

CASE STUDY

Faster, Less Expensive Substation Visualization For One Of The Largest Independent Electric Providers In The US

In April 2021, Visual Plan worked with partner Burns & McDonnell to 360 capture and process the electric provider's 24 substation sites. Using the Visual Plan platform as their capture platform and data hub, the customer was able to capture comprehensive, measurable visual data of each site without the exorbitant financial and time requirements of terrestrial LIDAR data.

The 360 capture process took place over 8 business days; with electrical substations located across Missouri, Oklahoma, Kansas and Arkansas, 2-4 sites were captured per day based on proximity. Using hardhat and tripod mounts, full captures were produced of perimeter fencing, substation assets and all required control rooms for at each substation, averaging 100k square feet each. The first capture was taken on April 12th, and by the 15th the first 4 substations' SiteViews were fully processed, geo-located, and ready for customer use, annotations and collaboration.

KEY ROI

- High Customer Satisfaction toward Visual Plan collaboration tool
- 83% reduction in capture & deliverable turnaround timeline (from 6 months to 1 month)
- 10x cost savings over entire site LIDAR capture, while allowing for LIDAR at critical locations
- Site visits and travel costs reduced exponentially across customer management and project teams – 21 project users and over 50 additional stakeholders are benefiting from virtual walk-throughs during the first 90-days and data will be re-used over and over again over the project lifespan and later

By importing Eagle View GIS imagery, the Visual Plan platform was able to effectively constrain the 360 data, merging both Aerial and terrestrial capture for this project, in addition to the available CAD drawings and new design files in creation. **With the captured 360 photogrammetry and the Visual Plan platform as their data hub and collaboration tool, the electric power company customer is able to have accurate, virtual, on-demand access to walk through each substation site to review, confirm or evaluate proposed security and rebuild projects.**



360 CAPTURE SPECS

camera Ricoh Theta Z1

capture site 24 Electrical Substations Across 4 States

capture size > 2.5 million square feet

capture time <1 day per site; 8 business days, 10-12 hours / day.

capture date Captured April 12 – 23, 2021; full project delivery May 7, 2021.

✓ **83% REDUCTION IN CAPTURE & PROCESSING TIME**

✓ **IMPROVED CLIENT COMMUNICATION**

✓ **STREAMLINED DECISION-MAKING**

"For this substation project, Visual Plan worked in a way that no other scanning company that I'm aware of could have worked simply because of the time it takes to do a scan. We were doing 24 sites in about 2 weeks – we didn't have time to spend multiple days per site doing 3D scanning. Visual Plan allowed us to do 2-4 sites per day."

– Brock Josephson, Physical Security Specialist, Burns & McDonnell

KEY PLATFORM FEATURES

- Low Investment in hardware
- Camera-agnostic platform
- Video Capture / Cluster capture
- Imported additional 2D or 3D data (BIM, LIDAR, floor plans, etc)
- Annotations / Annotation Groups
- In-environment Markup
- In-environment Measuring
- 2D Sketch
- Integrations (ProCore)
- Share/Reporting (Deep links to specific locations / User access controls / HTML Reports)
- Remote Viewing & Access
- Secure Cloud Storage
- Off-line Viewing/Access

Critical Features For Success

Out of the box, Visual Plan is optimized to use GIS data for each captured pano to accurately place and stitch together a large square footage across multiple sites – a feature critical to the speed and accuracy required during the substation capture process. Leveraging Visual Plan to its fullest potential, the annotation, measurement and sharing functionalities were immediately utilized by the customer as a critical collaboration tool as the security design upgrade project progressed.

- Barrier to entry was low regarding the capital investment
- Visual Plan performed all capture, processing and delivery
- Easy import, scale and alignment of floor plans to GIS via Import Floor-plan Wizard
- Intuitive organization of 360 panos across areas and spaces (accelerated via the Visual Plan Capture App)
- AI spatially and accurately aligned the panos automatically
- In-environment annotations, documentation and measurements
- Sharing/Reporting via deep links and remote viewing

360 Is Faster, Safer, Less Costly: Financial Savings From Reduced Site Revisits And More Accurate Decision Making

With a quick capture and processing timeline, low capital investment costs and integrated tools for streamlined collaboration and decision-making, customer satisfaction of the Visual Plan platform, and its capabilities was very high for this ongoing electrical substation repair project.

Low Capital Investment:

- 6 month timeline for LIDAR capture and processing reduced to **less than 1 month for captured, processed and completed customer-ready deliverables.**
- Processing and data storage required 20x less capital investment costs than terrestrial LIDAR options

Reduced Site Re-Visits & Travel Costs:

- Virtual site visits with the customer reduced the need for site re-visits, saving hourly and travel costs of 7 individuals per site visit.
- Virtual walk-throughs utilize the initial site visits conducted by approximately 10 individuals during the capture process now as the foundational visual data for 21 authorized users and over 50 additional stakeholders during remote tabletops and virtual walk-throughs.

Improved Project Accuracy & Decision Making:

- The 360 photogrammetry shows accurate, as-built representations of facilities, surrounds, spatial relationships and asset orientation.

“We had the first couple of sites ready to be viewed within a few days. All of the sites delivered within 2-3 weeks. With an alternative LIDAR scanning system, it took about a month to get the data from just 5 substations versus 2-3 weeks for all 24 with Visual Plan.”

– Brock Josephson, Physical Security Specialist, Burns & McDonnell