Customised PERI solutions for complex, architectural requirements

Research and Development Centre of Ferring Pharmaceuticals A/S, Copenhagen, Denmark

PERI has contributed to the construction of the new research and development centre of Ferring Pharmaceuticals A/S in Copenhagen by supplying individual formwork and scaffolding solutions. The building, which looks like a triangle when viewed from the air, is being erected in a central location right next to the sea at the Øresund crossing between Copenhagen and Malmö. The use of pre-assembled VARIOKIT system solutions and SKYDECK slab formwork streamlined the procedure significantly. At the same time, PERI's systems ensured that the architectural concrete was of the highest quality.

The new research and development centre of Ferring Pharmaceuticals A/S is currently being built right next to the sea on the outskirts of Copenhagen. The building looks out on the Swedish city of Malmö, where Ferring was founded. The architecture of the eight-storey structure is just as extravagant as its location. The centrepiece is a spacious atrium with a panoramic view which features an entrance hall, a café and a break room, not to mention conference facilities and space for social events. The large stone base beneath provides protection against flooding. A lightweight, suspended glass construction will be installed above this at a later date.

Most of the walls were to be erected using SB 4 concrete – architectural concrete of the highest quality. The dimensions and shapes of the slabs were specified with the highest level of detail and change from one floor to the next. For the façade of the project, major emphasis has been placed on horizontal lines, which is consistent with the flat surrounding structure. PERI engineers developed a tailor-made solution for the construction consisting of 2,600 m² of pre-assembled VARIOKIT formwork, 2,000 m² of SKYDECK slab formwork, 2,000 m² of MULTIPROP slab props and 1,200 m² of VARIODECK slab tables.

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Versatile solutions for complex shapes

The special geometry and the joint and tie arrangement for the walls specified in the design were challenging for those involved in the project. However, the

VARIO GT 24 girder formwork proved to be the optimal solution for keeping the workload and time requirement to a minimum during the forming process and achieving a high level of architectural concrete quality. On account of its outstanding ability to adapt to complex shapes and its high load-bearing capacity, using the wall formwork for the sloped walls was also straightforward.

A customised formwork and scaffolding solution from a single source

The roof of the atrium also stands out due to its complex shape. The building cores are integrated into the overhanging roof structure, giving the roof a streamlined profile. The special geometry of the atrium roof, consisting of a glazed, curved gridshell, also allows for the use of lightweight components, thus maximising the amount of sunlight that enters the interior spaces. The special SKYDECK drophead system and the early striking option it provides also meant that the forming time could be reduced significantly. This, together with well-thought-out concreting cycles, meant that the on-site material requirements remained manageable. When forming the slab floors, the recurring assembly sequence and easy handling in particular streamlined shuttering and striking procedures. Throughout the entire construction phase, the construction teams were also able to work safely on the SKYDECK panels, had easy access to each working level and were able to produce slab thicknesses of up to 109 cm at any given height. Regardless of whether there were straight or oblique residual areas to be closed within the slab area or if columns had to be shuttered – SKYDECK offered a practical and fast solution for every situation requiring only a low number of supplementary system components.

In addition to SKYDECK, the modular scaffold system PERI UP Flex was also used. It was possible to use this in a versatile manner thanks to its 25 cm or 50 cm end-to-end system grid and the possibility of combining it with SRU steel walers from the VARIOKIT engineering kit. In addition, the scaffolding provided a safe and stable working platform for the construction team and provided optimal access to the widely varying concreting heights throughout the building.

Reliable support during all phases of the project

Over the entire term of the project, a PERI project manager worked in close collaboration with the site manager to ensure that the project was executed efficiently. He also provided organisational support and technical advice on site. What's more, chief erectors from PERI instructed the construction site personnel where required on how to handle the systems and special formwork safely and

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correctly. On-site material requirements were low due to the fact that various systems had been pre-assembled.



Image 1
Not only did the SKYDECK speed up forming operations, it also provided a particularly high level of safety on the construction site.
(Photo: PERI GmbH)

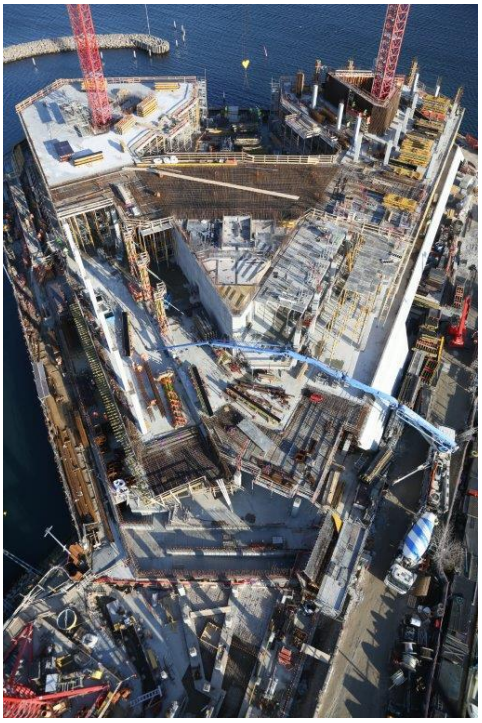


Image 2
From above, the building looks like a triangle. This complex shape meant that all parties involved had to work with a high degree of precision and that tailor-made solutions from PERI had to be used.
(Photo: PERI GmbH)

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Image 3
The PERI formwork and shoring solutions were optimally coordinated in order to achieve the desired shape of the building and meet its demanding architectural requirements. Thanks to the 25 cm or 50 cm end-to-end system grid, it was possible to adapt the modular scaffold system, PERI UP Flex, to the various geometries and loads in the form of a load-bearing construction.
(Photo: PERI GmbH)



Image 4
Using PERI UP Flex helped to achieve the complex building structure. It was also possible to achieve a high level of architectural concrete quality by using the PERI wall formwork VARIO GT 24.
(Photo: PERI GmbH)

Contractor
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