

Press Release
November 2021

7TH EDITION OF THE ITA TUNNELLING AWARDS FROM THE 29TH OF NOVEMBER TO THE 2ND OF DECEMBER 2 FINALISTS FOR INNOVATIVE AND CONTRIBUTING UNDERGROUND SPACES

Since 2015, the international competition "ITA Tunnelling and Underground Space Awards" aims to reward the most ground-breaking innovations and outstanding projects in underground construction. Due to the recent global pandemic which impacted international travels, this edition will be held online through a dedicated platform, from the 29th of November to the 2nd of December, where the winner will be elected.

Through 8 categories, this competition aims to identify the most important ongoing underground works and technologies that help cities change and enable habits and ways of life to evolve in order to build smart and sustainable urban areas.

One of the categories of the competition is focused on rewarding the **Innovative and Contributing Underground Spaces**. Amongst all of the projects submitted for this category, the panel of judges identified **2 finalists** that seem to pursue one common goal : **propose new and innovative spaces**.

These new underground spaces adapt to today's world by focusing on already existing elements (like caves in Norway) and by preventing climatic hazards. They share a common interest : integrating new technologies and intelligent systems (like data or open clouds) into constructions in order to move towards greener and more environmentally friendly works.

The digital transformation is also reflected in the projects of these awards.

NOVELTIES FOR 2021 :

Over the past years, underground space has been identified as a crucial lever to build resilient urban environments and tackle impacts of climate change. Sustainability and Ethic have become the driving forces behind all underground projects, and through this new edition, ITA Tunnelling and Underground Space Awards has at heart to demonstrate the evolution of the industry to meet these new challenges, and especially with the new category « Beyond Engineering: Making underground works projects even better ».

INNOVATIVE AND CONTRIBUTING UNDERGROUND SPACES CATEGORY AND ITS FINALISTS

- **Fuxin Parking Lot of Shenzhen Rail Transit Line 14, in China**



The building area of Fuxin Parking Lot of Shenzhen Metro Line 14 and his parking lot are located in the prosperous central area of Futian District in Shenzhen, where the land resources are not sufficient and the land for construction is limited.

Fuxin Parking Lot adopts the construction pattern of an underground parking lot in the prosperous central area of the city. The completion of Line 14 can promote the development of eastern and western areas to a greater degree as well as dealing with the problem of traffic connection of Shenzhen East Railway Station in Pingshan, and realize the dream of enjoying the metro services by citizens in Kengzi, Pingshan and Pinghu, etc.

Shenzhen Metro Line 14 is a line planned in Shenzhen Urban Rail Transit Construction and the project starts from Gangxia North Hub (which is in the center of Futian) and terminates at Shatian Station, which passes through Futian District, Luohu District, Longgang District and Pingshan District. The Phase 1 line of Shenzhen Metro Line 14, with a total length of 50.34km, is designed with a total of 18 underground stations.

We cannot not talk about the innovation of the support system (annular-plate support system of "half top-down" structure). The first support of the parking lot is designed of the annular-plate support system of "top-down" structure. This support system can adapt well to super-large foundation pit and also better control the deformation of foundation pit.

Combining these two advantages learned from annular support system and the "cut-and-cover" method, respectively.

- **Lefdal Mine Data Center - The Norwegian Solution where scale and flexibility meet resiliency**

Lefdal Mine was one of the world's largest olive mines, located next to Nordfjord in western Norway. The mine has large caverns in six levels, totally 75 pcs. and expandable area of 120,000 m² and has a total length of 500 m and width of 350 m and reaching a depth of 160 m.

The entry addresses novelty, it addresses re-use of existing underground rock caverns that earlier were excavated for extract mineral resources and it addresses technologies that enable a green approach with renewable energy.



These caverns have been inspected by engineering geologists to make sure that they were safe enough before the beginning of the project. The proposed project is certainly one that fulfil many of the Sustainable Development Goals and the concept of circularity. By reusing the existing mine openings the concept does limit the above foot print, it take benefit of the availability of sea water for cooling purpose and electrical power generated through hydro power development.

Last but not least, in a future that may suffer consequences of climate change the storage is safe for natural disasters, including earth quakes.

8 CATEGORIES AND THEIR FINALISTS :

- **MAJOR PROJET OF THE YEAR (OVER 500 M€)**
 - Klang Valley Mass Rapid Transit (KVMRT) Putrajaya Line Tunnels and Underground Station Works in Malaysia
 - Ismailia Tunnels under Suez Canal in Egypt
 - Shantou Bay Tunnel Project in China
- **PROJET OF THE YEAR (BETWEEN 50 AND 500 M€)**
 - Large-diameter shield tunnel engineering project in karst strata of sea area in China;
 - Ping'an Tunnel on Chengdu Lanzhou Railway in China
 - South extension of the metro Line 14 in Paris - GC02 contract in France
- **PROJET OF THE YEAR INCL. RENOVATION (-50 M€)**
 - Long Term Recycled Water Release Plan Stage 1 – Gold Coast Seaway in Australia
 - Relocation of Shatin Sewage Treatment Works into Caverns Hong Kong in China
 - Tangjiawan Dananshan Emergency Shelter Project in China
- **TECHNICAL INNOVATION OF THE YEAR**
 - A cloud based intelligent system for fully automated realtime design of tunnel supporting system in China
 - MISSIONOS for the Shaft & Tunnel Excavation Monitoring System for the DTSS2 Project in Singapore
 - O'Dive PRO services: decompression procedures monitoring in France
 - Riachuelo Lote 3 – Innovative method for the construction of sea outfall projects - The Risers Concept in Argentina
 - Virtual Master Rings, Replacing a tradition in Germany
- **BEYOND ENGINEERING – MAKING UNDERGROUND WORKS PROJETS EVEN BETTER**
 - Is shield tunneling spoil a waste? A novel solution says no. in China
 - Xueshan No.1 Tunnel Project of Huashixia- Dawu Highway in China
- **INNOVATIVE AND CONTRIBUTING UNDERGROUND SPACES**
 - Fuxin Parking Lot of Shenzhen Rail Transit Line 14 in China

- Lefdal Mine Data Center The Norwegian Solution where scale and flexibility meet resiliency in Norway

- **YOUNG TUNNELLER OF THE YEAR**

- **Chiranjib Sarkar** in India
- **Gianluca Comin** in Italy
- **Keith Bannerman** in Australia
- **Michael Mains** in Canada
- **Nick Hatzibousios** in Australia
- **Zhuanzhuan Zhang** in China

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