

Infrastructure Facilities for the New Capital City

Client

New Urban Communities Authority (NUCA)

Scope of Work

Schematic Design
Detailed Design
Tender Documents

Location

New Capital, Egypt

Types of Activities

Communications and Security Systems
Electrical
Infrastructure

The project covers the strategic plan and development strategy for the New Capital City; including the following infrastructure components:

Combined Potable Water and Firefighting Networks

The networks are located under the main streets; feeding the different project areas with the required amount of water through different sources including:

- New Water Treatment Plant in the New Capital (1,500,000 m³/day): The treated water is transmitted to a storage tank located inside the borders of the New Capital.
- Existing Water Treatment Plant in 10th of Ramadan City (180,000 m³/day): The treated water is transmitted to a 100,000 m³-ground-storage-tank located inside the borders of the New Capital.
- Existing Water Treatment Plant in New Cairo City (125,000 m³/day): The treated water is transmitted to an 80,000 m³-ground-storage-tank located inside the borders of the New Capital.

Irrigation Network

The irrigation network feeds different project areas with the required amount of irrigation water. Following are the different sources of irrigation water:

- New Main Wastewater Treatment Plant in the New Capital (200,000 m³/day): The treated water is transmitted via 3 transmission lines.
- Existing Wastewater Treatment Plant (100,000 m³/day)
- Existing Water Treatment Plant in New Cairo City (30,000 m³/day): The treated water is transmitted to underground tanks which have a capacity of 42,000 m³.



Combined Sewage and Storm Water Networks

The generated sewage and stormwater flow are collected from different project areas (parcels) for final discharge into the New Capital Sewage Treatment Plant; by means of main gravity pipeline. The design of the networks was based on storm water management.

Main Power Network

The total loads for Phase (1) is equal to almost 8.3 GVA, which are supplied by 19 main HV substations as follows:

- 3 Main HV Substations (existing or under construction)
- 16 Future Substations to feed the needed electrical loads through distributors

All connection points between loads/parcels and substations/distributors consists of Aluminum MV cables with a suitable cross section.

Street Lighting Network

Being a city that features smart technology, there are two types of lighting poles in the New Capital main and lateral roads; normal and smart lighting poles. The smart poles provide a range of services that encompass WiFi network, CCTVs, billboards, electronic signage, and amplifiers.

Telecommunications Network

Phase (1) will be served by 9 Network Nodes (N.Ns), which accommodates the main Optical Transport Network (OTN) in addition to N.Ns equipment.

Networks are designed to cover all outdoor areas of the city with smart and secure services. The design of telecommunications and smart networks is based on utilizing Air Blown Fiber System (ABF) technology to realize the following applications: Smart Pole Service; Facility Management Systems such as advertising, power, water, parking, lighting, and waste; Environmental Monitoring Stations; and Intelligent Transportation System (ITS).