



PRIVATE UNIVERSITY PRODUCTS AND NEWS

SPRING SPECIAL EDITION 2024

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**STEEL WINDOWS AND DOORS
IN GREEN CONSTRUCTION**

**BUILDING A BETTER, GREENER
FUTURE:
THE BOOM OF ECO-FRIENDLY
CONSTRUCTION ON COLLEGE
CAMPUSES**

**ACHIEVING SUSTAINABILITY
EXCELLENCE:
THE ADVANTAGES OF LEED
CERTIFICATION**

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GREEN CONSTRUCTION

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UNIVERSITY CAMPUS EXPANSION

NASHVILLE, TENNESSEE

At a major university residential expansion project in the Southeast, collaboration and cooperation among the construction management firm, window and door manufacturer, and installation contractor resulted in several stunning projects recreating the look of the surrounding century-old buildings. All totaled, Hope's Windows, Inc., supplied over 1,200 unique windows made from custom hot-rolled steel profiles and nearly 100 high traffic and fire-rated door assemblies made from 10 and 12 gauge cold-rolled steel.

According to Sean Farrell, senior project manager at Layton Construction, establishing collaborative relationships is key to successful construction projects. One of the best examples of this maxim is a multi-phase university project for which Layton Construction is serving as construction manager. Layton, part of the STO Building Group, is a nationally-ranked commercial contractor with ten offices around the United States. The firm specializes in healthcare, industrial, warehousing, and higher education projects. As construction manager, Layton hires the sub-contractors and manages and oversees the project as part of a team.



“Since we were building windows and doors to make a brand new college, we needed a company with the methodology to produce the product like it was done 100 years ago.”

— Sean Farrell, Sr Project Manager
Layton Construction

Hope's Brian Whalen, Vice President of Sales, acknowledges that the project was a real test of Hope's capabilities. He is especially proud that they Hope's was able to expedite the schedule even in the face of design changes and in the midst of the Covid-19 pandemic. The shop drawing approval process – including preparation of blueprints of windows and doors with all setting conditions, sizes, customized designs, and required testing – took longer than normal. Changes were made along the way that might have pushed back the delivery schedules for some, but Hope's made adjustments during the production process to deliver all materials on time. Whalen gave a nod to Joey Riggan and the team at Alexander Metals, the frame and glass installer team, saying the overall project went extremely smoothly once the frames were on site.

Says Whalen, “It was a fantastic collaboration among all the parties. Hope's worked closely as the manufacturer to fulfill the architect's design vision, and then the installer worked closely with us to make sure everything was installed executed properly.”

PHOTOS: Steve Hall, © Hall + Merrick Photographers



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Hope's® Windows, Inc., is a business based on 100 percent customized work design and manufacturing, Hope's provides a specialized skillset to assist clients in design and production of unique window and door assemblies. Meeting the expectations of Layton Construction in combination with the aesthetic vision of the client and architect was definitely a challenge. The overall experience was a testament to the quality standards of the university and an honor to be a part of. In business since 1912, Hope's had the global experience to make it happen.

Visit [HopesWindows.com](https://www.HopesWindows.com).

Editor's Letter

SPRING SPECIAL EDITION 2024

Dear Reader,

I am thrilled to share with you this special edition, and I must say, it's all thanks to you—our dedicated and insightful readers.

Your feedback and requests have always been the driving force behind our efforts to deliver relevant and valuable content. When we received numerous inquiries and suggestions for a special edition focused on green construction on college campuses, we couldn't help but be inspired by your enthusiasm.

From the bustling corridors of academic buildings to the serene landscapes of campus green spaces, we understand the vital role that college facilities play in shaping the student experience and supporting academic success. That's why we're excited to present this special edition entirely dedicated to addressing your questions and providing valuable insights into green construction and college facilities.

Whether you're interested in learning about sustainable building practices, innovative campus design trends, or the latest technology solutions for facility maintenance, this special edition covers it. We've listened carefully to your requests and have curated a collection of articles, interviews, and case studies that address the topics you're most passionate about.

But it doesn't stop there. In addition to delving into the practical aspects of facility management, we'll also explore the broader impact of college facilities on student engagement, campus culture, and sustainability initiatives. Through thought-provoking discussions and inspiring stories, we aim to highlight the integral role that well-designed and efficiently managed facilities play in creating vibrant and supportive learning environments.

As we embark on this journey together, I want to express my heartfelt gratitude to each and every one of you for your continued support and engagement. Your enthusiasm for our publication motivates us to push the boundaries and strive for excellence in everything we do. This special edition is our way of saying thank you for being an essential part of our community and for inspiring us to deliver content that truly resonates with your interests and needs.

So get ready to dive into a wealth of knowledge and inspiration in this special edition of Private University Products and News. We can't wait to share it with you, and we hope you'll find it both informative and engaging.

Thank you once again for your invaluable feedback and support. Here's to a special edition that exceeds your expectations and leaves you feeling inspired and empowered.

