Fellowes Array

Elevate Education, Eliminate Contaminants

Empowering Minds with Healthy Air

Adapting To Evolving Education Facilities Expectations

As any university facility operations manager or administrator knows, the state of higher education has never been more dynamic. Mounting financial pressures created by lower enrollments and greater budgetary scrutiny are fundamentally changing how institutions manage and maintain their campus. These changing expectations were significantly heightened by the COVID-19 pandemic, where students, parents, and faculty became acutely aware to the importance of air quality to human health and wellness.

Colleges and universities are currently juggling various priorities, each with its own financial implications. These include improving community health and wellness, addressing indoor air quality based on scientific evidence, all while striving to preserve the distinctive college experience that attracts many students to higher education.

This balancing act comes to a head when considering the expansive size of the campus itself with varying building types and ages, often equipped with a range of HVAC systems that may not meet efficiency needs or current ASHRAE standards. Updating these outdated systems en masse poses a daunting financial burden, while each day, their continued operation may inhibit colleges' ability to deliver healthy indoor air to students and staff. Similarly, multi-building campuses that have placed individual air purifiers throughout present distinct challenges for facilities management. They are tasked with coordinating consistent and appropriately timed filter maintenance leading to a cumbersome indoor air quality management strategy regardless of best intentions.

Colleges and universities that will thrive in this new education economy are balancing seemingly incompatible priorities. They will need to meet stakeholder and student's expectations of clean indoor air at all times while also managing their bottom line. **Fellowes® Array™ makes it possible.**

Campuses Present Unique Considerations

Higher education is plagued by a range of complex challenges related to indoor air quality and energy efficiency.

- Campuses are now **113%** larger than the campuses of 1970 while facing a **9%** decrease in operating budgets since 2019[1]
- HVAC consumes **40%** of a building's energy, often running without occupants there[2]
- An estimated **87%** of US classrooms fail to meet ASHRAE air cleaning standards[3]
- Polluted air can cause everyone to reduce their level of education by **one year**[4]

Students Seek Healthy Environments

Students are more aware than ever of the dangers of poor indoor air quality (IAQ), and those concerns are impacting their college decisions. Campus cleanliness and IAQ now rank in the **top three** most important factors for college or university selection, behind cost and quality of education.

- **84%** of parents rank campus cleanliness and indoor air quality as either important or somewhat important.[5]
- **59%** of parents didn't consider campus air quality prior to the pandemic.[5]
- Campus cleanliness and IAQ is the **3rd** most important factor to students when selecting their school.[5]

1 Gordian (2022). State of Facilities in Higher Education. https://www.gordian.com/uploads/2022/03/2022-State-of-Facilities-Report.pdf
2 U.S. Energy Information Administration (2023). Use of Energy Explained. https://www.eia.gov/energyexplained/use-of-energy/commercial-buildings.php
3 The Lancet COVID-19 Commission (2021). Designing infectious disease resilience into school buildings through improvements to ventilation and air cleaning. https://static1.squarespace.com/static/5ef3652ab722df11fcb2ba5d/t/60a3d1251fcec67243e91119/1621348646314/Safe+Work+TF-Designing+infectious+disease+resilience+April+2021.pdf
4 Cole, John G. (2022). How Clean is the Air at Your College? Housefresh. https://housefresh.com/how-clean-is-the-air-at-your-college/
5 https://www.facilitiesnet.com/iaq/tip/Campus-IAQ-Ranks-High-Among-Prospective-College-Students-Parents--48621 August 30, 2021; https://www.us.jll.com/en/newsroom/JLL-Higher-Education-Survey

Components of an Impactful IAQ Plan for Higher Education

As colleges and universities seek to align their organizations around key goals of a modern IAQ plan, the following standards should be included:

- Incorporating air purification devices with H13 True HEPA filtration, across all campus buildings and shared indoor spaces.
- Indoor air quality monitoring of all utilized spaces based on real-time data and the ability to share that information with building occupants.
- ASHRAE code adherence that includes a minimum of 5 equivalent air changes per hour in indoor spaces.
- Ability to retrofit air quality systems to older buildings and/or buildings with unique architecture.

Innovation to Elevate Higher Education IAQ Plans

Fellowes Array™

The Most Advanced Networked Air Quality System

Fellowes Array is the most advanced networked air quality system, with an integrated, breakthrough range of air purifiers, sensors, and monitoring software that can be connected to form a complete network for healthy air in any room, floor, or space. Designed for seamless, scalable integration and H13 True HEPA filtration, Array allows colleges and universities to deliver healthy air to their communities, reduce operating expenses, and proactively evolve their air monitoring strategy alongside their institution.

