



AL AIN WASTE TREATMENT ENHANCEMENT



Concept & Location

Al Ain (literally The Spring), also known as the Garden City due to its greenery, is the second largest city in the Emirate of Abu Dhabi and the fourth largest city in the United Arab Emirates. With a population of 374,000, it is located approximately 160 km east of the capital Abu Dhabi and about 120 km south of Dubai. Al Ain is the birthplace of Sheikh Zayed bin Sultan Al Nahyan, the first president of the United Arab Emirates.

Al Ain is situated in close proximity to the border with Oman. The freeways connecting Al Ain, Abu Dhabi and Dubai form a geographic triangle in the center of the country, each city being roughly 130 kilometers distant from the other two.

Its close proximity to the major cities in the UAE, plus its green landscape and milder weather when compared to Dubai and Abu Dhabi, have made Al Ain a favourable residential location for expatriates whose population has been on the rise. The increased population has put a lot of demand on the basic infrastructure in the city. To cope with the rising numbers of residents, the emirate decided to upgrade its waste treatment and pumping station network.

Drake & Scull Water and Power were chosen to undertake the responsibility of setting up the enhancement of the sewerage treatment plant, owing to their expertise and extensive experience in waste water treatment projects across MENA and Europe. DSWP's contract included the Supply, Erection, Installation, Testing and Commissioning of the Mechanical, Electrical and Instrumentation works for two treated sewerage

effluent pumping stations, one Bypass station in addition to the associated infrastructure works.

The project is located 50KM away from Al Ain City, on the way towards Abu Dhabi. The main project area consists of two Treated Sewage Effluent (TSE) main pumping stations and an Intermediate Pumping Station as well as a bypass pumping station.

The main Pumping Station will pump the TSE water from the Sewerage treatment plant (STP) to the Intermediate Pumping station reservoirs. The intermediate pumping stations will then channel the TSE water which will be transferred to Al Ain City. Each pumping station has services buildings which include substation buildings, office buildings, gate house buildings, and a Hypo chlorination building which is integrated with the Intermediate Pumping Station.

DSWP has been able to achieve strong progress along planned schedules and is well on track to completing the project on targeted deadline. At peak activity, more than 100 DSWP personnel worked nonstop on site and the project is proof of DSWP's diversified skill set and DSWP's capabilities as a specialist contractor in the infrastructure field and the waste water and water solutions sectors.

The Al Ain asset Enhancement scheme is testament to DSWP's ability to develop and enhance critical water and waste treatment systems for growing cities in the region.



Scope of Work & Innovation

Drake and Scull Water & Power were contracted to undertake the following elements of work:

- Complete works for two sewage pumping stations, one Bypass station in addition of infrastructure works
- Supply, Erection, Installation, Testing and commissioning of Electro Mechanical works for the pumping stations
- Supply, Erection, Installation, Testing and commissioning of MEP works for two sewage pumping stations + one bypass station

DSWP's initial time span for the project was assessed and found to be inadequate due to variations and additional requirements from the authorities as well as due to the material delivery schedule.

One of the major challenges of the project stemmed from the design issues from the initial design not being fully compliant with authorities' requirements and standards. This proved to be a hurdle as Al Ain authorities are renowned for being stringent with adherence to standards, especially on government funded projects. To overcome this obstacle, DSWP amended the original drawings to make them compatible with Al Ain regulations, after consultation and agreement with the clients and architects, by taking these requirements into consideration during the workshop drawings and material approvals. Any new requirement needs added to the contract was to be treated as a variation thereafter. This early proactive helped to snip the issue in the bud before it could transform into a major problem at later stages.

Due to the complex nature of the sewage treatment plant and pumping stations, some of the equipment required special tools which weren't available locally. But DSWP's strong logistics enabled DSWP to source and install them from the Dubai offices. The site also experienced regular sand storms and rare and sudden heavy rains which affected the site progress. DSWP's contingency plans took such delays into account and schedules were redesigned to accommodate such unexpected developments.

A peculiar aspect from the material viewpoint is the fact that all material is stored in the basement areas, by design. This proved to be a problem, as the basement was isolated from the building external, with an opening to the ground floor and no overhead cranes available. To circumvent this issue, DSWP used the structure of the building itself and engineered ways to invent unique technique/tools to lower the material to the basement level, to facilitate easy material movement on site.

The Al Ain Waste treatment enhancement proved to be a vital learning experience for DSE as well as a vindication of its strong infrastructure development capabilities. DSE completed the plants well before their intended launch dates and is proud to have played an important role in enhancing Al Ain's crucial infrastructure.