

CASE STUDY



Bristol Agricultural High School

Dighton, MA

OWA



Flexible Solutions for Unique Learning Spaces

Background

The Bristol Agricultural High School serves as one of the most unique educational opportunities in the country. The curriculum is developed around excellent vocational-technical academic programs and an overall focus on agricultural science and the natural environment. The wide range of educational programs were supported by a sprawling, and largely unconnected campus on the banks of the Taunton River.

Already serving students from 20 communities, School Administrators identified a need to expand their academic reach by increasing their student population from 450 students to over 640 students while significantly enhancing their science programs.

After enlisting the help of Architect HMFH and General Contractor Gilbane Building Company, the project team quickly realized that supporting this increased population meant increasing the scope of the current 270-acre campus.



"We needed to create a single architectural language in both the exterior and the interior. We wanted the students to have a unified, connected campus."

Bobby Williams - Associate Principal at HMFH Architects



Project Challenges

Massachusetts-based architect HMFH led the project design. When conducting the initial feasibility studies, several challenges were identified:

- **Lack of Sufficient Space, Resources:** Bristol's goals for educational expansion focused primarily on doubling the size of their science programs. This included adding a new Environmental Engineering program. HMFH identified the current facilities and classrooms would not support this and required new construction.
- **Large, Sprawling Campus:** The 270-acre campus consisted of multiple buildings between the North and South Campus. The campus lacked a unifying pathway, causing difficulties and stress for students traveling back and forth between the two.
- **Unconsolidated Vocational Programs:** The various agricultural and science programs were broken out across the campus. This caused a lack of cohesion in the educational experience of the students. The Natural Resources Management Program, just one instance of this, had classes located in multiple buildings.
- **Construction Delays, Material Shortages:** Construction was conducted right in the heart of the COVID-19 pandemic. Ripple effects into the supply chain of many of their chosen products caused material shortages and delays to construction. Reaching substantial completion was crucial in order to accommodate the upcoming 2021 school year.



Project Goals

Increase the campus footprint by over 196,000 SF to include three new buildings and wide-scale renovations of the existing three buildings.

- **Center for Science and the Environment:** A brand new building that would be the highlight of the enhanced science programs and newly developed Environmental Engineering program. The building would target LEED Gold Certification.
- **Gilbert Hall:** A pillar of the existing campus, a large-scale renovation was required to support new education while also unifying the architectural language with the rest of the campus. The building would target LEED Silver Certification and include a new indoor climbing lab.
- **Student Commons:** This new build out would provide a space for students to eat, relax and finish their own individual studies. The Student Commons would serve as the heart of the campus. The media center located on the second floor would double as a business center for the entire county. Low-carbon materials were targeted for this project.
- **Additional construction plans:** State-of-the-art robotic milking technology in the new Dairy Barn. Additionally updates to the Agricultural Mechanics building and a brand-new Landscape/Arbor Building were planned.



Outcomes

The Project Team of HMFH, Gilbane and installer H. Carr ultimately decided that OWA's Mineral Wool Ceiling Tiles met or exceeded all the challenges identified. **"The OWA products looked great, were more economical and had some of the best acoustical performances on the market. In the end, it was a no-brainer for us,"** said **Bobby Williams, Associate Principal at HMFH Architects.** The flexibility and design were just several of the factors that come into play when making the final choice. These factors included:

- Delivering pristine indoor air quality through low particle emissions
- High-end durability and quality at cost-effective prices
- Easy-to-install nature of OWA tiles due to crisp, consistent core
- Unifying, beautiful design with smooth white finish across all Octave tiles
- Excellent sound absorption properties with high noise reduction performance
- Contributions to sustainability with both LEED and spirit of low-carbon products



Mineral Wool Solution

Smooth, rich white surface regardless of the acoustical values provided a rarity in acoustical ceiling tiles.

OWA's entire Mineral Wool product line was an ideal answer in choosing sustainable ceiling products that delivered excellent indoor air quality in addition to an improved installation experience that would reduce construction time. This can be traced back to the way OWA manufacturers the Mineral Wool core found with every ceiling tile.

