



Contractor:



Location:

Newton Water Tower, Wisbech



Products Used:



CLIMEX®
Climate Control

RVT Group's Climate Control Solution supports the Newton Water Tower Tank maintenance project.

Project Overview

A water tank, especially within small rural towns, support the reliability of water supply for the surrounding businesses and homes. Each water system is usually connected to one or more water tower tanks, in case of emergency failures within the system. A typical water tower can hold about a day's worth of water for a community in case of pump failures. Water towers are tall and high in the air to create pressure, meaning they are usually located on the highest ground within the area. Each foot of height provides 0.43 PSI of pressure, with the typical water supply running between 50 - 100 PSI.

Every 10 years the Newton Water Tower Tank requires internal inspection to identify if any maintenance work is required to keep the tank working as efficiently as possible. Upon inspection in 2024, the 264m³ water holding tank required extensive internal repair, followed by the re-lining of the tank walls.

Challenge

Contractor, Churchill Specialist Contracting Ltd, were tasked with carrying out the project, and they identified that specialist climate control equipment would be needed to ensure the project was completed on time.

Effective Drying Triangle

RVT believe that effective climate control can be managed in three easy steps;



► Warmth:

Heat raises the room temperature and so lowers the relative humidity of the air. This allows the air to absorb more water from surrounding surfaces.

► Air Movement:

Air movement across a substrate draws the water to the surface, where it evaporates.


► Dehumidification:

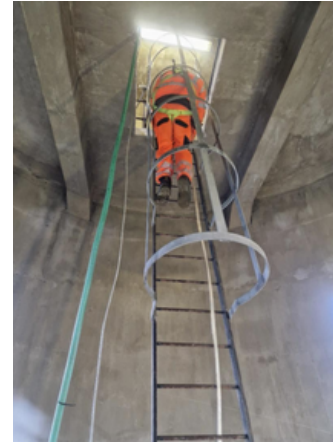
Dehumidification extracts water from the air, to be transferred from the work area.

Challenge

Firstly, to remove the current lining of the tank, a high pressure water jetting system was going to be used, and with little to no fresh airflow inside the tank, it would remain very wet. Before any works could continue, the tank would need to be dry, so an effective drying out system was key to the project progressing in a timely manner. In previous years, a moisture probe had been used weekly to check the humidity levels after the water jetting, resulting in weeks of waiting for the conditions to improve in order for works to continue.

Secondly, after the tank was dried out and the repair works completed, the relining process would begin, bringing the challenge of ensuring the tank is warm and dry enough for the curing process.

Lastly, the Newton Tower Tank is more than 30 meters high, and the only two access points are placed on the roof, with one being restricted with pipework, and the other with a ladder. With limited access and space, this made the logistics of installing a drying system a potential problem. 



Solution

Churchill Specialist Contracting Ltd contacted RVT Group, and our experienced consultants visited site to assess the challenges. Following the visit, we were able to provide a bespoke, effective drying out system for the project.

For the internal drying of the tank after the jet washing had been completed, we installed a CLIMEX® DD450 Desiccant Dehumidifier. With access restrictions, this equipment was placed on the roof of the tank via a crane. The unit had two duct runs going into the tank which fit through the restricted access point. One of duct runs extracted the moisture from the air in the tank, and then released it outside of the tank into the atmosphere. The second was forcing dry air back into the tank to create air circulation, speeding up the drying process. Unlike traditional dehumidifiers, this equipment is able to sit outside the work area, making it the most suitable solution for the logistical challenge of this project.

In support of this equipment, we also installed CLIMEX® 9KW Heaters within the tank. These heaters were small and lightweight enough to be passed through the access point and carried down the ladder safely. These fan heaters have a convenient built-in thermostat, helping to maintain an ambient temperature and draw out the moisture efficiently. With no requirement of fuel such as propane or diesel, this solution was the most suitable for inside a tank, which had little to no ventilation.

Following the implementation of RVT's specialist solutions, the maintenance of the Newton Water Tower was successfully completed on time.

Project images



CLIMEX® Electric Fan Heater 9

This hatch was the only access point into the tank for people and equipment, with the ladder reducing access to around 300mm wide.

This was used to transfer the CLIMEX® 9KW Heaters down into the tank.



CLIMEX® DD450 Desiccant Dehumidifier

The CLIMEX® DD450 Desiccant Dehumidifier was placed on the roof of the tank via a crane.

The second access point was restricted by large pipework, however, it was suitable to fit the ducting down from the CLIMEX® DD450 Desiccant Dehumidifier.

