# Laser Rangefinder System for 3-D Construction Modeling
University of Nebraska-Lincoln

Construction Engineering and Management Division in the Durham School of Architectural Engineering and Construction at the University of Nebraska-Lincoln researches ways to improve construction document management with BIM (Building Information Modeling) tools. BIM is rapidly being adopted by the construction industry as the optimal system to seamlessly circulating information throughout its construction phase by integrating design, building schedule and cost models all in one place.
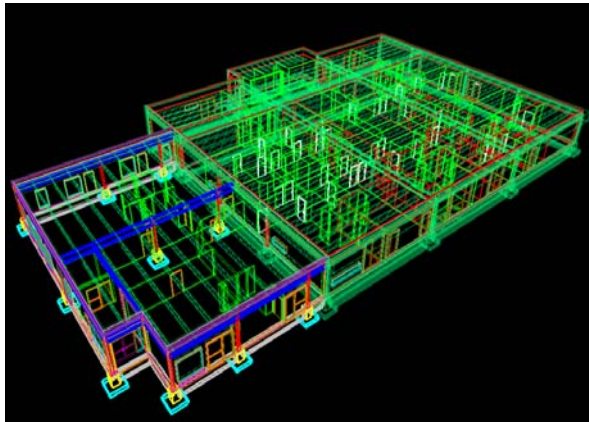
In most of the cases, as-planned designs do not match to the final as-built design after construction is completed. The main purpose of this project is to create 3D as-built models in a simplest manner and attach the construction process information to the models including schedule, specifications, and construction progress field images.

A data collection system for creating models for "as-built" models was developed by Dr. Yong Cho at the University of Nebraska (Cho and Haas, 2003). A laser range finder was integrated with a **Directed Perception PTU-D46 Pan-Tilt unit** to precisely position and record pan and tilt angles. The data was then compiled with the distance measurements to form a complete 3-D model.

The **Directed Perception PTU-D46 Pan-Tilt unit** provided the accuracy, ease of integration, and flexibility required for the success of this project.

More projects using Directed Perception PTU-D46 Pan-Tilt unit can be found from Dr. Cho's research web page at the University of Nebraska-Lincoln:

http://www.const.unl.edu/ykcho/Research

Customer Success Story

Reference

Cho, Y., Hass, C. (2003) Rapid Geometric Modeling for Unstructured Construction Workspaces, Journal of Computer-Aided Civil and Infrastructure Engineering, 18, 242-253

http://www.const.unl.edu/ykcho/Download/BIM_PKI_for_PDF.pdf