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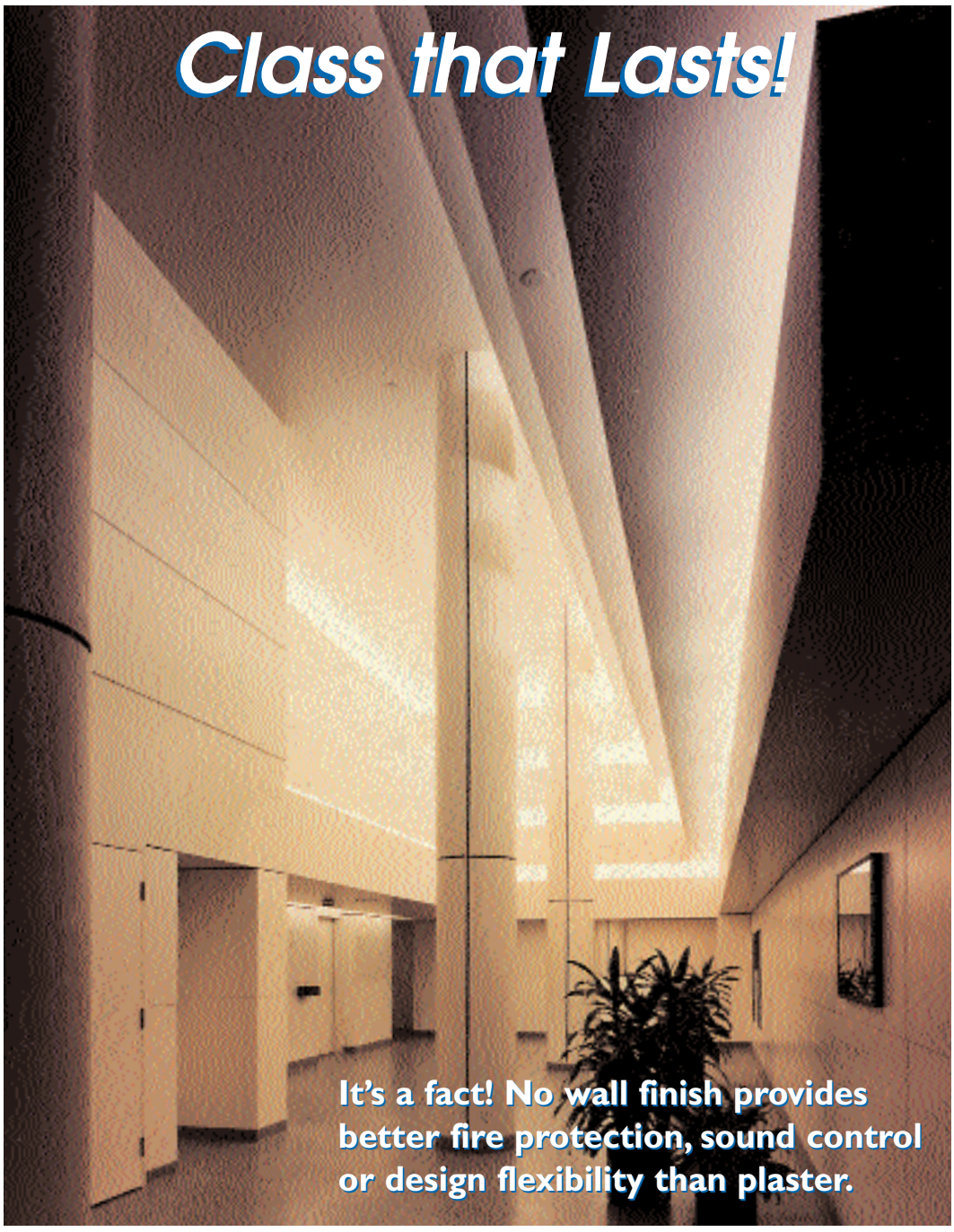
What's Inside:

The Art of Plastering



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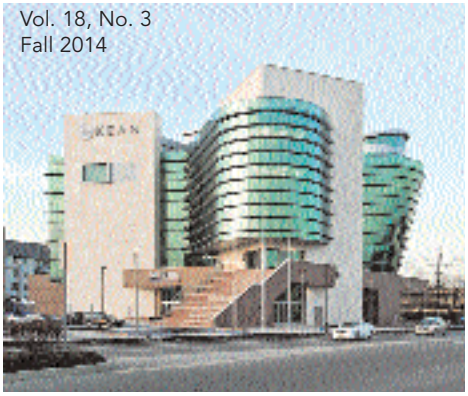

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Kean University Green Lane Building
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Photography:

FEATURES

ALA Midwest Architecture Conference and Product Show 42

ARTICLES

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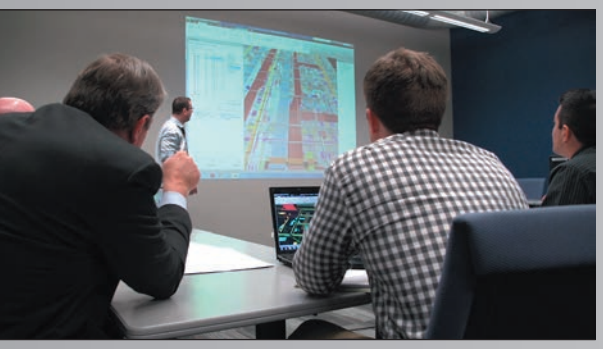

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Calling all Architects! It's time to register for the 2014 ALA Midwest Conference and Product Show on September 30th at Drury Lane. Secure your reservation now!

We have 80-plus exhibitors and a full day of seminars. This year you can register for the complete package or a modified day of activities. Additionally there is an evening social, and you will receive an hour of CE credit for visiting the exhibitors. New this year - there will be a photographer available to take head shots for social media at no charge.

We are thrilled to announce that our keynote speaker will be Gordon Gill of Adrian Smith + Gordon Gill Architecture. Per the firm's website, "Gordon Gill is one of the world's preeminent exponents of performance-based architecture" and will speak on "The Beauty of Utility". See our conference website at ALA2014.com for more information and registration.

This issue of "Licensed Architect" is a great one! There are four featured Architect firms and the exciting commercial projects that they create. We have a couple of contributed articles in addition to our regular featured articles on Insurance, ADA, Code, Business Planning, and Legal Issues. Plus there is an interview with Chicago Preservation Architect Thomas "Gunny" Harboe. Gunny's work includes the renovation / restoration of the Rookery, Sullivan Center (Carson Pirie Scott building) and the Burnham Hotel. Gunny was one of Chicago Magazine's Chicagoans of the Year in 2010.

I look forward to seeing you at the conference!

Jeffrey Budgell

Jeffrey N. Budgell, FALA, LEED AP
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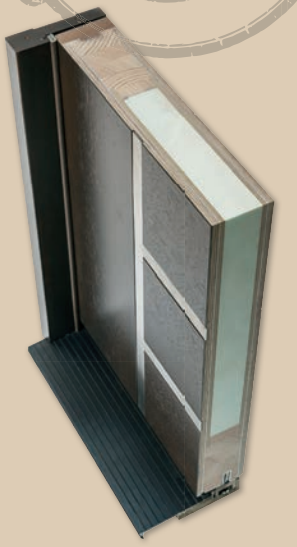

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Talking with...

T. Gunny Harboe,

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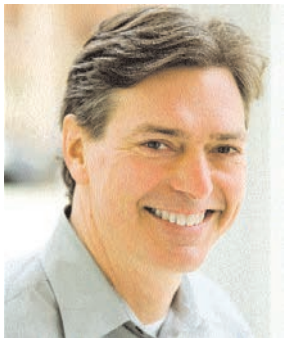


T. Gunny Harboe's work in historic preservation reads like a Who's Who of landmark architecture. From his award-winning restoration of The Rookery Building and the Reliance Building in Chicago while at the architecture, engineering and construction firm McClier (Now part of AECOM), to more recent projects as head of Harboe Architects, Gunny Harboe has a singular feel for what he calls "the history that resides in old structures."

Harboe spent nearly 18 years at McClier, before starting his own firm in 2006. Recent projects include Holabird and Roche's Marquette Building, Mies van der Rohe's Crown Hall, Louis Sullivan's Carson Pirie Scott Building and Holabird and Root's Chicago Board of Trade Building, all national historic landmarks.

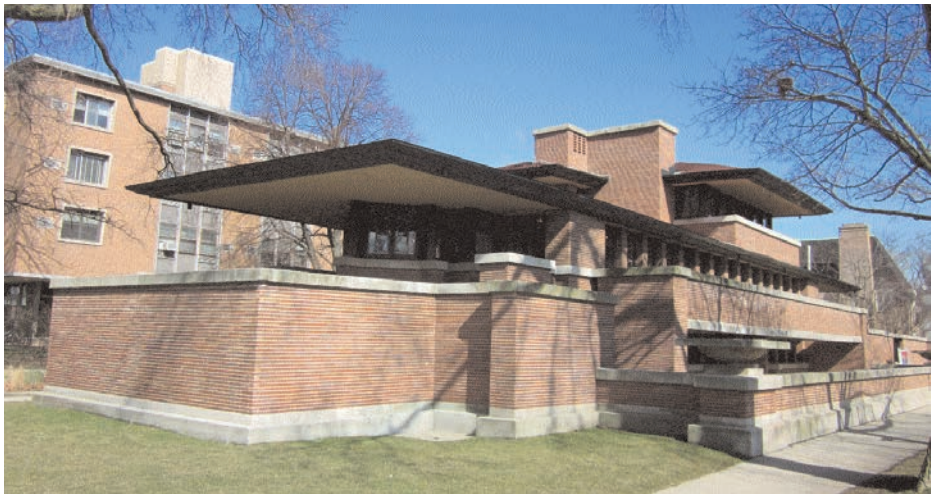
He was named Chicagoan of the Year by Chicago Magazine in 2010. He has served on the national board of the AIA, as a regional director from Illinois and is also a past president of AIA Chicago.

