

A new tunnelling era: the challenges of this decade (2020-2030) for the tunnelling industry

Thanks to the entry into the active phase of the Recovery and Resilience Plan, the decade we are already living is, at both Europe and Italian levels, a dynamic period for infrastructural work. As far as the Italian scenario is concerned, 48% of funding directly acts on the construction field, a field at which tunnels belong. Consequently, we are going to approach very dynamic years characterized by a huge number of tunnelling constructions: a number never seen in Italy before. This decade will be rich of challenges for all stakeholders involved in the tunnelling world, from designers to builders, by way of clients and material suppliers. The short-scheduled time for completing a work, the growth of price due to energy costs, the need for expert technicians and the Italian geological scenario (averagely not simple for a tunnel construction) are challenges that are complemented by the issue of sustainability. The optimization of the energy use is, indeed, not enough for reducing and controlling the carbon footprint of a tunnel construction. Alongside, new materials, new technologies or design adaptations can play a key role in reducing greenhouse gas emissions, crucial issue given the huge number of projects ready to start or already started.

At the same time, we need to keep in mind that the Fundamental Italian Infrastructure Network consists in structures built during the first and last years of last century. Railways and road tunnels represent a testimony of the evolution of technologies and construction techniques in the field. An example is the heterogeneity of construction materials of linings, going from brick masonry (1920s-40s) to the more complex reinforced and non-reinforced concrete (from the 1960s). Assessment, maintenance and operational management of the works are only a part of all the challenges the Italian industry is starting to face in this decade and that will face in the next one. Italian industry will have to respond to the new trends of the infrastructure market by guaranteeing a balanced, sustainable and innovative blend of the "new" and "already built". Moreover, these years aim at handing over to the next generations a new infrastructure network both resilient and capable of offering high safety standards in compliance with UE regulation.

As forerunner of the international event of "ITA & SIG 50th Anniversary Celebration Tunnels and Underground Works: over the last 5 decades and onwards", the Italian Tunnelling Association (SIG) has organized a two-days conference focused on the current decade (2020-2030) and on the challenges the tunnelling industry is going to face.

Program – October Thursday 10th

- 01:00 PM *Registration*
- 02:00 PM *Opening speeches*
SIG President **R. Casale**
SIG YMs group **L. D'Angelo**
- Session I Chairmen: **A. Viglione, E. Consoli**
- The challenges of the new works**
- 2:30 PM **M. Ianeselli** (BBT - SE)
Artificial ground freezing in the Isarco River Underpass construction lot
- 3:00 PM **A. Petriccioli, L. Tafuri, A. Daniele** (Webuild)
Young talents develop new technologies for TBMs and related control systems
- 3:30 PM **I. Migliori, A. Zambon** (Autostrade/Tecne)
Sustainability and Innovation during construction of the New San Donato Tunnel: Proximity of an existing highway Tunnel, BIM Modelling and Advanced Monitoring Plan
- 4:00 PM *Coffee break*
- 4:30 PM **C. Todaro** (Politecnico di Torino)
Sustainable two-component grout: sludge from ornamental stone cutting process as raw ingredient
- 5:00 PM **E. Barbero** (Utt Mapei)
Challenges of EPB excavation in areas with low water availability: a new line of products to reduce the amount of water required for soil conditioning
- 5:30 PM *Round Table and Conclusions*

Program – October Friday 11th

- 9:20 AM *Opening speeches*
SIG Vice President: **M. Bringiotti**
SIG YMs group **R. Amodeo**
- Session II Chairmen: **S. Fabozzi, C. Todaro**
- The challenges of existing infrastructures**
- 9:30 AM **S. Guanziroli** (Hinfra)
A new technology for the rapid resurfacing and reconstruction of damaged crowns in tunnels
- 10:00 AM **D. Iorio** (SINA – Gruppo ASTM)
Innovative technologies and methodologies for tunnelling inspections and monitoring
- 10:30 AM **A. Pranno** (RFI)
Interventi sulle gallerie dell'infrastruttura ferroviaria esistente
- 11:00 AM *Coffee break*
- 11:30 AM **F. Callea** (Lombardi)
Structural assessment on existing tunnel linings: technical solutions for restoration
- 12:00 PM **G. Masnaghetti** (RockSoil)
The refurbishment of the tunnels on the SS36 highway: design and on-site experiences
- 12:30 PM **S. Schmalzbauer** (Herrenknecht)
Mechanized refurbishment and enlargement of existing tunnels
- 1,00 PM *Round Table and Conclusions*
- 1:30 PM *Lunch*

REGISTRATION FORM

TO BE FILLED IN THE FORM DIRECTLY ON THE WEBSITE
www.societaitalianagallerie.it Events Area

Registration: the registration form must be filled on the web site and submitted within **the 2nd of October 2024**

Any cancellations, which allows a 50% reimbursement, must be received no later than the 2nd of October 2024.

Registration fee (including VAT not shown):

payment by 10.09.2024

| | |
|-----------------|----------|
| SIG member | € 160,00 |
| SIG non-member | € 180,00 |
| SIG YM e Junior | € 85,00 |
| Students | €50,00 |
| Streaming | €50,00 |

payment after 10.09.2024

| | |
|----------------------|----------|
| Member/non member | € 200,00 |
| Member YM and Junior | € 115,00 |
| Students | €50,00 |
| Streaming | €50,00 |

The registration fee includes: entrance invitation to the conference, coffee-breaks, lunch of 11/10/2024.

SIG member who have not paid the annual membership fees will not be eligible for the reduced fees.

Payment methods:

Bank credit transfer to: **SIG s.r.l.**
Via G. da Procida, 7 - 20149 Milano -
IBAN: IT45J0200801621000100504079
Unicredit, Ag. 221 - L.go Donegani n. 3 - 20121 Milano-MI

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SOCIETÀ DI SERVIZI S.I.G. Srl

20149 Milano – Via Giovanni da Procida, 7 – tel. 02 25715805
C.F. - P.I. e Registro Imprese di Milano n. 03619090966 R.E.A. 1689998



Conference:

“A new tunnelling era: the challenges of this decade
(2020-2030) for the tunnelling industry”

October 10 – 11, 2024

N. 3 CFP will be granted for the day of October 10th and N. 3 CFP for the day of October 11th by the National Council of Engineers

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