


**MONITORING OF NATURAL HAZARDS,
SLOPE PROTECTIONS & EMBANKMENT
DAMS, GROUND INVESTIGATION**

Selected References
Projects considered since 2014

AUSTRIA		
Owner Client	Project Services	Year Type
Grossglockner High Alpine Road AG Fürstauer Bau GmbH	Grossglockner High Alpine Road , Road culvert Guttal Supply and installation of earth pressure cells, data logger	2021 - Bridge foundation
Leoganger Bergbahnen GmbH Leoganger Bergbahnen GmbH	Cable car Asitz III , investigation for storage pond for snowmaking Geophysical investigation programme with seismics	2021 Ground investigation
Pass Thurn GmbH Pass Thurn GmbH	Water supply Pass Thurn , exploration Geophysical exploration with seismics and geoelectrics	2021 Ground investigation
Energie Steiermark Energie Steiermark	Hydro power station Leoben East Supply and monitoring of ground water wells, data acquisition and visualization (web platform)	2021 - Groundwater monitoring
ÖBB Felbermayr Bau GmbH & Co KG	Railway axis Linz - Selzthal, section Hinterstoder - Pießling High pressure dilatometer tests	2021 Groundwater monitoring
Office for Torrent and Avalanche Control, Tyrol Office for Torrent and Avalanche Control, Tyrol	Barrier Finsingbach Supply and installation of earth pressure cells with automatic data acquisition, commissioning	2021 Torrent control


Owner Client	Project Services	Year Type
Municipality Schladming Municipality Schladming	Hiking trails , assessment of rockfall hazard Aerial survey by drone, photogrammetric evaluation and creation of 3D model	2021 Rockfall protection
Salzburg AG GEOCONSULT ZT GmbH	Hydropower plant Hollersbach , Risk assessment of the left slope above the reservoir Geophysical investigations in the form of seismic profiles	2021 Rockfall protection
Salzburger Regionalstadtbahn Projektgesellschaft Salzburger Regionalstadtbahn Projektgesellschaft	S-LINK , extension of the Salzburg regional railway from the main station to Hallein Supply and installation of piezometers with data loggers, geophysical explorations (seismic and georadar), instrumentation and measurement of a test field for ground improvement with georobot systems for automatic 3D monitoring, levelling and borehole instrumentation with inclinometers and magnetostrictive extensometers	2021 - Ground investigation
Federal Road Administration Carinthia HTB Bau	B111 Gailtalstrasse Promeggen West , Landslide Multiple point extensometer, supply and installation	2020 Landslide monitoring
TIWAG TIWAG	“Hoher Stein”, Gepatsch Reservoir, Kaunertal Supply, installation and operating of joint meters with automatic data acquisition and alarming; 2D-Seismic investigation; Creation of 3D terrain model (photogrammetric with drones, terrestrial laserscans, GNSS)	2020 Rockfall protection
ASFINAG AFRY Austria GmbH	S10 , Mühlviertler freeway High pressure dilatometer tests	2020 Ground investigation
Country Road Administration Styria Kaim Bau- und Sprengunternehmen GmbH	L502 St. Lamprechterstrasse , Rockfall Multiple point extensometer, supply and installation, automatic data acquisition and alarming	2020 Rockfall protection
ASFINAG ASFINAG	Slope Protections A9, S6, S35 freeways in Styria Optical 3-D displacement monitoring of 37 structures, surface laserscanning of 3 structures	2020 Slope protection
Bergbahnen Nassfeld AG GPD ZT GmbH	Reservoir Treßdorfer Alp , storage bond for snowmaking facility In-place inclinometer chains and piezometer, supply and installation, automatic data acquisition and alarming (KRONOS)	2019 - 2020 Embankment dam
Rigips Austria iC Consulente ZT GmbH	Open Cut Mine Grundlsee , gypsum mine Inclinometer, supply of casing and monitoring	2019 Landslide monitoring
ECONHYDRO GMBH Schleich Geo GmbH	Pumped storage power plant St. Georgen High pressure dilatometer tests	2019 Ground investigation


