



# LUX REVIEW

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## The office of the future

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# New offices, new LIGHTING

A generation of digital natives is arriving in the workplace with new office needs. We need new lighting too, writes **Sabine Brunner** of the Trilux Group

Office culture is changing. As a generation of digital natives arrives in the workplace, having grown up with smartphones and tablets, offices have had to adapt to provide the right working conditions for them.

The biggest trend is the open office landscape, which demands new lighting ideas. As well as technical analysis, lighting designers must take an empathic, holistic and individual approach to properly support architecture and create a good working environment.

Digitalisation has not only changed the way workers behave and interact socially, it has also disrupted work structures in offices. The classic office layout with territorial work areas is being replaced by flexible structures that are optimised for working with mobile devices. At the same time, offices allow more informal methods of communication and more relaxed surroundings.

Modern office layouts are open, with a range of zones for different activities. Lounge areas play a key role, letting employees retreat with their laptop or tablet to develop creative concepts. Just as beneficial to creativity are areas for informal discussions among colleagues. Team zones have replaced the former cell-based office areas. Those who need to concentrate to solve a task, or perhaps make a telephone call, can go to a quiet room.



Above: The sides of these pendants emit general light, the downward component illuminates the stairs.  
Left: Colour-changing fittings in the lounge



Sabine Brunner, head of creative and brand management, Trilux Group

The complex structure of future offices will demand a new kind of lighting. Just differentiating between general lighting and individual workstation lighting will no longer be enough.

Three basics are essential for the illumination of buildings: the aesthetic aspirations of the architect, ergonomics and energy efficiency. Ambitious lighting concepts for complex structures can balance these requirements with construction considerations and workers' needs.

Applying this approach, an innovative lighting solution was implemented at the Centre for Visual Engineering ZVE, a new building on the campus of the Fraunhofer Association in Stuttgart, Germany.

The office building complex, planned by UNStudio, is described by owner Ben van Berkel as a reflection of the latest concepts for integrative and sustainable planning. The lighting concept reflects these parameters to respond directly to the architecture.

The lighting serves to identify the various zones in the open, technically innovative structure. General and accent lighting of the building structures create a balance between internal areas, such as offices and laboratories, and public areas. The stairs in the central atrium, connects the five storeys in a curved, flowing design, and is lit by safe step lighting and given a central focus with a light installation.

Design was limited by fixed light outlets and sprinkler systems, concrete walls and ceilings, and installation points for acoustic baffles, so various alternative solutions were drawn up. A precondition for this was an understanding of the complexity of the building. Only with a detailed analysis of the interior structure did the challenge become clear.

### Indoor lighting

The UNStudio and Fraunhofer project team specified a radial lighting installation with suspended task luminaires in a striking arrangement. These ensure a sufficiently illuminated working environment thanks to direct and indirect light distribution from high-power LEDs. Energy consumption is low thanks to daylight-dependent control and presence detection.

General lighting for the entrance area and the office areas in the core of the building was implemented using surface-mounted LED luminaires on the ceiling. The indirect light emission creates a decorative element, and the arrangement of luminaires in series contributes to wayfinding.

Employees in the lounge areas can control the coloured light from RGB luminaires.

The fenestrated atrium in the roof area was a challenge that reflected the complex construction of the arabesque staircase, because it placed multiple demands on the lighting – light for seeing, light for viewing and safe step lighting were all needed.

At the same time the architects specified a 'swarm' lighting installation that should symbolise the intelligence and accumulated knowledge of the group. A bespoke LED construction with two photometric components was devised. Cylindrical, suspended, frosted glass luminaires in two sizes are grouped above the steps in the form of striking light sculptures, emitting diffuse light that attracts attention and provides general lighting. Vertical light from the lower section of the luminaire provides safe illumination of the staircase steps.

The project is an example of how offices may look in the future, using innovative lighting to support the architectural ambience, promote positive emotions in employees, contribute to greater motivation, concentration and performance capability, and achieve high efficiency. The scheme is also efficient because of the intelligent light management systems that incorporate daylight and presence-dependent control functions.

## BIG TRENDS IN OFFICES

### 1 OPEN OFFICES

The classic layout with fixed work areas is being replaced by flexible structures that are more suited to work with mobile devices.

### 2 WORKSTATION MOBILITY

Moveable seating creates flexibility and encourages co-operation. Workers can hold meetings standing up at height-adjustable tables.

### 3 GREEN AREAS

Plants and walls with vertical gardens bring nature indoors, to create an atmosphere that promotes productivity.

### 4 SOCIAL COMMUNICATION

Communal meals and breaks are communication opportunities. Future offices will put more value on kitchens and eating areas.

### 5 COLOUR DESIGN

Research shows that certain colours such as blue, green and red promote productivity, whereas others lead to premature fatigue.