HOLO BUILDER

HENSEL PHELPS
Plan. Build. Manage.

Case Study

Hensel Phelps saved a total of 4,680 hours annually by using HoloBuilder rather than traditional photo capture methods.

Case Study

Background

Hensel Phelps is a top 20 ENR General Contractor headquartered in Greeley, CO that focuses on four key pillars within their business: People, Process, Partnership, and Technology. One of their most recent projects is the $1.2B Design Build Harvey Milk Terminal 1 at the San Francisco International Airport (SFIA Terminal 1). The project includes improved spaces for passenger check-in, a consolidated security checkpoint, a re-compose area, a new Individual Carrier System (ICS) Baggage Handling System, a new mezzanine with connections to the AirTrain and the Central Parking Garage and a secure connector to Terminal A. The project is under a GMP Contract with a target completion date in March 2023.
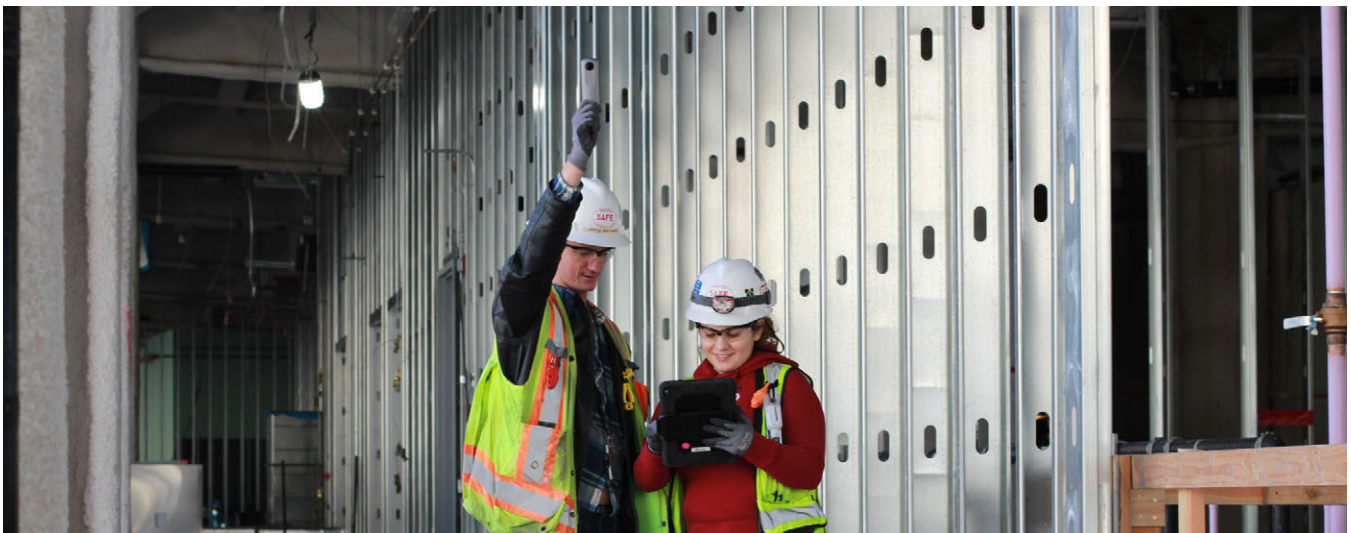

Fig. 1: Engineers capturing on-site conditions with the JobWalk App connected to a 360° camera.

Challenge

In the past, Hensel Phelps has used one of two processes for photo capture, either a site plan with standard images locally stored on a computer or an FTP site with 360° images that are manually hyperlinked. Both workflows involved manual processes that required one person to take full ownership of the documentation process for the entire project. This would be problematic for a large project such as SFIA Terminal 1. Finding specific images at a later point in time was a time-consuming task that sometimes resulted in no helpful documentation.

Solutions

For the SFIA T1 project, Hensel Phelps wanted to integrate 360° Reality Capturing, Computer Vision, and AI technologies within their workflow. Working to assist in the development of new technology is important for the company to advance the industry forward. This effort will ultimately provide a better building experience for all our stakeholders. Over a period of 1 year, Hensel Phelps engaged with HoloBuilder to co-develop reality capture features. The teams held two product development meetings per week, one in the field to test the new features and one in the office. In order to improve the previous photo documentation process, the two companies focused on two areas of improvement:

- Collaborative photo capture in order to efficiently cover large projects
- Image Content Categorization to quickly search and find specific photos by activity

Results

Today, each of the 15 Field Engineers are responsible for documenting their own area on site, which can be independently captured and synced to the HoloBuilder cloud, which can perfectly run on Microsoft Azure infrastructure. The ability to work collaboratively and divide up the site amongst many field engineers was made possible by the co-developed collaboration feature. Together, the team works to update project imagery on a weekly basis, covering 1 million square feet. The photo capture process is now a shared task amongst the team with 1 assigned project administrator, rather than the previous workflow that relied entirely on one individual.

"The Project team is using HoloBuilder to organize and better present our progress pictures. The ability to locate the picture on a plan view document and sort the pictures through time makes for a much more intuitive process allowing this platform to become the single source of truth for the team members to collaborate with."

Andrew Cameron, DBIA, Project Manager at Hensel Phelps

HoloBuilder automatically organizes visual information throughout all phases of construction by location and time. The Hensel Phelps team also highlighted the importance of quickly searching for 360° photos by content. The Categories feature addresses this process by adding a Category to the series of photos captured during a site walk. The photos can then be organized by a particular activity or during a certain phase. For example, each step of the QA/QC process can be thoroughly documented and if the images need to be referenced at a later date, they are easy to find.

The following table highlights the annual time savings with HoloBuilder compared to the previous construction photo documentation process.

	FTP Site & Hyperlinks	HoloBuilder	**Savings**
Photo Capture Process	10h	4h	**6h**
Annual Time Spent	7,800h	3,120h	**4,680h**

This calculation compares the previous process of manually uploading traditional photos to folders and creating hyperlinks on an FTP site versus HoloBuilder's JobWalk App for capture and upload. It assumes that if 15 field engineers carry out the task weekly, HoloBuilder would provide an annual savings of 4,680 hours.

What was once an administrative manual task of organizing images in the office, can be done automatically after capturing images in the field. The result provides a digital record of all construction activities that can be shared with all project stakeholders. The HoloBuilder project helps the Hensel Phelps make informed decisions as well as verify work performed.

HoloBuilder allows the team to spend more time on other tasks and provides an as-built deliverable to the owner that far exceeds the construction progress documentation requirements.

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