Array uses its proprietary technology to combine the benefits of H13 True HEPA filtration, a full suite of indoor air quality sensors and monitoring with real-time data to monitor, track and improve campus-wide air.

The first system of its kind, Array's networked air purifiers, sensors, and monitors track the air quality across all spaces and automatically adjust units to ramp up or down to address any change in contaminants. This continuous environmental monitoring allows Array to provide effective air purification and energy savings even in areas with dynamic occupancy, such as classrooms or lecture halls. All air quality data and purification performance metrics across the network are fed into a centralized dashboard, so building operators can see a full, precise picture of their building's exact air quality space-by-space. The dashboard also provides visibility into historic trends, unit maintenance needs, and more. Now, even large campuses with multiple buildings can have total control over air quality like never before.

Fellowes is pioneering a new chapter in indoor air quality management with Array, and more importantly, cleaning indoor air for every breath.

A Healthier Learning Experience

Colleges and universities are known to be commonly challenged by the wide variety of buildings at various ages and building material types. There's also an extensive range of spaces and uses from large lecture halls to smaller classrooms, dorms, and common areas. This makes higher education spaces more vulnerable to a range of contaminants. Viruses, bacteria, allergens, smoke, and odors are common, demonstrating the need for robust air filtration systems to ensure the health and well-being of students and staff wherever they may gather.

- Classrooms
- Lecture Halls
- Restrooms
- Common Areas
- Dining Halls
- Staff Offices
- Study Rooms
- Libraries
- Gyms

A Networked Air Quality System Built For Campuses

Seamless & Scalable Integration

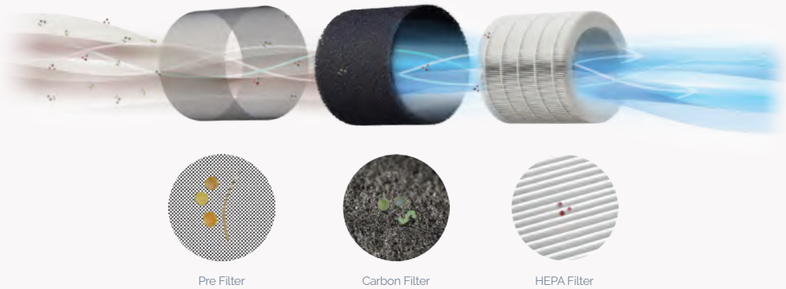
Traditional air purifiers are often obtrusive and may not fit into the expansive range of spaces like dorms, classrooms, or labs. Array purifiers and devices come in multiple installation styles so that any space, regardless of building type or age, can offer healthy air for its occupants. Because Array does not connect to HVAC system duct work, installation is fast and does not require invasive, costly renovations. Array's flexibility allows any space or floor, regardless of location or proximity, to add units at any time to their system. This scalable modularity helps control budgets and timelines as building uses, headcount, and purification needs evolve.

Automatic Sense & React Technology with EnviroSmart+™

Campuses see a dynamic range of occupancy shifts in all their spaces throughout the day. Air purifiers that are always engaged are either wasting energy cleaning air in empty spaces, or incapable of meeting increased purification needs if additional people have entered a space. Array purifier units are equipped with our patented EnviroSmart+™ Technology that proactively monitors surroundings, contaminant levels and occupancy to respond to changes. This allows our units to work hard when they need to, and shift into a lower fan speed, when possible, to conserve energy and reduce operating expenses.

Effective & Efficient Filtration

Array's 3-in-1 hospital grade H13 True HEPA filter is 99.95% effective in capturing particles as small as 0.1 microns including viruses, allergens, and germs. The unique mixed-flow fan design maximizes air flow to meet ASHRAE's latest standards of 3-5 incremental air changes per hour, even across areas with high square footage and older buildings. The mixed-flow fan is also designed for quiet operation, so students can focus and collaborate without disruption.