Warm regards,

Ed Bauer

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STEEL WINDOWS AND DOORS IN GREEN CONSTRUCTION

BY MATTHEW FULLER

When it comes to sustainable architecture and construction, every component of a building's design plays a crucial role in achieving environmental goals. As builders and architects strive to create structures that stand the test of time and minimize environmental impact, the focus on elements like windows and doors has intensified. We took a closer at what's at stake when choosing windows and doors for your next campus project.



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BUILDING A BETTER, GREENER FUTURE: THE BOOM OF ECO-FRIENDLY CONSTRUCTION ON COLLEGE CAMPUSES

BY ED BAUER

With concerns about climate change and environmental degradation mounting, adopting green construction practices has emerged as a crucial step towards a more sustainable future. College campuses, as centers of learning and innovation, have a unique opportunity to lead by example. Here's how.

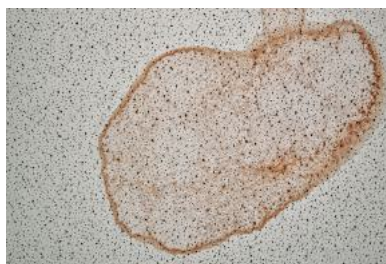


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ACHIEVING SUSTAINABILITY EXCELLENCE: THE ADVANTAGES OF LEED CERTIFICATION

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BY GRETE HEIMERDINGER

High levels of moisture and humidity in buildings are undesirable on many levels. Beyond making the interior atmosphere uncomfortable, moisture can pose real dangers to the health of your structure,



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THE FIVE THINGS YOU MUST KNOW TO ENSURE FIRE SAFETY ON CAMPUS

BY ED BAUER

Fire safety on campus is of paramount importance. Well-maintained fire sprinkler systems are the first defense.



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STEEL WINDOWS AND DOORS

in Green Construction

BY MATTHEW FULLER

When it comes to sustainable architecture and construction, every component of a building's design plays a crucial role in achieving environmental goals. The emphasis on energy efficiency has become paramount, and modern construction practices prioritize energy-efficient materials and designs to create a more sustainable and cost-effective building envelope.

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COVER PHOTO CREDIT: STEVE HALL AND COURTESY OF HOPE'S® WINDOWS, INC.

As builders and architects strive to create structures that not only stand the test of time but also minimize their environmental impact, the focus on elements like windows and doors has intensified. Windows and doors are significant contributors to a building's energy efficiency. Poorly designed or outdated windows and doors can result in thermal inefficiencies, leading to increased heating and cooling costs.

We took a closer look at the integral role steel windows and doors play in enhancing energy efficiency, and how incorporating these elements can earn valuable Leadership

in Energy and Environmental Design (LEED) credits and certification from the U.S. Green Building Council (USGBC).

Environmental Benefits

Hope's steel windows and doors are synonymous with longevity and quality. One of the primary environmental benefits of these fenestration systems lies in the material itself. Steel, known for its durability and recyclability, represents a sustainable choice for construction projects. Steel is the most recycled material in the United States. Each year, the steel industry saves enough energy through recycling to power 18 million homes—one-fifth of the nation's households. Hope's premium quality steel windows

and doors are made with hot-rolled frame profiles that are 100 percent recycled steel.

Unlike traditional materials that may degrade over time, steel retains its properties even after multiple recycling processes, making it a truly sustainable option. By incorporating recycled steel into their products, Hope's contributes to resource conservation, reduces the demand for virgin materials, and minimizes the environmental impact of construction activities. Finished with environmentally friendly coatings, their steel windows and doors are impervious to air and water infiltration, while Hope's advanced fabrication techniques and precision engineering emphasize energy efficiency and waste reduction. Additionally, Hope's commitment to sustainable sourcing and responsible manufacturing practices further enhances the environmental credentials of their products, aligning with the principles of green construction and sustainability.

These qualities contribute to unparalleled lifecycle value and assist building owners and architects seeking LEED® certification from the USGBC.

Energy Efficiency

Today's construction industry benefits from a variety of high-performance window technologies. Double- or triple-pane windows, low-emissivity coatings, and insulated frames are just a few examples. These features not only enhance insulation but also contribute to soundproofing and overall occupant comfort. When selecting windows, it's crucial to consider the climate and orientation of the building to maximize energy gains and losses.

Steel has better natural insulating capability compared to other metals, conducting heat and cold at one-fifth the rate of aluminum. Aluminum products require a thermal break just to match the natural thermal performance of steel. The minimal frame dimensions of steel windows and doors further lesson thermal transfer by reducing surface exposure.

Retrofit and historic renovation projects benefit from over a century of manufacturing and technical advancements. Insulated and low-E glass along with integral groove weatherstripping are coupled with slim, historically accurate sightlines to achieve the best in modern manufacturing without compromising the existing aesthetic. Modern safety features such as hurricane resistance can be incorporated into steel window systems and simultaneously complement the visual integrity of period buildings.

