

Rehabilitation Stabilization



ENGINEERING AND ENVIRONMENTAL CONSULTANTS

PRESENTATION

COBA is a multinational and multidisciplinary group of Engineering and Environmental Consultants, founded in 1962.

The Group provides engineering consultancy services ranging from basic and planning studies, technical, environmental and economic feasibility studies, design and construction design as well as project management and works supervision, to operation follow-up and behaviour monitoring.

The Group has offices/subsidiaries in three continents and experience in more than fifty countries and encompasses several companies in accordance with functional specializations or geographical areas.

The competences acquired along the last six decades, together with the state-of-the-art employee expertise, the stability of its permanent staff and the comprehensive international experience allow to find out the best solutions for the full satisfaction of public and private Clients' needs and expectations.

During its existence, the Group has participated together with public authorities or private developers, in the feasibility of multidimensional projects, some of them being structuring projects and with major impacts on the improvement of peoples' life conditions in the several countries where it worked.

At present, the Group has a wide number of competences and technical areas that allow the composition of multidisciplinary teams who share knowledge and experiences in the execution of projects.

FIELDS OF ACTIVITY

HYDRAULIC UNDERTAKINGS

Concrete, Earth-fill and Rock-fill Dams. Weirs and Reservoirs Water Conveyance Systems. Hydraulic Structures.

POWER GENERATION AND TRANSMISSION

Hydroelectric Power Plants. Photovoltaic power plants and wind farms. Small Hydropower Plants. Power Plants Rehabilitation and Modernization. Substations High Voltage Transmission Lines. Cooling Water Systems for Thermoelectric Plants.

WATER SUPPLY AND WASTEWATER SYSTEMS

Catchment, Transport and Distribution of Potable Water. Water Treatment Plants. Drainage Systems. Wastewater Treatment Stations. Pumping Stations.

AGRICULTURES AND RURAL DEVELOPMENT

Irrigation and Drainage Systems. Rural Roads. Production Systems. Mapping and Basic Information.

TRANSPORTATION INFRASTRUCTURES

Roads and highways. Railways. Passenger and Freight Railway Stations. Metro and Light Rail. Airports. Bridges and other engineering structures.

ENVIRONMENT

Environmental Impact Assessment. Environmental Management, Monitoring and Auditing. Pollution Control. Landscaping. Land Management. Recovery of Degraded Areas. Waste Landfills.

GEOTECHNICAL STRUCTURES

Tunnels and Caverns. Slopes in Fill and Cut Section. Special Foundations Breakwaters. Embankment Works.

MARITIME AND FLUVIAL WORKS

Wharfs. River Training. Quay Rehabilitation. Flood and Flow Control.

MINING INDUSTRY

Environmental Studies. Design of Tailings Dams and Related Structures. Safety Assessment of Tailings Dams. Design Review of Tailings Dam Closure. Operations Maintenance and Monitoring Manual for Tailings Dams. Risk Analysis. Mine Closure Plan. Training.

BUILDINGS

Residential and Services Buildings. Industrial Buildings. Steel and Mixed Industrial Structures. Rehabilitation and Restoration of Ancient Buildings.

CARTOGRAPHY AND CADASTRE

Geographic Information Systems (GIS). Digital Cartography. Thematic Cartography. Thematic Cadastres. Land Acquisition.

SAFETY CONTROL AND REHABILITATION

Expertise, Monitoring. Inspection and Reinforcement of Dams and Transportation Infrastructures. Works Instrumentation. Project Maintenance and Operation.

PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION

Project Management. Cost Management. Site Supervision. Quality Assurance/Quality Control.



Programme for Rehabilitation of the Paute River Area (La Josefina) 1996 | 2000 - Ecuador



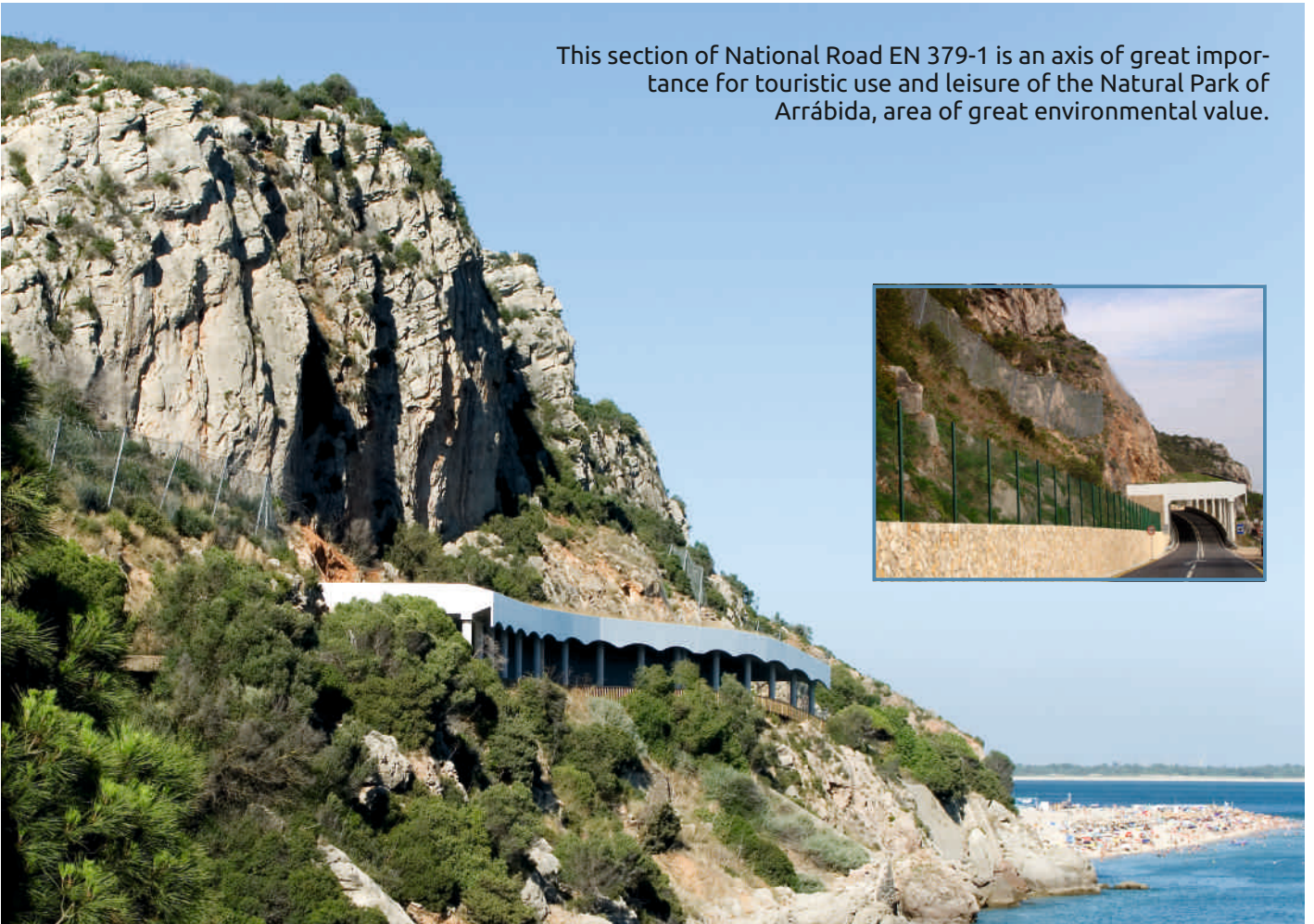
The landslide of La Josefina constituted a natural disaster of great complexity and dimensions, which required a multidisciplinary treatment.

COBA led a consortium composed of international consultants, contracted by the European Union to provide technical assistance to the project.

COBA was responsible for the slope stabilisation, erosion control and the reconstruction of bridges.



This section of National Road EN 379-1 is an axis of great importance for touristic use and leisure of the Natural Park of Arrábida, area of great environmental value.



Treatment and Stabilization of Slopes in Serra da Arrábida – 2004 | 2006 - Portugal

The EN 379-1 road is located in the foot of Serra da Arrábida. The intervention was between Outão and Portinho da Arrábida.



Upgrading and widening of the National Road EN260 Huambo-Benguela Caála / Ganda Section (125 Km) - 2007 | 2008 - Angola



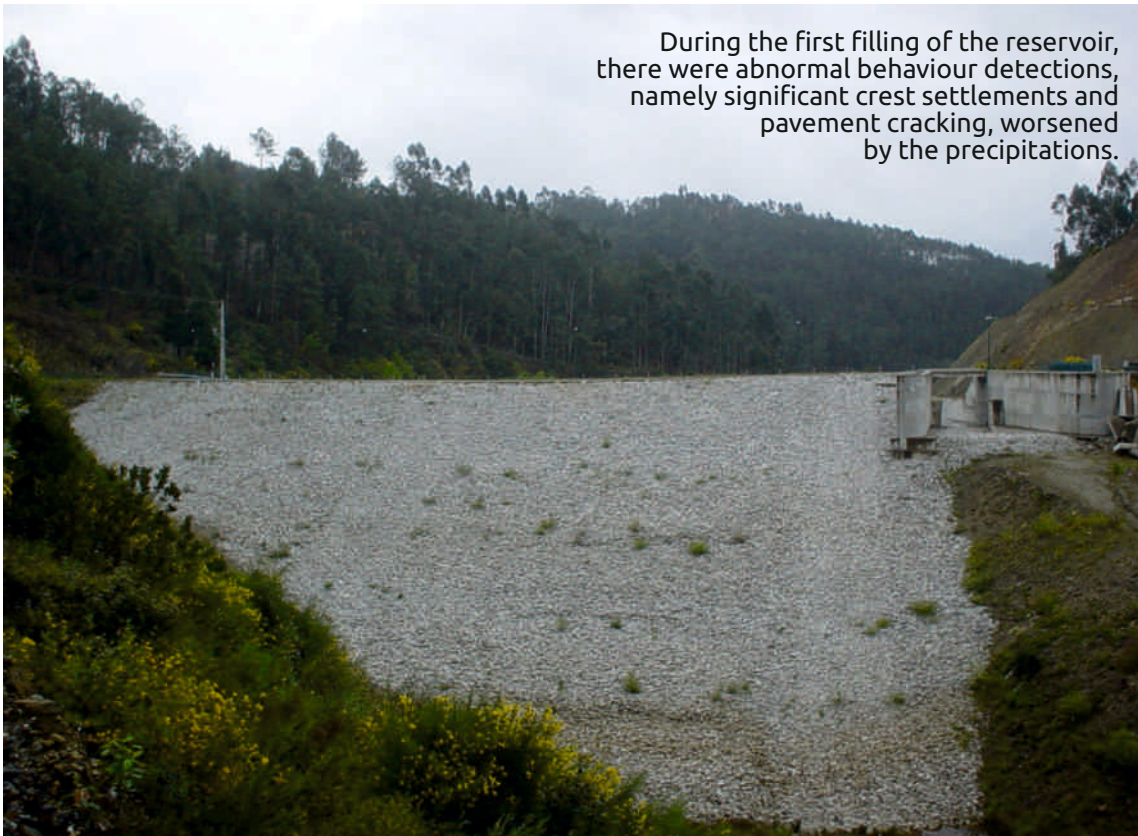
Structural Analysis of the “2º Circular” Pavements in Lisbon 2015 - Portugal



Falling Weight Deflectometer (FWD) and
Geotechnical Prospection.

The works were under the responsibility of CONSULSTRADA,
company pertaining to the COBA Group.

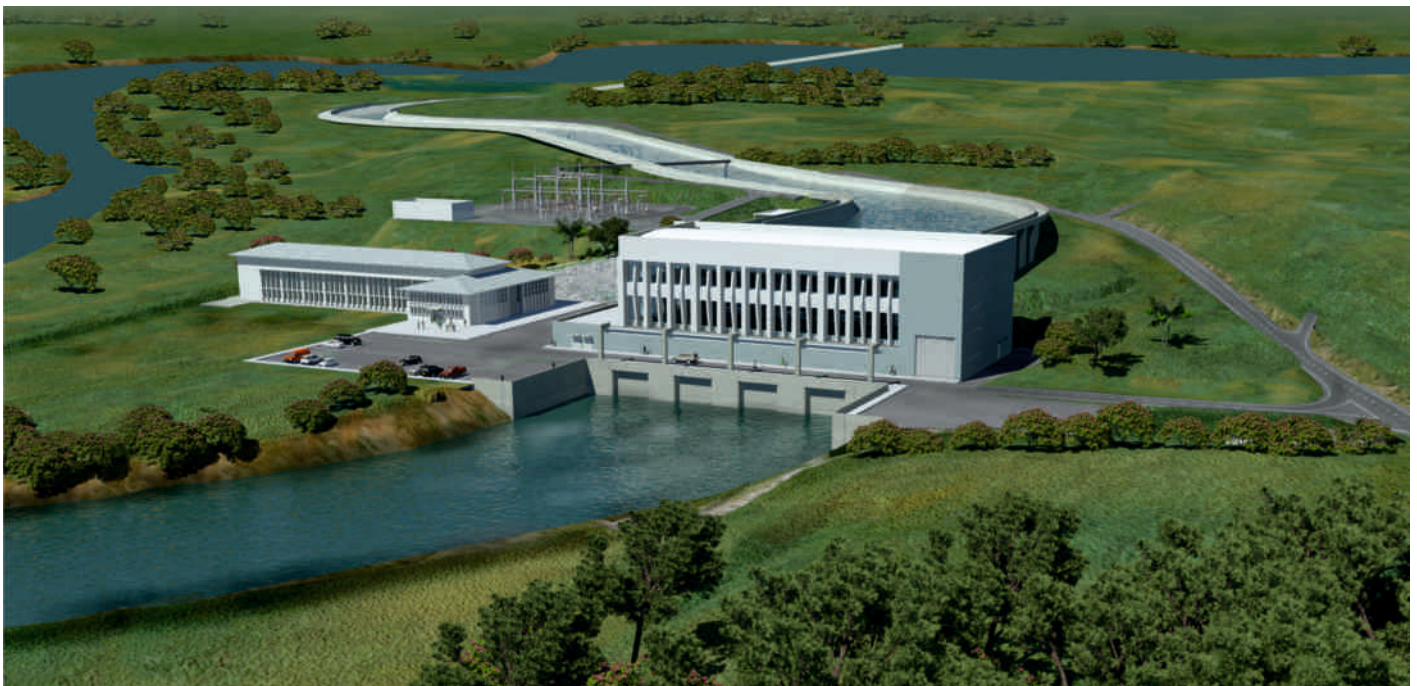
Final Design for the Rehabilitation of the Lapão Dam – 2005 - Portugal



During the first filling of the reservoir, there were abnormal behaviour detections, namely significant crest settlements and pavement cracking, worsened by the precipitations.



Luachimo Hydropower Development - Angola Rehabilitation, Power Upgrading and New Power Plant – 2012





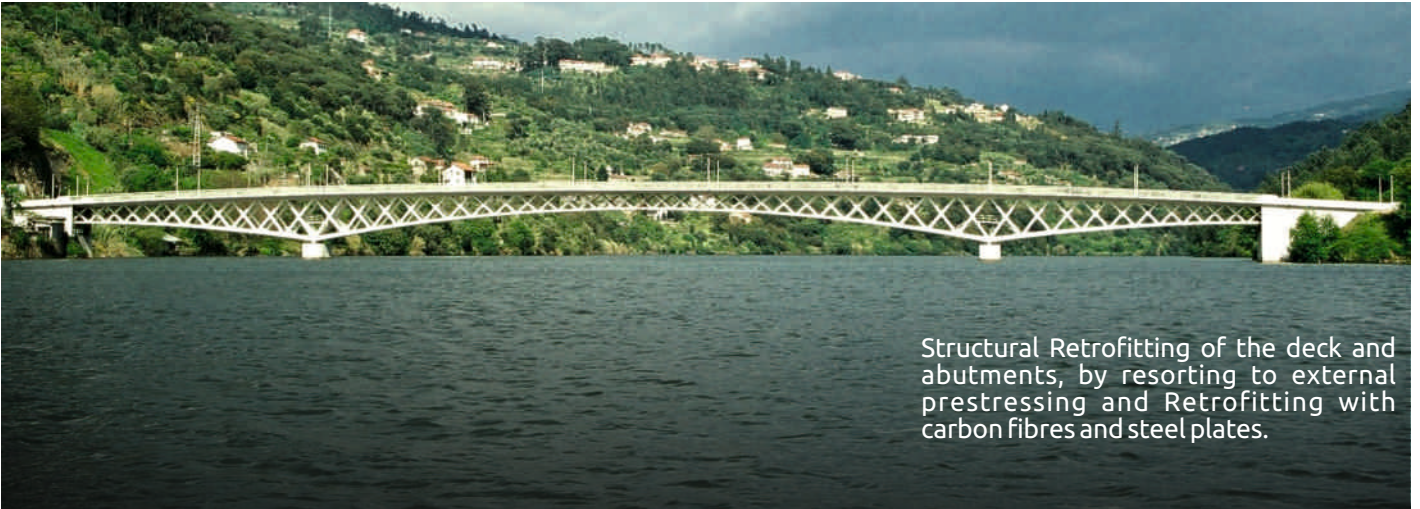
Gove Dam Rehabilitation and Construction of the new Hydropower Plant and Substation - 2002 | 2012 - Angola



