



## The industrial construction hat trick from Zurich: Efficient, sustainable, aesthetic

Otto Fischer AG showed all the symptoms of a company that had grown over many years: the electrical wholesaler's building dated back to the 1970s and was bursting at the seams. Processes were becoming increasingly inefficient due to the lack of space. This was no small matter for a company that guarantees its customers delivery within 24 hours throughout Switzerland. As a total contractor, IE optimized the existing building while operations continued and expanded it to ensure that there would be enough space for growth over the next 15 years.

The Otto Fischer AG company premises could not be expanded as they are located in the middle of densely built-up Zurich. This convenient location was also the main reason for staying at the existing site. Clever solutions were therefore needed to make better use of the available land. Against this backdrop, it was particularly beneficial for the customer that IE takes a holistic approach to planning: architects, engineers, logistics and energy experts work hand in hand. This was evident, for example, in the decision on the future energy supply.

### PLANNING AND CONSTRUCTION PERIOD

- › 3 years

### CONSTRUCTION SCOPE

- › Floor space: 25'000 m<sup>2</sup>
- › Volume SIA: 98'000 m<sup>3</sup>
- › Energy requirements: 863 MWh/a

### TOTAL CONSTRUCTION COSTS

- › CHF 20 million

### SERVICES IE

- › Planning and execution of the entire construction project as general contractor/ architect with operations planning



Heating system with heat pump



Vertical pallet conveyor system

The existing oil heating system was not only energy inefficient, but also a space problem: the heating technology and a tank with a capacity of 100,000 liters of heating oil took up much-needed space.

#### **Energy and space saving: Local heating in a network**

IE went in search of a sustainable and space-saving alternative - and found it: a communications provider's data center is located in the immediate vicinity. This center continuously generates large amounts of waste heat. A municipal energy supplier makes this waste heat available in a network system that is supplemented by heat pumps. This enabled IE to outsource Otto Fischer's entire heat generation and convert almost all of the space previously required for oil heating into additional storage space. A solution that benefits both the company and the environment: less space, lower energy costs, and CO<sup>2</sup> emissions that tend toward zero.

#### **Same plot of land, double storage space**

In order to create additional space for the necessary storage areas, the only option was to expand upwards: after thorough structural analyses and reinforcement measures, IE added two floors to the main building. All these measures combined increased the storage area from the original 9,100 to 15,000 square meters - despite only a slight increase in the building's floor space (600 square meters).

#### **Process optimization I: Automation**

The renovation and expansion measures were not only aimed at creating more space, but also at improving process efficiency. The results of IE's optimization measures



Picking system

were impressive: despite doubling the storage space and a corresponding increase in the number of products, no additional staff had to be hired. How was this possible? There were bottlenecks in the existing building when it came to the vertical flow of goods across different levels, especially with the goods lifts. IE installed an additional pallet lift, which, unlike the two existing lifts, is fully automated. This significantly increased capacity without taking up a lot of space.

Until then, many steps in the process, from removing items from the warehouse to the loading dock, had been carried out manually. IE recommended the installation of vertical and horizontal parcel conveyor systems. This enabled the flow of goods from the picking stations to the truck docking stations or direct pickup shops to be completely automated. At the same time, IE focused on the consistent use of barcode identification, which significantly accelerated the storage and retrieval of items.

**Process optimization II: Every little bit helps**

IE examines all processes in the company at the outset in order to design the building in such a way that even minor efficiency traps are eliminated during the renovation. At Otto Fischer, IE's experts noticed that large quantities of packaging material were collected on different floors and transported several times a day by employees over long distances to the outside area. A drop chute, accessible from every floor, now ensures that packaging material can be disposed of in a matter of seconds. Simple measures, big time savings.



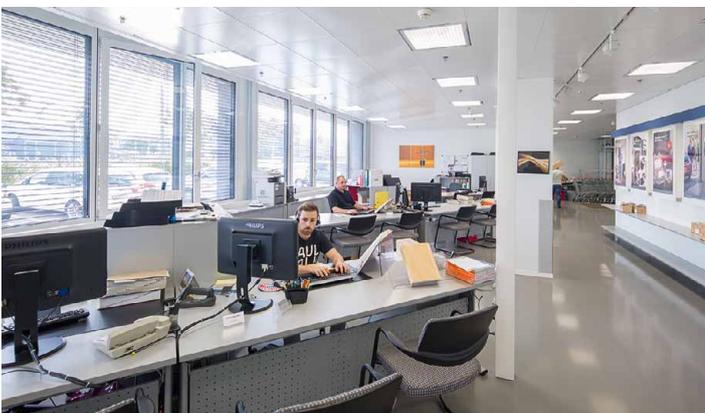
Compactor with a chute



Staff restaurant

### Energy saving with style

Both energy and aesthetic considerations played a role in the renovation of the facade. The parapets and posts made of prefabricated washed concrete elements and brown-colored metal windows were completely re-insulated on the outside and the windows were replaced. IE emphasized the parapets horizontally with plastered exterior insulation and covered the recessed posts with sheet metal. This gives the building a harmonious, aesthetically pleasing appearance. Thanks to the close coordination of energy supply, building services concept, and facade renovation, the building is particularly energy-efficient and meets the strict Swiss Minergie standard for both the building envelope and heat generation.



Customer pick-up shop

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