

Air instead of concrete

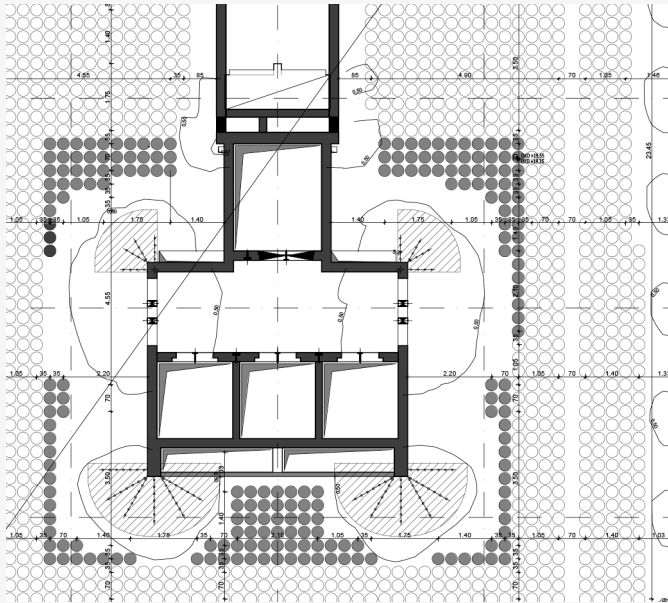
08 | 19

Cobix used in the Mannheim Glückstein district: Cobix SL modules enable savings of 136 tonnes of CO₂ in buildings owned by SV SparkassenVersicherung.

Construction work has been underway in Mannheim's Glückstein district since November 2017, on the two new SV SparkassenVersicherung (SV) buildings, which will create a total of 24,300 m² floor space in Quartier4. Project developer and general contractor is the Diring & Scheidel Group (D&S). Following handover to the owner, scheduled for summer 2020, SV and SV Informatik employees in Mannheim will relocate to the new offices. A further 16,800 m² of the total office space available at the 13-story office block will be leased externally. A total of 77 rental apartments are being built in the second building, with a total floor area of 7,500 m². As the property needs to attain the DGNB Gold standard, attention was paid during the planning phase to sustainable and energy-efficient construction. As well as certification requirements, the maximum height of 53 m required by building regulations was also complied with, necessitating a slab depth of 30 cm. At this point, our patented void former system comes into play. By the time the shell was comple-

ted in July 2019, a weight saving of 16,125 kN or 1,613 t had been achieved using our Cobix SL modules, as well as CO₂ savings of 136 tons.

The two interlocking L-shaped buildings, currently being built in Mannheim to designs by architects Sacker from Freiburg, winner of the design competition and D&S partner, reflect all the demands placed on modern urban buildings today. The office building, with its 13-story tower, and the residential building facing it, surround a lively and green inner courtyard, so offering a perfect synergy of work and living environments. To meet building regulations, care had to be taken in the planning phase not to exceed the permitted building height, 53 m. The height of the office tower also presented the planners with a huge challenge, for reasons of geology, as Mannheim is located in a category 1 earthqua-



The experts at Cobiax draw up a detailed installation plan for each project, taking into account the structural engineer's statics calculations.

ke zone and the site has been classified in subsoil class C and ground type class S. Demonstrating seismic safety, the responsibility of structural engineers at engineering group Kronach + Müller (ikm), was particularly elaborate and difficult. The stable and even load transfer needed for this is achieved using shear walls on top of a total of 311 reinforced beam columns cast on site. Thanks to Cobiax's void former modules and the associated weight reduction, it was possible to shorten the length of the beam columns to 7 - 8 m.

Construction progress on schedule despite inner-city location

Work on shell construction finally began in May 2018. The limited space in the inner-city construction site and the large amount of materials to be delivered made precise logistics planning inevitable. The individual deliveries had to be timed as precisely as possible in order to ensure smooth unloading, which did not affect regular traffic around the construction site of Diring & Scheidel Bauunternehmung GmbH & Co.KG. Logistics also had to be considered carefully for the 8,866 Cobiax void former modules, which arrived at the construction site over 16 deliveries, pre-assembled at the factory in order to speed up the unloading process and ensure that the slabs were concreted in according to schedule. Furthermore, for example, the supply of 16,000 m³ of concrete and 3,000 tonnes of steel had to be

managed logistically. Thanks to a great team effort from all companies involved, it was nevertheless possible to keep to the schedule and complete the shell construction phase in July 2019.

Material and weight savings using Cobiax void formers lead to CO₂ savings of 136 t

By using the Cobiax SL modules up to 35 percent weight reduction can be achieved, compared to solid reinforced concrete. Significant savings in material and weight are achieved, at the same time broadening the creative scope for the architects, as shallower slab depths are possible, along with spans of up to 20 m. With our system, load transfer occurs in two directions, meaning the static performance and external appearance of the voided flat slab are totally preserved. The lower volume of concrete reduces pollutant emissions, so that we were able to achieve CO₂ savings of 136 t by using our system in the Quartier4 project. Thus, a mere 100 concrete mixer journeys were needed for a total of 645 m³ of concrete.



Significant savings in material and weight are achieved, so that shallower slab depths are possible, along with spans of up to 20 m.



The modules are first set into a layer of concrete in order to avoid them bouncing around. The bond is created using the reinforcement steel elements of the void former modules, which at the same time serve to hold the individual void formers in place.


Shell construction was completed on schedule in July, and handover of the turnkey property is scheduled for summer 2020. We are pleased to be part of this interesting and challenging project, and help meet DGNB guidelines fully, using our Cobiax SL modules.

Further informations

Heinze Cobiax Deutschland GmbH
 Otto-von-Guericke-Ring 10
 65205 Wiesbaden
 Germany
 Phone +49 6122 918 45 00
 Fax +49 6122 918 45 40
 info.de@cobiax.com
 www.cobiax.com

Heinze Cobiax Schweiz GmbH
 Schwertstrasse 4
 8200 Schaffhausen
 Switzerland
 Phone +41 52 260 09 00
 Fax +41 52 260 09 09
 info.ch@cobiax.com
 www.cobiax.com

Copyright all images: Diringer & Scheidel Bauunternehmung GmbH & Co.KG

The Chop-Chop-Needs-To-Be-Out-There-Window 

+++ Cobiax used for another „district“ + stop + Axel-Springer-District in Hamburg + stop + Construction of a new college building in Ulm + stop + All facts at this point soon + end +++