



Size
42,000 sq/m



Scan time
Two hours



Location
Tucson,
Arizona



Industry
Conservation



Scanned
Outdoor Film
Studio

Words by

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Between tours and filming, Old Tucson Studios is a dynamic environment that couldn't shut down to accommodate our University of Arizona 3D scanning team. With the equivalent of four city blocks and dozens of building exteriors and interiors to scan, we had to move fast. The team relied on the ZEB Horizon mobile scanner equipped with the ZEB Cam to quickly and accurately capture the geometry, architecture and appearance of the film set.

We want film buffs to experience Old Tucson Studios the way it looked during its heyday when some of Hollywood's biggest Western movies were filmed there. The colorized point clouds generated with the GeoSLAM devices will serve as the core data set upon which 3D models, and eventually, Virtual and Augmented Reality experiences will be created. Archived air photos and drone imagery, as well as photogrammetric measurements pulled from original films, will also help us create digital versions of the movie studio at key points in its history.

The 'Downtown Tucson' main street and plaza stretch almost a quarter mile. Stationary scanners may seem like the obvious choice for long-range data capture, but there wasn't time to set up and take down those types of devices. And we needed richer detail. Our scan technician held the mobile ZEB Horizon and moved quickly through the streets, dodging studio personnel and vehicles. She entered those buildings with real interiors and scanned them as well.

Scanning with the ZEB Cam adds context to the point cloud. The scanner with mounted camera was held steady at chest level. At each building, the technician stopped and pointed the device directly at the façade as if snapping a still photo, and then slowly turned around to scan the surroundings. This captured a rich 3D scan data set for each structure along with its context on the movie set.

“ I've seen the quality of the point cloud and it's amazing ”





The entire Downtown Tucson portion of the studio was scanned in two hours. Afterwards, the technician processed the scans and video footage into a colorized point cloud running the ZEB Hub software on a standard laptop. Extraneous people and vehicles were filtered from the point clouds later with an open-source third-party software.

We will build 3D representations of the studio at major periods of its history – 1938 when it was built for the film Arizona, the 1950s and 60s when four John Wayne Westerns were shot there, and the mid-1990s just before a devastating fire. This will require merging the 3D models of today with archived air photos and film photogrammetry to re-create buildings that no longer exist.

In the future, you will be able to walk the Old Tucson Studios lot wearing a VR headset and 'see' how the site looked during filming of epic motion pictures such as Rio Bravo, Gunfight at OK the Coral, and Tombstone. Who knows? John Wayne himself might swagger out of the saloon doors right in front of you.

