

# Korea (South)



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

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

**Number of Members:** 3055 members, 73 corporate members

## ASSOCIATION ACTIVITIES DURING 2021 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, although not limited to the civil engineering field and recent expansion into the field of fire, disaster prevention and ventilation within tunnels, among others, are noteworthy.

- In 2021, KTA hosted the international conference (ICTUS, International conference on Tunnels and Underground Spaces): 2021. 08.24~26, Seoul ,
- In addition, KTA hosted several domestic conferences and forums:
  - 1) 2021 KTA General Assembly: 2021.04.22, Seoul (300 domestic participants),



- 2) 2021 KTA Tunnel Construction Policy Forum & Annual Conference: 2021.11.05, Seoul (200 domestic participants),
- 3) The KTA Technical Forum on TBM

- Tunnel: 2021.02.22 - 02.24, Seoul (58 domestic participants),
- KTA hosted eight continuing education and training courses last year, see: 'Education on Tunnelling in the Country'
- KTA-Annual WG Activity Reports: 11 WG activity reports, 6 WG technical reports

## Publications

- Domestic technical journal: "Journal of Korean Tunnelling and Underground Space Association" (six issues with 43 papers in 2021)
- Quarterly magazine: "Nature, Tunnel and Underground Space"

## CURRENT TUNNELLING ACTIVITIES

### Daegok-Sosa railway tunnel construction

- TBM + NATM hybrid construction
- Dia. 8.1m twin shield TBM tunnel crossing the Han River
- Total length of 18.36km (2.85km in the Han River)

### Kimpo-Paju 2nd Seoul outer-ring-road project (passing the Han River section)

- Connecting the 2nd Seoul outer-ring-road
- Total length of 25.3km (Han River section is 4km)

- Project cost will be about \$1.3bn

### FUTURE TUNNELLING ACTIVITIES

#### Youngdong Main Street Underground underground complex development project

- Mega-underground space in Seoul Metropolitan
- Total underground space of 0.41Mm2
- Project cost will be about \$1.5bn

#### 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 the Seoul metropolitan area
- The 3rd connection after two long-span marine bridges

#### Gangneung-Jejin single line railway construction project

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

## EDUCATION ON TUNNELLING IN THE COUNTRY

### KTA Continuing Education and Training Course

*2021.03.04, Seoul (online courses)*

Environmental issues during Tunnel blasting

Low-cost windless pipe local ventilation system

*2021.04.08, Seoul (online courses)*

EPM protection system

Technology for widening existing tunnels

*2021.05.06, Seoul (online courses)*

Understanding design and construction for tunnel maintenance

Tunnel maintenance

*2021.06.03, Seoul (online courses)*

Geotechnical survey theory and lab-test

Field geotechnical investigation test

*2021.09.02, Seoul (online courses)*

Subsidence analysis practice due to lowering of groundwater during underground excavation

“Underground space development”

new demands and paradigm for urban development

*2021.10.07, Seoul (online courses)*

Shield TBM design and construction technology for utility tunnel construction

Stability evaluation technology of utility tunnel

*2021.11.04, Seoul (online courses)*

Expressway tunnel method (ex-TM)

Contents

Revision of railway tunnel design standards

*2021.12.02, Seoul (online courses)*

BIM application in tunnel design

Domestic and overseas application examples of underground space BIM design (GeoBIM)

## STATISTICS

### 1. List of tunnels completed

Wonju-Gangneung High-speed Railway Tunnel

Jinhae-Guyjae Main Gas Pipe Line Tunnel

Gunjang Energy GE-3 PJT Subsea Tunnel

### 2. List of tunnels under construction

Yulchon Thermoelectric Power Plant Tunnel

Boryung-Taeon Subsea Road Tunnel

Daegok-Sosa Railway Tunnel

Kimpo-Paju 2nd Seoul Outer-ring-road Project