HEIF Project History At A Glance

Project Name Relight Redwood Bowl	**Project ID Number**	**Chartfield**

Link to Project Folder

Project Description / Scope:

In 2009, the Humboldt Energy Independence Fund (HEIF) allocated approximately $79,000 to fund the retrofit of stadium lighting and the installation of a monitoring system for the Redwood Bowl. The project has concurrently reduced the amount of energy used to light the field as well as mitigated the impact of excessive light pollution experienced by the area's surrounding natural landscape. The project has been lauded as an example of a highly visible, energy-saving undertaking only made possible through the collaboration between students, faculty, staff, and off-campus entities.

If you would like to read more in depth about this project:

Link to Project Report Summary

Link to Spring 2009 Project Proposal

Link to 2009- 2010 Annual Report, see page 9

Additions to Project Description / Scope

(Include date addition was approved by Committee):

Major Project Milestones

Stage / Phase	**Description**
Milestone 1: Idea Paper	
Semester & Year Idea Paper Submitted	This project was submitted prior to the current Idea Paper process.
Idea Paper Author(s), Major(s), expected graduation year & Semester	
Date Idea Paper Voted on By Committee *(Date aligns to Committee Mtg Minutes)*	
Approved for Development (Yes / No)	
Milestone 2: Development	
Semester(s) & Year(s) Project was in Development	Spring 2009
Development Team Member names, majors, expected graduation year & semester	**HSU Green Campus:** Kale Roberts-SP 2009 Jamila Ghoul- FA 2009 Sarah Schneider- SP 2009
Development Mentor Name	
Estimated Savings from this Project	This proposed lighting retrofit was projected to reduce average annual energy usage by 60,804 kWh and energy costs by $7,905, consequently using only 101,340 kWh per year at a cost of approximately $13,174. In addition, the project was estimated to help achieve greenhouse gas reduction targets by eliminating 796,525 pounds (361 metric tons) of carbon dioxide gas emissions over a 25-year period.

Date(s) Development Proposal Voted on By Committee *(Date aligns to Committee Mtg Minutes)*	Soon after 4/1/2009 *There are no meeting minutes in Spring 2009 on record.
Approved for Implementation (Yes / No)	Yes

Milestone 3: Funding	
HEIF Funding Amount Requested in Development	$75,000
HEIF Funding Amount Approved by Committee	$79,000
HEIF Funding Amount Approved for design services (Included in the amount above)	0
Match Funding Amount from other sources *(State the other source)*	$166,177 - provided by HSU Plant Operations (PO) (see Attachment: Tim Moxon Letter of Support). $14,593 - UC/CSU/Investor-Owned Utilities (IOU) Partnership for rebate funding for the project's resulting energy savings
HEIF Funding Addition Approved by Committee, *(Include Date of Additional Funding Approval)*	0
Total Project Funding Needed from HEIF	$79,000
Reason for HEIF Funding Addition	
Estimate Total Budget	$259,770
Milestone 4: Design & Permitting	
Date Project transition to PD&C	5/5/09
Date Project completed Design Phase *(i.e. Date Project was Permitted)*	11/13/09
Name of Design Manager (in house)	
Name of Outside Consultant	BCM Construction Company (JOC)
Major scope element changes	
Milestone 5: Implementation	
Date Project entered Implementation Phase	Summer 2009
Date Project completed Implementation Phase	Fall 2009

Delivery Method (e.g. name of implementer)	Job-Order-Contract involving BCM as the main contractor and Musco Lighting and Kiewit Construction as the subcontractors.
Name of Project Manager (in house)	
Milestone 6: Project Closeout	
Final Implementation Cost *(including non-HEIF sources)*	$379,947.00
Date Project Billed & Recorded in OBI	
Milestone 7: Monitoring	
Final Annual Savings Calculated	"Lighting upgrades have reduced average annual energy usage by 86,004 kWh post-retrofit, exceeding projected savings by 41%. With a current electric rate of $0.16 per kWh, average annual energy costs are $12,182 in comparison to $21,079 pre-retrofit (at a $0.13 kWh rate in 2009), yielding $8,897 in average annual energy savings."(Link to Project Report Summary)
Name of Person who Calculated Savings	
How were savings calculated? *(e.g. monitoring devices, utility bill review, etc.)*	ELITE pro Recording PolyPhase Power Meter Spec sheet
Date Savings Metrics Calculated	

