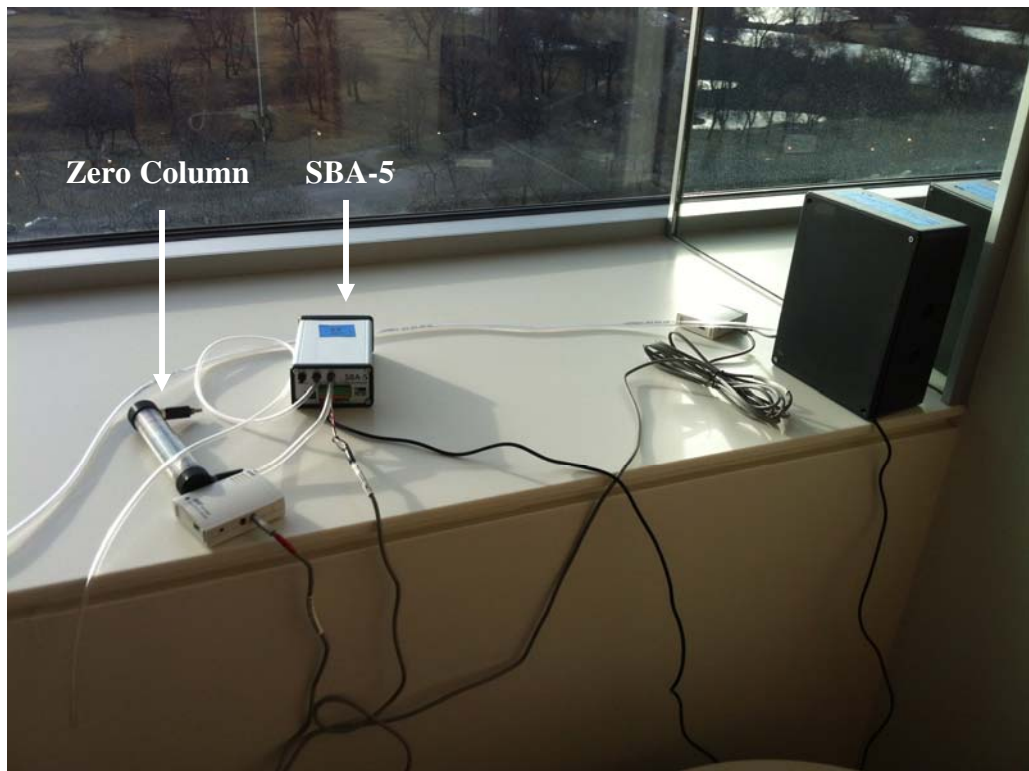# Monitoring CO_2 in Hospital Rooms with the SBA-5

In the Hospital Microbiome Project, SBA-5 CO_2 analyzers are being used to measure a variety of building science parameters that may ultimately be used to explain some of the differences in microbial communities observed inside a new hospital as it becomes occupied and operates for an entire year.

15 SBA-5 CO_2 Gas Monitors lined up for calibration checks prior to deployment

The analyzers are being used to estimate the fraction of outdoor air provided by HVAC systems in the hospital at 5-minute intervals for the duration of the project. This is accomplished by monitoring CO_2 concentrations inside the return air intakes, outdoor air intakes, and supply air plenums simultaneously. The SBA-5, with its high accuracy, allows for accurate measurement of outdoor air fractions that other devices do not allow. Additionally, CO_2 measurements are also being conducted with the SBA-5 analyzers inside patient rooms in the hospital at the same 5-minute interval. These measurements serve as a surrogate for human occupancy and allow for intermittent estimates of actual air exchange rates in the rooms by observing concentration decays following temporarily elevated periods. These measurements are also combined with IR beam-break occupancy sensors at the patient room doorways to provide another method of estimating in-room human occupancy.

System checks were performed in several unoccupied patient rooms at the University of Chicago Hospital (Chicago, IL USA) prior to the opening of the hospital.

To learn more about this exciting new project, click on http://built-envi.com/portfolio/hospital-microbiome-project/.

Thank you to Dr. Brent Stephens (Illinois Institute of Technology-Dept. of Civil, Architectural and Environmental Engineering) for his input and assistance in providing the information contained in this application note.

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