

SPECWORK



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President's Thoughts

By: Billy J. Mathis, FCSI, CDT, Little Rock Chapter President



Here we start a new Fiscal Year. Your officers and other interested members and supporters are working hard to revitalize the Little Rock Chapter and steer it towards the status it had just a few years ago. Believe it or not at one time the Little Rock Chapter has over 140 members and an active Board and Committee Chairs of over 40 people. Why did we lose so many members. Some can be that people moved away or had job changes that didn't allow them to keep their membership. Others have passed away and still others felt that there was nothing in it for them.

I can tell you from personal experience that there is so much that membership offers. For one, you will belong to an organization that has only one requirement for membership, that you be in the Built Environment in any way. Whether you are a Designer, Engineer, Architect, Contractor, Building Manager, Plant Management, Construction Law, teaching Construction (I.E. Construction Management Classes, Architectural Classes, etc) or any other job or position where you support the Built Environment. Second, you will be a part of a nation-wide organization with members in all 50 States and even in Canada and overseas. This gives you access to a network of people that can help you in so many ways. Other benefits include Certifications, Education, and Leadership Training.

So you may ask, what can I do to become involved? Well we have many things we could be accomplishing if we had the member volunteers to lead and assist. One thing we could do is a fundraising event such as a Golf Tournament, Bowling Tournament, or some other fun event that not only raises a few dollars to help the Chapter fund travel for its members, but also help fund our Scholarship efforts. Another is our monthly education meetings. We need someone to help organize, find the presenters, and set-up the "lunch" for all attendees. All of these things are not huge time commitments and go a long ways to bringing attention to just what CSI has to offer. We also have need of volunteers to coordinate our Learning Library and Certification efforts. This might be a touch more involved, but is so rewarding when someone you are helping achieves their Certification. Finally, we need Officers and Committee Chairs (Directors) to help determine the path the Little Rock Chapter takes in the future. You could help set the path for the Chapter. Things like opening membership and representation from all over the State, trying to make this the Arkansas Chapter and not just the Little Rock Chapter (we can work on changing the name down the road). So you see, there is a great need for a few volunteers to do some small tasks that will combine to make this Chapter grow and become relevant again.

Quick Question: Dwelling Units—Motions to Unlatch

By: [Lori Greene](#), I Dig Hardware Blog

When Mark Kuhn and I were in Savannah for the recent BHMA meetings, we came across this door in the conference hotel, and a few days later I received a related Quick Question:



This application is not acceptable – even on a dwelling unit entry door where two releasing motions are permitted by the model codes. The lockset and latchset shown here would require two simultaneous motions to unlatch the door. This requirement has been clarified in the 2024 edition of NFPA 101.

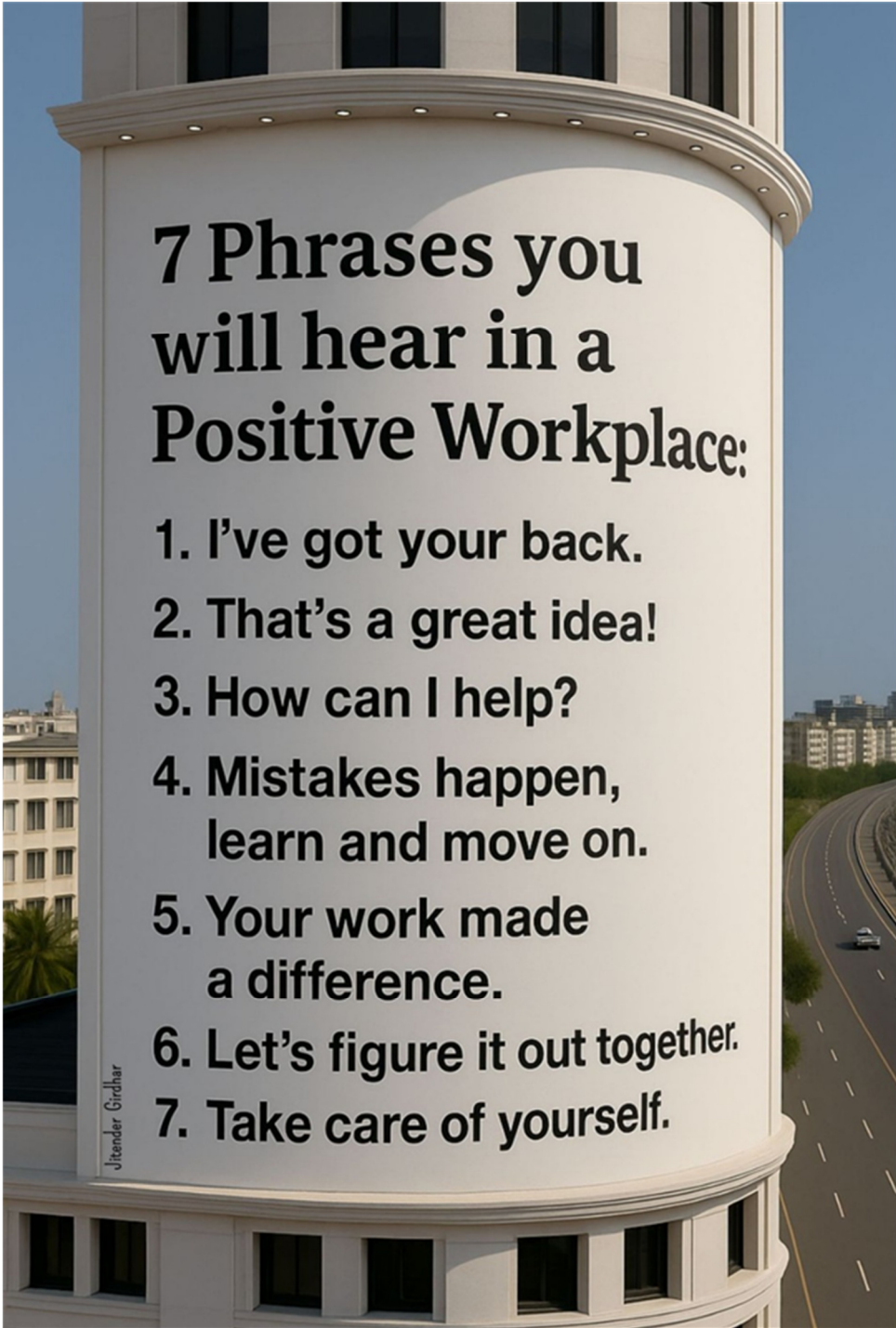
On a residential dwelling unit or sleeping unit, is there a limit to the number of security devices (night latches, dead bolts, manual bolts, security chains) that can be installed along with the latchset/lockset?

