



**SOLETANCHE BACHY**

# Geotechnical and civil engineering contractors

## Engineering works interacting with the ground:

- Underground car parks
- Tunnels and metros
- Port construction
- Storage tanks and drainage
- Environmental protection

## Special Engineering Works:

- Urban excavations
- Dams
- Foundations for building or civil engineering works
- Slope stabilisation
- Structural refurbishment and underpinning works

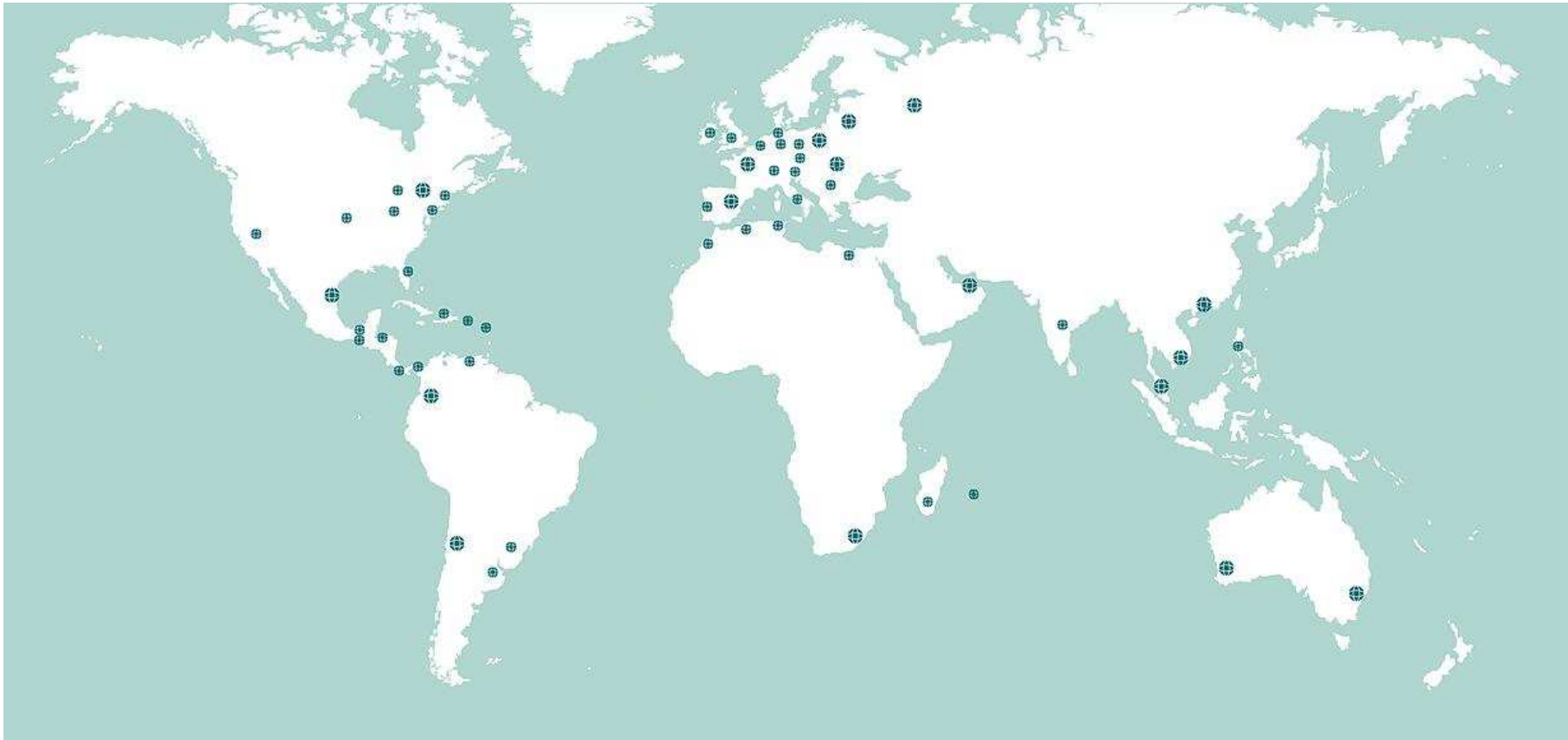
## Soletanche Bachy key figures

- Consolidated turnover of 1,1 billion euros
- 6 895\* permanent staff of more than 60 nationalities
- A global network of more than 870\*\* engineers and managers
- Projects in over 100 countries
- Locations in over 40 countries
- 12 specialised subsidiaries
- 15 prizes for innovation awarded by the FNTP

(\* 8560 managed workforce)

(\*\* 950 managed workforce)

# Soletanche Bachy key figures



# Engineering works interacting with the ground

- **Wherever there is a significant component of "ground works" that represents**
  - an integral part of the works,
  - a significant risk proportion of the contract.
- **Project management:**
  - all work interfaces and trades,
  - regardless of size.
- **Reliant on in house resources to undertake all complex elements related to geotechnics**

