

PROJECT PROFILE

PRECISION CONSTRUCTION COMPONENTS (PCC)



PROJECT BACKGROUND

The UNB Off-site Construction Research Centre (OCRC) has collaborated with Precision Construction Components (PCC), to design and layout a new standardized panel manufacturing facility. The primary objectives of this project included developing an efficient factory layout for panel construction and providing equipment selection recommendations. Key activities included identifying and developing a factory workflow, designing a factory layout with identified stations, and providing equipment recommendations for identified major tasks in the factory.

METHODOLOGY

1. Workflow Development:

- Reviewed production goals and in-factory panel assembly specifications.
- Identified manufacturing and assembly stations.
- Outlined key in-factory workflows from raw materials to delivery ready product—to support equipment recommendations.
- Identified equipment requirements for production goals.

2. Initial Factory Layout Design:

- Transferred the developed workflow with identified stations into a full-scale minimal footprint factory layout.
- Analyzed material, component, and panel flow through designed full scale factory layout.
- Ensured the factory layout meets PCC's production goals through collaboration and iteration.

3. Finalized Factory layout:

- Evaluated low footprint designed factory layout with developed workflow to ensure efficient and productive worker, material, and panel handling.
- Performed a space-utilization assessment to confirm allocated area was being used efficiently and highlight opportunities for improvements.
- Analyzed designed factory layout performance to ensure production output and flexibility meets client needs.

RESULTS AND RECOMMENDATIONS

- **Factory Layout Design:** Optimized spatial arrangements and workflow paths, enhancing productivity and efficiency.
- **Equipment Selection:** Provided additional equipment recommendations to assist manufacturing and assembly processes and meet production goals.

Recommendations:

- Identify and evaluate feasibility of potential equipment options meeting production goals.
- Integration of real-time factory productivity data and material/component delivery/processing times to outline operational efficiency of factory with potential equipment options.