

LNEC



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL



José Manuel Catarino
Principal Research Officer
Director of Structures Department



LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL

Total area: 22 hectares



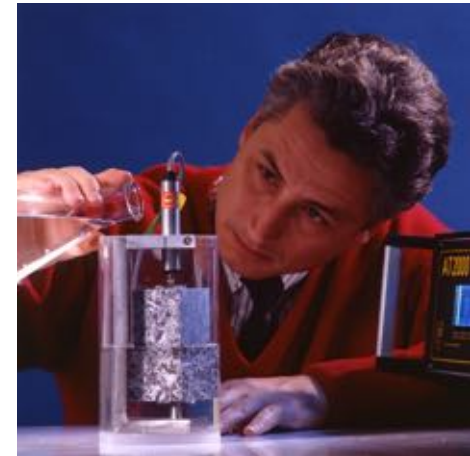
Profile



- **Establishment:** 1946
- **Legal Status:** State Laboratory
- **Jurisdiction:** Ministry of Economy - Secretary of Infrastructures, Transport and Communications
- **Strategic orientations:** Ministry of Education and Science
- **Annual budget:** about 25 M€

Main fields of activity

- Civil engineering / Public works
- Housing and urban planning
- Environment
- Building industry
- Components and other construction products



Objectives

- Technically support the government action
- Quality and safety of construction works, acting as a “regulator body” for quality in the construction sector
- Protection and rehabilitation of the natural and built environment
- Technological modernization and innovation of the construction sector



Main types of activity

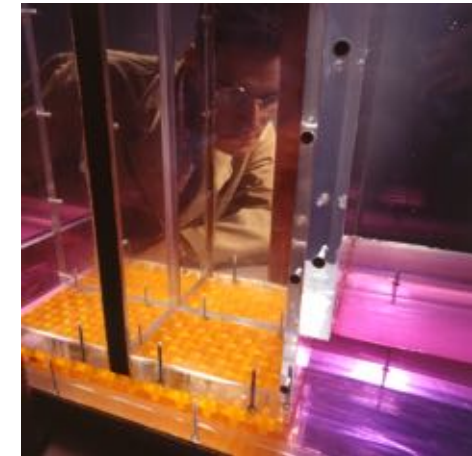
1. Research and innovation

Of a strategic nature, developed within research lines considered as priority due to their relevance for Portugal and Europe.



2. Studies and expert reports

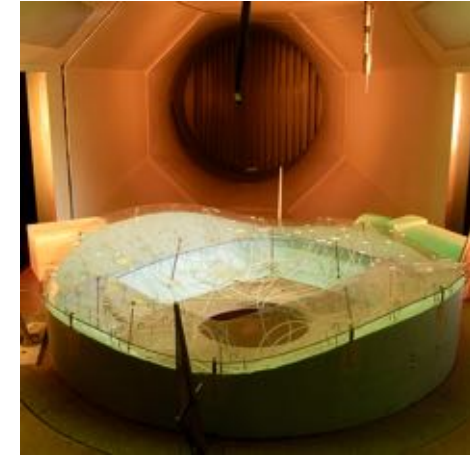
Advanced expert advisory services to public and private bodies, both national and foreign.



Main types of activity

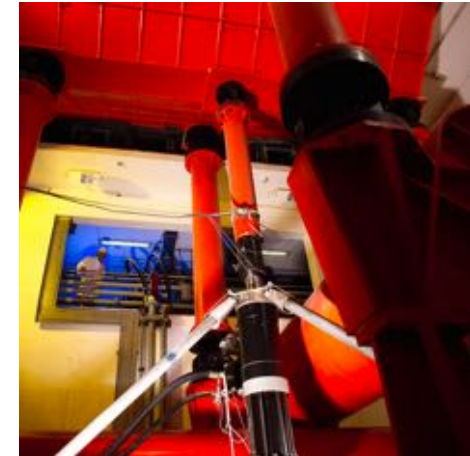
3. Other scientific and technical activities

