

OUR PEOPLE DRIVE INNOVATION

LASER TECHNOLOGY & ROBOTIC TOTAL STATION ACHIEVES QUALITY, SAVES TIME AND AVOIDS REWORK



Today's laser technology can be found in a multitude of products ranging from laser pointers, laser levels, laser guided missiles, autonomous car sensors, cd players, optical computer hard drives, and laser powered weapons. Shapiro & Duncan is using laser technology in the field to map and lay-out our HVAC and plumbing assemblies. We use the Fargo Focus, a 3D scanner, to scan existing buildings, mechanical rooms and equipment connections. The scanner takes 360° snapshots of a room, capturing points of the structure or what is "sees" in a point cloud. This point cloud provides the details of the room or equipment to our software, which then converts the point cloud to a 3D model. Once we have the model, we can measure, coordinate and connect to existing components. This allows our Virtual Design Coordination team to be as accurate as possible for our fabrication and construction of piping assemblies.

We also use a robotic Total Station manufactured by Sokkia (we currently have 4 in use). The Total Station is used to lay-out the placement of pipe sleeves and embeds. Embeds are attached to the wood decks before a floor is poured with concrete. After the floor is poured and cured, the plywood is removed and the embeds remain in place. They are used for attaching pipe hangers and rods to the overhead concrete floor which will support the equipment we install. We have made renewed efforts to maximize the capabilities of the Total Station over the last few years. We brought on full time surveyors and members of our VDC team have crossed trained and established SOP's and CADD standards to pull it all together. Now, our surveyors can scan and upload the point cloud for input into our BIM models, allowing our VDC team to remain focused on critical projects while meeting the scanning needs of our clients (internal and external). The overall benefits are less rework, reduced labor hours installing sleeves, hangers and equipment and a higher quality project.