

# CALVIN

## **Calvin Energy Recovery Fund Monthly Report**

**December 2022**

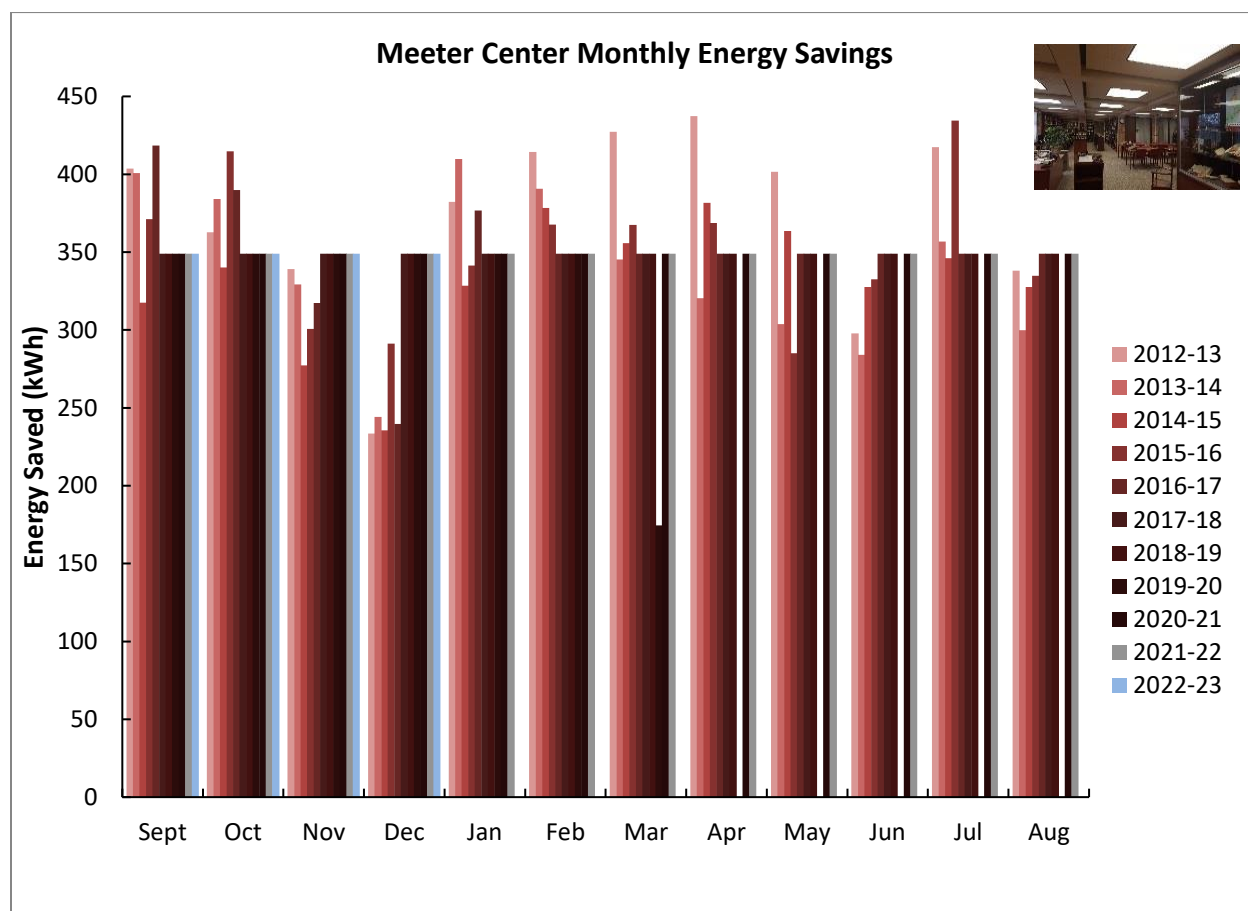
**Prepared by:  
Gia Mien Le**

**January 2023**



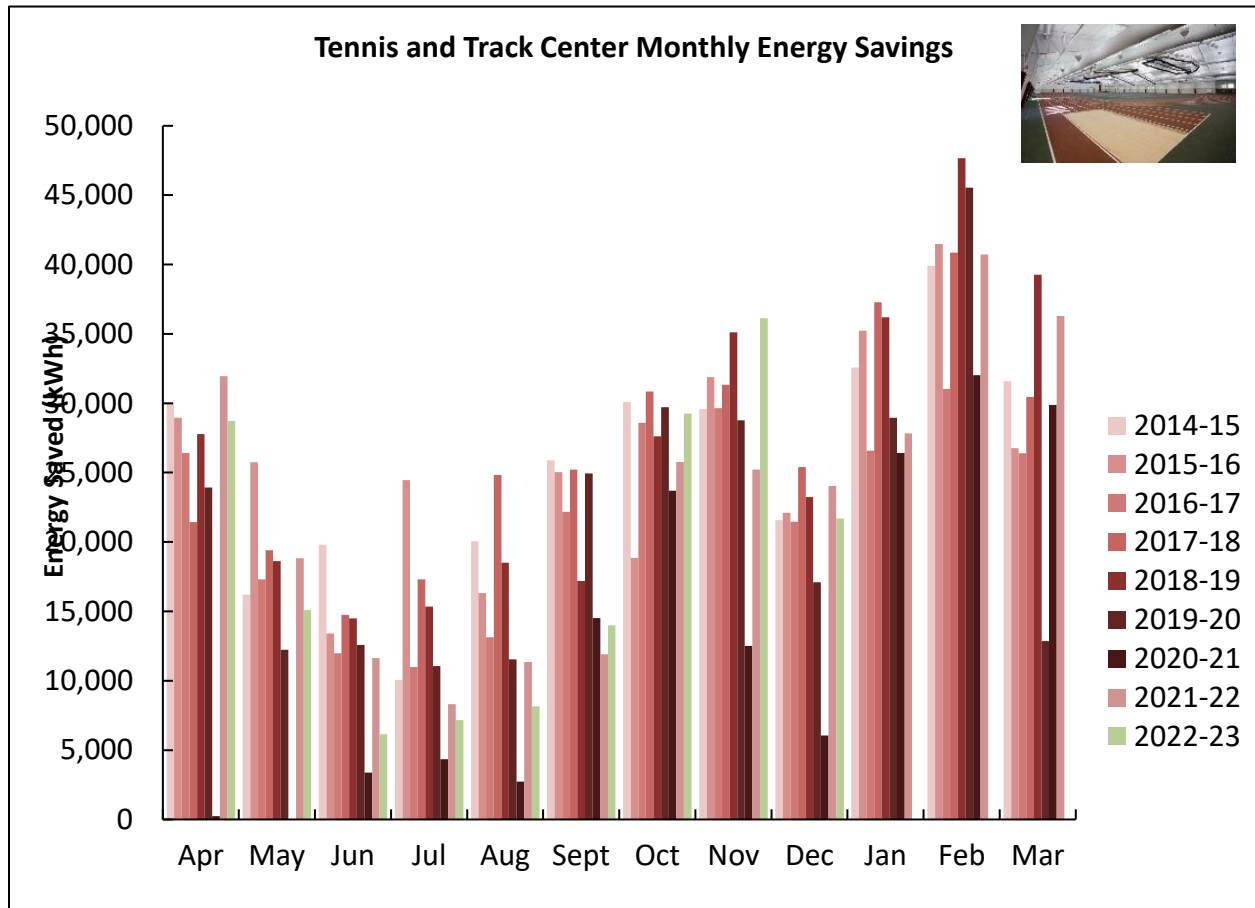
## Meeter Center Lighting Project

The Hekman Library's Meeter Center project continues to produce consistent savings. Last month, 349 kWh and \$34.23 were saved. Detailed monitoring for the Meeter Center has stopped. We now estimate savings by historical monthly averages. As of October of 2022, this project reached payback. Monitoring and calculations will continue until October of 2027.