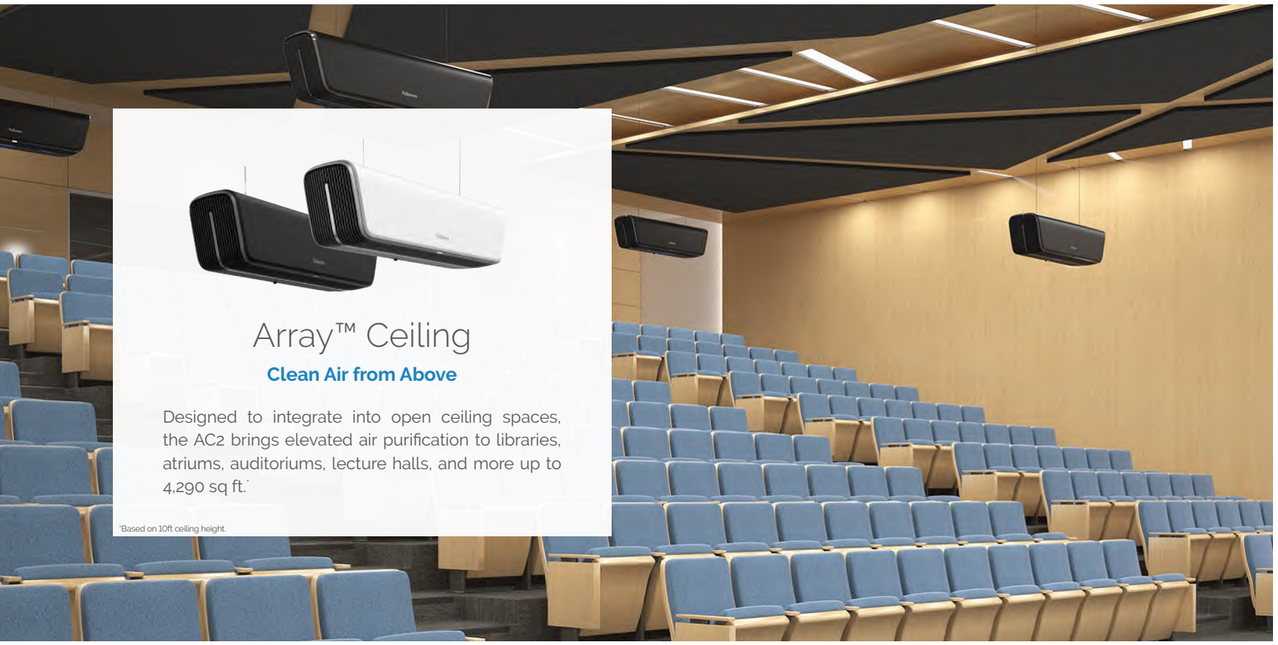


Monitoring & Real-Time Data with Viewpoint

Viewpoint, the cloud-based dashboard, allows facilities managers to utilize real-time data from all Array units throughout the entire campus from one spot. As data is collected and aggregated, Viewpoint helps to inform the exact air quality status of every space in real-time, while also simplifying maintenance processes. Viewpoint's networked connection enables the ability to remotely monitor and adjust the Array system from anywhere, at any time. Provide transparency for occupants' peace of mind with the Community Dashboard.

Healthy Air, Anywhere on Campus

Fellowes Array products work together to provide an intuitive, coordinated response to any air quality circumstance – all designed with a clean, minimalist aesthetic that elevates all campus environment for students, faculty, and staff.



Array™ Ceiling

Clean Air from Above

Designed to integrate into open ceiling spaces, the AC2 brings elevated air purification to libraries, atriums, auditoriums, lecture halls, and more up to 4,290 sq ft.*

*Based on 10ft ceiling height.

Array™ Recess

High Performance, Low Profile

The AR1 and AR2 beautifully integrate with the majority of standard grid ceiling systems common in educational buildings. Ideal for classrooms, staff offices, and lobbies, the AR1 and AR2 become virtually invisible while offering powerful purification in spaces up to 4,500 sq ft.*

*Based on 8ft ceiling height.

Array™ Recess UVC

Light-Powered Disinfection

The Array Recess UVC's sophisticated flush-mount design uses UV-powered disinfection to eliminate germs, bacteria, and viruses from the air, delivering up to 98.1% Single Pass Kill Rate.* By destroying contaminants versus capturing them, the UVC is specially designed for environments such as gyms and restrooms where higher levels of airborne bacteria can lead to can lead to degraded air quality.

