CASE STUDY

Kloosterboer, Cool Port II City Terminal Rotterdam:
Fully automated state of the art high bay cold storage facility warehouse

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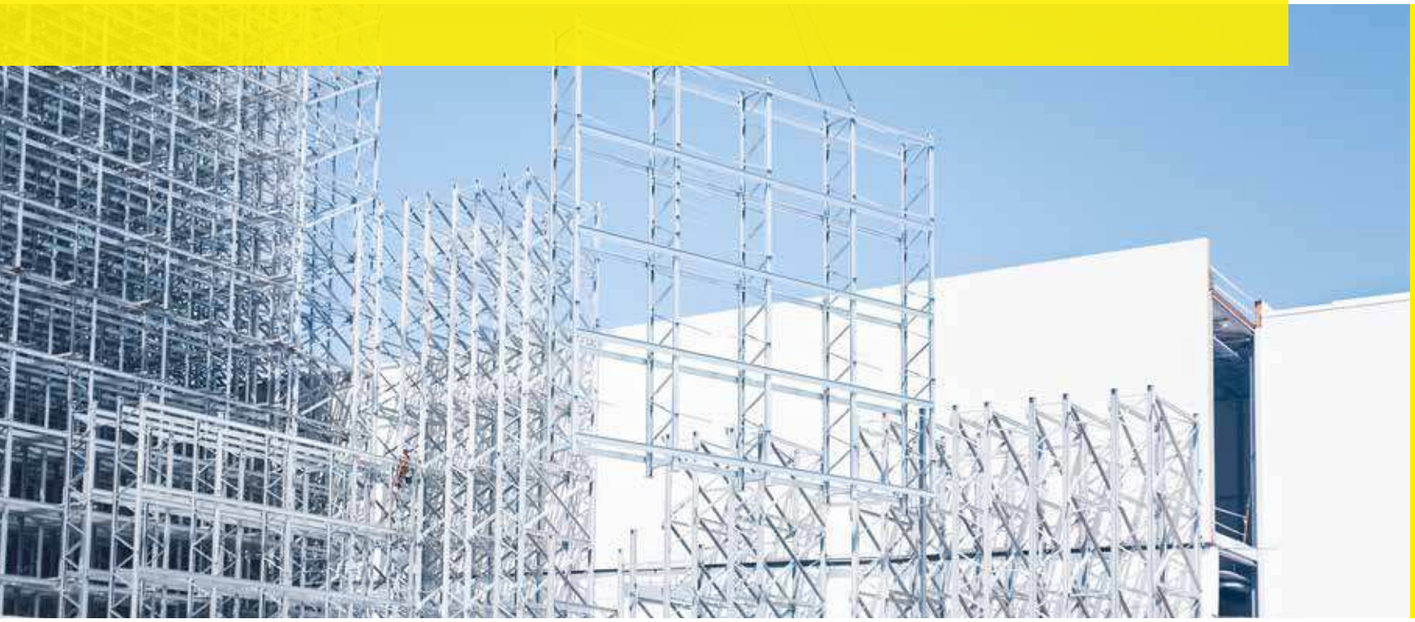
SILO DESIGN FOR IMPRESSIVE HIGH BAY COLD STORAGE FACILITY

KLOOSTERBOER

The cooperation between SSI SCHAEFER and the logistics service provider Kloosterboer dates back to 2008. Over the years, SSI SCHAEFER has implemented numerous intralogistic solutions for Kloosterboer in the Netherlands, France and Sweden. With the construction of the impressive Cool Port II high bay cold storage facility in Rotterdam, storage for 60,000 pallets has been created. SSI SCHAEFER is responsible for the entire steelwork construction.



Silo design
The high bay warehouse consists of a silo design with the vertical walls and roof attached directly to the steelwork. In order to cool the warehouse continuously SSI SCHAEFER built a special refrigeration platform. In addition, in the front building, the so-called low bay building, SSI SCHAEFER built a special floor structure which connects seamlessly to the platforms of the high bay building.

"This project exactly characterizes SSI SCHAEFER because the organization has the capacity and know-how for large and especially complex projects. SSI SCHAEFER can deliver both projects where we only supply the steel construction, but we are also able to supply conveyor technology, storage and retrieval machines and software. Everything comes from our own factories and out of a single source."

Jeroen Aarts
Project Manager
SSI SCHAEFER

Engineering of the entire steel structure
The deep-freeze logistics center is fully automated. There are several aisles in the satellite warehouse. SSI SCHAEFER is supplying all the profiles of steel for this warehouse that can accommodate pallet spaces for frozen products. The entire steel construction was designed by SSI SCHAEFER engineers, with extensive coordination of the various subcontractors beforehand: from the construction company, air conditioning and refrigeration supplier, roof and wall supplier to the company responsible for the safety of the workers on site.

