

# CALVIN

## **Calvin Energy Recovery Fund Quarterly Report**

**Jul – Sept 2021**

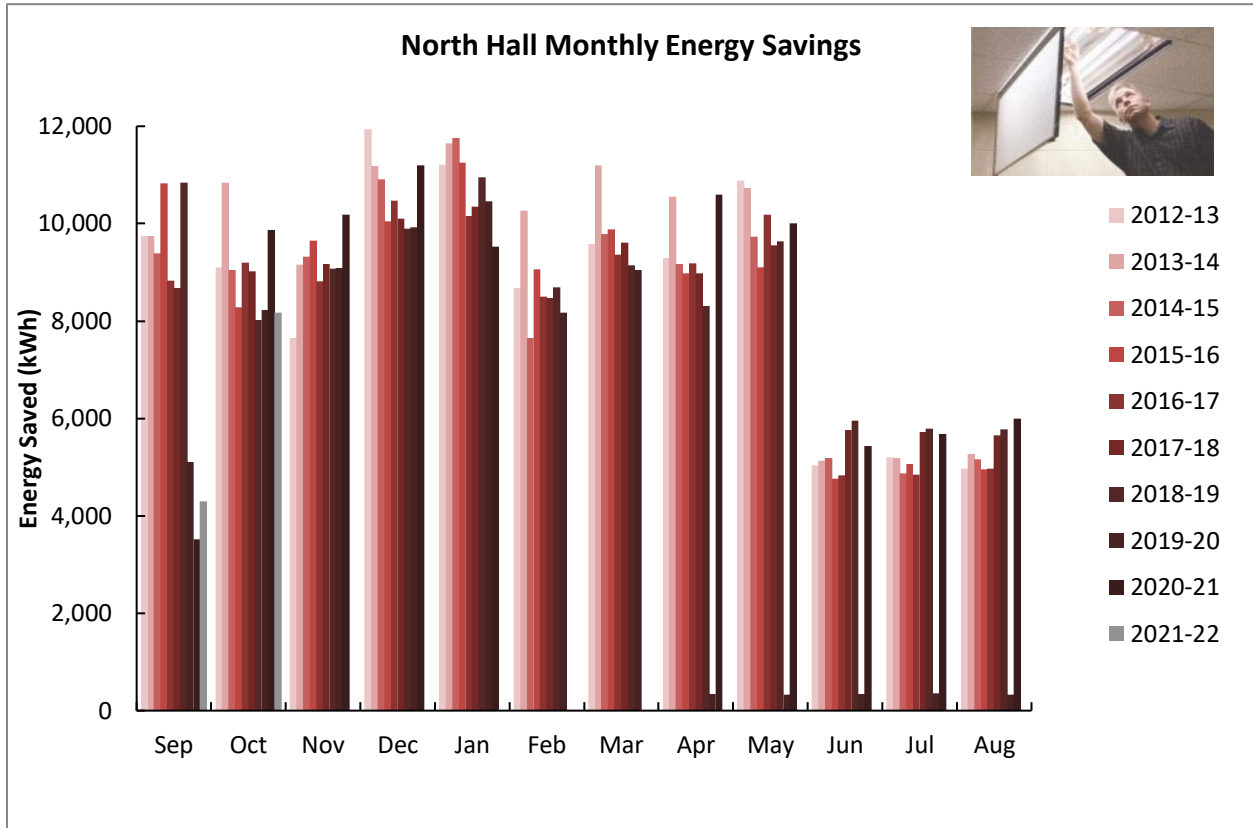
**Prepared by:  
Gia Mien Le**

**November 2021**



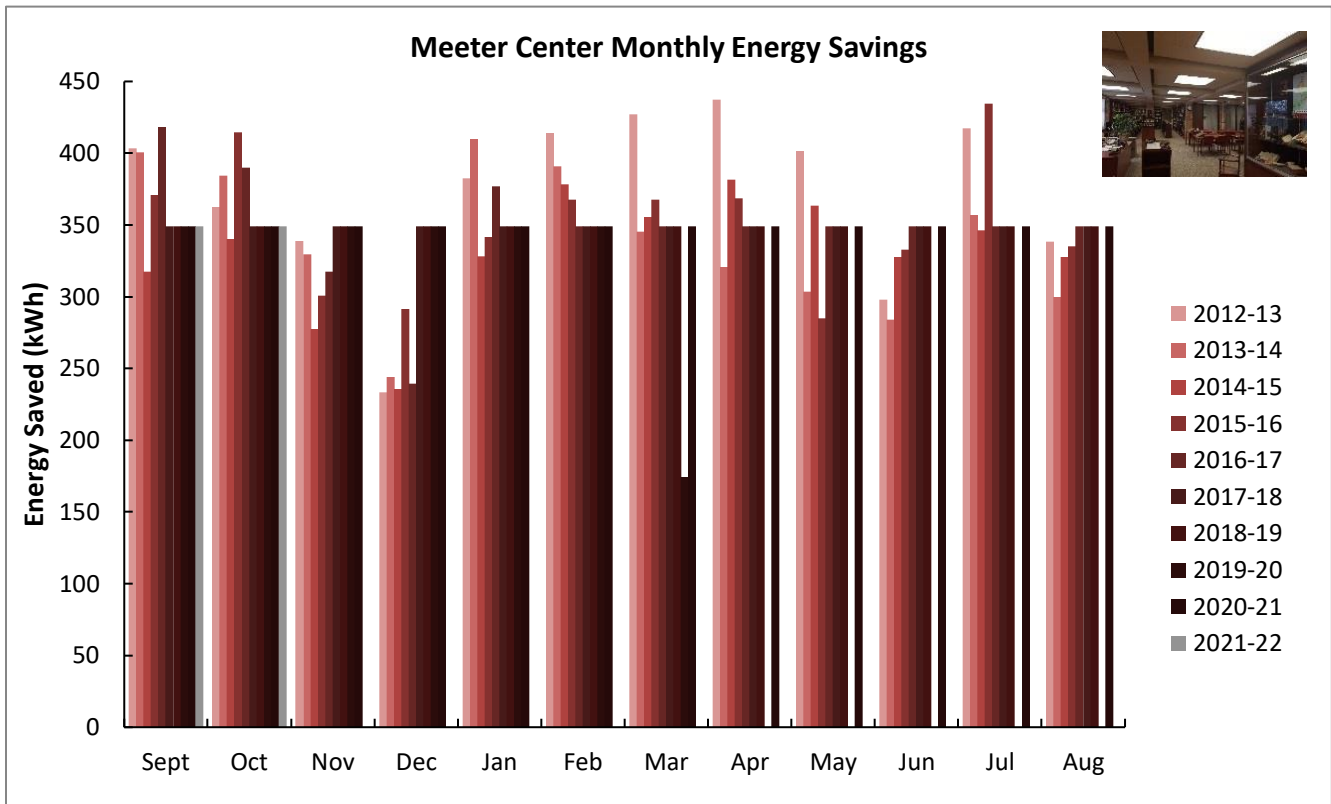
# North Hall Lighting Project

The North Hall lighting project continues to accumulate significant energy savings for Calvin. This past quarter, the North Hall lighting project saved 15,969 kWh and \$862.49. The project reached payback in December of 2016 and is adding funds until December of 2021.



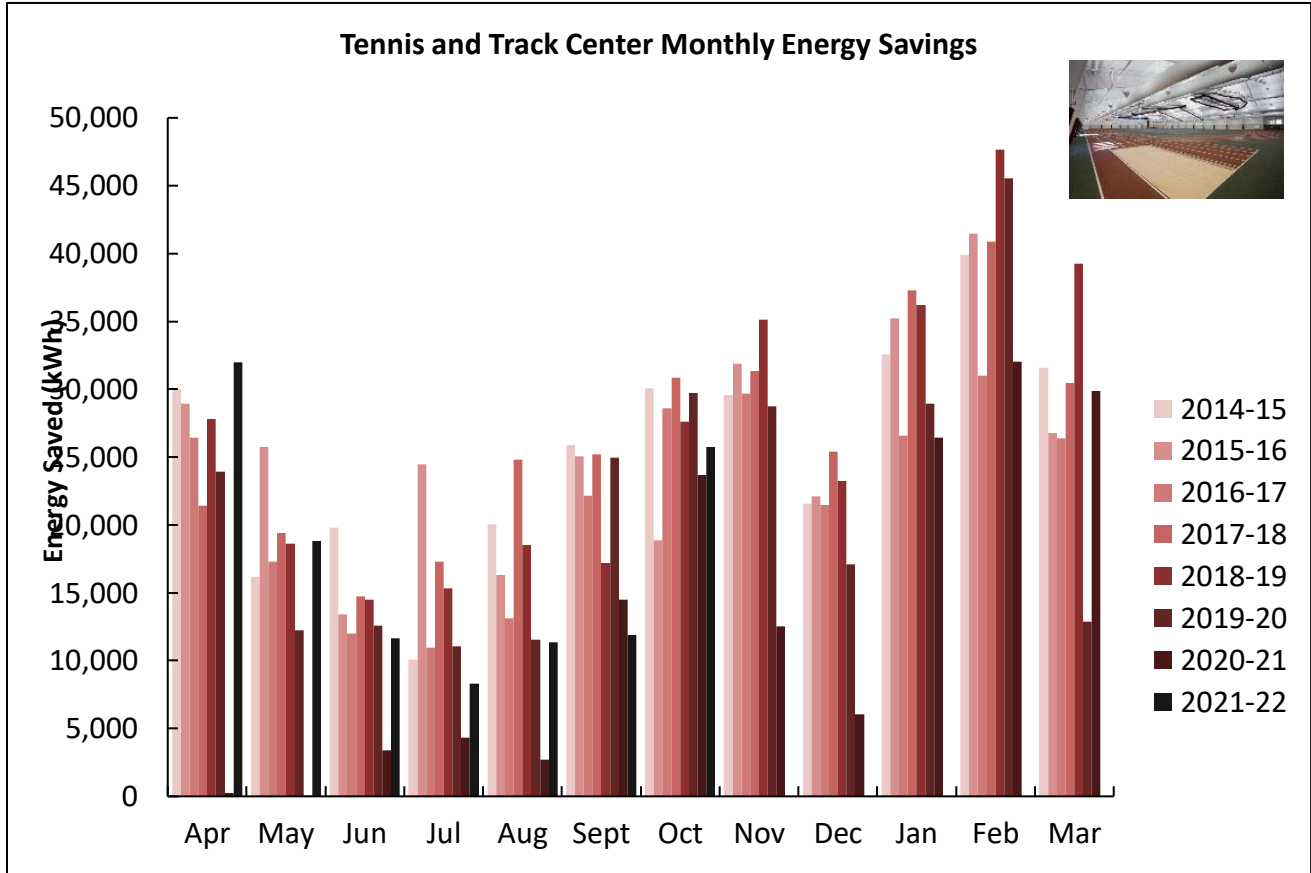
## Meeter Center Lighting Project

The Hekman Library's Meeter Center project continues to produce consistent savings. Last quarter, 1,047 kWh and \$102.69 were saved. Detailed monitoring for the Meeter Center has stopped, We now estimate savings by historical monthly averages.



