GEODATA

UNDERGROUND SUSTAINABLE SOLUTIONS

COMPANY PROFILE 2021

English

37 YEARS OF GROWTH

TODAY ISTANBUL, TURKEY 6 DIFFERENT METRO LINES DESIGNED BY GEODATA AND UNDER CONSTRUCTION; GAYRETTEPE-NEW AIRPORT AND KADIKOY-KARTAL LINES ALREADY IN OPERATION. SNOWY 2.0 HPSP, AUSTRALIA

POWERCHINA BECOMES THE MAJOR SHAREHOLDER OF GEODATA GROUP — **2017** — TRASANDINO AND MARCONA RAILWAYS IN PERU

OPENING OF THE BRANCHES IN BOLIVIA, CANADA & KATHMANDU (NEPAL) — **2015** — EL BALA 3200 MW HPP, BOLIVIA
SÃO PAULO METRO – EXTENSION OF LINE 5

400 PROFESSIONALS WORKING IN THE GEODATA GROUP; CONTINUING EXPANSION IN MATURE AND HIGH-DEMANDING MARKETS, USA, SINGAPORE, TURKEY (2013) – OHSAS 18001 CERTIFICATION — **2012** — FLOOD-RELIEF TUNNELS OF THE MALDONADO RIVER IN BUENOS AIRES, ARGENTINA
LIMA METRO LINES 2 AND 4, PERU

COMPLEMENTING WORLDWIDE ROOTING (AUSTRALIA, COLOMBIA, PERU) BREAKING THROUGH 40 M€ REVENUES — **2011** — STARTING INVOLVEMENT IN INDIAN METROS: BANGALORE, DELHI, LUCKNOW, AHMEDABAD, CHENNAI, MUMBAI, BHOPAL & INDORE

ISO 14001 CERTIFICATION - START WORKING IN INDIA — **2010** — STARTING INVOLVEMENT IN INDIAN RAILWAYS: SIVOK-RANGPO, RISHIKESH-KARANPRAYANG, TUNNELS T1-T5 ON UDHAMPUR-SRINAGAR-BARAMULLA RAIL LINK - T74R RAILWAY TUNNEL

CONSOLIDATING PRESENCE IN SOUTH AMERICA THROUGH THE OPENING OF ARGENTINA, ECUADOR AND BRAZIL BRANCHES — **2009** — ECUADORIAN HPP: COCA CODO SINCLAIR 1500MW, VILLADORA & CHONTAL 365 MW, MINAS Y LA UNION 260MW

ASSIGNED TO GEODATA THE SAMOTER INTERNATIONAL AWARD (CATEGORY DESIGN) — **2008** — HIGHWAY AND RAILWAY TO SOCHI FOR WINTER OLYMPIC GAMES, RUSSIA

REACHING 15 M€ REVENUES -OPENING IN RUSSIA, CHINA (2006) — **2007** — "MECHANIZED TUNNELING IN URBAN AREAS" BOOK PUBLICATION

OVER 2.000 KM OF TUNNELS DESIGNED — **2005** — LYON–TURIN HSR BASE TUNNEL -FRANCE/ITALY
SALERNO-REGGIO HIGHWAY & BOLOGNA HSR UNDERPASSING, ITALY

ESTABLISHMENT OF THE BRANCH IN GREECE; INCORPORATING E&M SPECIALISTS (ITEA S.R.L.) (2004); GROWING IN S.E.ASIA AND S.AMERICA THANKS TO MORE THAN 100 PROFESSIONALS — **2003** — PORTO METRO - LINES C, S, J, PORTUGAL

FIRST FOREIGN BRANCH (PORTUGAL) AND PARTICIPATION (VENEZUELA); STARTING UP IN HYDRO PROJECTS (GROUPE INCOMAG S.R.L.) — **2000** — TURIN METRO LINE 1, ITALY
A6-A21 ASTI-CUNEO HIGHWAY, ITALY

ISO 9001 QUALITY CERTIFICATION; 5 M€ REVENUES — **1998** — ST. PETERSBURG METRO LINE, RUSSIA
PORTO METRO LINE, PORTUGAL

REACHED 1.000 KM OF TUNNELS DESIGNED — **1996** — CAREMA ROCK SLOPE AND FLOOD PROTECTION, ITALY

1990 — ALPINE HIGHWAYS: AOSTA-MONT BLANC, AOSTA-GRAN SAN BERNARDO AND TURIN-FREJUS, ITALY
CONNECTION BETWEEN THE NEW GENOVA-VOLTRI HARBOR AND THE HSR NETWORK TO MILANO, ITALY

ESTABLISHMENT OF THE COMPANY — **1984** — THE FIRST IMPORTANT BIG PROJECT IN WHICH WE HAVE BEEN INVOLVED: PONTREMOLESE RAILWAY LINE, ITALY

