

# Prefabricated UNB Residence

PeakEng & Sons

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Client:



## Project Goals

Redesign NexGen Consulting's conventional construction design of McCrea house using offsite construction methods to minimize campus closure time, overall project costs, and general construction issues.

## Design Considerations

- Satisfy NBC 2015 Requirements
- Building Layout and Elevations
- Design of Precast Components
- Construction Plan and Schedule
- Cost Analysis
- Sustainability Analysis
- Compare to Conventional Methods
- Building Insulation
- Roof Type
- Delivery Logistics
- Exterior Building Appearance

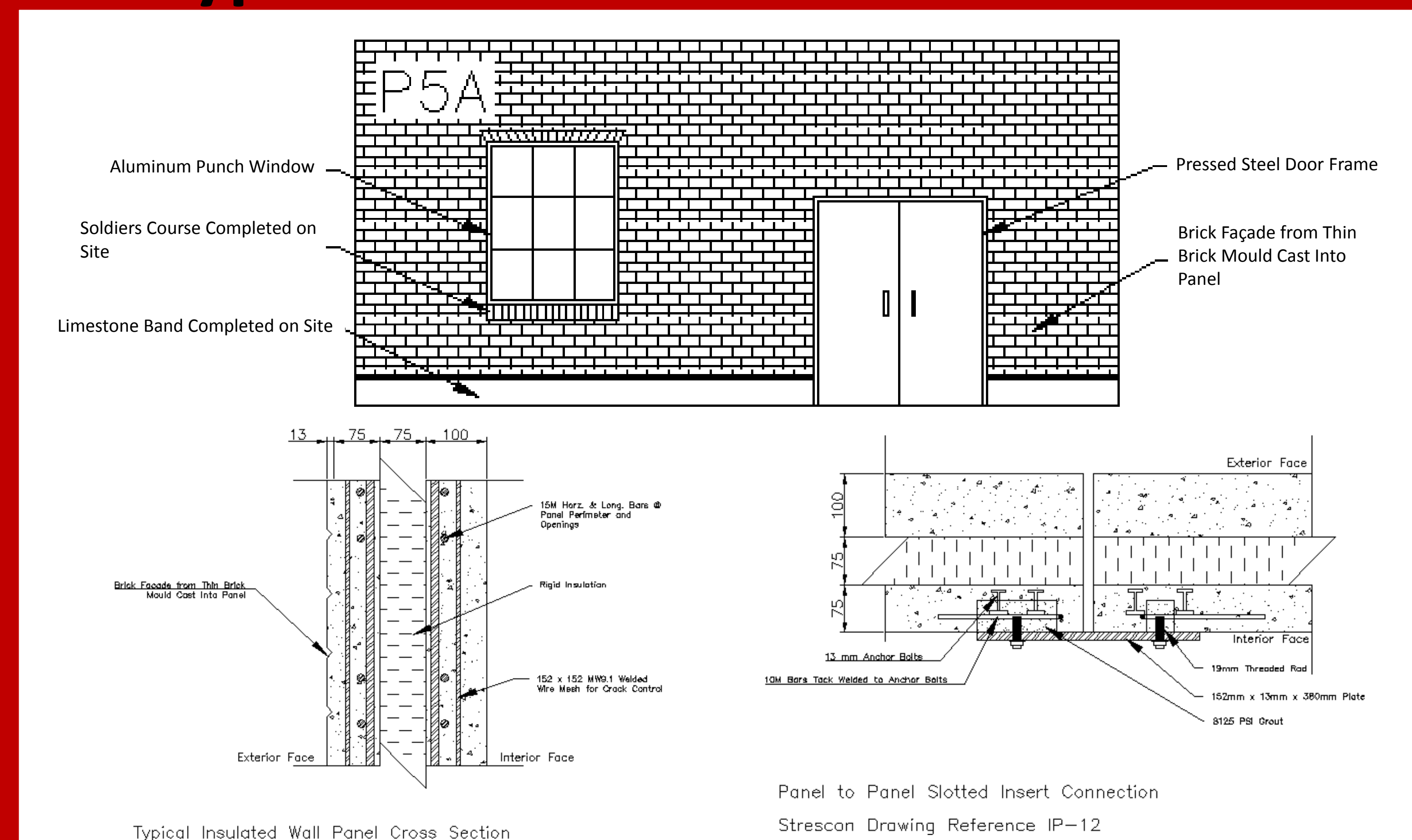
## Prefabricated Concrete Components

- Exterior Insulated Panels
- Hollowcore Floor & Roof Planks
- Beams & Columns
- Shear Walls
- Connections & Details

## Proposed McCrea House



## Typical Exterior Panel & Connections



## Cost Opinion

Total Construction	\$ 20,000,000
Unit Area Cost	\$ 440/ft <sup>2</sup>
Operation & Maintenance	\$ 16,000,000
Overall Project	\$ 38,700,000

## Sustainability Analysis

The Envision rating system was used to rate the level of sustainability of McCrea House. The system includes five main topics: quality of life; leadership; resource allocation; natural world; and climate. McCrea House received a platinum rating of **67%** sustainability, the highest achievable level of rating.

<https://sustainableinfrastructure.org/envision/>

## Site Constraints

- MacKay Drive temporarily realigned
- 10 parking spaces adjacent to Mackenzie House eliminated during construction activities

Offsite construction minimizes time on site and reduces the amount of time these facilities will be realigned/unavailable.

## Site Layout