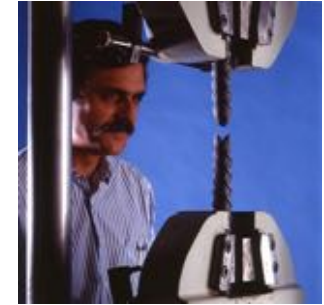
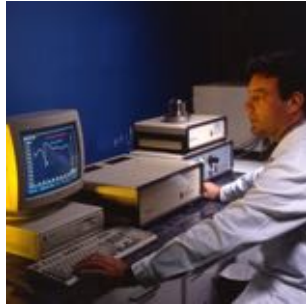
General activities to assist the construction industry, for example standardization, certification of products.



4. Scientific and technical cooperation

Cooperation activities with various Portuguese and foreign bodies, in particular with associations of a scientific and technical character, universities, laboratories and other institutions.





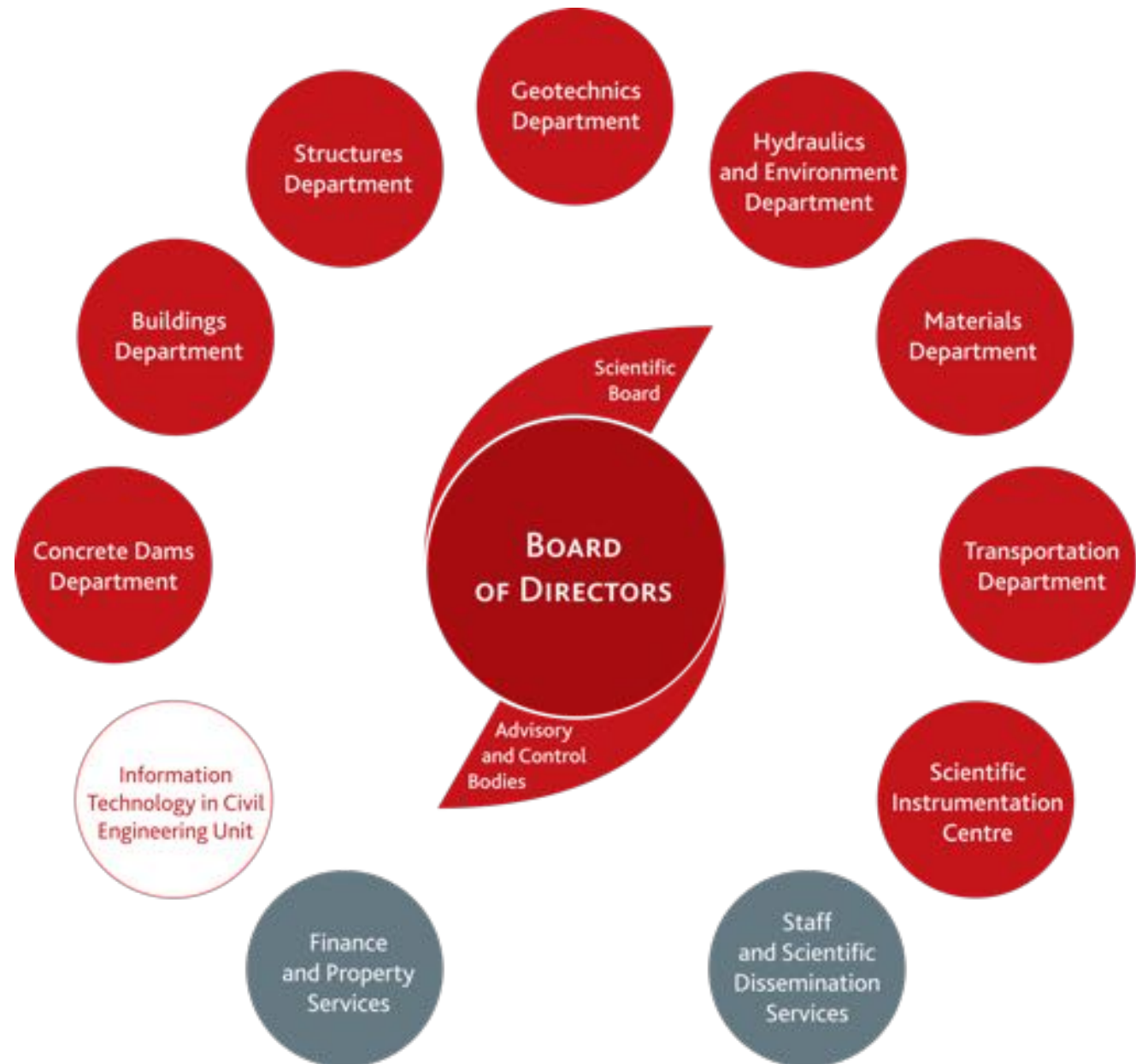
Staff

504 Employees
+
125 Grant holders
and
202 Trainees and Sabbaticals

- 10 Managers**
- 148 Research career (PhD)**
- 118 Technical Officers (94 for experimental activities)**
- 17 IT Technicians**
- 159 Administrative Assistants (37 for experimental activities)**
- 44 Auxiliary and maintenance staff (21 for experimental activities)**
- 10 Teaching career**
- 4 Nursing career**

