Tactile Energy History Exhibition

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Our Plan

- Energy history of Carleton timeline
- Museum-style exhibition
- Hands-on with tactile components
- Temporary and permanent displays
Why?

- Bring awareness to historical significance
- Physically engage students in learning
- Target specific learning styles
- Draw most possible attention
Our Design
Energy History of Carleton

- Carleton Founded 1866
- Coal Plant 1910
- New Breakwater/ Natural Gas 1941
- Hot water 1950
- Chilled Water 1980
- 1st wind Turbine 2004
- Solar 2009
- Geo 2017

Electricity:
- piece of wood
- piece of coal
- brick
- wood
- piece of gravel

Heating and Cooling:
- explain diff. between heating and electricity
Energy History of Carleton

At the time of Carleton’s founding in 1866, the college is heated with fireplaces and coal furnaces in each building. There is no electricity at Carleton yet (the light bulb wasn’t invented until 1879).

The construction of a central heating plant in 1910 allows Carleton to stop relying on heating systems in individual buildings and is a major development in the college’s energy history.

In 1908 the public electric grid comes to Carleton, giving the college electricity for the first time.

In 1941 and 1942, a new smokestack is built and Carleton switches the fuel in its heating plant from coal to natural gas. This is a major turning point in the history of energy and sustainability at Carleton.

The conversion of heating from steam to hot water radiators in the 1960s makes heating more efficient, especially in the new buildings of Myers, Musser, and Bolio.

In the 1980s, the installation of chilled water cooling technology allows for the air conditioning of a number of buildings on campus.

The 2004 installation of a 1.65 megawatt wind turbine replaces about 40% of Carleton’s electricity needs with renewable energy. This is the first utility-grade wind turbine in the country to be owned by a college, and marks the first step in Carleton’s attempt at electrical energy reduction.

Carleton’s first solar panels are installed on the roofs of Cassat and Memo in 2009.

Two types of geothermal wells are installed on campus: horizontal wells are drilled under Bell Field, while vertical wells are drilled under the Bald Spot and the Mini-Bald-Spot. These wells will help with heating and cooling at Carleton.
GLACIAL TILL (0-48ft) is unsorted sediment (eroded rocks) that is the result of the moving glaciers that once covered Minnesota!

LIMESTONE (48-108ft) is a sedimentary rock, made from mainly the skeletons of marine organisms like coral, shells and other biomass

SANDSTONE (108-310ft) sand is pressed together to create a rock. This is where most aquifers come from. Around here, we get our water from the Jordan Aquifer, which is also sandstone.

LIMESTONE (310-500ft) Here is another layer of limestone, this is the bedrock upon which Carleton rests.
Tactile Components
Tactile Components (Pt. 2)
Tactile Components (Pt. 3)
Location

- Temporary display: The Rookery back wall, items placed above bookshelves
- Permanent display: potentially lobby of new science building, items placed on museum podiums
Where do we go from here?

- Leave prototype with the Sustainability Office and Geology department
- Follow construction of new science building
- Look for opportunities for permanent display
Conclusion

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