Hope's steel window and door manufacturing process includes fusion-welded corners and face-welded muntin intersections, providing seamless construction that is impervious to air infiltration and water penetration. Hope's triple-groove weatherstripping applied to integral grooves also significantly improves air and water performance for premium, sustainable, and energy efficient products.

Architects may still specify a thermal break despite the natural thermal properties of steel. It is important to understand that adding a typical thermal break into any metal frame results in dramatically weakening the material. This is because a traditional thermal break splits the frame into interior and exterior pieces and then reconnects them with a weaker insulating material. An advanced alternative solution called Thermal Evolution™ technology, available exclusively from Hope's Windows, Inc., ensures that the solid steel profiles remain solid for the full depth of the frame, thus maintaining the structural integrity of the steel.

These properties and features, together with modern advancements in glazing, result in exceptional thermal performance and condensation resistance for steel windows and doors.

Doors, often overlooked in terms of energy efficiency, are equally important. Insulated doors with airtight seals help prevent drafts and maintain a consistent

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Today's construction industry benefits from a variety of high-performance window technologies. Double- or triple-pane windows, low-emissivity coatings, and insulated frames are just a few examples.



indoor temperature. The use of sustainable materials for door construction aligns with environmentally conscious building practices.

Durability and Longevity

Durability is a hallmark characteristic of Hope's steel windows and doors, offering long-lasting performance and minimal maintenance requirements. Constructed from high-quality steel, these fenestration systems are inherently resistant to corrosion, rot, and deterioration, for a long lifecycle compared to traditional materials such as wood or aluminum. With their proven ability to last for a century or longer, steel doors provide an unparalleled lifecycle value.

The robust nature of steel provides structural integrity and protection against harsh weather conditions, impact, and intrusions, further contributing to the resilience and longevity of the building envelope.

Furthermore, Hope's steel windows and doors undergo extensive, rigorous testing and quality assurance measures to ensure compliance with industry standards and

performance criteria. From material selection to fabrication techniques, every aspect of the manufacturing process is meticulously controlled to deliver products that meet the highest standards of quality, durability, and reliability. As a result, architects, builders, and property owners can rely on Hope's steel fenestration systems to provide lasting performance and peace of mind, reducing the need for frequent replacements and minimizing the environmental impact associated with building maintenance and renovation.

Eco-Friendly Coatings

The most advanced pretreatment and finishing processes available for steel are lead-free, contain zero hazardous air pollutants (HAPs), and have ultra-low volatile organic compounds (VOC), resulting in an earth-friendly product with unlimited color options and long-term protection against corrosion and abrasion. Hope's steel finishing processes exceed the most rigorous testing standards and are carefully scrutinized to ensure products will perform, both aesthetically and functionally, for decades to come and with extremely low maintenance requirements.

LEED Certification

LEED certification provides a framework for recognizing and rewarding sustainable building practices. The integration of energy-efficient solid, hot-rolled steel windows and doors can contribute significantly to earning LEED credits. Categories such as Energy and Atmosphere, Materials and Resources, and Indoor Environmental Quality are particularly influenced by the choices made in window and door selection.

Strategies for LEED Credits

Optimal energy performance. Choose windows and doors with high energy performance ratings to maximize energy savings.

Materials and resources. Use recycled or locally sourced materials for window and door construction to earn additional credits.

Indoor environmental quality. Select windows and doors that enhance natural lighting and ventilation, promoting a healthier indoor environment.

As the construction industry continues to evolve, integrating energy-efficient, solid hot-rolled steel windows and doors is no longer a choice but a necessity. The benefits extend beyond cost savings to encompass environmental stewardship and a commitment to creating spaces that prioritize the well-being of occupants. By leveraging these elements, builders not only enhance the overall efficiency of their projects but also position themselves for LEED certification, setting a new standard for sustainable construction practices.



ABOUT THE AUTHOR: Matthew Fuller is the National Sales Manager and LEED Green Associate at Hope's Windows, Inc., the largest domestic manufacturer of luxury steel and bronze windows and doors. Matt has worked in the custom steel window and door industry for 17 years.



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Building a Better, Greener Future:

The Boom of Eco-Friendly Construction on College Campuses

BY ED BAUER



In recent years, the push for sustainability has become increasingly prevalent across various sectors, including construction. With concerns about climate change and environmental degradation mounting, adopting green construction practices has emerged as a crucial step towards a more sustainable future. College campuses, as centers of learning and innovation, have a unique opportunity to lead by example in this regard.

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By embracing green construction principles, colleges can not only reduce their environmental footprint but also reap significant financial and public relations benefits. Here are a few of the major benefits to espousing a green-is-good philosophy.

Environmental impact reduction. Green construction focuses on minimizing environmental impact throughout the building's lifecycle. This includes using renewable energy sources, optimizing energy efficiency, and reducing water consumption. According to the U.S. Green Building Council (USGBC), green buildings consume 25 percent less energy and 11 percent less water compared to conventional buildings. By implementing these practices on college campuses, institutions can significantly contribute to environmental conservation efforts.

Cost savings. While there may be an initial investment required for incorporating green construction practices, the long-term cost savings are substantial. Energy-efficient buildings consume less electricity, leading to lower utility bills. Additionally, sustainable materials and designs often require less maintenance over time, further reducing operational costs. The American Institute of Architects (AIA) reports that green buildings typically have 20 percent lower maintenance costs compared to traditional buildings, resulting in significant financial savings for college campuses.

Improved indoor air quality. Green construction prioritizes indoor air quality by using non-toxic building materials and implementing efficient ventilation systems. Poor indoor air quality can negatively impact occupants' health and productivity. By ensuring a healthier indoor environment,

colleges can enhance the overall well-being of students, faculty, and staff. According to the Environmental Protection Agency (EPA), green buildings have been shown to reduce respiratory ailments and improve cognitive function, leading to a more conducive learning environment.

Enhanced student engagement. Colleges that embrace green construction initiatives often find that students are more engaged and environmentally conscious. Sustainable buildings serve as educational tools, allowing students to learn about eco-friendly practices firsthand. Moreover, involving students in sustainability initiatives fosters a sense of ownership and community involvement. According to a survey by the Princeton Review, 68 percent of college applicants consider a school’s commitment to sustainability when making enrollment decisions, highlighting the importance of green initiatives for attracting prospective students.

How can your campus implement more green construction across the board? Begin with energy-efficient building design. Designing buildings

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with features such as high-performance insulation, energy-efficient lighting, and passive solar design can significantly reduce energy consumption and carbon emissions. Integrating renewable energy through the installation of solar panels, wind turbines, and other renewable energy systems can help colleges generate clean energy onsite. By investing in renewable energy infrastructure, campuses can reduce reliance on fossil fuels and mitigate greenhouse gas emissions.

Choosing sustainable building materials, such as recycled steel, bamboo, and reclaimed wood, minimizes environmental impact and promotes resource conservation. Colleges that prioritize locally sourced materials also reduce transportation emissions and support local economies.

Meanwhile, water conservation measures such as implementing water-efficient fixtures, including low-flow toilets and faucets, can help colleges reduce water consumption and minimize strain on local water resources. Rainwater harvesting systems and greywater recycling can further enhance water conservation efforts.

Financial and Public Relations Benefits of Building Green on College Campuses

Better environmental stewardship may be your primary goal in embracing sustainability-minded practices, but there are plenty of other benefits your campus will reap in the process. Including:

Cost savings. Green construction practices can lead to substantial cost savings for college campuses over time. By reducing energy and water consumption, colleges can lower utility bills and operational expenses, freeing up resources for other priorities.

Grants and incentives. Many government agencies and nonprofit organizations offer grants and incentives to support green building projects. By pursuing green construction initiatives, colleges may be eligible for financial assistance and tax incentives, further offsetting upfront costs.

Alumni and donor engagement. Green construction projects can serve as opportunities for colleges to engage alumni and

Better environmental stewardship may be your primary goal in embracing sustainability-minded practices, but there are plenty of other benefits your campus will reap in the process.

donors who are passionate about sustainability. By highlighting their commitment to environmental stewardship, colleges can attract philanthropic support and strengthen relationships with key stakeholders.

Positive public image. Colleges that prioritize sustainability and green construction often enjoy a public-image and reputation boost. Demonstrating a commitment to environmental responsibility can enhance brand perception, attract prospective students, and differentiate colleges from their peers.

In short, embracing green construction principles offers numerous benefits for college campuses, ranging from environmental conservation to financial savings and enhanced public relations. By implementing energy-efficient designs, integrating renewable energy systems, and prioritizing sustainable materials, colleges can lead by example in creating a more sustainable future. As centers of learning and innovation, college campuses play a pivotal role in shaping the next generation of leaders and driving positive change towards a more sustainable society.

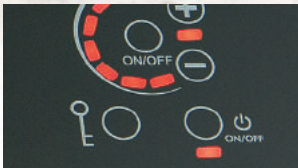


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Achieving Sustainability EXCELLENCE:

The Advantages of LEED Certification

BY ED BAUER

In the pursuit of sustainability, colleges and universities are increasingly turning to Leadership in Energy and Environmental Design (LEED) certification as a benchmark for excellence in green building practices. LEED certification not only verifies a campus's commitment to environmental stewardship but also offers numerous tangible benefits, ranging from cost savings to improved occupant health and well-being.

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To assist in the pursuit of LEED certification, we looked at critical steps involved in obtaining LEED certification for college campuses, the agencies that can assist in the process, and strategies for promoting LEED certification within the campus community.

First, let's look at the benefits.

Environmental stewardship. LEED certification signifies a campus's dedication to environmental sustainability. By implementing energy-efficient designs, sustainable materials, and water conservation measures, colleges can minimize their environmental footprint and contribute to global efforts to combat climate change.

Cost savings. LEED-certified buildings are designed to optimize energy and water efficiency, resulting in lower utility bills and operational expenses for college campuses. According to the U.S. Green Building Council (USGBC), LEED-certified buildings consume 25 percent less energy and 11 percent less water on average compared to conventional buildings, translating into significant cost savings over time.

Health and well-being. LEED-certified buildings prioritize indoor environmental quality, promoting occupant health and well-being. By using non-toxic building materials, optimizing ventilation systems, and maximizing natural daylight, colleges can create healthier learning and working

environments for students, faculty, and staff.

Market differentiation. LEED certification enhances the marketability and reputation of a college or university. By demonstrating a commitment to sustainability and environmental responsibility, colleges can attract prospective students, faculty, and donors who value green initiatives. A campus with LEED-certified buildings stands out as a leader in sustainable development and innovation.

Before embarking on project for which you intended to seek LEED certification, consider the resources available to your team. There are several places to turn for information, guidance, and a better understanding of the certification process, starting with the USGBC itself. As the leading authority on green building certification, the USGBC provides resources, training, and accreditation for professionals seeking to achieve LEED certification. Colleges can leverage USGBC's expertise and guidance throughout the certification process.

Meanwhile, the Green Building Certification Institute (GBCI) is responsible for administering LEED certification and credentialing professionals in the green building industry. Colleges can work with GBCI-accredited professionals to navigate the certification process and ensure compliance with LEED requirements.

You may also have your own campus office or organizations dedicated to sustainability. These will help support LEED certification efforts by providing expertise, funding, and advocacy to promote sustainable development on campus and facilitate LEED certification projects.

Many campuses have embraced the value of promoting LEED certification in their campus communities to give these projects momentum and buy-in from students, faculty, and staff. Education and awareness campaigns can raise consciousness of the importance of LEED certification and its benefits for the campus community.

These may include hosting workshops, seminars, and campus tours to showcase LEED-certified buildings and highlight their sustainable features.

Engaging students in LEED certification efforts also fosters a sense of ownership and community involvement. Colleges can involve students in sustainability projects, green building design competitions, and campus greening initiatives to promote LEED certification and inspire future sustainability leaders.

Colleges can collaborate with local businesses, government agencies, and community organizations as well to support LEED certification efforts and advance sustainability goals. By leveraging external resources and expertise, colleges can accelerate the certification process and expand their impact beyond campus boundaries.

Steps to Obtain LEED Certification for College Campuses

Before beginning a project, you'll want to understand the steps involved.

Sustainability-minded project planning and design. The first step in obtaining LEED certification is to establish sustainability goals and integrate green building principles into a project's planning and design phase. This involves selecting a LEED-accredited design team and setting performance targets for energy efficiency, water conservation, and indoor environmental quality.

LEED documentation and submission. Once a project is underway, colleges must compile documentation and evidence to demonstrate compliance with LEED requirements. This includes tracking energy and water usage, documenting sustainable materials and construction practices, and conducting performance testing to verify building performance.

LEED certification review. After completing the construction phase, colleges can submit their LEED documentation to the U.S. Green Building Council (USGBC)

Engaging students in LEED certification efforts also fosters a sense of ownership and community involvement

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for review and evaluation. A team of LEED reviewers assesses the project's compliance with LEED criteria and awards certification based on the level of achievement: Certified, Silver, Gold, or Platinum.

Areas on Campus to Consider Seeking LEED Certification

The key to earning LEED certification wherever viable is to think ahead about new projects on the horizon and determine if this is something you want to pursue. Consider opportunities in projects both already on the horizon or those a few years down the road:

New construction. Colleges can pursue LEED certification for new building projects, incorporating sustainable design principles and green building technologies to minimize environmental impact and optimize building performance.

Renovation and retrofitting. Existing buildings on college campuses can undergo renovations and retrofits to achieve LEED certification. This may involve upgrading HVAC systems, installing energy-efficient lighting, and improving indoor air quality to meet LEED criteria.

Campus operations. Beyond buildings, colleges can pursue LEED certification for campus-wide sustainability initiatives, such as waste reduction, recycling programs, and transportation alternatives. By addressing operational aspects, colleges can achieve comprehensive sustainability goals and earn recognition for their efforts.

The advantages of earning LEED requirements for campus buildings are plentiful in both the short and long term. Short-term benefits include immediate cost savings from reduced energy and water consumption, enhanced occupant comfort and productivity in LEED-certified buildings, and positive publicity and recognition for sustainability leadership.

Long-term benefits include continued cost savings and operational efficiencies over the lifecycle of your buildings, improved campus resilience to environmental challenges and climate change impacts, and a long-lasting legacy of environmental stewardship and sustainable development.

LEED certification offers college campuses a roadmap for achieving sustainability

excellence and reaping numerous benefits, including cost savings, enhanced occupant health, and market differentiation. By following the steps outlined in this article, colleges can navigate the certification process successfully and position themselves as leaders in green building and environmental stewardship. Through education, collaboration, and strategic promotion, colleges can engage the campus community and inspire collective action towards a more sustainable future.