His other volunteer activities include serving as current Vice President of the ICOMOS ISC on 20th Century Heritage, past Vice President of the Landmarks Preservation Council of Illinois; and past Vice President of DOCOMOMO-US, where he currently remains a board member. He is also a current board member of the Frank Lloyd Wright Building Conservancy.

He received his M. Arch. Degree from MIT, which included study at the Royal Academy of Fine Arts in Copenhagen, Denmark. In 1998 he completed the course in Architectural Conservation at ICCROM in Rome, Italy.

Where were you born and raised? What events or experiences influenced your decision to become an architect?

I grew up in Northfield, Illinois. In the mid-1960s my family moved to New Providence, New Jersey for several years. Then we returned to the Chicago area and my parents actually bought back our old house in Northfield. I graduated from New Trier West High School.



Robie House

After college (an A.B. in history from Brown University), I had my first full time job building post and beam houses in Vermont for $3.50/hr. I then applied to Columbia University to obtain an M. Sc. in Historic Preservation. After finishing school I got a job working at the Metropolitan Museum of Art in New York rebuilding the Frank Lloyd Wright Room (from the Francis Little House) and the Greek Revival and Rococo parlors in the American Wing. It was the restoration of the Frank Lloyd Wright room that was a revelation for me. It was so impactful. Two factors influenced my decision to become an architect. First, it was the beauty of that room, and second, it was the way the project had been defined by the architects. I wanted to be in a position to define what should be done and how the work should be carried out by the contractors and trades people.

Historic or modern?

I admire great design of every era, and a lot of our practice is devoted to preserving modern architecture.

What's your favorite building?

One of my favorites is certainly The Rookery Building. Not only is it a fabulous building, but it was my first real preservation project. It was originally designed by Burnham and Root in 1888 and renovated in 1905 by Frank Lloyd Wright. Continental Bank had been planning a major rehab in the late 1980s and then went bankrupt and the building had to be sold. Thomas Baldwin III purchased the building in 1988 and McClier was given the job of overseeing the upgraded project, which took three and a half years. We found the original shop drawings in the basement and used them to authentically replicate Wright's interiors.

What inspires you?

I love art – modern as well as traditional - painting, sculpture, photography; basically everything. I particularly like modern sculpture such as the work of Henry Moore, Louise Nevelson and Alexander Calder. Our office is across from Federal Plaza which has the "Flamingo" by Calder. It is a delight. I enjoy walking by it every day.

Who are your favorite architects?

Of course for many reasons I would have to say Frank Lloyd Wright and Mies van der Rohe. I also really like the work of Eliel and Eero Saarinen. Because of my heritage, I like Danish architecture, particularly the work of Arne Jacobsen and his classic modern furniture designs.

Do have a message for young architects – how do you succeed as an architect in today's world?

They need to have passion and believe in what they are doing. Second, they should have an understanding of the general way the business of building buildings works. It's also important to recognize that clients (building owners) have needs and wants and that you are there to serve them. The role of the architect is to get everyone to have the same vision.

Tell us about your firm?

We have a staff of five architects. Two of them, Bob Score and Mark Kasprzyk, worked with me at McClier, so we have been together a long time. I like the size we are, because it means that I am still engaged in all of the projects.

Taliesin West

Unity Temple

What has been your biggest challenge?

Every project is different – sometimes the hardest work is getting the next project. We have been really lucky and have worked on some great buildings. What's often difficult is getting clients to understand the importance of doing the work to the right level of authenticity – to be true to the building. In this world of cheaper and faster, we need to help them balance what is the best thing to do for the long term preservation of the building with their own needs which of course include schedule and cost issues.

What are you working on now?

We're working on Robie House, Unity Temple and Taliesin West, all by Frank Lloyd Wright. We're also working on restoring the exterior of Wrigley Field with VOA.

What do you do to relax?

I like to read, travel and take photographs. When I go on vacation, I like going to Cape Cod to the beach. I also ride my bike to work regularly – I have been doing that for the past 25 years.

Plans for the future?

Stay in business (laughs). We want to continue to work on iconic buildings of the past because we understand their value and want to preserve them for the next generation. We want to have a positive impact.■

Sullivan Center Rotunda

Got Code Questions?
ASK KELLY

by Kelly P. Reynolds
ALA Code Consultant

Here are some more answers to your recent code questions

QUESTION? *- "In a fully fire sprinklered building, are they also required in elevator hoistways and machine rooms?"*

ANSWER: Fire sprinklers can be omitted under the following conditions:

- The room is dedicated for elevator equipment only;
- The room is protected by an approved smoke detector system;
- The room is separated from the remainder of the building with two hours (one-hour for buildings three levels or less);
- No unrelated materials stored in the elevator room;
- The elevator machinery is not the hydraulic type;
- Sidewall sprinklers required at the bottom of each hoistway no more than two feet above the floor of the pit. A fire sprinkler at the bottom of the hoistway is not required if the room is enclosed, noncombustible shafts and does not contain any hydraulic fluids.

QUESTION? *- "What is the difference between emergency and standby power?"*

ANSWER: Emergency power systems are for such life safety systems as egress lighting, emergency communications, fire pumps, high-rise building elevators and hazardous processes. Standy power systems are for loads not as critical and emergency power such as smoke control systems, certain elevators, certain hazardous processes, HVAC, and sewage systems.

QUESTION? *"When is a unisex bathroom permitted? Must it be handicapped accessible?"*

ANSWER: The *International Plumbing Code* permits a unisex (single) bathroom for an occupancy of 15 or less people. This occupant load of 15 people includes the aggregate total of both employees and customers. If only one restroom is permitted, then it must meet the handicapped requirements and be accessible.

QUESTION? *"We have a pizza parlor (A-2) that wants to add seating by renting the space next door and removing the demising wall. The only problem is that when you calculate the "allowable" area, it exceeds 100 persons and therefore requires fire sprinklers. The architect wants to reduce the number of seats to under 100 persons. Is that method acceptable?"*

ANSWER: No, that concept does not work. The code is based on "allowable area" in Table 1004.1.1 of the IBC. The code does permit calculating occupant load by "actual area", but that does not apply to this situation. Who would monitor the daily occupants load if tables and chairs are added during a busy dinner time? The "actual area" concept would be an occupancy such as a movie theater with fixed seats.

QUESTION? *"What are the opening requirements for duct inspection access required by the International Mechanical Code?"*

ANSWER: The duct opening must be identified with a exterior label of a minimum of 1/2-in. lettering "FIRE/SMOKE DAMPER, SMOKE DAMPER" or "FIRE DAMPER". The minimum access door is 18" x 16" when duct size permits. For dampers that are too large for an ordinary person's arm to reach from the outside of the duct to reset the damper and replace the link, then the access must be at least 24" x 16" to allow a person to enter the duct. Refer to *NFPA No. 90A* (Air conditioning and Ventilation Systems) for further details.

QUESTION? *"When the IPC requires a drinking fountain, can the faucet from an employee kitchen be an alternative for compliance?"*

ANSWER: NO. Neither a kitchen sink faucet or dispenser on a refrigerator meet the standards for drinking fountains.

QUESTION? *"Can an electrical outlet box be placed in a fire-rated gypsum system?"*

ANSWER: If it meets certain requirements. Metallic outlet boxes can be installed in wood and steel stud walls and partitions having gypsum board facings and rated of 2-hours or less. Individual boxes surface area cannot exceed 16 sq. in. The aggregate surface area of all the boxes is limited to 100 sq. in. per 100 sq. ft. Backed to back boxes on the same wall must be separated at least 24-inches diagonally. No more than one outlet is permitted per stud cavity in a fire-rated system. Approved nonmetallic boxes are only permitted where allowable by local code.

QUESTION? *"We have a residential duplex that requires a two-hour fire-separation between units. The designer had proposed using two, one-hour walls back-to-back. Is that acceptable?"*

ANSWER: The intent of the code is to provide a two-hour fire separation between units. Using two, one hour rated walls back to back is acceptable. However, each wall must meet all the requirements for a one-hour rating, including the finish ratings for both sides.

