

Agenda

- The benefits of using Insulated Concrete Forms in construction, especially in regards to rural and Tribal projects.
- ICF's as a key component in our pursuit of Net Zero design.
- The country's first Tribal Net Zero school for the Four Winds School District on the Sprit Lake Sioux Reservation in Fort Totten, North Dakota.
- ICF project experience & lessons learned





- Established in 2009
- Studio leaders are enrolled American Indians
- Dedicated to Native American Community Development
- Strong long term relationships with Native American Clientele
- Dedicated to Native Americans becoming fully engaged in the built process



*Listening.
Enriching.
Engaging.*



The First American Design Studio

"Over 170 Native American community projects with 30 tribes across 10 states"



Enriching Native Communities Through Architecture

Why use Insulated Concrete Forms?

- ICF's are modular, easy to install.
- ICF's lend themselves to becoming community storm shelters
- Tribal members can be taught to install and not have to be union or experienced tradesman.
- Reduced trades in building envelope.
- Thermal mass reduces peak energy demand
- Continuous insulation (New MN Energy Code) and excellent air tightness
- LEED, Energy Star & Net Zero friendly product
- Baseline r28



Benefits of ICF's



Energy Use Intensity

- EUI is expressed as energy per square foot per year
- It's calculated by dividing the total energy consumed by the building in one year (measured in kBtu or GJ) by the total gross floor area of the building.
- Generally, a low EUI signifies good energy performance



ICF's & Net Zero



Reducing EUI

- Ensuring proper maintenance of equipment to improve efficiency
- Installing motion activated lights (occupancy sensors)
- Incorporate the use of natural sunlight into the design of occupied spaces
- Provide a means for passive heating and cooling of interior spaces
- Develop on-site renewable energy generation
- Heating, air conditioning, and lighting in building spaces together comprise the majority of energy use and obtaining efficiencies in these two areas can result in a significant amount of cost savings, as well as gains in compliance with the 2030 energy reduction goals.



ICF's & Net Zero



Net Zero

A building which, while still connected to the grid, produces enough energy on site equal to the amount of energy used.

ICF's & Net Zero





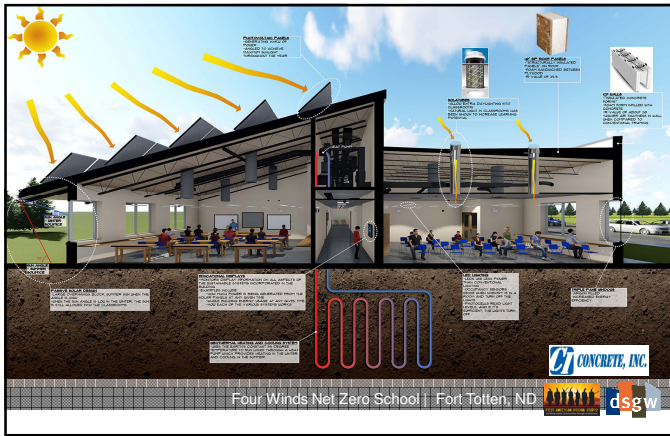
Four Winds Net Zero School | Fort Totten, ND



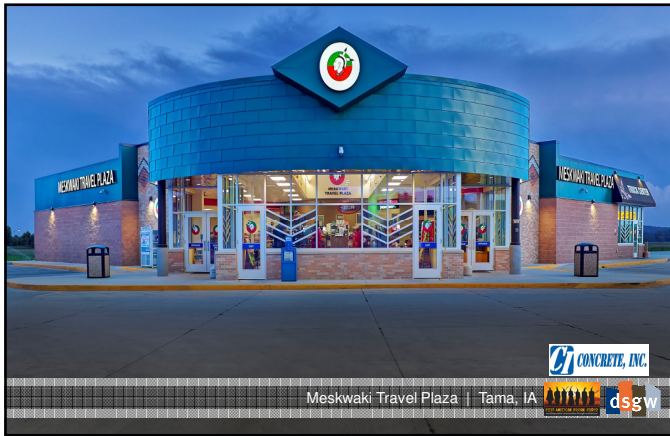


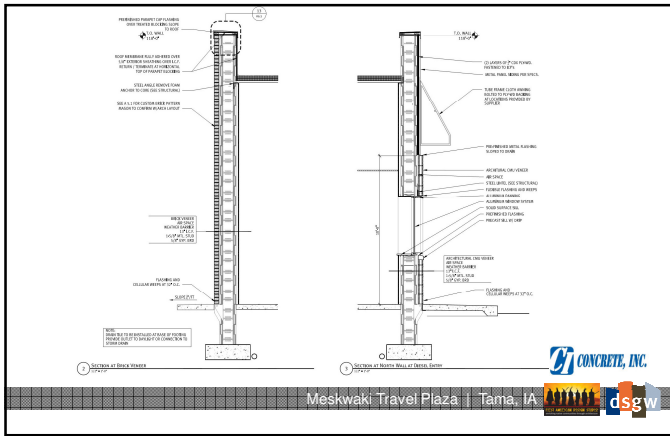
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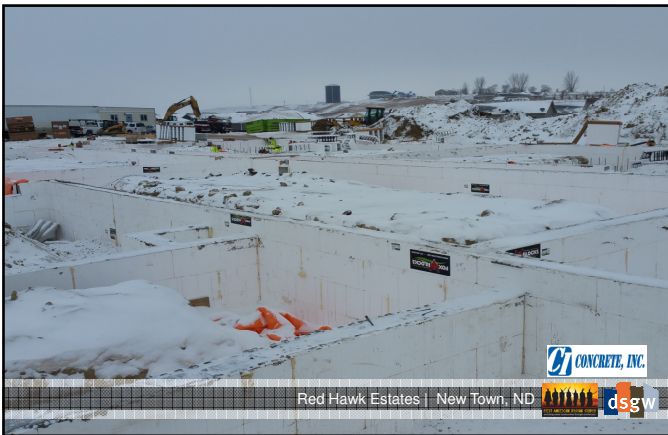


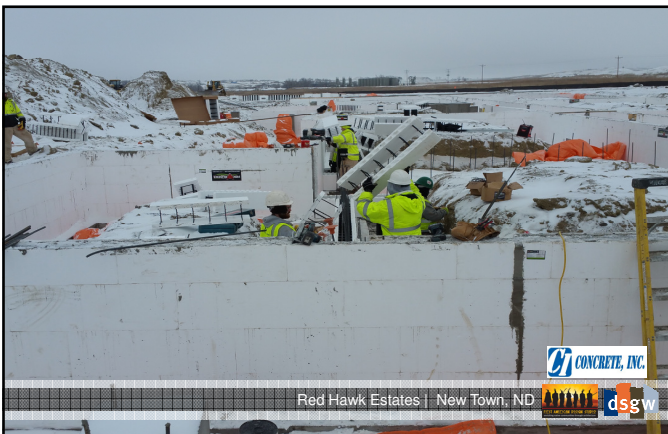












Thanks!

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