

G.T. Engineering S.r.l. Civil Engineering Consultants

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#### **OVERVIEW**

Since 1990 GTE has been providing civil engineering services to construction companies, businesses, authorities and private individuals.

GTE offers expertise and experience in the following fields:

- Buildings
- Transport infrastructures
- Topography
- Civil works for the Oil & Gas sector

The company has its own internal staff of technicians, as well as a network of consultants, which means it can quickly tackle multidisciplinary projects of any size with the aim of providing a top quality, comprehensive service.

A pragmatic approach to problems and the speed at which we come up with solutions are the strong points all Clients recognize.

#### EXPERTISE

#### Buildings

- Structural design
- Architecture
- Building revamping
- Project management

#### Infrastructures

- Roads and railways design
- Structures
- Earthworks digital modeling and optimization
- Urban planning
- Road sign structures
- Worksite desing and operational phases study
- Guardrails design
- Exixting bridges and structures safety evaluation and revamping design

#### Topography

- Framework and high density topographic networks design
- Cartography testing
- Survey and tracking
- Topographic monitoring (structural settlements etc)
- GIS

#### Civil works design for pipeline projects

- Foundations, anchor blocks, supports
- Permanent and temporary structures
- Microtunnel starting pits
- Topographical tracking and checking
- Pipeline launch design

#### **QUALITY ASSURANCE**

GTE works in observance of a company Quality System in accordance with standard UNI EN ISO 9001 for the provision of "services of architectural project design, calculation of structures for civilian and industrial construction and project engineering of roads and accessory services; performance of topographic surveys with the preparation of technical documents" certified by **DNV GL Business Assurance Italia S.r.l.**, an organization accredited by Accredia, with Certificate no. CERT-02421-97-AQ-BOL-SINCERT first issued on 11/12/1997.

#### TURNOVER

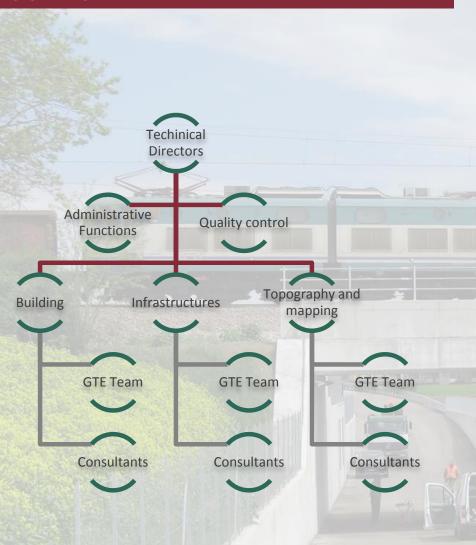
Year	2008	2009	2010	2011	2012	2013
1000 x €	1.746	1.828	2.039	1.877	2.316	1.840

Since October 2013 GTE has been a member of the **OICE** (*Employers' Association*, belonging to Confindustria, representing Italian engineering, architectural and technical economic consulting organizations).





#### ORGANIZATION



## TEAM

#### TECHNICAL DIRECTORS

**Paolo Manfredi**, Civil Structural Engineer, is now President and Technical Director of GTE. He graduated in Civil Engineering in 2000 and has been an employee of the company since March 2001. He is in charge of the structural and building sector of GTE.

**Luca Testa,** Civil Road Engineer, is now CEO and Technical Director of GTE. He graduated in Civil Engineering in 1998 and has been an employee of the company since 1999. He is the coordinator of the road and railways design team.

#### **EXPERT CONSULTANT ENGINEER**

**Maurizio Ghizzoni**, Civil Engineer. He graduated in 1972 from the Milan Polytechnic Institute with a degree in Civil Engineering. He has been registered with the provincial Order of Engineers in Parma, no. 631 since 1973 and is listed among the commissioning engineers of the same Order. Extensive knownledge of all civil engineering sectors, top expert in topography and mapping.

