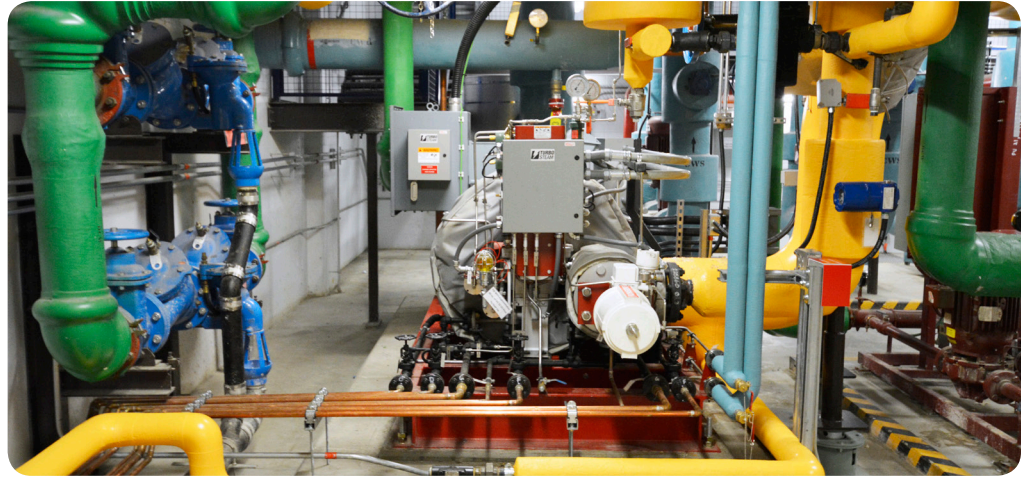


Li Ka Shing Centre for Health Research Innovation is connected to the University of Alberta's District Energy System (DES). The DES delivers superheated steam under high pressure to the buildings on campus for heating and process use, but these extreme conditions degrade mechanical equipment at accelerated rates. This turbine generator reduces the temperature and pressure of the steam, decreasing mechanical equipment maintenance costs, while also generating electricity.



The turbine converts  
mechanical energy  
into electrical energy



## ENVIRONMENTAL IMPACT

Equivalent of 705 tonnes of CO<sub>2</sub>  
emissions avoided annually

*Equivalent to taking 255 cars  
off the road each year*

Lower carbon footprint  
compared to electricity from  
Alberta's electrical grid because  
it is generated with natural  
gas-fired steam instead of coal



## INNOVATION & TECHNOLOGY

250 kW steam pressure-reducing  
turbine generator

Helps maximize energy utilized  
from the DES heating system

No other commercial building  
on a post-secondary campus in  
Canada has such an installation



## ESTIMATED SAVINGS

\$70,000–80,000 per year  
in energy cost savings

*Based on March 2016 energy rates*

Reduces maintenance costs  
for mechanical equipment,  
freeing limited resources for  
other deferred maintenance

### PROJECT TEAM

- Energy Management and Sustainable Operations
- Engineering and Technical Services
- Planning and Project Delivery

### LESSONS LEARNED

Optimal performance depends on selecting  
equipment that is appropriately sized for the job.