

COMPANY INFORMATION

BAUGRUND DRESDEN
Consulting Engineers

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General manager Prof. Dr.-Ing. Peter-A. von Wolffersdorff
Commercial register Amtsgericht Dresden, HRB 3418

CERTIFICATION

- Quality Management System according to DIN EN ISO 9001

REGISTRATION

- Member of the Saxon Chamber of Engineers, registered as "Consulting Engineer"
- Expert for Geotechnical Engineering acc. to Building Regulations
- Expert for Geotechnical Engineering acc. to Federal Railway Authority (FRA)
- Authorized to carry out work according to §5 Radiation Protection Regulations including Radiation Protection Documents (§20)
- Licensed testing house for road-building materials acc. to German regulation RAP Stra
- Authorised safety coordinator



COMPANY STRUCTURE

GEOTECHNICAL ENGINEERING CONSULTANCY

Staff:

About 50 employees
 2/3 are graduates: engineers,
 geologists, geophysicists,
 engineer-geologists, chemists
 1/3 are technicians

Equipment:

Geotechnical laboratory
 Field testing
 Data archive (database of about 25.000 examined sites)
 Computer aided workplaces (network, CAD)
 Service vehicle pool
 Subsidiaries at project sites

TYPES OF WORK

- Earthworks and foundation engineering
 (shallow foundations, deep foundations, foundation beds, retaining structures, mechanical slope stabilisations, excavation pits, trenches, underground structures, ground-water lowering)
- Transportation engineering
 (railways, roads, highways, bridges, tunnels, airports)
- Hydraulic engineering
 (dams, dykes, embankments, waterfront structures, port construction, inverted syphons, locks, ship hoist works)
- Special foundation techniques
 (ground improvement, grouting, underpinning, tunnelling-through, jacking-through)
- Environmental engineering
 (construction of waste deposits, safety and control of contaminated wastes, rehabilitation of contaminated sites)

SPECIAL FIELDS

- Soil mechanics
- Rock mechanics
- Soil dynamics
- Computational geomechanics
- Geology, Engineering-geology
- Geohydrology
- Geophysics
- Geochemistry

SERVICES

- Geotechnical and civil engineering consulting
- Geotechnical reports
- Expert advice
- Geotechnical laboratory investigations
- Geotechnical in situ testing
- Soil dynamic measurements
- Evaluation of radon risk in ground
- Design of earthworks and special foundation structures
- Project management and supervision
- Construction control and monitoring
- Research and development



EARTHWORKS AND FOUNDATION ENGINEERING

REHABILITATION OF HISTORICAL BUILDINGS

- Investigation of foundation subsoil and of the geometry of existing foundations
- Evaluation of subsoil and foundation conditions with respect to the structure of historical buildings
- Evaluation of compatibility between old and new foundations and/or supporting structures
- Recommendations on preservation and rehabilitation of building foundations and retaining structures
- Design, monitoring and evaluation of loading tests of old foundations with respect to long term stability
- Design of measures for an efficient improvement of building foundations and of rock stabilisation

FOUNDATIONS AND EXCAVATION PITS

- Evaluation of ground conditions for optimisation of foundations and retaining structures
- Design of foundation structures (pad or strip footings), shallow foundations with soil replacement, foundation rafts, pile foundations and combined pile/raft foundations
- Design of retaining structures for excavations including dewatering works
- Geotechnical supervision of foundation construction and retaining structures
- Quality assurance management for stiff excavation support structures

CONSTRUCTIONS WITH GEOSYNTHETICS

- Design of geosynthetic structures for ground improvement, for bridging of subsidence areas, for supporting of slopes as well as for sealing and dewatering
- Determination of load bearing capacity and deformations using numerical methods (finite element method)
- Management of licence procedures for the use of geosynthetics, especially in railway structures
- Quality assurance management for acceptance and control testing of geosynthetics before and during installation, either for the contractor or as an independent supervisor
- Evaluation of the equivalence of geosynthetic products

- 1 Kempinski Hotel Taschenberg Palais Dresden: Geotechnical and civil engineering consulting services, geotechnical reports
- 2 Fortress Koenigstein: Investigation of rock stability, design and supervision of the measures for rock stabilisation
- 3 New Synagogue in Dresden: Geotechnical consulting services for a stiff excavation support and design of the pile foundation
- 4 AMD FAB 36 company in Dresden: Investigation of the ground, consulting services on foundation and on groundwater monitoring
- 5 Extension of railway line Hamburg – Berlin, section Paulinenaue – Friesack: Design of a geogrid construction over a plug pile foundation



TRANSPORTATION ENGINEERING

HIGH SPEED RAILWAY LINES

- Formulation of geotechnical design criteria for high speed railway lines with high safety and low maintenance
- Evaluation of the deformation behaviour of the tracks with regard to high travel comfort criteria
- Design of geotechnical measures for ensuring of very low track deformations in the long term
- Design of special solutions for tracks at critical locations, for example swelling soils, karst rock formations or on slopes or dams sensitive to deformations

LOADINGS OF SLAB TRACKS

- Measurement and evaluation of dynamic loadings of the permanent way and of the emission of vibrations in the subsoil for different types of tracks
- Design of slab systems using modern numerical calculations to model realistic loadings
- Technical surveys accompanying the construction and operation of high speed railway tracks
- Design and technical supervision of measures for the reduction of stresses in the high speed tracks and the emission of vibrations

CONSTRUCTION OF MOTORWAYS

- Geotechnical advice accompanying construction work
- In-house quality testing and confirmation testing of soils and non-bound base courses
- Certification of subgrade surfaces and formation levels
- Design of ground improvements and of stabilisations of soil embankments
- Expert opinion on stability of soil and rock slopes
- Special investigations of unusual ground conditions, e.g. dumps, chemically and radioactively contaminated soils

AIRPORTS

- Geotechnical design of airfield surface water drainage systems
- Groundwater modelling of seepage of surface water run-off collected from runways
- Management of licence procedures for the water discharge
- Geotechnical advisory services to special tasks of airport construction and airport operation and supervision of construction work

- 1 New built railway line Cologne – Frankfurt/Main: Assessment of the general applicability of slab track systems
- 2 New built railway line Nuremberg – Ingolstadt: Expert advice on the construction of the track over subsoil prone to swelling or karst subsidence
- 3 High speed railway line Berlin – Hannover: Measurement of the dynamic live loadings
- 4 Motorway A 17 Dresden – Prague: Soil investigations, soil testing and site supervision
- 5 Airport Dresden Klotzsche – New runway: Geotechnical engineering for the new surface water drainage system



HYDRAULIC ENGINEERING

DAMS

- Geotechnical investigations of ground underlying dams and reservoirs and reservoir banks
- Investigation of causes of damage to dams and recommendations for rehabilitation measures
- Investigation of allowable deformations of individual structural elements of dams with respect to ensuring the serviceability
- Design and construction supervision of drainage systems
- Suitability tests and quality certification of dam construction materials and foundations
- Monitoring of seepage flow and of structural movements

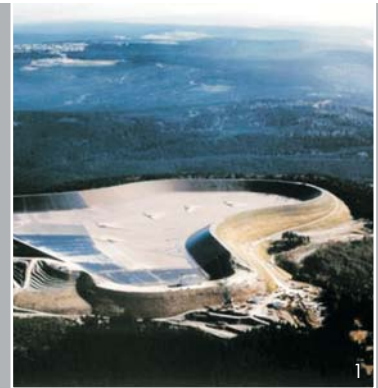
WATERWAYS AND WATERFRONT STRUCTURES

- Geotechnical investigations of embankments, dikes and waterfront structures for extension or rehabilitation works
- Stability and serviceability analyses of canal and river banks and embankments as well as seepage calculations
- Preparation of tender documentation for measurement surveys and supervision of the work on site
- Design of embankment foundations on ground with low load-bearing capacity
- Design of construction pits for hydraulic structures and bank stabilisation works
- Supervision of stability improving measures e.g. flattening of bank slopes and provision of drainage systems