Doors in most locations require hardware that unlatches the door with one releasing motion, for example, turning a lever or pushing on the pushpad of the panic hardware. There are exceptions in both sets of model codes used in the US, that apply to dwelling units and sleeping units. These exceptions allow security devices in addition to the lockset or latchset, but how many of these devices may be installed? How many releasing motions are allowed?

The applicable excerpts from the model codes are below. The intent of the model codes is for a second releasing motion to be permitted for the unit entry, not a third, fourth, etc. So in my opinion, the model codes allow one lockset + one deadbolt (OR night latch OR security chain, etc.).

IBC-2024: *Doors from individual dwelling or sleeping units of Group R occupancies permitted to have a single exit in accordance with Section 1006.2.1 or 1006.3.4 are permitted to be equipped with a night latch, dead bolt, manual bolt, or security chain that requires a second releasing motion, provided that such devices are operable from the inside without the use of a key or tool.*

NFPA 101-2024: *Egress door assemblies from individual living units and guest rooms of residential occupancies shall be permitted to be provided with devices, including automatic latching devices, that require not more than one additional releasing motion provided that releasing does not require simultaneous operations, and provided that such devices are operable from the inside without the use of a key or tool and are mounted at a height not exceeding 48 in. (1220 mm) above the finished floor.*

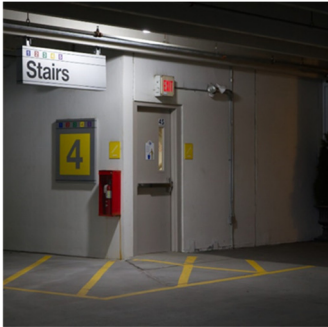


7 Phrases you will hear in a Positive Workplace:

- 1. I've got your back.**
- 2. That's a great idea!**
- 3. How can I help?**
- 4. Mistakes happen,
learn and move on.**
- 5. Your work made
a difference.**
- 6. Let's figure it out together.**
- 7. Take care of yourself.**

Quick Question: Parking Garage Panics

By: [Lori Greene](#), I Dig Hardware Blog



Today's Quick Question has come up many times, in reference to various types of buildings and spaces:

On a multi-level parking garage with a capacity of 600 cars, do the stair doors and exit discharge doors require panic hardware?

Compared to other code requirements related to doors, those that apply to panic hardware are very clear and have been quite stable over the past 20 years. Panic hardware is required by the model codes for egress doors equipped with a lock or latch, serving the following locations:

- International Building Code (IBC) and International Fire Code (IFC)
 - *Assembly or educational occupancies with a calculated occupant load of 50 people or more
 - *High hazard occupancies (any occupant load)
- NFPA 101 – Life Safety Code
 - *Assembly, educational, or day care occupancies with a calculated occupant load of 100 people or more
 - *Areas of high hazard contents with a calculated occupant load in excess of 5

So the answer to this question, whether we're talking about a parking garage, apartment building, office building, etc., is based on the use group or occupancy classification. Is a parking garage an assembly, educational, day care, or high hazard occupancy? Typically, the answer is no – a parking garage is usually a storage occupancy.

If the building or space in question IS one of the use groups or occupancy classifications that require panic hardware, we would then need to check the calculated occupant load (50+ for the I-Codes, 100+ for the NFPA codes). But panic hardware would not be required by the model codes for a storage occupancy regardless of the number of occupants. If the egress plan shows an assembly occupancy exiting through a parking garage (not common), panic hardware might be required for doors serving the assembly occupancy.

With all of that said, there are good reasons to specify/install panic hardware even where it is not required by code. Panic hardware – especially a rim panic – is durable, reliable, secure, and easy to use, even when your hands are full. Most panic hardware can easily support access control features, which have become very common in all building types. So it's a great choice for a parking garage, but no – it is not required by the model codes for storage occupancies.

Note that a parking garage might contain an electric room that is required by the National Electrical Code to have panic hardware. In this case, the panic hardware would be required for doors within 25 feet of the required working area around the electrical equipment, but would not be required for all of the doors between the electrical room and the public way. Refer to this Decoded article for more info.

Wordless Wednesday: Hospital “Egress”

By: [Lori Greene](#), I Dig Hardware Blog

During my hospital stay a couple of weeks ago, I was in a lot of pain but of course I was still checking out the doors. When the security guard used the reader to let me access the treatment area from reception, I wondered what the process was to get out. I didn't find out until I was sent home, but my inklings were right – the access control hardware (electromagnetic locks) did not permit egress.

My visitors, who spent most of their time watching Netflix while I slept, were assigned visitor badges. What was the purpose of the QR code? I have no idea – it definitely didn't unlock the doors. The doors in question are the main doors leading from lobby to the rest of the hospital – the restroom was also behind this door. The security guard would allow people in, and also had to allow people out unless they were staff members with an access control credential.



As many of you know, there are two code sections that typically apply to electromagnetic locks. One requires the doors to unlock via a switch in the door-mounted hardware, and upon loss of power. The other requires the doors to unlock for egress via a sensor on the egress side which detects an approaching occupant, an auxiliary push button, activation of the fire alarm/sprinkler system, and loss of power. While this door does have an auxiliary push button, it would not meet the requirements of the US model codes (this hospital is in Mexico). And there was no sensor to release the lock – my visitors had to tap on the door until the security guard let them out.

Although the model codes allow controlled egress locks to be used in certain health care units like pediatrics and memory care, this door would not qualify as a door where controlled egress is permitted. It serves the entire hospital, including outpatient areas, lab testing, and standard hospital rooms – not areas where patients require containment for their safety or security.

To learn more about the requirements for electromagnetic locks, check out this video. For more on controlled egress locks in health care facilities, here is a recent Decoded article.

Wordless Wednesday: Down at the Pizzeria

By: [Lori Greene](#), I Dig Hardware Blog

I know we have seen MANY of these blocked egress photos, but this one is pretty egregious. What I'm wondering is...are there no AHJs who eat here?

Thank you to Tim Weller of Allegion for today's Wordless Wednesday photo!

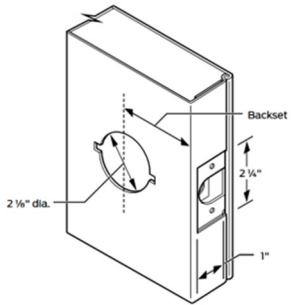


Back-2-Basics: Backsets

By: Mark Kuhn, I Dig Hardware Blog

Well...the recovery from my surprise appendectomy was tougher than I thought, but I think I'm finally on the mend! As I get caught up, Mark Kuhn has written the first post in a series about basic hardware terminology. Hopefully these posts will be helpful to the newer people in the industry.