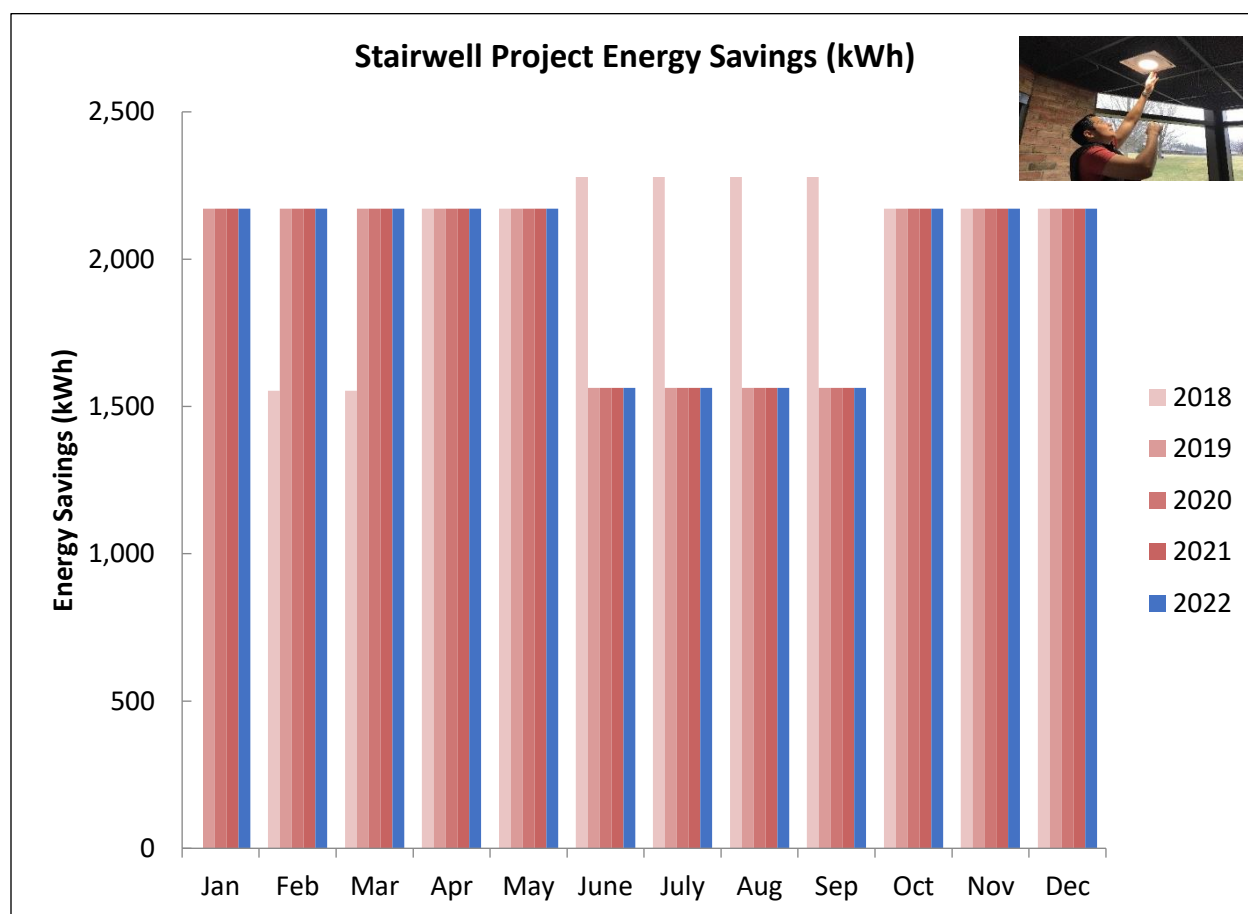
## Huizenga Tennis and Track Center Project

LED fixtures were installed in the Tennis and Track Center during Spring Break 2014. The project replaced 142 1,000-W metal halide lamps with 210-W and 160-W LED fixtures. CERF is grateful to donors who supported the T&T project with gifts to CERF. This past month, 21,686 kWh of electricity and \$1,914.00 were saved.



