



Data is collected from thermal imaging devices that sense a person's body heat against the background temperature. Two software-configured thresholds are used to determine the number of people entering and leaving a space based on the direction of travel, thereby counting them. Traditionally People Counting technologies have been used for retail spaces, however the University of Alberta has applied it to their North

Campus as part of their Building Automation Systems, their environmental targets, their operational management, as well as their long-term facilities planning. Knowing which areas are frequently used and which are not allows the University to reduce energy, allocate staff resources to higher use areas, and minimize unnecessary costs all while identifying potential space opportunities.

**A PEOPLE COUNTER:** A device that determines frequency of use of a space by monitoring the movement of people using thermal sensors.



**PROJECT PARTNERS:**  
Energy Management & Sustainable Operations  
and Feedback Solutions



## ENVIRONMENTAL BENEFITS



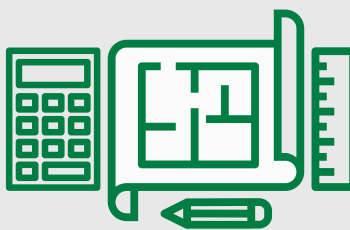
Reduced cleaning of unused rooms reduces chemicals use  
redirects staff resources.



Lighting, heating, cooling and ventilation usage is lowered in empty rooms reducing GHG's from utility use.



## INNOVATION & FEATURES



Collected data provides meaningful patterns to assist with future space utilization planning. Applying data to projected campus needs allows for improved facilities planning and possible reductions in capital costs for new buildings.



## ESTIMATED PROJECT SAVINGS

Energy savings: decreases lighting, heating, cooling and ventilation when a room is not in use reducing utilities consumed.



Deferred Maintenance: reduction in mechanical system use extends equipment life and the savings from these small changes can help to reduce overall maintenance cost expenditures.

## ADDED VALUE

STAFF, STUDENTS, COMMUNITY

People Counter sensors have multiple benefits to the building staff, students, and local community as well as the global community including the following:

## ENVIRONMENTAL TARGETS

The reduction of energy use from the implementation of this technology is a direct and tangible step towards the University of Alberta meeting its

**GHG reduction target of  
17% below 2005 levels by 2020**



**COST** The first installation shows a payback of approximately 7-8 years. The costs include the technology as well as mechanical equipment and controls upgrades required to facilitate responsiveness to the counters. Pay back periods will be building dependent and will be different for every application. Typically an older building with out-dated mechanical systems will see a quicker payback than a building with a newer HVAC system.

**LESSONS LEARNED** Some areas are less ideal for installation including areas with low ceilings and inside small rooms, as the thermal imaging is tight to configure. Exterior entrances have to be calibrated for cold temperatures. Once limitations are identified the system works well.

## COMMUNITY

The data from this innovation is available to students and staff as a living lab. This is a wonderful research opportunity. The University of Alberta's application of people counters in an institutional setting for operational effectiveness is cutting edge; they are only one of two Universities in Canada utilizing this technology. People counters identify existing space utilization and therefore provides more data to better project future campus needs. Underutilized rooms can be targeted for improvement, change of use or possibly opened to community. The data collected can also be used to reduce the footprint of the campus, which results in positive local and global environmental impacts.



### LEARN MORE

[www.facilities.ualberta.ca/EMSO](http://www.facilities.ualberta.ca/EMSO)

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INTELLIGENT ENERGY REDUCTION