ENGINEERING TEAM
10 designers
2 HSE experts
6 draftmen
1 geologist

ADMINISTRATIVE FUNCTIONS

2 employees



### **MAIN CLIENTS**

Anas S.p.a. Annoni S.p.a. Ativa Engineering S.p.a. Autocamionale della Cisa – Cisa Engineering Autostrade Centro Padane S.p.a. Barilla S.p.a. Consorzio ARCO TEEM Consorzio BBM Consorzio Cepav Due Consorzio Cepav Uno Eni Group Gas Plus S.p.a. Grandi Lavori Fincosit S.p.a. IBIS Salumi S.p.a. Impresa Ghizzoni S.p.a. Impresa Pizzarotti e C. S.p.a. Italferr S.p.a. Max Streicher Italia S.p.a. Metropolitana Milanese S.p.a. Net Engineering S.p.a. Progin S.p.a. Saipem S.p.a. Sea Segnaletica S.p.a. Sicim S.p.a. SINA S.p.a. Sinelec S.p.a. Snam Rete Gas S.p.a. Technital S.p.a. UNIECO S.c.r.l.

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# **INFRASTRUCTURES**

#### SS195 CAGLIARI-PULA MOTORWAY – SARDINIA ITALY



- The new 4 lanes motorway will connect Cagliari to Pula, the project involves 15 km of road, 5 viaducts, 5 overbridge and 12 underpasses.
- CLIENT: GRANDI LAVORI FINCOSIT SPA
  SERVICES: DETAILED DESIGN, SITE ASSISTANCE

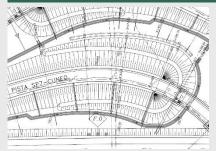
#### HISTORICAL BRIDGE STRUCTURAL SAFETY STUDY - PARMA - ITALY



Lamberti Bridge is a 3 arches Maillard type concrete structure on a main road in the Province of Parma. Built in 1933 it now needs a seismic retrofit and structural restoration.

- CLIENT: PARMA PROVINCA ADMINISTRATION
- SERVIZI: SEISMIC AND STRUCTURAL EVALUATION

### A33 ASTI-CUNEO MOTORWAY - PIEDMOND REGION - ITALY



The motorway will connect the two important cities of the Piedmont region. The road has 2 ways 4 lane section

- CLIENT: SINA SPA
- SERVICE: CONCEPT AND DETAILED ROAD DESIGN, RETAINING WALLS, ACOUSTIC BARRIERS, GUARDRAIL, UNDERPASSES, CULVERTS.

#### MILAN OUTER EASTERN BYPASS - TEEM - MILANO - ITALY



The project consists in the construction of a 32km multi-lane bypass running from Melegnano on the A1 Milan-Bologna Motorway to Agrate Brianza on the A4 Milan-Venice Motorway.

- CLIENT: IMPRESA PIZZAROTTI SPA, SINA SPA
- SERVICES: DETAILED DESIGN OF CONNECTING ROADS, DETAILED DESING OF 11000m OF ACOUSTIC BARRIERS

#### FIDENZA-CREMONA RAILWAY UNDERPASS - ITALY



In 2010 a 2km bypass connecting Sp46 to SP588 near Busseto, Province of Parma. A concrete monolithic underpass was needed to pass the RFI Fidenza-Cremona railway.

- CLIENT: COMUNE DI BUSSETO CEPAV UNO
- SERVICE: PRELIMINARY AND DETAILED
   DESIGN OF ROAD AND STRUCTURES, WORKS
   SUPERVISION

#### ETIHAD RAIL STAGE 1 – UAE



The stage 1 of the project will include the connections between Ruwais to Abu-Dhabi and Shah and the total lenght is 264km.

- CLIENT: SAIPEM UAE
- SERVICE: CULVERTS AND UNDERPASSES DESIGN, ROAD DESIGN, HYDRAULIC WORKS DESIGN OF THE MIRFA DEPOT.