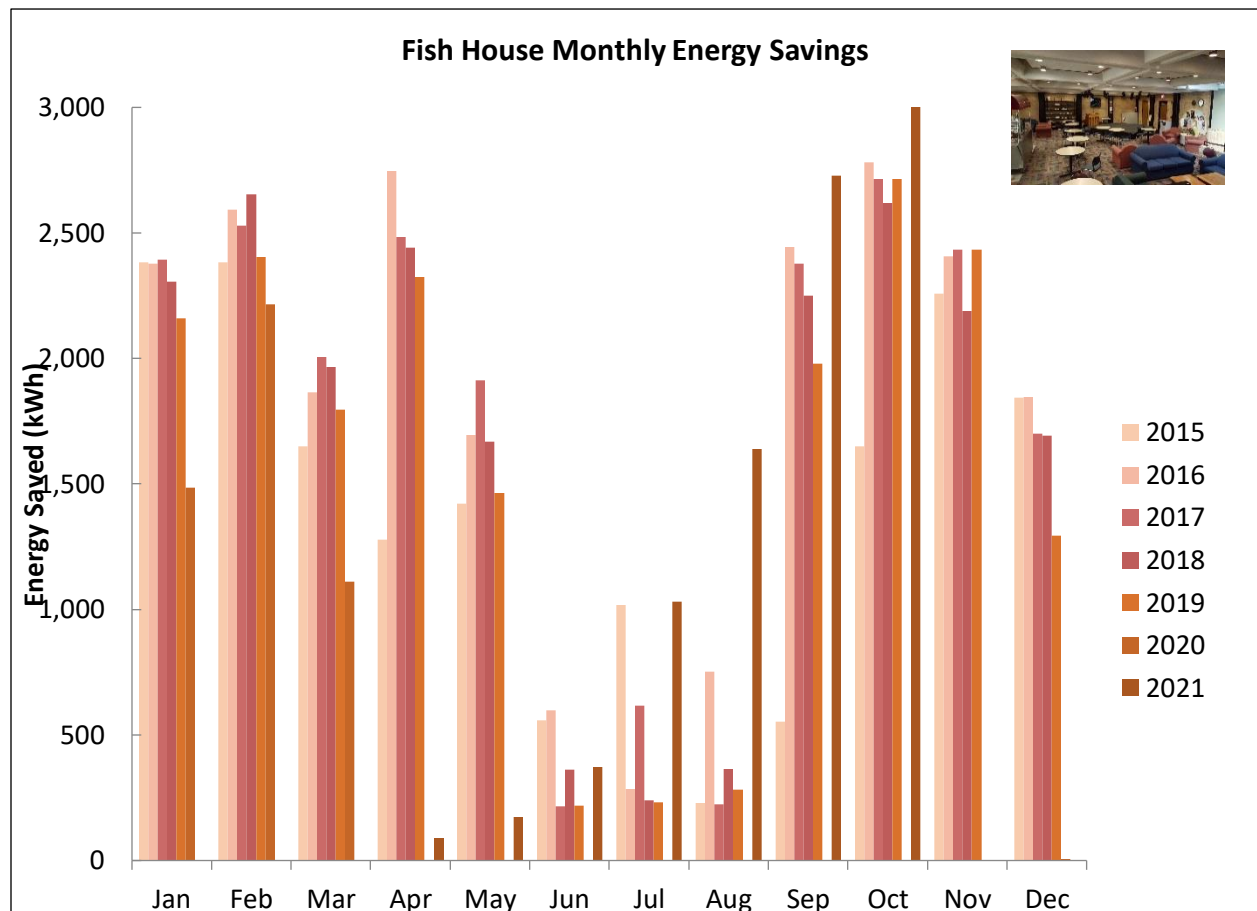
## Huizenga Tennis and Track Center Project

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 quarter, 31,567 kWh of electricity and \$4,604.16 were saved.



