Factsheet

Innovation Center

New corporate building in Stuttgart: high-grade sustainability standards



Low-carbon concrete, environmentally friendly rock wool insulation and recycled aluminium. These are just three examples of how the STRABAG Group is putting sustainability into practice at its new corporate building in Stuttgart. The six-storey office building at Albstadtweg 10 represents a further expansion of STRABAG and ZÜBLIN's Stuttgart headquarters. The project, a joint effort by STRABAG Real Estate, ZÜBLIN as the general contractor and Zentrale Technik as general planner, has achieved a gold sustainability certification from the German Sustainable Building Council (DGNB). The building also meets the requirements of a KfW Efficiency House 55, whose primary energy demand does not exceed 55 per cent of the consumption of a statutory reference building.



Sustainability in detail

A variety of different measures and construction methods make the new building at the ZÜBLIN campus a model of sustainability – across the entire design-build-operate cycle. Efficient processes are guaranteed through the use of BIM 5D® and LEAN principles.

Low-carbon concrete

Low-carbon concrete was used from the floor slab all the way through to the roof. The remaining carbon footprint of the concrete and reinforcing steel is offset through additional measures to achieve a neutral balance.

Recycled aluminium

In addition to low-emission concrete, STRABAG Real Estate (SRE) and ZÜBLIN have also focused on resource conservation with regard to the other materials used in the construction of the new building. The aluminium in the window frames and the post-and-beam structure of the façade have a high recycling content of up to 65 per cent. The façade itself is largely clad with recyclable aluminium sheets.

Environmentally friendly rock wool insulation

The roof and façade of the new building were insulated using rock wool obtained from rock types that occur in almost unlimited quantities, such as feldspar, dolomite and basalt. Moreover, the production of rock wool insulation requires much less energy than conventional EPS (polystyrene) insulation.

Green façade and rainwater storage

Façade greening was implemented over large parts of the building. This improves the air quality, generates oxygen, filters particulate matter, reduces noise and even has an insulating function. The plants on the façades and in the landscaping of the inner and front courtyards are irrigated from a rainwater storage tank with a capacity of around 60,000 litres.

Efficient heating and cooling with Four-pipe heat pump

An energy-efficient four-pipe heat pump is used to heat and cool the new building at Albstadtweg and to provide hot water for the staff canteen. Heat recovery through the redirection of excess heat to rooms where it is needed ensures a significant reduction in energy consumption. In standby mode, the system cools the water and releases the heat extracted in the process to the ambient air through a finned heat exchanger. The heat pump functions like a conventional water chiller, but with greater safety and efficiency thanks to its multi-stage capacity range and multiple cooling circuits.

Photovoltaics system

In combination with a battery buffer storage system, the photovoltaic panels on the roof allow for a partially self-sufficient power supply – especially for the building's main technical equipment. The PV system occupies the entire roof surface of the new building.

EV infrastructure

An extensive infrastructure for electric vehicles rounds off the sustainability concept of the new corporate building. The 24 EV charging stations in the underground car park and in the outdoor parking lot can be fed by solar power from the photovoltaic system, with a supplementary battery storage system to optimise the charging capacity. Additional charging points are also available in the large bicycle garage with 116 spaces.

Use of cradle-to-cradle products

The carpet tiles laid throughout the building are certified cradle-to-cradle, a paradigm for a complete and consistent circular concept in product design. Cradle-to-cradle represents the principle of an ideal, self-contained resource cycle modelled on nature, where 100 % of raw materials remain in the cycle and can be reused after the product's useful life has expired.



1 Installation of the low-carbon concrete

Modern office concept

The new building not only stands out for its sustainability aspirations and high technical standards, but also for its modern office concept with desk sharing and no permanently assigned workstations. Around 10,000 m² of office space is available on six floors. On the third floor, an open office concept was chosen to promote a collaborative work environment. When the new building opened in autumn 2022, the three corporate entities STRABAG Innovation & Digitalisation (SID), Zentrale Technik and STRABAG BRVZ IT moved into it.