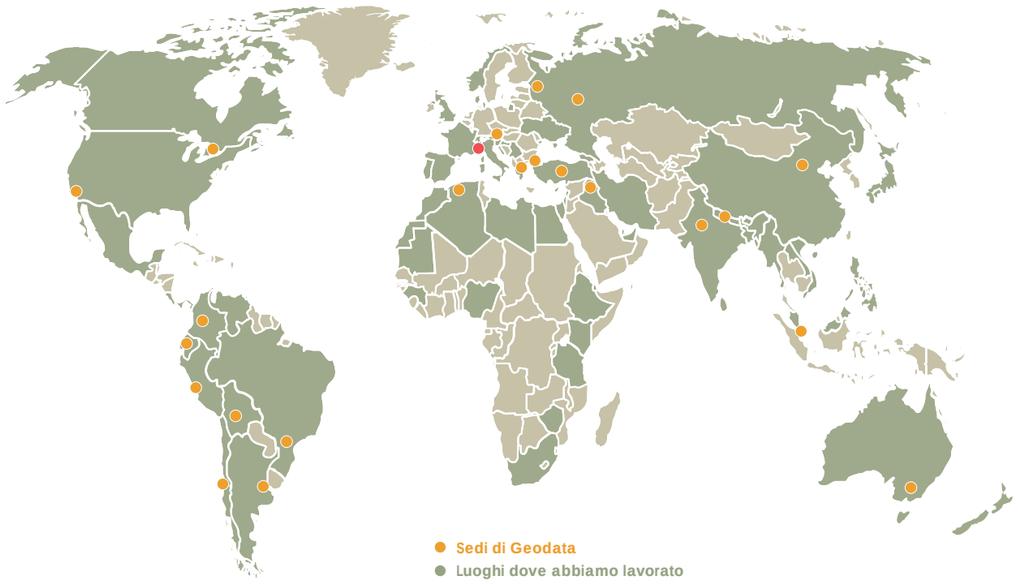
The value and power of the water, facilitation of mobility beyond barriers, reaching towards the future through cultivation of state-of-the-art engineering. A sustainable environment with which people relate. Daily challenges to improve the quality of life. Innovation continues.

Established in 1984 in Turin (Italy), as an independent geo-engineering company. GEODATA is leader in Italy and internationally recognized in the field of design and engineering of underground infrastructures.

Still strongly focused on tunnelling and underground space use, GEODATA has gradually become a global multidisciplinary designer.

GEODATA presents itself as the ideal global partner to create the positive and eff ective synergy with partners and clients for developing complex projects.
With proven vast expertise in engineering underground infrastructures for road & rail transportation, water supply & waste water management, storage and hydropower, we are committed to implement digital innovation to enable comprehensive robust solutions both for new infrastructures and for the management and rehabilitation of existing facilities.

Today, GEODATA operates in 5 major market sectors: **Metro, Road, Rail, Hydro, Earth**



METRO RAIL ROAD HYDRO EARTH

OVERCOMING BARRIERS

From long and deep tunnels through mountains to urban transformation with **underground** infrastructures for **transportation**, water supply, waste water management and flood mitigation.

MOBILITY FREEDOM AND RESILIENT CITIES

It is the essence of the urban centers of tomorrow: smart efficient cities with functional, resilient and iconic infrastructures, designed respecting the environment, historical heritages and territories where they take shape.

A vast infrastructure expertise is needed for defining innovative reliable and **sustainable resilient solutions** for using the underground space and to meet the needs of:

▪ Fast growing urbanizations ▪ Smart cities ▪ Future quality of human life ▪ Climate changes ▪ Respect of historical heritages

WATER

The most precious natural resource for mankind.

Understanding and respecting this resource is the biggest challenge engineering is facing today in order to draw from water all potentials. To tackle different needs in different geographies transfer, storage, hydropower production are demanded **in compliance with sustainability criteria**.

Prevent and manage in order to secure cities and population from flood and hydrogeological risks. New projects should analyze scenarios for disaster prevention and implement robust and resilient solutions.

DIGITAL ENGINEERING

Digital innovation is the **most effective revolution** in the engineering industry: Building Information Modeling, Digital design and Project Control, Common and Cooperative Data Environment are enhancing reliable efficiency, productivity and added value.

