

Balfour Beatty Construction

For over 100 years, Balfour Beatty has created and cared for the vital assets that enable societies and economies to grow. With operations in over 80 countries, Balfour's global staff is comprised of designers, planners, engineers, builders, project and facilities managers, analysts, and consultants. Through more than 50,000 employees worldwide, Balfour Beatty is one of only a few companies with the expertise and resources to deliver complex and large-scale projects, handling all stages of the infrastructure lifecycle - from financing, through planning and design, to construction, maintenance and support.

Given this wealth of experience and capability, it is no surprise that when Dallas Fort Worth International Airport needed to renovate their four older terminals, they sought out Balfour Beatty to manage and execute the project. Balfour Beatty was brought on board as the construction manager for the 6 to 7 year project to renovate two of the terminals, dividing the project into six phases.



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-Jeff Pistor, Project Manager

Opportunity: Mobile access to large drawing sets

Balfour Beatty employees needed constant access to up-to-date drawing sets, from any location onsite. While a set of drawings for a project typically consists of less than 3,000 sheets, the large-scale nature of this project was projected to require 20 times the normal size, or about 60,000 sheets for all six phases of the project. Given that employees needed access to the current drawings, new and updated drawings would have to be printed and delivered to employees on site with each new modification or update. Jeff Pistor, Project Manager for Balfour Beatty, noted that the five sets of early stage drawings for phase one of the project alone had cost almost \$60,000. Realizing that full size sets of drawings would be needed for the jobsite office and in the construction area, over the life of the project, the cost of drawings for Balfour Beatty alone could easily have exceeded \$500,000 per terminal.

Concern over Internet access to the drawing sets was a key issue, particularly for project superintendents. Historically, superintendents go to a plan room located in the jobsite office to look at drawings. In the airport's case, the actual jobsite was 1.5 miles away, and with the time to get in and out of secure areas at the airport, traveling back and forth from the jobsite to the office trailer would take at least 20 minutes each way. That time (and money) was saved by the adoption of iPads to access project drawings.

Other challenges surrounded the control and access of documents for all of the stakeholders. With the drawings continuing to be refined, distribution of the most up-to-date version of the drawing set was critical. The potential for subcontractors to be using outdated plans, leading to confusion and potential re-work, was immense.

Challenge: Provide secure online and offline access to workers

The solution was to eliminate the paper and to provide the team with real time access to electronic drawing sets. The existing Internet connection in the jobsite office was not robust, especially with 70 workers trying to access the cloud. In addition, speed limitations and coverage concerns existed within the construction space itself. Project team members needed a solution that provided online and offline access to workers at all times, with efficient use of available network bandwidth.

With so many different contractors working on a project of this scale and with unique security requirements, a solution with granular permissions was key. Balfour Beatty needed separate folders and permissions for contractors accessing the drawings on this project.

An airport employee recommended Egnyte as a solution.

Solution: Hybrid Cloud File Server with iPad Access

Hosting the drawings on the cloud worked well but it soon became clear that the number of drawings being accessed from the Egnyte cloud file server was eating up bandwidth and becoming an issue as the jobsite staff increased. To solve the problem, they chose to deploy Egnyte's Enterprise Local Cloud on a VMware based virtual server on an existing file server.

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“Egnyte's Enterprise Local Cloud (ELC) allowed us to reduce the amount of bandwidth used to access the cloud. The ELC was set up to sync with Egnyte on the cloud every 15 minutes. Instead of everyone going out to the cloud to retrieve drawings, they were simply mapped to the ELC,” said Pistor. “This provided quick access to the large drawing sets for our staff.”

When out in the construction areas, employees carry iPads with them for accessing the drawing sets. Egnyte, integrated with the GoodReader app on the iPad, enables employees to download the drawing sets and cache the drawings for local access. Instead of having to haul around 60,000-sheet drawing sets or walk to a jobsite office to access them (away from the issue they are trying to address), employees now simply stash the iPad in their bag when heading to the job site.

“For this project, we developed a ‘recycle less’ mantra and have saved several hundred full-size recycle bin's worth of material by never printing the drawing sets in the first place,” says Ben Bringardner, Assistant Manager, Integrated Projects for Balfour Beatty. “Over the life of the project we would have printed drawing sets weighing 9,000 lbs. and stacked 20 feet high if we had not established the cloud based

paperless document management system.”

Field superintendents also love the paperless solution, as it allows them to address many issues from wherever they are. Many have cited how hard it is to imagine life before electronic documents and drawings and iPads. As one superintendent recently said, “You’ll have to pry it from my cold dead hands. I don’t how know how anything’s gotten built in the past 20 years!”

DFW recently entered into a Sustainability Partnership with the Environmental Protection Agency, and is thrilled that Balfour Beatty was able to come up with a sustainable solution in the reconstruction of the two terminals. DFW projects that the design team is saving them \$5.1 million (71%) in costs by using Egnyte.

“By selecting Egnyte for this project, Balfour enabled us to take an innovative approach that supports sustainability,” said Julie Ludeman, TRIP Communications Director. “We are thrilled they chose a hybrid cloud solution that has the redundancy, security and flexibility necessary for a program of this size.”

“Egnyte provides our partners with BARC the flexibility they need and the security we require,” said Perfecto Solis, Vice President of Airport Development and Engineering at DFW. “As part of our sustainability initiatives we continue to look for ways within our organization to go paperless and hope to use products like Egnyte for future projects.”

TAKE THE NEXT STEP

Over 1 Billion files are shared daily by businesses using Egnyte. Egnyte provides the speed and security of local storage with the accessibility of the cloud. Users can easily store, share, access and backup files, while IT has the centralized administration and control to enforce business policies. Egnyte, founded in 2007, is based in Mountain View, California and is a privately held company backed by venture capital firms Google Ventures, Kleiner Perkins Caufield & Byers, Floodgate Fund, and Polaris Venture Partners. For more information, please visit www.egnyte.com or call 1-877-7EGNYTE.