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The Team

- Kevin Wellen Superintendent Menahga Public Schools
- Steve Skoblik, AIA Partner
Foss Architecture + Interiors
- Chad Regnier President Concrete Inc.

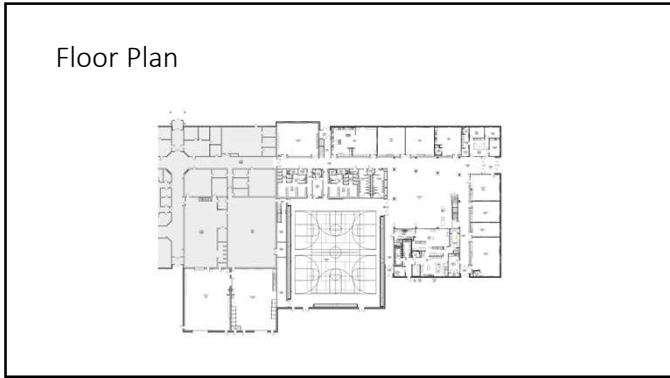


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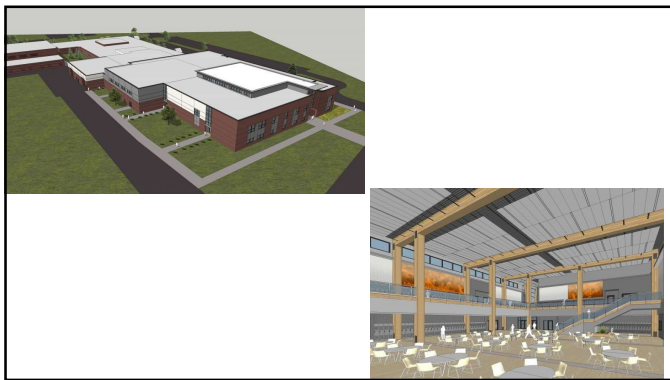
Menahga Public School Addition

- 15 Million Dollar Budget
- 70,000 square feet of additional space
- 14 Month build schedule
- Many referendums failed prior this plan
- Student Population grew from 750 to 1050 in 7 years
Room for growth to 1300

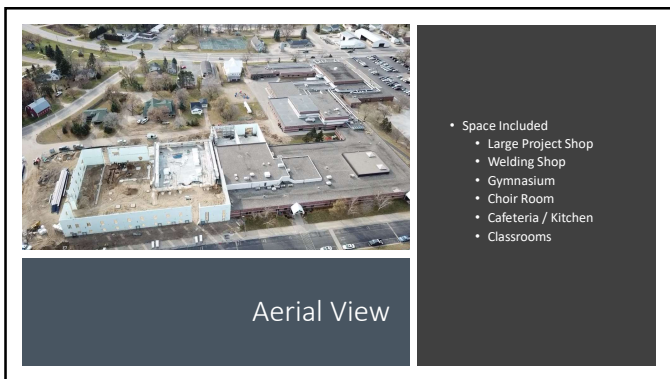
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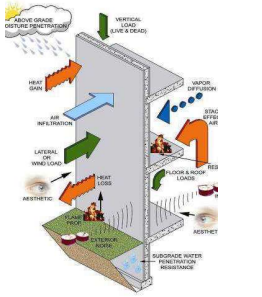
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Why ICF

- Local General Contractor and Sub-Contractor had recommended ICF
- Research of other schools that have used ICF's
- Potential of local labor to install
- Initial cost savings of \$70-80K
- Long term energy savings

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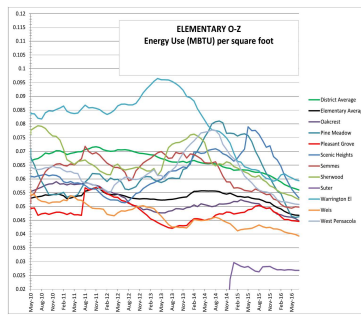
ICF Advantages

- 5 in 1 Full Assembly efficiencies
- Fewer Building Site Materials & Fewer Sub-Trades to schedule
- Speed of Construction
- Superior Strength & Building Security
- Design Flexibility
- Superior Thermal Performance (CI)
- Reduction of Building HVAC & Annual Maintenance Costs
- Healthy Indoor Environmental Air Quality IAQ
- Provides Sound Suppression (High STC Rating)
- Compatible with ALL Finish Materials
- Sustainable Products – Green Building Performance
- USGBC LEED or other Green Building Program "Contributor or Enhancer" in many categories

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Research Data Available

Actual energy use data from a Florida school district that built an ICF building.