HARDWARE NERD ALERT!!!!



Last month, I spent a week teaching at DHI's Spring Classroom Series School in Reno, and it occurred to me that there is a need to teach about some basic hardware terms and products. It also occurred to me that iDigHardware would be a great place to do this.

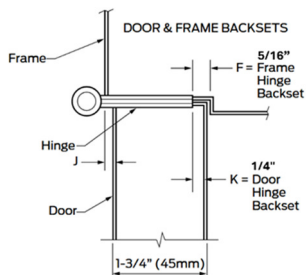
As I was teaching, I noticed one of the terms that everyone seemed to struggle with was "backset." I don't fault anyone for their confusion about the term backset, because as door and hardware folks we have typically heard it in reference to locksets.

When talking about a lock, the term "backset" refers to the distance between the edge of the door and the centerline of the lock (spindle, cylinder, etc.). The most common backset for commercial locksets is 2-3/4 inches, with 2-3/8 inches also available for some products. Occasionally, a lockset or hospital latch will have a larger backset.

It's important to realize that we use this term when talking about hinges as well. The hinge backset is no less important than the lock backset, and without an understanding of this dimension you can run into issues when ordering or hanging a door.

Here are some important facts about hinge backsets...

First of all, what is a hinge backset? The hinge backset on a door is the distance between the edge of the door and the hinge pocket. On a frame, the backset is measured from the face of the frame stop and the hinge preparation.



Second, it is important that the door hinge backset measures less than the frame hinge backset. In the example shown, you will notice that the backset on the door (1/4-inch) is 1/16-inch less than the backset on the frame (5/16-inch).

Why do we care about the hinge backset?

If you want to order doors to properly fit a frame, then you need to know all kinds of dimensions like hinge size and location, lock type and location, and hinge backset. Without these dimensions, the door won't properly fit the frame and it's possible that the door won't work or swing. In addition, we need to know the hinge backset to properly size a hinge, as the backset dimension is part of the formula for properly sizing the hinge. So, the next time someone asks you what the backset dimension of your door is...ask them "Which one? The lock backset or the hinge backset" and watch for the puzzled look.

What I Learned From CSI - Flat Coke and other beverages??

By: Gary Bergeron, CSI, CCS, GSR Technical Chair

Have you ever been at a line at a food drive-thru restaurant and noticed a large silver tank on the side or back of the building? If you are part of the building construction and design community you might know that silver tank is a carbon dioxide (CO₂) tank. The CO₂ is used to provide the carbonated water or fizz in your soda, pop, coke, cola, soda pop, or soft drink. This large silver CO₂ tank is a lower pressure tank and replaces the multiple old fashioned small red cylinder with a black carrying handle. It was when we did a five year commitment as concession chairpersons for our children's high school football games that I became intimately familiar with the little red high pressure tanks. Depending on their size the red tanks can be heavy, difficult to keep in stock, and filled with enough gas to last an entire high school football game.

The silver tanks hold much more CO₂ and are filled easily by the CO₂ supplier from a tank truck. These silver CO₂ tanks are filled at a much lower pressure which makes them less hazardous to the user. The CO₂ supplies the soft drink machine with carbonated water in a pre-mix or a post-mix manner. The soft drink fountain heads are calibrated with the correct amount of water, syrup, and CO₂ to provide a consistent drink quality. The water line is equipped with a stainless-steel backflow preventer at the fountain head to prevent any carbonated water from backing up into the domestic water system and causing copper poisoning. I didn't realize it until I started researching this article but there is food grade CO₂ and normal grade CO₂ which is very important. The food grade (99.9% or higher) is purer and yields a much better tasting product. There are safety hazards with the large CO₂ tanks. The amount of gas in the large tank can be enough to fill an entire room. OSHA estimates the current average CO₂ death toll at 90 fatalities per year. CO₂ poisoning occurs when the CO₂ concentration goes over 5,000 PPM in an enclosed area. This is why a CO₂ detector/alarm is located inside many restaurants that use the large capacity tank to alert the occupants of a leak. CO₂ is heavier than air and can fill a room undetected due to its colorless and odorless nature. The tanks are also required to be secured to an adjacent wall (usually with a yellow chain) to prevent them from overturning.



Bulk silver CO₂ tank w/ chain

If you want to learn more about the design and construction industry, please attend your local, regional, or national CSI meetings. Please contact Gary Bergeron at Gary@kelso-regen.com for more information.



Bulk silver CO2 tank



Small 10# and 20# high pressure CO2 tank

Specifying Practices: Controlling the Work and Related Matters

By: Kevin O'Beirne, PE, FCSI, CCS®, CCA®, CDT®



It is widely known and accepted among design professionals and specifiers that construction contracts typically confer on the contractor responsibility for construction means, methods, procedures, techniques, and sequences, together with responsibility for construction site safety and protection, and complying with the contract documents. These are often regarded as among the contractor's most important obligations. Despite this, owners, design professionals, and specifiers routinely incorporate language into construction contracts and specifications that muddles the waters of contractual responsibility for controlling the work, safety, protection of property, and related matters. While likely well-intentioned by drafters, clauses that have the potential to obscure otherwise clear contract language may also have the potential to result in a sharing of responsibility and liability, in the event of lost time or financial damages.

.Controlling the work, including construction means and methods, safety and protection during construction, and complying with the contract documents, is a broad topic, affecting the preparation of construction contracts and specifications, as well as construction contract administration. This article focuses on the preparation of the construction documents, especially the specifications and the documents in "Division 00 – Procurement and Contracting Requirements".

Foundational Contractual Requirements

The language of standard construction contracts in widespread use in the United States is generally quite clear, assigning to the contractor sole responsibility for construction means and methods, safety and protection during construction, compliance with the construction contract documents, and completing the work within the stipulated contract times. For example, AIA A201—2017, Standard General Conditions of the Contract for Construction, includes the following:

"§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures."

The foregoing not only assigns to the contractor responsibility for construction means and methods, but also for safety and protection. When the construction contract establishes specific means and methods of construction, which the contractor believes may be unsafe, Section 3.3.1 allows the contractor to propose alternative construction means and methods and expressly indicates that the architect's review is only for compliance with the architect's design intent for the completed project as a functioning whole. Section 3.3.1 does not require that the architect approve or accept the contractor's proposed alternative means and methods, regardless of whether the

contract documents expressly establish certain means, methods, procedures, techniques, or sequences. Thus, by including language such as, “Unless the Architect objects to the Contractor’s proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures”, Section 3.3.1 might be construed as obviating the need for change orders or architect’s supplemental instructions when the contractor elects to use means and methods other than those expressly indicated in the contract documents.

