

# KOREA (SOUTH)

**Name of Association:** Korean Tunnelling and Underground Space Association

**Type of Structure:** Non-profit, open association

**Number of Members:** 3449 members, 76 corporate members



## ASSOCIATION ACTIVITIES DURING 2023 AND TO DATE

Established in 1992 as a non-profit incorporated association, KTA is the tunnel-oriented national organization that complies with the international aims of ITA. Most of the KTA members are

tunnel engineers, but not limited to the civil engineering field. Recent expansions into the field of fire, disaster prevention and ventilation within tunnels, among others, are noteworthy.

In 2023, KTA hosted the international conference (ICTUS, International

conference on Tunnels and Underground Spaces) under the platform of the 2023 World Congress on Advances in Structural Engineering and Mechanics (ASEM23) (Theme: Tunnelling a Sustainable Way for a New-Normal World) 2023/08/16-18, Seoul (300 domestic participants, 50 international participants).

In addition, KTA hosted several domestic conferences, forums, short courses, and technical seminars. The short list is as follows:

- 2023 KTA General Assembly and Annual Spring Conference
- 2023/04/14, Seoul (250 domestic participants)



- 2023 KTA Tunnel Construction Policy Forum & Seminar on Underground Safety (Theme: Technological Trends for Tunnel Safety Construction), 2023/11/09, Seoul (110 domestic participants)
- Tunnel Face Mapping Short Course on NATM tunnelling for Korea National Railway, 2023/05/30-31, Seoul (160 domestic participants)
- Special Education Course on Utility tunnelling for TBM application, 2023/06/13, Daejeon (150 domestic participants)
- The KTA Short Course on tunnelling with Tunnel Boring Machines, 2023/07/13, Seoul (45 domestic participants)
- Technical Seminar for Underground Disposal of Radioactive Waste in Waste Disposal Facilities, 2023/07/18, Daejeon (68 domestic participants)
- Forum of Tunnel Construction/ Maintenance and Smart Construction Technology (Theme: Recent Issues and Latest Smart Technologies in Tunnel Construction and Maintenance) 2023/08/31-09/01, Seoul (246 domestic participants)
- KTA-Annual WG Activity Reports: 19 WG activity reports, 12 WG technical reports

#### Publications

- Domestic technical journal "Journal of Korean Tunnelling and Underground Space Association" (six issues with 36 papers in 2023)

- Quarterly magazine "Nature, Tunnel and Underground Space"

#### CURRENT TUNNELLING ACTIVITIES

##### Youngdong Main Street Underground Complex Development Project

- Maga-Underground Space in Seoul Metropolitan
- Total underground space of 0.41Mm<sup>2</sup>
- Project cost will be about \$1.5bn

##### Kimpo-Paju 2nd Seoul Outer-Ring-Road Project (passing Han River section)

- Connecting the 2nd Seoul outer-ring-road
- Total length of 25.3km (Passing Han River over a section of 4km)
- Project cost will be about \$1.3bn

##### Gangneung-Jejin Single Line Railway Construction Project

- Railway along the east coast in Korea
- Total length of 111.7km (undersea section of 50.9km)
- Project cost will be about \$2.5bn

##### Chuncheon-Sokcho Double Line Railway Construction Project

- Railway connection east and west Korea
- Total length of 93.7km
- Project cost will be about \$1.8bn

##### Great Train eXpress (GTX) Higher-Speed Commuter Rail Network Project

- Densely-populated Seoul capital region
- GTX-A 83.1km with 11 stations, GTX-B, GTX-C, GTX-D will be continued.

- speeds of up to 180km/h in tunnels built 40m below ground, bypassing existing infrastructure, and reducing commute times significantly
- Project cost will be about \$61bn

##### Dobongsan Mountain-Pocheon Subway Extension Project

- Railway extension of Subway Line No. 7
- Total length of 33.1km
- Project cost will be about \$1.6bn

##### Pocheon-Sejong Highway Construction Project

- Railway extension of Subway Line No. 7
- Total length of 177.6km
- Project cost will be about \$5.5bn

##### Incheon Urban Railway Line 1 Geomdan Extension Line Construction Project

- Railway extension of Subway Line No. 1 of Incheon Urban Railway
- Total length of 6.8km
- Project cost will be about \$560M

#### FUTURE TUNNELLING ACTIVITIES

##### Honam-Jeju Subsea Tunnel Project

- Connecting the Korean Peninsula and Jeju Island
- Total length of 167km (Undersea section of 73km)
- Project cost will be about \$15bn

##### Youngjong Island 3rd Connection Way Project

- Connecting Incheon hub airport and Seoul metropolitan area
- The 3rd connection way after two

# ITA MEMBER NATION ACTIVITY REPORTS 2023

long-span marine bridges

- Consideration of transport security and weather accident

## Namhae-Yeosu Undersea Tunnel Project

- New 8.09km four-lane highway connecting Shindeok-dong in Yeosu and Seomyeon in Namhae on the country's southern coast
- Total length of 8.09km (undersea section of 5.76km)
- Project cost will be about \$530M

## Indeokwon-Dongtan Double Track Railway Construction Project

- Expansion of metropolitan transportation functions in the southwestern metropolitan area
- Total length of 34.3km
- Project cost will be about \$2.1bn

## Wolgot-Pangyo Double Track Railway Construction Project

- Providing rail transportation convenience to local residents through

direct connection between the metropolitan area and the Gangwon area

- Total length of 34.16km
- Project cost will be about \$1.7bn

## Pyeongtaek-Osong Double Track Construction Project

- Providing rail transportation convenience to local residents through direct connection between the metropolitan area and the Gangwon area
- Total length of 34.16km
- Project cost will be about \$1.7bn

## Southern Inland Railway Construction Project

- In order to expand the capacity of the Pyeongtaek-Osong section, which has insufficient track capacity, an additional high-speed rail double track was constructed (two tracks) to improve convenience for high-speed rail users.
- Total length of 46.4km
- Project cost will be about \$2.5bn

## STATISTICS

### List of tunnels completed

- Daegok-Sosa Railway Tunnel
- Yulchon Thermolectric Power Plant Tunnel

### List of tunnels under construction

- Youngdong Main Street Underground Complex Development Project
- Kimpo-Paju 2nd Seoul Outer-ring-road Project
- Gangneung~Jejin Single Line Railway Construction Project
- Chuncheon~ Sokcho Double Line Railway Construction Project
- GTX A (Ilsan - Dongtan) Project
- GTX C (Uijeongbu - Geumjeong) Project
- Dobongsan Mountain~ Pocheon Subway Extension Project
- Pocheon~ Sejong Highway Construction Project
- Incheon Urban Railway Line 1 Geomdan Extension Line Construction Project