



UNDERGROUND SUSTAINABLE SOLUTIONS

COMPANY PROFILE 2019

35 YEARS OF GROWTH

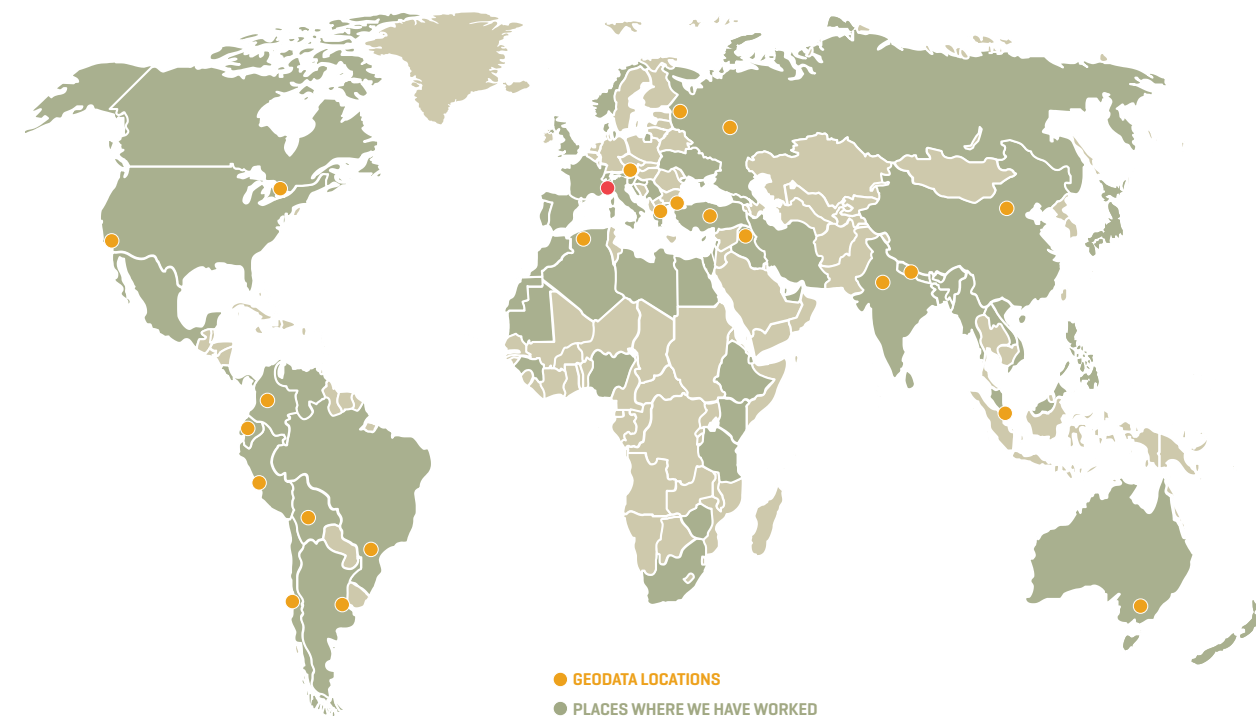
The value and power of the water, facilitation of mobility beyond barriers, reaching towards the future through cultivation of state-of-the-art engineering. A sustainable environment with which people relate. Daily challenges to improve the quality of life. Innovation continues.

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 effective 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

	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	TRANSANDINO AND MARCONA RAILWAYS IN PERU
OPENING OF THE BRANCHES IN BOLIVIA, CANADA & KATHMANDU (NEPAL)	2015	EL BALA 3675 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, SINGAPOUR, 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, BOPHAL & INDOORE
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 INVOLVEMENT SALERNO-REGGIO HIGHWAY BOLOGNA HSR UNDERPASSING
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



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 **35** YEARS OF ACTIVITY AVERAGE ANNUAL GROWTH HAS BEEN **15%**.

THE AVERAGE TURNOVER OF LAST 3 YEARS IS **35** MILLION EURO, OF WHICH **90%** ABROAD.
AS OF TODAY **4.000** km OF UNDERGROUND INFRASTRUCTURES HAVE BEEN DEVELOPED.
OVER **3.500** 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 OHSAS **18001** SINCE **2012**.

