



Water Sector

Case Studies

April 2021



Introduction:

- Arua Water Supply and Sanitation Project aims at improving water and sanitation services in Arua Municipality and the surrounding seven sub-counties, providing Arua’s first sewerage system and expansion of the water network to supply a population of 400,000.
- The project is required to meet the National Water and Sewerage Corporation (NWSC) sustainability objectives, promoting the positive impacts of the project while minimizing any negative environmental effects.

Scope of Work:

- The scope of work undertaken by Braithwaite Engineers included the design, manufacture, supply and shipping of:
 - Three BRAITHWAITE Hot Pressed Steel Tank to BS 1564 Type 1, external flange construction with weatherproof cover, complete with all necessary stays, cleats, bolts, nuts, washers and jointing compound.
 - Three Towers 10 metres high to underside of the tanks complete with ladder, safety cage, valve operating platforms

Key Benefits:

- Effective project management, tanks delivered on time and within budget. Major impact on reducing project time when compared with concrete tank products.
- All component parts shipped and transported using standard 20ft and 40ft ISO containers.
- Structural elevation facilitated to provide sufficient water pressure based on local topography.
- Tanks, towers and ancillary components galvanized to further extend asset life.

Key Data:

- **Location:** Arua District, North West Uganda
- **Product Type:** Hot Pressed Section Steel Water Tanks and 10m Towers
- **Capacity:** Tank 1&2 -172668 litres (26.8m x 13.42m x 4.88m high)
Tank 3 – 254087 litres (9.76m x 7.32m x 3.66m high)
- **Use:** Water supply and sanitation network.
- **End User:** Population of Arua Municipality
- **Contract Type:** Design and Supply

Arua Water Supply and Sanitation Project



<https://www.youtube.com/watch?v=DvqTeyxeBG8>

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Introduction:

- The Jabal Hadid Reservoirs form part of an infrastructure project aimed at raising the health status of the population and improving the environmental conditions in several areas in Aden Governorate.
- Addressed through the construction and rehabilitation of water and wastewater facilities in the areas.
- The project aims to support improvements in accessing clean water for almost 1.1 million Yemenis living in the port-city of Aden.

Scope of Work:

- Braithwaite Engineers responsibility included the detailed design, manufacture and supply of two water tanks and included:.
- Supply - Two BRAITHWAITE Hot Pressed Steel Tank to BS 1564 Type 1, external flange construction with weatherproof cover, complete with all necessary stays, cleats, bolts, nuts, washers and jointing compound.
- Assignment shipped in 12 x 20' open top containers (6 no. per tank)

Key Benefits:

- An effective design, meeting the requirements of large tank size and capacity.
- Modular tank product reducing logistical issues in accessing the site of the reservoirs, high above the city.
- Limited tool and plant requirements in construction.
- Short installation time with simple on site assembly using local contractors and Yemeni labour.
- Reliable quality galvanized surfaces significantly reducing corrosion in exposed environmental conditions.

Key Data:

- **Location:** Jabal Hadid Reservoirs, Khormaksar, Aden
- **Product Type:** Hot Pressed Section Steel Water Tank
- **Capacity:** Tank - 2 x 2,400,000 litres (54.9m x 12.2m x 3.66m high)
- **Use:** Water supply for water and sewerage network.
- **Consultant:** Dome International LLC
- **End User:** Population of Aden Governorate
- **Contract Type:** Design and Supply



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Introduction:

- One of the requirements for Romania to achieve membership to the European Union was to ensure a given % of the population had access to clean drinking water.
- In order to achieve this Romania embarked on a major rural water supply scheme.
- The successful contractor determined the most economical and timely solution would be through the use of modular pressed steel water tanks.
- As modular panels were utilized, construction lead time was reduced by allowing manufacturing to proceed in conjunction with developing detail design.

Scope of Work:

- The scope of works undertaken by Braithwaite Engineers included the design, manufacture and supply of 350 BRAITHWAITE Hot Pressed Steel Tanks to BS1564 Type 1.
- The scope also included training the Clients local teams in best practice installation techniques.
- The design was tailored to suit Romanian conditions – severe snow load, temperature range of -30/+40°C and seismic loadings. Design calculations were produced in accordance with Romanian standards and codes of practice.

Key Benefits:

- Pre-selection of a standard range of sizes and connection positions provided the design team with off the shelf solutions to satisfy their design requirements for each individual location
- As modular panels were utilized, construction lead time was reduced by allowing manufacturing to proceed in conjunction with developing detail design.
- Modular design reduced logistical issues in accessing sites.
- Short installation time with simple on site assembly reduced potential for site over-run and cost escalations.

Key Data:

- **Location:** Romania
- **Product Type:** Galvanised Hot Pressed Sectional Steel Water Tank
- **Capacity:** 350 Tanks ranging from 15m³ to 1250m³
- **Use:** Rural Water Supply
- **End User:** Rural population of Romania
- **Contract Type:** Design, Supply and Installation



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Department for
International Trade

Sub Sector: Water Storage and Distribution

Country: GHANA

Company : BRAITHWAITE ENGINEERS LTD

Client: Ghana Armed Forces

Introduction:

- Originally a military hospital which has undergone expansion and is now open to the general public.
- The hospital facilities include a twenty four hour Emergency Department and 400 hospital beds. The hospital is staffed by military personnel.
- Braithwaite have supplied a number of hospital and medical centres with water tanks.
- Facilities requiring secure water supplies

Scope of Work:

- The scope of work undertaken by Braithwaite Engineers included the design, manufacture and supply of Two BRAITHWAITE Hot Pressed Steel Tanks to BS1564 Type 1, external flange construction with division & weatherproof cover, complete with all necessary stays, cleats, bolts, nuts, washers and jointing compound.
- One Tower 15 metres high to underside of the tank complete with ladder, safety cage, valve operating platform, peripheral platform, 1 x landing platform and all holding down and other bolts for site erection

Key Benefits:

- Tank system designed with ground tank pumped to high level tank on elevated tower for facilitating continual gravity flow to hospital
- Ground level tank installed with dividing wall allowing a the tank to remain operational whilst cleaning maintenance on empty chamber.
- Reliable quality galvanized surfaces significantly reducing corrosion.
- Flexible fabrication solutions with an infinite range of size and capacity..
- On site assembly employed local contractors and labour.

