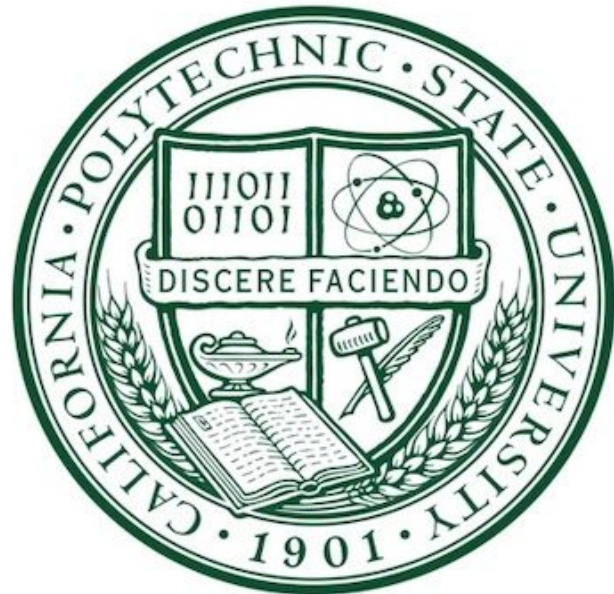


# CAL POLY ENGINEERING EAST – BUILDING 20, A CRITICAL ANALYSIS OF MECHANICAL NEEDS AND DISTRIBUTION OF MECHANICAL RESOURCES



## ABSTRACT

❖ Older buildings on the Cal Poly campus need renovation, particularly with the heating, ventilation, air-conditioning systems in the classrooms. The HVAC units within the old buildings are obsolete, inefficient, and are most likely due for replacement or heavy repairs. The Engineering East building is an example of a campus building that requires a quality HVAC system. By upgrading the HVAC unit, the building conditions can be positively enhanced through better cooling and ventilation, allowing students in the labs and classrooms to overall have a better experience within the building. The methodology includes a survey answered by 94 students who have or have had classes and labs in Building 20 and seeking their general opinions on whether their education could be improved with a better HVAC system. It also includes an interview with a department head who has and is currently teaching classes in Building 20 as well as an additional interview of Cal Poly’s project and facilities manager. From both the survey and interview results, Cal Poly Administration can be educated on how a better mechanical system can improve the education of both students and faculty members, which can ultimately influence their official decision on the concept of providing a quality HVAC unit in Building 20.