METRO

RAIL

ROAD

HYDRO

EARTH

METRO

- | | |
|-----------|---|
| AUSTRALIA | ▶ PERTH, AIRPORT METRO LINK |
| BRAZIL | ▶ SÃO PAULO, LINE 5 |
| CHILE | ▶ SANTIAGO, LINE 4 |
| 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 |
| 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 | ▶ MOSCOW, KOZHUKHOVSKAYA LINE |
| RUSSIA | ▶ MOSCOW, KALININSKO-SOLNTSEVSKAYA LINE |
| RUSSIA | ▶ MOSCOW, TOD RYAZANSKAYA & TOD VOLZHSKAYA |
| TURKEY | ▶ ISTANBUL, LINE KADIKOY-KARTAL |
| TURKEY | ▶ ISTANBUL, LINE DUDULLU-BOSTANCI |
| TURKEY | ▶ ISTANBUL, LINE ÜMRANIYE-GÖZTEPE |
| TURKEY | ▶ ISTANBUL, LINE GAYRETTEPE-3 RD NEW AIRPORT |

M
 ▶ 325
 • Underground
 • Stations

400 km
 • Underground
 • Lines

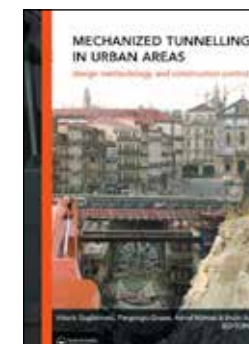


OUR SKILLS

- Define best metro functional layout for line and station
- 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

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



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.

RAIL

ALGERIA	▶ EL ACHIR NEW TUNNEL AND LINE IMPROVEMENT AND LGV2 HSR
ALGERIA	▶ OUED TLELAT-MOROCCO BORDER NEW LINE
ARGENTINA	▶ CORREDOR BIOCEANICO ACONCAGUA
CHILE	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	▶ SIVOK-RANGPO NEW RAILWAY LINE
INDIA	▶ T1-T5 & T74-R RAILWAY TUNNEL ON UDHAMPUR-SRINAGAR RAILWAY LINE
ITALY	▶ PALERMO-AGRIGENTO UPGRADING OF EXISTING RAILWAY
ITALY	▶ TERNI-SPOLETO NEW RAILWAY LINK
ITALY	▶ BOLOGNA HSR BY-PASS
ITALY	▶ PALERMO RAILWAY UNDERGROUND BY-PASS
ITALY	▶ TURIN AIRPORT RAILWAY LINK
ITALY	▶ UPGRADING AND CLEARANCE ENLARGEMENT OF HISTORICAL FREJUS RAILWAY TUNNEL
FRANCE	▶ LYON-TURIN HSR
FRANCE	
IRAN	▶ TEHRAN-MASHHAD LINE
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	▶ GIBRALTAR STRAIT TUNNEL
MOROCCO	



LONG AND DEEP TUNNELS

ITALY-AUSTRIA ▶ 55.0 km
<i>Brenner Base Tunnel (BBT)</i>
ITALY-FRANCE ▶ 57.7 km
<i>Lyon-Turin Base Tunnel</i>
ARGENTINA-CHILE ▶ 52.5 km
<i>Corredor Bioceánico Aconcagua</i>
SPAIN-MOROCCO ▶ 38.7 km
<i>The Gibraltar strait fixed railway link</i>
ITALY ▶ 20.0 km
<i>New Terni-Spoleto railway line</i>
ITALY-FRANCE 13.7 km
<i>Upgrading of the Frejus historical tunnel</i>
INDIA ▶ 8.7 km
<i>Kashmir new railway line, Dharam-Qazigund track</i>
VENEZUELA ▶ 6.9 km
<i>Caracas-Cua railway line</i>
AUSTRALIA ▶ 6.3 km
<i>Northern Sydney Freight Corridor</i>