AIA A201—2017 Section 10.2 titled, “Safety of Persons and Property”, clearly establishes the contractor’s responsibility for safety of persons at, and adjacent to, the site, as well as the protection of property during construction. Section 3.5 (“Warranty”) requires, in part, “the Work will conform to the requirements of the Contract Documents and will be free from defects”, meaning that the contractor is solely responsible for providing work at the locations required, within the stipulated contract times, and of the quality established in the contract documents, without the intervention or assistance of any third-party, such as the architect or owner.

EJCDC C700—2018, Standard General Conditions of the Construction Contract, includes:

“7.01 Contractor’s Means and Methods of Construction

“A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

“B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor’s responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor’s expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor’s determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

“7.02 Supervision and Superintendence

“A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

“B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

“7.03 Labor; Working Hours

“A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.”

EJCDC C-700—2018 addresses safety and protection in Paragraph 7.13, which states in part:

“7.13 Safety and Protection

“A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.”

Similar to AIA A201 Section 3.5, EJCDC C-700—2018 Paragraph 7.17 (“Contractor’s General Warranty and Guarantee”) states in part, “Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective.” This extremely important provision makes the contractor solely responsible for complying with all aspects of the construction contract, without imposing on either the engineer or the owner any similar responsibility. The reason for this is fairly obvious: both AIA and EJCDC documents allocate contractual risk to the party best able to control that risk. Accordingly, the contractor is in the best position to control the work, its workers, scheduling, and other matters and, hence, possesses full responsibility for providing work in accordance with the contract.

Both AIA A201 and EJCDC C-700 include other provisions expressly indicating that the architect’s and engineer’s review and action on required submittals, visits to the site, and review and action on the contractor’s payment requests do not constitute approval or acceptance of the contractor’s means and methods of construction, or safety and protection measures. The design professional’s responsibilities and limitations of authority as set forth in EJCDC C-700 and AIA A201 are coordinated with their respective agreements for design professional services, including EJCDC E-500 – Agreement Between Owner and Engineer for Professional Services, and AIA B101 – Agreement Between Owner and Architect.

The Problem

Many project owners use their own, unique construction agreements and general conditions, rather than widely used standard contract documents, such as those by EJCDC and AIA. Owner-specific documents frequently incorporate language that decreases the clarity of provisions assigning to the contractor responsibility for construction means and methods, and safety and protection. Presented below are examples from actual construction contracts used by public owners:

“...the means and methods of construction shall be such as the CONTRACTOR may choose; subject, however, to the OWNER'S right to prohibit means and methods proposed by the CONTRACTOR which in the OWNER'S judgment: (1) shall constitute a hazard to the work, or to persons or property, or shall violate express requirements of applicable laws or ordinances; or (2) shall cause unnecessary or unreasonable inconvenience to the public; or (3) shall not produce finished work in accordance with the requirements of the Contract documents; or (4) shall not assure the work to be completed within the time allowed by the Contract.”

“If the OWNER discovers that the CONTRACTOR has failed to comply with the applicable federal and state law by failing to furnish the necessary flagmen, warning devices, barricades, lights, signs or other precautionary measures for the protection of persons or property, the OWNER may order such other, additional precautionary measures as required by law to be taken to protect persons and property.”

“Should the Contractor fail to remove any employee from work when requested or fail to furnish suitable and sufficient personnel and equipment for the proper prosecution of the work, the Engineer may suspend the work by written notice until compliance with such order is achieved.”

“The superintendence and the number of workmen shall be sufficient, in the opinion of the Engineer.”

“Contractor...shall discharge at the written request of the Authority any incompetent or troublesome men in his employ. None but men expert in their respective branches of work shall be employed where special skill is required.”

“If weather conditions prevent this contract from being completed in this calendar year, a winter shutdown or suspension of work may be ordered by the Commissioner of Public Works.”

“The Consultant shall have the authority to stop the work, wholly or in part, as he may deem necessary to ensure proper execution of the Contract Documents. The Contractor shall not suspend any operations without the permission of the Consultant.”

“Upon notice to the Contractor that the City deems any employee incompetent or negligent or for any cause unfit for duty, the Contractor shall immediately require such employee to correct his conduct, and if he is unable to do so, the Contractor shall immediately remove him from employment on the work.”

“The Contractor shall promptly comply with any other instructions, written or verbal, which the Owner or the Design Professional shall give to the Contractor with respect to the storage, handling, and use of explosives and inflammable materials as the work progresses.”

“If, in the judgment of the Commissioner, it becomes necessary to change the schedule of operations in order to accelerate the work, each Contractor or Subcontractor, when so ordered by the Commissioner, shall cease work at any particular point and transfer the Contractor’s workmen and equipment to such points and execute such portions of the work as the Commissioner may direct.”

“All temporary shoring necessary for the removal of existing work or for the installation of new work shall be deemed to be required by the Contract Documents and must be done in accordance with the directions and to the satisfaction of the County.”

“It shall be the Architect’s or Engineer’s responsibility to verify that the Contractor’s schedule is adhered to strictly. Should the Contractor’s progress fall behind the schedule established by the Contractor and approved jointly by the Owner and the Architect or Engineer, the Architect or Engineer shall promptly notify the Contractor in writing that the work must get back on schedule and further advise the Owner of the steps which the Contractor has taken to put the project back on schedule and enforce maintenance of the schedule.”

Contract clauses that allow or obligate the project owner or design professional to review, comment on, or direct the contractor’s means and methods, or safety and protection measures, muddy the contractual waters for controlling the work. As documented in many court and arbitration decisions in construction disputes, with a contractual right often comes a corresponding, associated duty. Therefore, the example contract clauses presented above could be interpreted such that the owner or design professional needs to affirmatively evaluate the competency of each worker employed in the construction, on an ongoing basis, and affirmatively examine the work for defects, as well as potential safety and protection concerns.

In a disagreement concerning injury to persons and property, late performance, acceptability of the work, or other matters, a contractor, perhaps in consultation with its legal counsel, may contend that contract clauses such as the examples presented above provide the contractor the right to rely on the skill, ability, timeliness, and judgement of the owner or design professional for the contractor’s construction purposes. Few owners or design professionals conduct themselves during construction with the intent of looking out for the contractor’s benefit, let alone being fully aware of, or sufficiently expert in, construction means and methods and their associated safety and protection measures. Therefore, contract language, such as the examples presented above, should be avoided or limited.

