BURNS McDONNELL

CASE STUDY / **DEICING PAD GSE DESIGN-BUILD PROJECT**

NEW DEICING PAD IMPROVES OPERATIONAL SAFETY AND EFFICIENCY

To incorporate functional ground service equipment (GSE) layout into new and updated deicing infrastructure at O'Hare International Airport, United Airlines selected a partner familiar with airport operations and construction. Our team seamlessly incorporated functional GSE design elements into the project.

UNITED AIRLINES CLEARED FOR TAKE OFF WITH DEICING FACILITY

The functionality of the new deicing pad at O'Hare is promoting more effective overall airport operations with quick and easy deicing treatment.

PROJECT STATS

CLIENT
United Airlines

LOCATION
Chicago, Illinois

COMPLETION DATE
July 2019

2
25K-GALLON TYPE I TANKS

1
20K-GALLON TYPE IV TANK

57
ELECTRIC TRUCK CHARGING STATIONS

CHALLENGE

When strategically placed, remote deicing facilities can provide a number of benefits to an airport. These include improved gate utilization, increased on-time performance, reduced time between the final deicing/anti-icing application and takeoff, and overall improved ramp conditions and safety. Based on these operational benefits, deicing pads have become the go-to solution for airlines and airports to increase capacity through more efficient operation.

To maximize the functionality of airline deicing equipment and operations, United Airlines required a qualified firm to incorporate its facility and operational needs into the overall facility pad. Designed for independent airline deicing operations, the facility required a collaborative interface between city planners, designers, contractors and other airline users.

The project would need to take into account the integration of ground service equipment (GSE) needs. The GSE area required positive drainage to eliminate ponding and reduce the possibility of freezing conditions on the pad. Additionally, underground utility infrastructure had not been fully integrated or tied in. This included glycol storage and distribution, information technology (IT) infrastructure, water supply, and sanitary sewer. Preliminary pavement grades were established by CDA, but Burns & McDonnell coordinated grading revisions with CDA's design team to improve drainage and accessibility around United's deicing infrastructure.

Finally, the site had previously been utilized as a centralized material recycling and processing area for concrete, asphalt and other miscellaneous airport construction materials and debris. This further complicated the excavation process.

SOLUTION

Our team acted swiftly to integrate the GSE project needs with the existing design of the pad. Close coordination between the deicing pad designer of record and contractor was required in order to minimize unnecessary rework related to underground utilities and pavement regrading. Direct coordination between our team and

United Airlines deicing personnel allowed us to tailor the site geometry, truck circulation and parking, and equipment installation to their operations and applicator vehicles.

We successfully routed fiber-optic cabling to the ramp operations trailer. After coordinating the schedule with the city construction contractor, we installed the terminations and wraps for the GSE island as well as the ramp operations trailer. IT points were also added for security cameras and wireless access points.

Due to the state of the subgrade, the excavation process required particular caution to properly clear debris and materials. This slowed the process and necessitated comprehensive scheduling and logistics with the city construction contractor to keep the project on track.

From the start, fabrication of the majority of pipe would take place off-site, saving time in the construction schedule.

RESULTS

The completed deicing pad includes two 25,000-gallon Type I tanks and one 20,000-gallon Type IV tank. Site utilities include sanitary, water, electric, lighting, and communication.

The station also includes deicing truck parking and 57 positions for electric deicing truck charging, as well as a prefabricated building to support deicing operations at the pad.

O'Hare's remote deicing facility enables a more efficient deicing process for the established airlines operating at the airport. Effective design and placement of the pad allows aircraft to safely and quickly receive deicing/anti-icing treatment, thereby opening up valuable gate space needed to improve on-time performance during winter operations.

BURNS McDONNELL

burnsmcd.com | Offices Worldwide

11083-DPG-0819