



Reading experience with a special flair

The new Deichman library in Oslo's old port district

The Bjørvika district is a former port facility on the inner Oslo Fjord. It is now being redeveloped and the new Deichman library here is one of the most modern of its kind in Europe. When it came to the formwork for the extraordinary wrinkle-effect ceiling, lead contractor Skanska opted for know-how from Doka.

Sited in close proximity to the city's opera house and the Munch Museum, the new Deichman library will have 23,500 m² of floor space. As well as offering visitors superb views of the city and the fjord, the five-storey building will also have an impressive architecture all of its own. The architectural concept by Lund Hagem in collaboration with Atelier Oslo builds on the large, central open library hall, which extends upward through all five of the structure's levels. The partially transparent façade and diagonal light shafts will flood the interior with natural light throughout daytime hours. The ceiling, with all its edges and angles, is an eye-catching visual of the library's design. To create it, Doka's Engineering and Pre-assembly Service supplied a one-of-a-kind formwork solution that achieved a new dimension in fair-faced concreting.

When it opens in 2020, the modern library will house extensive book collections and offer ample additional space for a cinema, gaming areas, lounges and a restaurant.

Precision engineering for the ceiling formwork

For the extraordinary wrinkle-effect ceiling of the library, the Doka Pre-assembly Service manufactured 526 formwork boxes with a total surface area of 2,600 m². "The staff from Doka did a very professional job, especially with the design. The production at Doka was also very precise. All the different boxes were delivered at site without any production errors", asserts Nils Skinnarland, Site Manager at Skanska. The individual formwork panels were designed in a 3D model and then manufactured on CNC (Computerized Numerical Control) milling machines. In all, 1080 drawings had to be made and some 1850 hours were invested in this part of the project alone.

The Doka Pre-assembly Service also developed a plug-in so that on site, the formwork boxes could be precision-installed. "Close, professional cooperation between Engineering and Production – from the concept phase through to implementation – and the work done by qualified specialists and reliable logistics partners are what enabled Doka to undertake a project of this magnitude", emphasizes Josef Berger, Pre-assembly Supervisor Doka Austria, reviewing the crunch success factors on this build. At this time the formwork for the wrinkle-effect ceiling is the single biggest job ever undertaken by the Doka Pre-assembly Service anywhere in the world.



Custom formwork with Doka Pre-assembly Service

For out-of-the-ordinary builds, the Doka Pre-assembly Service supplies the jobsite with made-to-measure, pre-assembled formwork units. Every year, Doka Amstetten produces about 25,000 m² of custom formwork, and more than 45,000 hours of work go into assembly and disassembly. The assembly plans for the custom elements are drawn up by Doka technicians to meet the project's specific set of requirements. Precision-built custom formwork enhances the surface quality of the finished concrete structures, saves space on the site and streamlines the construction workflow.

About Doka:

Doka is a world leader in developing, manufacturing and distributing formwork technology for use in all fields of the construction sector. With more than 160 sales and logistics facilities in over 70 countries, the Doka Group has a high-performing distribution network which ensures that equipment and technical support are provided swiftly and professionally. An enterprise forming part of the Umdasch Group, the Doka Group employs a worldwide workforce of more than 6,200.

In short:

Project:	Deichmanske Hovedbibliotek
Location:	Oslo, Norway
Type of structure:	Public library
Total floor area:	23,500 m ²
Slab area:	2,600 m ²
Storeys:	5
Developer:	Oslo city council (Bjørvika 2020 redevelopment project)
Construction work by:	Skanska Norge AS
Architect:	Lund Hagem arkitekter AS, Atelier Oslo AS
Start of construction:	2014
Scheduled completion:	2019
Systems used:	Products: 526 formwork boxes with a total surface area of 2,600 m ² Services: Planning, project management, pre-assembly service, logistics, formwork instructor on site
Formwork planning:	Doka Norway & Engineering Western Europe

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Photos:

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The new main branch of the Deichman library is a new architectural highlight for Norway's capital Oslo.

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For the extraordinary ceiling of the library, the Doka Pre-assembly Service manufactured 526 formwork boxes with a total surface area of 2,600 m².

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