AIA A201 and EJCDC C-700, together with their associated professional services agreements, obligate the design professional to reject defective work when the design professional is aware of defective work, but expressly do not obligate the design professional to rigorously or continuously “inspect” the work, except to verify whether the work is substantially complete and to verify whether the work is fully complete and ready for final payment. In contrast, several of the example contract clauses presented above appear to interject the design professional or the owner into the contractor’s obligation to furnish work in accordance with the contract documents, thus blurring which party is ultimately responsible for defective construction.

Despite the reasonably clear language of documents such as AIA A201 and EJCDC C-700, specifications provisions have potential to alter these contractual requirements. These often appear in requirements for the contractor to furnish, as a submittal, construction plans for specific elements of the work, often together with a written plan setting forth the contractor's quality assurance and quality control measures. Selected examples of this type of specifications language include:

- "Excavation Plan: Prior to starting excavation operations, submit written plan to demonstrate compliance with OSHA 29 CFR Part 1926.650. As a minimum, the excavation plan shall include: ...2) Excavation method(s)... 3) Copies of "manufacturer's data" or other tabulated data if protective system(s) are designed on the basis of such data..."
- "Submit Site-specific health and safety plan to ENGINEER the sooner of: seven days prior to pre-construction conference, or 30 days prior to CONTRACTOR's scheduled mobilization at the Site."
- "Submit details for temporary supports and tie-downs as needed to stabilize the cantilevers during construction."
- "Submit erection plan, including sequence of erection; crane capacities; and the location, capacity, and elevation of any temporary supports."

It is common for construction contracts to require submittal of the contractor's project-specific quality assurance (QA) and quality control (QC) plan. Exactly what submitted QA/QC plans are required to address is often unclear. QC requirements for determining the acceptability of the work should not be established by a contractor-prepared submittal, but rather should be clearly set forth in each specifications section. Similarly, the specifications should indicate required QA, such as qualification requirements, mockups, and pre-installation conferences, for each work result. Indeed, SectionFormat--2007, by the Construction Specifications Institute, establishes articles titled "Quality Assurance" in "Part 1 – General", "Source Quality Control" in "Part 2 Products", and "Field Quality Control" in "Part 3 – Execution". When necessary, requirements for QA and QC are clearly established in the specifications, there is often little need for a contractor-submitted QA/QC plan for the project. When a comprehensive QA/QC plan submittal is required, the design professional's review could potentially transfer from the contractor some of the contractor's overarching responsibility to provide construction in accordance with the contract documents.

Requiring the contractor to submit its plan for executing the work, whether means and methods of excavation, safety and protection, temporary supports needed during construction, proposed types and capacities of construction equipment and machinery, and the like, obligates the receiving entity (typically the design professional) to review, comment upon, and assign a submittal disposition. Such requirements have the potential to impart to the receiving entity the responsibility to evaluate the adequacy of the contractor's means and methods of construction and, possibly, associated safety and protection measures. The potential liability for requiring, receiving, and reviewing such submittals may be significant, and has the potential to impart to the receiving entity some of the contractor's risk associated with such matters.

Recommended Practices

The documents comprising "Division 00 – Procurement and Contracting Requirements" for a construction project should clearly assign to the contractor sole responsibility for controlling the work. Caveats that the owner or design professional may interject themselves into the contractor's responsibility for controlling the work, complying with the contract documents, safety and protection, and other matters should be avoided. When a design professional is required to use a project owner's unique Division 00 documents, an experienced employee familiar with the project and contractual risk allocations should perform a risk management review of the proposed Division 00 documents. One of the results of such reviews should be written recommendations presented to the owner, with advice that the owner consult with their legal counsel, to appropriately revise contract clauses that have potential to blur the lines of contractual responsibility for construction means and methods, safety and protection, complying with the contract documents and complying with laws and regs.

Drafters of construction specifications should carefully consider whether requiring certain, contractor-furnished submittals, such as installation plans, proposed construction procedures, details of proposed construction equipment and machinery, health and safety plans, and QA/QC plans, are truly necessary to achieve the work results required by the construction contract. When such submittals or rights of the owner and design professional are being considered, specifiers, design professionals in responsible charge, and project managers should carefully consider that receiving and reviewing such submittals potentially increases their risk by transferring to them a portion of the contractor's liability. With a contractual right often comes a corresponding obligation to exercise the associated authority. Often, construction submittals are necessary only to indicate materials and equipment proposed for incorporation into the completed project, together with other common submittals, such as those requiring submittal of shop test results, field tests, and inspections, and suppliers' written instructions.

For certain types of work, such as construction of special (deep) foundations, the design professional in responsible charge may deem it necessary to require installation plan submittals. In such cases, certain aspects of the proposed means and methods of construction may have a strong potential to positively or negatively affect the quality of the completed work. Such cases should, optimally, be rare, and, when necessary, the requirements for such submittals in the specifications should include language similar to the following:

[Architect's] [Engineer's] review of, comments upon, assignment of an appropriate Submittal disposition, and retention in files, for [indicate specific type of work] installation plan does not, in any way, modify Contractor's sole responsibility for complying with the Contract Documents, construction means, methods, procedures, techniques, and sequences, and associated safety and protection measures.

When reviewing such submittals during construction, the design professional should avoid commenting on matters that will not affect the contractor's ability to comply with the contract documents and the design professionals design intent. A disclaimer similar to that suggested above should likely also be included with the design professionals' comments on such submittals.

Although virtually every specifications section includes certain requirements for construction means, methods, procedures, techniques, or sequences, excessively detailed requirements should typically be avoided unless they address matters likely to adversely affect the required quality of the completed work and achievement of the design intent. Specific means and methods should be required only when absolutely necessary.

To further encourage the contractor to apply its expertise and innovation in the construction, it may be appropriate to include in the construction contract documents, likely within a specifications Section 01 25 00 – Substitution Procedures, language clearly establishing requirements for proposed substitute construction means, methods, techniques, procedures, and sequences. Although some may contend that design professionals' specifications do not address construction means and methods, the fact is that specifications frequently require certain means, methods, techniques, procedures, or sequences. For example, industrial/process projects frequently include a specifications Section 01 14 16 – Coordination with Owner's Operations, stipulating specific construction sequences and restrictions on facility or process shutdowns when tie-ins to existing systems are necessary. Contractors on such projects frequently propose alternate sequences, combining separate shutdowns, request additional shutdowns, or request longer durations for shutdowns. Such requests, when received, should be considered as proposed substitutes, even though they are not concerning materials or equipment that will become a permanent part of a completed project. In other cases, specifications may require the use of certain tools or minimum curing periods, or other matters. Contractor requests to modify such requirements should be regarded as proposed substitutes.

