

EBERHARD LUDWIGS SECONDARY SCHOOL Stuttgart (Germany)

REDEVELOPMENT / REFURBISHMENT, NEW BUILDING

Client: State capital Stuttgart,
Department of youth and education
School administrative office, represented by building department

Architects: LRO Lederer Ragnasdóttir Oei, Stuttgart

Our services:

- Technical inspection of existing structure
(Structural stability, load transfer, fire protection)
- Surveying and documentation of building damages
- Feasibility study
- Full structural design
- Fire protection
- Earthquake engineering
- Consulting regarding concrete repair
- Pit sheeting, planning of establishing the basis, preliminary designing, final design

Brief description:

Existing building

,Wing with classrooms, specialised classrooms with administrative units‘

- reinforced concrete building with up to 5-storeys
- flat roof
- reinforced concrete walls and columns
- predominately ribbed slabs, occasional reinforced concrete slabs with beams
- full cellar
- 8,900 GFA

Construction measures

- due to changes in the space allocation plan, some existing supports were demolished and replaced elsewhere
- mounting new beams
- installation of new slabs
- numerous wall and slab apertures due to new building technology
- installation of a new lift
- selective strengthening of the existing load-bearing construction due to a revised building concept
- refurbishment of the concrete facade due to corrosion and spalling

Existing building „The Old Gymnasium“

- single-storey reinforced concrete building
- integrated functional rooms
- flat roof
- load-bearing roof construction made of steel truss girders

Construction measures

- Comprehensive structural renewal due to conversion into a school orchestra hall, including complete renewal of the load-bearing roof construction
- replacement of the old steel truss construction with a new timber construction
- fitting of load-bearing glulam beams spanning 15 m
- mounting of glulam beams on new steel girders and existing walls
- roof covering made of trapezoidal sheet steel
- stabilisation of the existing exterior walls against the wind during the construction phase until the final assembly of the new wooden roof construction with steel braces
- on-site dismantling of the old steel construction

The new building

- ###### .Gymnasium‘ including functional rooms with two-storey structure containing classrooms and administrative rooms in the inner courtyard of the school complex
- two-storey reinforced concrete building
 - containing a cellar
 - floor space 35 m x 25 m
 - reinforced concrete girder (w/h 50/175 cm) spanning 17 m above the column-free gymnasium
 - bracing of the upper floors (classrooms and administrative rooms)
 - excavation pit shoring, 2-fold anchored bored pile wall with 60 cm thick bored piles and in parts 2-fold back anchored pressure-grouted foundations

Completion: 2024



Building before refurbishing

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Façade before refurbishing

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