



# HEALTHY BUILDINGS: HIGHER EDUCATION

The COVID-19 pandemic has presented a massive challenge for colleges and universities. While significant evidence suggests that in-person learning may be more effective than online, the benefits and positive impact of returning to campus this fall must be weighed against the potential health risks to both students and faculty. And there are unique risks inherent on college campuses due to student activity, density and travel from near and far.

With this in mind, now more than ever, higher education is evaluating buildings with a health lens – designing and retrofitting buildings for health to enable learning, research and living on campuses. Through healthy building strategies, colleges and universities can take steps to reduce the risk of COVID-19 transmission as they welcome students back to campus – and turn schools into powerful tools for student health and progress moving forward.

## UNIVERSITY PRIORITIES



## THE SCIENCE OF HEALTHY COLLEGES AND UNIVERSITIES

While the current urgency around healthy indoor environments on college campuses revolves around stopping the spread of COVID-19, research has shown the potential impact of healthy environments to be much greater. So as we look to keep students healthy in the short term, we must also harness opportunities to drive overall student health, performance and productivity through healthy building strategies.



## HEALTHY COLLEGES AND UNIVERSITIES IN ACTION

From immediate solutions to assist in a safe reopening to more ongoing and long-term healthy building strategies, leaders in higher education can take a number of actions to improve indoor air quality (IAQ), reduce the spread of infection and transform any campus building into a healthy building.

### REOPENING SOLUTIONS



#### BUILDING RE-USE

COVID residence halls  
Upgrade filtration  
Increase outside air  
Install UVGI lighting



#### BUILDING IMPROVEMENT

HVAC equipment on demand to reopen quickly and safely  
Detailed site evaluations  
Ensure system is able to meet new ventilation and IAQ requirements



#### IAQ AND VENTILATION ASSESSMENT

Test indoor air quality and current ventilation rates

- Particulate matter
- Volatile organic compounds
- Air changes/hour



### SUSTAINING HEALTHY BUILDING STRATEGIES



#### BUILDING OPERATIONS & MAINTENANCE

Retro-commissioning of all building systems  
Controls upgrades  
Implement new best practices  
Ongoing air quality monitoring



#### WELLNESS ASSESSMENT

Healthy Building certifications  
Updated preventive maintenance  
Education of campus community via signage, public programming and reporting



#### SAFETY & SECURITY

Provide security solutions and upgrades  
Remote monitoring and diagnostics



### LONG-TERM HEALTHY BUILDINGS STRATEGIES



#### BUILDING UPGRADES

Ongoing commissioning of HVAC equipment  
Implement best practices  
Capital planning for system upgrades



#### DEVELOPMENT OF NEW METRICS

Monitoring:

- Energy
- IAQ
- Carbon emissions
- Healthy Building indicators

Financing structures



#### NEW CONSTRUCTION GUIDELINES

Intelligent buildings  
New construction certifications  
Develop campus-wide IAQ engineering standards



### CARRIER HEALTHY BUILDINGS PROGRAM

As the inventors of modern air conditioning and a world leader in HVAC, refrigeration, and fire and security solutions, Carrier has a legacy of creating safe and comfortable buildings. Now we're building on that legacy through the launch of our Healthy Buildings Program. Our experts have in-depth knowledge and experience in higher education and a holistic suite of healthy building technologies and services to address the immediate pandemic concerns and long into the future.

### HEALTHY BUILDINGS ASSESSMENTS FOR HIGHER EDUCATION

At Carrier, we understand that many colleges and universities are facing uncertainty with how to move forward in developing a healthy building strategy. Retrofits, modernizations and upgrades must be done with student health and safety as a top priority, while being smart about costs, budgets and future requirements. Our experts are here to help – starting with assessments across various aspects of a building.



INDOOR AIR QUALITY  
THERMAL COMFORT  
OCCUPANCY FLOW  
BUILDING MAINTENANCE  
REGULAR HOUSEKEEPING  
ENERGY EFFICIENCY



## HEALTHY BUILDINGS SOLUTIONS FOR HIGHER EDUCATION

Carrier offers a full suite of products and services designed to help create safe and healthy environments for students, faculty and staff. The following are just a few highlights of our offering.

### ADVANCED AIRSIDE SYSTEMS



FRESH AIR MANAGEMENT  
ENERGY MONITORING  
CO<sub>2</sub> LEVEL CONTROL

### ROOFTOPS



CARBON FILTERS  
BIPOLAR IONIZATION  
CO<sub>2</sub> SENSORS

### ACTIVAIR HYBRID HYDRONIC AIR TERMINAL



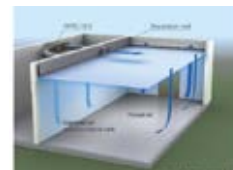
LOW HEIGHT PROFILE  
MODULATING CAPACITY AND LOAD REACTIVITY  
HIGH VENTILATION CAPABILITIES

### AIR HANDLING UNITS



FRESH AIR MANAGEMENT  
HEPA FILTERS / CARBON FILTERS  
UV LIGHTS / BIPOLAR IONIZATION

### STRETCH CEILING TECHNOLOGY



HIGH INDOOR AIR QUALITY AND HIGH ENERGY EFFICIENCY  
THERMAL AND ACOUSTIC COMFORT COMBINED  
WITH INFINITE CUSTOMIZATION

### AIR PURIFIERS



PORTABLE SOLUTIONS  
HEPA FILTERS / CARBON FILTERS  
UV LIGHTS / BIPOLAR IONIZATION

## HEALTHY BUILDING SERVICES FOR HIGHER EDUCATION



We will work with you to fully understand the needs of your business.

Our building protection services help to ensure high-quality air by keeping the building's HVAC system properly maintained.

Our BluEdge service platform is designed to meet your requirements and keep your equipment running efficiently.



### PREDICTIVE MAINTENANCE

- Remote connection through BMS manages IAQ and ventilation in line with best practices
- Make changes and fix issues remotely
- Optimize maintenance and operational costs
- 24 x 7 command center



### HVAC EUROPEAN CONNECTED SERVICES PORTAL

- Provide advanced remote analytics
- Optimize energy efficiency, equipment uptime, occupant comfort and operational productivity
- Actionable insights by different communication protocols
- Optimize autonomously or through a remote application

## RETROFIT SPARE PART SOLUTIONS FOR HIGHER EDUCATION



### INNOVATIVE TECHNOLOGIES

- M5 filters
- New filtering media technologies
- High filtration efficiency on PM2.5 particles



### ADD-ON RETROFIT ALTERNATIVES

- AHU-UVC add-on kits
- Carbon surface & F7 filtering technology options
- Add-ons are easy to install in the universal frames of existing AHUs
- Effective against viruses, bacteria, small particles and VOCs



### RANGE OF FILTRATION SOLUTIONS

- High-efficiency filtration solutions
- A large variety of air filters
- Solutions for our full product range (AHU, RTU, TFCU)
- More than 1300 references of air filters to cover all sizes / filtration needs

## GET STARTED WITH AN EXPERT

From safe business reopening to ongoing enhancements to customer experiences, a healthier future starts indoors. Let's work together to unlock the potential of healthy colleges and universities. Visit us at [carrier.com/healthybuildings](https://carrier.com/healthybuildings) to learn more about our Healthy Buildings Program and connect with one of our experts.



HEALTHYBUILDINGS