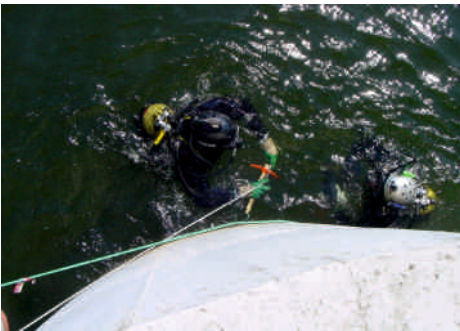


Rehabilitation and Retrofitting of the
Mosteirô Bridge, on the Douro River - 2005 | 2009

Rehabilitation and Retrofitting of the Mosteirô Bridge, on the Douro River - 2005 | 2009 - Portugal

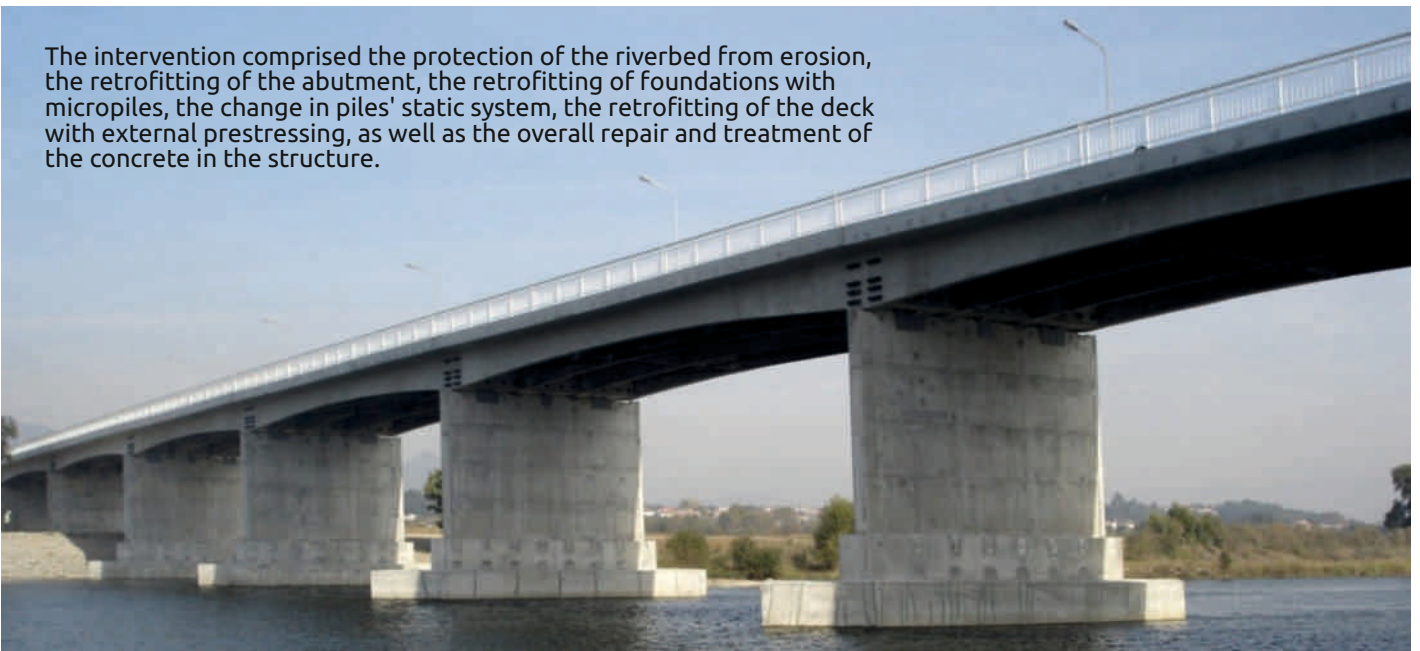


Structural Retrofitting of the deck and abutments, by resorting to external prestressing and Retrofitting with carbon fibres and steel plates.



Rehabilitation and Retrofitting of the Lanheses Bridge, on the Lima River - 2003 | 2004 - Portugal

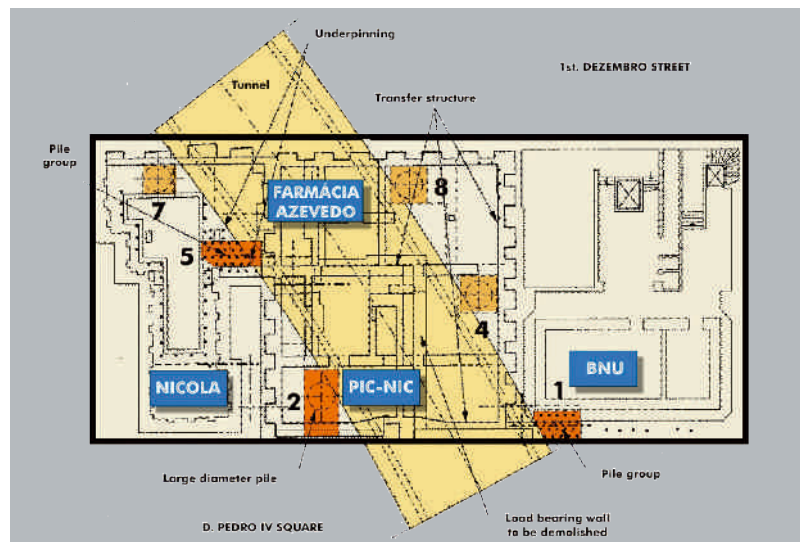
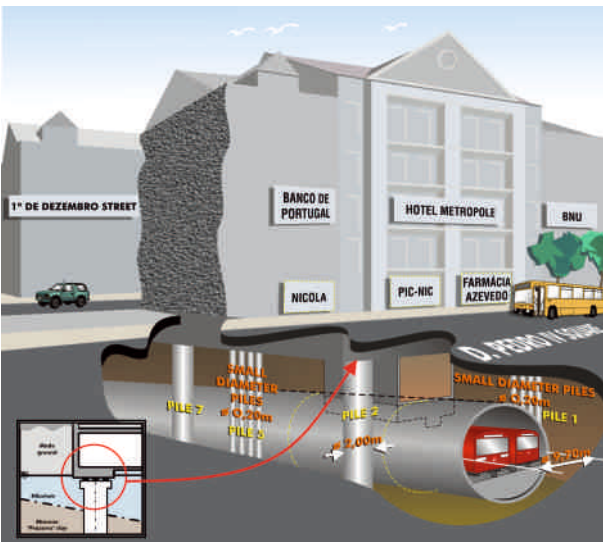
The intervention comprised the protection of the riverbed from erosion, the retrofitting of the abutment, the retrofitting of foundations with micropiles, the change in piles' static system, the retrofitting of the deck with external prestressing, as well as the overall repair and treatment of the concrete in the structure.



Smallholder Agricultural Rehabilitation Project, in Xai-Xai, Province of Gaza - 2003 | 2009 - Mozambique



Rehabilitation of the buildings affected by the expansion of the Lisbon Underground Network - 1994 | 1996 - Portugal





Slope Stabilisation on A9 CREL
(Lisbon Outer Ring Road)|
National Stadium – Alverca
Queluz/Belas Subsection
2010 - Portugal



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