

Offsetting the Rubenstein School's Energy Use Through Solar Power

Interns: Hayden Childs, Evan Jean, Kayla Vaccaro

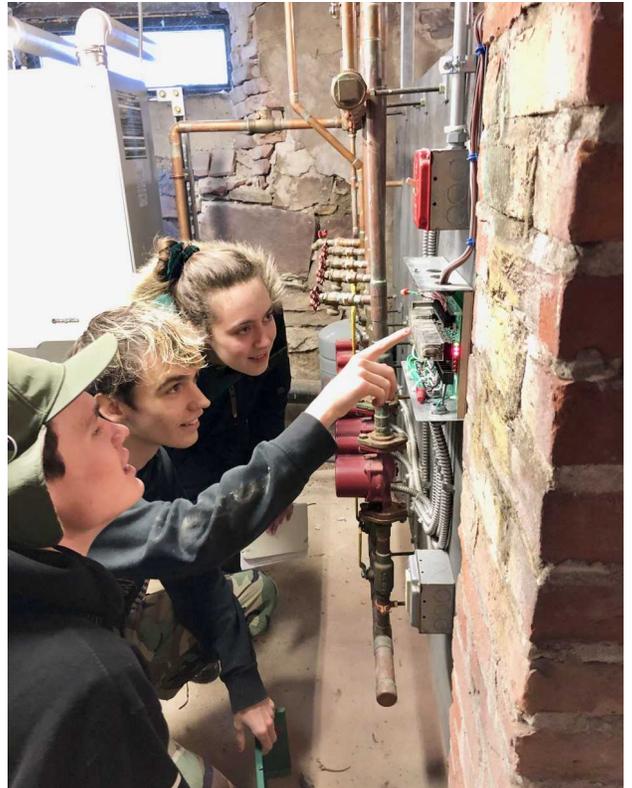
Our Greening of Rubenstein Interns team has been working together to determine the energy use of RSENR buildings to be offset by renewable solar energy. This process involves three phases:

- 1) determine how much energy is currently used by the four RSENR buildings;
- 2) upgrade the efficiency of Bittersweet Building, Rubenstein Ecosystem Sciences Laboratory, Aiken Center, and the Forestry Sciences building to reach their Achievable Potential energy use; and
- 3) offset the energy use with renewable energy to reach Net Zero Energy.

To begin the process, we have worked closely with Gretchen Schimelpfenig from Burlington Electric Department, Richard Wolbach from the UVM Physical Plant, and staff from Vermont Gas to address areas of inefficiency in the Bittersweet Building on South Prospect Street. Together, we conducted a phase two "treasure hunt" by touring the office spaces and the basement and taking note of possible energy efficiency upgrades.

We are currently looking into the possible savings that could be acquired by replacing the various mini-fridges in offices with a larger refrigerator certified by the Consortium for Energy Efficiency, as well as changing one office space from electric heat to natural gas. We also noted the basement as an area of concern, due to the oddly high temperature for an unoccupied space. This was a simple fix as there was a fan heater that seemed to be running throughout the day that needed to be shut off. We have recently begun taking temperature readings by placing digital thermometers in multiple spaces in the basement to ensure that the building is not using any excess heating for this rarely used space.

Two of us were able to attend a meeting with Burlington Electric, Vermont Gas, the UVM Physical Plant, and CX associates to discuss the retro-commissioning (a systematic process to improve an existing building's performance) of the Aiken Center and the Rubenstein Laboratory. We will continue working with this group throughout the semester. The Forestry Sciences building has recently been involved in a high-level energy audit that provided several efficiency upgrades we hope to install. We are working our way, building by building, to help reach each building's Achievable Potential energy level so that we can help finalize potential arrangements to install solar panels to offset the energy use in all RSENR buildings. But first, we must address areas of inefficiency before the installation.



Team members Evan Jean (Environmental Studies, '21), Kayla Vaccaro (Environmental Science '22), and Hayden Childs (Natural Resources '19) examine the furnace zone control box in the basement of the Bittersweet Building.