Temporary construction facilities, such as temporary support of excavations, can be considered with three levels of importance:

1. A shallow excavation is required on a virgin site with reasonably stable soils. In this scenario, the contractor will typically be allowed to determine their own approach relative to the means and methods of supporting the excavations
2. An excavation, perhaps of somewhat extensive depth and with variable subsurface conditions, where potential for damage to property or unsafe conditions may be expected. In this case, the specifications will likely expressly require that the contractor retain the services of a third-party professional engineer to evaluate the excavation conditions, together with the contractor's intended construction means and methods, and, when necessary, design appropriate temporary supports.
3. A deep excavation in unstable soils adjacent to the foundation of a historic structure, or directly adjacent to a 72-inch diameter, 100-year-old, active combined sewer. In this scenario, where failure of the temporary supports of the excavation is likely to have an extremely adverse outcome, especially if entrusted to a contractor-retained professional engineer unknown to the owner and project design professional, the owner may desire to have the project design professional fully design the required temporary supports adjacent to the historic building or large, ancient sewer. Another example of this alternative is how highway projects for state departments of transportation include numerous sheets in the drawings showing required plans for maintenance and protection of traffic during construction. This alternative will, of course, increase the cost of the design professional's design phase services and may potentially be inconsistent with the contractor's preferred construction means and methods, but is likely to result in the owner and design professional having greater confidence in the required temporary facilities. While this alternative is relatively rare, when implemented, owners and design professionals should be prepared for the contractor to propose substitute means and methods.

Relative to temporary supports, whether for excavations or for temporarily supporting an existing structure or building element, the second alternative, above, is likely the most common. If a contractor-retained professional engineer is required to design temporary facilities and, during design, it is deemed that the contractor and their professional engineer are not fully trusted, documentation of the design of the temporary facilities may be a required submittal. In such a case, the specifications should clearly indicate what the project design professional will, and will not, review, similar in some respects to how AIA A201 and EJCDC C-700 address delegated designs. An example of such language in the associated specifications section is:

[Architect's] [Engineer's] review of, comments upon (if any), assignment of disposition, and retention of copy of such Submittal is only for the limited purposes of: (1) verifying that Contractor has complied with the requirement to retain the services of a properly licensed, registered professional engineer to design the required temporary facilities, and (2) determine by brief observation that such design appears to be reasonably complete. [Architect's] [Engineer's] review expressly does not encompass: (a) Contractor's construction means, methods, techniques, procedures, or sequences, and associated safety and protection measures; (b) whether such design is suitable for Contractor's construction means, methods, techniques, procedures, or sequences, and associated safety and protection measures; and (c) suitability, completeness, and accuracy of such design prepared by or for Contractor, including loading conditions that are the basis of such design. Contractor's professional engineer solely possesses professional liability for the design of the temporary facilities. Owner and [Architect] [Engineer] have the right to rely on the suitability, completeness, and accuracy of such designs, and Contractor's implementation thereof.

The design professional's staff reviewing such submittals should understand and comply with language like the example above when incorporated in the construction contract. To reduce the potential for inadvertently taking on some of the contractor's risk and responsibilities, submittal reviewers should refrain from exceeding the limits of the design professional's authority when commenting on such submittals.

In addition, it may be desirable to include in the project's specifications Section 01 71 23 – Field Engineering, basic, brief requirements concerning the qualifications of professional engineers, professional geologists, and other design professionals retained by the contractor for services related to controlling the work, such as:

1. Design Professional Services that are Not Delegated Professional Design of the Completed Work:

a. Where the Contract Documents require that Contractor retain a design professional such as a professional engineer, geologist, or architect, or when in Contractor's judgment retaining such entity is necessary for implementing Contractor's means, methods, techniques, procedures, and sequences, or associated safety and protection measures, retain a design professional with necessary skills, experience, and qualifications to perform the required services. Where required by the Contract Documents or by Laws or Regulations, such entity shall be legally qualified and duly licensed and registered to perform the associated design professional services in the same jurisdiction as the Site, unless otherwise allowed by Laws or Regulations or by the Contract Documents.

b. Owner and [Architect] [Engineer] shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed by such design professional(s).

Conclusions

In construction documents, contract language should avoid muddying the waters of contractual responsibility for construction means and methods, safety and protection, obligations to provide work in accordance with the contract documents, and other matters related to controlling the work. Design professionals should consider the potential for required submittals, such as installation plans, to potentially transfer to the design professional some of the contractor's obligations for controlling the work. In the relatively limited circumstances when such submittals are required, appropriate contract language should be included to expressly address the limits of the design professional's review and actions. Failure to do so may result in a significant shift of risk from the contractor to the project owner and the design professional.

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Kevin O'Beirne, PE, FCSI, CCS, CCA is a professional engineer licensed in NY and PA with over 35 years of experience designing and constructing water and wastewater infrastructure for public and private clients. He is the engineering specifications manager for a global engineering and architecture design firm. He has been a member of various CSI national committees and is the certification chair of CSI's Buffalo-Western New York Chapter. He is an ACEC voting delegate in the Engineers Joint Contract Documents Committee (EJCDC) and lives and works in the Buffalo NY area. Kevin O'Beirne's LinkedIn page.

LEED v5: The Game-Changer for Building Product Manufacturers

By: Ron Blank, Ron Blank and Associates .



If you've struggled to get your products specified for LEED projects in the past, you're not alone. The marketplace has presented numerous challenges, but the landscape is changing dramatically with LEED v5. The good news? You don't need massive venture capital to succeed—you need the right strategy focused on education and specification.

The Market Has Already Shifted

The writing is on the wall for building product manufacturers who haven't embraced transparency. According to Architecture 2030, 66% of the top 200 U.S. architectural firms now have material transparency requirements built into their standard specifications. This isn't a trend—it's the new reality. Transparency has evolved from a luxury to a prerequisite for market participation.

If you're still relying on vague marketing claims while your competitors are providing detailed product documentation, you're not just behind the curve—you're completely out of the conversation. Specifiers are already responding to these major marketplace changes, and manufacturers who fail to adapt will find themselves excluded from lucrative specification opportunities.