(continued on p. 45)

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Statute of Limitations Accrual Provisions as a Way to Reduce the Time Allowed to File Design Error Claims

by Shawn E. Goodman,
Sabo & Zahn, Attorneys at Law

Every jurisdiction has certain time limits, known as statutes of limitations, which serve to limit the time within claims can be filed. If filed beyond the time period mandated by the statute of limitations, claims are time barred and subject to dismissal on that basis alone, regardless of their merits. Most jurisdictions also have what are known as "discovery rules" which dictate when the statute of limitations period, whatever that time period is, begins to run. For example, the Illinois statute which governs design and construction claims provides:

> Actions based upon tort, contract or otherwise against any person for an act or omission of such person in the design, planning, supervision, observation or management of construction, or construction of an improvement to real property shall be commenced within 4 years from the time the person bringing an action . . . *knew or should reasonably have known* of such act or omission.[1]

Thus, in Illinois the statute of limitations is four years, but that four years does not begin to run until the time that the party bringing the claims "knew or should have reasonably have known of such act or omission." Furthermore, Illinois also allows that party up to ten years to make that "discovery," i.e., that it has been injured and may have a cause of action available to it.[2] So, the injured party has up to ten years to "discover," then up to four years after its "discovery" to actually file suit. In other words, it's possible that a cause of action could beat the statute of limitations even if it was not filed until up to fourteen years after the project was completed. Not only is that obviously a rather long period of time, but the question of when a claiming party "knew or should reasonably have known" of its claim can be the subject of much litigation. If there is any room for disagreement on that question, the case will have to proceed all the way through trial, both on that and all other matters in dispute. Only when there is no reasonable room for disagreement about when the party "knew or should reasonably have known" will a motion, either to dismiss or for summary judgment, succeed in knocking out the claim prior to all the time, trouble and expense of a full-blown trial.

Importantly, parties can deviate from the statute of limitations adopted by the legislature. They can do this by adopting their own, privately negotiated "statute of limitations" in their contract. The AIA form contracts, as of the 1977 versions, included terms which did not alter or shorten the actual statutory limitations period. They did better than that by eliminating the discovery rule altogether and providing a mandatory start date on which the applicable statute of limitations would begin to run, *regardless of when the aggrieved party discovered the allegedly actionable "act or omission."*

The owner-architect agreement, B141-1997, provided in section 1.3.7.3:

> Causes of action between the parties to this Agreement pertaining to acts or failures to act shall be deemed to have accrued and the applicable statutes of limitations shall commence to run not later than either the date of Substantial Completion for acts or failures to act occurring prior to Substantial Completion or the date of issuance of the final Certificate for Payment for acts or failures to act occurring after Substantial Completion. In no event shall such statutes of limitations commence to run any later than the date when the Architect's services are substantially completed.

In Illinois, this meant that the four-year statute of limitations began to run at substantial completion for the vast majority of claims, no matter whether the owner could have discovered the problem within those four years or not. The beauty of this clause is that it did away with all of the uncertainty which can arise in applying the discovery rule, fighting it out in court over when the owner knew or should have known of a defect.

The AIA accrual provision was the subject of various appellate court opinions. One prominent one was the case of Gustine Uniontown Assocs. v. Anthony Crane Rental, 892 A.2d830, 836 (Pa. Super. Ct. 2006). In that case, the plaintiff, Gustine, purchased thirty-five acres to construct a mall. The mall was built over a functioning coal mine. Gustine contracted with Architectural Services Group (ASG) as the architect for the project and entered into separate contracts with various contractors. On September 8, 1993, ASG certified that all the structures in the shopping center were substantially complete. Eventually, some of the stores' floor slabs began to buckle, and cracks appeared in walls, sidewalks and parking lots. The plaintiff did not file suit until 1999. Many of the defendants moved to dismiss based on the applicable four-year statute of limitations for breach of contract in Pennsylvania, and the two-year statute of limitations for tort. Gustine argued that any applicable statute of limitations had been tolled, or legally suspended from starting to run, by the discovery rule, among other defenses.

ASG was the sole defendant to succeed with its motion to dismiss, based upon the AIA accrual clause. The trial court was then upheld twice, first by the mid-level appellate court, then by the Pennsylvania Supreme Court, which specifically noted that the clause in question "precludes application of the discovery rule; indeed, that is its obvious intent."

It took several more years before Illinois

(continued on page 30)

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What is Considered an Accessible Route Within a Type B Dwelling Unit?

by Kimberly Paarlberg, RA
Senior Staff Architect, ICC

Note: References throughout this article are from the 2012 International Building Code (IBC), or the 2009 ICC A117.1 Accessible and Usable Building and Facilities (ICC).

ICC technical staff answers questions over the phone or through email as part of their service to Members. The title of this article is a common question that comes up:

So, by requiring an "accessible route" within a Type B unit, is the intent to require turning circles in every room and/or maneuvering clearances at all doors? There are allowances for institutional and residential buildings to not have elevators between floors (IBC 1107.7), but for this article, we will assume that either a building elevator is provided, or we will focus only on the ground floor where the Accessible, Type A or Type B units are provided.

An accessible route intended to be fully accessible to a person using a wheelchair is described in Chapter 4 of the A117.1. Elements include walking surfaces, doors, ramps, curb cuts, elevators and platform lifts (ICC 402.2). The route has to be wide enough to allow for a person using a wheelchair to move throughout the space. A maneuvering clearance is provided at doors to allow someone to reach the door hardware, maneuver out of the swing of the door so the door can open and then move into the opening through the doorway (ICC 404). Floor surfaces must be firm and stable (ICC 302). Thick carpets with thick padding make it very difficult for a person using a wheelchair to maneuver, similar to trying to move through loose stones or sand. When dealing with a change in level, there are options of curb cuts, ramps, elevators and, where permitted by IBC 1109.8, platform lifts.

Photo 1 – Maneuvering at a door

Accessible, Type A and Type B units are scoped in Group I and R (IBC 1107). When a person walks or rolls into a residential or institutional facility, all public spaces and corridors would be required to comply with the accessible route provisions in ICC Chapter 4. This includes a route from any arrival points, (such as the accessible parking or drop off), to an accessible building entrance; and from there to the shared areas in the building (e.g., lobby, cafeteria, mail room, laundry, activity rooms) and to the front door of all the Accessible, Type A and Type B dwelling or sleeping units. The self-same accessible route is also required within any Accessible or Type A units (ICC 1002.3 through 1002.8, 1003.3 through 1003.8). However, the "accessible route" requirements within a Type B unit are less stringent and are defined in ICC 1004.3 through 1004.8. To fully understand the requirements, it is important to look at the limits of the references:

Type B units are defined in the IBC as "consistent with the design and construction requirements of the federal Fair Housing Act

(IBC 202)." The basic idea is that a Type B unit is required to be useable by a person in a wheelchair, but it is not necessarily wheelchair friendly. Sections 1004.3 through 1004.8 provide specific references as to what is considered a Type B accessible route.

Photo 2
Private Residence elevator

The front door to the unit must provide a 32-inch clear width (typically a 3'-0" door), have maneuvering clearances on both sides (to allow for ingress and egress), have lever hardware and a smooth bottom surface on the push side (ICC 404, 1004.5.1). The other doors within the unit have to provide only a 31-3/4" clear width (ICC 1004.5.2.1). This can be met with most standard 2'-10" doors. Door hardware can include door knobs that meet the general egress provisions for door hardware (IBC 1008.9.1).

The route does not have to reach every living space within the Type B unit. Non-accessible areas can include areas such as a raised dining area, a sunken seating areas in a living room, or a mezzanine sleeping loft, as long as you can get around those non-accessible areas to reach the other areas within the unit (ICC 1004.3.1). While the route throughout the unit does have to be at least 36 inches wide (ICC 403.5, 1004.4.1), the floor surface could be anything, including a shag carpet with double padding, if desired. Turning spaces are not required in any room within the unit. The bathrooms that provide clearances at fixtures (either Option A or Option B) have to have a 30-by-48-inch wheelchair space past the swing of the door (ICC 305.3, 1004.11.2.1), but not a turning space. While the standard thresholds at doors or at changes in floor materials are 1/2-inch maximum, a 4-inch step down between the interior and exterior surfaces is permitted to an exterior deck (ICC 1004.4.2), and a 3/4-inch threshold is permitted at sliding doors (ICC 1004.5.2.2) providing access to that deck.

If a Type B dwelling or sleeping unit includes a change in level from a step to a story, there are several options: Ramp requirements within the unit are the same as a ramp anyplace else in the building (ICC 405, 1004.6). However, given the size requirements, ramps are not common within a dwelling or sleeping unit. Any type of passenger elevator can be used to provide an accessible route within a dwelling unit (IBC 1109.7, ICC 407, 408, 409, 1004.7). The elevator safety standard, ASME A18.1, allows for private residence elevators to be used to provide a route between stories within or serving an individual dwelling or sleeping unit. A private residence elevator is not permitted in other uses. Platform lifts, either inclined or vertical, can be used to provide a route between levels within a dwelling or sleeping unit (IBC 1109.8 Item 4, ICC 410, 1004.8). The platform lift safety standard, ASME A18.1, does limit the rise of a platform lift to 14 feet maximum. A platform lift does allow for a person in a wheelchair to move their device onto the lift. A chair lift that provides only a seat, while it may aid persons who have mobility issues, is not permitted as part of a required accessible route.

