



Case Study **Crosslake Residence** **Crosslake, Minnesota**

The Crosslake Residence presented many structural challenges which include the combination of older timber framing techniques with technically advanced insulated building envelopes and standard platform stick framing. Many heavy, brittle finishes and veneers were chosen for this project which required stiffer than standard structural framing.



Innovative Timber Truss and Steel Connectors



We used environmentally efficient structural members such as engineered I-joists and engineered laminated veneer lumber (LVL) to support heavy northern Minnesota snow loads and economical, but heavy, concrete in-floor heating over the floor framing. The great room facing the lake is framed with large timber roof and wall members that are connected with exposed steel connectors and less conventional timber wood peg connections. Locus Architects had a specific visual appeal they wanted to achieve for each timber truss and set of columns throughout the house, and it was our job to hide connections in some cases, and bring them into the forefront in other cases.

High Wind Design

We designed this house for higher than the minimum required MN Code wind loading per the owner's request.

An interior portion of the house was designed as a hardened wind resistant element to provide increased safety for high wind events. The wide side of the residence is exposed to the lake, thus there are no obstructions to provide a wind break that might reduce the wind pressure.

