

RoomReader

Real time occupancy tracking for a post pandemic world

A CityStudio project one-pager by Duncan Ford, Connor Johst, and Taylor Hillier.

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Background:

The COVID pandemic is changing how people can use public spaces as we need to reconfigure our spaces for social distancing and occupancy limits. RoomReader provides a live floor by floor, room by room breakdown of where people are in a public space and stores the data for future analysis.

Relevance to City Goals:

RoomReader will help monitor occupancy in a public space. Occupancy monitoring is essential in public areas as they are imposed with new health guidelines. RoomReader may help save tax dollars by reducing the workload of public servants, who are tasked with providing occupancy counts at various times during the workday. Implementation of RoomReader can help create a safer city for the people.

Overview of the project:

The goal of our project is to provide real change in our community by protecting its citizens. Our group has built a sensor that utilizes sonar to keep track of people as they move through public spaces without storing any identifying data, allowing for citizens to keep a social distance between one another while maintaining their privacy.

Methods / Project Details:

RoomReader can be installed on any door frame, hallway, or stairway. RoomReader uses sound waves to detect when someone walks past it, and wirelessly transmits this data to a central server. Staff can view the occupancies of individual floors, rooms, or the whole building in real time as needed to determine whether or not an occupancy limit is being reached or exceeded. Additionally, the data is stored for future analysis to assist in scheduling staff in areas of the building which are busiest at certain times, improving the labour efficiency of the business or public space.

Next steps / Future research:

As of now we have built a working prototype that can be easily affixed in most spaces to provide a real time room count. In the immediate future, we hope to apply RoomReader in the North Vancouver City Public Library and maintain an accurate occupancy count.

This student project was developed as part of a CityStudio North Vancouver course collaboration.

Instructor: Banda Logawa
Course: APSC 140