

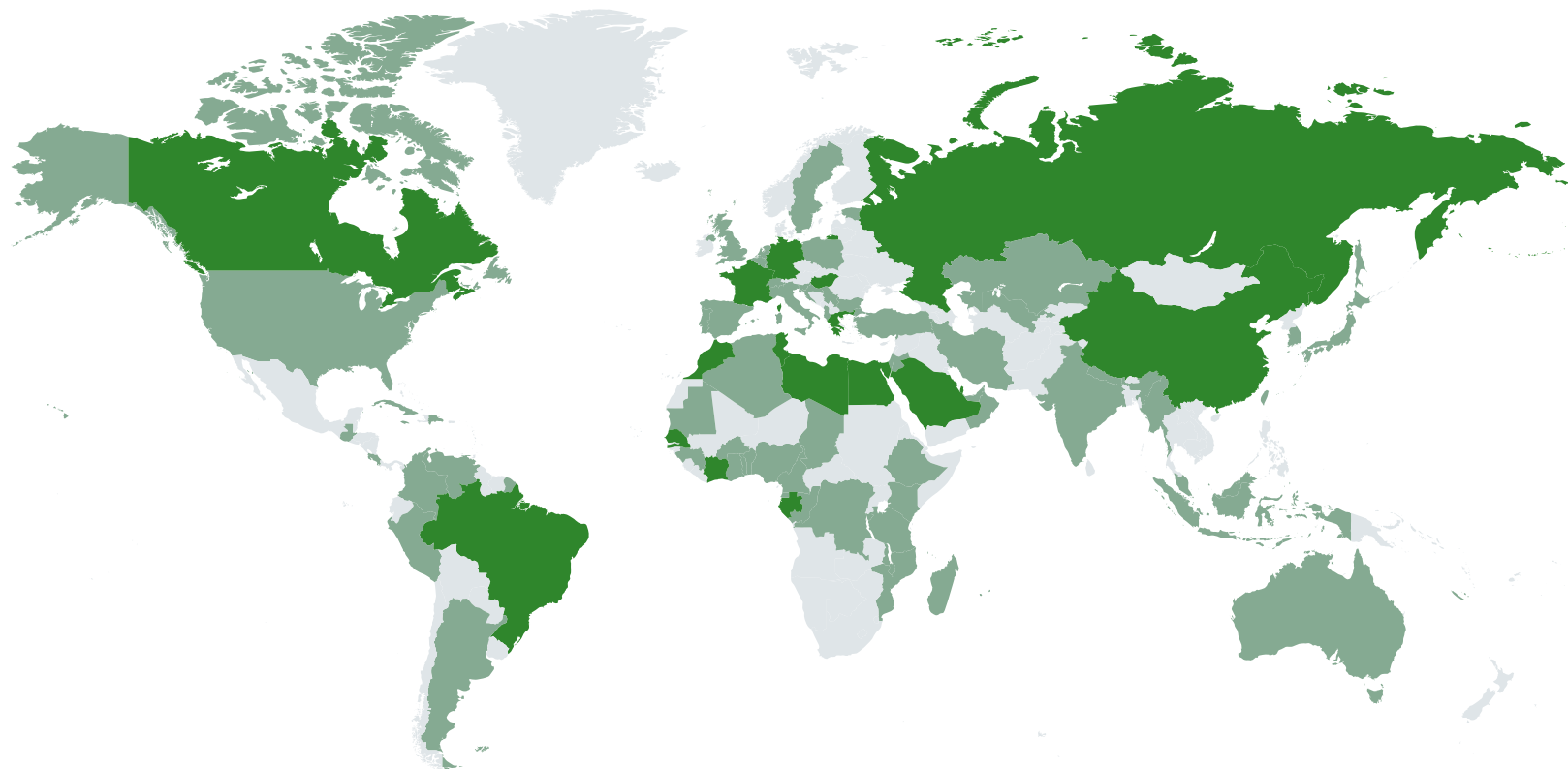


setec  
terrasol

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setec  
international

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setec  
lerm

**setec's** position as one of the global leaders in engineering is based on more than 50 years of demonstrated technical excellence. Its 2,400 employees worldwide have been involved in some of the world's leading projects in transportation, water, buildings, energy efficiency, digital infrastructure and industrial facilities. Its engineers continuously enrich their expertise to design, model and implement sustainable and renewable solutions. As an independent company owned by its engineers, **setec** regenerates its energy through their professional development. Their curiosity and appetite for challenge allows **setec** to constantly invent new disciplines and approaches that are focused entirely on meeting the needs of its customers.



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setec

- Soil investigations management
- Geotechnical syntheses
- Project design/optimization
- Numerical modeling
- Works supervision
- Diagnostic/expertise
- Geotechnical software

## EXPERTISE Geotechnical engineering



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A recognized leader in geotechnical engineering in France and abroad, **setec** supports its customers, whether owners, contractors or civil engineering firms.

