

Lighthouse

Design & Build contract for Denmark's largest multi-storey building



AARSLEFF

At the tip of the harbour district Aarhus Ø, Per Aarsleff A/S is delivering the Design & Build contract for the construction of the 142-metre-tall Lighthouse building. In addition to the tower, the building structure consists of two low-rise buildings which will accommodate more than 380 apartments. Most of the apartments will have a secluded view over Aarhus Bay. The contract also includes the construction of a two-storey underground car park to be linked to the neighbouring building's underground car park.

Moreover, the project includes a tenants' house designed for use for all tenants at the harbour district Aarhus Ø, an educational room for lectures on life in the Aarhus Bay as well as cafés. There will also be access to a public observation platform and a restaurant on the 44th floor. Also included are terraces and garden areas.

The entire project is carried out on the tip of the harbour front of Aarhus Ø surrounded by water on two sides and buildings on the other sides. This means that we're carefully planning our work activities and coordinating logistics on this highly complex project.

Early contractor involvement

Early contractor involvement and focus on project optimising made this building project possible. Throughout this process, analyses of the stability of the building showed that an additional floor could be added. This meant that the slab thickness of each floor could be reduced by 10 centimetres.

Working closely together with our sister companies Wicotec Kirkebjerg A/S and Dan Jord A/S on this One Company project allows us to use all our specialist knowledge of foundation, shell structure, technical installations and landscaping.

Extensive in-house production

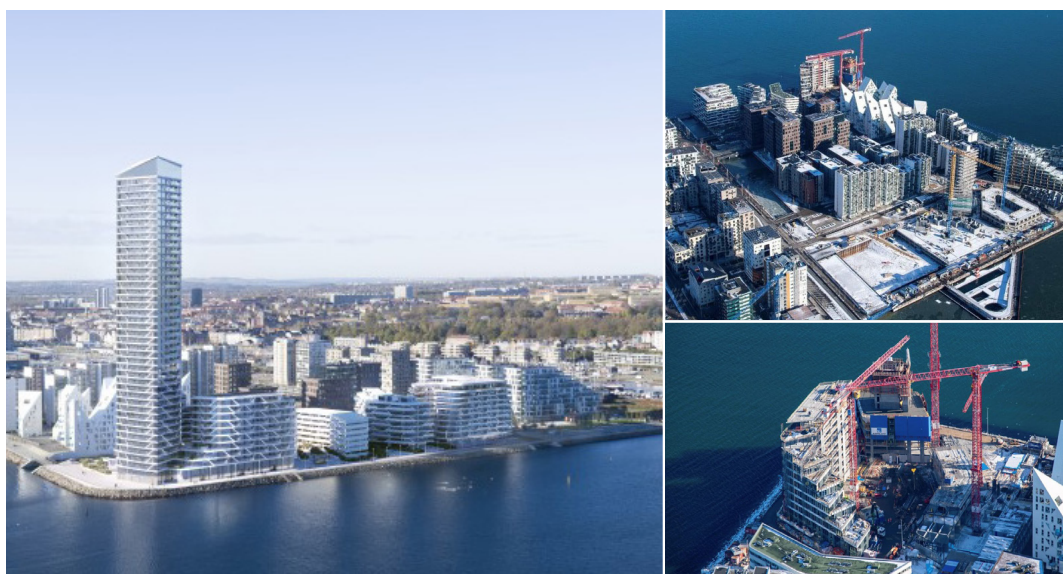
Our in-house production work for the construction pit involves sheet piles, ground anchors, excavation and management of soil, including contaminated soil, as well as sewer work and foundation work. The foundation work will include 28 drilled DN2000-millimetre concrete piles installed at depths of up to 70 metres.

What's more, Aarsleff is responsible for all concrete work involved in this project ranging from the 750-square metre-large and 2-metre-thick base slab through to the top of the tower. Work involved for the shell structure is a mixture of in situ concrete and element installation for which new methods not previously seen in Denmark have been developed.

Time, process and management

We completed the foundation activities and the basement at the end of 2020, and much of the basement installations including heating and sewers are also complete, whilst the construction work continues to progress for the tower and the two low-rise buildings Promenadhuset and Kanalhuset. We expect to hand over the project to the client in 2022.

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On a complex project like this with so many internal and external project stakeholders it's crucial to have clear and agreed guidelines as well as a sharp focus on project management. Moreover, the project has many interfaces leading from coordinating and complying with requirements and wishes from the client through to managing the challenging logistics at the construction site. We'll manage individual wishes for the interior design of the apartments as they are sold.

Lighthouse is a large and complex project that constantly progresses and changes and that calls

for accurate management of the organisation, the working environment, risks, execution design, project finance and handling of time and processes. So, it's crucial that all parties perform strongly in a cross-functional team to make sure that all stakeholders come into play.

High quality

This is an extraordinary building construction with a very high standard of finish combining the highest level of architecture, execution and materials. So, Lighthouse will undoubtedly be a significant landmark for Aarhus.

Data

Gross area:
45,984 m² + 14,801 m² underground car park and technical installations

Client

Lighthouse United
Client contact:
John Skovbjerg

Contractor

Per Aarsleff A/S

Type of contract

Design & Build contract

Construction period

May 2019 to July 2022

Contract value

DKK 1,181 million

Contact

Per Aarsleff A/S
Construction
Estimation & Tender
kalkulation@arsleff.com
Tel +45 8744 2222

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