A multi-story unit in a building with elevator access outside the unit is permitted to be accessible only on the level with elevator access (IBC 1107.7.2), provided that level has a living space and a toilet room. The 2015 IBC adds that if the Type B unit includes a kitchen, the kitchen also must be on that level. The intent is that if someone has a temporary disability, they can at least have access to the minimum facilities in the unit. Best design practice would allow for a bedroom area and full bathroom on the accessible level, however, this is not a requirement. Many designers do include this feature for homes where the idea is to allow for "aging-in-place." A family could have such a need for a variety of reasons while living in their home, such as for a family member recovering from an operation, injury or illness that does not allow or limits the use of stairways; or a visiting family member or friend who cannot use or has difficulty using stairways.

Photo 3
Access in a kitchen in a Type B unit

Type B units, while consistent with Fair Housing Act requirements, do not provide, nor are they intended to provide, the same level of access for a person using a wheelchair as that which is found in public area, Accessible or Type A dwelling or sleeping units. IBC 1107.2 recognizes this in allowing for elements of Accessible or Type A units to be permitted within Type B units since they offer a higher level of accessibility. The ICC A117.1 has a special study group that proposed changes to make the requirements between the different types of dwelling and sleeping units in the 2009 edition have a clearer "step-down"' of requirements.■

EWING COLE

EwingCole, in practice for over 50 years, is a nationally recognized, fully integrated architecture, engineering, interior design, and planning firm of more than 300 professionals with headquarters in Philadelphia and offices in New York and Irvine, California.

Our success is based on creating relationships and trust, with an underlying emphasis on communication, design excellence and a dedication to client advocacy.

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5. Corporate & Workplace Facilities

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Philosophically, we approach every project as a collaborative process, based on developing consensus among stakeholders and providing the tools and knowledge for informed decision making. For each of our markets, we invest in developing and maintaining a high level of understanding of our clients' business, operations and trends for both today and in the future and using this expertise, focus on integrating functionality, technology and great design for buildings, site and environment. We strive to minimize depletion of natural resources and improve our resource efficiency.

National Lab: Thomas Jefferson National Accelerator Facility Technology & Engineering Development (TED) Building
Newport News, VA

The 70,000 SF facility provides space for nuclear physics, research and testing on behalf of the US Department of Energy. The challenge was to consolidate and integrate multiple functions spread over the campus into one environment to foster communication and collaboration among scientist, engineers and technologist as part of the new direction established by the National Labs.

The building provides an open arms entrance for the diversity of users and a new front door to the community to accommodate their changing direction and mission. The exterior image acts as a symbol to reinforce the move to an open environment to peer into the activities inside.

A geothermal well field, outdoor air energy recovery system and solar domestic hot water contributed to the project's LEED Gold certification.

Photos: Ron Blunt Architectural Photography

Bayhealth Medical Center Patient Pavilion

Dover, DE

The new Pavilion is a visible expression of Bayhealth's ongoing commitment to serve patients and their families with the highest level of care supported and enhanced by advances in technology and design. The program includes a full service Cancer Center and an Emergency Department accommodating 60,000 annual visits.

The design softens the institutional image of healthcare with form and landscaping working together to provide a welcoming entry while presenting non rectilinear spaces inside. Natural lighting is introduced inside to keep the connection to the outside.

Photos: Ron Blunt Architectural Photography

Anne Arundel Community College

Andrew G. Truxal Library Expansion & Renovation

Arnold, MD

The complete renovation and 32,000 square foot addition to the Andrew G. Truxal Library, an underutilized relic from the 1960's, transforms it into a 21st Century Learning Center, with less emphasis on warehousing the College's print collection and more on technology innovation, study options and accessibility of information. The centerpiece of the addition is the two-story Technology Learning Center, a 21st Century equivalent of the 19th Century grand reading room of traditional libraries. The TLC, as it is called, is surrounded by full-height glass which is imbedded with a ceramic pattern to control sunlight and reduce glare on the individual and collaborative computer work stations contained within it. This space has become both symbolically and functionally the heart of the transformed library. Complementary positioning of the LEED Gold addition created a new and dramatic image for the campus from the entrance drive.

Photos: Halkin Architectural Photography, LLC

Photo: © David Sundberg / Esto.

New York Football Giants and New York Jets MetLife Stadium

East Rutherford, NJ

The 2.1M SF stadium, site of Super Bowl XLVIII, is the only venue that is home to two professional teams in the same sport: The New York Jets and The New York Football Giants. The challenge was to design the best, most technologically advanced stadium, with an intimate seating bowl offering the best sightlines and an intimidating experience for opposing teams. The stadium is team-neutral on non-football days but transformable on game days to reflect the colors and logos of the respective home team.

The stadium facade is composed of a continuous array of aluminum louvers which create a sleek, unified, monolithic appearance. The louvers, which are the size of small airplane wings and visible from Manhattan, will be uniformly washed in colored light – green on Jets' home games and blue on Giants' home games.

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Licensed nationwide, Gruskin Group Principal, Kenneth A. Gruskin, AIA, co-founded the firm in 1984 as AGM Architecture + Design, P.C. Under his leadership, the firm's direction evolved into one of the first design firms in the U.S. to offer integrated design.

In 2014, Gruskin Group was named among the New York Region's top 100 design firms by *ENR*; among the top retail design firms nationally by *VMSD* (#19); and among the top 25 design firms in New Jersey by *NJBiz*. In addition, the firm has been ranked among the top firms nationally by *Architectural Record, Design: Retail*, and *Commercial Construction Magazine*, and has been named to the prestigious *Inc. 5000*. The firm and its professionals' award-winning work has been recognized by AIA, The American Concrete Institute, the Retail Design Institute, Chain Store Age, ICSC, ASID, New York Ad Club, New Jersey Ad Club, Graphis, and the Association of Graphic Communications. For additional information, visit www.gruskingroup.com.

Photography: © Kenneth A. Gruskin/Gruskin Architecture + Design, P.C.

Kean University Green Lane Building

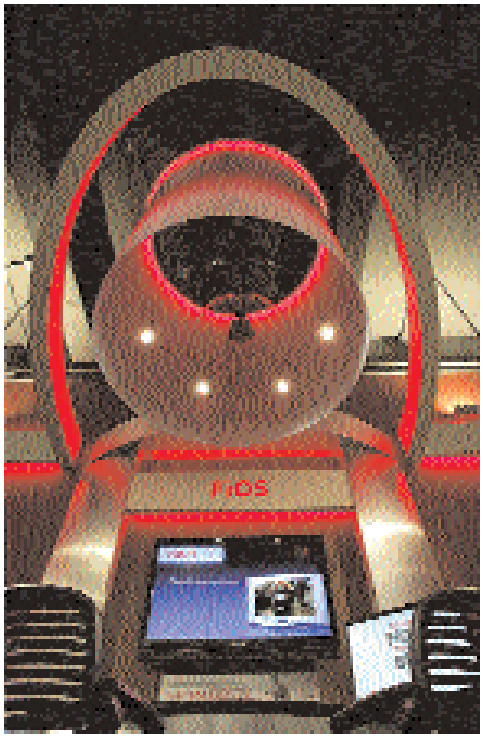
Union, NJ

Kean University's newest addition, a 102,275 SF academic building composed of glass, stone, concrete, and brick, serves as a gateway icon to its Union, New Jersey campus. The six-story building includes a café/retail space on the first floor, the Robert Busch School of Design and the university's expanding business programs on floors two through five, and a conference center on the sixth floor. The building offers students and faculty numerous opportunities to learn, socialize, and engage outside the classroom via its numerous lounges, breakout spaces, intimate nooks, outdoor terraces, and even corridors that are no longer wasted space, but are now prime places for educational gatherings.

Verizon FiOS Store

New York, NY

Verizon Communications asked us to develop a showroom and dedicated customer sales area for their FiOS service for the Peter Cooper Village community in New York City. This resulted in an award-winning design that immerses customers in the FiOS experience with all of the excitement one expects from their home entertainment. Our design created a personal connection to the community by including large lifestyle graphics depicting local customers actively using Verizon products in their neighborhood.



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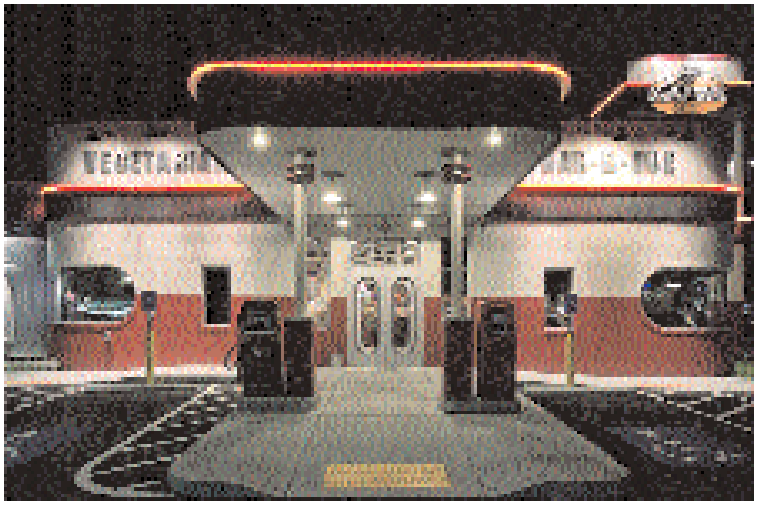


Double Wide Grill

Mars, PA

Double Wide Grill, designed as a vintage gas station-turned-restaurant, suggests a 1950's sensibility while capturing the country's newfound fascination with 'the open road' and adventure travel in the family car, trailer in tow. The stylistic approach evokes a nostalgic feel that connects to the public's love for 'motorabilia.' The design features the flowing 'Airstream' curves of a 1950's filling station complete with gas pumps and trailers, typical of that era. The goal was to offer diners the experience, fun, and sense of adventure of a road trip 'Route 66' style, even if only for the duration of a meal.