Technical detail tuning
Both prior, but also during, construction, there was significant mutual coordination with the various subcontractors. All the wishes and requirements of the customer, were translated into the construction of the steel structure of the deep-freeze warehouse. In addition to being calculated for external weather conditions at different heights, the steel structure also had to be able to support the wall and roof with solar panels. In short, a very close collaboration between the customer, the subcontractors and SSI SCHAEFER was essential. ►

Subconstruction
SSI SCHAEFER also calculated the substructure and provided the attachment for a stair tower which was supplied by the construction company. The stair tower is located on the roof of the low bay building and has an overhang over the roof edge of the high bay cold storage. An access door to the cooling platform is mounted at a height of 35 meters.

The constant temperature of the low bay and high bay warehouse is -25°C

INTERNAL COOPERATION

In order to implement the project efficiently, various SSI SCHAEFER staff and departments, in various countries, were involved in this project.
The complete turnaround time for this particular project was approximately 18 months - from the first appointment to the delivery of the complete steel construction. Departments involved in the successful completion of the state of the art high bay deep-freeze warehouse include:

- Sales Department
- Statics department Neunkirchen
- Technical office Neunkirchen (drawing office)
- Work preparation Neunkirchen
- Steel production Neunkirchen
- Coating galvanizing Siegen
- Transport Department Neunkirchen
- Quality Assurance Department Neunkirchen
- Purchasing Department Neunkirchen
- Project Management Neunkirchen and Arnhem
- Assembly Competence Team Neunkirchen
- Assmont GmbH - external assembly company of SSI SCHAEFER

"Our products come from several factories:
steel (Neunkirchen - Germany), storage and retrieval machines (Hranice - Czech Republic), conveying (Graz - Austria), Software (Friesach - Austria)."

PROJECT GOALS

In addition to Cool Port I, Cool Port II has been built at the City Terminal Rotterdam. SSI SCHAEFER was awarded the contract for the entire steel construction. For this project, we advised on the intralogistics solution, designed the silo, supplied the steel profiles, supervised the construction of the steel structure and supervised the project management with an IPMA-C certified project manager. The project goals included:

- Maximize storage capacity
- Increase efficiency in the warehouse
- Achieve time savings and high stock reliability
- Implement process optimization
- Secure sustainability

Another specific project goal was to meet the delivery deadline. Through good communication and cooperation, we were able to deliver this project on time.

CHALLENGE

SAFETY FIRST

Safety comes first at SSI SCHAEFER. In the front zone of the high bay cold storage warehouse, a cage ladder was installed by SSI SCHAEFER from the first floor to the refrigeration platform at a height of 35 meters. In addition, the front zone and low bay were equipped with the necessary wire mesh fences and handrails.
A fall-through guard was also installed at the top of the conveyor platforms.
A special anti-creep device has been mounted in the inner blocks of the deep-freeze warehouse. All this is to increase safety in the new fully automatic facility and these measures comply with the applicable guidelines for warehouse safety.

Sustainability
For the client, sustainability is very important.
In the construction of the 40-meter high bay freezer warehouse, achieving the BREEAM outstanding sustainability certificate is essential. This also has direct consequences for the steel construction. For example, the roof structure was designed for the installation of 2,700 solar panels. With the already existing solar panel installation of 11,000 solar panels on Cool Port I, Kloosterboer is a forerunner in the Port of Rotterdam with the generation of solar energy for its own use.

"This project gives me pleasure because there are new challenges every day. For these challenges, I have to find a solution together with the team to bring the project to a successful conclusion."

Jeroen Aarts
IPMA-C certified Project Manager

6 REASONS WHY YOU SHOULD CHOOSE SSI SCHAEFER

- **Safety and Security**
  As a financially independent, family-owned business, we think long-term. You can rest assured that our team of experts will be with you today and long after tomorrow.

- **Efficiency**
  Our scalable solutions always comply with the latest technology standards and grow with your demands.

- **Production Quality**
  As a system specialist with our own in-house production capabilities, we supply high-quality, sustainable, and custom solutions from one source. We continue this tradition to address your specific challenges.

- **Reliable Partner**
  Our long-term commitment to customers, partners, and employees defines our corporate DNA. Working together in a partnership built on mutual trust is how we build upon our success.

- **Customization**
  It is our mission to find the right solution for you. We provide individual consultation and solve challenges for any application by offering products, supplying system components, and implementing complete solutions.

- **Locality**
  Worldwide, we are expanding our local competencies with over 70 locations. On site, our experts guarantee personal support in your respective language and time zone.

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