OUR CORE SKILLS:

- GEOLOGY AND HYDROGEOLOGY
- GEOTECHNICAL
- ENVIRONMENTAL
- MINING
- STRUCTURAL ENGINEERING
- HYDRAULIC ENGINEERING

ARE SUPPLEMENTED, AT BOTH DESIGN AND CONSTRUCTION STAGE, BY MEANS OF:

- INFRASTRUCTURES PLANNING AND DESIGN
- ELECTRICAL & MECHANICAL ENGINEERING
- RISK MANAGEMENT
- PROBABILISTIC DESIGN AND ANALYSIS OF TIME AND COSTS
- SELECTION AND OPTIMIZATION OF CONSTRUCTION METHODS
- SITE ORGANIZATION AND LOGISTICS
- MONITORING
- PROJECT & CONSTRUCTION MANAGEMENT
- SUPERVISION
- KNOWLEDGE MANAGEMENT – INFORMATION TECHNOLOGIES FOR ENGINEERING
- HEALTH & SAFETY MANAGEMENT

NUMBERS

GEODATA WAS ESTABLISHED IN **1984** IN TURIN. IN **37** YEARS OF ACTIVITY AVERAGE ANNUAL GROWTH HAS BEEN **15**%.

THE AVERAGE TURNOVER OF LAST 3 YEARS IS **30** MILLION EURO, OF WHICH **90**% ABROAD.

AS OF TODAY, **4.000** KM OF UNDERGROUND INFRASTRUCTURES HAVE BEEN DEVELOPED.

OVER **3.700** PROJECTS HAVE BEEN MANAGED.

GEODATA HAS WORKED ON **5** CONTINENTS IN **45** COUNTRIES.

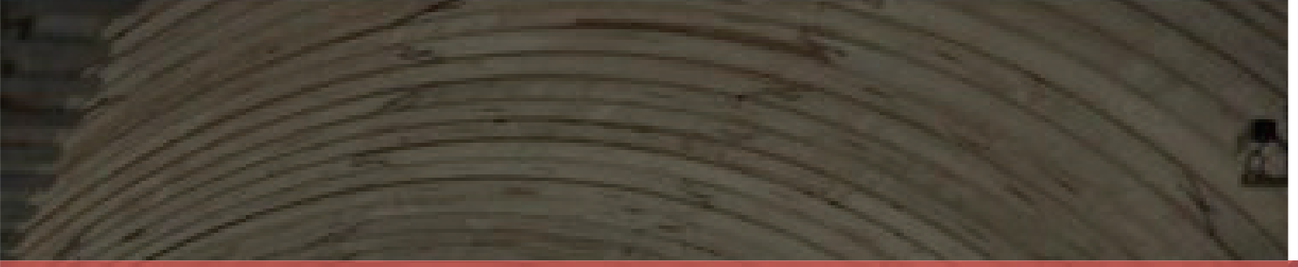
GEODATA HAS OVER **400** EMPLOYEES.

OVER **500** PUBLIC AND PRIVATE CLIENTS.

OVER **300** ARTICLES IN INTERNATIONAL SPECIALIZED TRADE JOURNALS.

ISO **9001** CERTIFIED SINCE **1998**, ISO **14001** CERTIFIED SINCE **2010** AND ISO **45001** SINCE **2012**.

METRO RAIL ROAD HYDRO EARTH

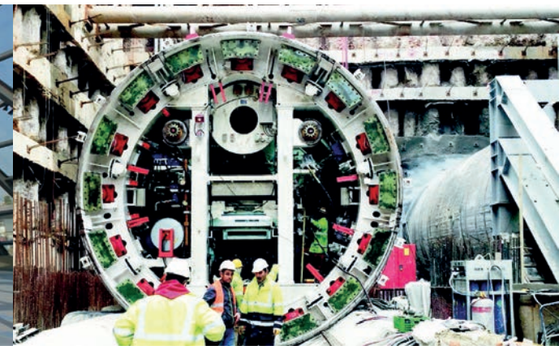


METRO

AUSTRALIA	PERTH, AIRPORT METRO LINK
BRAZIL	SÃO PAULO, LINE 5
CHINA	CHENGDU, LINE 1
FRANCE	PARIS, RER E EOLE
GREECE	ATHENS, LINE 3
INDIA	BANGALORE, NORTH-SOUTH LINE UG1
INDIA	LUCKNOW, BHOPAL AND INDORE AUTHORITY GENERAL CONSULTANT
INDIA	NEW DELHI, PACKAGE CC-04-PHASE III
IRAN	TABRIZ, LINE 2 AND AHWAZ, LINE 1
ISRAEL	TEL AVIV METRO M1-5
ISRAEL	TEL AVIV GREEN LINE PACKAGE G3.2
ITALY	TURIN, LINE 1 AND EXTENSIONS
ITALY	BOLOGNA, LINE 1-METRO-TRAMWAY
ITALY	ROME, LINE D AND B
ITALY	CATANIA AND NAPLES METRO
PERU	LIMA, LINES 2 AND 4
PORTUGAL	PORTO, LINES C-S-J
RUSSIA	ST. PETERSBURG, LINE 1 AND 5, SPASSKAYA STATION ON LINE 5
RUSSIA	KALININSKO-SOLNTSEVKAYA AND KOZHUKHOVSKAYA LINE
RUSSIA	MOSCOW, TOD RYAZANSKAYA & TOD VOLZHSKAYA
TURKEY	ISTANBUL, LINE KADIKOY-KARTAL
TURKEY	ISTANBUL, DUDULLU - BOSTANCI, HALKALI - KIRAZLI, ÜMRANIYE - GÖZTEPE LINES
TURKEY	ISTANBUL, LINE GAYRETTEPE-3RD NEW AIRPORT