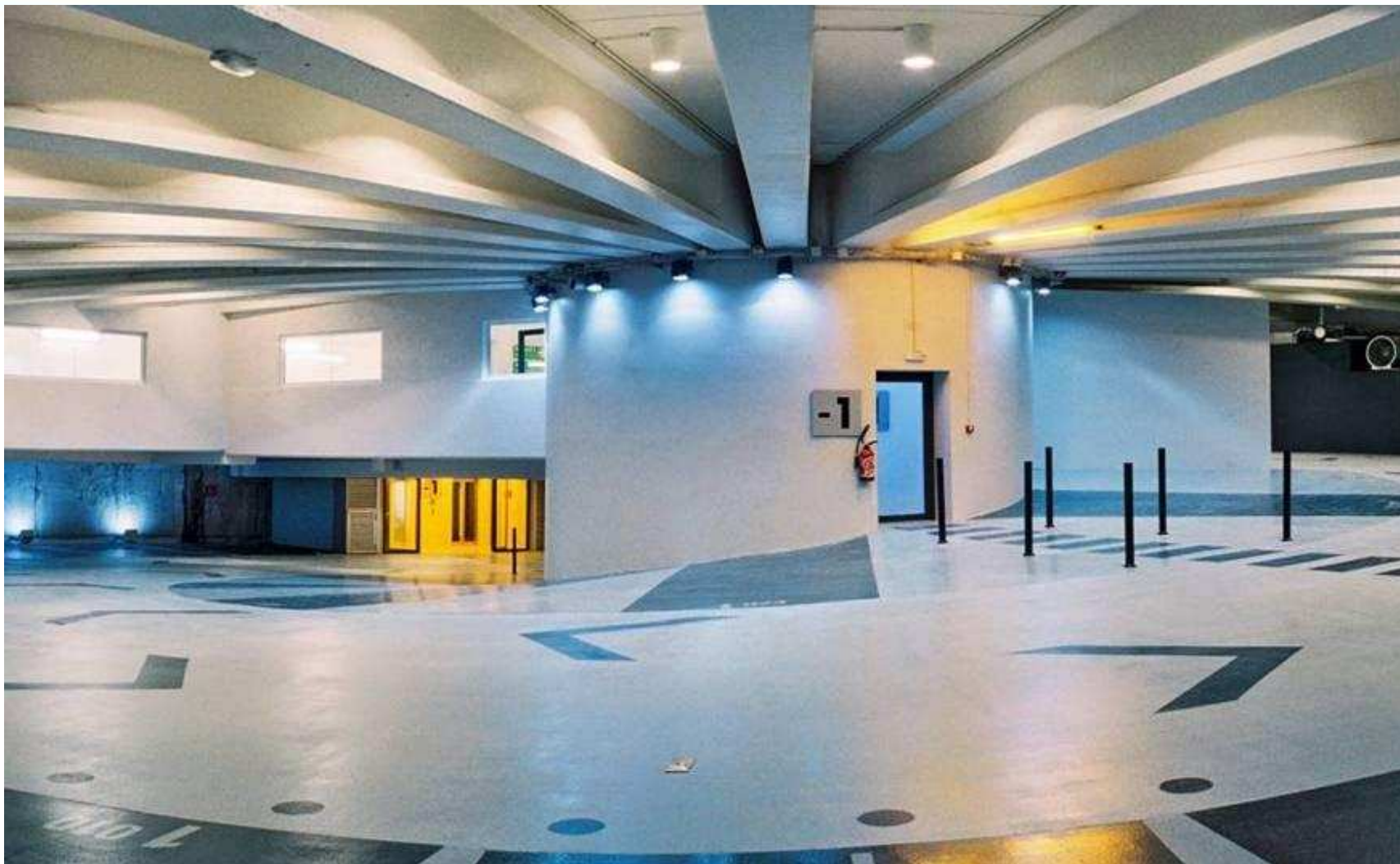
# Underground car parks

- **Turnkey contracting capability:**
  - feasibility studies,
  - construction design and build,
  - provision of finance,
  - project delivery on a turnkey basis.
  
- **Extensive geotechnical experience to optimise projects**

## Place du Marché-Neuf car park - Saint-Germain-en-Laye, FRANCE



## Place d'Arvieux car park - Marseille, FRANCE





# Tunnels et metros

## Three specialised subsidiaries

- **CSM Bessac**

- design and construction of tunnel boring machines Ø 0,5 m to Ø 5 m,
- full underground construction capability.

- **Soletanche Bachy Tunnels**

- unique global expertise in all associated specialist techniques (geotechnical survey, grouting, anchoring, nailing, freezing, instrumentation, monitoring, diaphragm walling and other retaining structures for access).

- **Specialised subsidiary SOTEM**

- maintenance of tunnels and galleries.

## China Light & Power Hong Kong Ltd, CHINA



# Tunnel A50/57 Link - Toulon, FRANCE



# Storage tanks and drainage

- **Extensive experience with a variety of hydraulic structures:**
  - storm water storage tanks,
  - potable water reservoirs,
  - pumping stations,
  - water treatment plants,
  - refurbishment and construction of sewers and drainage tunnels.
- **High expertise in underground and geotechnical work provides good competitiveness.**

## Joffre storage tanks - LOOS, FRANCE



## St Jean de la Ruelle storage tanks – Orleans, FRANCE



# Environmental protection

- **Stabilisation of waste, rehabilitation and treatment of polluted sites**
- **Cleaning of discharge to required environmental control levels and construction of waste storage facilities**
- **Protection of the ground water table:  
active and passive cut off walls for containment, reactive barriers**
- **Specialised subsidiary: Sol Environment**

