



2022

**AMES
HIGH SCHOOL**
PROJECT PLUMBING



INTRO

The primary building includes 430,000 sq. ft. of space needed to give 1,600 students a quality academic, athletic and fine arts experience. These spaces include the natatorium, auxiliary gyms for practice and physical education, the competition gymnasium, strength and conditioning facilities, a commons area, academic pods, career technical education spaces, a state-of-the-art auditorium, fine arts instructional space, and administrative areas.



Owner
AMES SCHOOL DISTRICT



Construction Manager
STORY CONSTRUCTION



Delivery Method
MECHANICAL CONTRACTOR



Project Value
\$ 19.395.200



Architect
OPN ARCHITECTS



Date Completed
JULY-2022



PROJECT FACTS



In 2019, ACI was awarded the mechanical & plumbing package for the new Ames High School project. With an initial contract amount of \$19,395,200.00, the total project was estimated to cost over \$140 million. The project was contracted directly to the school district as a CM delivery method. Story Construction was brought on as the construction manager, and they teamed with OPN and Design Engineers as the A/E group. OPN designed the building around multiple styles of construction including Precast Concrete, CMU block, Steel Structural and cast in place concrete. The south wing of the building houses an Olympic size swimming pool, state of the art weight room and wrestling room, and 3 gyms. The north wing includes classrooms, fantastic shop space, and an auditorium that rivals any other theater in the state of Iowa.



100%
PROJECT ON TIME



100%
PROJECT ON BUDGET

- 10 MECHANICAL ROOMS
- 5 CHILLERS / HEATERS
- 5+ MILES OF HYDRONIC PIPING
- 2+ MILES OF PLUMBING PIPING
- 145 TOILETS, 168 SINKS
- 48,000 GALLONS 25% GLYCOL



Each day at Ames High School project started with an ACI daily huddle. With a crew size of over 30 at the peak points, it was critical to keep everyone working on the same page. Along with daily huddles, a weekly safety toolbox talk was also conducted.

General Scope

The sophisticated chiller/heater system is used to both cool and heat the building. Unlike a typical chiller installation, there is no true condensing & evaporating side. Design Engineers designed the system to utilize the geothermal ground loops to supply both cooling and heating as required. All 3 systems are tied together, ground water, chilled water, and heating water. The 5 chillers/heaters are controlled by demand through the advanced building controls system. Control valves direct the water in the direction it's needed, and the chillers have a delineation line that determines which units are cooling and which are heating. The system is manipulated by 12 pumps, 3 air separators, 2 heat exchangers, and other hydronic specialties. The heating system also controls the pool water through another set of pumps and heat exchangers. Chilled and heating water is pushed throughout the building to coils in the AHU's and FCU's. Finally, spaces in the building are tempered by over 8 miles of ductwork



Side Stream Filters



Backflow Preventers



BIM MODEL

During preconstruction, we used Revit to create and coordinate a BIM model that was used for prefabrication of underground plumbing, mechanical room HVAC piping, ductwork, and also coil connections at all units. The model was also utilized to use our total station for hanger locations, in which all hangers were installed prior to the concrete decks going in.

