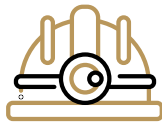


# ENGINEERING SERVICES & SOLUTIONS

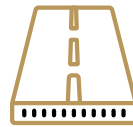
Stratum Logics is home to world-renowned civil engineers, geotechnical engineering experts and EPCM professionals. We provide a wide range of services that lend to our global geotechnical engineering expertise and allow us to build sustainable, long-lasting, cost-effective, low-maintenance, infrastructure in some of the world's most challenging physical environments.



**CONSTRUCTION SURVEYS**



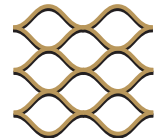
**CONSTRUCTION SUPERVISION**



**TRANSPORTATION ENGINEERING**



**WATER RESOURCES ENGINEERING**



**GEOTECHNICAL ENGINEERING**

## STRATUM SERVICES



### CONSTRUCTION SURVEYS

- ▶ Site reconnaissance
- ▶ Reference surveys
- ▶ Topographic surveys
- ▶ Drone surveys
- ▶ Pre-construction surveys
- ▶ Geometric layouts
- ▶ Construction layout surveys



### ENGINEERING & DESIGN

- ▶ Geometric & structural road design
- ▶ Load supporting structures
- ▶ Geosynthetic reinforcement (roads, pads, rail, yards, etc.)
- ▶ Erosion & sediment control
- ▶ Overland drainage
- ▶ Culverts
- ▶ Site grading plans
- ▶ Dry ponds
- ▶ Concrete swales
- ▶ Drainage structures & systems
- ▶ Water distribution systems
- ▶ Railway embankments



### REPORTS, PLANS TENDERS & PERMITS

- ▶ Road test & upgrade plans
- ▶ Tender preparation & management
- ▶ Work zone traffic accommodation
- ▶ Traffic impact assessments (TIA)
- ▶ Water management plans
- ▶ Topsoil relocation plans
- ▶ Erosion and sediment control plans
- ▶ Cut and fill plans
- ▶ Project execution plans (PEP)
- ▶ Material take-off (MTO)
- ▶ Engineering work packages (EWP)
- ▶ Roadside development permits
- ▶ Individual ownership plans (IOP)



### CONSTRUCTION SUPERVISION

- ▶ Administration & management
- ▶ Geosynthetics installation
- ▶ Subcontractor management
- ▶ QA / QC



### GEOTECHNICAL SERVICES

- ▶ Review & preparation of Geotechnical reports
- ▶ Drilling management; bore hole log preparation & analysis
- ▶ Dynamic Cone Penetration (DCP)
- ▶ Field & laboratory testing
- ▶ Bearing capacity calculations
- ▶ Falling weight deflectometer (FWD)
- ▶ Ground-penetrating radar (GPR)
- ▶ Subgrade preparation supervision
- ▶ Settlement analysis



### UTILITIES

- ▶ Assessments
- ▶ Crossing agreements



### 3RD PARTY SERVICES

- ▶ Surveys
- ▶ Environmental
- ▶ Land Agents
- ▶ Geotechnical