LEED v5 Materials and Resources: Your Primary Opportunity

The majority of specification opportunities for building product manufacturers lie within the LEED v5 Building Design and Construction Materials and Resources Category. This category focuses on minimizing embodied energy and other impacts throughout the entire lifecycle of building materials—from extraction and processing through transport, maintenance, and disposal.

The LEED v5 MR credit category includes seven key areas: Planning for Zero Waste Operations, Quantify and Assess Embodied Carbon, Building and Materials Reuse, Reduce Embodied Carbon, Low-Emitting Materials, Building Product Selection and Procurement, and Construction and Waste Diversion.

The Credit That Changes Everything

Among these credits, the Building Product Selection and Procurement credit stands out as the most critical for manufacturers. Sustainability experts have dubbed it "The LEED Credit That Changes Everything," and for good reason. This credit uniquely addresses all three impact areas: decarbonization, quality of life, and ecological conservation and restoration. More importantly for manufacturers, it offers more points than any other Materials and Resources credit.

LEED v5 has strategically consolidated several LEED v4 credits into this single, powerful credit. The retired credits—Material Ingredients, Sourcing of Raw Materials, and Environmental Product Declarations—along with pilot credits focused on social equity and circularity, have all been integrated into the Building Product Selection and Procurement credit.

The Five-Criteria Scoring System

Success in LEED v5 depends on understanding the five criteria used to score products: Climate health, Human health, Ecosystem health, Social health and equity, and Circular economy. The more criteria your product meets, the more points you contribute to the project.

Products achieving two or more criteria areas are considered multi-attribute, and those achieving higher levels across additional criteria areas receive higher values in credit calculations. This system rewards comprehensive sustainability rather than single-attribute improvements.

The credit applies to interior and enclosure materials across nine product categories: Paints and coatings, Adhesives and sealants, Flooring, Walls, Ceilings, Insulation, Furniture, Composite wood, and Plumbing fixtures.

Understanding the Three Achievement Levels

Products are evaluated across three distinct ranking levels. Level 1 represents a first step toward sustainability for a criteria area. Level 2 demonstrates marketplace leadership in a given sustainability attribute—products that peers aspire to achieve. Level 3 represents elite products at the forefront of sustainability.

Eligible products receive scores of 1, 2, or 3, which are added across criteria areas for a maximum score of 5 per product. This cumulative score becomes the product's "multi-attribute score." While multiple scores can be combined, only the highest value in each criteria area counts toward the total—double counting within specific criteria areas isn't allowed.

Essential Documentation Strategy

To contribute to LEED credits, manufacturers must submit compliant product documentation including third-party certifications, product declarations, and meet applicable standards. The investment level varies significantly based on your company's resources and ambitions.

Smaller and medium-sized manufacturers should consider starting with cost-effective documentation like Health Product Declarations (HPDs). Companies with extensive budgets can invest tens of thousands of dollars in comprehensive multi-attribute documentation like Cradle to Cradle Certification.

The Minimum Documentation Requirements

For manufacturers serious about LEED v5 specification opportunities, certain documentation is absolutely essential. First, an EPD Product-Specific Type III is crucial because decarbonization strategies comprise over half of LEED v5 credits. Without an EPD, you're essentially eliminated from consideration by many large firms if you manufacture a carbon intensive product.

Second, an HPD is the most requested and used material transparency document in the construction industry. HPDs represent a modest investment with significant ROI potential. If your product lacks an HPD, you're not even part of the conversation. Approved HPD Preparers like Elixir Environmental can help manufacturers develop LEED compliant HPDs and LEED documentation.

VOC emissions testing is equally important, particularly for education, healthcare, and commercial projects where project teams mandate these requirements. Finally, recycled content documentation with third-party verification ensures you meet AEC firm requirements for products containing recycled materials.

Direct vs. Indirect Contributions

There are two types of documentation needed by design professionals to specify your products for LEED. There is the testing data, product certifications, and product declarations. And then there is what we call LEED documentation. All of your declarations and certifications like EPDS, HPDs, and VOC emissions data is tabulated into what can be described as a LEED product scorecard, green data sheet, or what we call it: LEED Documentation. Design professionals use LEED documentation to identify what LEED credits your products can contribute to and then they review your EPDs, HPDs, and testing documentation to make their final selection.

Education and Specification: Your Path to Success

The most cost-effective strategies for reaching decision makers and securing product specifications center on education and specification support. LEED online courses, webinars, and podcasts provide direct access to the professionals who make specification decisions.

AIA and LEED Podcasts are another cost-effective way to reach LEED professionals. They are typically 70% cheaper to produce than regular AIA courses. Podcasts deserve special attention as they combine the accessibility of online courses with the engagement of morning radio shows. Architects, engineers, and interior designers embrace podcasts because they deliver valuable insights in formats that fit their busy schedules. Beyond education, podcasts collect valuable contact information—names, emails, and telephone numbers—allowing manufacturers to nurture relationships and convert listeners into loyal customers.

The Bottom Line

LEED certification has evolved from a nice-to-have to a market requirement for many projects. If your products aren't LEED compliant with proper documentation like EPDs and HPDs, specifiers will simply choose competitors who are prepared.

Your sales team must speak the language of sustainability and leverage educational tools like LEED podcasts, webinars, and online courses. Being unprepared for LEED v5 isn't just missing an opportunity—it's actively losing business you can't afford to lose.

The manufacturers who succeed in the LEED v5 era will be those who embrace transparency, invest in proper documentation, and commit to educating the market about their products' sustainability attributes. The question isn't whether LEED v5 will impact your business—it's whether you'll be prepared to capitalize on the opportunities it creates.



Ron Blank - President of Ron Blank & Associates | Author of Built to Last: Specification Secrets From Industry Giants

Transforming Tomorrow: How AI, Biomaterials, and Climate Science Are Reshaping Design Practice

By: Ron Blank, President Ron Blank and Associates .

The design and construction industry stands at an unprecedented inflection point. As design professionals, you are witnessing the convergence of artificial intelligence, innovative biomaterials, and climate-responsive planning that promises to fundamentally transform how we conceive, create, and construct our built environment. These emerging trends are not merely technological curiosities—they represent essential tools for addressing the complex challenges of urbanization, climate change, and resource scarcity that define our professional landscape today.

The AI Revolution: Beyond Automation to Intelligence

The integration of artificial intelligence into design practice has evolved far beyond simple automation. According to industry experts, "If 2024 was the year that AI in construction started to walk, then 2025 will be the year it starts to run." This acceleration is fundamentally altering how design professionals approach everything from initial concept development to project delivery.