Photography: ©Kenneth A. Gruskin/Gruskin Architecture + Design, P.C.

LVDA

LVDA offers the personalized attention you expect from a small design studio combined with the established expertise and history of a large, full-service firm.

Established by several executives of the prolific Chicago architecture firm DeStefano Partners, Lothan Van Hook DeStefano Architecture LLC (LVDA) focuses on service and design excellence. Working together for decades on projects with a proven track record of success, LVDA founding Principals Avram Lothan, Mary Ann Van Hook and James DeStefano have been practicing architecture together for nearly 30 years. Led by Lothan as the Design Principal and Van Hook as the Managing Principal, this new generation consists of the previous firm's respected senior thought leaders in the Education, Residential, Community and Commercial market sectors.

Peace Corner Youth Center

Chicago, IL

The economical and sustainable design for the new building successfully represents the goals of this community organization while providing a sense of place and belonging for at-risks youths.

This youth center in one of the roughest neighborhoods on Chicago's west side is underserved by public parks and recreational programs. The client required a safe Center to encourage an alternative to street life and gangs.

Transparency and color invite kids into the building in an intimate and non-threatening way. The "floating boxes" of luminous polycarbonate house the program components to support courses in GED, computer literacy and work internships, while providing visual interest to occupants and passersby. Through the use of durable and economical materials and minimal finishes, the streamlined design creates a compact suite of spaces that are visually united yet functionally independent. A range of spaces from computer lab to gymnasium, are provided to channel youthful energy into productive pursuits.

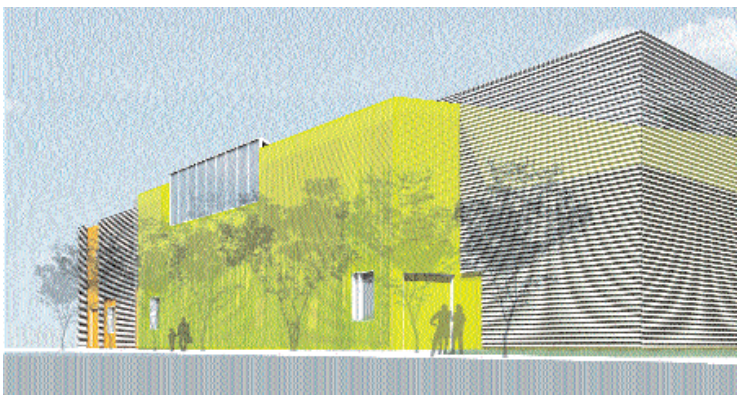
Built on an unsightly and unsafe empty lot next to its previous location, the one-story, 8,000 sf infill building preserves an urban center. Conceived as an inexpensive and fast-to-build construction effort, the simple building fills an urgent need while bringing a community together.

Northwestern University
Kresge Centennial Hall Renovation

Evanston, IL

The project involves the complete renovation and select reconstruction of the 90,000 sf Kresge Centennial Hall and the demolition and expanded reconstruction of a wing that connects Kresge Hall with an earlier addition. The project will fulfill ongoing programmatic and building systems' needs to provide an efficient, functional and contemporary academic environment.

Central to the University's goal for the facility is the integration of modern technology and teaching methods specific to art and language. The renovation will utilize multimedia applications and provide access to broadcasts via satellites. These technologically intensive spaces combine not only labs and testing facilities, but language immersion opportunities as well. LVDA's task is to provide a detailed and comprehensive analysis of the various stakeholders' space and program needs. The final design will be a collaborative effort between stakeholder groups and the design team that ties the complex together into a single, visually coherent structure. It will incorporate 'third' spaces; improve utilization, building organization, sustainable design; and establish a strong sense of identity for the Weinberg College of Arts and Sciences.



Legacy Charter School

Chicago, IL

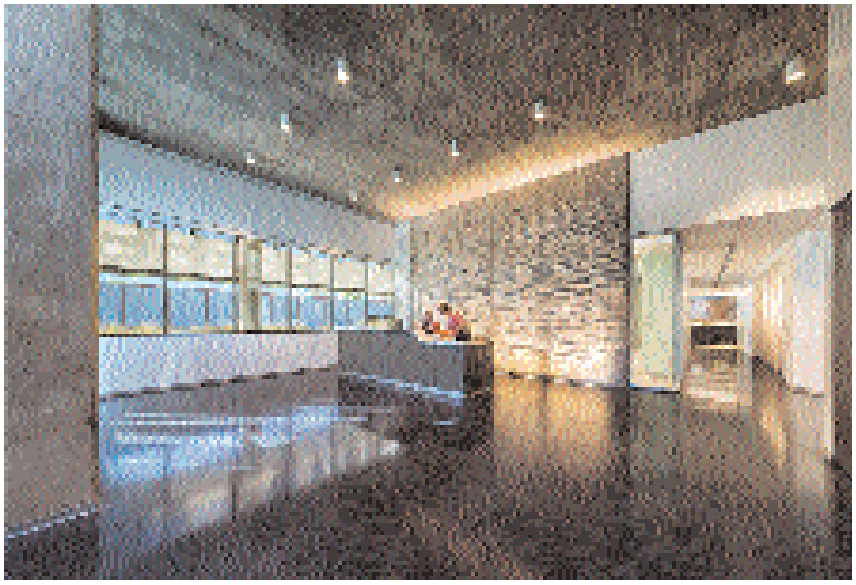
The independent Charter School is one of the top performing charter schools in the Chicago area. The new education center will accommodate comprehensive curriculum. In addition to planning and programming the new 72,000 sf school, LVDA worked with representatives from Legacy and several benefactors to test a range of potential sites before finally selecting this site on Ogden Avenue in the North Lawndale community. Adjacent to North Lawndale College Preparatory High School, Catalyst Howland Charter, and a police station, the site integrates a range of educational and community resources.

The client desires a sustainable building that provides a statement and a safe, enriching environment. The structure also has to be easy to maintain and built under a tight budget. Inexpensive, minimalist materials in bright colors and energy efficient systems support citizenship and civic responsibilities as well as the student-centered education central to Legacy's philosophy. The school boasts small class sizes and an array of social and educational services. Therefore the design features group study and work rooms, private breakout space, and traditional and specialty classrooms. The variety of learning environments and services ensures that each child's strengths, needs and learning style are nurtured.

WHITNEY
ARCHITECTS

Whitney Architects, a 30-year-old company, is a diverse group of architects and interior designers. Their studio-based approach embraces the collaboration of disciplines, expertise, and experience. Through providing a full-range of interior architecture services, from Programming through Construction Administration, Whitney develops innovative, personalized solutions through focused listening and creative problem-solving. A strong client relationship is their priority, with more than 43% recurring for 10+ years. These long-term relationships are developed by creating spaces attuned to each client's individual needs and work styles, thus contributing to their continued success.

Whitney recently celebrated their second year in new offices, which have enhanced collaboration and performance more than ever before. The restructuring has continued to foster an emerging transformation in the firm's culture, and developed solid partnerships with a growing list of major global corporations. This past year, Whitney placed number '91' on Interior Design Magazine's list of 'Design Giants', was named 'Interior Design Firm of the Year' at the Chicago Real Estate Awards, and was given the 'People's Choice Award' at the IIDA Red Awards.



Adjustable Forms

Lombard, IL

Adjustable Forms, a cast-in-place concrete company, looked to Whitney to renovate their dated facility with an eye towards reuse of existing materials and LEED accreditation. Collaborating with DLR Group, Whitney created a modern, minimalist 8,000 SF office featuring an employee lounge, collaboration area, BIM room, grand reception, and trellised courtyard.

Photos: James Steinkamp / Steinkamp Photography

Catamaran Headquarters

Schaumburg, IL

Catamaran recently doubled their headcount and engaged Whitney to define a new aesthetic for their relocated corporate headquarters. The final product includes a two story lobby and water feature, commercial kitchen and café, onsite clinic and fitness center, 25,000 SF full service conference center, 2 Network Services floors, and 6 staff floors.

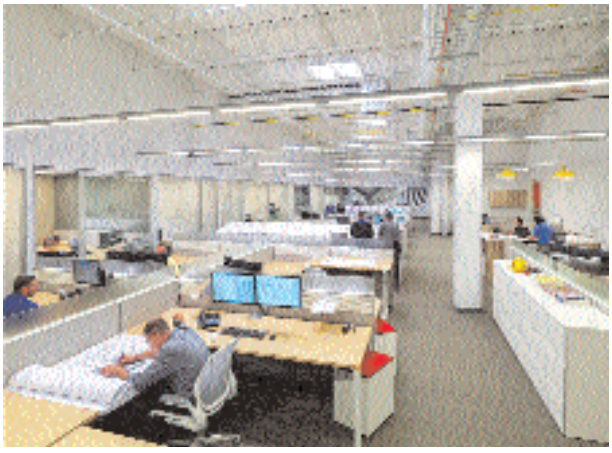
Photos: Christopher Barrett / Christopher Barrett Photography

Titan Electric

Itasca, IL

Titan Electric, looking to expand their facilities, asked Whitney to design an open space to promote collaboration and showcase Titan's abilities. The design includes a custom reception desk with a backlit conduit front, full-height glass walls, and an open ceiling with exposed HVAC, conduit, and electrical work by Titan.