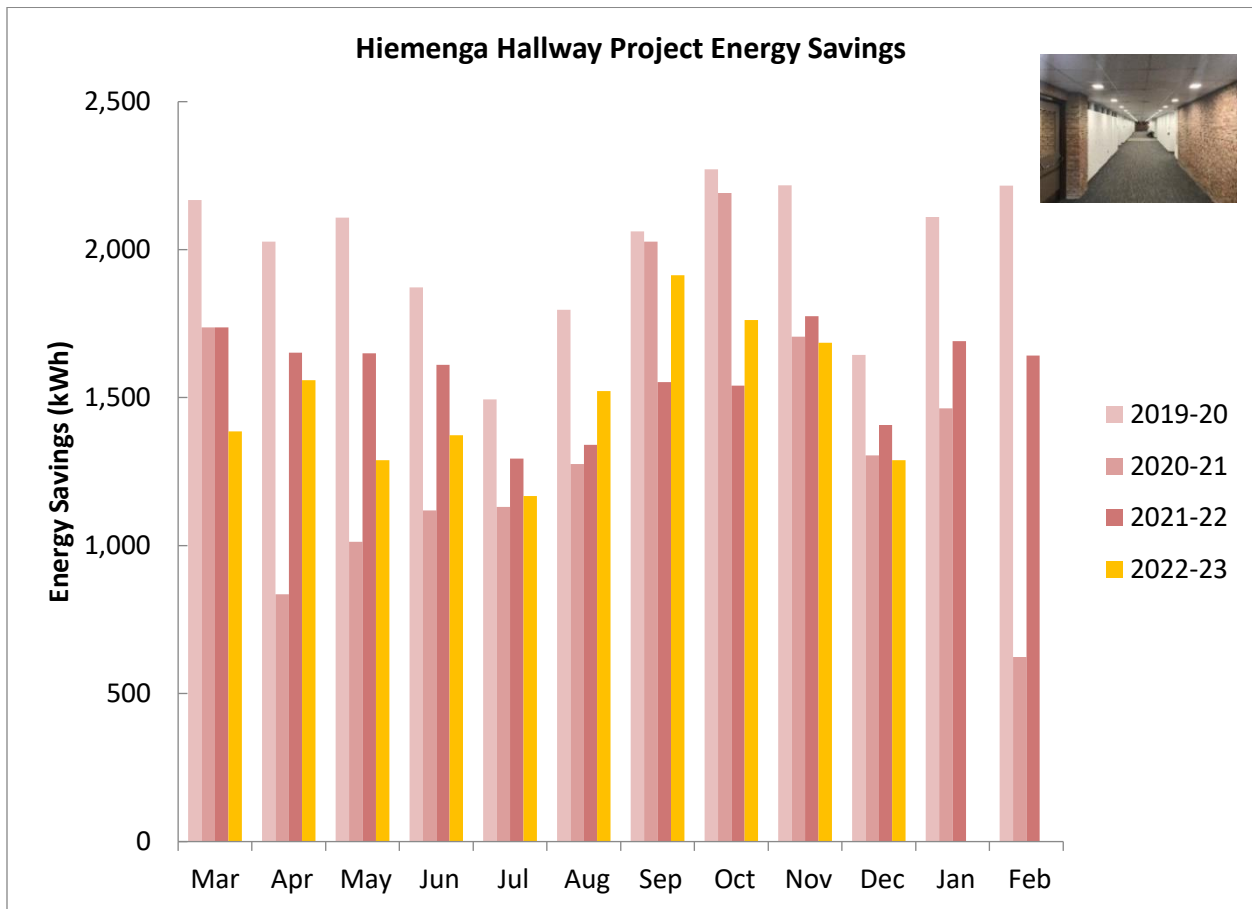
## Stairwells Relighting Project

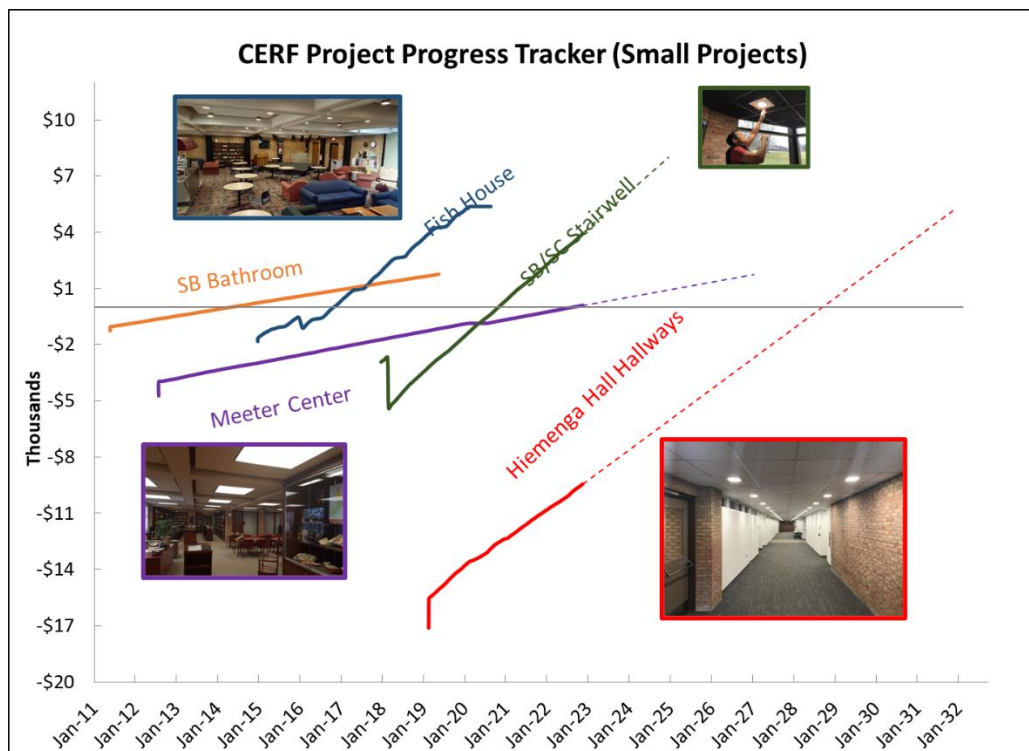
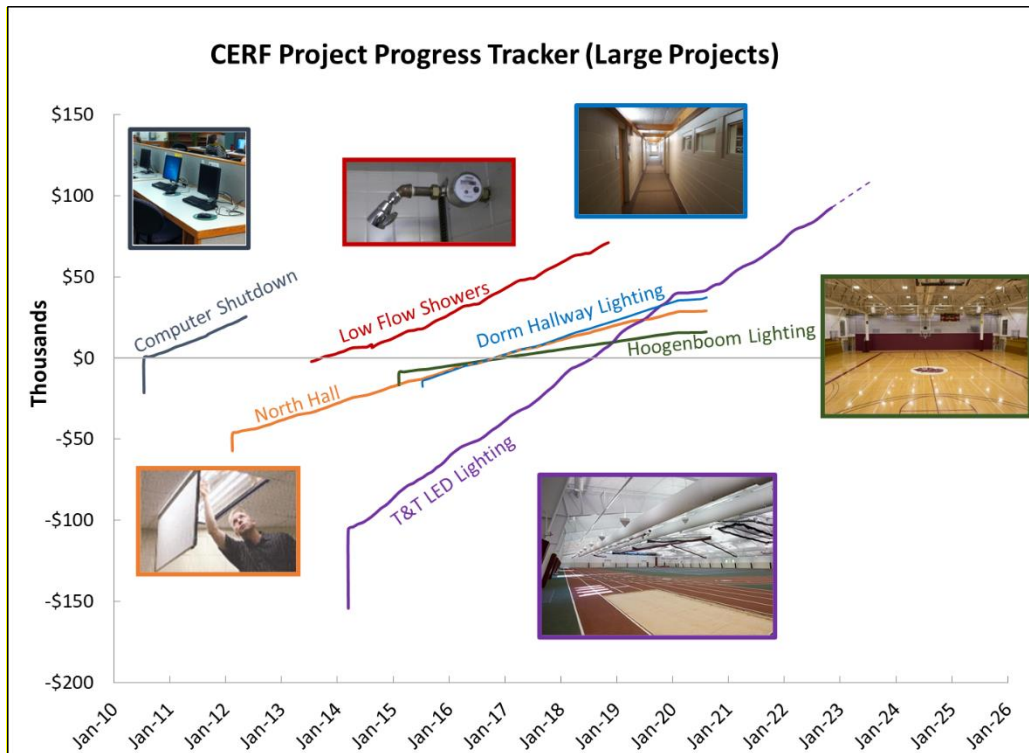
Several stairwells on campus in the Science Building and Spoelhof Center provided an excellent opportunity to reduce energy consumption and costs. CERF interns replaced the incandescent lights in the Spoelhof Center stairwells with energy efficient LEDs during Interim 2018. During Spring Break 2018, Physical Plant with CERF support replaced fluorescent lamps in the Science Building stairwells. This past month, 2,171.12 kWh of energy and \$167.79 were saved. This project had reached payback in December 2020, allowing CERF to monitor and collect data until December 2025.