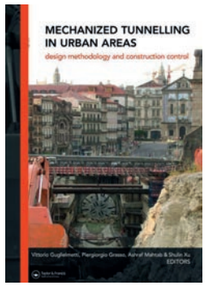
> 325
Underground
Stations

> 400 km
Underground
Lines



OUR SKILLS

- Define best metro functional layout for line and stations
- Integrated and complete design from demand study to rolling stock
- System integration between architecture, civil works and metro system equipment
- Urban integration and Transit Oriented Development (TOD) projects
- Value Engineering for underground solutions
- Ventilation strategies definition, Safety and Security assessment
- CFD and pedestrian simulations
- Experiences on Unattended Metro Systems (GoA4)
- General Consultant for Owners and Public Authorities
- Designer for EPC contractors and PPP developers



Mechanical excavation has always been an area of excellence of our "know-how", as demonstrated by the success of our technical and scientific publications. These have been the channel for us to define a specific methodology which has at its foundation a systematic approach to risk analysis as an operating, qualifying and permeating tool for the entire design process.

OUR AREAS OF EXPERTISE

- Planning and feasibility of the project
- Geological, hydro-geological, and geotechnical studies
- Design of the line infrastructure and system studies according to specific needs and type of users
- Functional and architectural design for stations and depots
- Geotechnical and structural design of civil works
- Systems and safety design
- Fluid dynamics analysis for fire hazard simulations in risk scenarios
- Selection, enhancement and innovation of construction techniques
- Risk assessment and management
- Studies for construction site service road network
- Planning for traffic, utilities and services re-routing
- Safety coordination in planning and construction phase
- Value Engineering
- Contract management
- Project & construction management
- GIS systems for real-time mechanized construction

RAIL

ALGERIA	▸ EL ACHIR NEW TUNNEL AND LINE IMPROVEMENT AND LGV2 HSR
ALGERIA	▸ OUED TLELAT-MOROCCO BORDER NEW LINE
ARGENTINA CHILE	▸ CORREDOR BIOCEANICO ACONCAGUA (PPP RAIL LINK)
AUSTRALIA	▸ NORTHERN SYDNEY FREIGHT CORRIDOR
CHILE	▸ SANTIAGO-BATUCO RAILWAY LINE
CHINA	▸ CHENGDU-CHONGQING AND SHANGHAI-KUNMING HSR
CHINA	▸ SHENYANG-DANDONG NEW PASSENGER DEDICATED HSR
CHINA	▸ BEIJING-FUZHOU PASSENGER DEDICATED RAILWAY
INDIA	▸ RISHIKESH-KARANPRAYAG NEW RAILWAY LINK
INDIA	▸ UNA - HAMIRPUR NEW RAILWAY LINE
INDIA	▸ SIVOK-RANGPO NEW RAILWAY LINE
INDIA	▸ T1-T5 & T74-R RAILWAY TUNNEL ON UDHAMPUR-SRINAGAR RAILWAY LINE
ITALY	▸ NAPLES – BARI, LOT FRASSO TELESINO - TELESE
ITALY	▸ TERNI-SPOLETO NEW RAILWAY LINK
ITALY	▸ BOLOGNA HSR BY-PASS
ITALY	▸ TURIN AIRPORT RAILWAY LINK
ITALY FRANCE	▸ UPGRADING AND LOWERING UNDERGROUND OF HISTORICAL FREJUS RAILWAY TUNNEL
ITALY FRANCE	▸ LYON-TURIN HSR
PERU	▸ MARCONA-ANDAHUAYL RAILWAY
PERU	▸ UPGRADING OF TRASANDINO RAILWAY
PORTUGAL	▸ UPGRADING OF PORTO-LISBON LINE
RUSSIA	▸ SOCHI-ADLER KRASNAYA-POLIANA COMBINED HIGHWAY AND RAILWAY CORRIDOR
SPAIN	▸ MADRID-SEGOVIA HSR, GUADARRAMA TUNNEL AND LEON-OVIEDO HSR, PAJARES TUNNEL
SPAIN MOROCCO	▸ GIBRALTAR STRAIT TUNNEL

LONG AND DEEP TUNNELS

ITALY-AUSTRIA ▸ 55.0km
Brenner Base Tunnel (BBT)

