

MATERIAL RESEARCH CENTER MRC MERCK KGAA Darmstadt (Germany)

NEW BUILDING

Client: Merck KGaA, Darmstadt

Architects: Carpus + Partner, Aachen

Our services: Full structural design
Establishing the basis
Preliminary design
Final design
Approval documentation
Execution drawings
Preparation of contract award
Project supervision
Structural fire protection
Earthquake engineering
Thermal building physics

Brief description: New building of a chemistry, research and development centre with two laboratory buildings, clean rooms and a technical control room

- new build of two 6-storey concrete structures without basement
- new build of a 2-storey hall
- clean rooms with classes 100 and 1000
- carrying capacity on flat slabs 7.5- 10 kN/m² – the building must both be usable as a warehouse and a production facility
- optimised support structure
- flat slabs spanning 10 m and supported on composite columns
- 80 m long, load-bearing, continuous floor slab
- longitudinal stiffening by six reduced cores
- consideration of seismic loads
- high density of installations
- special requirements for performance capability of flat slabs due to laboratory usage:
 - prevention of joints opening in clean room ceiling
 - high natural frequency of slabs due to accommodation of sensitive measuring and laboratory equipment

Completion: 2009



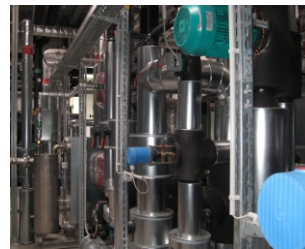
F 61 - Laboratory building chemistry



F 60 - Laboratory building



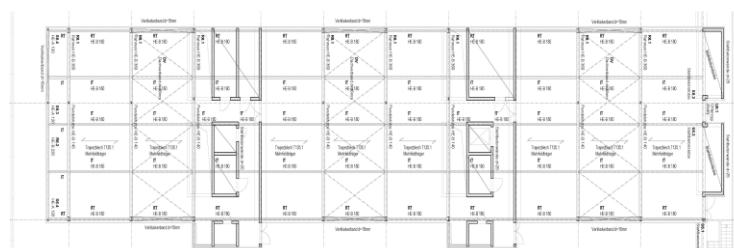
E 61 - Clean rooms with classes 100 and 1,000



High density of fittings



Construction detail



Pictures / Illustrations: ProfessorPfeiferandPartner PartGmbB, Carpus + Partner, Aachen

ProfessorPfeiferandPartner PartGmbB Structural engineering Building physics Fire protection Structural assessment
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