Source: Human Resources and Public Relations , 31 December 2013

Organization

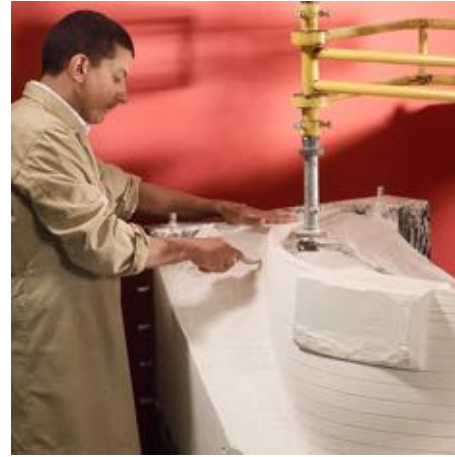
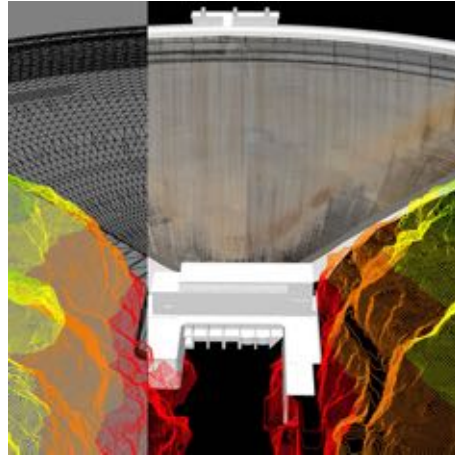


2015



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Concrete Dams Department

- Safety control of concrete dams
- Rock mechanics: underground structures and rock foundations
- Numerical and physical modeling
- Concrete dams design
- Applied geodesy and remote sensing



Buildings Department

- Acoustics and lighting
- Building components and facilities
- Economy and construction management
- Construction technology
- Architecture and urban planning
- Social ecology





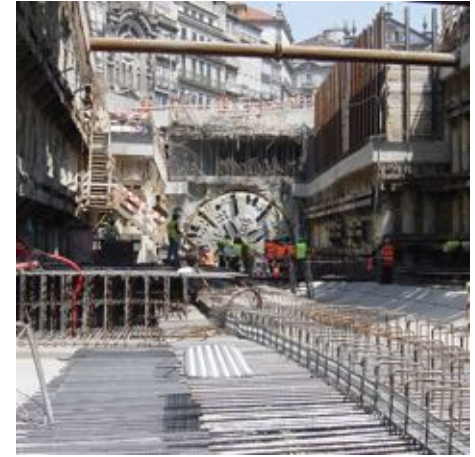
Structures Department

- Monitoring and behavior evaluation of building and bridge structures
- Observation, testing and pathology of structures
- Earthquake engineering studies
- Fluid dynamics and aerodynamics



