



F&R
WORLDWIDE

ENVIRONMENTAL · GEOTECHNICAL · CONSTRUCTION SUPPORT

Geotechnical Services

Selected Project Profiles

January 10th, 2010

F&R Worldwide



Representative projects: AICI-SP

US Embassy Compound – Bucharest, Romania

- F&R Worldwide was the independent geotechnical engineering testing agency to perform field quality-control testing on earthwork and foundation subgrade inspections in order to verify that these activities met construction documents and specifications. Specific field tests included subgrade inspections by Dynamic Cone Penetration (DCP), compaction testing on new structural fill, and laboratory materials testing.
- F&R Worldwide was also selected as the independent geotechnical engineering testing agency to provide quality assurance services for the aggregate pier soil improvement elements to support the more heavily loaded foundations. Specific duties included monitoring the modulus test for verification of design parameters, monitoring the daily installation of the aggregate pier elements, and performance of DCP tests.
- **Scope:** Geotechnical Engineering
- **Facility Type:** Embassy



Representative projects: **Bovis Lend Lease**

Geotechnical Investigation for a Residential Complex – Brasov, Romania

- F&R Worldwide was selected to conduct a geotechnical investigation for a high-rise residential complex. The project included fieldwork, lab testing on the recovered rock cores and geotechnical engineering analysis in order to provide design parameters and recommendations for five tower buildings of 24 and 18 stories.
- The fieldwork included geotechnical borings with continuous rock coring and sampling. Our experienced drill crew and field engineer provided invaluable insight to the recognized karst dissolution features.
- Using the results obtained from the fieldwork, laboratory testing, engineering analyses and experience, we were able to provide the client with optimized foundation design recommendations and parameters for cost-effective solutions.

- **Scope:** Geotechnical Services
- **Facility Type:** Residential Development



Representative projects: S.C. Petrom S.A. – Member of OMV Group

Geotechnical Investigation and Engineering Evaluation for Infrastructure Projects – Petrobrazi Refinery, Romania

- F&R Worldwide completed a full scope geotechnical investigation for the construction and installation of several industrial units at the Petrobrazi Refinery under a frame contract for Geotechnical Services with Petrom.
- Field investigations included drilling activities with borings to 40 meters, performing SPT's and collecting undisturbed and disturbed samples. Geophysical investigations, including seismic profiling, soil electrical resistivity and ground penetrating radar mapping were also carried out.
- The project report included foundation design parameters for footings, mat foundations and piles, site preparation recommendations. The report was fully compliant with Romanian and European geotechnical standards.

- **Scope:** Geotechnical Services
- **Facility Type:** Rehabilitation and New Refinery Units



Representative projects: **S.C. Epstein Architecture & Engineering S.R.L.** **Geotechnical Investigation, Engineering and Technical Assistance for Oil Storage Depot – Albotesti, Romania**

- F&R Worldwide completed a full scope geotechnical investigation for the rehabilitation, construction and installation of numerous oil structures at the Albotesti Oil Storage Depot.
 - Field investigations included drilling activities, performing SPT's, collecting undisturbed and disturbed samples, penetrometer tests. Geophysical investigations, including seismic profiling, soil electrical resistivity and ground penetrating radar mapping were also carried out.
 - The project report included foundation design parameters for spread footings and mat foundations, as well as ground improvements and site preparation recommendations. The report was fully compliant with Romanian and European geotechnical standards.
 - During the construction phase, our specialists provided assistance to the client by supervising the foundation construction and ground improvement works.
- **Scope:** Geotechnical Services, Technical assistance
 - **Facility Type:** Oil Storage Depot



Representative projects: Newland Estates Ltd.

Geotechnical Investigation for a Logistics Warehouse and Office Development – Pitesti, Romania

- F&R Worldwide was selected to conduct a geotechnical investigation and environmental site assessment for a future logistics warehouse and office complex. The Project included fieldwork, sample analysis and foundation recommendations for a 65,000 m² structure.
- The fieldwork included geotechnical borings, with in-situ tests, water and soil sample collection, and eight plate load tests at depths of one and two meters.
- The Environmental Site Assessment focused on the historical and present conditions of the environmental components for the site and its surroundings.
- Using the results obtained from the in-situ and plate load tests, and the laboratory analyses, we were able to provide the client with optimized foundation-design recommendations and parameters.
- **Scope:** Geotechnical, Environmental
- **Facility Type:** Industrial and Office Development



Representative projects: Schnabel Engineering

US Embassy Compound – Pristina, Kosovo

- F&R Worldwide provided supervision of the preliminary geotechnical investigation for the new US Embassy in Pristina, Kosovo.
- The investigation included several soil borings with in-situ testing, installation of groundwater monitoring wells, and collection of soil and water samples for environmental and geotechnical analysis.

- **Scope:** Geotechnical Engineering
- **Facility Type:** Embassy



Representative projects: Echo Investment

Geotechnical Investigation for a Commercial Complex – Brasov, Romania

- F&R Worldwide completed a preliminary geotechnical investigation for the construction and installation of a commercial center in Brasov. The report was necessary for obtaining construction permits and for site layout and preliminary project design.
- Field investigations included drilling, performing SPTS and collecting undisturbed and disturbed samples. Monitoring wells were also installed and sampled.
- The project report included basic foundation design parameters, site preparation recommendations, and a characterization of the geotechnical risk. The report met or exceeded Romanian geotechnical standards.

- **Scope:** Geotechnical
- **Facility Type:** Commercial



Representative projects: S.C. Petrom S.A. – Member of OMV Group

Hydrogeological Study for Contamination Evaluation of the Phreatic Aquifer With Salt Water – Cocu Oil Extraction Area Arges County, Romania

- F&R Worldwide was selected to conduct a hydrogeological study for establishing the contamination range and solution for remediation of the aquifer polluted with injection salt water.
 - The Project included fieldwork, sample analysis, monitoring well installation, hydrogeological tests and engineering analysis for development of a hydrogeological model of the aquifer in the area.
 - Using the hydrogeological model build up based on the data obtained from the fieldwork, laboratory analyses and hydrogeological tests, we were able to provide the client with optimized solutions to stop spreading the actual polluting phenomena, reducing the risk of new incidents to occur and rehabilitation measures for decontamination of the aquifer.
- **Scope:** Hydrogeological Services
 - **Facility Type:** Oil Extraction Field





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