

Project Descriptions

As an Energy, Education, and Facilities Fellow my role was to assist in energy efficiency projects and sustainability initiatives at City College of San Francisco (CCSF). During my 8-month position, I collaborated with several departments including Facilities Planning & Construction, Buildings & Grounds, Recycling Center, and Trade Skills. Of the 11 CCSF campuses located throughout the city, I was able to work at Ocean Center, Downtown Center, Mission Center, and Evans Center.

Prop 39 Mechanical Upgrades at Downtown Center

- Prop 39 changed the corporate income tax code and allocates projected revenue to improve energy efficiency in California schools and to support clean energy related workforce training.
- CCSF started its first Prop 39 funded project in 2014 and will be finishing its fifth year with the Downtown Center project.
- This infrastructure upgrade includes a installation of a new boiler system in parallel, a crane rig operation to replace the chiller and cooling towers in the penthouse, and replacing air handler units (AHU), installing variable frequency drives (VFD), and upgrading building management system (BMS) controls for all 8 floors.



Sheedy Crane at Penthouse

Campus Buildings Mechanical Maintenance Packages

- According to USGBC, buildings account for 39% of CO₂ emissions and 70% of the electricity load in US. Creating a more sustainable built environment can greatly reduce the threat of climate change.
- Facility asset management is important in extending the useful lifespan of building equipment, optimizing energy efficiency, and ensuring the health and safety of building occupants and staff.
- The goal of this project was to improve building operational efficiency by creating maintenance manuals for campus building equipment and focused on the Multi-Use Building (MUB) at Ocean Center and the Mission Center Building.



MUB Equipment Room

Project Outcomes

Prop 39 Mechanical Upgrades at Downtown Center

- Electricity savings = 485,206 kWh/year, \$35,177 in year 1
- Gas savings = 42,215 therms/year, \$49,814 in year 1
- Demand savings = 145.6 kW
- Maintenance savings = \$69,976 in year 1
- This upgrade significantly improves overall campus sustainability.



View from Penthouse

Campus Buildings Mechanical Maintenance Packages

- I created an inventory of building documents for the MUB, Mission Center, and Ocean Center Shops building.
- I compiled maintenance manuals for the MUB and Mission Center.



View from Mission Center

Fellow Experience

The projects I tackled during my time at CCSF gave me the invaluable experience I needed as a recent post-graduate but it was truly the people I worked with that pushed me to be the team player, effective communicator, and proactive leader I intend to be in my future endeavors.

Successful Strategies

- For the Prop 39 project, it was most helpful to visit the project site day to day to see the progress, facilitate support, and give weekly updates to ensure that everyone involved was on the same page.

Recommendations for Improvement

- Better operation and maintenance training for building staff and occupants would help optimize performance and avoid degradation.



My Site Supervisor
Paul Wilhite