Owner Client	Project Services	Year Type
Hinterglemmer Bergbahnen Ges.mbH Hinterglemmer Bergbahnen Ges.mbH	Reservoir Haselstein , storage bond for snowmaking facility Extensometer, supply and installation, automatic data acquisition and alarming (Kronos)	2019 - Embankment dam
ASFINAG HABAU Hoch- und Tiefbaugesellschaft mbH	S31 Burgenland Freeway , Anchor wall 05 High pressure dilatometer tests (23 tests)	2019 Ground investigation
ASFINAG Korschineck & Partner Vermessung ZT GmbH	S6 Semmering Freeway Anchor Wall 05 Tilt sensors, supply and installation, automatic data acquisition and alarming	2019 Slope protection
ASFINAG Framak Bohrtechnik GmbH	A10 Tauern Freeway , pillar foundation Gmünd Multiple point extensometer, supply and installation	2019 Bridge foundation
ASFINAG Porr Bau GmbH	A10 Tauern Freeway , anchor wall Hochmais Multiple point extensometers, supply and training for installation	2019 - 2020
BMLRT-Section for torrent and avalanche control BMLRT-Section for torrent and avalanche control	Rockfall Pürgger Wand , settlement area threatened by rockfall Design, supply, installation and operation of automated monitoring system consisting of joint meters and 3D-displacement measurements (Georobot), alarming (KRONOS), geotechnical site supervision & consulting	2018 - 2021 Rockfall protection
ASFINAG ASFINAG	Slope Protections A1 , A10 freeways in Salzburg Optical 3-D displacement monitoring of 60 structures, surface laserscanning of 5 structures	2018 - 2020 Slope protection
ASFINAG Framak Bohrtechnik GmbH	A9 Pyhrn Freeway , anchor walls Multiple point extensometers, supply and installation	2018 - 2019 Slope protection
State of Upper Austria Felbermayr Bau GmbH & Co KG	B 121 Bypass Weyer Supply of 10 inclinometers, zero reading, geodetic measurement of the measuring points	2018 Ground investigation
State of Upper Austria Framak Bohrtechnik	B 145 Bypass Altmünster High pressure dilatometer tests	2018 Ground investigation
State of Lower Austria Bachner Brunnen- und Spezialtiefbau GmbH	B 25 Bypass Wieselburg , slope monitoring Supply of 14 inclinometers, inclinometer measurements and evaluation	2018 - 2021 Slope monitoring
ÖBB - Austrian Federal Railway ÖBB - Austrian Federal Railway	Rockfall Hiefrau ; ÖBB raildock Multiple point extensometers, supply and installation, automatic data acquisition, alarming (KRONOS)	2018 - Rockfall protection

Owner Client	Project Services	Year Type
ASFINAG ASFINAG	A9 Pyhrn Freeway , retaining wall sports field Übelbach Automatic 3D-displacement monitoring (Georobot)	2017 Slope protection
Federal Road Administration Carinthia HTB Bau	B99 Katschbergstrasse , slope protection Extensometer measurements	2016 Slope protection
ASFINAG ASFINAG	A2, A9 and S35 Freeways , retaining structures and wing walls Optical 3-D displacement monitoring, surface laserscanning	2016 Slope protection
ASFINAG ASFINAG	S35 Murtal Freeway , creeping slope in the tunnel portal area Monitoring of inclinometers, extensometers, load cells and strain gauges	2015 - 2016 Slope protection
ASFINAG Kaim Bau	A2 Southern Freeway , refurbishment anchor wall 01 Multiple point extensometers, supply and installation	2015 Slope protection
ASFINAG Framak / Kaim Bau	S6 Semmering Freeway , slope protection Gloggnitz Multiple point extensometers, supply and installation, inclinometer measurements	2015 Slope protection
State Government Lower Austria State Government Lower Austria / Porr Bau	Mass Movement Fürteben Supply and installation of piezometers and inclinometers with IPI sensors, automatic data acquisition (KRONOS)	2015 - Landslide monitoring
Vienna City Council Depart. 31-Water Supply Vienna City Council Depart. 31-Water Supply	Second Vienna Spring Water Main , landslide area Haberöd Automated distance monitoring and data transfer with laser distance meter	2015 - Landslide monitoring
ASFINAG ASFINAG	A9 Pyhrn Freeway , bridge B6 Inclinometer measurements	2014 - Bridge foundation
ASFINAG ASFINAG	A9 Pyhrn Freeway , C&C tunnel Krenngraben Optical 3D displacement monitoring (surface, tunnel, slope protections), inclinometer measurements, joint meters (supply, installation and monitoring)	2014 - Slope protection

Explanation of abbreviations for Austria owners and clients:

ASFINAG Austrian federal road administration (responsible for construction, maintenance and financing of the Austrian freeways)
 ÖBB Federal railway company

GERMANY		
Owner Client	Project Services	Year Type
Municipality Burghausen Vogl.Plus GmbH	Redevelopment seepage canal next to the Salzach in Burghausen Construction survey, vibration monitoring	2022 Flood protection
DB Netze Bohrsgesellschaft Roßla GmbH	Upgrade railway line Leipzig - Dresden High pressure dilatometer tests	2021 Ground investigation

ITALY		
Owner Client	Project Services	Year Type
Agency for Civil Protection, Autonomous province Bozen - South Tyrol Agency for Civil Protection, Autonomous province Bozen - South Tyrol	Torrent control Hahnebaum Supply and installation of earth pressure cells and strain gauges in the reinforcement with automatic data acquisition, commissioning	2021 - 2022 Torrent control
Agency for Civil Protection, Autonomous province Bozen - South Tyrol Agency for Civil Protection, Autonomous province Bozen - South Tyrol	Flood protection Innichen Geophysical investigation programme with seismics and geoelectrics	2021 Flood protection, Ground investigation