

Esslingen District Government Office

Circular construction –
resource-saving and
sustainable

Cover The new office building for the Esslingen District Office was planned and constructed by ZÜBLIN on a turnkey basis © Ed. Züblin AG / Niels Schubert

The extension of the Esslingen District Office in Baden-Württemberg sets standards for circular and sustainable construction. STRABAG subsidiary ZÜBLIN planned and implemented a modern turnkey administrative building for the district authority on the banks of the Neckar River. The new building was constructed on the site of the old district administration office, which had stood there since 1978, with the targeted use of recycled building materials. The two-part office building in the shape of a horizontal figure eight was designed by BFK Architekten and meets high standards for sustainable building operation with its consistent use of renewable energy sources. The old building, which was in dire need of renovation and had become too small, was systematically dismantled with a high recycling rate.



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The construction project followed a specially developed concept for circular construction. During the demolition of the existing building by recycling specialist Heinrich Feeß GmbH from Kirchheim unter Teck, the building materials were systematically separated and processed for reuse (keyword: "urban mining"). Recycled materials were specifically used for the new building: for example, the shell was largely constructed using resource-saving concrete (R-concrete).

Parallel to the construction work, ZÜBLIN regularly had the project checked against the comprehensive criteria for DGNB certification as a sustainable construction site. With this award, the German Sustainable Building Council honors holistic sustainability quality according to comprehensive rules: from construction site organization and resource protection to aspects such as health, social issues, and communication with the public to the quality of the construction work.

1 The new two-part building for the district government office combines two polygonal structures into one building complex in the form of a horizontal figure of eight. © Design: BFK Architekten / **2** Behind the generously glazed façade of the new building are two meeting rooms, among other facilities. © Ed. Züblin AG / Niels Schubert



Cubic building complex with flexible space concept

In a joint venture, ZÜBLIN's Stuttgart office and its subsidiary Wolfer & Goebel Bau GmbH have completed a turnkey administrative building between Merkelpark and the banks of the Neckar: Two polygonal structures with spacious inner courtyards are connected by a light, two-storey foyer and a connecting bridge on the first floor to form a cubic building complex with around 33,000 square metres of net floor space, spread over four to five upper floors and two basement floors. After construction began at the end of February 2023, the project team completed the new building on schedule by September 2025, thus adhering to the tight timetable.

The new Esslingen District Office has direct connections to the existing administrative high-rise building on two levels and offers space for a total of 675 workplaces – for senior administrators and employees from eleven offices. Behind the generously glazed façade, there is space for, among other things, the vehicle registration office, two meeting rooms, a daycare centre and the canteen. The multifunctional room system of the new building is divided according to a three-zone principle into a public area, a semi-public zone for people with appointments and an internal area for authority employees only. With its modular, flexible space concept, the new district administration office has been designed and built with the future in mind. The foyer has been designed by the internationally renowned Esslingen artist Tobias Rehberger, who will transform the entrance hall into a pop-art eye-catcher with his expansive and colourful alphabet of shapes.



Urban Mining: Old building materials almost completely recycled

ZÜBLIN partner company Heinrich Feeß systematically gutted and dismantled the six-storey old building of the Esslingen District Office between May 2022 and March 2023. The raw materials are then separated and reused or recycled as much as possible. In order to optimise recycling and reuse, ZÜBLIN and Heinrich Feeß GmbH drew up a material flow balance sheet that details the quantities of each building material to be dismantled along with their respective recycling and disposal paths. As a result, more than 90 per cent of the materials recovered from the old building can be returned to the cycle.

Examples:

- The 31,500 tonnes of concrete from the old building are crushed and screened directly on site (up to 1,800 tonnes/day). The concrete granulate is then recycled in the Feeß wet separation plant in Kirchheim to produce an aggregate for resource-saving concrete for delivery to nearby concrete plants.
- At the Kaatsch metal processing plant in nearby Plochingen, more than 1,220 tonnes of metal from the old building – from reinforcing steel to aluminium windows to copper cables – are processed for reuse.
- In Zweibrücken, Remondis recycles around 40 tonnes of gypsum planks and cardboard for future use in building construction.

3 The new district administration building was constructed using a high proportion of recycled building materials.
© Esslingen district / **4** More than 90 percent of the building materials from the demolition of the original 1978 building are being recycled. © Landratsamt Esslingen, Andrea Wangner



Sustainability at a glance

- Circular construction concept
- Material flow balance sheet for systematic building material recycling ("urban mining") during dismantling and demolition of the existing building
- DGNB Sustainable Construction Site certification
- New building to be constructed primarily using resource-saving concrete
- Use of cradle-to-cradle products
- Heat pump fed with river water for heating and cooling
- Photovoltaic modules integrated into the façade and on the roof
- EV charging stations
- KfW Efficiency House Standard 40
- DGNB Gold Certification for the new buildings
- Catalogue of ecologically sound building components



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Conserving resources and protecting the climate as a guiding principle

Sustainable and circular planning and construction were top priorities right from the start in the realisation of the new administration building for the Esslingen District Office.

- In line with the principle of circular economy, ZÜBLIN constructed the new building using as high a proportion of recycled building materials as possible, i.e. as far as possible, the material recovered from the existing building was reused. Example: For the new building, the ZÜBLIN project team used around 21,000 m³ of concrete, of which 12,780m³ (61 percent) was recycled concrete from reused concrete rubble. For example, two-thirds of the floor slab consists of resource-saving R-concrete; the same applies to numerous walls, ceilings and supports.
- The energy technology equipment of the new district administration office takes into account the targeted KfW Efficiency House 40 standard, which means that the primary energy requirement is a maximum of 40 percent of the new building standard. This is ensured, among other things, by the use of four heat pumps fed by Neckar water to heat and cool the building via ceiling sails, as well as the extensive use of photovoltaics (PV) to generate the building's own electricity. A PV system with a total output of 481.5 kilowatt peak (kWp) on the otherwise green roofs and via façade-integrated modules supplies the new building and the e-charging stations for cars and pedelecs with energy. The solar power produced is expected to cover almost 85 percent of the district administration office's requirements.
- Resource conservation is also a key theme in the interior design. Among other things, cradle-to-cradle-certified products such as office partition walls and facade elements made from recycled aluminium, carpet flooring and wood flooring with FSC/PEFC certification from sustainably managed forests are being used.
- With its standards, the new administration building meets the life-cycle-oriented sustainability criteria for a DGNB gold certificate for new buildings. ZÜBLIN is also compiling a material ecology component catalogue that lists all essential components and assigns them the materials used, including their building biology properties.

1 From the carpeting to the frames of the office partitions: Cradle to Cradle-certified products were specifically selected for the interior design. © Ed. Züblin AG / Niels Schubert /
2 Four heat pumps fed by water from the Neckar River provide heating and cooling for the building via ceiling panels. © Ed. Züblin AG



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