# Rehabilitation of a polluted industrial site of a metallurgical factory, FRANCE





## Temporary water treatment plant – Île-de-France, FRANCE



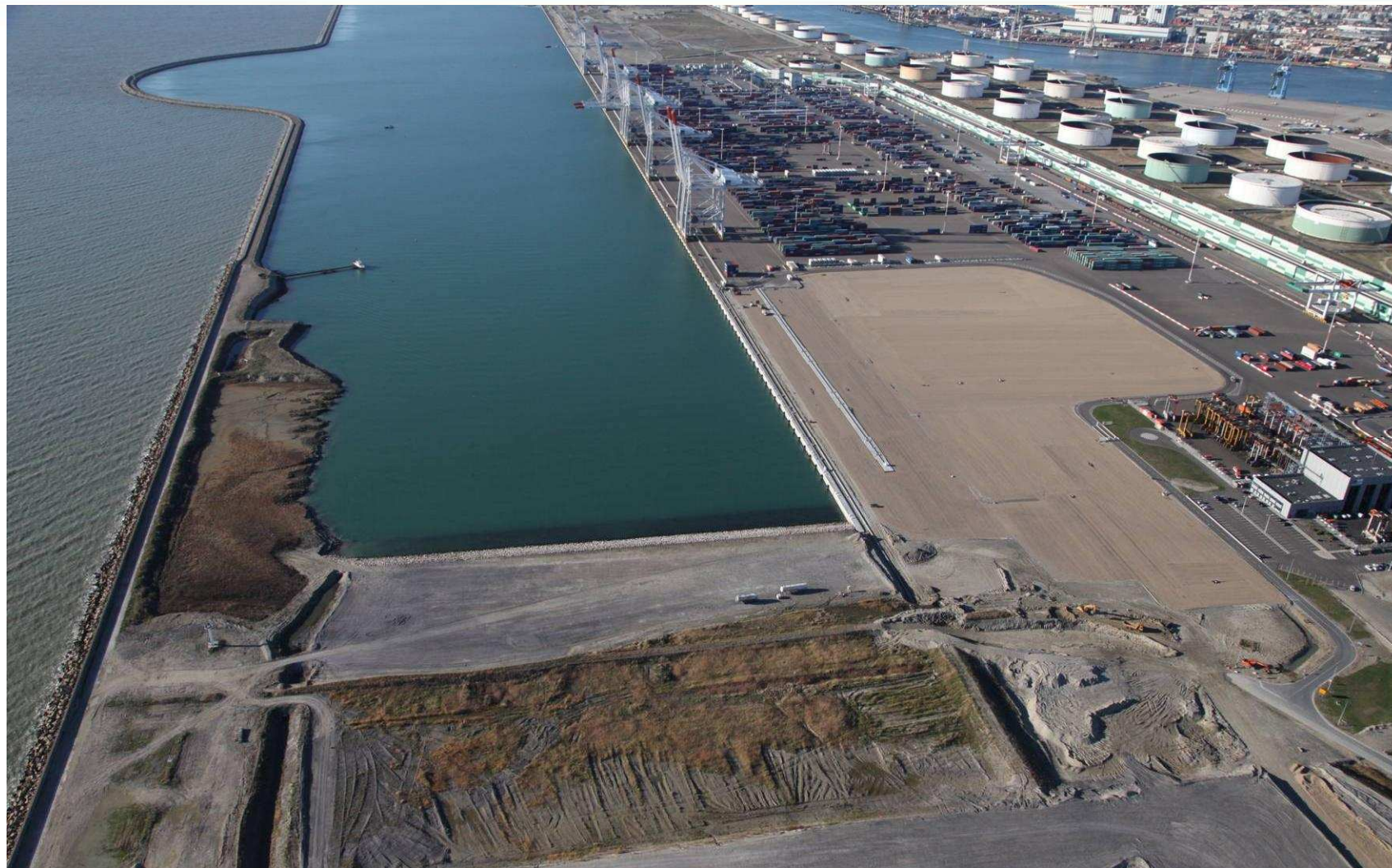
# Port construction

- Quay walls, dry docks
- Landing stages, dolphins, sewers, gabions
- Ground water lowering for major excavations
- Underwater inspections and operations
- Specialised subsidiary in marine works: **Balineau**

