MACCAFERRI

CASE HISTORY

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CONTRACT P105 CRL-PUNGGOL EXTENSION

SINGAPORE, PUNGGOL, SINGAPORE

Excavation Consolidation and Reinforcement

Problem

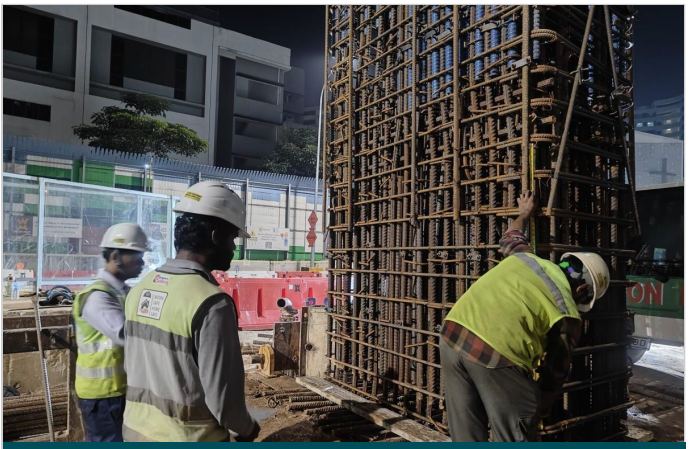
Tunneling plays a vital role in modern infrastructure development, enabling efficient urbanization and improved connectivity. Singapore is developing their transportation infrastructure. As a part of it contract P105 is for design & construction of Punggol intercahnge station & tunnels for CRL-Punggol extension.
For tunneling Dwalls are conventionally done with RCC wall. However, it is very tidious to operate TBM through it and many of the times it ends up damaging the TBM.

Solution

As cities continue to expand and transportation networks become more complex, the demand for innovative tunneling solutions that enhance safety and streamline construction processes has never been greater. One such innovation gaining significant attention is the use of Glass Fiber Reinforced Polymer (GFRP) systems.
GFRP solutions have emerged as a highly effective method for soil consolidation and structural reinforcement in underground construction. Due to their exceptional strength-to-weight ratio and inherent resistance to corrosion, GFRP bars are increasingly being used as alternatives to traditional steel reinforcement, particularly in temporary tunneling structures. Among the various applications of GFRP, the implementation of GFRP Composite Reinforcement Grid (CRG) bars in "soft eye" solutions stands out as a critical advancement.
The "soft eye" technique involves the integration of knock-out panels within diaphragm walls, retaining structures, or piles to facilitate controlled tunnel breakthroughs. GF

Client: Land Transport Authority (LTA), Singapore
Designer / Consultant: Tylin International with ONG&ONG
Contractor: Woh Hup (Private) Limited
Products used (Qty.)
- Tunnelling Reinforcement GFRP bars

Date of construction: 05/2025 - 05/2025
Google Maps Google Earth



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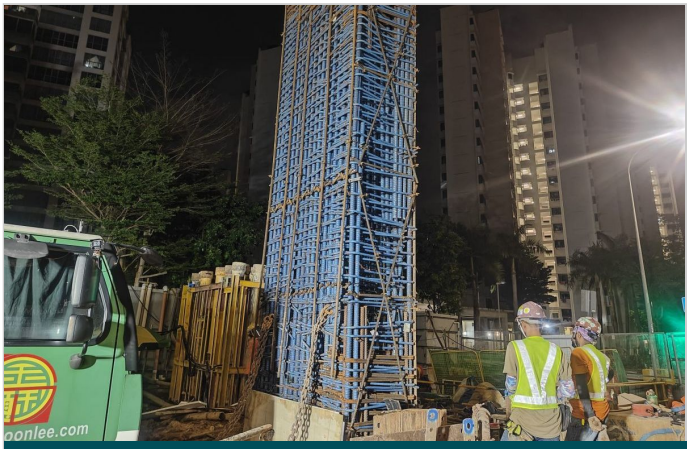

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