



Engineering Structures for Life

TRANSPORTS - INFRASTRUCTURES

King Abdullah Economic City - Industrial Valley Phase 4 (KAEC IV4)

ABOUT

King Abdullah Economic City (KAEC) is a new city envisioned by the Kingdom of Saudi Arabia to develop a more diverse and sustainable economy.

With a total development area of approximately 180 km², it is located 100km north of Jeddah, between the Red Sea and the Jeddah-Yanbu Highway.

The heart of GEG's mission was the design of the Infrastructure and Road network within Industrial Valley 4, located in the northeast portion of KAEC. The Industrial Valley's vision is to become the preferred regional hub for manufacturing industries and value-added global logistics, contributing to job creation and economic development for Saudi Arabia.

The IV4 design was based on information provided by the client by means of a Masterplan. GEG was responsible for the Grading and Road design which comprised proposal of general earthworks, road junction design, general plan of road marking and signage, pavement construction design, among other details.

Due to the presence of a wadi channel, GEG had the duty of designing the wadi crossing structures.

The infrastructure design encompassed the design of the following networks:

- Stormwater;
- Potable water supply & Firefighting;
- Sewerage;
- Gas corridors;
- Electrical power;

FACTS

Year: 2016-2018

Client: Emaar, The Economic City

Services: Detailed design, Roadway design, Excavations and earthworks design, Infrastructures design, Mechanical, Electrical and Plumbing design, Project Management, Value Engineering

TEAM

LOCATION

King Abdullah Economic City (KAEC), Saudi Arabia

- Irrigation,
- Telecommunications.

The Stormwater network design comprised the conception of an extensive gravity pipe system and swale network running along the roadways, connected to the existing wadi channel that runs through KAEC.

The design of Potable water, Firefighting and Irrigation networks consisted on the general arrangement of the pipe system complemented with valves or other water system devices.

The designed Sewerage network included a gravity pipe network, with its auxiliary devices and a foul water pumping station, pumping a flow of approximately 400 l/s.

The Electrical Infrastructure design comprised the layout of the Medium and Low voltage networks, with its cabling and manholes as well as the arrangement of the street lighting network and other electrical control systems, such as irrigation or traffic signal controllers.

The design of the Telecommunications network consisted on the general layout of its ducts, plot connections and details required for service.

This project had the implementation of BIM technology, by resorting to Navisworks. Due to the existence of numerous infrastructures, the possibility of existing incompatibilities between the different engineering disciplines is very high. By making use of a 3D model, the designed infrastructures become coordinated, avoiding possible coordination issues during construction.

Besides the supplied design services, this venture had a strong component in Project Management due to the various disciplines foresaw in GEG's scope of work, requiring a resilient attitude towards the project. To achieve the best solutions, a strong communication channel was kept with the client to keep it always informed and to guarantee all project decisions are valid.

With this project, GEG demonstrated a strong capability in Project Management and that it is a company capable of undertaking multidisciplinary projects.