Key Data:

- **Location:** 37 Military Hospital, Accra, Ghana
- **Product Type:** Steel Water Tanks, 15m Tower, Pipework, Valves.
- **Capacity:** Elevated Tank - 575m³ (10.98m x 10.98m x 4.88m high)
Ground Tank - 940m³ (14.64m x 13.42m x 4.88m high)
- **Use:** Hospital Water Supply
- **Consultant:** D.E.S. Ghana Armed Forces
- **End User:** Ghana Armed Forces
- **Contract Type:** Design/Supply. Installation arranged with Edidor Ltd.



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Department for
International Trade

Sub Sector: Water Storage and Distribution

Country: GHANA

Company : BRAITHWAITE ENGINEERS LTD

Client: China International Water and Electric Corp.:

Introduction:

- Tema, Ghana's major residential and industrial city. The development of a multi purpose industrial park construction of on site infrastructure
- Good quality roads, drains water and electric, sewerage readily available. Large water reservoir constructed to ensure the constant supply of water, central sewerage system.
- Industrial water supply to provide water to the Export Processing Zone and the industrial units located in the zone

Scope of Work:

- The scope of work undertaken by Braithwaite Engineers included the design, manufacture, supply and shipping of:
 - Braithwaite Sectional Steel tank to BS1564 Type 1. 2,500 m³ together with an 18m high supporting tower.
 - All ductile iron pipework was supplied down to ground level.

Key Benefits:

- Braithwaite supported the consultants with advice on the most economical tank configuration to meet the volume requirements by the client.
- Full consideration by Braithwaite engineers in the design process was given to the seismic conditions of the area.
- All component parts including sectional steel tank and towers were manufacture in the UK and shipped in containers to Ghana.

Key Data:

- **Location:** Tema Export Processing Zone, Ghana
- **Product Type:** Section Steel Water Tank, 18m Tower and Pipework
- **Capacity:** Elevated Tank 2,500m³ (23.18m x 21.96m x 4.88m high)
- **Use:** Industrial Water Supply
- **Consultant:** ABP Consult
- **End User:** Tema Industrial Park *clients*
- **Contract Type:** Design and Supply



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Introduction:

- Vauxhall Motors Manufacturing facility in Luton, England required a water storage tank to store water returned from the factory production line welding process.
- The tank installation located in factory basement.

Scope of Work:

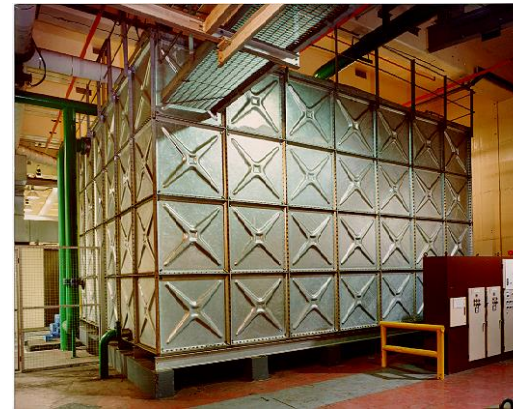
- The project involved Braithwaite designing, supplying and installing a galvanized hot pressed steel sectional tank to BS1564 Type 1.
- The tank required installation in a restricted area located inside the factories basement plant room.
- 4.88m tank selected to maximize capacity on small footprint
- Twin compartment with central dividing wall.

Key Benefits:

- Compartmentalized of tank allowing for continual storage capacity.
- Braithwaite sectional steel tanks can be designed and fabricated to meet most new build or existing site restrictions or requirements. For example building columns can be accommodated with recess areas built into the tank design. Non-standard tank dimensions can be planned through a dialogue with our design and sales team .
- Modular tank design reduces the logistical issues in accessing confined areas and construction sites.
- Fully galvanized robust self repairing zinc coating prolonging tank life with ability to apply secondary lining during asset life.

Key Data:

- **Location:** Vauxhall Factory, Luton, UK
- **Product Type:** Galvanised Hot Pressed Sectional Steel Water Tank
- **Capacity:** Tank 445m³ (10.98m X 8.54m X 4.88m high)
- **Use:** Industrial Water Supply
- **End User:** Vauxhall Motors
- **Contract Type:** Design, Supply and Installation



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Company profile

[Braithwaite Engineers Ltd](#) is a globally respected UK company with a reputation for technical excellence founded on more than 135 years of engineering experience. The name Braithwaite is synonymous with a range of liquid storage tanks and ancillary products. The company leads in the design, manufacture and supply of the highest quality galvanised, hot pressed, sectional steel water tanks available on the market. A truly versatile and durable water tank with an exceptional life expectancy. Working with partners in the commercial, private and public sectors we provide expertise to address the challenges faced in implementing water storage and water infrastructure projects. In addition to operating in the UK market, Braithwaite is an experienced and trusted exporter working with clients across the globe to help facilitate the effective storage and distribution of water, our most valued resource.

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