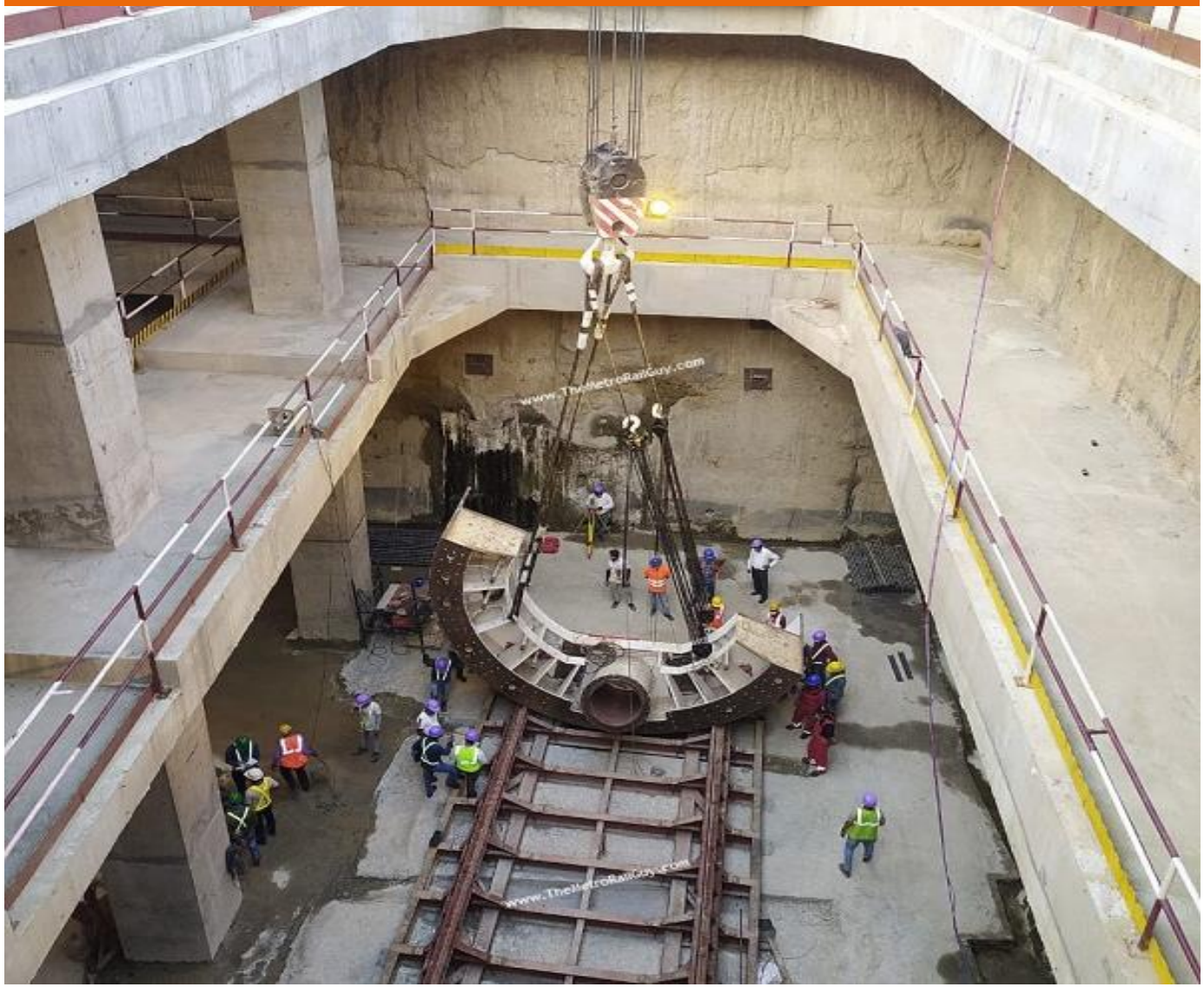
Delhi MRTS Package DC-06, India



Package DC-06: Janakpuri West to R.K. Ashram Corridor (Extn. of Line-8) of Phase-IV of Delhi MRTS, India

Design consultancy services for “Design and Construction of Twin Tunnel by Shield TBM, Cut & Cover Tunnel box, Underground ramp and one Underground station namely Krishna Park Extn. With Entry/Exits & Connecting subway by Box pushing method including Architectural Finishing, Water Supply, Sanitary Installation & Drainage works from chainage 805.110mt. to 2830.863mt. (UP Line) & from chainage 788.198 mt. to 2814.745 mt. (DN Line) of Janakpuri West to R.K. Ashram Corridor (Extn. of Line-8) of Phase-IV of Delhi MRTS”

Client

HCC - VCCL Joint Venture, India

Authority

Delhi Metro Rail Corporation Ltd. (DMRC), India

Scope

Detailed Design of

- Bored twin tunnels (TBM) and cross passages (NATM)
- Launching Shaft
- One UG station
- Cut & Cover and UG ramp
- Tunnel drainage, instrumentation and monitoring scheme

Developing structural 3D BIM model

Challenges

- Densely populated urban area
- Sensitivity for noise and pollution
- Difficult ground – mainly soil with high water table, old dilapidated buildings on tunneling route, settlement issues
- All structural GA and reinforcement drawings extracted from 3D BIM models

AMBERG ENGINEERING

AMBERG FACTS

Contracted value Amberg

- Total Approx. INR 4.30 Crores

Project Phases & Duration

- Design: Start in Jan 2020
- Construction: From March 2020

Project Details
Tunnels

- Twin-tube tunnel
- Length: 2 x 1400 m approx.
- Machine drive by closed tunnel boring machine (Earth-Pressure Balance Shield– EPBS TBM)
- Inner diameter: 5.80 m
- Single shell watertight segmental lining

Metro station

- One underground station at Krishna Park Extn.
- Top Down construction using diaphragm Walls

Cut and Cover Tunnel and UG Ramp

- Cut and Cover tunnel part is constructed using Diaphragm walls and UG ramp is constructed using temporary retaining systems like soldier piles, struts and waler

Launching Shaft

- Launching shaft for the TBMs to be constructed by open cut excavation using temporary retaining system like Soldier piles and struts

CLIENT FACTS

Overall costs

- Total Approx. INR 489 Crores

Overview Project

- 2 single-track metro tunnel tubes, length approx. 2 x 1400 m
- One underground metro station 235 m
- Cut & Cover tunnel (190 m) and ramp (170 m)
- Launching Shaft

Geology

The region comprises of quartzite of Delhi super group and quaternary to recent alluvial sediments. This project is completely in soil. These are unconsolidated, interbedded layers of sand, silt, gravel and clay; mostly confined to flood plains of Yamuna river.
Generally, the GWL is about 9.42 m to 14.00 m below existing ground level
Overburden: 15 to 20 m

Contact person

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