BLUM ASSEMBLY WAREHOUSE, HÖCHST/VORARLBERG

Client: Blum Ltd., Fittings Factory, Höchst/Vorarlberg
Development Period: 2002 / 2003

THE PROJECT

Adjacent to the existing Factory 2, an assembly warehouse was to be built on the premises of the company Blum in Höchst (Austrian state of Vorarlberg). The complex also included additional office and administrative space. The building features a length of 113 m, a width of 20 m and a height of 22 m. The integration below terrain is 4 m at maximum.
Due to the planned storage of metallic materials, very high loads occur which have to be transferred into the underground without damage.

OUR FUNCTION

BGG has been comissioned with the supervision in the fields of geotechnics and hydrogeology during all planning and realization phases of the project. After the evaluation of explorations of previous construction stages and neighbouring structures,the subsoil investigation could remain limited to dynamic probings.
In addition to the foundation of the new building, BGG had to deal with the securing of existing structures and traffic routes as well as the dewatering of the construction pit. Subsequently to the geotechnical and hydrogeological evaluation prior to the submission for construction permit, a geotechnical supervision of the specialized foundation works was carried out during construction.

Foundation of the Warehouse:
Based on the subsoil explorations, a vivid alternation of gravel and sand with lenticularly embedded members of silt and sand-silt mixtures were to be expected below a soft, cohesive cover layer with a thickness of up to 3.0 m.
A significant finding from the investigation was a great variation of the density between very loose and loose to medium dense. As most economical foundation variant, a shallow foundation after a soil improvement by means of vibro-displacement technique was recommended and also implemented. With this special method, the load application zone could be homogenized and an increase of density (and with it also an improvement of the bearing and deformation characteristics) obtained.
The construction of a stable and fit-for-use building was thus ensured.

The warehouse during shell phase