ABOUT THE AUTHOR: Ed Bauer has been in publishing for over twenty years. In his early career years, he worked on the staff at Mount Union College and for the last twelve years as publisher and managing partner at Flaherty Media has been privileged to tour many private higher education campuses and talk with numerous staff members who manage these multiple building facilities. He can be reached at ed@pupnmag.com.

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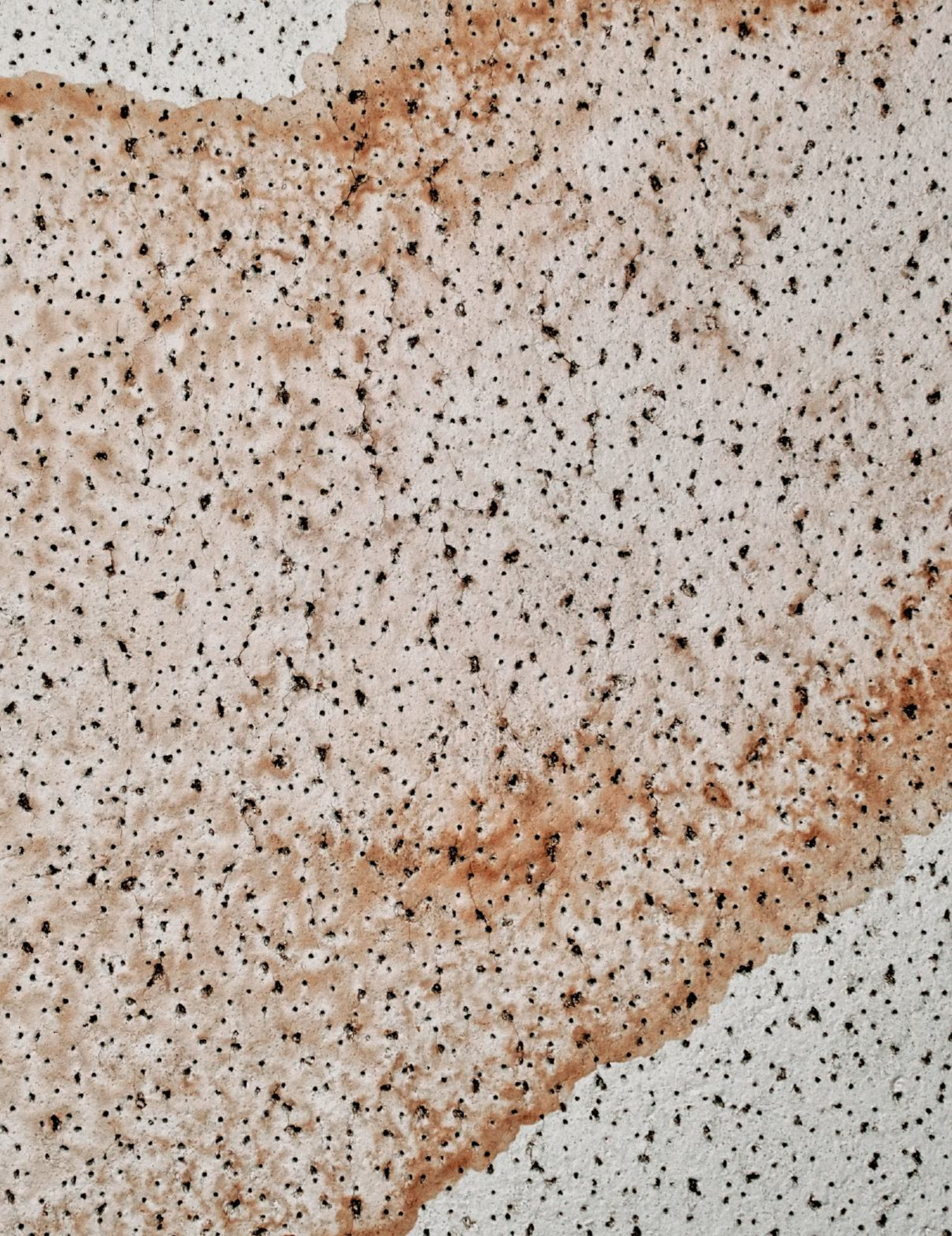
Moisture and Humidity in Campus Buildings:

Early Detection and Intervention Are Key to Preventing Serious Problems

BY GRETE HEIMERDINGER

Outside of steam saunas, high levels of moisture and humidity in buildings are undesirable on many levels. Beyond making the interior atmosphere uncomfortable, moisture can pose real dangers to the health of your structures. The standard accepted range for relative humidity is between 30% and 50% at a temperature of 600F to 800F. Deviation from those values can have serious consequences.

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First, changes in moisture content in wood products are accompanied by dimensional changes which ruin their beauty and functionality. Wood floors in gymnasiums can cup, chairs will delaminate, doors become hard to close, to name just a few examples.