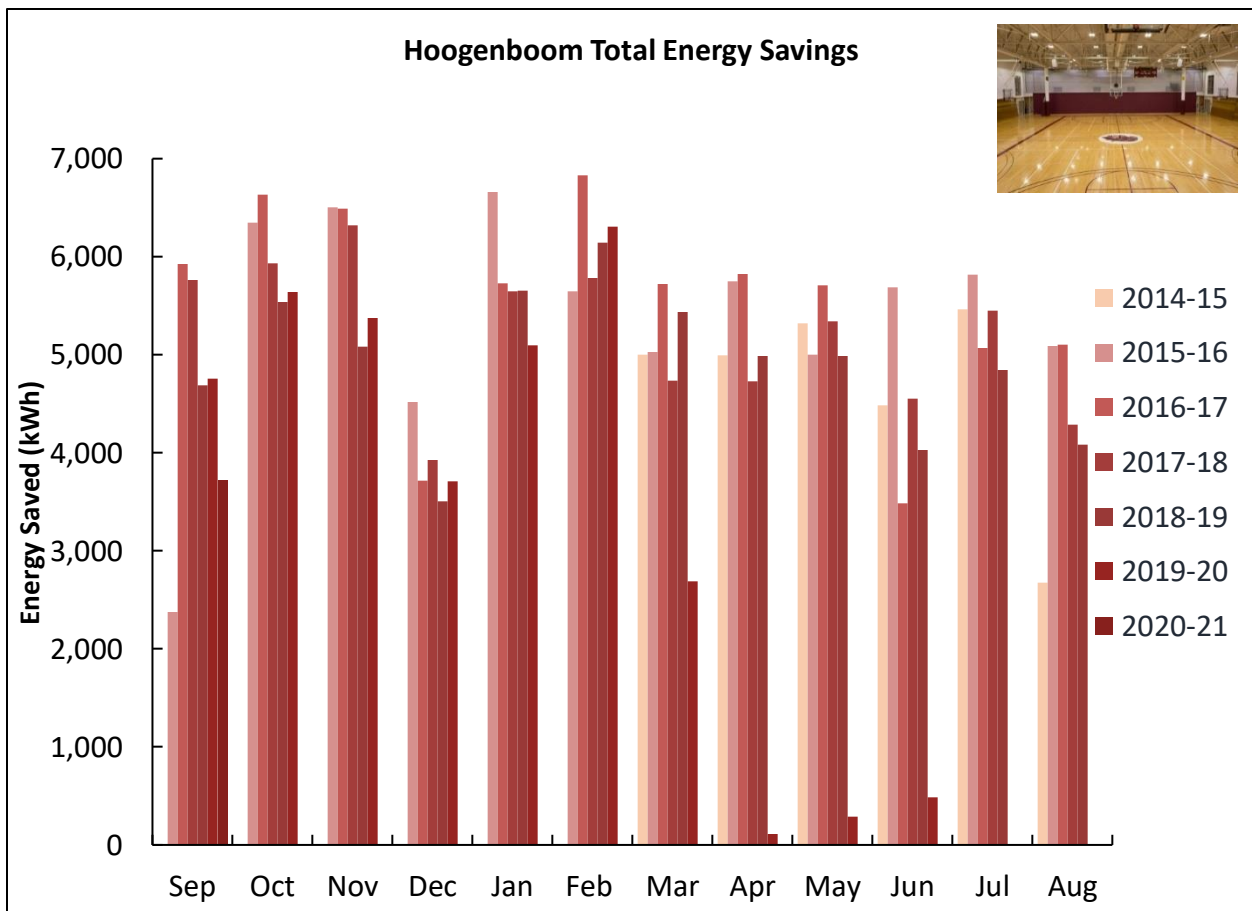
## Fish House Lighting Project

The Fish House is an area for students to drink coffee and study, but it is also a great opportunity to reduce energy consumption and costs. During January 2015, the CERF interns replaced 80 57-W incandescent lamps with 8.5-W LEDs. This past quarter, 5,400.15 kWh of energy and \$468.64 were saved. The project reached payback in December of 2016 and will continue to bring savings to CERF for new projects until December 2021.



