

A Particularly Sustainable Jewel: *experimenta* Awarded Diamond DGNB Certificate

Sustainable building protects the climate and saves resources. The German Sustainable Building Council (DGNB) recognizes special showcase projects. On August 13, it awarded a Diamond certificate to Schwarz Real Estate's sustainable and architecturally exceptional new building to house *experimenta*. This is the highest possible award from the Sustainable Building Council. Germany's largest science center has already earned the DGNB's prestigious Platinum award for its high sustainability standards. This makes *experimenta*, which is sponsored by the Dieter Schwarz Foundation, one of the four most sustainable buildings in Germany with Diamond and Platinum certificates. Drees & Sommer's work included developing the energy and sustainability concept, supervising the construction project as DGNB auditor and taking overall responsibility for management, planning and site management from a single source.

An Innovative Building From The Ground Up

The architecturally exceptional new building for *experimenta*, with staggered floors in the shape of a spiral, has developed into an eye-catcher on the edge of Heilbronn's city center. Architecture and building services engineering are also just as outstanding as the innovative way in which science is transformed into an experience at *experimenta*. They are the basis for the DGNB certifications at Platinum and Diamond level, which attest to the high quality and sustainability of the building. 'For me, bringing together sophisticated architecture, innovation and visible technologies under the premise of sustainability is the highlight of the project,' said professor Michael Bauer, a Partner at Drees & Sommer.

This Is How Sustainable Heating And Cooling At *experimenta* Can Be

The *experimenta* concept for energy and sustainability focuses entirely on the cost-effective use of renewable energy. The building materials and exhibits are also sustainable. They are pollutant-free and the timber used comes largely from sustainable forestry. In order to make optimum use of daylight, save energy for lighting and minimize heating and cooling loads, Drees & Sommer's engineering experts simulated and analyzed the thermal properties of the façade and the technical aspects of its daylight performance. Although the façade is highly transparent, it does not require any moving structures for solar shading. By repelling the sun's rays, it reduces the cooling load. In winter, thermal insulation cuts heating loads.

A high level of comfort in the building is achieved by component cooling in the ceiling and gravity cooling, which works with heat exchangers and physical effects. By using groundwater in combination with a heat pump, 75 percent of the heat for heating purposes can be extracted from the groundwater. When cooling is required, the groundwater absorbs 100 percent of the cooling. As a result, 200 tons of CO₂ can be saved per year through the well and the cooling load reduction. By using these technologies, the energy concept is adapted to the users and substantially falls short of the legal specifications.

360° Panoramic View From Glass Free-Standing Building

The DGNB's Diamond certificate is a supplementary award for the quality of design and architecture. Criteria such as proportion, composition, materials, coloring, layout, spatial arrangement, timelessness and urban integration are evaluated. The architect of the *experimenta* building is the Sauerbruch Hutton Berlin office. The sophisticated architecture of the new building provides unique positioning, while also integrating *experimenta* into the existing urban and landscape environment. Functional areas that do not explicitly require daylight were deliberately housed underground in order to reduce the above-ground volume. 'The island location of the site, with its 360° panoramic view, was the inspiration for the spiral space. This spiral provides the structure for the themed areas and gives the architecture its form,' said architect Juan Lucas Young, describing the idea behind the design of *experimenta*.

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