AI-powered Building Information Modeling (BIM) is transforming architecture, engineering, and construction by providing professionals with tools to design, simulate, and manage structures with unparalleled accuracy. The technology enables design professionals to process vast amounts of data in real-time, making informed decisions that optimize both design outcomes and project efficiency.

The practical applications are already demonstrating measurable impact. Energy efficiency initiatives driven by AI analyze energy-consumption patterns and environmental factors to suggest improvements in design and operation, helping create energy-efficient buildings with reduced operational costs and environmental impact. This data-driven approach allows design professionals to move beyond intuition-based decisions to evidence-based design strategies.

Perhaps most significantly, AI is enhancing the collaborative nature of design practice. AI-powered tools within BIM platforms monitor project developments while identifying possible delays and offering remedial measures, strengthening communication channels between architects, engineers, contractors, and clients. This integration is creating more cohesive project teams and reducing the communication gaps that have historically plagued complex construction projects.

The generative design capabilities of AI are particularly transformative for design professionals. AI can help architects make smarter and more sustainable decisions when designing buildings by using data and insights from tools designed to optimize the design process, from improving energy efficiency to recommending eco-friendly materials. This capability allows design professionals to explore thousands of design iterations rapidly, identifying optimal solutions that might never have been discovered through traditional design methods.

However, the true power of AI lies not in replacing human creativity but in augmenting it. "AI's role in architecture signals a transformative evolution towards a collaborative, intelligent design process. As human expertise and AI's data-driven insights converge, an emergent, interactive design ecosystem is taking shape," explains Patrick Chopson, Chief Product Officer at cove.tool. This collaborative model allows design professionals to focus on higher-level creative and strategic decision-making while AI handles computational optimization and data analysis.

Biomaterials: Growing the Future of Construction

The emergence of biomaterials, particularly mycelium-based construction materials, represents one of the most exciting developments in sustainable design practice. This innovation is exemplified by Studio Weave's recent gold medal-winning installation at the Chelsea Flower Show, which demonstrates how biological materials can be integrated into architectural applications.

Studio Weave's structure features materials that carry their own narratives, with ash timber harvested from diseased trees in local forests woven and curved to shape the outer skin. Between the slats, natural light lands on the softly undulating surface of mycelium panels grown in Sebastian Cox's Kent workshop from agricultural byproducts, bringing both tactile richness and a low-impact material footprint.

The significance of mycelium extends beyond its environmental benefits. "We wanted to use mycelium not just because it's an innovative and carbon negative material, but also because there is this link between how AI operates and how mycelium behaves," explains Je Ahn of Studio Weave. This connection between biological and digital networks offers design professionals a new conceptual framework for understanding both material properties and information systems.

The practical advantages of biomaterials for design professionals are substantial. The pavilion provides a low-carbon and eco-friendly alternative to traditional structures that is also completely compostable. This characteristic addresses the growing concern about construction waste and end-of-life building management, offering design professionals a pathway to truly circular construction practices.

The fabrication process itself is democratizing advanced material production. Innovative furniture designer Sebastian Cox worked with Studio Weave to develop the pavilion's mycelium wall panels. Waste wood pulp is inoculated with fungus which colonizes the pulp to a stable form from which the panels can be cut. This relatively simple production method means that biomaterial manufacturing could become accessible to design professionals working at various scales and in diverse geographic contexts.

The modular nature of biomaterial construction also aligns with contemporary demands for flexible, adaptable building systems. The building's construction avoids permanence in favor of adaptability. Every joint, weave, and panel has been designed with disassembly in mind. This approach offers design professionals the ability to create buildings that can evolve with changing needs while maintaining environmental responsibility.

Climate Resilience: Essential Tools for Responsible Practice

The launch of the American Institute of Architects' Climate Risk Factsheet marks a critical evolution in how design professionals must approach project planning and risk management. This development reflects the growing recognition that climate adaptation is not a future concern but an immediate professional responsibility.

The Climate Risk Factsheet, available exclusively to AIA members, provides site-specific climate projections for hazards such as wildfires, floods, windstorms, and extreme heat. The guide allows architects to better inform resilient design strategies and document their professional standard of care. This tool transforms climate considerations from abstract global concerns into concrete, actionable design parameters.

The practical implementation of this resource is particularly significant for design professionals working across diverse geographic contexts. The PDF uses geographic coordinates to generate a forward-looking risk profile, including easy-to-understand hazard scores and time-based projections. This tool helps architects communicate long-term risks to clients and align project decisions with foreseeable climate impacts—even when building codes fall short.

The timing of this resource introduction is crucial for the profession. "The launch comes at a pivotal moment: the LEED v5 rating system will require climate resilience assessments for most project types, and courts are increasingly scrutinizing whether architects considered foreseeable hazards, not just those defined by outdated code." This regulatory landscape shift means that climate risk assessment is becoming a professional liability issue as much as an environmental responsibility.

The factsheet represents a proactive approach to professional practice that acknowledges the limitations of existing regulatory frameworks. Many building codes were developed based on historical climate data that no longer accurately reflects current or future conditions. By providing forward-looking climate projections, the AIA is enabling design professionals to design for actual future conditions rather than outdated historical patterns.

Integration and Future Implications

These three trends—AI integration, biomaterial adoption, and climate risk assessment—are not isolated developments but interconnected elements of an evolving design practice paradigm. The combination of AI's analytical capabilities, biomaterials' environmental benefits, and climate science's predictive power creates unprecedented opportunities for design professionals to create more responsive, sustainable, and resilient built environments.

Success in this evolving landscape will require design professionals to embrace continuous learning, interdisciplinary collaboration, and systems-level thinking. The integration of these technologies and approaches is not merely about adopting new tools—it represents a fundamental shift toward more responsive, sustainable, and intelligent design practice.

The projects and initiatives highlighted here demonstrate that these technologies are not theoretical possibilities but practical realities already being implemented by forward-thinking design professionals. The question is no longer whether these trends will reshape the industry, but how quickly and effectively we can integrate them into our practice to create better outcomes for clients, communities, and the environment.

As we move forward, the design professionals who thrive will be those who see these developments not as separate technological adoptions but as components of an integrated approach to creating more intelligent, sustainable, and resilient built environments. The future of design practice is being written now, and these trends provide the foundation for that evolution.

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Chapter Info

Chapter Website:

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Chapter Meeting Day and Time:

2nd Wednesday of Each Month unless otherwise specified by the Chapter President

Chapter Board Meeting Day and Time:

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