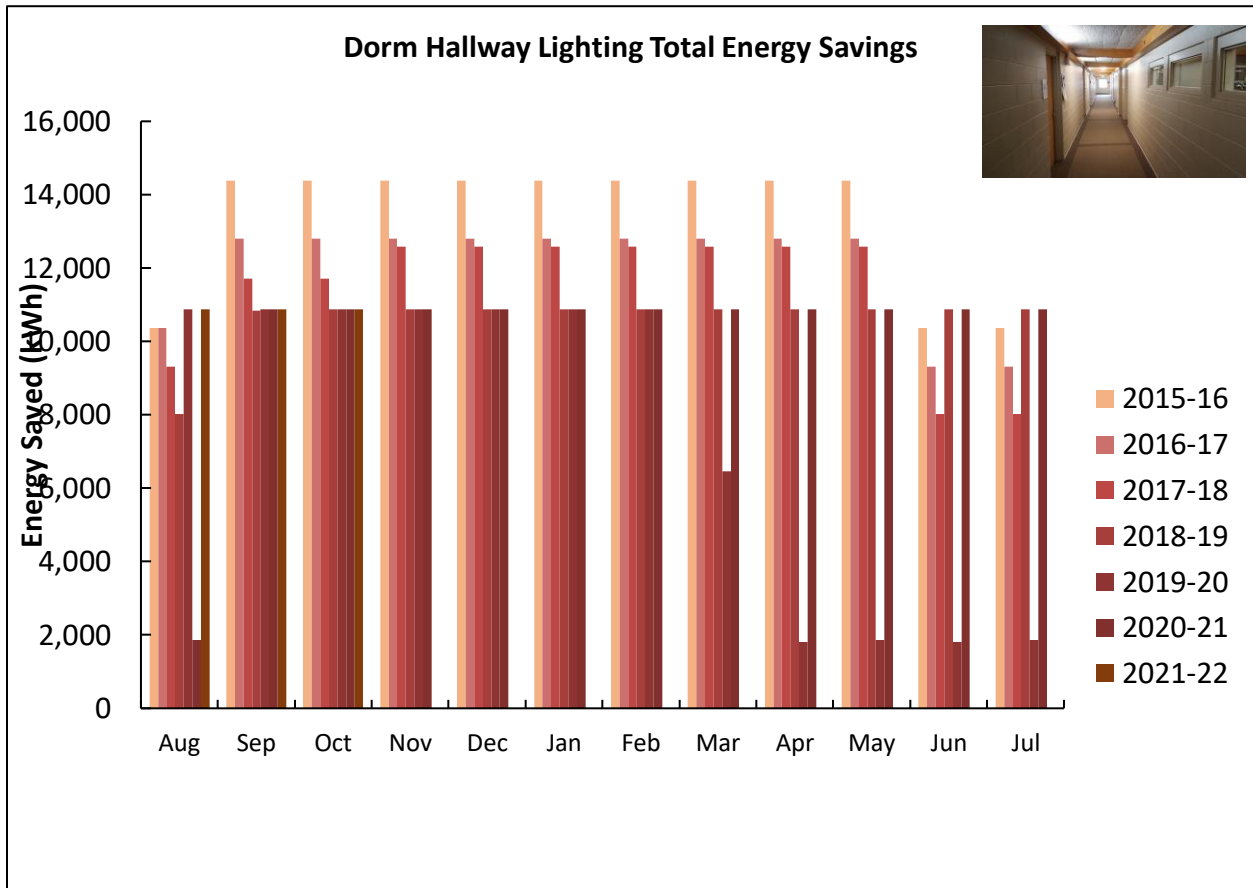
## Hoogenboom Lighting Project

The Physical Plant with CERF support replaced 51 400-W metal halide fixtures with energy efficient LEDs in the Hoogenboom gymnasium during Spring Break 2015. CERF is grateful to the donors who supported the Hoogenboom project. This past quarter 6,582.97kWh of energy and \$516.34 were saved. This is data from the last quarter of 2020. Data for this quarter has not been collected due to the failing of the Raspberry Pi sensor at Hoogenboom. Therefore, the total energy savings costs for this quarter will exclude the Hoogenboom project. More detailed and accurate report will be included in the next quarterly and yearly report.



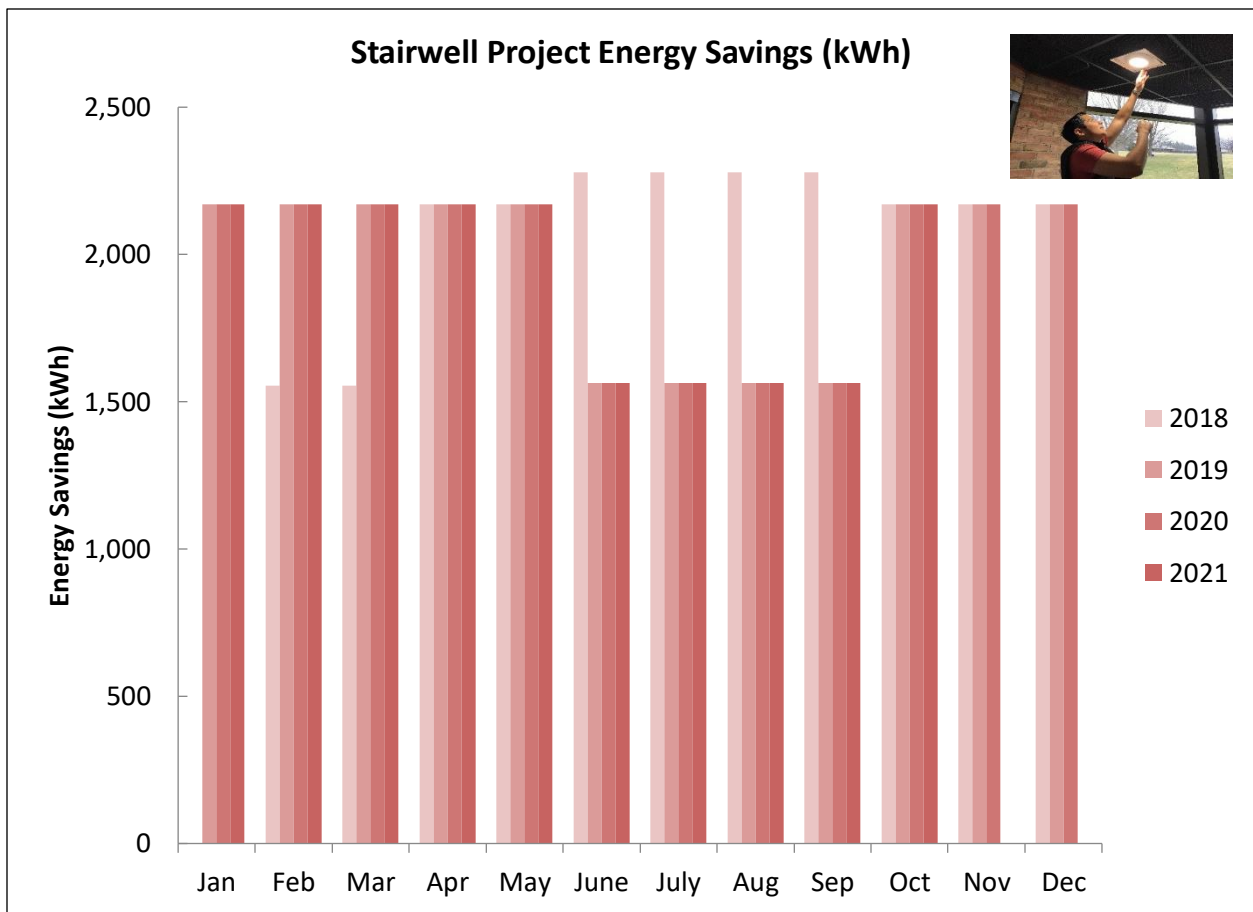
## Dorm Hallway Lighting Project

The Physical Plant with CERF support replaced fluorescent lamps with energy efficient LEDs in the Dorm Hallways during July 2015. This past quarter, 32,638.79 kWh of energy and \$2,935.94 were saved. As of December 2016, the project successfully reached payback allowing CERF to monitor and collect savings for five more years.



