

New Hampshire **INSTITUTE** of Art

88 Lowell Street
Alternative “Green” Energies

The New Hampshire Institute of Art identified the property at 88 Lowell Street as an ideal location for an expansion project to the urban campus. The historical building, Manchester’s first high school, was vacant for over 20 years and experienced exceptional environmental and human neglect, requiring extensive renovations.

The Institute has incorporated a variety of alternative energies:

Site Selection

- Provides pedestrian access to campus, restaurants, social activities, and public transportation.
- Building in a high-density area on a disturbed site eliminates the need for the development of a pristine site elsewhere, and preserves the historic location of Manchester’s first High School.

Building Design

- The building design is arranged to minimize heat loss by reducing exterior wall and roof area, and oriented to maximize passive solar gains in the winter and limit unwanted heat in the summer.
- A demonstration green roof filters rainwater and reintroduces it at a controlled rate, reducing stress on drainage infrastructure, streams, and ponds. This and other light-reflecting features mitigate the Heat Island Effect, which effects local climate and weather patterns.
- Dark-sky compliant lighting retains light where it is being utilized and decreases light pollution.
- Building materials such as flooring and insulation are made of recycled and renewable natural materials. The design also features high-efficiency insulation, siding, and windows.

Water

- Low-flow fixtures throughout, augmented by recycled rainwater to flush toilets, reduce overall water demand.
- Use of climate-appropriate plants eliminates ongoing irrigation needs.

Energy and Lighting

- Uses energy-efficient LED fixtures to reduce energy consumption.
- Energy usage is offset with solar electricity generated on-site.
- Occupancy and daylight sensors turn off lights in rooms which are unoccupied or naturally lighted, with reflective ceilings to maximize lighting potential.

Heating and Cooling

- Building incorporates geothermal heating & cooling system paired, with energy recovery ventilators that recycle waste heat from water and ventilation systems.
- Heat pumps move heat to areas of high demand, reducing energy wasted in unoccupied areas.
- Incorporates operable windows that reduce the energy needs of mechanically pumped air.
- A high-efficiency natural gas boiler is used for domestic hot water.
- These features prevent the discharge of over 200,000 pounds of harmful waste gasses per year.