's intelligent free-standing luminaires considerably reduce energy consumption: in comparison to conventional solutions, they cut energy consumption by half. CO_2 emissions are also verifiably more than halved. The graphs below show the detailed energy requirements of the Waldmann solution and the conventional solution in direct comparison.

Connection to the building engineering

An integrated LON (Local Operating Network) interface enables the connection of the communicative luminaires to the building engineering. The luminaire sensors detect daylight and presence. Via the LON, these are made available to other subsystems such as heating. If an employee enters his office, both the light and heating are automatically switched on.
Independent of the level of daylight, the user can manually adjust the light to his individual needs. This can be done directly by operating an intuitive switch on the luminaire or by a telephone, which is also connected to the LON. To increase efficiency, every night the building engineering uniformly resets the lighting level to its original position.

Outstanding sustainability

The building's efficient and environmentally friendly lighting technology is an example of acting according to ThyssenKrupp's principles of sustainable management. As a result, the German Sustainable Building Council (DGNB) awarded the project a Gold certificate.

CLEAR SAVINGS POTENTIAL – THE MONITORED CONSUMPTION VALUES