ITALY-FRANCE ▸ 57.7 km
Lyon-Turin Base Tunnel

ARGENTINA-CHILE ▸ 52.5 km
Corredor Bioceanico Aconcagua

SPAIN-MOROCCO ▸ 38.7 km
The Gibraltar strait fixed railway link

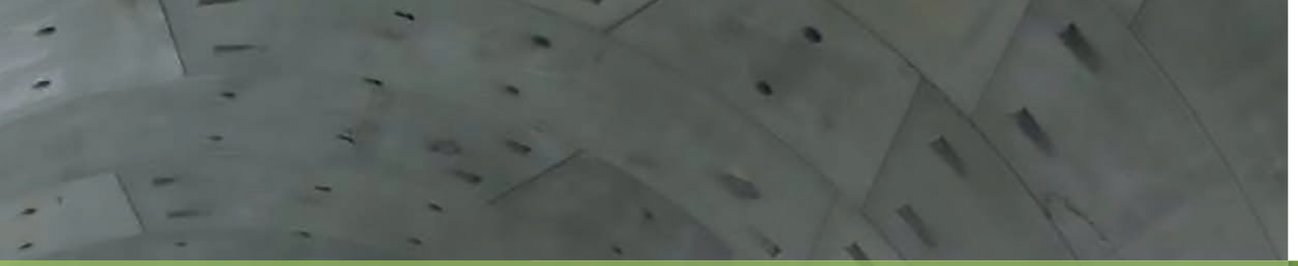
ITALY ▸ 20.0 km
New Terni-Spoleto railway line

ITALY-FRANCE ▸13.7 km
Upgrading of the Frejus historical tunnel

INDIA ▸ 8.7 km
Kashmir new railway line, Dharam-Qazigund track

VENEZUELA ▸ 6.9 km
Caracas-Cua railway line

AUSTRALIA ▸ 6.3 km
Northern Sydney Freight Corridor



OUR SKILLS

- From High Speed to Commuter Rail projects
- Define functional layout for line and stations
- Complete design from alignment to signalling solutions
- Multimodal terminals and marshalling yards
- DC and AC electric traction systems
- Opentrack railway simulation
- Tunnel safety assessment during construction and operation
- Long and deep rail tunnel design
- Maintenance, refurbishment and upgrade
- Construction supervision and commissioning support

OUR AREAS OF EXPERTISE

- Conception of railway system
- Project & Risk Management
- Operation studies
- Alignment options study
- Track and route design
- Structure design
- Functional and architectural studies for stations and interchange nodes
- Urban Design for High Speed and Commuter Services
- Life Cycle Cost Analysis
- Cost-Benefit Analysis
- Design and organization of construction methods and phases
- Refurbishment of railway tunnels (new clearance profile definition, consolidation, safety standards)
- Control and signalling systems
- Electric traction and substations
- Electric and mechanical systems
- Definition of rolling stock required by system

ROAD

ALGERIA	RN 77 NATIONAL HIGHWAY
AUSTRALIA	BRISBANE LEGACY WAY PROJECT
BRAZIL	RODOVIA DOS IMIGRANTES
COLOMBIA	BOGOTÀ VILLAVINCENCIO AND CONCESSION TUNNEL ABURRÀ ORIENTE
FRANCE	A51 GRENOBLE-SISTERON HIGHWAY
FRANCE	MONTECARLO TUNNEL DESCENDANT OUEST
GREECE	EGNATIA ODOS MOTORWAY
GREECE	SIGMA 1 AND SIGMA 2 TUNNELS
INDIA	RAZDHAN PASS AND BARALACHALA PASS TUNNELS
INDIA	CHENANI-NASHRI SECTION ON NH-1A
INDIA	MUMBAI-PUNE EXPRESS WAY
INDIA	DWARKA EXPRESS WAY FOR WESTERN CONNECTIVITY TO DELHI AIRPORT
IRAN	TEHRAN-SHOMAL FREEWAY ALBORZ TUNNEL
ITALY	SALERNO-REGGIO CALABRIA HIGHWAY
ITALY	ENLARGEMENT VENICE-TRIESTE HIGHWAY A4
ITALY	DOUBLING OF THE A6 TORINO-SAVONA HIGHWAY
ITALY	A5 MONT BLANC-AOSTA HIGHWAY AND AOSTA UNDERGROUND BY-PASSES TO GRAN SAN BERNARDO PASS
ITALY	VARIOUS UNDERGROUND CITY BY-PASSES (CARCARE, PORTE, OMEGNA, MENAGGIO)
ITALY	VARIOUS FRAMEWORK AGREEMENTS FOR NEW ROAD PROJECTS AND FOR EXTRAORDINARY MAINTENANCE OF EXISTING STATE ROADS
MALAYSIA	WESTERN KUALA LUMPUR TRAFFIC DISPERSAL SCHEME-PENCHALA TUNNEL
MONTENEGRO	BAR BOLJARE HIGHWAY
PERU	INTERAMERICAN ROAD
PERU	ANTAMINA ROAD
PORTUGAL	NEW AGUAS SANTAS NORTH TUNNEL ON MATOSINHOS-AMARANTE HIGHWAY
RUSSIA	SOCHI-ADLER KRASNAYA-POLIANA COMBINED HIGHWAY AND RAILWAY CORRIDOR