Photos: James Steinkamp / Steinkamp Photography



Critical Brick Masonry Restoration Considerations - Selecting an Appropriate Mortar

Timothy M. Crowe, ALA, SE, PE
Wiss, Janney, Elstner Associates, Inc.

Improper repairs and poor masonry maintenance practices can often be the cause of damage or accelerate deterioration of exterior masonry assemblies. Masonry repair efforts need to accurately identify the cause of distress conditions and the system properties in order to develop appropriate repairs. This may sound like a statement of the obvious, but it is all too common in the industry to see masonry restoration efforts that approach problems, in a one size fits all approach, which, in some cases can do more harm than good. Prior to performing masonry remediation work, there should be a thorough examination of the existing assembly and distress patterns to accurately identify the causes of the distress and to select appropriate repair methods and materials to address these causes. When the repairs involve rebuilding or repointing, mortar selection must be carefully considered.

In simple terms, masonry assemblies are comprised of either solid stone, fired clay or shale, or cementitious units that are laid with a mortar. The mortar in turn is comprised of a fine aggregate, usually a well graded sand, and a binder. Different binders have been used over time and included various combinations of cement and hydrated limes. Other mortars utilized a non-hydraulic lime (or lime putty) and sand with no cement. When selecting mortar for repairs, it is essential that the masonry units and mortar components work together. Clay brick masonry system, discussed herein, have been manufactured for thousands of years and have been shown to have serviceable lives that can go on for centuries with proper care. For the purposes of this article, we will discuss mortar selection for the repair of clay brick masonry assemblies of the 19th and early 20th centuries.

In addition to having adequate strength to resist gravity and environmental loads, masonry assemblies need to be able to dissipate moisture and to accommodate expansion and contraction due to temperature and moisture. Mass masonry walls, that utilize multiple wythes of brick within the wall construction, control water from rains by absorbing and storing various amounts of moisture throughout the seasons. These systems must be permitted to dry out, typically both to the exterior and to the interior. Masonry wall systems utilized in the late 1800s and early 1900s have included multiple wythe assemblies comprised of solid brick units that include an air space, approximately 2 inches wide, and are historically referred to as hollow walls. Hollow walls were used to prevent the transfer of excessive moisture from the exterior to interior wall finishes. These systems included combinations of double or single wythe exterior walls and single or double wythe inner walls (or any one of a number of variations on this theme) that were separated by air spaces. The inner and outer wythes of mass walls are typically tied together with header bricks (although metal ties were also in use by the mid-19th century, this was more prevalent in England at that time).

From a material basis, there are significant differences between clay brick units, depending on the method of manufacturing. Clay bricks from the 19th century or earlier, were typically molded or pressed units fired in beehive kilns. The temperature ranges in these kilns were not easily controlled and, as a result, units were not fired uniformly throughout the clay body. Bricks located in different areas of the kiln would also experience different firing temperatures and their corresponding strength characteristics would also differ, depending upon their positioning within the kilns. The softer (low-fired) materials were typically utilized at interior walls or portions of the building that required less durable bricks. Brick units of this age typically have lower compressive strengths than clay bricks fabricated in the later 20th century and today. Based on experience with compressive strength tests results from various projects, clay masonry units fabricated in the 1800s seldom had compressive strengths in excess of 2,500 to 3,000 psi (which generally fall into the low end of acceptable compressive strengths per ASTM C216 for compliance with face brick masonry requirements). It is also not uncommon to encounter brick masonry units with strengths as low as 1,500 psi for bricks of this era. Modern bricks are fired at higher temperatures, can achieve compressive strengths in excess of 7,000 to 10,000 psi, and also have a greater propensity to expend in service in comparison to older bricks.

Figure 1. View of Morrill Hall, a 1890s university building at Iowa State, during an investigation prior to renovation.

Similarly, mortar used in masonry construction in the 1800s and before had a lower compressive strength that those commonly used today.

Typically, lime based mortars were used in masonry construction, with some natural cements and portland cements coming into play in the later 19th century. These older lime mortars (especially those without cements) are also more flexible and more

vapor permeable than modern mortars. Modern mortars include a greater amount of portland cement and have been more prevalent through the 20th century.

The strength of the original brick units and mortar need to be recognized during repairs. More specifically, masonry walls undergo volumetric changes in service. If pointing mortar is of a much greater strength than that of the underlying mortar, the non-uniform strength and/or resistance within the mortar joints between masonry units can occur with the harder mortar present in the outer surface of the wall, and stress concentrations at the edge of the masonry can contribute to masonry spalls as shown in Figure 2.

Figure 2. Close-up view of distressed masonry arch within a 1907 factory building in New Orleans, Louisiana.

The permeability of the repair mortar can play a role in holding moisture within masonry walls. As noted above, mass walls will absorb moisture in rain events and store this moisture until it has time to evaporate to the interior and the exterior through both the masonry units and the mortar. When repointing mortar is selected, a soft permeable mortar can assist in facilitating evaporation to the exterior. Hard mortars containing portland cement can have lower water vapor permeability and may result in the path of least resistance for the escape of moisture to be through the face of the masonry unit (Figures 3 and 4). This can also allow moisture to remain within the softer original mortar behind the repointing mortar. When moisture is held in the softer original mortar (especially if the depth of mortar removal was not extended to sound mortar), the binder can be leached over time and the mortar may experience more frequent freeze-thaw cycles, further accelerating the deterioration of this soft original mortar (Figure 5). This trapped moisture can also lead to the deterioration of embedded metal components, resulting in further distress conditions within the masonry facade.

The use of high compressive strength mortars with masonry repairs that use new brick units can also be a problem. New clay masonry units undergo permanent moisture expansion as they acclimate over their initial years of service. If repairs include replacement of significant regions of masonry with new clay units and new high compressive strength mortar, expansion within the masonry repair can damage the surrounding construction. Care is needed to ensure that the replacement material characteristics for older masonry systems, which can be relatively softer (of lower compression strength) than modern materials, are properly considered.

Figure 3. Close-up view of an impermeable repair mortar in an 1884 building in Chicago Illinois. Note the efflorescence deposition on the brick. This can be an indication that more moisture is escaping through the masonry units than through the mortar.

Figure 4. Deteriorated masonry due to a combination of a hard mortar and apparent application of sealer applied to the masonry surface at a building in Urbana, Illinois.

The current building code for masonry construction, is ACI-530-13, which was originally developed by the Masonry Standards Joint Committee of The Masonry Society, American Concrete Institute and Structural Engineers Institute and is currently maintained solely by The Masonry Society. The weakest mortar recognized in this code is Type N. Consequently, architects may tend to fall back on this mortar type to help ensure code compliance. However, for masonry constructions that date back to the 1800s and early 1900s, the use of Type N mortar will more than likely be too hard for these applications, both for use in repointing and for use with replacement masonry. Type N mortar has a significant amount of portland cement, compared to historic mortars, that can result in reduced permeability and lead to new deterioration potentials that did not previously exist.

Within the standards developed by ASTM International (ASTM), ASTM C270 is the Standard Specification for Mortar for Unit Masonry. The appendix of C270 also recommends the use of Type N mortar for exterior tuckpointing, and also designates Type O mortar as an alternate material for exterior tuckpointing above grade. More importantly, ASTM C270 recognizes that tuckpointing mortar should be of the same strength or weaker than that of the original mortar. ASTM

Figure 5. Deteriorated masonry in the 1884 theater and office building located in Danville, Illinois. Note the eroded mortar and displaced bricks.

E2260 (reapproved in 2012) is the Standard Guide for Repointing (Tuckpointing) Historic Masonry. This standard provides better guidance on repointing processes, and although intended for historically significant buildings, is appropriate for use on most buildings as a reasonable practice to help minimize damage to the existing masonry and provide appropriate long term repairs.

When repairing older masonry structures, it is important to identify the original mortar and to select a new mortar of comparable strength to the existing mortar. This can readily be accomplished via a petrographic analysis so that existing mortar characteristics, including the binder type and aggregate gradation can be identified per ASTM C1324. Successful masonry assemblies utilize repointing and replacement mortar with lower compressive strength and greater permeability than the masonry units. To reduce the risk of problems, mortar selected for repair should be a softer material that also separates (cushions) the individual masonry units in the wall, can accommodate expansion of new brick units, and can help facilitate evaporation to allow moisture to escape.■

Tim Crowe is an Associate Principal, with Wiss Janney Elstner Associates, Inc. (WJE) in Northbrook, Illinois, with over twenty-five years of experience in the design, investigation, and repair of archaic and contemporary building structures. He can be reached at tcrowe@wje.com.

Design Your Practice, Practice Your Design

by Rena M. Klein, FAIA

Business planning should be a no brainer for architects, who apply their design abilities to a host of different problems needing to be solved. Nevertheless, few firm owners actually plan their businesses, especially at start-up, which is often more opportunistic than strategic.

