

Portugal



Name: Comissão Portuguesa de Túneis e Espaço Subterrâneo (CPT) – Portuguese Tunnelling Association

Type of structure: A Committee of the Portuguese Society of Geotechnics, non-profit, open association

Number of members: 110 members, 10 corporate members

ASSOCIATION ACTIVITIES DURING 2017 AND TO DATE

In 2017, the CPT organized an event on the Public Works Contract Code (CCP), accompanying the revision of the existing Code at the Legislature level. The new code was promulgated in September and entered into legislation on the first day of 2018.

The workshop on “The Execution of Tunnels and Complex Geotechnical Works, what changes with the CCP revised?” was held on February 2, 2018 at the LNEC, Lisbon.

The event integrated lectures delivered by engineers and lawyers. The opening was attended by the Secretary of State for Infrastructures.

A new WG on BIM was created, integrated preferentially by young people, employees in owners companies, universities, research institutes and industry.

CPT participated in the ITA's WG actively, through meetings and paper contributions. During 2017 the CPT secured participation in the WTC2017 in Bergen and at the AFTES Congress (October, Paris), and in internal meetings of the BEFIP group.

CURRENT TUNNELLING ACTIVITIES

Conclusion of the Águas Santas Tunnel, A4 Motorway

Owner : BRISA Concessões
Owner Designer and Consultant: Coba, S.A.
Contractor: Ramalho Rosa Cobetar - Conduril - Amândio Carvalho

Designer : Geodata
Excavation Cross-section: ~240m²
Total length: 370m
Excavation vol 1.6 x 105m³

Lisbon Drainage Tunnels

Tendered in December 2017, EPC contract for two drainage tunnels (4.5 and 1.3km long) with an internal diameter of 5.5 - 6m.

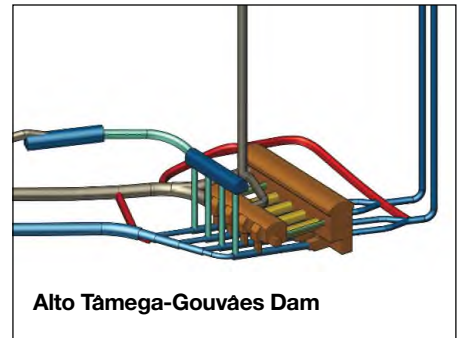


Alto Tâmega Hydroelectrical System (under construction)

Gouvães dam (turbination+reverse pumping)

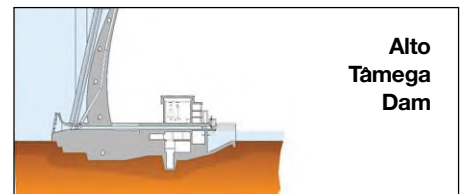
- Torno river
- Dam height 35m
- 6.9km tunnels, 750m shafts, 1.25 x 105m³ caverns
- Nominal power 4 x 220MW
- Designer: Dam to designate Hidropower ACCIONA
- Contractor Hidropower Ferrovial Agroman MSF

- Engenharia
- Dam to designate



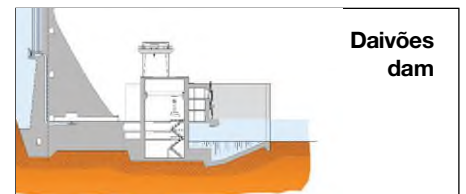
Alto Tâmega dam (turbination)

- Dam height 106.5m
- 1.2km tunnels, 40m shafts, 0.7 x 105m³ caverns
- Nominal power 2 x 80MW
- Tâmega river
- Designer Jesus Granell
- Contractor Acciona+Mota-Engil+Edivisa



Daivões dam (turbination)

- Dam height 77.5m
- Tunnels, 600m
- Nominal power 2 x 59MW
- Tâmega river
- Designer Dam Jesus Granell Hidropower ACCIONA
- Contractor Ferrovial Agroman MSF Engenharia



Electrification of the Minho line's ancient railway tunnels.

The electrification of the tunnels will be carried out using catenary support, of the elastic suspension type. The maximum



Award of the contract for Rehabilitation of the Águas Santas (existing Galleries) and completion (IE equipment) of the New Tunnel



The Minho line ancient railway tunnels

speed allowed by this type of support is 110km/h.

At the level of its extension, the three tunnels that lie along this section, totalling 1471m in length, are:

- São Miguel da Carreira, built in 1876, about 260m long.
- Tamel, built in 1878, about 980m in length.
- Santa Lucrecia, built in 1878, about 230m long.

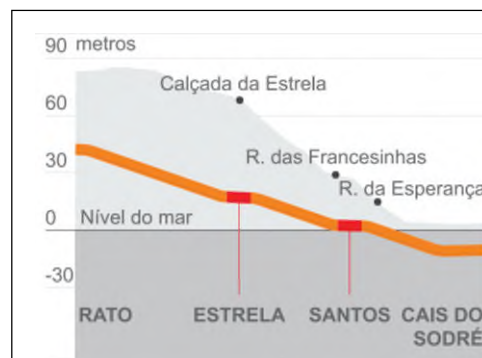
All tunnels were subjected to rehabilitation works and waterproofing of the vault over the catenary.

FUTURE TUNNELLING ACTIVITIES

Lisbon Metro

Yellow Line extension (ring closure)

- 1.5 km tunnels (conventional method and Cut&Cover)
- 2 stations



Yellow line extension from Rato to Cais do Sodré. Metropolitano de Lisboa (ML) is preparing the tendering to be announced this year.

- Total investment €215M
- Preliminary design and site investigation (until summer 2018)
- International call for tenders

Oporto Metro

- Yellow line extension: 1.1km tunnels and 3 stations
- New Pink line (G): 2.7km tunnels, 4 Stations.
- The call for tenders for the executive projects of the extension of the Yellow line and the new Pink line was carried out in September.
- International call for tenders for construction (mid of 2018)
- The works contracts may be started at 2019.
- Total investment: ~€200M

Albufeira (Algarve) stormwater drainage tunnel, preliminary design and site investigation

Jardim do Mar Tunnel.

Bi-directional road tunnel, ~700m long. Madeira Island, Portugal. Tendership for design during February 18. Works are to start in 2019.

STATISTICS

1. Length or volume excavated - % mechanized / % conventional during 2017:
4,370m, 100% Conventional
2. Amount (USD or EUR) of tunnelling / underground space facilities awarded in 2017:
€30M
3. List of tunnels completed:
Aguas Santas, New Tunnel North
4. List of tunnels under construction:
See Current Activities