LONG AND DEEP TUNNELS

INDIA ▸ 18.0 km - 2.700m asl
Razdhan Pass on Gureiz-Bandipur

FRANCE-ITALY ▸ 12.9 km
Safety tunnels Frejus Highway tunnel

INDIA ▸ 11.25 km
Baralachala Tunnel on Manali Sarchu Road

INDIA ▸ 9.0 km
Chenani-Nashri tunnel (Patnitop)

IRAN ▸ 6.4 km
Alborz Main Tunnel

ITALY - SWITZERLAND ▸ 5.8 km
Gran San Bernardo tunnel

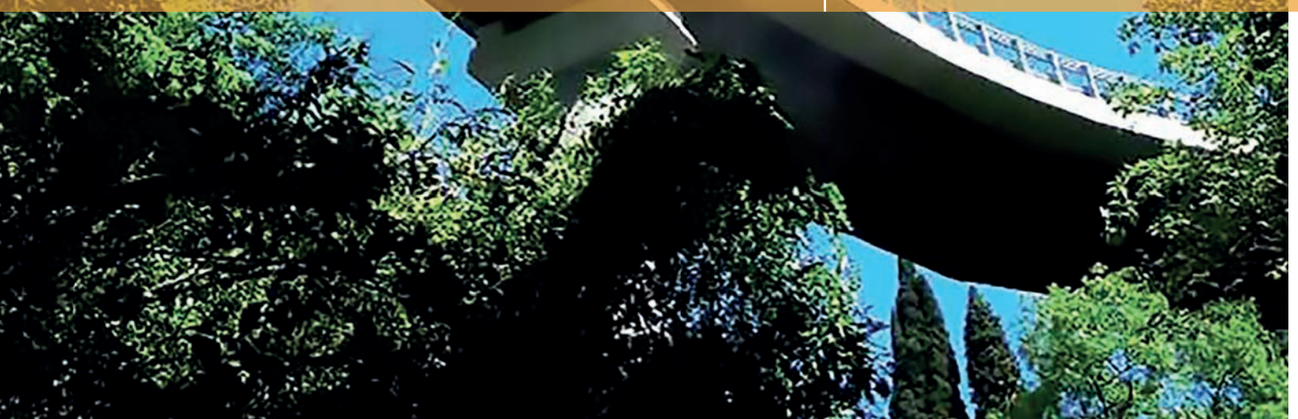
DOUBLE DECK URBAN TUNNELS

RUSSIA ▸ 19.1 m diameter
Orlovsky tunnel

GREECE ▸ 15.9 m diameter
Thessaloniki Submerged tunnel

ITALY▸ 15.5 m diameter
VERONA BY PASS TUNNEL

MALAYSIA ▸ 13.5 m diameter
Kuala Lumpur (SMART)



OUR SKILLS

- Complex highway, junctions and urban by-pass
- Road layout definition: combining cost-benefit and multi-criteria analysis to define best layout and alignment
- Analysis, planning, management and appraisal of road maintenance, improvement and investment decision (HDM-4 Software)
- Mechanized and double deck road tunnel
- Underground parking design
- CFD and egress simulations
- Tunnel ventilation and Fire Safety
- Drainage solution and landscape design
- Value engineering for complex underground solutions
- Environmental studies

OUR AREAS OF EXPERTISE

- Project & Risk Management
- Transport sustainability analysis
- Economic and financial analysis
- Probability analysis of costs and construction times
- Multi-criteria analysis
- Selection of routes, layout and typical road sections
- Functional and accessibility analysis of the infrastructure
- Roadway, geological, geotechnical, hydraulic, general and structural design of the major structures and minor structures
- Environmental feasibility, pre-feasibility studies and impact assessment
- Design and organization of construction methods and phases
- ITS
- Maintenance and requalification programmes
- Project management and control