# Cuenca del Plata terminal - Montevideo, URUGUAY



## Port 2000 Phase 2 , container terminal - Le Havre, FRANCE



# Safina dry dock – Dubai, UNITED ARAB EMIRATES



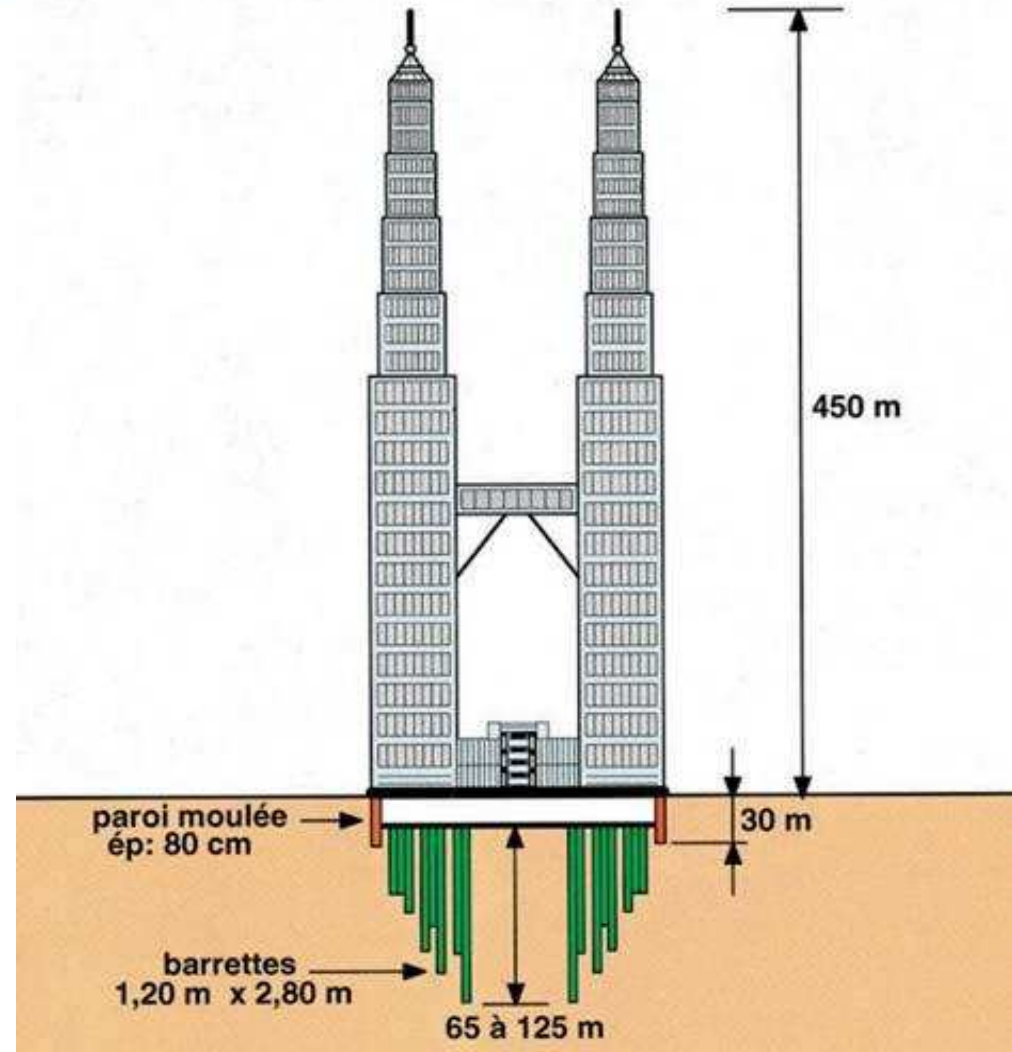
# Special Engineering Works

- **Full range of geotechnical processes**
- **All geotechnical specialised works:**
  - in joint venture,
  - as a subcontractor,
  - provision of technical assistance.

# Foundations for building or civil engineering works

- **Historical core activity**
- **Expertise in all special foundation technologies, particularly:**
  - piles, barrettes, micropiles,
  - diaphragm walls and various retaining structures,
  - grouting,
  - soilmixing, jet grouting,
  - ground improvement.

# Kuala Lumpur City Center, MALAYSIA





# Slope stabilisation

- Slopes for roads, motorways, railways
- Industrial sites (factories, dams)
- Natural slope stability (landslides)
- **Combination of techniques, such as:**
  - anchoring,
  - drilled drains,
  - drainage trenches,
  - inclusions.

