

**Making Building
Easy
January 2022**



Building Music and Performance Friendly Facilities for Students: Hempstead High School



After completing a facility assessment, the Dubuque Community School District knew [Hempstead High School](#) was in need of some upgrades. The district hired [FEH Design](#) to work on additions to [Hempstead High School](#), including both athletics and performance areas.

The \$30 million renovation and addition included a new 700+ seat auditorium, gymnasium, locker and weight rooms, classrooms, art and music rooms, food prep/dining areas, and offices.

Structural insulated precast wall panels provided high R-values and the use of custom form liners, different reveal patterns, multiple colors and finishes provide a dramatic and unique design.

"Our auditorium is used for high school orchestra, band, and vocal music concerts," said Brian Kuhle, Activities Director and Assistant Principal. "It is also used for theater productions, the school musical, our talent show, booster club dance contests, and awards ceremonies."

The renovations and addition have allowed the school to put on state-of-the-art productions like *Mary Poppins*, for which the students were able to use rigging and have Mary actually fly away at the end. The booster club has also enjoyed hosting fundraising events, like the popular "Dancing with the Mustangs" event in the auditorium.

"The facility has been a huge asset to our school and our community," Kuhle said. "It is used constantly. Our theater and music programs have grown for sure. Outside groups always want to use it. However, it is booked for district events year-round. Our students feel a great deal of pride in any event that takes place in the auditorium."

Auditorium interior panels were produced with a stock form liner and stained to achieve the desired aesthetic. Exterior panels feature a green colored mix with reveals and light acid-etched finish. Panels on the educational wing use a buff colored mix with acid-etched finish. Panels measure 12x20x10", 8'x53'x13", and 8'x38'x12".

Precast hollow core was used for a portion of the gymnasium floor over the locker rooms, ceilings over the tunnels for the auditorium, and a mezzanine in the education wing. The 8" plank allowed for spans of up to 18'. The 12" plank allowed for spans of up to 36'.

Precast:

13,221 square feet of [Hollow Core](#)

251 [Wall Panels](#) (59,617 square feet)
Multiple finishes and two custom form liners

Project Partners:

GC: [Conlon Construction](#)

Architect & EOR: [FEH Design](#)

Precast Chalk Talk: Episode 28-2



In this episode of Precast Chalk Talk, President Hagen Harker talks with Jim Nugent of Atlas Molded Products about insulation, including graphite infused insulation.

[Check it out >>](#)

Find every episode of **Precast Chalk Talk** [here](#).

New Year's Resolution: Use More Precast



By [PCI](#)

Understanding some of the benefits of precast concrete will assist designers in evaluating the impact of precast concrete on the environment and the building operation. An overview of the benefits of precast concrete, taken from the PCI Designer's Notebook on Sustainability, is listed below.

Durability and adaptability

Precast concrete panels provide a long service life due to their durable, low-maintenance surfaces. Insulated sandwich panels paired with precast concrete construction also provides the opportunity to move and reuse panels to refurbish the building, rather than tear it down, should its use or function change.

Thermal mass and energy performance

The thermal mass of concrete allows shifting of peak heating and cooling loads in a structure to help reduce mechanical-system requirements and energy consumption through the building envelope.

Fire and natural disaster resistance

Concrete is noncombustible and can contain a fire. As a separation wall, precast concrete helps prevent fire from spreading throughout a building or jumping from building to building. Precast concrete is resistant to wind, hurricanes, and floods.

Air infiltration

Precast concrete panels have negligible air infiltration. Minimizing air infiltration between panels and at floors and ceilings will provide a building with low air infiltration. These effects will lower energy costs and help prevent moisture problems.

Abundant, local materials

Concrete is used in almost every country of the world as a basic building material. Aggregates, about 85% of concrete content, are generally low-energy, local, naturally occurring sand and stone. Most precast concrete plants are within 200 miles (300 km) of a building site. Using local materials reduces the transportation required to ship heavy building materials, and the associated energy and emissions.

Indoor environmental quality

Concrete contains low to negligible volatile organic compounds (VOCs). Polished concrete floors do not require carpeting. Exposed concrete walls do not require finishing materials, eliminating particulates from sanding drywall taping seams.

Mitigating the urban heat-island effect

Precast concrete provides reflective surfaces that minimize the urban heat-island effect.

Resistance to noise

Precast concrete walls provide a buffer between outdoor noise and the indoor environment.

Inedibility

Vermin and insects cannot destroy concrete because it is inedible.



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