## From modeling ... to works supervision



Preliminary studies of sites, supervision of soil investigation programs, design, modeling and works supervision, **setec's** numerous references illustrate its expertise on all types of geotechnical structures, whether involved as project manager or in delivering specific expertise with projects stakeholders. Its engineers and experts, all passionate about their jobs, are constantly attentive to its customers to optimize their projects in increasingly complex contexts, leveraging advanced modeling and construction technologies as well as laboratory expertise relating to materials. Innovation in these areas is central to **setec's** activity and ensures the most relevant technical choices.

With more than 2,400 employees around the world, including international experts, **setec** incorporates all of the skills needed in this area to support clients on all projects, in France and abroad.



**setec** is involved in the national and international scientific community: professional associations, research programs, working groups, standardization, initial training and continuing education.

### EXPERTISES

- Engineering geology
- Behavior of soils and rocks
- Hydrogeology
- Earthworks engineering
- Soil reinforcement
- 2D/3D numerical modeling
- Soil/structure interaction
- Seismic design
- Thermo-mechanical models
- Risk analysis (qualitative / quantitative)
- Materials: weathering, geomaterials, special grout formulation
- Subsurface geophysics

### MISSIONS

- Soil investigations management
- Geotechnical syntheses
- Geological hazards management
- Design, modeling, project optimization

- Design control as Independent Engineer
- Works supervision
- Interactive geotechnical design
- Technical assistance to owner
- Consulting, expertise, training
- Development and sales of geotechnical software

### STRUCTURES

- Earthworks, platforms, pavement structures
- Tunnels and underground structures
- Civil engineering structures
- Industrial and oil & gas facilities / platforms
- Towers and buildings
- Port and airport structures
- Maritime and river structures
- Retaining structures
- Special soil improvement works



### MAJOR LINEAR PROJECTS

**setec** is involved in railways and highways projects, either as a project manager (design and works) for contracting authorities or within engineering teams for major contractors. **setec** handles all geotechnical aspects of these projects (new or rehabilitation): earthworks, standard and exceptional civil engineering structures, platforms and pavement structures.

*Le Mans-Rennes High Speed Line – Jouanne Valley (France)*



### BRIDGES AND VIADUCTS

**setec** performs the design and optimization of foundations of bridges piers and abutments: deep, shallow, or piled-raft foundations, soil reinforcement, anchor blocks. **setec's** services include seismic design.

*Cofferdam for one pier of the Raymond Barre bridge (France)*



### ENERGY AND INDUSTRY

**setec** supports major stakeholders in the field of energy and industry as part of the construction of new facilities or evaluation of existing installations: foundations of structures (reservoirs, buildings, turbines, wind farms, solar panels, ...), access infrastructures (tracks, roads, railways...), hydraulic galleries, industrial platforms, etc.

*Shah Deniz project (Azerbaijan)*

### UNDERGROUND PROJECTS

**setec** provides its expertise to its customers on numerous underground structures in the framework of transportation (rail, road, metro) or industrial projects: boring methods (conventional or mechanized), soil reinforcement techniques, finite elements modeling (2D / 3D) or management of surface settlements.

*Croix-Rouisse tunnel breakthrough (France)*



### BUILDINGS

**setec** designs and optimizes (shallow, piled-raft or deep) foundations and retaining structures for high-rise towers and public / industrial buildings, taking into account soil / structure interaction, groundwater levels and flows, as well as constraints imposed by the urban environment.

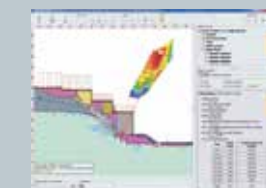
*D2 tower in La Défense (France)*



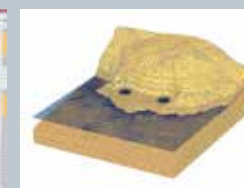
## Research & Development

**setec** develops methods and tools for geotechnical calculation and evaluation

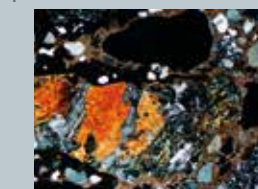
- Participation in research projects (ASIRI, RUFEX, SOLCYP, etc)
- Development of calculation methods and geotechnical software (Talren, Foxta, K-Réa, Straticad) as well as advanced modeling (including 3D finite element models)
- High-performance non-destructive testing, innovative measurement instrumentation, laboratory development of special binders.



1. Talren v5 software



2. Plaxis 3D modeling (3<sup>rd</sup> Bosphorus bridge in Turkey)



3. Laboratory weathering expertise

### HYDRAULIC, PORT AND AIRPORT DEVELOPMENT PROJECTS

**setec** works alongside operators of waterways, ports and airports as well as in the field of hydraulic structures to address specific geotechnical aspects: quay walls, basins, crane tracks, locks, dikes, logistics platforms, airport tracks and runways, pavements.

*Port-Gentil Airport (Gabon)*

