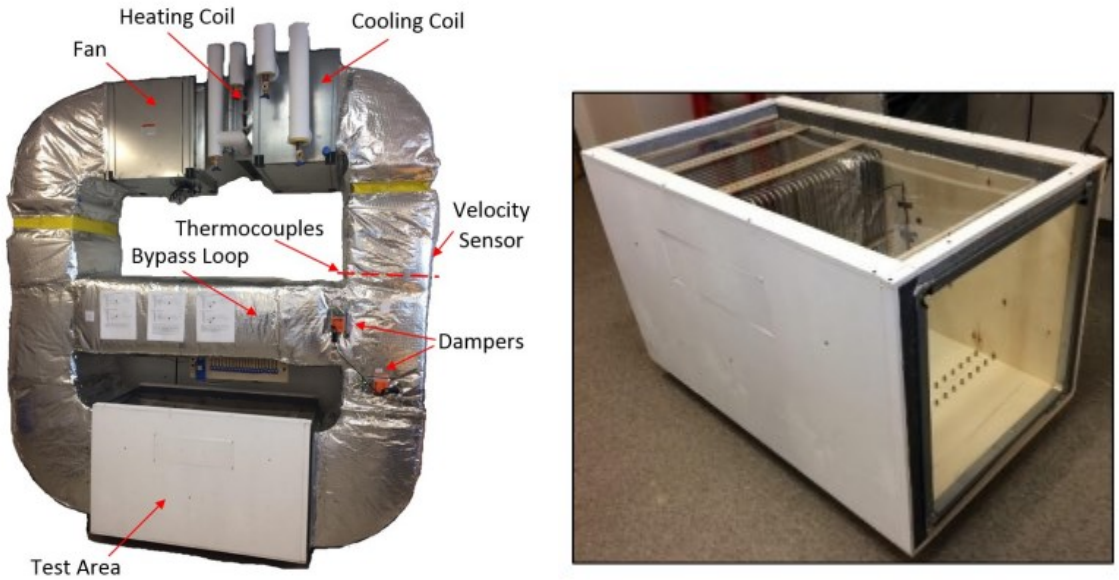
Funded M.A.Sc. Project: Integration of Air Based Thermal Storage for Demand Side Management
Graduate Supervisor: Dr. Cynthia Cruickshank (cynthia.cruickshank@carleton.ca)
Project Start Date: May 2023
Research Website: https://carleton.ca/caber/

Dr. Cruickshank is currently hiring for a Master's of Applied Science graduate student with research interest in building energy systems and energy efficiency.

Project Description: As Canada's supply of housing in increasingly constrained, the use of multi-unit residential buildings (MURBs) are becoming more common. These buildings, with many occupants and individual units provide a unique opportunity for demand side management (control of when energy is used during the day), as it will be rare that all units are simultaneously occupied. As such, systems can be incorporated into MURBs that balance energy use across the day, eliminating significant consumption peaks. One potential method is to integrate air-based thermal storage systems using phase change materials, storing energy during low demands, and releasing it during high demand.

To complete this project, Dr. Cruickshank is looking to recruit a M.A.Sc. student to complete a modelling study to determine the potential impact of these strategies within various sized MURBs and upon optimizing the design, the strategy will be experimentally evaluated in an existing set up in Dr. Cruickshank's lab. This work will be complemented with a policy scan and surveys/ interviews/focus group sessions with relevant actors. This project will be co-supervised with Dr. Alex Mallett from the School of Public Policy and Administration as part of the Hybrid Thermal Electric Microgrid (HyTEM) CREATE Program led by Simon Fraser University.

If interested, please contact Cynthia Cruickshank for more information on this graduate project (Cynthia.Cruickshank@carleton.ca). Additional M.A.Sc. and Ph.D. projects are also available and described here: https://carleton.ca/caber/graduate-student-opportunities/



Test Apparatus to be Utilized with the Solar Energy Systems Laboratory.