HYDRO

ALGERIA	▸ DOUERA, KRAMIS, IRDJANA, TAHT & EL ABD DAMS
ARGENTINA	▸ FLOOD RELIEF TUNNELS FOR MALDONADO RIVER
ARGENTINA	▸ SUSTAINABLE DEVELOPMENT OF THE MATANZA-RIACHUELO BASIN (LOT 1 & 3)
BOLIVIA	▸ EL BALA HPP 3675 MW
CANADA	▸ TORONTO WEST VAUGHAN SEWAGE SYSTEM
CHILE	▸ ALTO MAIPO HPP 531 MW
CHINA	▸ ZENH'AN AND FUKANG PSP 350 MW
CHINA	▸ SOUTH-NORTH WATER DIVERSION
CHINA	▸ WANGIAZHAI WATER DIVERSION
COLOMBIA	▸ TUNJUELO CANOAS WASTEWATER INTERCEPTOR
ECUADOR	▸ COCA CODO SINCLAIR HPP 1500 MW
ECUADOR	▸ MINAS-SAN FRANCISCO & LA UNIÓN HPP 276+94 MW
ECUADOR	▸ CHONTAL 194 MW
ECUADOR	▸ DELSITANISAGUA HPP 180 MW
FRANCE	▸ ANNECY SEWAGE TUNNEL
FRANCE SWITZERLAND	▸ CHOULLY SEWAGE TUNNEL
INDIA	▸ BAJOLI HOLI HPP 180 MW
ISRAEL	▸ KOKHAV HAYARDEN PSP 340 MW
ITALY	▸ RAVEDIS MULTIPURPOSE DAM
ITALY	▸ FLOOD RELIEF TUNNEL FOR BISAGNO RIVER IN GENOVA
ITALY	▸ SANTA VITTORIA D'ALBA ON TANARO RIVER HPP 4.1 MW
NEPAL	▸ BHERI BABAI DIVERSION MULTIPURPOSE PROJECT
RUSSIA	▸ ZAGORSKAYA PSPP-2
SRI LANKA	▸ COLOMBO FLOOD MITIGATION NEW MUTWAL AND TORRINGTON TUNNELS
TANZANIA	▸ JULIUS NYERERE HPP
USA	▸ NEW YORK SUFFOLK OUTFALL REPLACEMENT PROJECT

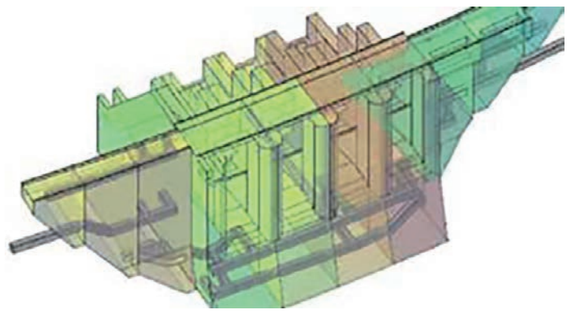
15 km
Flood Control Tunnels

143 m
RCC Chontal Dam

72.5 km
Water Transfer Tunnel

OUR SKILLS

- Integrated river basin management
- Water resources management
- Water transfer
- River engineering
- Multipurpose project
- Hydraulic tunnels
- Dams
- Flood and natural hazards
- Risk and hazard assessments
- Strategic sewage
- Hydropower
- Value engineering for complex underground solutions



OUR AREAS OF EXPERTISE

- Hydrological, hydraulic and sedimentology studies
- System layout design
- Preliminary, final and executive design
- Multi-criteria analysis, probability assessment of timing and costs
- Risk analysis, Risk Management Plan
- Technical specifications
- Project and construction management
- Value engineering
- Contract management
- Geological, geomechanical and hydrological studies
- 3D Geological model (LEAPFROG)
- Definition of Geotechnical Reference models (GTRM)
- Geotechnical and Structural Design of Dams
- Geotechnical and Structural Design of Underground Caverns
- Design and organization of construction methods and phases