ELEMENTARY O-Z Energy Use (MBTU) per square foot

The graph displays energy use data for several schools and district averages. The Y-axis represents energy use in MBTU per square foot, ranging from 0.02 to 0.12. The X-axis shows monthly intervals from August 2011 to August 2012. The schools included are: District Average, Elementary Average, Oakton, Pine Bluff, Pleasant Grove, Satic Heights, Summit, Sweetwood, SUN, Washington II, West, and West Peninsula. The data shows seasonal fluctuations, with higher energy use during the winter months (December to February) and lower energy use during the summer months (June to August).

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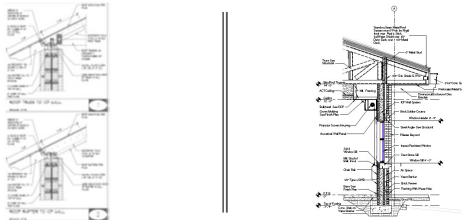
Design Process

- Design was primarily for exterior load bearing walls
- Details for ICF's design were readily available from manufacturers drawing library on their website.

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Details

Many design details are available from the ICF manufactures websites.



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More details

- All different types of details are available for different types of building.



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On-Site

- ICF's tend to be very clean organized sites
- The Menahga addition had a substantial amount of openings to deal with.
- Ready for next trades to step in

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- ICF foundation wall with brick ledge
 - No need for in floor heat
 - Early start with footing and foundation permit only
 - Was able to stretch it
- Safely built to final heights with traditional scaffolding
- Labor options
- Tours of site by students promoting all trades.

ICF Construction

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Safety


- Quote
- *"There are no aspects of the ICF system that pose a safety risk any higher than any other form of construction. If anything the risks are less. Concrete truck traffic and overhead concrete pumping are typical. The sub-contractor had a wall brace/scaffold system for the walls up to 10 feet which included a railing system to meet fall protection requirements. For the main gym walls extending nearly 36 feet they utilized a Safeway scaffold system which included on-site training for all."* – Bryan Koenig, Shingobee Builders

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Working with other trades

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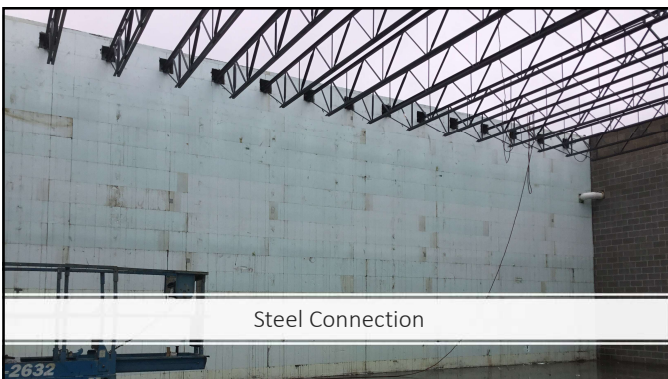
Sleeves and Beam Pockets

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Brick Ties Installed

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Steel Connection

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Lessons Learned

- More can be done with ICF's
 - ICF's could of replaced interior CMU walls.
 - No need to wait for product or different trades.
 - No sound proofing needed with ICF
 - Coordination with other trades (Electrical/Mechanical) benefits everyone.
 - Boxouts and sleeves can easily be installed.
 - Potential Rebates from power companies.
 - Tap the knowledge of ICF manufactures and installers during design phase.

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