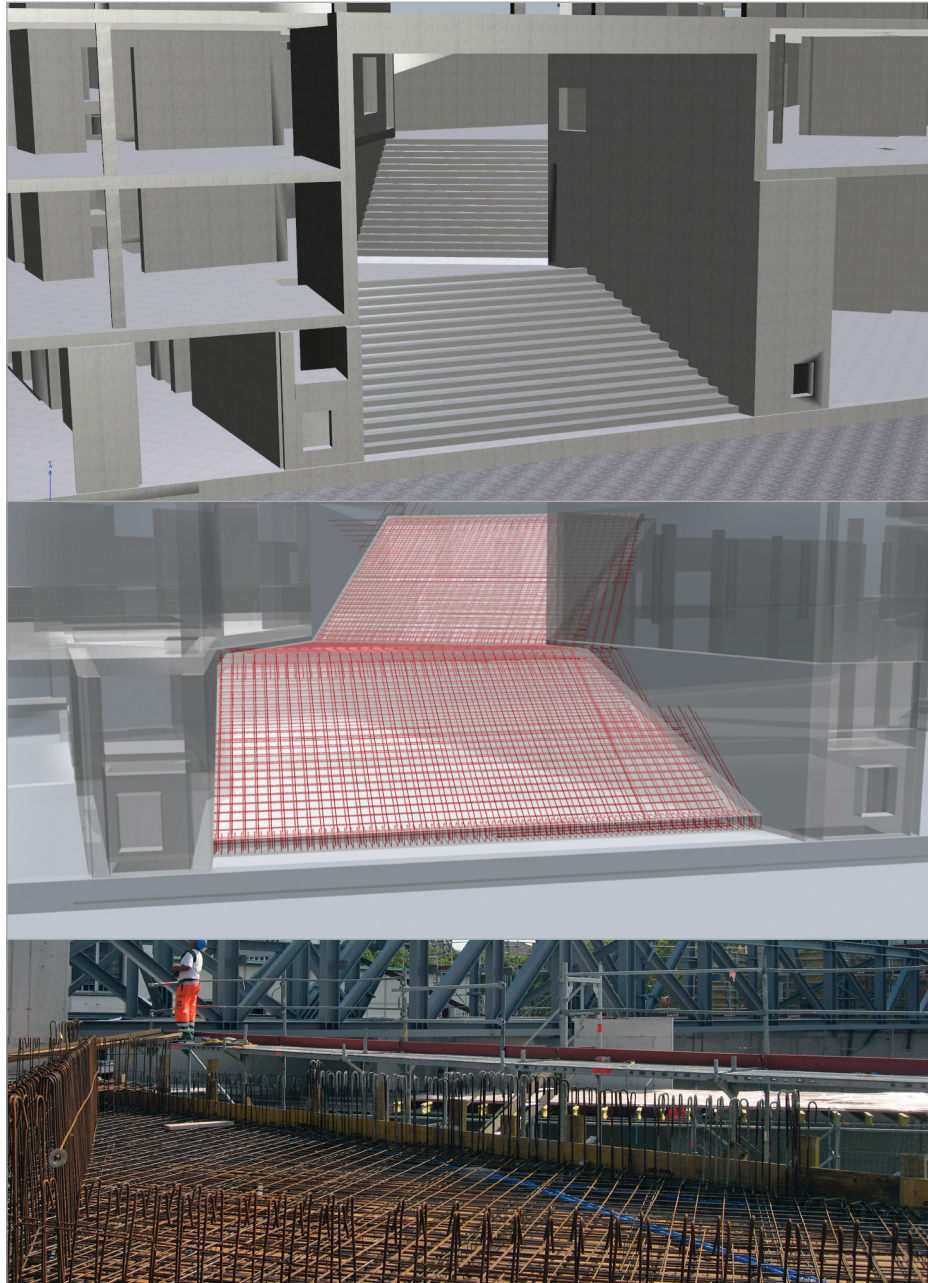


Residential Building with Tram Depot, Kalkbreite - Zürich, Switzerland



The new building in Kalkbreite, Zurich, is situated along the SBB railway line between Badenerstrasse, Kalkbreitestrasse and Urselweg. The building has the total length of about 125 metres and the maximum width of 70 metres. It consists of a basement, the ground floor, six upper storeys and the building equipment rooms on top of the roof.

The major element of the building is the construction of a tram shed above the tram stabling area of the Zurich public transport authority, which will be enclosed and covered by the new building.

The building will be mainly residential. The storeys at the same level as the tram shed are planned to be used for offices, cinemas, shops, restaurants, etc. The necessary technical and storage areas will be provided in the basement.

The new building is designed in such a way that the tram shed will form a coherent unit with the main building both in its visual appearance and in its structure.

The project was extremely complicated and difficult in several respects. The first problem was the highly complex geometry resulting from the shape of the plot, the necessary position of the tram shed and the variety of uses which needed to be included. On the other hand, the load-bearing structure was very difficult, mainly because of the integration of the tram shed into the building. Above the exit rails from the tram depot, for example, the building must span the full width of the tram shed. This made it necessary to insert four solid steel trusses, which are integrated into the walls of the building. The middle trusses extend for three storeys, meaning that they are about 12 metres high.

The tram shed itself is covered by pre-tensioned prefabricated girders.

The tram stabling area had to be built two years before the construction of the main building. Therefore, all the necessary foundation work and building pit systems had to be executed beforehand. The foundation works within the tram stabling consist of deep bored piles to

transfer the concentrated loads from the tram shed into the ground. The building itself is standing on a shallow foundation, which is located in stable gravel.

As a result of the sophisticated geometry, we were especially dependent on an effective and professional CAD program. Nemetschek Allplan fulfilled this requirement. The creation of the plans in 3D was successful, and the same method will also be used for future plans.

Dr. Lüchinger + Meyer Bauingenieure AG

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Konstruktiver Ingenieurbau
Fassaden- und Leichtbau

The structural engineering company Dr. Lüchinger + Meyer Bauingenieure AG was founded in 1994 and has about 50 employees in its headquarters in Zurich and its branch in Lucerne.

We deal with all aspects of structural construction engineering, facade construction and lightweight construction. Owing to our close cooperation with research institutes and our intensive involvement in various standardisation committees, we are able to work to a high quality in line with the latest engineering knowledge.

We deal with projects of any size for both institutional clients and private property developers.

Project information

Owner	Genossenschaft Kalkbreite and AHB Zürich
Architect	Müller Sigrist Architekten AG
Engineering Office	Dr. Lüchinger + Meyer Bauingenieure AG
Location	Zürich, Switzerland
Construction Period	01/2012 to 03/2013

Short description | Residential Building with Tram Depot

The new Kalkbreite building is situated in the centre of the city of Zurich. The building integrates a tram stabling area and is determined by its complex geometry and the wide variety of uses. The difficult geometry of the plot and the requirements for the tram shed led to a number of highly complex challenges for the load-bearing structure. For example, the building must span the full width of the exit rails from the tram shed. This is to be implemented by inserting three-storey steel trusses into the walls.