Structures Department





Geotechnics Department

- Earth and rockfill dams
- Road and railway embankments
- Soil retaining walls and slope consolidation works
- Tunnels and other underground activities
- Engineering Geology and Environmental Geotechnics



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Hydraulics and Environment Department

- Estuary and Coastal Zones
- Harbors and Maritime Structures
- Water Resources and Hydraulic Structures
- Groundwater
- Sanitary Engineering



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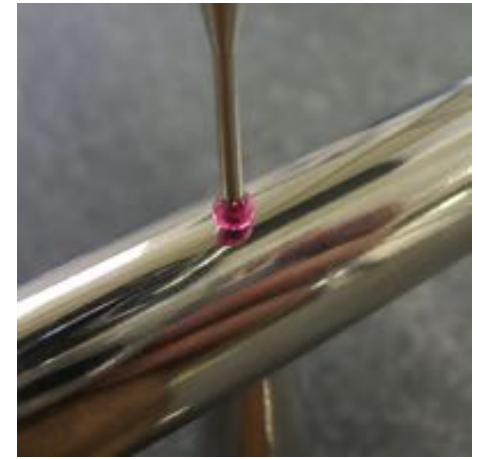
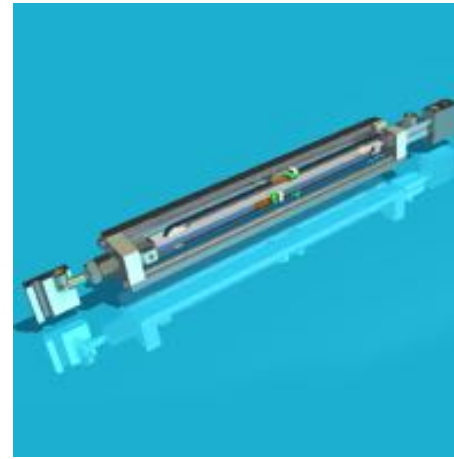
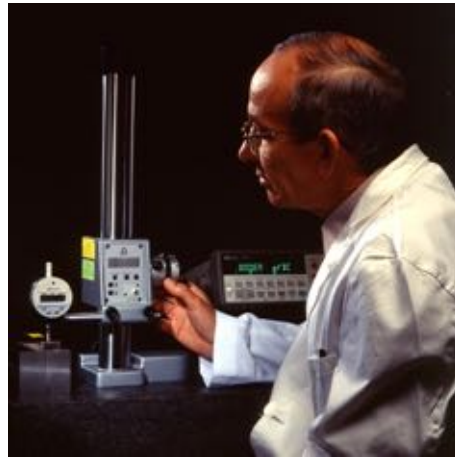
Materials Department

- Concrete and cement
- Ceramic and petrous materials
- Metallic materials
- Plastic and composite materials
- Materials and organic coatings
 - Chemical and physical characterization
 - Conservation and deterioration of materials



Transportation Department

- Road and airport infrastructures
- Railway infrastructures
- Planning, traffic and road safety
- Transport economics and planning



Scientific Instrumentation Centre

- Electrotechnical and mechanical systems
- Metrological quality
- Computer infrastructures



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LNEC's world-wide activity

Over 500 studies, research projects and consultancies in more than 50 countries



Angola, Algeria, Australia, Brazil, Cape Verde, China, Denmark, Finland, France, Germany, Greece, Guinea-Bissau, India, Israel, Italy, Morocco, Mozambique, Norway, Peru, São Tomé e Príncipe, South Africa, Sweden, Thailand, Uruguay, Venezuela, Vietnam, etc.

Thank you for
your attention!