Comprised of high-quality, virgin raw materials from the Odenwald Mountains in Germany, OWA Mineral Wool is produced from pure, natural ingredients such as sand, limestone with organic binders such as potato starch. The result is a well-composed, crisp, consistent Mineral Wool Core. When it came to the installing crew at H. Carr making for perimeter panels as well as fitting next to linear light fixtures, this consistent, crisp Mineral Wool core allowed for extremely quick, easy cutting of the tiles. The pure, high-quality materials did not gum up on the blades being used for cutting and allowed installers to make quick work of this normally labor-intensive process to keep up with the rigorous construction schedule. **"We found the OWA Tile to be a high quality product that looked great, performed as it should and was packaged well. The process with the OWA Team was top notch from bidding and submittals to orders and deliveries," said Ben Achin, Project Manager for the H. Carr installation team.**

The high-quality nature of the Mineral Wool core extended well past installation benefits. Due to the excellent composition and firmly bound fibers, each one of OWA's Octave Tiles used on the project are tested for use in ISO 4 Rated Clean Rooms, a title usually reserved for higher-priced medical-grade products. Tested according to the ISO 14644 standard, this test method measures the amount of particulate and fiber emissions from the acoustical ceiling when exposed to structure borne noise and low-frequency vibrations. The ISO 4 rating achieved by standard Octave products is the highest among comparable products, accomplished without any additional edge sealant or in-field treatment. The sensitive nature of the CS&E building, which includes work with various animals such as dogs, turtles, and even lizards, healthy, pristine indoor air quality was a requirement.



Classrooms & Lab Learning Spaces

OWA's Octave 85 was a perfect fit throughout classrooms and new laboratory learning spaces in both the CS&E building and the newly renovated Gilbert Hall.

With an excellent 0.85 NRC (noise reduction coefficient), the absorption properties of the ceiling system effectively reduced reverberation to a comfortable space for student learning as well as teacher comfort. Octave 85 also delivered appropriated sound reduction properties in the space and necessary acoustical flexibility between rooms.



Corridors & Connecting Spaces

OWA's Octave 70 made for a great choice with a 0.70 NRC value and 40 dB CAC.

Corridors and connecting spaces did not have the sound absorption properties reserved for core learning spaces. OWA's Octave 70 made for a great choice with a 0.70 NRC value. With potential noise and commotion from students moving between classes, the 40 dB CAC was extremely effective at blocking any noise intrusion into classrooms. Octave 80, with a 0.80 NRC and 37 dB CAC, was used for smaller classroom areas that required an effective NRC/CAC balance due to a shared plenum between rooms.

Bristol Agricultural High School

135 Center Street
Dighton, Massachusetts

- Beautiful, Unified Design
- Acoustically Controlled
- Excellent Indoor Air Quality
- Fast Installations, Turnaround

Architect: HMFH

General Contractor: Gilbane

Installer: H. Carr

- Product: Octave 85, 2'x4', SQ Lay-in
- Area Type(s): Classrooms, Animal and Science Labs (Including Aquatic, Grooming Labs)
- Total Square Footage: 60,960 SF
- Product: Octave 70 High CAC, 2'x4', SQ Lay-in
- Area Type(s): Corridors
- Total Square Footage: 8,000 SF
- Product: Octave 80 High CAC, 2'x4', 15/16" Reveal
- Area Type(s): Classrooms with Shared Plenum
- Total Square Footage: 4,000 SF
- Product: Finetta High NRC, 2'x4', SQ Lay-in
- Area Type(s): Multi-Purpose Rooms
- Total Square Footage: 8,150 SF



The information in this brochure is up-to-date at the time of publication. Errors and mistakes excepted. Please contact our competence team OWAconsult for specific advice. Our experts will be happy to answer your questions under the following contact details: tel: +49 9373 201-444 or e-mail: info@owaconsult.de

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