## Hiemenga Hall Hallway Relighting Project

Hiemenga Hall is one of Calvin's main academic buildings and is heavily utilized, providing an opportunity to replace the lights in the hallways to enhance the aesthetics of the building and reduce energy usage and costs. Throughout the 2018-2019 school year, Physical Plant replaced the existing fluorescent lights with new LED fixtures. There were missing data in the month of July due to the failure of the data acquisition device, therefore, this month's report will be an average of similar months. Savings shown are 1,288.93 kWh and \$100.06.








<i><b>Lifetime CERF Savings (as of December 2022)</b></i>	
Electricity Savings (kWh)	<b>5,350,240</b>
Water Savings (gal)	<b>7,290,335</b>
Natural Gas Savings (MMBtu)	<b>5,080.17</b>
CO <sub>2</sub> Savings (metric tons)	<b>3,959.46</b>
Cost Savings	<b>\$513,673.59</b>

## CERF Project Status

Projects awaiting installation, active projects, and mature projects are shown on the project flowchart below. Spoelhof Basement is a new project currently being installed, although no data has been shown yet due to the malfunction of the acquisition device. There will be an upcoming installation of the DeVos project.

ACTIONS	Project Proposal		Proposal Analysis		Proposal Approval/Rejection		Project Launch		Payback & Auditing Active Period			Project Hand-off	
PROJECT TYPES	Proposed Project		Pending Proposal		Pending Proposal (Inactive Proposal)				Active Project			Mature Project	
ACTIVE PARTICIPANTS	Project Proposer	CERF Intern	CERF Manager	Environmental Stewardship Committee			Project Implementer		Project Auditor	CERF Intern	Calvin College		
CERF CASH FLOW		(-) Intern wage					(-) Installation	(-) Maintenance	(+) Audited Savings				
CALVIN BUDGET CASH FLOW											(-) Maintenance	(+) Savings	
TIME													