EARTH

ALGERIA	▸ GEOLOGICAL SURVEY FOR RN77 (120 KM) AND OUED TLELAT RAILWAY (400 KM)
ARGENTINA CHILE	▸ GEOLOGICAL STUDIES FOR THE RAILWAY PROJECT OF CORREDOR BIOCEANICO ACONCAGUA
BRAZIL	▸ GEOLOGICAL INVESTIGATION FOR THE HIGH-SPEED RAILWAY SAO PAULO-RIO DE JANEIRO
COLOMBIA	▸ SLOPES STABILITY ANALYSIS AND ENGINEERING SERVICES ON MEDELLIN-LAS PALMAS ROAD
COLOMBIA	▸ ENVIRONMENTAL MANAGEMENT PLAN OF THE AQUIFERS OF THE SAVANNAH OF BOGOTÁ
CHILE	▸ ACCESS TUNNELS TO NUEVO NIVEL MINA EL TENIENTE
CHILE	▸ CHUQUICAMATA MINE ACCESS TUNNEL
COLOMBIA	▸ HYDROGEOLOGICAL & ENVIRONMENTAL STUDIES FOR THE ABURRÁ ORIENTE HIGHWAY CONNECTION
ECUADOR	▸ EIA FOR HPP MINAS-LA UNIÓN, CHONTAL
ECUADOR	▸ SETTLEMENT& GEOTECHNICAL DESIGN OF NEW AIRPORT OF QUITO
INDIA	▸ GEOLOGICAL SURVEY FOR SEVERAL RAILWAY LINES
ITALY	▸ VARIOUS HIGHWAYS PROJECTS
ITALY	▸ TERRITORIAL PLANNING PROCEDURES AND PROTECTION PLANS
ITALY	▸ AVALANCHE BARRIER TUNNELS
ITALY	▸ STUDIES FOR SAFETY MEASURES OF PROTECTION FROM FLOODING
ITALY-FRANCE SPAIN-AUSTRIA	▸ LONG AND DEEP TUNNELS FOR HSR TURIN-LYON, PERTHUS, BRENNERO , TERZO VALICO MILAN-GENOA
MALAYSIA	▸ SLOPE PROTECTION ON NORTH SOUTH EXPRESSWAY, IPOH
MESSICO	▸ ETILENO XXI PROJECT REHABILITATION DESIGN OF SLOPES AND CUTS
SOUTH AFRICA	▸ INGULA PUMPED STORAGE SCHEME
WORLDWIDE	▸ GEOLOGICAL & GEOTECHNICAL PROJECTS OF HYDRO POWER PLANTS (COCA CODO SINCLAIR, CERRO DE AGUILA,SANTA TERESA, HUANZA, SANTA MARIA, COCHABAMBA, CHEPETE, BALA, IVIRIZU, JULIUS NYERERE, FUKANG, ZENANG, MOLINO, KOKHAV HAYARDEN)
WORLDWIDE	▸ METRO GEOTECHNICAL PROJECTS (TURIN, BANGALORE, TEL AVIV, SAO PAULO, MOSCOW, PARIS, PERTH AIRPORT LINK UNDERGROUND)

320.000 m
Borehole log interpretation

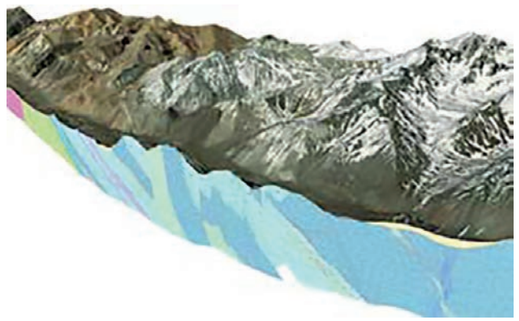
3.200
Geological and Geotechincal models

750.000 km²
Mining, natural disaster surveys and land use planning

120.000 km²
Geological survey

OUR SKILLS

- Engineering Geology, geological survey and mapping
- Geological and Geotechnical Reference Model (GRM)
- Dynamic 3D geological modelling, LEAPFROG Sequence GIS models, Info-graphy
- Reliability of geological forecast (R-Index) and Risk Analysis
- Geomechanical & Geotechnical Characterization and Modelling
- Hydrogeological and Geothermal Studies
- Slopes Stability, Excavations Analysis, Support Calculation
- Natural risks assessment (landslides, floods, snow avalanches, rock & debris flows)
- Environmental impact assessment
- Climate change and the impacts on infrastructures and hazard managing
- Mining development, rehabilitation of dismissed mine sites



OUR AREAS OF EXPERTISE

GEOLOGICAL AND GEOMORPHOLOGIC STUDIES

- Brittle and ductile structural geology studies
- Sedimentologic, tectonostratigraphic and petrographic studies
- Hydrogeological studies and numerical modelling of groundwater flow
- Geochemistry, hydrochemistry studies

GEOLOGICAL INVESTIGATIONS AND SURVEYS

- Planning and management of: in situ geological investigations geological surveys and geotechnical measurements
- Interpretations of geological and geotechnical data

GEOLOGICAL AND GEOMECHANICAL STUDIES

- Study and characterization of rock mass and weak rock behaviour
- Geotechnical characterization
- Slope stability FED and DEM analyses
- Geotechnical engineering for underground infrastructures
- Geotechnical engineering for foundations, settlements and embankments
- Geotechnical engineering of dams
- Geotechnical engineering of quarries and mines
- Seismic Dynamic Analysis

ENVIRONMENTAL AND MINING STUDIES

- Land planning studies and natural hazard (e.g. landslides, floods) analyses
- Study of rock and soil aggregates
- Study of muck material and deposits

GEODATA

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GEODATA, a provider of sustainable and value-added solutions, for underground projects, to meet the ever-increasing demands of transportation and sustainable development.

GEODATA is active in 25 countries at over 50 work-sites for the development of projects in metro, rail, road and highway, hydro power and multi-purpose, mining, environment protection, flood mitigation and treatment of combined sewer overflow, and territorial planning.

Geodata has designed over 4000 km of tunnels and followed the realization of over 3300 projects.

MANAGEMENT SYSTEM CERTIFICATION
DNV·GL
ISO 9001 = ISO 14001
ISO 45001

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is certified
ISO 9001,
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