## RD1, Fonds Saint-Denis – Martinique, FRANCE



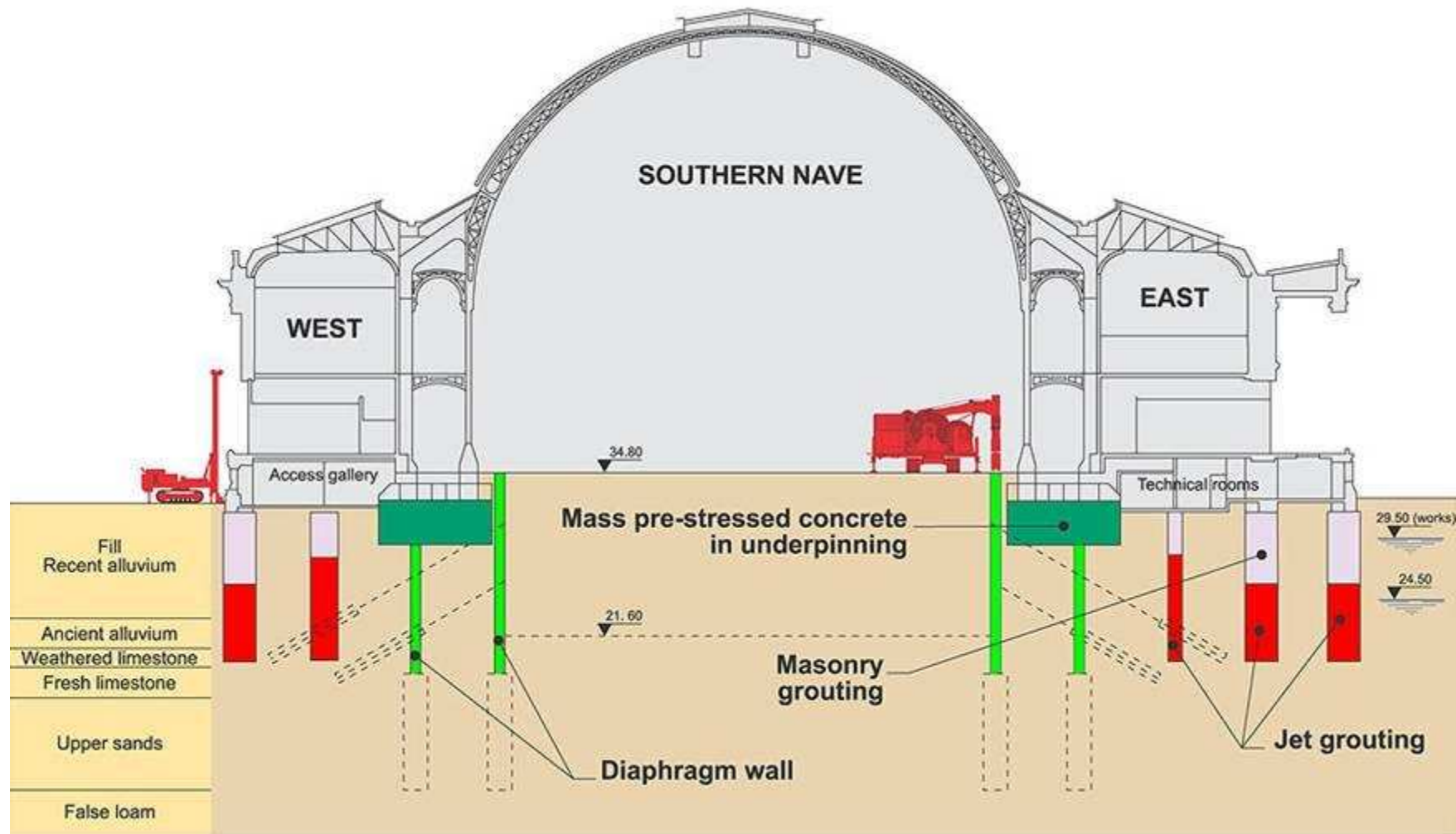
# Structural refurbishment and underpinning works

- **Reinforcement of delapidated foundations**
- **Preparation for new building construction**
- **Structural refurbishment of historical monuments and large structures (dams, etc.)**
- **Reduced headroom compact equipment, silent and vibration free**
- **Geotechnical, structural and environmental monitoring service.  
Specialised subsidiary: SolData**

