

# CONRAD HOTEL

CHICAGO, IL, USA

HOSPITALITY

## OVERVIEW

*This project started out as a plan and specification project, then changed to a design build project. The building is an older 21-story office building, with over half converted into a 5-star hotel. The focus was customer comfort.*

## PROJECT DETAILS

Reliable Controls Authorized Dealer Intelli-Building Control and Solutions completed this fast-paced retrofit project, which required an accurate schedule critical to achieving occupancy by the deadline.

Networked hardware includes all HVAC equipment, kitchen exhaust systems, guest thermostats, and VFDs. Reliable Controls equipment includes MACH-ProAir VAV controllers for common area comfort, MACH-ProZone controllers servicing common area head pumps, MACH-ProSys controllers to manage the boiler plant, cooling tower, and pumps, and MACH-Pro2 controllers to provide smoke control and floor pressurization.

BACnet integration includes six variable frequency drives (VFDs) for pumps and cooling towers, six sensors for parking garage ventilation, two boilers, eight routers, four kitchen hood exhaust systems, and 325 thermostats serving guest rooms. Mechanical equipment includes heat pumps, air handlers, make-up air units, VFDs, and boilers.

The integration into the guest suite's INNCOM system, which controls all lights, curtains, heat pumps, and entertainment, provided Intelli-Building Control and Solutions with the ability to "sense" when a bathroom light is turned on. The light is interlocked with the bathroom's exhaust damper, providing a total count of how many exhaust dampers are open per floor. Knowing the cubic feet per minute (CFM) of each damper allowed for the calculation of the CFMs per floor being exhausted; if the count falls below the amount required to be open, INNCOM sends a BACnet command back to the MACH-System to energize the additional dampers to meet the required minimum fresh air requirements.

Floor pressurization and smoke removal for the safety of the guests was another requirement of this project. Each level was divided into two zones with magnetically latched fire doors in the center of the floor hallway. The doors act as a safety zone for proper control of smoke removal, allowing pressurization above and below the detected fire floor. A total of 66 dampers hardwired into the fire alarm system are controlled, with status and monitoring of every damper.

Intelli-Building Control and Solutions minimized the install cost through integration of the INNCOM system. Utilizing it as a gateway to perform minimum fresh air control eliminated thousands of feet of wire and hardware.

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### PROJECT TYPE:

Retrofit

### INSTALLATION TYPE:

Boiler, CO<sub>2</sub> Monitoring, Heatpump, INNCOM, HVAC, Smoke Control, VAV

### TOTAL AREA:

13,935 m<sup>2</sup> (150,000 ft<sup>2</sup>)

### NETWORK:

BACnet, EIA-485, Ethernet, WAN, Wireless

### POINTS:

3,000

### EQUIPMENT INSTALLED:

44 MACH-ProAir™  
 10 MACH-ProZone™  
 2 MACH-ProSys™  
 10 MACH-Pro2

### RELIABLE CONTROLS® DEALER:

Intelli-Building Control and Solutions LLC

