DIAPHRAGM WALL CONSTRUCTION FOR AN UNDERGROUND METRO PROJECT
LUCKNOW, UTTAR PRADESH

Key achievements
- On time completion of critical project in highly congested environment
- Received awards from client and Govt of India for safety practices
- Keller engineering excellence delivered top down construction approach

The project
M/s Lucknow Metro Rail Corporation was constructing an underground metro station at Hazrat Ganj, Lucknow which will be part of Lucknow Metro North-South Corridor. Keller was commissioned by the main contractor to construct diaphragm walls with lateral support to retain deep excavation.

The challenge
The major geotechnical condition was to maintain the verticality of D-Wall in the given soil condition. Also the operations were to be execution happened in the middle of one of the busiest narrow function roads in Lucknow. The installation of D-wall involves various activities like construction of guide walls, boring for d-wall by grabbing method, cage lowering, tremie lowering, concreting etc. including coordination of supporting activities which requires special attention on quality aspects to deliver the project as per specifications.

The solution
To address the associated challenge of the project, Keller developed and executed a buildable, value added “top down construction” method to build D-wall to retain the excavations as deep as 20 Meters. The global strength of Keller via expatriates from Australia, USA and Poland helped in initial engineering operations. With proper planning, regular site inspection & testing procedures, Keller was able to successfully accomplish first D-wall installation in 600 days of operation with 750,000 manhours of work with absolute safety and quality compliance.

Application
Earth retention

Technique
Diaphragm Wall

Market
Infrastructure - Metro

Client
Lucknow Metro Rail Corporation

Main contractor
Guler Mark-Tata Projects Ltd JV

Engineer
AYESA-KRNA-Aarvee-Geodata JV

Contract Value
INR 100 Millions approx.

Keller business unit (s)
Keller Ground Engineering India Pvt Ltd