Pictures

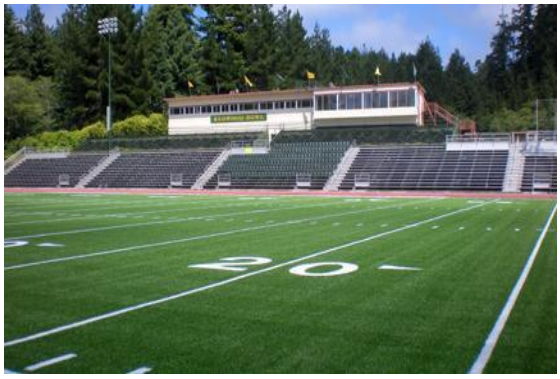
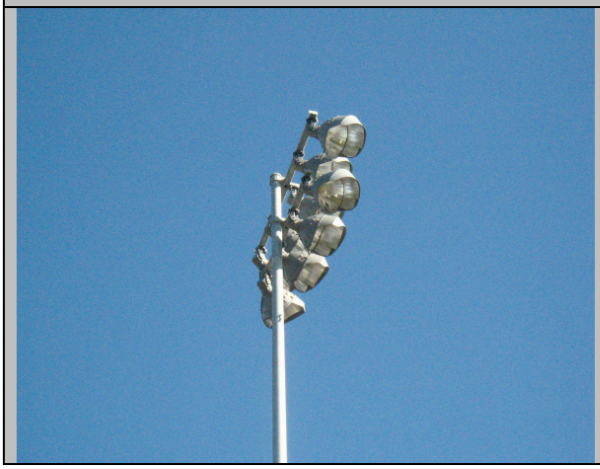
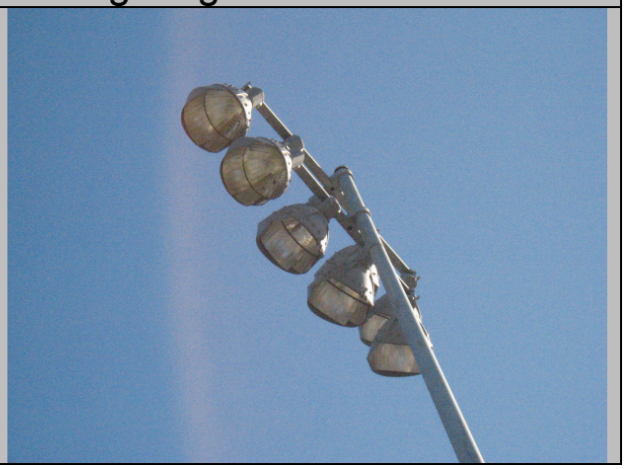


Fig 1: Redwood Bowl - Current Lights

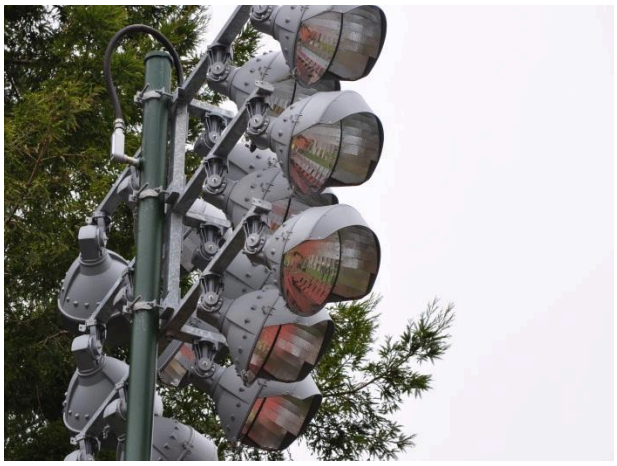
Fig 2: Arcata Sports Complex. Note fixture/reflector configuration. Vendor: Musco Lighting





Credits: C. Escarcega / A. Virgen

(Picture 1: Existing Conditions, date photo taken)



(Picture 2: Completed Project, date photo taken)

*(*Include screencaptures and links to non-infrastructure projects.)*

Names of People who compiled this information:

Name	Date
Lynn Brown	April 30, 2019
Liszet Burgueno	November 09, 2020
HEIF Managers	November 12, 2020