



## REFERENCES

Company: GeoEngineering  
Name: **Hubert KIRSCHNER**  
Nationality: Austrian  
Date of Birth: 10.04.1960  
Profession: Chartered Engineering Consultant for Geology  
Position in firm: Owner / Senior Geologist  
Years with firm: Since 2011

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### Selected References:

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2011 - Currently **GEOENGINEERING** / Engineering Consultant for Geology  
planning, tendering, investigations, supervision

#### Tunnelling in Urban Area

07/2014 – 09/2016 **Confederation Line, Ottawa Light Rail Transit (OLRT)**, Ontario, Canada  
2.5 km long twin-track running tunnel including 3 light-rail stations, dia. 19 m in hard rock and soft ground. Hard rock excavation carried out by roadheader and softground excavation by excavator.  
Position: Chief Geotechnical Engineer

05/2013 – 04/2014 **MTR South Island Line (East), Admiralty Integrated Station and SCL Enabling Works, Contract C901**, Hong Kong SAR  
KIER – LAING O'ROURKE – KADEN Joint Venture, Honk Kong SAR  
Contract Partner: KIER Infrastructure and Overseas Ltd.  
Client: MTR Corporation Ltd  
Geological-geotechnical documentation and monitoring in: ADM Cavern, Platform Tunnels, Adits and Underpinning in Station Box. Q - Rock mass classification and rock support determination, investigations, testing and prediction; NATM method.  
Position: Engineering Geologist

#### Supervision

04/2011 – 03/2013 **New Hefei–Fuzhou High Speed Railway Passenger Dedicated Line P.D.L / Mingan Section L3**, Jianyang (Office), PC 354300, Fujian Province, P.R.China  
Client: MoR Ministry of Railway, China  
Speed 350 km/h – ballast-less track, length 810 km  
Supervision Consulting: Professional Supervision Engineer (PSE) for tunnel and subgrade in Lot V; length 52 km, 24 tunnels and subgrades.  
Tunnel length total: 18.380,0 m; 24 tunnels between 178,0 m to 2.591,0 m length; X-section approx. 170 m<sup>2</sup>  
Position: Professional Tunnel Expert

#### Cavern

04/2017 **ADNOC Al Mandous Cavern Project, Storage of Crude Oil**, Fujairah, U.A.E.  
Preparation of Tender Documents: Geological – Geotechnical Assessment  
Geological Consultant

01/2012 – 03/2012 **Strategic Storage of Crude Oil Project**, Visakhapatnam, India  
Client: Indian Strategic Petroleum Reserves Ltd. (ISPRL)  
Underground construction: Restoration work for Wedge Failure Area (approx. 3.000 m<sup>3</sup>)

Volume Wedge Failure)  
Position: Sr. Geologist

- 12/2009 – 02/2011 **Strategic Storage of Crude Oil Project**, Padur, India  
Indian Strategic Petroleum Reserves Ltd. (ISPRL)  
Underground oil storage caverns, Unit A  
Four caverns 700m x 20m x 30m (LWH) with capacity of 1,25 million metric tons, 1 access tunnel, 2 water curtain tunnels, 2 pump shafts, 2 inlet shafts, total capacity of unit A & B: 2,5 million metric tons  
Geotechnical consultation and engineering geological documentation using KRONOS from Geodata of tunnels, shafts and caverns including recommending the rock support systems using the Q-System (Barton et al, 1978)  
Senior-Geologist on-site
- 06/2008 – 03/2009: **Strategic Crude Oil Project in Underground Rock Caverns**, Visakhapatnam, India  
Indian Strategic Petroleum Reserve Limited (ISPRL), Contractor: Hindustan Construction Company (HCC)  
Underground oil caverns: 3 A-caverns 840 m x 20m x 30m (LWH); 2 B-caverns 320m x 20m x 30m (LWH); total capacity of oil storage caverns: 1,33 million metric tons; total length of access and cross tunnels 1400 m; total length of water curtain tunnels 1140 m; 5 shafts up to circa 75 m depth;  
Geotechnical consultation and engineering geological documentation of slopes, tunnels, shafts and caverns including recommending the rock support systems in metamorphic rocks using the Q-System (Barton et al, 1978)  
Geologist on-site