1 Modern office concept at the Innovation Center /
2 MEP ceiling module

Innovation and digitalisation

The new building at Albstadtweg in Stuttgart is a showcase project not only in terms of sustainability. The STRABAG Group also used digital working methods and innovative tools in all of the project phases – from the initial planning and design to the actual construction and building operation.

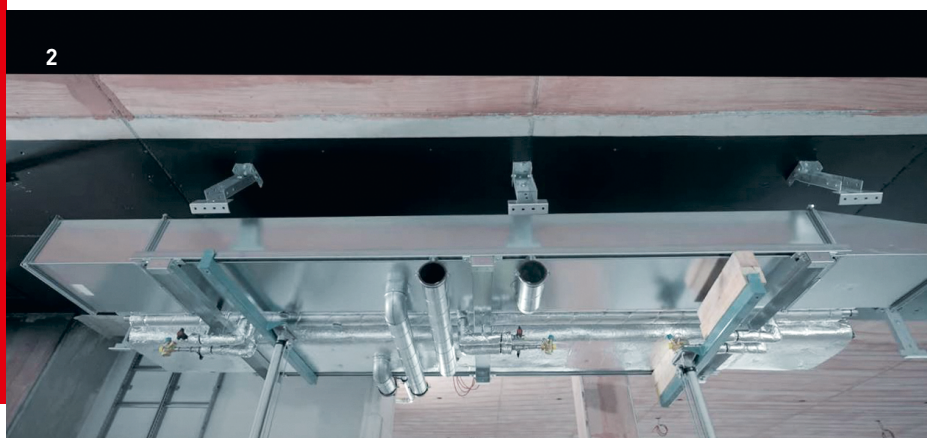
BIM in the project

All project participants used Building Information Modelling (BIM) and worked together on a continuous model across all stages of the project via the BIM 360 project platform. As a BIM pilot scheme, the construction project also served to implement and refine in-house standards and newly developed solutions.

Modular mechanical and electrical systems

Building services modules covering all mechanical, electrical and plumbing (MEP) ducts and wirings were designed and prefabricated offsite before being delivered and assembled in one piece. Such modules reduce construction and installation time, eliminate storage needs and minimise idle times on the construction site. Industrial prefabrication brought with it greater clarity and safety on site, whilst also significantly improving the quality of workmanship.

Find out more about the installation of prefabricated MEP ceiling modules.



Quality control with augmented reality

The quality control of the structural reinforcements was carried out using augmented reality (AR). This works by overlaying the reinforcement model on top of the actual reinforcement installed, thereby enabling a visual comparison that allows discrepancies and congruities to be detected quickly and easily.

Rule-based evaluation of user requirements

The rule-based verification of geometric and alphanumeric project information can be used to review compliance with selected structural engineering codes. Rule-based model evaluation tools were developed and applied to coordinate activities within the project.

3D reinforcement planning

The 3D reinforcement model offers numerous possibilities for applying downstream processes. This enables conflicts with other components to be detected at an early stage in order to increase the planning quality. Quantity controlling of the reinforcement in comparison to the calculated and planned steel quantities was also carried out. The 3D reinforcement model is also used for building documentation purposes.

Mobile daily construction reports (Sitelife)

The daily construction reports were prepared using Sitelife. The digital tool makes it possible to enhance the building components with information regarding their as-built status, to display this information visually and to evaluate the construction progress in iTWO 2021. The daily construction reports can be recorded digitally on mobile devices, with up-to-date weather data stored automatically as well.

Digital fire safety file

The use of a digital work platform ensures the seamless documentation of all fire safety activities. The file contains all relevant fire safety information and enables each individual measure to be processed based on the latest models and plans.

As-built model (structural works)

Laser scanning is used to record the as-built geometry and to compare it with the structural model from the design documents. Any deviations can then be taken into account for further planning.



1 Modern office concept / **2** Spot, digital construction site documentation at the Innovation Center

