



WHAT WOULD TAKE 3 DAYS FOR
A TEAM OF 2 TO MEASURE BY
HAND CAN BE DONE IN ONE DAY,
WITH A HIGH DEGREE OF ACCURACY.



3D LASER SCANNING

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3D laser scanning has only just reached the early stages of adoption in the building construction industry and MillerClapperton is at the cutting edge of this technology, utilizing a sophisticated form of measurement to improve efficiencies and ensure accurate fabrication and installation of materials.

It's important to understand how and where laser scanning fits into the design and construction process as well as the value or return on investment this type of service provides.

WHAT IT IS

3D laser scanning is the process by which we digitally capture the spatial relationship of objects using infrared laser technology. In using this technology, we are able to measure and analyze highly complex or distant structures faster and to a higher degree of accuracy than our competition.

WHY WE USE IT

Most of the projects that MillerClapperton is awarded contain complex geometry or large and/or difficult panels in sometimes hard to reach locations. Therefore, the accuracy of dimensions provided by laser scanning is essential to improve project planning and to generate accurate measurements for our pre-fabricated materials. This will help to minimize waste and avoid modifications in the field.

Rather than relying on approved shop drawings or hand measurements alone, we now have a reliable and accurate form of measurement in a faster amount of time. What would typically take days to measure by hand, can now be done in less time and to a greater degree of accuracy than ever before.

For these reasons, higher accuracy and faster data capture have differentiated laser scanning from conventional methods of measurement particularly in construction.

HOW IT WORKS

The scanner outputs a point cloud image, which accurately replicates the scanned objects. The process allows us to scan objects from up to several hundred feet away and data points can be collected to an accuracy of less than 1/16". When an object is too large to be captured in a single scan, multiple scans from different lines of sight are obtained and linked together to complete the point cloud image. Once the 3D point cloud is generated, the data is exported to our 3D modeling software where the engineer will begin their analysis and panel implementation.

Ultimately, what we have is a record of the as-built condition at the time of scan, which is used to implement joint layouts according to approved shop drawings. It also performs conflict analysis in a proactive manner to ensure the project continues to move forward while avoiding unnecessary delays.



WHEN THE TIMING IS RIGHT

Site Requirements

While many project teams think they are saving time by getting the scan team on-site at the first available opportunity, this is simply not the case if the building is not ready to be scanned. In order to create an accurate model, the substrate must be in place including adjacent materials, and/or materials that are critical to joint alignment. When the process is rushed or if we leave the site with incomplete data because the project was not ready to scan, the entire process can be delayed.

Timing

When we can get an accurate, complete scan of the area, our system produces high-quality panel fabrication with an excellent rate of first run installation. We can reduce rework or the need for field adjustments, saving time and money in the long run. With a very low occurrence of problems in the field, we improve efficiencies and maintain a productive installation schedule.

TOP 3 THINGS TO CONSIDER

1. The Site Is Not Ready To Scan

An incomplete substrate creates holes in the scan and will require additional trips to fill the gap in the model.

2. Unable To Have Exclusive Access

The scanning device must have an unobstructed view, without interruption, of the particular section of building being scanned. This may mean that the team will need to temporarily restrict access to certain areas of the site. Restrictions will move throughout the day as the scanner is moved to different positions. Any interruption requires restarting the scan at that position, which may hinder the completion of the building scan within the scheduled timeframe.

3. Restricted Site Hours

The scan team often works extended hours to complete the trip efficiently. Working later in the afternoon will often minimize the chances of scan disruption as there is not much work activity on site by other trades. It's important that the scan team has the ability to work late into the evening.