OUR SKILLS

- From High Speed to Commuter Rail projects
- Define functional layout for line and station
- Complete design from alignment to signaling 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 signing 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	▶ GRENOBLE-SISTERON HIGHWAY A51
FRANCE	▶ MONTECARLO TUNNEL DESCENDANT OUEST
GREECE	▶ EGNATIA ODOS MOTORWAY
GREECE	▶ SIGMA 1 AND SIGMA 2 TUNNELS
INDIA	▶ RAZDHAN PASS AND BARALACHALA PASS TUNNELS
INDIA	▶ CHENNANI-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	▶ TORINO-BARDONECCHIA HIGHWAY A32
ITALY	▶ SALERNO-REGGIO CALABRIA HIGHWAY
ITALY	▶ ENLARGEMENT VENICE-TRIESTE HIGHWAY A4
ITALY	▶ DOUBLING OF THE TORINO-SAVONA HIGHWAY A6
ITALY	▶ MONT BLANC-AOSTA HIGHWAY A5 AND AOSTA UNDERGROUND BY-PASSES TO GRAN SAN BERNARDO PASS
ITALY	▶ VARIOUS UNDERGROUND CITY BY-PASS [CARCARE, PORTE, OMEGNA, MENAGGIO]
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 AMARANTE HIGHWAYS
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
Chennani-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]

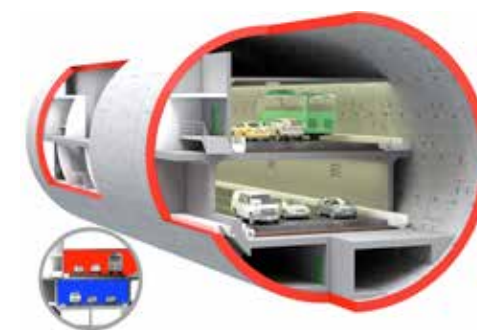


OUR SKILLS

- 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 and 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	▶ CHOULLY SEWAGE TUNNEL
FRANCE	▶ BAJOLI HOLI HPP 180 MW
INDIA	▶ KOKHAV HAYARDEN PSP 340 MW
ISRAEL	▶ 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
USA	▶ NEW YORK SUFFOLK OUTFALL REPLACEMENT PROJECT



15 km
Flood Control
Tunnels



143 m
RCC Chontal
Dam



72.5 km
Water Transfer
Tunnel

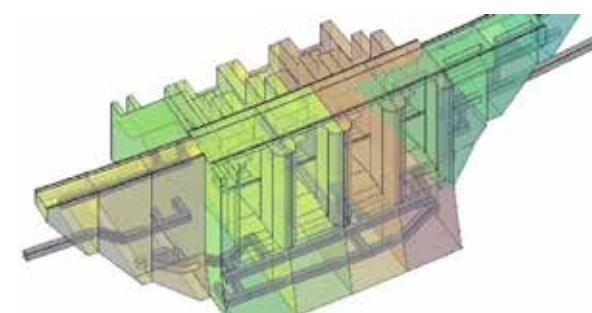


OUR SKILLS

- 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 ▶ GEOLOGICAL STUDIES FOR THE RAILWAY PROJECT OF CORREDOR BIOCEANICO ACONCAGUA
- CHILE ▶ GEOLOGICAL INVESTIGATION FOR THE HIGH-SPEED RAILWAY SAO PAULO-RIO DE JANEIRO
- BRAZIL ▶ 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 ▶ SETTLEMENTS & 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 ▶ LONG AND DEEP TUNNELS FOR HSR
- SPAIN- AUSTRIA ▶ TURIN-LYON, PERTHUS, BRENNERO, TERZO VALICO MILAN-GENOA
- MALAYSIA ▶ SLOPE PROTECTION ON NORTH SOUTH EXPRESSWAY, IPOH
- MEXICO ▶ 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, RUFUJI, 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
geotechnical 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

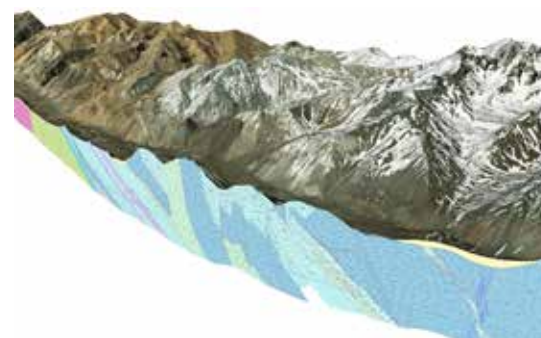
- Planning and management of: in situ geological investigations geological surveys and geotechnical measurements
- Interpretations of geological and geotechnical data

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.it

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 tunnels and followed the construction of over 3300 projects.



GEODATA is certified
under ISO 9001, ISO 14001
and OHSAS 18001