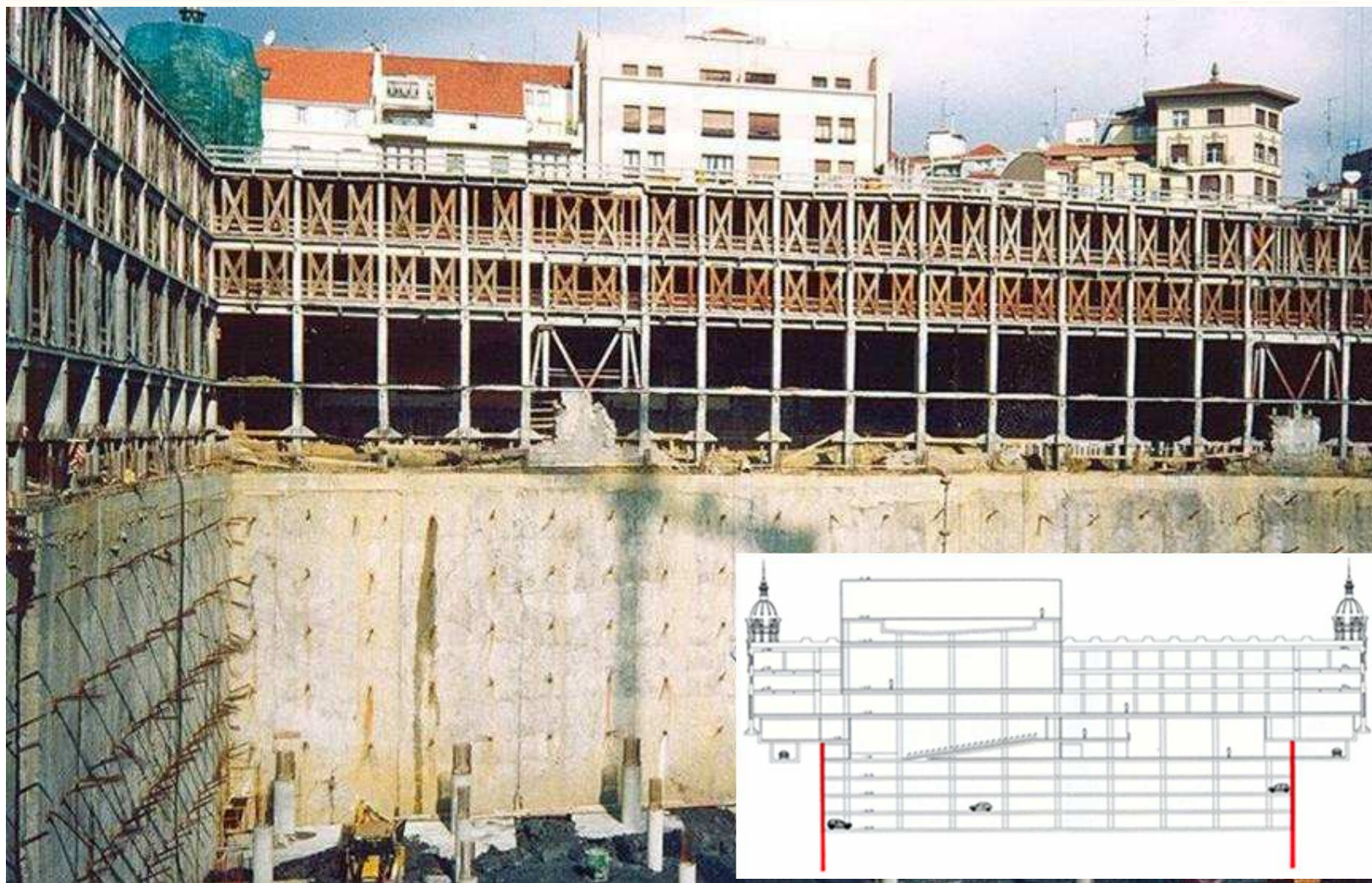
# Le Grand Palais - Paris, FRANCE



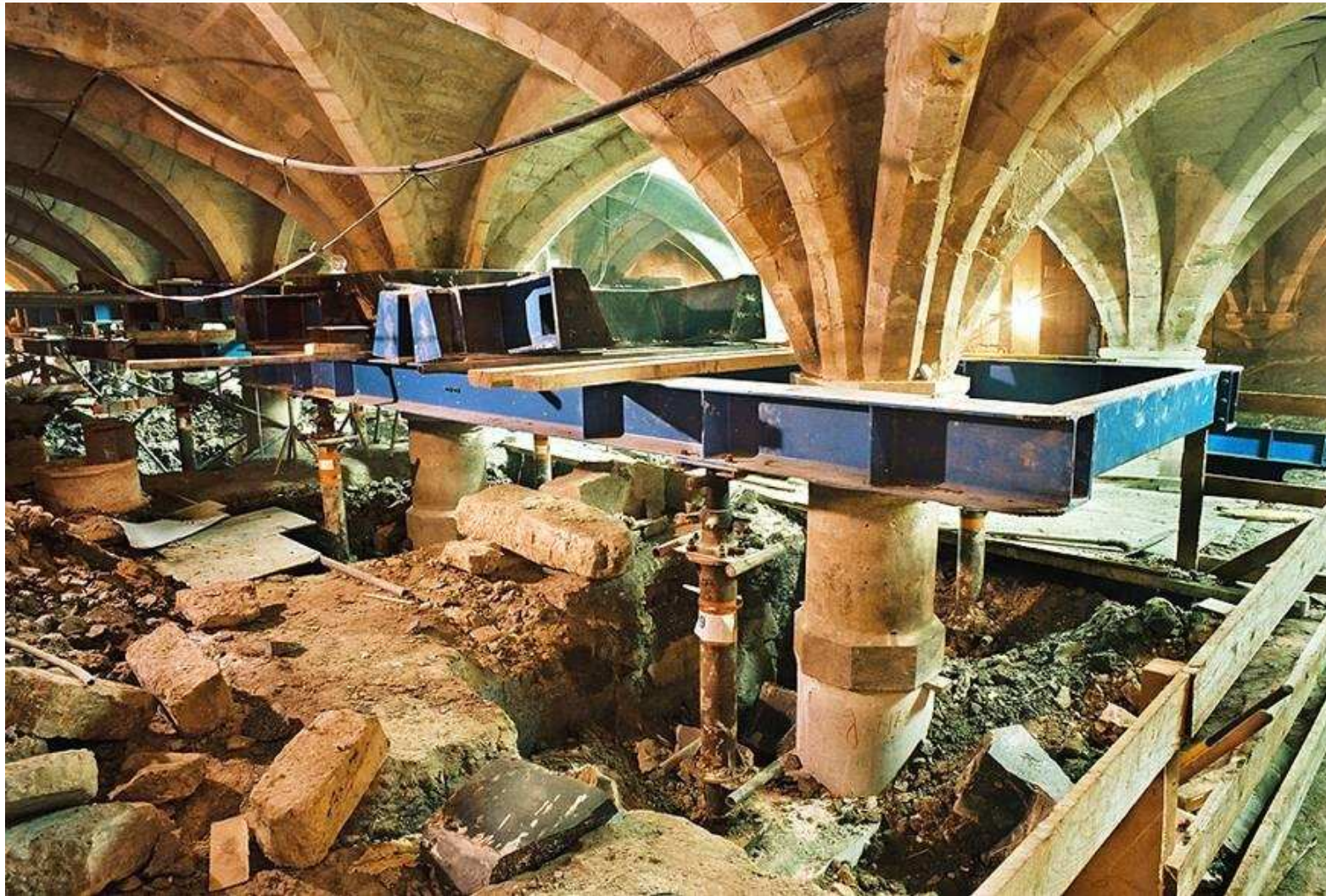
# Le Grand Palais - Paris, FRANCE



# Alhondiga Sports and Leisure Centre - Bilbao, SPAIN



## College of Bernardins - Paris, FRANCE



# Urban excavations

- **Complex physical environments, existing structures and services, traffic, noise, vibrations**
- **Basement for buildings**
- **Underground car parks**
- **Underground road tunnels**
- **Underground plants:**
  - sewage treatment plants,
  - air conditioning and power plants.



