Laser Templating System for Truss Fabrication

Laser Projection Systems have been used in the aerospace industry for composite ply lay up for many years. Just recently, this technology has been applied to the manufacture of pre-fabricated roof trusses.

Prior to the construction of a new production facility, Boozer Lumber in Columbia, South Carolina commissioned a study to determine the best equipment to use in a state-of-the-art truss plant. The study looked at all facets of the manufacturing process. This innovation focuses on optimizing a task called jigging. Jigging involves locating lumber holding devices called pucks. The pucks are strategically placed to ensure that the shape of the truss matches the design with respect to length, height, and pitch and holds the lumber in place as a roller embeds connector plates into the joints. Correct placement of the pucks requires use of tape measures, and stringing and squaring is needed to ensure conformity to specification. Skilled personnel normally perform this task.

Laser projection was being used for truss jigging during the time of the evaluation but required that pucks be aligned to the projected truss shape. Boozer and its consultant determined that to be more efficient, the laser had to project the puck location. They developed specialized pucks with cross hairs on the top, which were used with modified laser projection software. When implemented, unskilled labor need only slide a puck to the laser line until the laser passes through the cross hair. At this location, the puck is locked into position.

This reinvented process has reduced the time required to jig an average truss by 50-70%, enabling Boozer Lumber to double its production while improving quality.

Contact: Ed Bianchin, P. Eng. • Virtek Vision International, Inc. • 785 Bridge Street
Waterloo, Ontario N2V 2K1 • Canada • 519-746-7190 • 519-746-3383 • www.virtek.ca