## Tunnelling

- 09/2010 – 10/2010 **Hydroelectric Dam Project Kühtai – Pilot Tunnel**, Tyrol, Austria  
TIWAG, Innsbruck  
Pilot tunnel (length 750 m) and execution 1100 m of core drillings to explore the area of the underground structures of the hydroelectric dam project, Kühtai, Tyrol, Austria  
Engineering geological tunnel and core drilling documentation  
Geologist on-site
- 07/2010 **New Railway Ebensfeld-Erfurt, Construction Lot Silberberg Tunnel**, Ilm Kreis, Thüringen, Germany  
Deutsche Bahn ProjektBau GmbH – Ingenieurbüro Vössing GmbH  
Circa 7,4 km long railway tunnel, parallel pilot tunnel/emergency tunnel and 8 emergency exits with total length of 4,4 km, maximum gradient 10%, conventional tunnel driving (NATM), cross-sectional area circa 180 m<sup>2</sup>, maximum overburden 120 m  
Construction supervision and engineering geological documentation  
Geologist on-site
- 07/2010 **New Railway Ebensfeld-Erfurt, Construction Lot Brandkopf Tunnel**, Ilm Kreis, Thüringen, Germany  
Deutsche Bahn Projekt Bau GmbH – Ingenieurbüro Vössing GmbH  
Double track railway tunnel of 193 m length, conventional tunnel driving (NATM), cross-sectional area circa 100 m<sup>2</sup> (max. 180 m<sup>2</sup>), maximum overburden 120 m  
Construction supervision and engineering geological documentation  
Geologist on-site
- 06/2007 – 05/2008 **Railway Project Munich-Verona, Inn Valley Corridor, Lot H4-3, Feeder Radfeld - Baumkirchen**, Tyrol, Austria  
Brenner Eisenbahn GmbH (BEG), Innsbruck  
New railway network with construction of civil works using traditional and specialized

tunnelling and building methods; total lot length 2,6 km; length of rehabilitated and shifted line 2,0 km; maximum depth of the open cuts 17,5 m; circa 750 m of pressure tunnelling using extensive jet grouting enclosure in soft ground (fluvial deposits), cross-sectional area circa 127 m<sup>2</sup>; tunnelling under existing infrastructures; very shallow overburden (to 3 m below surface); groundwater level 2 m under the surface  
Engineering geological documentation and consultancy during the pressure tunnel drive  
Senior-Geologist on-site

- 1999 – 2000      **Munich-Verona Railway Axis, feeder line North/Lower Inn valley**, Austria (Brenner Eisenbahn GmbH)  
Access tunnel (approx. 100 m)  
Brixlegg East reconnaissance tunnel (approx. 2500 m)  
Vomp East reconnaissance tunnel (approx. 4000 m)  
Vomp West reconnaissance tunnel (approx. 1500 m)  
Engineering geology consultancy services and tunnel documentation  
Geologist
- 1998              **Munich-Verona Railway Axis, feeder line North/Lower Inn valley**, Austria (Brenner Eisenbahn GmbH)  
Geological, hydrogeological and geotechnical tunnel prediction for preparation of tender documents for  
Vomp East reconnaissance tunnel (approx. 4000 m)  
Vomp West reconnaissance tunnel (approx. 500 m)  
Project geologist

### Geological Field- and Underground Investigation

- 05/2010 – 06/2010      **Patnitop Road Tunnel**, Jammu & Kashmir, India  
JV Gammon and Marti for National Highway Authority  
Double tube Road tunnel with emergency galleries, Length 2 x 9 km  
Geological mapping and consulting during tendering for contractor  
Geologist on-site
- 06/2009 – 04/2010      **Hydroelectric Dam Project, Kaunertal Expansion, Environmental Impact Report**  
Tyrol, Austria  
TIWAG, Innsbruck  
Hydro power plant expansion, construction of: earth dam with height of 121 m, reservoir with working capacity of 42 million m<sup>3</sup>, a pump-storage plant (upper stage power plant, extension capacity circa 400 MW), circa 23km of diversion tunnels and 4 stream barrages, a circa 13 km long head race tunnel, and lower stage power plant (extension capacity circa 500 MW)  
Hydrogeological mapping in alpine country of up to 3500 m (area circa 180 km<sup>2</sup>); establishment of a water-rights monitoring programme; data management and interpretation; compiling of environmental impact reports, maps and sections in the field of groundwater; GIS organisation and management  
Hydrogeologist on-site
- 2002 – 2003              **Linz western ring (A26), 4th Danube crossing, Nordspange**, Upper Austria  
(Provincial Government of Upper Austria)  
Total length: 8.5 km; 2 motorway-tunnels (two-lines each) with 3.2 and 2.8 km, numerous access galleries, Danube River crossing; preliminary design  
Elaboration of the 2nd phase II soil survey, coordination of drilling works and tests, geological analysis of soil survey, Completion of authority procedures  
Project Manager for underground investigations