# Four Seasons Hotel car park - Baltimore, UNITED STATES



© Greg Pease

# Tyne Tunnel – Newcastle, UNITED KINGDOM



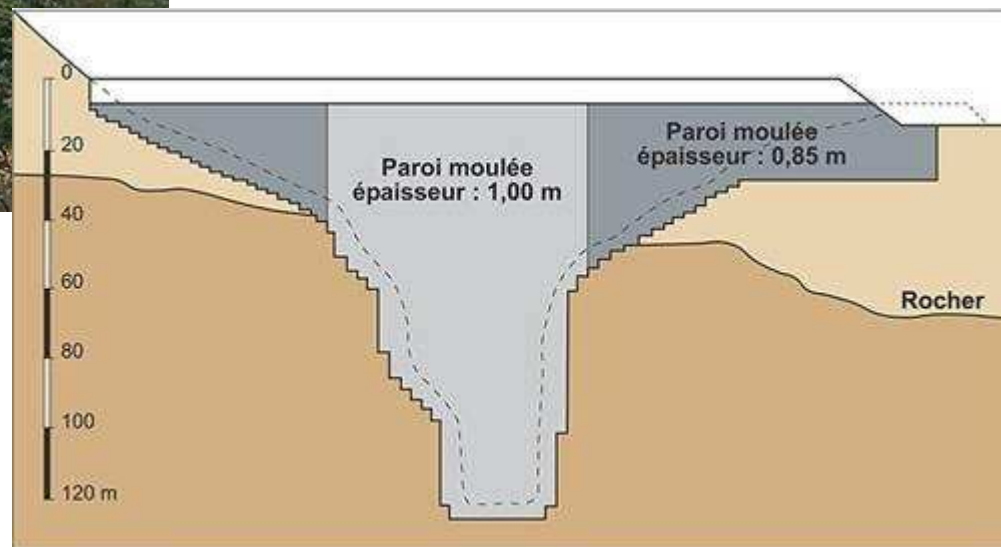
# Dams

- **The original activities of Soletanche Bachy**
- **New or reinforcement works:**
  - investigation, boring injection, drilling,
  - reinforcement and refurbishment works,
  - sealing and drainage,
  - diaphragm walls, slurry cut offs.

# Mud Mountain dam - Washington State, UNITED STATES



*The diaphragm wall constructed by hydrofraise cutter, within competent andesite rock at 124.5m depth, is a record of its kind*

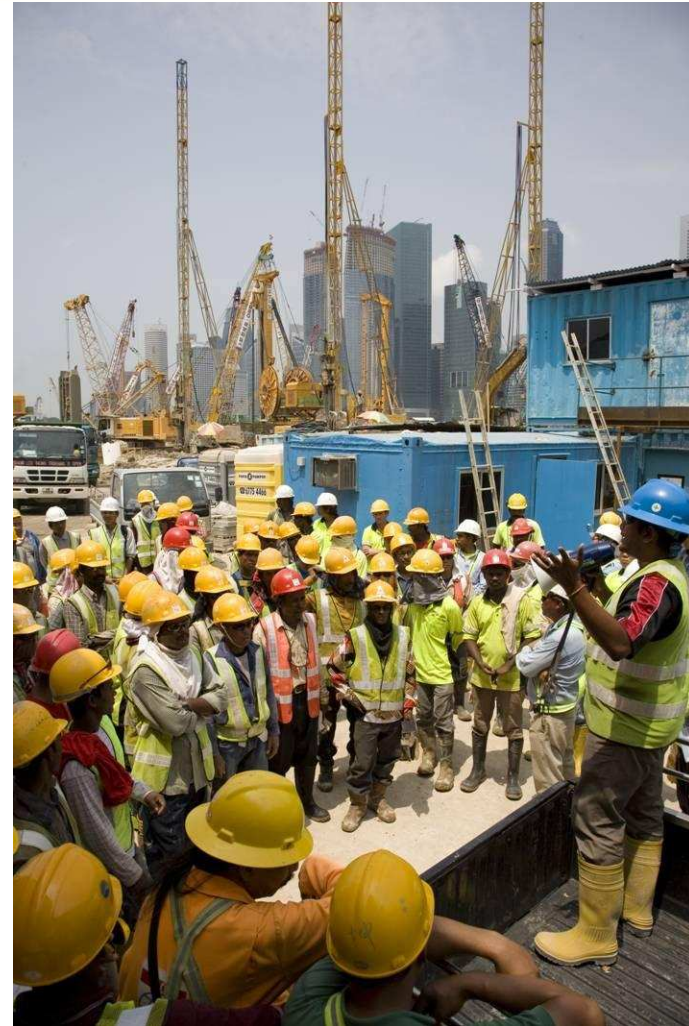


# Lower Carno dam, UNITED KINGDOM



# The foundations of our operational reliability

- Our people
- Our innovative design solutions
- Our extensive and versatile plant fleet



