

BRAZIL



(MND) na Engenharia Brasileira” - Yannis Calapodopulos

June

5th - Linha 6 – Laranja Metrô SP – Aspectos Construtivos e Operacionais - Gustavo Rodrigues

22nd - Ecos WTC 2023

29th - Tuneladora TBM - Análise da construção de túneis em Sistemas Metroviários - (CBTYM)

July

31st - Connecting & Analyzing Data to Reduce Geotechnical Uncertainty - Cristian do Santos

November

28th – Presentation - Important Aspects of IMT Tunnels – with Harald Franke & Peter van Westendorp at Instituto de Engenharia

December

1st – Tunnel Day 2023

Press and social media

Linkedin: +30 posts; Instagram: +30 posts; Facebook: +30 posts; Monthly CBT@News

CURRENT TUNNELLING ACTIVITIES

During 2023, there were several tunnels being excavated, some completed in 2024, with some major projects still ongoing.

Two major metro projects started in one of the biggest cities in the world, São Paulo. Lines 2 and 6 are currently ongoing, with several stations and tunnels, using both conventional and mechanized methods.

Another road tunnel has finished, the Florianópolis Bypass, with four tunnels. This is also the city that hosted one of the CBT activities, the Road Tunnels Seminar, at the start of the beginning of 2023,.

For hydroelectric power plants, there was a total of 3,255m of excavated tunnels in the south of Brazil.

Finally a total of 8.4km of utility tunnels were excavated using pipe jacking technology.

FUTURE TUNNELLING ACTIVITIES

In 2024, São Paulo metro projects will continue, with the TBM on Line 6 excavating since 2022 and the TBM on Line 2 also continuing. Several conventional tunnels for both metro projects are currently being excavated and other connecting tunnels for both

Name of Association: Brazilian Committee of Tunnels and Underground Spaces

Type of Structure: CBT is a committee of the Brazilian Society for Soil Mechanics and Geotechnical Engineering (ABMS). It is an open society based on membership

Number of Members: 275 Individual Affiliate Members and 13 Corporate Affiliate Members.

ASSOCIATION ACTIVITIES DURING 2023 AND TO DATE

March

2nd – 3rd Seminário de Túneis Rodoviários: Contorno de Florianópolis – STR 2023

9th - Webinário “Advanced Technologies in Refuge Chambers for Tunneling”, com Michael Rispin, P.ENG

April

6th - Webinar “Application of Calibrated Multi-Scale Numerical Models for Rockburst Hazard Management in Mines and Tunnels” with Kathy Kalenchuk & Neda Dadashzadeh

May

8th - Webinar “Método Não Destrutivo



Contorno Viário de Florianópolis: Tunnel 1 begins to be excavated in Palhoça (Photo: Arteris, Disclosure)

ITA MEMBER NATION ACTIVITY REPORTS 2023

projects should start in 2024. Additionally, the extension of Line 2 should start in 2024, connecting São Paulo to its neighbouring city, Guarulhos.

For the São Paulo Metro, several viability and preliminary projects will start through 2024, such as Lines 16-Violet, 19-Sky Blue, 20-Pink and 22-Brown. Regarding road tunnels, the north connection road tunnel project, as part of the city ring of São Paulo, Rodoanel North, could resume soon.

Finally, the new government is promising to release a new railway link, which might include tunnels.

EDUCATION ON TUNNELLING IN THE COUNTRY

- UnB – Brasilia University – Tunnel graduate course (60h course) and post graduate course (30h course), as well as a research group
- EPUSP - Polytechnic School of the University of São Paulo – Graduate

course that includes tunnel execution (NATM and TBM) and post graduate course, focusing on NATM excavation

- EESC – São Carlos Engineering School – part of the ITACET University Network, includes post graduate courses for a masters, PhD and Post-Doc programs
- Presbiteriana Mackenzie University – a graduate course “Tunnels and Underground Structures”.

STATISTICS

Project	Type	Total Length (m)	Excavated Length (m)	Area (m ²)	Excavated Volume (m ³)	Cost (USD)
PB-01 Tunnel	NATM	240,66	240,66	72,30	17.399,72	5.219.915,40
PB-02 Tunnel	NATM	1847,19	1847,19	76,69	141.661,00	42.498.300,33
PB-03 Tunnel	NATM	52,45	52,45	24,60	1.290,27	387.081,00
PB-04 Tunnel	NATM	45,69	45,69	6,27	286,48	85.942,89
PB-05 Tunnel	NATM	436,76	436,76	20,33	8.879,33	2.663.799,24
SP Metro Station Tunnel	NATM	97,00	13,00	277,24	3.604,12	1.081.236,00
Luís Bom Tunnel 2	NATM	497,00	60,50	88,25	5.339,13	1.601.737,50
Vigário -Ponte Coberta (“By pass”) Tunnel	NATM	4613,00	752,00	42,00	31.584,00	9.475.200,00
Estação da Luz CPTM - Metrô SP Tunnel	NATM	62,31	32,31	96,52	3.118,61	935.583,00
Morro do Vieira BR-280/SC Tunnel	NATM	88,96	88,96	86,00	7.651,00	2.295.300,00
TOTAL					220.813,65	66.244.095,36