# **BUILDINGS**

#### **BARILLA BAKERY PLANT IN RUBBIANO**



GTE is Barilla's main civil engineering consultant for the 28200 sqm plant of Rubbiano. After the 2012 earthquake, the Company started the seismic retrofitting of the plant in order to increase safety to 60% of the design seismic load for this region.

- CLIENT: BARILLA SPA
   SERVICE: SEISMIC RETROEITTING DE
- SERVICE: SEISMIC RETROFITTING DESIGN

#### PIAZZA DELLA STAZIONE DI FIDENZA – BIKE PARKING



The project includes an underground parking for 400 cycles, the restoration of the square and a new multi-functional building.

- CLIENT: UNIECO Soc. Coop
- SERVICES: DETAILED STRUCTURAL DESIGN, MEP DESIGN, SITE ASSISTANCE

#### **MONTESANO GAS CENTRAL – NEW WAREHOUSE**



The Montesano Snam Plant is located in the highest seismic level of Italy. Overstructure is a concrete prefab frame, foundations are cast in place footings over a pile-consolidated soil.

CLIENT: GHIZZONI SPASERVICE: STRUCTURAL DESIGN

## SUGAR PRODUCTION PLANT RESTORATION - ERIDANIA



Borsari Group bought the former sugar production plant from Eridania in order to transform it in a cultural and commercial center.

- CLIENT: BORSARI GROUP
- SERVICE: STRUCTURAL DESIGN AND SITE SUPERVISION

#### **INFANTRY SCHOOL IN SAN PROSPERO – PARMA**



The structure of this building is made by PlastBau walls. These stay in place EPS formork include a prefabricated reinforcing bar system. Class A Energy building

CLIENT: COMUNE DI PARMA – IMPRESA BUIA SERVICE: STRUCTURAL DETAILED DESIGN

### L'AQUILA RESEARCH CENTER ON RENOWABLE ENERGY



After 2009 L'Aquila strong earthquake, ENI Group offered Univiersity of L'Aquila a complex of building in order to develop a renewable energy research center.

- CLIENT: ENI GROUP
- SERVICES: PRELIMINARY AND DETAILED STRUCTURAL DESIGN



# CASE STUDIES

## **TOPOGRAPHY AND MAPPING**

#### **ETIHAD RAIL STAGE 1 – UAE**



The stage 1 of the project will include the connections between Ruwais to Abu-Dhabi and Shah and the total lenght is 264km

- CLIENT: SAIPEM UAE
- SERVICE: FRAMEWORK AND HIGH DENSITY NETWORK TESTING AND GENERAL TOPOGRAPHIC CONSULTANCY

#### **HIGH SPEED RAILWAY MILANO-BOLOGNA**



The High speed railway connect Milan to Bologna (180 km) and is part pf the national high-speed train project.

- CLIENT: CEPAV UNO
- SERVICE: FRAMEWORK AND HIGH DENSITY NETWORK DESIGN AND GENERAL TOPOGRAPHIC CONSULTANCY

#### **TRAMWAY DE COSTANTINE - ALGERIA**



The line runs from the city's old-town alongside the main historical Mosque, passes over the slope of the Oued Rhumel, and proceeds through the university area, ending in the modern part of the city. The works include 11 stations, two viaducts stretching 465 and 114 metres, an underpass for urban traffic.

- CLIENT: IMPRESA PIZZAROTTI S.P.A.
- SERVICE: TOPOGRAPHIC SURVEYS AND FRAMEWORK NETWORK DESIGN AND TESTING

#### DGE – ENI HEADQUARTER IN MILANO



Eni Group is building new headquarters in San Donato Milanese. The project includes 3 main buildings, underground parking and other facilities

- CLIENT: ENI Group
- SERVICE: STRUCTURAL MONITORING OF THE BUILDING SOURROUNDING THE WORKSITE

#### **HIGH SPEED RAILWAY MILANO-VERONA**



The High speed railway connect Milan to Verona (140 km) and is part pf the national high-speed train project.