FLOOD PROTECTION

- Registration and documentation of flood regions
- Design of flood protection measures
- Design of flood protection facilities, e.g. temporary groundwater lowering, temporary flood protection walls
- Hydrogeological modelling of surface water flow and groundwater flow at extraordinary high water levels
- Investigation into the movement of river sediments
- Classification of materials excavated from rivers and lakes according to waste handling regulations
- Supervision of rehabilitation of flood damaged earth structures and buildings

- 1 Pumped storage hydropower plant Goldisthal - upper reservoir: Supervision of construction, analysis of fill material, stability assessment
- 2 Klingenberg dam: Geotechnical investigations of the strata below the dam and for the flood spillway
- 3 Mueritz-Elde waterway: Stability analysis and numerical seepage flow calculations
- 4 Oder-Havel canal: Geotechnical consulting services and stability analysis of the banks for canal extension
- 5 Weesenstein at Mueglitztal: Geotechnical investigations and site supervision of the improvement of the banks of the Mueglitz



SPECIAL FOUNDATION TECHNIQUES

GROUND IMPROVEMENT

- Geotechnical tests for soil improvement and soil stabilisation
- Design of measures for soil improvement of foundation layers
- Geotechnical consulting services during the execution of soil improvement measures.
- Design, supervision and monitoring of special applications like foundation layers reinforced with geogrids on vertical support structures

GROUTING

- Design and supervision of grouting for improvement and underpinning of foundations
- Geotechnical consulting services on grouting of sandstone foundations of historical buildings
- Design and supervision of compensation grouting to counterbalance settlements of operational railways with slab tracks
- Geotechnical consulting services regarding grouting for rock stabilisation

ENVIRONMENTAL ENGINEERING

CONSTRUCTION OF NEW LANDFILLS AND DECOMMISSIONING OF EXISTING LANDFILLS

- Site assessment for new landfills
- Design for decommissioning of existing landfills
- Testing of sealing materials and layers
- In-house testing or independent certification of soil mechanics methods
- Testing of stability and deformation of contaminated industrial sites

ABANDONED CONTAMINATED INDUSTRIAL SITES OR WASTE SITES

- Investigation of contaminated sites and assessment of the risks
- Geohydrological and geochemical modelling of interactions for contaminated sites
- Determination of pollutant emission
- Rehabilitation proposals for abandoned contaminated industrial sites, abandoned waste sites and industrial tailings ponds
- Application procedures for licences according to water-, waste handling-, radiation protection- and soil protection regulations
- Management of rehabilitation work

- 1 Railway line Hamburg – Berlin, Section Paulinenaue – Friesack:
Consulting services of the soil improvement measures
- 2 Dresden main station: Design of high pressure grouting for foundation improvement and repair of flood damage
- 3 Former uranium processing facility at Dresden-Coschütz/Gittersee:
Situation in 1993 before start of rehabilitation
- 4 Former uranium processing facility at Dresden-Coschütz/Gittersee:
Management of rehabilitation work from 1993 to 1999, situation in 1999
- 5 Tailings pond of the uranium processing facility at Helmsdorf near Zwickau:
Design and supervision of the trial embankment for the rehabilitation



Source of photographs:

Title:

Photo Frauenkirche: Jörg Schöner, Dresden

Earthworks and Foundation Engineering:

Photo 2: Herbert Boswank, Dresden

Photo 4: AMD, Dresden

Transportation Engineering:

Photo 1: DB ProjektBau

Photo 4: www.autobahn17.de

Photo 5: Dresden Airport GmbH

Hydraulic Engineering:

Photo 1: JV pumped storage plant Goldisthal

Photo 2: State dam authority, Saxony

Photo 4: Waterway authority Eberswalde

Special Foundation Techniques – Environmental Engineering:

Photo 3: State capital office for environment, Dresden

Photo 4: State capital office for environment, Dresden

Photo 5: WISMUT GmbH



LOCATION AND APPROACH