## Stairwells Relighting Project

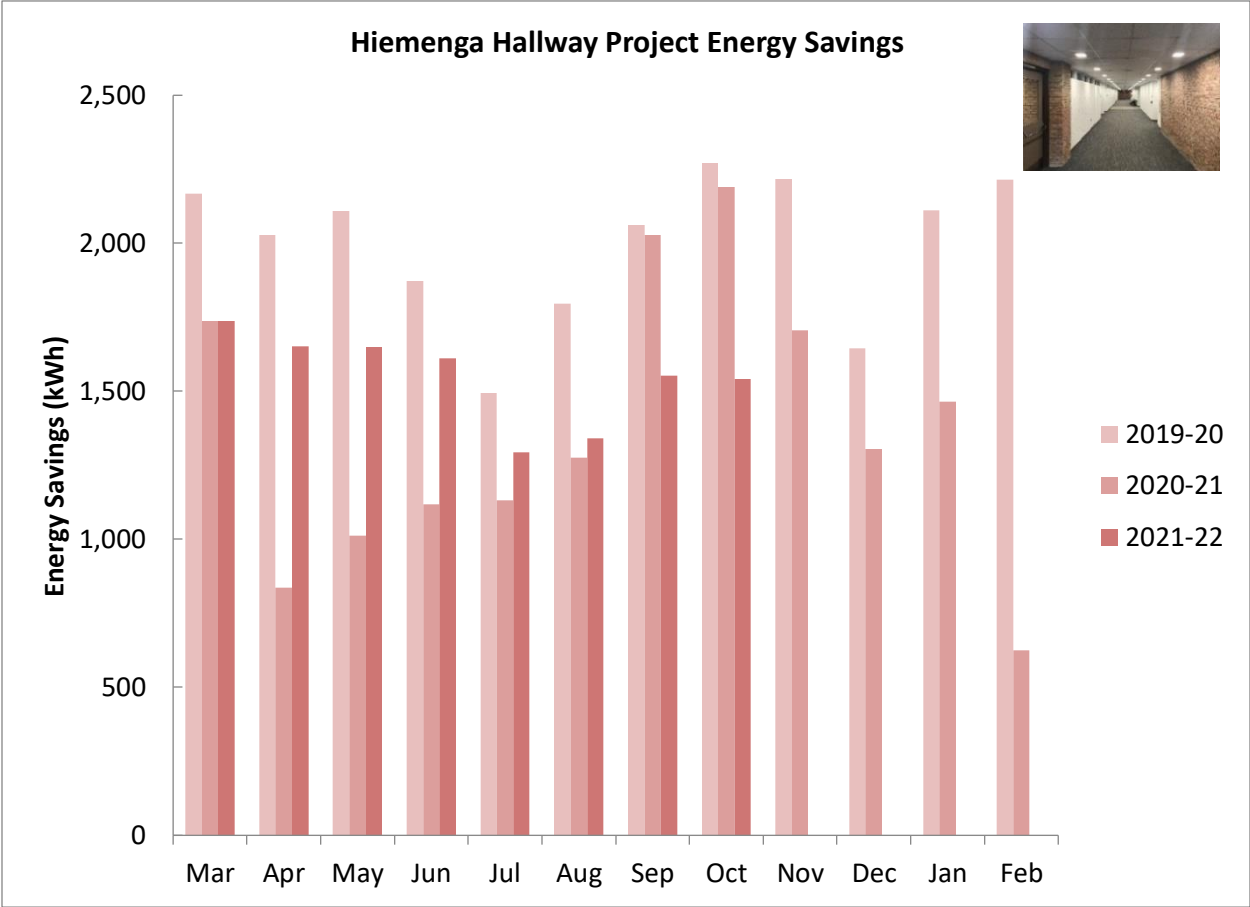
Several stairwells on campus in the Science Building and Spoelhof Center provided an excellent opportunity to reduce energy consumption and costs. CERF interns replaced the incandescent lights in the Spoelhof Center stairwells with energy efficient LEDs during Interim 2018. During Spring Break 2018, Physical Plant with CERF support replaced fluorescent lamps in the Science Building stairwells. This past quarter, 4,687.88 kWh of energy and \$423.76 were saved. This project had reached payback in December 2020, allowing CERF to monitor and collect data until December 2025.

