Industry & Logistics

Expertise in collaboration: the success story behind the PALLAS reactor

A SPECIAL PROJECT IN THE PETTEN DUNES

Since the 1960s, the Petten Dunes in North Holland have been home to a nuclear reactor dedicated to researching and producing medical isotopes. However, the High Flux Reactor (HFR) at this site is now 60 years old, posing a risk of shutdown that could disrupt medical treatment for thousands of patients. To address this, PALLAS has initiated the construction of a new reactor in Petten, ensuring a reliable supply of medical isotopes for the 30,000 patients who depend on them every day.

The excavation work for the construction of the PALLAS reactor building has been underway since early 2023. Collaborative efforts between two sister companies, Franki Grondtechnieken, and BESIX Netherlands, are expected to complete this phase by the end of 2024, paving the way for the next phase: the reactor's actual construction. The reactor is designed to be so robust that it remains intact even under the most extreme conditions. This necessitates high-quality standards throughout the construction process. Each aspect of the construction undergoes thorough preparation and multiple checks to ensure compliance with all specified standards and requirements, highlighting the importance of effective coordination and cooperation.

Project details

PALLAS Reactor

Location
Petten, The Netherlands

Client
PALLAS

Partners
BESIX Nederland and Franki Grondtechnieken

Contract type
Design & Build

Construction period
2023 - 2024

Contract value
€33 million

Integrated cooperation

Effective collaboration is like a successful marriage: it requires commitment, good communication, and occasional constructive conflict to last. Working with diverse teams and partners presents its challenges, emphasising the importance of prioritising collective goals over individual preferences. The close partnership between BESIX Nederland and Franki Grondtechnieken on the PALLAS project exemplifies this collaborative spirit.

From the project's inception, the two sister companies have collaborated closely. "It is quite unique that we have established a cohesive team right from the start, with the right colleagues in the right roles, to execute the work in an integrated manner," says Jan Leen van der Vlies, Director of Execution at Franki Grondtechnieken. The combined knowledge and expertise of BESIX Netherlands (in project management and concrete work) and Franki Grondtechnieken (with their specific understanding of complex foundation techniques) were shared early on, complementing each other seamlessly. "Building a reactor is a relatively new endeavour for everyone involved, and projects of this scale have not been undertaken in the Netherlands before. This necessitates continuous coordination and cooperation to ensure success. We rely heavily on each other's expertise," explains Robbert Brand, Manager of Industry, Energy & Water at BESIX. The project holds special significance for all involved, as the work is conducted in an extraordinary environment, demanding meticulous attention to quality and safety.

Foundation for good project results

"Open dialogue and effective decision-making between PALLAS, BESIX Nederland, Franki Grondtechnieken, and the subcontractors are crucial for project success. Regular discussions to reflect on collaboration and communication patterns allowed for greater connection, trust, and mutual understanding to be built, laying the groundwork for a successful project outcome", Jan Leen and Robbert explain.

Sietsche Eppinga, Construction Director PALLAS: "BESIX Nederland has been a reliable partner, with whom we have maintained open communication since the project's inception. Their expertise will be invaluable as we proceed with the construction of the new PALLAS reactor. Time is truly of the essence for us to ensure that in the future, patients can count on nuclear medicine from Petten."

The building excavation in numbers

- **30 diaphragm** wall panels (each 7.5 metre wide, 1.5 metre thick and 35 metre deep) with 1,500 tonnes of reinforcement steel
- **12,000 m³** of concrete
- **50,000 m³** of soil excavated from the site
- Depth of building excavation: **22 metres**
- Area of building excavation: **52 x 50 metres**
- **164 stem** anchors with lengths of **50-65 metres**
- **380 screw** injection piles with lengths of **33.5 metres** (applied from a pontoon with a water depth of 20 metres)
- **3,750 m³** of underwater concrete
- Bearing slab with a thickness of **1.5 metres**; total **3,000 m³**