- Express road S-69, section Wegierska Gorka, Milowka/Poland**  
Tunnel prediction, geological, hydrogeological and geotechnical soil investigations for 4.5 km (two-line) tunnel  
Project Manager for underground investigations.
- 2002 **City Express road in Katowice/Poland**  
Tunnel prediction, geological, hydrogeological and geotechnical soil investigations for several open cut tunnels in urban area  
Project Manager for underground investigations.
- National Highway NH1A, Jammu-Srinagar, India**  
National Highway Authority, Delhi  
Geological field mapping, evaluation and representation of the data for study of alternatives and feasibility 2<sup>nd</sup> phase.  
Geologist
- 2001 **SS 508 Sarntal valley road – competition project for the straightening of the Sarntal valley road, Italy**  
(Autonomous Province of Bolzano, South Tyrol)  
Basic geological mapping for design competition  
Geologist
- Paso Ancho Hydropower Plants, Rio Chiriqui, Panama**  
(Andes Telecoms Consulting GmbH)  
Basic geological mapping for conceptual study  
Geologist
- 2000 – 2001 **Westring Linz-Westspange, 4th Danube river bridge, Nordspange, Austria**  
(Provincial Government of Upper Austria)  
Study of alternatives 2001,  
Elaboration of tender documents for Phase 1 Soil Survey, coordination of drilling works and tests, geological analysis of soil survey  
project manager for underground investigations  
Geologist
- 2000 **National Highway NH1A, Jammu-Srinagar, India**  
National Highway Authority, Delhi  
Basic geological field investigation carried out for study of alternatives and feasibility. 1<sup>st</sup> phase.  
Geologist
- 1999 **Rheintal motorway A14 – Amberg Tunnel, Austria**  
(Provincial Government of Vorarlberg)  
Geological detail mapping  
Geological, hydrogeological and geotechnical prediction for construction of second tunnel tube (approx. 3,000 m)  
Project geologist
- 1998 **Arlberg expressway S16 - Strengen tunnel, Austria**  
(ASG)  
Geological detail mapping and  
Geological, hydrogeological and geotechnical prediction for two-bore motorway tunnel construction (each approx. 5,700 m)  
Project geologist

- 1998 **BAB A71 federal motorway – Rennsteig tunnel**, Germany  
(DEGES)  
Brandleite tunnel overpass: reconnaissance and test coordination, on site data evaluation, geological-geotechnical prognosis
- 1998 **Soil/Site exploration for bed load retention basin at Wörgler Bach creek**, Austrian  
Forestral Service for Torrent and Avalanche Control.
- 1997 – 1998 **Leutasch WWTP**  
Technical-economic site assessment prepared for wastewater treatment plant.  
Engineering Geologist
- 1997 **WILHELMY ENGINEERING**  
Exploration of sand and gravel resources in Eastern Tyrol; Site exploration in  
Telfs/Stubaital valley, St. Ulrich/Pillersee, Austria
- Geotechnics**
- 04/2009 – 02/2010 **Railway Project Munich-Verona, Brenner Base Tunnel – Pilot Tunnel**, Tyrol, Austria  
– South Tyrol, Italy  
BBT-SE, Innsbruck  
56 km long twin-tube railway tunnel, emergency tunnels, multi-function junctions, access  
tunnels and water diversion tunnel  
Taking accompanying geotechnical measurements (inclinometer) during the construction  
of the pilot civil works & tunnel in the Innsbruck Gorge  
Engineering Geologist on-site
- 08/2006 – 06/2007 **Pir Panjal Railway Tunnel**, Jammu & Kashmir, India  
Ircon International Limited, Delhi  
Railway tunnel of 11 km length in the Jammu & Kashmir region with complicated  
geological behaviour (circa 2 km of soil, up to 1 km of overburden in the central area  
along with large-scale karst difficulties)  
Engineering geological consultancy and schooling of the on-site Indian geologists for the  
geological-geotechnical documentation and prognosis during the tunnel driving  
Geologist on-site

**Mass-Movement and Landslide**

- 2003 – 2006 **alpS – GmbH, Centre for natural hazard management**  
PROJEKT A 2.3; Multi-disciplinary analysis of processes for monitoring and modelling of  
unstable slopes in connection with (recent) tectonic-seismic events; investigations in  
Austria. Estimation of geogenic hazard potentials as well as the collection of geogenic  
risks in intensively used landscape parts with the development of a standardized manual  
in sensitive high-alpine areas.  
Deputy Project Manager
- 1999 **Rockfall at the Eiblschrofen massif**, Austria  
Intensive geotechnical monitoring;  
Head of the data collection centre – project manager for geology / geotechnology.

### Pipe Line

2001                    **Burgas-Alexandroupolis Oil Pipeline Project**, Bulgaria/Greece  
(BAPLINE I/V S.A. / Thraki S.A.)  
Geological-geotechnical consultancy  
Geologist

### Research

2001 – 2003           **Environmental tectonics of the eastern Stubai Alps and the Wipptal valley**, Austria  
(Ministry of Education, Science and Culture, Provincial Government of the Tyrol)  
A brittle tectonic study to evaluate hydrological and geogenic risks as well as water  
resource hazards - research project  
Hydrological-hydrogeological analysis  
Geologist

1986 – 1996           **University of Innsbruck**  
Structural geological analyses on the exploitation of thermal water resources in the  
Ötztal valley, Tyrol, Austria  
Geotechnical surveying and mapping of the “Lainbach” torrent in the region of Reutte,  
Tyrol, Austria  
Stratigraphic and tectonic analysis in the mountains of Tannheim, Tyrol, Austria

### Construction

1981 – 1986           **Hanel Construction Management GmbH (Innsbruck)**  
**Techno Design- & Construction GmbH (Salzburg)**  
**D.I. Westhausser, Engineering Consultant (ZT) for Structural Design (Salzburg)**  
Preliminary design, tender design, BOQ, detail design for various projects of structural  
engineering nature