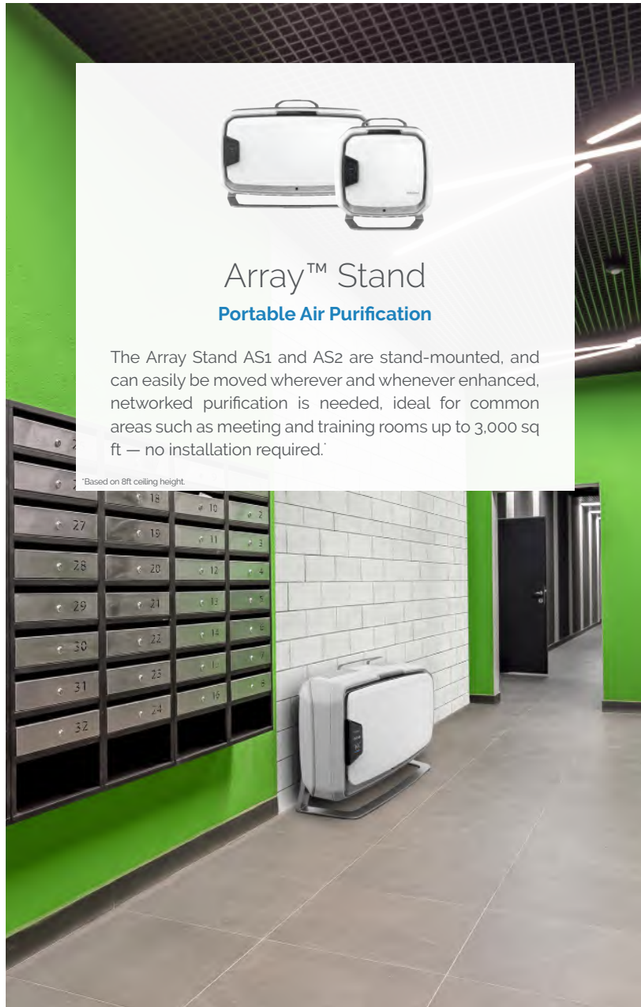
* Based on 98.1% Single Pass Reduction in Staphylococcus epidermidis bacteria.

Array™ Wall

Wall-to-Wall Protection

Array Wall AW1 and AW2 can be installed on a range of wall materials with minimal installation requirements. The elevated design's minimal footprint is ideal for ideal for study rooms and staff offices up to 3,000 sq ft.*

*Based on 8ft ceiling height.



Array™ Stand

Portable Air Purification

The Array Stand AS1 and AS2 are stand-mounted, and can easily be moved wherever and whenever enhanced, networked purification is needed, ideal for common areas such as meeting and training rooms up to 3,000 sq ft — no installation required.*

*Based on 8ft ceiling height.

Fellowes Array™ Viewpoint

Improve Operational Efficiencies with Data-informed Decisions

Designed for facilities and operations managers overseeing multiple buildings, Viewpoint provides comprehensive air quality data for all of your connected spaces from an easy to-use dashboard, available with every Array device. All units connect through campus-wide, secure LTE currently at no charge.

Track trends, monitor energy usage, and evolve your air quality strategy – all from one dashboard.

Viewpoint Features Include:

- Sensor sharing between units assigned to an area
- Remote Array unit controls
- Current RESET Air Index at the building, area, or device level
- Device status and filter change notifications
- Multi-level Viewpoint Account Management

Additional Features Included with Viewpoint Plus subscription service:

- Community Dashboard provides transparency for occupants' peace of mind
- Timers and scheduling for any unit in your system
- Current and historical data to analyze trends and identify IAQ concerns
- Data export capabilities
- Unit maintenance notifications and advanced troubleshooting
- Real-time filter life measurement and replacement history
- Future BMS integration

Array™ Lookout

The Invisible, Now Visible

Lookout's wall-mounted display shows precise air quality status and filtration progress of specific spaces. Now, anyone can have confidence that a bathroom, classroom, dining hall or lecture hall has healthy air.

Array™ Signal

Monitor Any Space

Signal provides remote air quality monitoring for areas without a dedicated air purifier. Our integrated suite of indoor air quality (IAQ) sensors includes particulates (PM10, PM2.5), temperature, humidity (rH), carbon dioxide (CO_2), pressure, and TVOCs. Place in smaller offices, study nooks, instrument practice rooms, or anywhere else without proper ventilation or air monitoring.

Looking for more information on how Fellowes Array can help create learning environments that support intellectual development and physical health?

Contact a Fellowes Representative at 800-833-3746 or visit us at fellowes.com/air to see additional details on the full line of Array products.

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To contact a Fellowes® service representative, call 800-833-3746.