### Key

Awaiting Installation

Yet to Break-Even

Past Break-Even

Mature Project

Hiemenga Hallway



Meeter Center



Computer Shutdown



Stairwell Lighting



T&T Lighting



Dorm Hallway Lighting



North Hall Lighting



Low-Flow Showerhead Replacement



Fish House Lighting



Hoogenboom Lighting



SB Bathroom Lighting



## Summary of Project Activity for December 2022

### Active Projects

Project #	Start Date	Title	Energy Cost Savings	Electricity Savings	CO <sub>2</sub> Savings
2011S0037	Aug 2012	Meeter Center Lighting	\$ 34.23	349.00 kWh	0.24 tonnes
2012S0052	Mar 2014	Tennis and Track Center Metal Halide Replacement	\$ 1,914.00	21,686.00 kWh	14.96 tonnes
2016S0098	Feb 2018	Stairwells Relighting	\$ 167.79	2,171.12 kWh	1.50 tonnes
2017I0103	Mar 2019	Hiemenga Hallway Lighting	\$ 100.06	1,288.93 kWh	0.89 tonnes

### Mature Projects

Project #	Dates	Title	Total Energy Cost Savings	Total Energy Savings	Total CO <sub>2</sub> Savings
2010S0001	Aug 2010– Jun 2012	CIT Computer Power Management	\$ 25,547.87	435,975 kWh	300.82 tonnes
2010F0023	Jun 2011– Jun 2019	SB Bathroom Motion Sensors	\$2,808.16	42,408 kWh	29.26 tonnes
2011S0038	Mar 2012 – Dec 2021	North Hall Lighting	\$ 84,133.46	928,700.25 kWh	640.80 tonnes
2014F0084	Jan 2015 – Dec 2021	Fish House Lighting	\$ 8,450.77	108,238.03 kWh	74.68 tonnes
2014S0082	Mar 2015 – Feb 22	Hoogenboom Lighting	\$ 31,306.80	391,490.30 kWh	270.13 tonnes
2013F0069	Aug 2015 – Dec 2021	Dorm Hallway Lighting	\$ 65,967.45	839,390.40 kWh	579.18 tonnes
2012S0054	Aug 2013– Dec 2018	Low-Flow Showerheads	\$ 73,427.59	7,290,335 gallons	5,080.17 MMBtu 269.25 tonnes

### Recent and Upcoming CERF Activity

- Double-check Raspberry pi's in Spoelhof basement and Hiemenga Hall
- Update on Spoelhof Basement and Hiemenga Hall project data.
- Changing all of Calvin's fluorescent lights to LEDs.
- Solar power installation.
- Calculate engineering building lighting savings if switched to LED lights.



## Financial Summary for December 2022

Gifts	--
Energy Cost Savings	\$ 2,216.08
Expenses	--
<hr/>	
Net for December 2022	--

## About CERF

The Calvin Energy Recovery Fund (CERF) is an award-winning Green Revolving Fund that improves energy efficiency and reduces carbon dioxide emissions on campus.<sup>1</sup> The energy savings from CERF projects are routed back into the fund for five years after project payoff, thereby growing the fund to support future projects.

Calvin provided initial seed funding for the student-proposed fund in September 2009, and the college's Environmental and Energy Sustainability Committee (EESC) approved policies governing CERF in March 2010.

Students are involved in project proposal, analysis, implementation, monitoring, and reporting, providing opportunities for curricular and extracurricular learning on environmental and energy stewardship and fiscal responsibility.

### **CERF Information:**

**EESC Chair:** Matthew Heun

**CERF Manager:** Nicholas Thompson

**CERF Energy Interns:**

Gia Mien Le

Peter Peng

To learn more about CERF or submit a project idea:

**<https://calvin.edu/about/sustainability/cerf/>**

To make a financial investment in CERF:

**<https://calvin.quadweb.site/giving/cerf>**

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<sup>1</sup> [http://www.mlive.com/business/west-michigan/index.ssf/2010/09/green\\_awards\\_2010\\_calvin\\_colle.html](http://www.mlive.com/business/west-michigan/index.ssf/2010/09/green_awards_2010_calvin_colle.html)