So, why write a business plan for your firm? You could similarly ask, "Why do architectural drawings before constructing a building?" Sure, you can figure it out as you go along when building something, but most architects will say it's a good idea to have a plan. Having a vision and a holistic view of how all the parts fit together can help anticipate problems, avoid mistakes, and is more likely to produce an outcome that works, no matter what you are building.

When you think about it, business planning is actually a design process. You would never design a building without knowing it's purpose, it's location, and at least something about the budget. The same should be true of your firm. It's possible to develop "design criteria" for your firm, similar to the process of programming. Figure 1 shows the stages of business planning in relation to the stages of design. It is easy to see how they run parallel to one another.

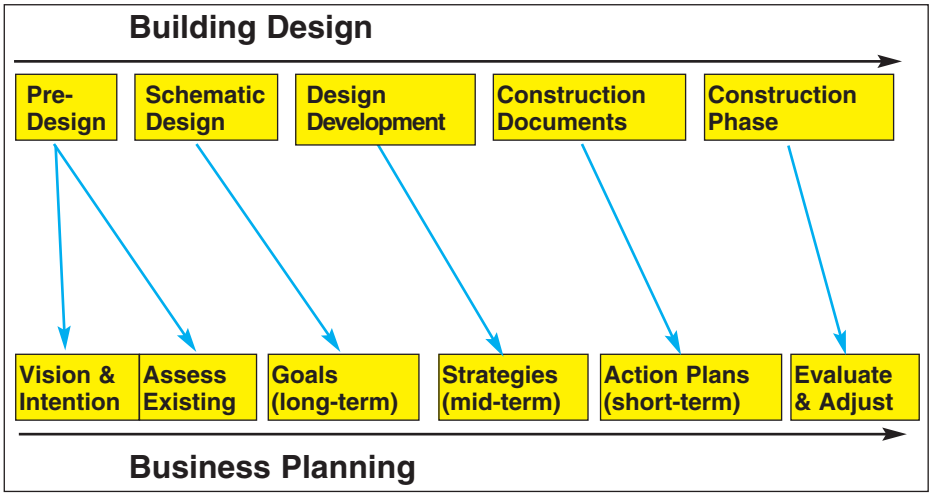


Figure 1: Business Planning Parallels Building Design

In business, having a plan gives you a basis to evaluate what is happening in real time against what you thought would happen, make adjustments as necessary, and have a guide to help make strategic business decisions. Like building design, business planning increases the likelihood of manifesting your vision for your firm and for your work-life.

What Makes A Good Business Plan?

As a way of exploring this question, business plan competitions have been around for a long time. Used for decades as part of education in business, in recent years business plan competitions have been popular in the technology sector. This makes sense given the number of start-ups and the opportunity for innovation in the marketplace.

This year, an Architecture Business Plan Competition was launched by Charrette Venture Group and another round is planned for 2015. Offering a prize of $10,000 to the

(continued on page 29)

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(continued from page 26)

Figure 2: Cover Page from Winning Business Plan
(courtesy Charrette Venture Group)

winner, the competition garnered hundreds of applicants from firms in business less than five years. From those, six finalists were chosen who presented to the jury live in Chicago in June 2014. First and second place winners, as well as an honorable mention, were chosen and awarded cash prizes.

What made the winning business plans stand out? Two qualities were most important:

1. Identifying a problem and providing an innovative solution that works in the marketplace.
2. Understanding market position, financial realities, and how to deliver projects to clients.

First Prize went to Scott Larrick of eleven: 59 studio from Austin, Texas. Austin is currently experiencing a boom in high-tech jobs and an in-flux of highly paid tech industry workers. As a result, housing prices are skyrocketing and many neighborhoods that used to be affordable are now out of reach to the majority of Austin residences. As one strategy to help alleviate the situation, the city of Austin allows accessory dwelling units (ADUs) to be built on lots in single-family zones. These backyard structures can become rental units that provide both affordable housing within existing neighborhoods and extra income to the current homeowners.

Seeing the opportunity to merge good design and benefit to the community, Scott and his team have devised a plan to produce stylish, modular, and highly sustainable backyard cottages. Built in a factory, delivered and installed on site, the company is planning two units that are priced to be affordable to the average homeowner. In addition, for every four units sold, the company intends to donate one ADU to a local non-profit that will place it where it is needed the most.

> "In business, having a plan gives you a basis to evaluate what is happening in real time against what you thought would happen, make adjustments as necessary, and have a guide to help make strategic business decisions."

The plan exhibited excellent market research and understanding of the problem that needed to be solved. Then it presented a solution that is simple, focused and doable. It exhibits potential for social benefit, while simultaneously providing job creation and the possibility of profit for the company. In addition, the idea can be applied to other communities that have similar circumstances – it could even become a franchise operation, if the company was inclined in that direction.

> At its best, design is the art of solving problems.
>
> Our mission is to meet Austin's skyrocketing demand for affordable housing by specializing in the design and construction of prefabricated sustainable homes between 500 and 850 square feet.

Figure 3: Mission Statement of eleven: 59 studio
(courtesy Charrette Venture Group)

To illustrate the second important aspect of a good business plan - understanding market position, financial realities, and how to deliver projects to clients - consider the plan submitted by the honorable mention winner, Ascent Architecture of Bend, Oregon.

This plan demonstrates a solid understanding of the firm's position in the marketplace, its business model, and its target clients/project types. The owner's history in the community and his understanding of the competitive landscape is evident in the business plan, which emphasizes the market segments that are available to the firm. Of these, senior housing is the most promising and the plan demonstrates how the firm can build on its experience in the project type to acquire more work.

Although the aspirations to solve social problems are less evident in this plan than the one previously described, the traditional aspects of firm development are treated with thoughtful and realistic analysis. How many projects, how much revenue, and how much overhead it will take to support a staff big enough to serve clients effectively are carefully outlined. How the firm is differentiated from its competition and how potential clients will be reached is also presented with clear understanding of the firm's position in the marketplace.

Building a Business Plan

Aspects of an effective business plan are outlined on the Architecture Firm Competition website as follows:

1. Strategy / Vision – what your vision is for your firm
2. Marketing & Client Acquisition – how you find clients, who you will target, the size of the market
3. Competition – who the competitors are & how you will compete effectively
4. Operations – how you will deliver for your clients
5. Management – who will run the firm
6. Financials – pricing your services, income & expense forecasts, and cash flow

Another way of looking at the parts of a business plan is to group these 6 sections into four main sub-plans:

1. Purpose – why are you in business?

(continued on page 46)

(continued from page 12)

addressed the AIA accrual clause, but that happened with the case of FDIC v. Konstant, 902 N.E.2d 1213 (Ill. App. 1st Dist. 2009). In Konstant, an insurance company, on behalf of the owners, brought suit against an architectural firm alleging breach of contract with respect to design and construction of a residence. The parties had entered into an AIA contract with the standard contractual statute of limitations accrual clause. The project was built and substantially completed in 1997. The owners discovered mold and water damage in 2002, and filed their complaint in 2005. The architect filed its motion to dismiss based on the passage of time. The court agreed, holding that the contract controlled the accrual date of the applicable statute of limitations and precluded application of the discovery rule. The correct accrual date was 1997, so the case should have been filed no later than 2001.

In addition to Pennsylvania and Illinois, the AIA accrual provision has been enforced by other courts across the country, including California, Kansas, Kentucky, Maryland, New Jersey and New York.[3] However, a recent case out of Oregon showed the importance of being sure to issue a certificate of substantial completion. In Sunset Presbyterian Church v. Brockamp & Jaeger, 325 P.3d 730 (Or. 2014), the owner, a church, hired the defendant, Brockman & Jaeger, to act as general contractor. The parties signed a standard AIA contract. Construction started in 1998, with the county issuing a certificate of final occupancy on May 28, 1999, additional work continuing during the summer of 1999, and the architect approving final payment on November 19, 1999. However, no certificate of substantial completion was entered into evidence.

In early 2009, the plaintiff discovered water damage, and on March 16, 2009, filed its complaint against a multitude of defendants. The general contractor filed an affirmative defense on statute of limitations grounds, relying on the accrual clause in the AIA contract to have started the running of the statute at substantial completion. The trial court granted the contractor summary judgment, but this was reversed by the appellate court, and that reversal was upheld by the Oregon Supreme Court. Even though the church had occupied and used the property beginning in February 1999, that did not establish the date on which the plaintiff's claims accrued under the contract. Instead, those claims only accrued on the date that the certificate of substantial completion was issued by the architect. Because the contractor did not introduce evidence proving that the architect had ever issued a certificate of substantial completion, Brockamp & Jaeger could not rely on the AIA contract section which sets the date of substantial completion as when the statute of limitations begins to run as the basis for obtaining summary judgment.

With the issuance of the 2007 AIA forms came a drastic revision to those clauses dealing with statute of limitations. "In making the changes to the relevant provisions, the AIA Documents Committee was primarily responding to complaints from owner groups that the B141-1997 and the B151-1997 caused the statute of limitations to run too quickly."[4] The result can be found at section 8.1.1 of the B101-2007, owner-architect agreement:

> The Owner and Architect shall commence all claims and causes of action, whether in contract, tort, or otherwise, against the other arising out of or related to this Agreement in accordance with the requirements of the method of binding dispute resolution selected in this Agreement within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Architect waive all claims and causes of action not commenced in accordance with this Section 8.1.1.

