

### Sustainable Design Features of the New 3<sup>rd</sup> – 8<sup>th</sup> Grade Building:

- Anticipated to be “Net Zero” energy usage due to the Solar Panels, and the Geothermal Mechanical System
- The building layout was organized by the path of the sun, to orient most of the classrooms to the north side, and minimize the heat from the sunpath travelling around the equator.
- Plumbing fixtures were selected to reduce the amount of water used per flush and washing hands
- We monitor the amount of fresh air coming into the building to promote wellness
- The Building envelope was designed with a very high thermal resistance
  - This is achieved through the spray foam insulation you see during construction, and heavy insulation being installed in the roof
  - This helps insulate the building to keep the warm air inside during the winter, and the warm air outside during the summer, which helps keep the energy bills lower throughout the year
- Construction materials and products were selected such that the building is made up of about 20% recycled content
  - Manufacturers are using more and more recycled materials to limit dumping waste in landfills
- Construction materials and products were selected such that about 20% of the materials are locally harvested, manufactured, and shipped within a 500 mile radius
  - This ripple effect minimizes shipping and manufacturing from across the country or globe, and aims to reduce carbon emissions
- Landscaping is being selected that naturally thrive in our part of the country, so that they are easily established and maintained (vs. having to replant everything every year)
- We minimized the building footprints to maximize the amount of open space between buildings for vegetation
- Roofing materials were chosen with high solar reflectance values, to minimize the Heat Island Effect that buildings can contribute to the surrounding environment

- The large trees that were cleared during construction have been saved on site, and will be reused as part of the natural playscape playground area
  - Cutting out trunk rings for stepping stones, carving trunks for benches, climbing pieces, etc.
  - The rocks excavated are also being reused in the playscape
- The Geothermal exchange well system
  - There are 108 piping wells buried under the new parking lot that go 305 feet down into the earth.
  - This system is then piped underground into the new Cafeteria Building, and then pumped between the Cafeteria and 3-8
    - This will eventually tie into the new K-2 building, and other facilities on the campus over time
  - This system uses the natural temperature of the earth to help heat and cool the buildings
  - This system also balances between all the buildings, such that if one building is hot, while another is cold, they balance out so that they reach the desired temperatures using less energy
  - This system is incredibly energy efficient, and lowers the school's use of the local electric and gas utilities, therefore lowering the energy bills every month

Sustainable Design Features of the Cafeteria Addition:

- Virtually the same as the 3-8 building, except it is not anticipated to be Net Zero.