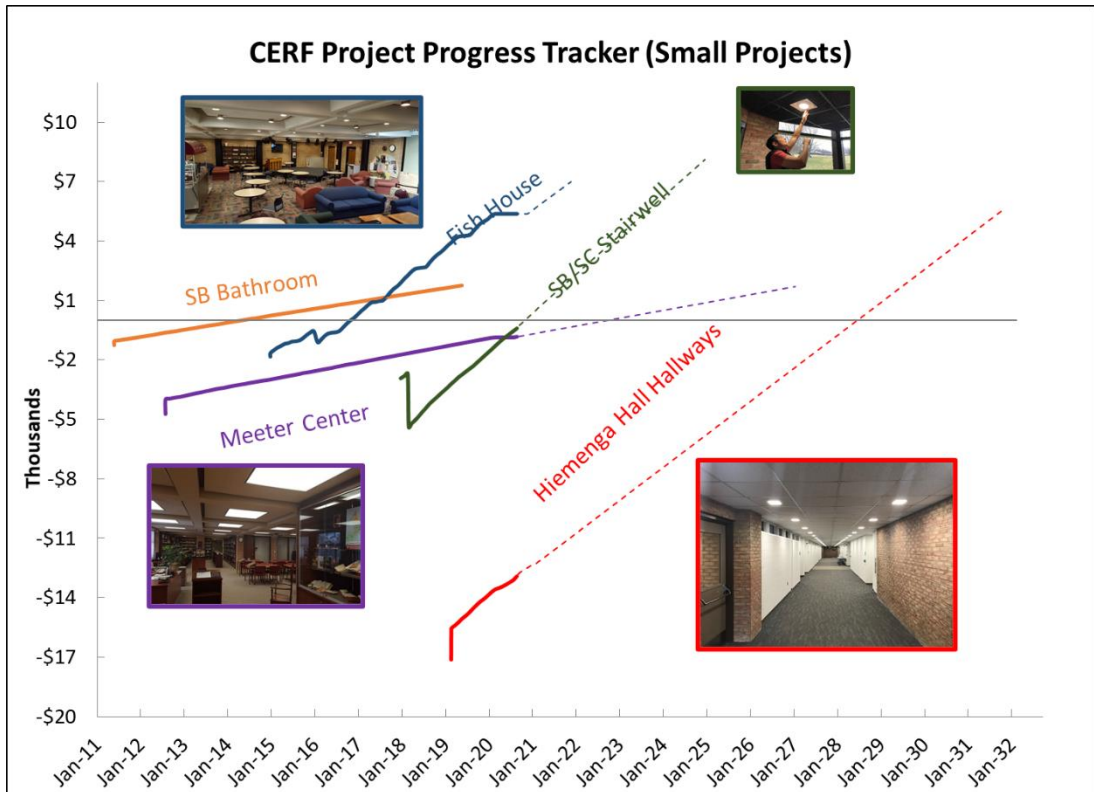
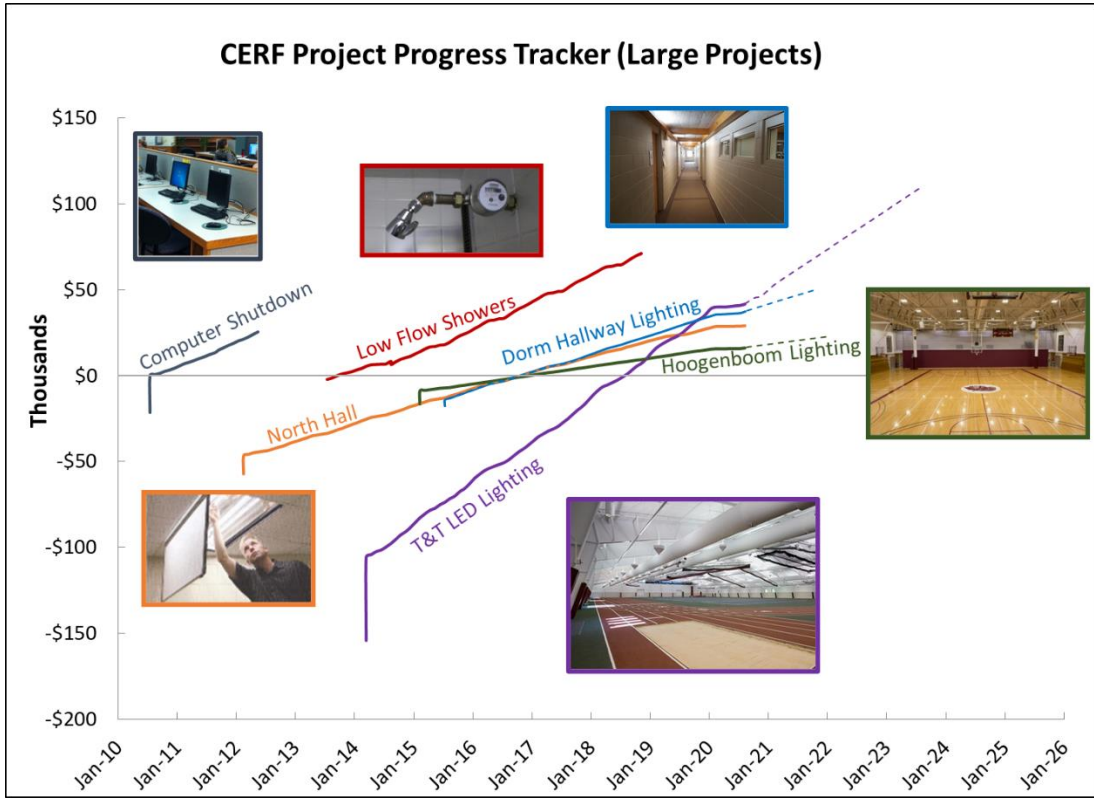




# Hiemenga Hall Hallway Relighting Project

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. This past quarter, 4,186.35 kWh of energy and \$402.51 were saved.





