

COSTA RICA



Name of Association: Asociación Costarricense de Obras Subterráneas, ACROS

Type of Structure: Non-profit, open association

Number of Members: 25 members, 4 corporate

ASSOCIATION ACTIVITIES DURING 2023 AND TO DATE

The third Costa Rican Congress of Underground Works, CCROS 2023: “Current practices in the design and construction of underground works”, was held from March 9th - 11th, 2023, with a technical program featuring the following four sessions:

- Session 1: Underground works planning course
- Session 2: Design of underground works
- Session 3: Construction of underground works

- Session 4: Monitoring and evaluation of underground works

The number of participants was 121. The speakers were from: Germany 1, Spain 6, France 3, México 3, Chile 3, and Colombia 1.

CURRENT TUNNELLING ACTIVITIES

- The pipe-jacked micro tunnel on the Ambiental Improvement of the San Jose Metropolitan Area residual water project has seen the following advance: In the north sector of San José, 1918m of pipe jack micro tunnels of 600mm

diameter, and four shafts of 3.5m diameter with an average depth of 10m.

- The mobility improvement on the Circumvallation Route of San José has had the following advance: Excavation of the underground pass under the Circumvallation Route at the Calle Blancos intersection stands at 355m long and 22m - 35m wide, with a 62% advance.
- Completion of the 510m long at the La Uruca intersection of the Circumvallation Route underground pass.
- A new 60m long underpass at the La Galera Intersection on the National Route No. 2 Florencio del Castillo was completed.
- Corrective maintenance works on Tunnel 1 - 500m long - on the Hydropower Plant Garita, which was built more than 50 years ago. The work consisted of repairing the concrete lining, filling the annular space between the concrete lining and the rock, and

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consolidating, at a depth of 3m, the surrounding rock by injecting water-cement grout with a resistance equal to or greater than the resistance of the concrete. As a result, a significant number of voids were found behind the lining and the rock. Large open fissures were also found in the rock that were injected and consolidated.

FUTURE TUNNELLING ACTIVITIES

- Three tunnels for the fifth stage of the potable water supply project for the Metropolitan Area of San José, with a total length of 11.8km and 3.9m diameter.
- Two tunnels for storm sewage relief for the Metropolitan Area of San Jose, 1300m length, 3m diameter each.
- An ACROS Petit Committee is drafting a Technical Guide for the Development

of Underground Works in Costa Rica under the auspices of the College of Civil Engineers of Costa Rica. The guidelines will be complete in December 2024.

EDUCATION ON TUNNELLING IN THE COUNTRY

Course on Underground Works, as part of the Master Science Program on Civil Engineering of the University of Costa Rica (UCR).



Above: La Galera Underground Pass
Right: Garita Hydroelectric Tunnel

