

# CUSD300 Big Timber Elementary School

## FIRST PLACE

ASHRAE Excellence in Engineering Award  
Chapter Level

### Project Highlights and Results

- New construction of elementary school to meet demands of district enrollment growth.
- Elara providing Schematic Design, Design Development, Permit/Bid/Construction Document, Bidding, and Construction Support.
- Energy modeling and building optimization study to support the early planning phase and identify the most effective building design.

### Project Background

<b>Owner:</b>	Community Unit School District 300
<b>Location:</b>	Hampshire, IL
<b>Team/Team Lead:</b>	Brian Malone, Sean Hidaka, Jesse Langille, Micheal Doran
<b>Elara Role:</b>	MEFP Engineer
<b>Type:</b>	New Construction
<b>Construction Cost:</b>	\$26,000,000

### Project Overview

<b>Building Type:</b>	K-12 Education
<b>Building Attributes:</b>	2-Stories with Lobby, Classroom, Kitchen, Offices, Gymnasium meeting ICC 500 Storm Shelter Standards, Multi-Purpose Room, Media Center, Specialty Rooms with Sensory Adaption; 86,260 SF
<b>Initial Construction:</b>	2021
<b>MEFP Systems:</b>	DOAS with energy recovery, dedicated AHUs for large spaces, gym destratification fans, 4-pipe fan coils, condensing boilers, air cooled chillers, condensing domestic water heaters, water softener, LED lighting, emergency/standby generator

### Innovation

- The project further developed the school district's model school MEP systems (previously updated 14 years prior) and included energy efficiency enhancements and airborne infectious contaminant control strategies.
- The gymnasium is constructed as the first storm shelter for the school district.
- Design elements include: Mechanical/HVAC systems (ventilation, boiler/chiller plants, distribution, and controls), electrical (normal/emergency power, interior/exterior lighting, fire alarm system), and plumbing (including fire suppression).
- Ventilation system comprised of 7 AHUs including 3 DOAS units and separate AHUs for specialty spaces, each with an energy wheel for heat recovery providing demand controlled ventilation air or space conditioning.
- Hot water boiler plant includes two (2) 3,000 MMBTU fire tube condensing boilers located in the building's second floor sized to support a future addition which was designed a short time later and constructed in time for the 2022/2023 school year.
- Chiller plant includes two (2) 90-ton air cooled chillers located on the roof above the building's 2nd floor sized to support a future addition.