Even more serious are mold problems. Mold not only affects the structural integrity of buildings; it also affects indoor air quality, which affects the health of the occupants in the building. A fungus living by its own rules, mold is part of the natural environment and can be found everywhere indoors and outdoors. Spores, the start of any mold colony, are ever-present, dormant, and waiting for the right conditions. Once enough humidity is available, mold will start to grow on any carbon-containing surface. There are many materials containing carbon in buildings

from concrete to sheetrock, wood, and even paint (unless carbon-free paint has been used). As the spores grow, multiply, and digest food, toxic compounds are released into the air. A single mold colony can grow millions of spores—so light and small that once they are airborne, they are dispersed throughout the building and can lead to serious health issues.



This is why campus maintenance teams need to be vigilant about keeping moisture and humidity in buildings within a safe range. Improper cleaning practices, water spills, roof leaks, burst pipes, or flooding can all undermine the structural integrity and safety of a building if left unchecked. Under normal circumstances, buildings are only exposed to seasonal changes, which often can be kept in check with an HVAC system. When moisture exceeds normal ranges, however, maintenance needs to take immediate action.

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Detection is the first step in prevention. A moisture meter and a thermo-hygrometer are the best tools for checking relative humidity and detecting warning signs. Conditions of wood floors outside the ideal range of 6% to 9% moisture can be discovered early enough to prevent problems. Moisture conditions in other materials can also be checked with a wood moisture meter, and Lignomat's BL2 data loggers track humidity conditions with an audible alarm feature and MC Tracker which will record the moisture content. With these tools, a campus maintenance team can pinpoint a problem or area of concern and address it immediately.

Here's what you need to know in a nutshell:

Wood measurements. Measuring solid floor planks requires a meter calibrated for different wood species, and the user needs to set the meter to the floor species for measurements. Pin and pinless meters can be used to measure floor planks. If it is suspected that a moisture problem originated in the subfloor or the concrete underneath, then a pin meter is required with a depth electrode to investigate moisture conditions in the sub floor.

WME measurements. Engineered floor planks composed of a wear layer and a different material core can be measured with a wood moisture meter as well. You may have to calibrate the meter to the

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specific type of engineered floor plank. That is an easy task if you have a sample acclimated to a certain relative humidity. For example, in an environment of 45% relative humidity, the sample's moisture content can be assumed to be around 7%. Take a measurement of the test sample at any calibration setting and change the setting until the meter reads 7%. In the future, all measurements of this particular floor can be measured at the setting you found.

This method works well, once the calibration setting has been established. For all future measurements, the setting can be used and changes in moisture content become apparent by comparing past measurements to the values now.

Reference scales or comparative measurements. There are many materials besides wood used in the building envelop. If your moisture meter is calibrated for a specific building material, you can choose the calibration for measuring the material. In order to make sense of the different scales, it is important to know what value represents dry.

For example: wood floors are considered dry at 6-9%; moldings are considered dry at 12%; and construction lumber is considered dry at 16%. When measuring drywall with a drywall scale, the values are very low due to the ratio between the small weight of water and the larger weight of the material. Here the manufacturers of the meters may state a value of .5% for "dry" and .8% already questionable

However, there are still many materials used within building, which are not listed for any moisture meter. The only way to establish moisture levels is by using a reference scale. Most meters have a reference scale, which divides the maximum moisture range between low and high moisture values into equal parts. If your meter does not have a reference scale, you can dedicate a calibration setting to measure a particular material. If measurements were taken of the same material with the same calibration setting, you can detect telltale changes when the moisture levels read lower or higher. This method becomes more meaningful if a dry piece of the material can be found. All measurements can then be

compared to the dry value.

Experts recommend that maintenance crews document moisture levels in critical areas even when there are no apparent moisture problems: take measurements and note measured values, calibration settings, and the location where the readings were taken as well as the meter's measuring mode, the meter's name, and the meter's manufacturer.

When moisture problems are discovered, the first step is to establish the extent of moisture infiltration by using a moisture meter. Problems can be confined to the surface or they could come from sources farther away within walls, roofs, or the foundation of the building. A combination or pin and pinless meter with suitable hand probes is the best choice to map moisture problems and find the source. In many cases professional help is required to remedy the problem quickly before more damage has occurred and the environment is contaminated by mold.

For expert help and more information, visit Lignomat at www.lignomat.com or call 800-227-2105.

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ABOUT THE AUTHOR: Grete

Heimerdinger has been the technical adviser for the moisture meter division for Lignomat. She graduated from the technical university in Stuttgart and started Lignomat with her husband in 1982. Lignomat now offers a full line of pin, pinless and RH meters as well as wireless monitoring devices for buildings. For more information on moisture meters and data loggers contact Lignomat at 800-227-2105 or go to www.lignomat.com.



