KING COUNTY'S PATH TO NET ZERO: BUILDING ENERGY EFFICIENCY UPGRADES

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2050 PROJECT

KING COUNTY C-PACER
Commercial Property Assessed Clean Energy & Resiliency

King County

PROGRAM ON THE ENVIRONMENT

BACKGROUND

- Globally 28% of emissions come from building operations.
- 11% from building construction and material sourcing.
- Second only to transportation, building-associated emissions are the largest contributor to greenhouse gasses in King County.
- These emissions mainly come from heating and cooling energy demands.
- Worldwide and locally the built environment currently accounts for a disproportionate amount of emissions.
- Washington State passed the Clean Buildings Act (HB 1257, 2019) with the objective to lower fossil fuel consumption in the state's existing and future buildings, with a focus on commercial properties.
- The Executive Office is rolling out the Commercial Property Accessed Clean Energy and Resiliency program (C-PACER) offering low-interest loans to owners of commercial property over 50,000sqft for building upgrades that lower energy use and CO2 emissions.
- I interned for the 2050 Project, an environmental non-profit looking to inject positive energy into environmental messaging, media and events by getting students involved.
- We were tasked by King County to create a video series explaining and highlighting the new C-PACER program.

RESEARCH QUESTION

How can we improve the energy efficiency of commerical buildings in King County?

METHODS

I conducted multiple interviews with professionals and stakeholders across King County in conjunction with the production of a video series promoting the new C-PACER program. I used their qualitative accounts in conjunction with the feasibility research I conducted for King County to accomplish the study.

RESULTS

These are the most promising design interventions for commercial properties.

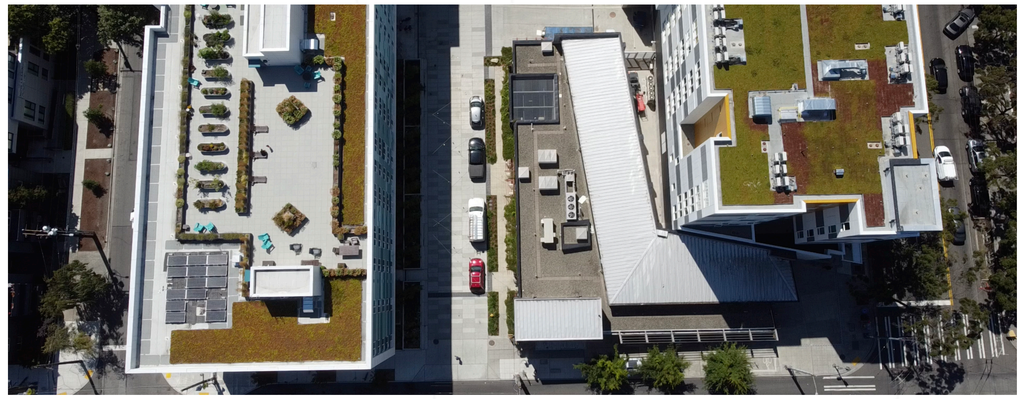
GREEN ROOFS

SOLAR

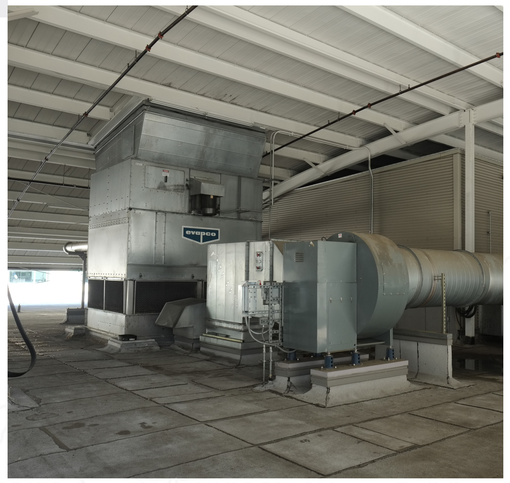
DAYLIGHTING

INSULATION UPGRADES

HVAC MAINTENANCE



Transit Oriented Development located at the Capitol Hill Light Rail Station features green roofs and HVAC upgrades that commercial properities can use.



HVAC System at UNICO's Skinner Building

Solar Array on Bullitt Center

IMPLICATIONS

The results state the most promising interventions are Building Automation Systems (BAS), HVAC rehauls and maintenance, envelope and insulation upgrades, refrigeration as heating in mixed-use developments, daylighting, gray water recycling, solar installations, and green roofs. Continued government enforcement of efficiency standards and funding of these intervention implementations is required. Additionally, structures smaller than 50,000sqft should be included in upcoming legislation as they are currently exempt.