<b>Lifetime CERF Savings (as of Sep 2021)</b>	
Energy Savings (kWh)	<b>4,803,804</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>3,582.42</b>
Cost Savings	<b>\$467,061.86</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. 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 →												

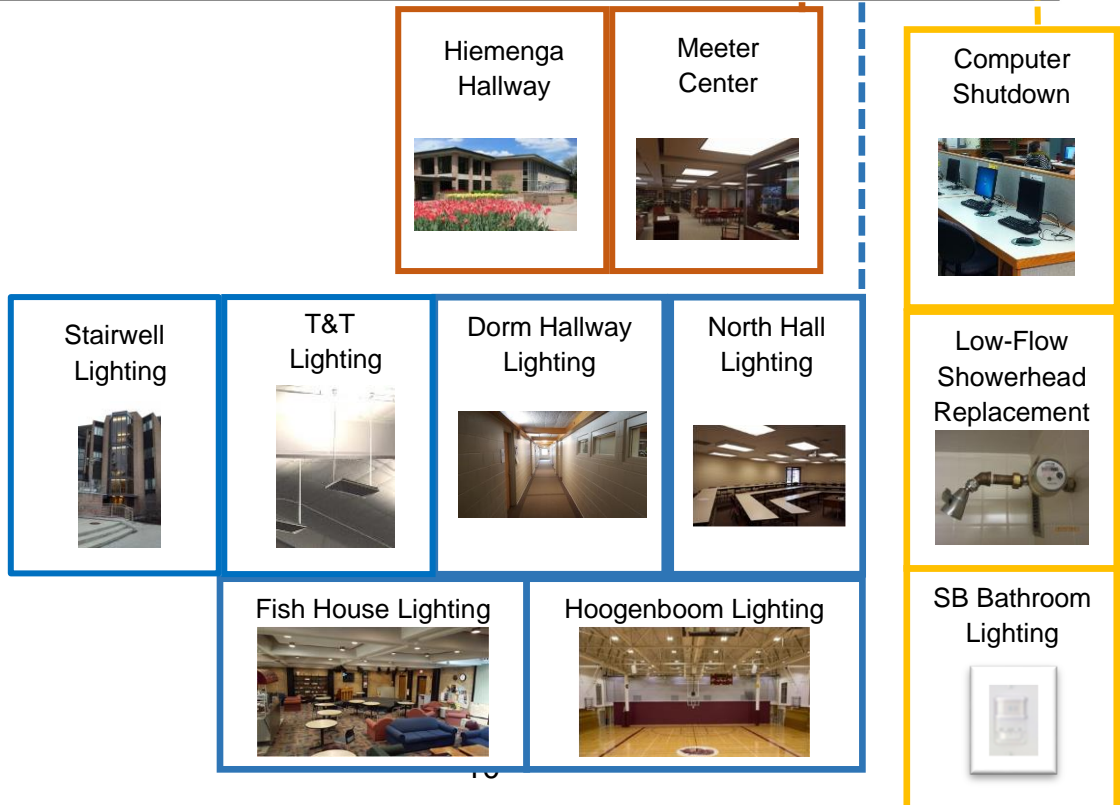
### Key

Awaiting Installation

Yet to Break-Even

Past Break-Even

Mature Project



## Summary of Project Activity for July - September 2021

### Active Projects

Project #	Start Date	Title	Energy Cost Savings	Electricity Savings	CO <sub>2</sub> Savings
2011S0038	Mar 2012	North Hall Lighting	\$ 862.49	15,970 kWh	11.02 tonnes
2011S0037	Aug 2012	Meeter Center Lighting	\$ 102.69	1,047 kWh	0.72 tonnes
2012S0052	Mar 2014	Tennis and Track Center Metal Halide Replacement	\$ 4,604.15	31,567 kWh	21.78 tonnes
2014F0084	Jan 2015	Fish House Lighting	\$ 468.64	5,400 kWh	3.73 tonnes
2014S0082	Mar 2015	Hoogenboom Lighting	\$ 516.34 (old data)	6,582.97 kWh (old data)	4.54 tonnes (old data)
2013F0069	Aug 2015	Dorm Hallway Lighting	\$ 2,935.95	32,639 kWh	22.52 tonnes
2016S0098	Feb 2018	Stairwells Relighting	\$ 423.75	4,688 kWh	3.23 tonnes
2017I0103	Mar 2019	Hiemenga Hallway Lighting	\$ 402.50	4,186 kWh	2.89 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	
Project #	Dates	Title	Total Cost Savings	Total Water Savings	Total Natural Gas Savings	Total CO <sub>2</sub> Savings
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

Since Spoelhof basement is a newly implemented project, not much data has been recorded. This should appear in the following quarter report along with the missing Hoogenboom data.

## Financial Summary for July - September 2021

Gifts	\$718.20 (pending)
Energy Cost Savings	\$9,800.17
Expenses	\$0.00 (pending)
<hr/>	
Net for July - September 2021 Quarter	#VALUE# (pending)

## 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:** Russell Bray

**Physical Plant Liaison:** Russell Bray

**CERF Energy Interns:**

Christian Ro

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>

<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)