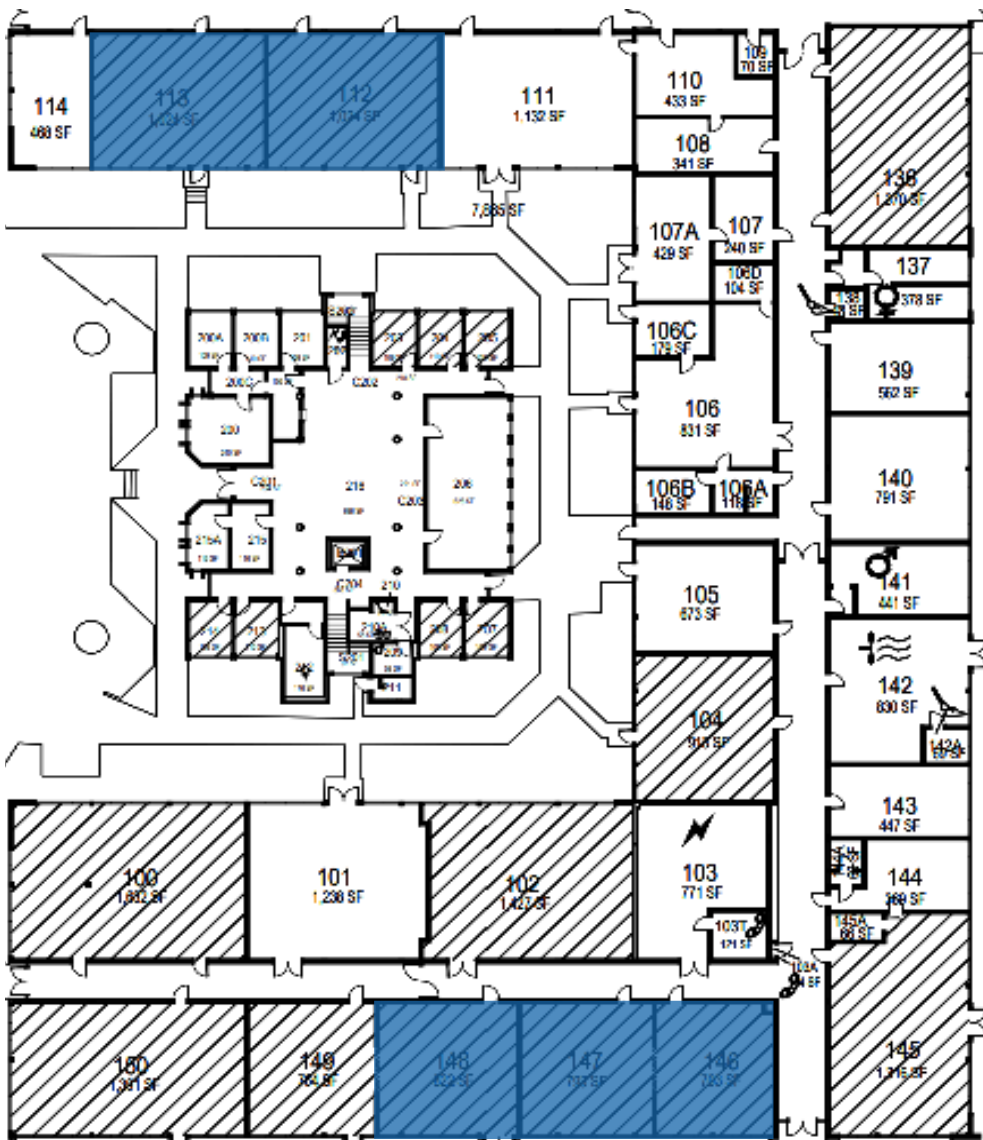
## RESULTS

- ❖ 94 Cal Poly students were surveyed via Google Surveys
- ❖ Results revealed a strong positive response in favor of installing a new and more efficient HVAC system
- ❖ General consensus was that BLDG 20 is generally hot, humid and overall uncomfortable
- ❖ “A better HVAC system is necessary for Engineering East” - Dennis Derickson
- ❖ “I’ve heard a lot of complaints about the heating and ventilation in this building” - Dave Norton



“I think a new, working HVAC system would be super helpful for us as students.”

“It’s so hard to concentrate because the classrooms are so hot and humid!”



## CURRENT PROPOSAL

- ❖ Undergoing proposition initiated by Dennis Derickson - Head of Electrical Engineering Department
- ❖ Proposal entails that 5 of the lab rooms will have chilled water pipes installed and connected to existing HVAC

**Cost Estimate: \$99,139.84**

## NEW PROPOSAL

- ❖ New proposal would bring a entirely new HVAC system to all of Engineering East
- ❖ Full-building HVAC would better provide occupants with a more comfortable experience
- ❖ Although potential cost for full HVAC replacement will be expensive, the investment may be more cost-efficient over time

**Cost Estimate: APPROX. \$1.5 - \$2 MIL**



## SURVEY RESPONSES



**Q1:** WOULD IMPROVING THE HVAC OF BUILDING 20 HELP YOUR EXPERIENCE AS A STUDENT?

**YES NO**

**Q2:** WOULD YOU ENJOY HAVING BETTER VENTILATION IN BOTH LABS AND CLASSROOMS?

**YES NO**



**Q3:** WOULD YOU ENJOY HAVING AC IN BOTH LABS AND CLASSROOMS?

**YES NO**