

Is a net-zero building possible?

Start with some background—energy efficiency, renewable & non-renewable energy resources, carbon footprint, global warming, climate change and natural resource use.



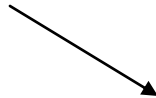
Introduce project with key goals:

1. Compare energy source (input)/energy use of conventional building to energy efficient/net-zero building
2. Design a building or redesign an existing building that is extremely energy efficient or even net-zero.



Teacher-guided research into:

- energy sources used in conventional buildings
- Energy used in lighting, heating, appliances
- Carbon emissions associated with energy use in buildings



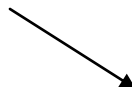
Teacher-guided research into:

- Energy efficient features in buildings & their energy use
- Carbon emissions associated with these features
- Renewable energy sources to power building & emissions



Student products for assessment & evaluation

- Summary table of conventional vs. energy efficient/net-zero
- Net-zero building design or redesign
- Discussion about feasibility of net-zero



Extensions

Adding water conservation
Locally sourced building materials/sustainable landscaping
Transportation options
Indoor air quality