# Our people



**Safety above all**

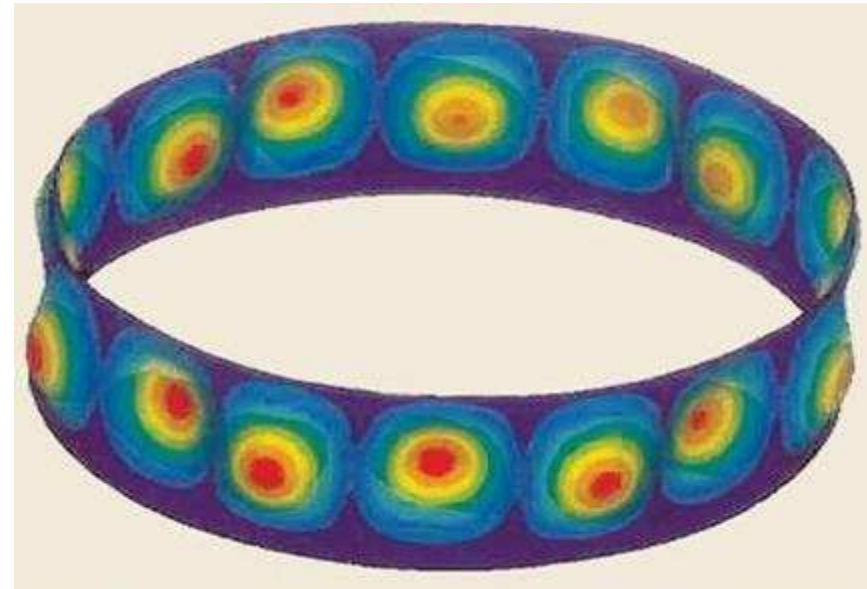
# Our innovative design solutions

- **A research capacity with 125 multidisciplinary and complementary engineers**
- **A system with shared databases**
- **Internal development and maintenance of our design software systems specific to soil structure and interfaces**





## Zeebrugge, BELGIUM



*3D view of deflection for the buckling analysis of a circular diaphragm wall for a LNG tank.*

## Our very large range of plant

- **300** crawler cranes
- **200** diaphragm wall plant
- **150** piling machines
- **100** vibroflots
- **200** small diameter drilling rigs
- **70** drilling machines
- **350** grouting pumps
- **30** high pressure pumps for jet grouting
- **20** tunnel boring machines



## Our very large range of plant



*Cutter Soilmixing*



*HC03 compact, low headroom hydrofraise for diaphragm walls and barrettes*

# Our very large range of plant



*KS 3000 hydraulic grab  
for diaphragm walls and barrettes*



*CSM Bessac compressed air road header  
tunnel boring machine*

## Our technical creativity, the tradition of a leader

- **Synergies between our experts, research laboratories and universities**
- **Participation in Pan European programs**
- **A large portfolio of 525 patents**
- **35 patents filed each year in France and Internationally**
- **More than 2% of the turnover devoted to R&D**

# Our technical creativity, the tradition of a leader



*Sewage pipe cleaning system (PROCCOPE)*

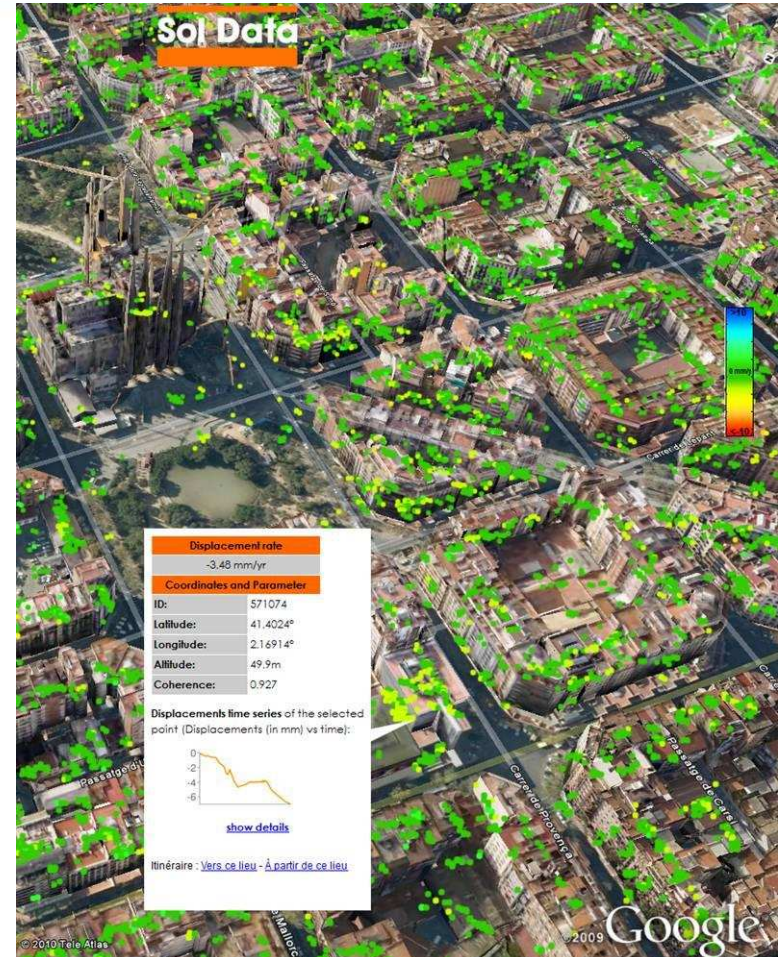


*Geomix process*

# Our technical creativity, the tradition of a leader



*Biocalcis, soil improvement by grouting of calcifying bacteria*



*Atlas: satellite monitoring of millimetric ground movements*