- CLIENT: CEPAV DUE
- SERVICE: FRAMEWORK AND HIGH DENSITY NETWORK TESTING, CARTOGRAPHY TESTING AND GENERAL TOPOGRAPHIC CONSULTANCY

#### A3 SALERNO-REGGIO CALABRIA STAGE 3 MOTORWAY



G.L.F. s.p.a. is working on what is called Macro Lotto 3 part 1 for about 9 kms with two tunnels 3.800 meters long and the 120m span viaduct Caffaro.

- CLIENT: GRANDI LAVORI FINCOSIT SPA
- SERVICE: STRUCTURE POSITION CHECK, STRUCTURE TRACKING, SURVEYS



# CASE STUDIES

# **OIL & GAS**

#### **BUNDE-ETZEL 48" PIPELINE (BEP) PROJECT - GERMANY**



For the Westerwoldsche AA and Wymeerer Sieltief river crossing the company decided to use an Herrecknect 750ton pipe thruster. Due to the very soft and muddy soil conditions, the installation required a temporary basament with 16 1000mm pipes driven in the soil and a complex system of steel beams to support the pipe thruste, to be built in less than 10 days.

CLIENT: GHIZZONI SPA SERVICE: PIPELINE LAUNCH WITH PIPE-THRUSTER FEASIBILITY STUDY, PIPE THRUSTER TEMPORARY BASEMENT DESIGN, SITE ASSISTANCE.

#### **POGGIO RENATICO-CREMONA PIPELINE PROJECT - ITALY**



The 1200mm natural gas pipeline, designed to strengthen one of the most important gas networks in the North of Italy, has a lenght of 85 km and a working pressure of 75 bars. Several *trenchless* technologies such as minitunnels, controlled horizontal drilling and direct pipes were adopted.

CLIENT: GHIZZONI SPA – SNAM RETEGAS
 SERVICE: MICROTUNNEL LAUNCHING
 PITS,PIPELINE LAUNCH DESIGN, CIVIL
 WORK DESIGN, TEMPORARY
 STRUCTURES DESIGN

#### **MAMBA LNG ONSHORE PLANT - MOZAMBIQUE**



In order to optimize the earthworks for the Eni onshore LNG plant (area about 300 ha) a DTM model has been performed.

- CLIENT: SAIPEM SPA
  - SERVICE: DIGITAL MODEL OF THE TERRAIN, DESIGN ELEVATIONS AND EARTHWORKS OPTIMIZATION

#### **BORDOLANO STORAGE PLANT - ITALY**



The new site (90000 sqm) will include a compressor and treatment station which will consist of 9 wells (2 existing wells and 7 new wells) and a pipeline of approximately 2 km connected to the Snam network.

- CLIENT: MAX STREICHER ITALIA
- SERVICE: TEMPORARY WORKS DESIGN, STRUCTURAL DETAILED DESIGN

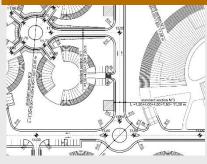
## SAN POTITO - CERIGNOLA STORAGE PLANT - ITALY



The San Potito and Cotignola field has a storage capacity of about 400 million cubic metres of natural gas and consists of 11 active wells.

CLIENT: GHIZZONI S.P.A. – EDISON S.P.A. SERVICE: CIVIL WORKS STRUCTURAL DETAILED DESIGN

#### **ZUBAIR OIL FIELD DEVELOPMENT PROJECT - IRAQ**



The ZFOD includes a Office District and a Residential Village for a total area of 800000sqm.

- CLIENT: ENI GROUP
- SERVICE: ROAD AND SEWAGE SISTEM DESIGN. BILL OF QUANTITIES.