THE 5 THINGS YOU MUST KNOW

to Ensure Fire Safety on Campus

BY ED BAUER

Ensuring fire safety on university campuses is of paramount importance, with the well-being of students, faculty, and valuable assets at stake. Fire sprinkler systems serve as the first line of defense against potential disasters, underscoring the need for meticulous maintenance and proactive measures. In this comprehensive guide, we will explore five key strategies tailored to university personnel for optimizing fire sprinkler system maintenance and enhancing overall campus safety. Let's get started.

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Look at your testing procedures.

A first step in preventative fire safety is to streamline remote testing procedures. Compliance with industry standards such as NFPA 13 and NFPA 25 necessitates regular testing of sprinkler water flow alarm devices. However, conventional testing methods often prove time consuming and labor intensive, especially in multi-story buildings or expansive campus facilities. AGF Manufacturing's RemoteTEST solution offers cutting-edge technology that revolutionizes testing procedures by enabling remote activation of sprinkler system tests through various control mechanisms. By facilitating efficient testing across the entire campus, this innovative approach not only enhances operational readiness but

also minimizes costs associated with manual inspections.

Be mindful of corrosion.

The second step when it comes to fire safety and sprinkler checks is to combat any threats of corrosion. Corrosion poses a significant risk to the integrity and functionality of fire sprinkler systems over time. Automatic air vents offer a proactive solution by continuously venting trapped air, thereby reducing the conditions conducive to corrosion. NFPA 13 has required air vents on new systems since 2016, but older systems can still benefit from retrofitting air vents into the system. By implementing robust corrosion prevention measures, university personnel can extend the lifespan of their

sprinkler systems and mitigate the risk of operational failures during emergencies.

Be sure your campus has implemented corrosion monitoring protocols. Early detection of corrosion is paramount for effective maintenance planning. Corrosion monitors are not required but can identify an issue before pinhole leaks occur. A CORRinSITE corrosion monitor provides a simple yet reliable means of monitoring corrosion levels in both wet and dry sprinkler systems. This non-powered device serves as an early warning system, alerting maintenance teams to corrosion progression and facilitating targeted interventions to prevent system deterioration. By integrating corrosion monitoring into routine maintenance practices, universities can safeguard their fire sprinkler systems and minimize the risk of costly water damage and repairs.

Safeguard against freezing hazards. Every university should have a protocol for safeguarding against freezing hazards. In regions prone to freezing temperatures, auxiliary drains in dry sprinkler systems are susceptible to ice formation, leading to potential system malfunctions. The technology in products called COLLECTanDRAIN offers solutions for the most common issues that plague facility managers. Auxiliary drains can be retrofitted with water detectors for notification when service is needed. Heated cabinets that house the drum drip provide protection against freezing and can be drained remotely or automatically, saving hours of labor, and reducing the risk of downtime and costly repairs. By proactively safeguarding against freezing hazards, university personnel can ensure the uninterrupted functionality of their sprinkler systems, even in harsh weather conditions.

continued on next page

By integrating corrosion monitoring into routine maintenance practices, universities can safeguard their fire sprinkler systems and minimize the risk of costly water damage and repairs.

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Protect Your Facility from Accidental Flooding.

Possibly your budget doesn't include smart options for your auxiliary drains, but the addition of a tool called the FLOODEliminator offers an economical option of added protection if an auxiliary drain were to fail. This small device is installed above a drum drip and snaps closed from the pressure of water when the dry valve is tripped. This prevents water from flowing out of a broken auxiliary drain and prevents a flood and the associated water damage. The FLOODEliminator is easily retrofitted onto existing drains and doesn't require power or maintenance.

Deterrence of Vandalism with Enhanced Security Measures. Public access areas, such as parking structures, are vulnerable to vandalism, posing a threat to the integrity of fire sprinkler systems. Anti-trip plates and locking kits for auxiliary drains serve as effective deterrents against unauthorized access and tampering. By enhancing security measures, university personnel can mitigate the risk of vandalism and ensure the reliability of their sprinkler systems in critical areas. Additionally, clear signage

and education initiatives can raise awareness among campus stakeholders about the importance of preserving fire safety infrastructure.

The effective maintenance of fire sprinkler systems is paramount for ensuring the safety and well-being of university campuses. By adopting the strategies outlined in this guide and leveraging innovative solutions, university personnel can enhance the resilience and reliability of their fire sprinkler infrastructure. From streamlining remote testing procedures to implementing proactive corrosion prevention measures, each strategy plays a crucial role in safeguarding campus communities and assets against fire-related risks. By prioritizing fire safety and embracing a proactive approach to maintenance, universities can create safer environments for learning, research, and collaboration.

ABOUT THE AUTHOR: Ed Bauer has been in publishing for over twenty years. In his early career years, he worked on the staff at Mount Union College and for the last twelve years as publisher and managing partner at Flaherty Media has been privileged to tour many private higher education campuses and talk with numerous staff members who manage these multiple building facilities. He can be reached at ed@pupnmag.com.

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