Sound: Boosting Student Focus through Interior Finishes in the Built Environment

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According to a recent study, the average college student will skip 240 classes throughout their four-year undergraduate education. Class schedules are increasingly competing with other opportunities—academic, social, and personal. Previously bound to a strict 8 a.m. to 3 p.m. agenda, college classes now present students with an entirely flexible schedule that can be decided upon daily.

This challenges universities to answer a question: How do we get students to attend class and keep coming back? While possible answers are as diverse as the student body, one thing is true—providing a positive environment for students that fosters engagement and increases student comfort has a strong impact on student performance and attendance. Universities have the opportunity to craft a built environment that encourages safety, health, and alertness through the consideration of educational design elements.

Through evidence-based design (EBD), educational facility managers consider the impact of built-environment elements. Through research, decision makers often determine which products have the highest promise for student success and wellness, by taking into account the foundations of a healthy building: ventilation, air quality, thermal health, moisture, dust and pests, safety and security, water quality, lighting and view, and noise.

The 9 Foundations of a Healthy Building report, published by the Harvard T.H. Chan School of Public Health, outlines clear, actionable steps for achieving inclusion of these foundations, and the specific health and wellness benefits of including each element. When designers consider these foundations with occupants in mind, student performance improves and the ability to learn increases, fostering a desire to participate in the learning process. Specifically, identifying ways to dampen or remove unwanted noise from the learning environment improves the classroom experience for students and faculty alike.

THE IMPACT OF DISCOMFORT

When considering the nine foundations, the physical conditions—thermal health, dust and pests, and noise—offer significant room for improvement in terms of student comfort. For example, when a classroom is too cold, students are not able to focus on the lesson, as they are distracted by their discomfort and the inability to address their physical woes. This discomfort in the built environment also materializes in poor faculty retention and class attendance as well.

Discomfort can also be expressed in the form of an individual's inability to hear, negatively impacting the educational space's occupants in terms of learning function and capabilities. With EBD practices in mind, facility managers can reduce unwanted sound and improve students' classroom experience, ultimately motivating students to be in the classroom more frequently.

SOUND MATTERS

On college campuses, student spaces, faculty spaces, and those in between differ greatly in their design and purpose, but all must take acoustics into consideration. For example, large lecture halls seat hundreds of students for multiple hours each week. Because of this, the influx of unwanted noise is worsened as the room's occupants whisper, type on laptops, and shuffle papers. In a setting that already makes it difficult to interact with the professor and their peers, students are further burdened by difficulty in hearing the content being discussed, making attendance seem unnecessary and altogether frustrating.

Beyond the typical classroom and lecture hall settings, student wellness can be ensured through the consideration of acoustical performance in communal areas, including auditoriums. On college campuses, students are provided with opportunities to attend performances, speeches, demonstrations, panels, and other events in large auditoriums or theaters. Students expect an environment that supports the acoustic needs associated with attending such events. If the acoustics fail to meet the space's needs, students may be hesitant to return for future events due to the suboptimal experience.

According to Julian Treasure's consultancy The Sound Agency, which advises businesses worldwide about how to design with sound, when the impact of unwanted sound is reduced, distractions are lessened, speech intelligibility is improved, and cognitive discomfort is diminished. Providing positive spaces for students increases their desire to participate in the classroom and university spaces, since they know their needs and expectations will be met. Facility managers must design their institution's spaces with EBD in mind, especially as it relates to acoustics in the built environment.

MATERIAL CHOICE CAN MAKE THE DIFFERENCE

Through flooring product selection, facility managers can minimize the impact of noise, because the right flooring will absorb sound and provide increased acoustic comfort. According to a recent report related to workplace acoustics, 54 percent of employees working in an office with wood, ceramic tile, or concrete flooring complained about noise in their office. Meanwhile, another study found that 4-mm rubber flooring is four times quieter than vinyl composition tile (VCT) and delivers at least twice as much impact-noise reduction than other resilient flooring types. This discrepancy demonstrates that proper flooring selection can greatly impact the comfort of occupants.

This principle applies beyond acoustics as well, as flooring selection can also influence air quality. VCT products require stripping, coating, and refinishing with chemicals that can produce volatile organic compounds (VOCs). According to a recent study, the same amount of VOCs are emitted during a single waxing as are emitted throughout a rubber flooring product's entire lifetime. With its never-wax protocol, rubber flooring eliminates the need for harsh cleaning chemicals, reducing the number of VOCs released while improving health and wellness and overall indoor air quality.

Providing a soundscape that supports student and faculty wellness and productivity is crucial in encouraging attendance and enthusiasm in university facilities. Careful attention to the nine foundations of a healthy building in relation to EBD, coupled with consideration of products available, such as luxury vinyl tile (LVT), carpet tile, and rubber flooring, is crucial in securing positive spaces for success. By understanding the needs of the space, facility managers promote growth and success for all occupants, facilitating the advancement of education and learning while ensuring the foundations of a healthy building and offsetting overall carbon footprint.

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