



Water and Sewerage Authority Trinidad and Tobago Matura Water Treatment Plant Design/Build

MAAK Technologies is part of a design/build team to develop the new Matura Water Plant. The plant will treat raw water from Matura River in the eastern part of Trinidad.

The new plant will provide an additional 31.5 MLD (6.94 mgd) into Trinidad's distribution system. This will assist the Water and Sewerage Authority (WASA) in meeting the current and future water demand levels.

The main components of the water treatment plant are as follows:

- Inlet works
- Aeration system (iron and manganese removal)
- Flocculation and sedimentation
- Filtration
- Treated water pumping
- Chemical systems (disinfection, coagulation)
- Sludge management system
- Electrical system with standby power
- SCADA system with link to Operational Control Centres
- Laboratory facilities



The water treatment plant design includes process, mechanical, civil, structural, electrical, instrumentation and control details for all processes within the plant. Structures are designed, at a minimum, to conform with local regulations. Construction materials specified and used are suitable for high humidity conditions. Mechanical considerations include ventilation and air conditioning, Building Automation System (BAS), emergency power generator room, plumbing, fire protection, and noise control.

A bench scale treatability study was undertaken to determine the most appropriate oxidant and chemical coagulant and their respective optimal dosages, as well as determine the time required to achieve suitable floc formation.

All critical loads are provided with back-up power from a diesel generator, and the power system will be monitored through the plant SCADA system.

The SCADA system provides full automation, with data reporting as well as a link to the (future) operational control centres. The system addresses quality of water, reliability of service, optimum chemical use, optimum energy use, increased productivity, and program-driven maintenance.

Site development includes site grading, roof drainage, a site stormwater management plan (SMP) for storm drainage/outfalls, sanitary sewer/disposal, vehicle and truck access and parking, fire hydrants and fire department access, and site and security lighting. Architecture and landscaping are designed to accommodate residential and natural patterns that reflect important aspects of the landscape and founding ecologies.

- Engineering Services
- Concept Development and Studies
- Optimization and Modeling
- Automation and SCADA Development
- Data Management
- Testing and Validation

