Egypt

Name: Egyptian Tunnelling Society

Type of Structure: Non Governmental, non-profit, open association

Number of Members: 328 members, 13 corporate members

ASSOCIATION ACTIVITIES DURING 2018 AND TO DATE

In 2018 the Egyptian Tunnelling Society continued working to show society the benefits of the underground environment, both through the implementation of technical events, and the dissemination of materials via technical events.

Several activities, like Lectures and Presentations at engineering events were developed through 2018. The lectures titles were:
1) Geo environmental Impact of Egyptian Soil Formations on the Safety of Structures.
2) The 10th Ramadan Railway Project.
3) The Role of Numerical Modelling in Tunnel Rehabilitation
4) Small Holes - Major Consequences, tunnels and deep excavation in sand.
5) Innovative Methods and Concepts around Sprayed Materials Technology for Sustainable Construction Solution.
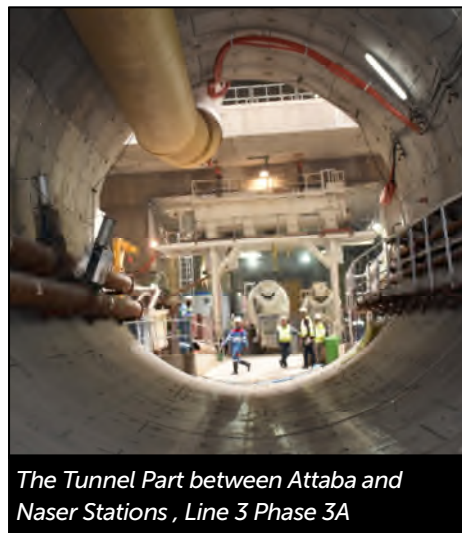
Additionally, a mini-symposium was organized in collaboration with the ICCEE2018 conference at Hurghada (24-26/11/2018). Preparation for the ETS Conference & Exhibition 2019 (http://icgi2019-ets.org/) started earlier in 2018.

CURRENT TUNNELLING ACTIVITIES

The Greater Cairo Metro Line 3 is 47km in length of which nearly 29km are underground together with 38 stations. The route extends from Cairo Airport to Imbaba. An additional branch to Mohandeseen of 6km, has been added which will also be constructed underground. The line crosses the River Nile twice. The planned capacity of the line when completed is 2.1 million passengers/day. Phases 1 and 2 are already finished and under operation. Phases 3A, 3B and 3C are currently under construction since December 2016, Phase 4A is finished and in operation as of December 2018, while phase 4B will be delivered in April 2020. The tender document for phase 4C is currently under preparation and planned to start in November 2019.

The Line 4, phase I of the Cairo Metro is already tendered and planned to start in July of 2019. The Study Area is defined by: Phase 1 of the proposed Metro Line 4, running from a depot/workshop via the Grand Egyptian Museum to El Malek El Saleh Station with a length of about 19km; and Phase 2 route between El Malek El Saleh and New Cairo with a length of about 22km, namely "Northern Route".

The Tunnel Part between Attaba and Naser Stations , Line 3 Phase 3A

FUTURE TUNNELLING ACTIVITIES

- Greater Cairo Metro Line 4, Phase 1 and 2. The total length of Phase 1 is about 19km. Line 4 Phase 1 will cross the Nile river and crosses Line 1 at El Malek El Saleh Station and Line 2 at El Giza Station. The total number of stations in Phase 1 is 17. Phase 2 of the proposed Line 4 route starts from Fustat Station to New Cairo with a length of about 23.5km. The total number of stations in Phase 2 will be 19.
- Extension of Line 2 of the Greater Cairo Metro To Qalyoub with a total length of 8.8km.
- The studies of Greater Cairo Metro Line 5 with a total length of about 20km and 17 underground stations.
- LRT 10th of Ramadan Railway
- Rehabilitation of Cairo Metro Line 1

Lateral Supports of Side Walls, Naser Stations, Line 3 Phase 3A

STATISTICS

1. **Length or volume excavated 4km - % 100mechanized/0 % conventional during 2017**
2. **Amount (USD or EUR) of tunnelling/underground space facilities awarded in 2018** €1.66bn
3. **List of tunnels completed:** Metro Line 3 Phase 4A
4. **List of tunnels under construction** Metro Line 3 Phases 3A, 3B,3C & 4B

EDUCATION ON TUNNELLING IN THE COUNTRY

The basic courses for the analysis and design of underground structures especially with the Cut and Cover Technique are being implemented in all Egyptian universities at the undergraduate stage. Only a few universities are offering specialized tunnelling courses in both undergraduate and post graduate stages (Minia University, Ain Shams University, ..etc.) The ETS are currently investigating the different courses in all universities to prepare a database for tunnelling education in Egypt. However, the ETS is responsible for offering a practical training for some students and young engineers at NAT projects periodically.

A finished station on Line 3