The discovery rule is back. Whereas, under the 1997 documents, in Illinois by way of example, the statute of limitations would run out four years after the end of the job, it now would run out four years after the owner knows or reasonably should know of the basis for a cause of action, provided that suit must be filed within ten years of substantial completion.

Obviously, the change implemented by the 2007 AIA form agreements represents a substantial expansion of the time period within which design professionals can now be subjected to claims of errors and omissions. Even worse, all of the uncertainty involved with application of the discovery rule is now fully eligible to come into play, even in cases in which there is a viable statute of limitations defense.

It would be wise for any design professional interested in limiting, as opposed to expanding, exposure to lawsuits to propose contract terms which include an accrual provision along the lines of the 1977 AIA forms. That could mean revising a 2007 AIA form before presenting it to a potential client for consideration. It could also mean using the old, 1997, forms in lieu of the 2007 versions.[5] A third, and very good, alternative is to make use of the ALA forms. ALA Document OA3-2007, for example, provides at section 17.0 that the "Statute of Limitations period shall commence to run on the Date of Substantial Completion of the project. In no case shall the Statute of Limitations period commence to run later than the date when the Architect's services are substantially completed." OA3-2007, just as did B141-1997, waives the discovery rule, and in even simpler terms than did the AIA form, begins the running of the statute of limitations on the date of substantial completion. In the absence of an accrual provision like that found in OA3-2007, the architect will literally be exposed to potential claims for years longer than would be the case had the parties agreed to have the statute of limitations accrue at substantial completion.■

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[1] 735 ILCS 5/13-214(a) (West 2012) (emphasis added.)

[2] See 735 ILCS 5/13-214(b) (West 2012) ("No action . . . may be brought against any person for an act or omission . . . in the design, planning, supervision, observation or management of construction, or construction of an improvement to real property after 10 years have elapsed from the time of such act or omission.").

[3] See In re Arbitration between Oriskany Central School Dist. v. Booth Architects, 206 A.D.2d 896 (N.Y. App. Div. 1994), aff'd, 654 N.E.2d 1208 (N.Y. 1995); Old Mason's Home of Ky., Inc. v. Mitchell, 892 S.W.2d 304 (Ky. Ct. App. 1995); Harbor Court Assocs. v. Leo A. Daly Co., 179 F.3d 147(4th Cir. 1999); College of Notre Dame of Maryland v. Morabito Consultants, Inc., 752 A.2d 265 (Md. Ct. Spec. App. 2000); Schultz v. Cooper, 134 S.W.3d 618 (Ky. Ct. App. 2003); Newman Mem'l Hosp. v. Walton Constr., 149 P.3d 525 (Kan. Ct. App. 2007); Trinity Church v. Atkin Olshin Lawson-Bell, 925 A.2d 720 (N.J. 2007); Brisbane Lodging, L.P. v. Webcor Builders, Inc., 157 Cal. Rptr. 3d 467 (Cal. Ct. App. 2013).

[4] http://www.aia.org/groups/aia/documents/pdf/aiab078767.pdf

[5] Of course, using the 1997 forms is easier said than done, because AIA "retired" them as of May 31, 2009, and they are no longer available for purchase.
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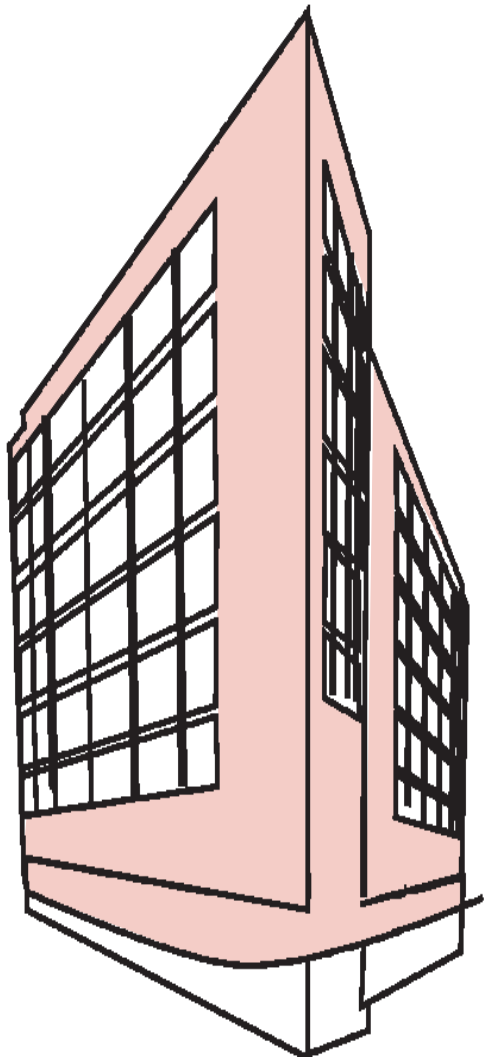


Why Condo Projects Are So Risky

by Dan Buelow,
Managing Director of Willis A&E

Most insurance carriers that specialize in Architects and Engineers' Professional Liability (PL) would agree that condominium projects are one of, if not the most hazardous project types when it comes to claims against design firms. In fact, many of the more seasoned carriers would tell you that the average loss ratio on condo projects is in excess of 300%. In other words, for every one dollar in premium earned these carriers are paying out three dollars in losses. No wonder A&E firms doing much work in this area are finding themselves in a severely constricted marketplace and paying a much higher rate than most other firms for their Professional Liability insurance. Whether you are currently doing condo work now or may consider it in the future, it would be wise to recognize the inherent risks of condo projects.

So, why are condo projects so risky?

1. **Third Party Exposure** – Most PL claims against A&E's come from their Clients versus Contractors or Third Parties. Condo projects however, are unique in that they have a significant third party exposure. While the Design Professional will negotiate their contract with their Client, and hopefully make the effort to establish and manage their client's expectations, on a condo project they ultimately end up in bed with a lot of condo owners - that they most likely never even met.

(continued on p. 32)

(continued from page 31)

2. **Residential Exposure** – All residential projects are inherently risky given the consumer is typically unsophisticated. The A&E is tasked with interpreting the dreams of their unsophisticated client - which creates an emotionally charged exposure. Condo projects have this element of risk which is further increased by the fact the A&E never had the opportunity to select or establish any expectations of these residential condo owners.

3. **Multiple Potential Claimants** – Every night these emotionally charged unsophisticated condo owners are lying in their beds looking at their ceilings and, if there is a problem in unit #1, there most likely is the same problem in Unit #301.

4. **The Homeowner Association** – After a restless night sleep these 301 or so unit owners get together for a favorite pastime, the HOA meeting. This invariably escalates into a discussion about the cracks in their ceilings and the faulty design of their units.

5. **The Plaintiff Attorney** – It's safe to assume that there are a bunch of plaintiff attorneys that have in their docket system the statute of limitations of every condo project that has ever been built. It's also reasonable to suggest that these good folk will contact the manager of the condo/HOA just before the statute of limitations runs out the Plaintiff Attorney to advise them that it is the HO Manager's "fiduciary responsibility" to advise their HOA members that time is running out if they want new ceilings, etc. - and to bring legal action to collect for any design flaws….

6. **The Single Purpose LLC** –When it hits the fan, the developer is often nowhere to be found - leaving the A&E team holding the proverbial bag.

7. **The Developer** – Not all Clients are created equal and developers have proven to be on the more hazardous end of the spectrum when it comes to lawsuits against A&E firms.

"Most PL claims against A&E's come from their Clients versus Contractors or Third Parties."

Managing Condo Risk

In 2008 I was asked to present a risk management program at the National AIA Convention in Boston titled, "Managing The Condo Craze". By the time I showed up for my presentation the condo craze was over. While we are not at the moment in the midst of a condo craze, it's safe to assume that condo projects aren't going anywhere and we've already seen this market pick up. I have a number of A&E clients that do a fair amount of condo work and have been successful at it. I believe the key to their success is that that don't dabble in this work but rather are well versed in and do a good job managing the inherent risks of condo projects. This begins with having well thought out "go/no-go" procedures in place when evaluating prospective clients, the contract(s) and a firm's team capabilities. The following are some risk management considerations I would encourage any firm doing condo work to address:

- **Client Selection** – try to select a client who will be around after the completion of the project. Be wary of the single purpose LLC and be diligent in qualifying your prospective client. Find out how the developer plans on marketing the project. Will the promotion be realistic and will your firm name be included?

- **The Contract** – This is one project type you should strive to most if not all your "deal makers" and "deal breaker" contractual provisions are adequately addressed. You want an agreement that is fully insurable and ideally includes a waiver of consequential damages and limitation of liability clause. Work with legal counsel on your contract and include a "condo rider" that would address the owner and HOA obligations specific to maintenance. Develop a Maintenance Manual – and have it incorporated into the HOA's bylaws binding the HOA and individual purchasers.

- Require a project peer review and constructability review of the design.

- Make sure there are adequate contingency funds budgeted for the project.

- Insist on providing full-service construction observation and administration.

- