

PROJECT PROFILE

PRESTIGE HOMES



DIGITAL TECHNOLOGY IMPLEMENTATION FOR AUTOMATED PRODUCTION AND ORGANIZATIONAL MANAGEMENT

Prestige Homes is a modular home manufacturer located in Sussex, New Brunswick, Canada. They produce custom modular homes within the Atlantic Canadian region, with some projects located in Eastern USA.

PROJECT BACKGROUND

Prestige Homes partnered with the University of New Brunswick (UNB) Off-site Construction Research Centre (OCRC) to complete a two-phase project. The proposed scope for each phase included:

Phase 1

- Process mapping of the current state for the production facility and management processes
- Definition of current technology, equipment, and participants for all processes
- Identification of non-value add work in the production and management processes
- Development of resolution strategies and implementation constraints to address non-value add work in production
- Identification of digital technology solutions to improve management processes

Phase 2

- Investigate digital technologies to replace existing paper-based systems to minimize data duplication
- Increase traceability of a project between systems from management to production
- Enable automated manufacturing within production

RESULTS

It was found in Phase 1 that many of the existing processes rely on manual systems through paper-

based or word-of-mouth communication. This leads to risks of error through repetitive data entry.

The outcomes of the research executed in Phase 2 include:

- Technology research and recommendations for a centralized database
- Centralized database prototype with QA/QC forms from Prestige Homes
- Database implementation improvement initiatives
- Compilation of data collected and generated throughout the business, and how this can be addressed with a centralized database
- Technology research for a digital design workflow to enable automation, including mapping the future state of the design process at Prestige Homes
- BIM and CAD software identification, review and assessment
- CAM software and CNC hardware review and summary

RECOMMENDATIONS

There were two key areas explored through this project: a centralized database to improve organizational management, and a digitized workflow to enable automated manufacturing. It's recommended that the centralized database implementation is done through a phased approach, where key functions, resources, and business advantages are defined. To prepare for the adoption of automated machinery, changes to the current digital design workflow are needed. Most importantly, 3D modelling would be required of the design team to allow for sufficient detail to be communicated to the automated machines. Various software and hardware solutions were explored and evaluated for the Prestige Homes team to move forward with.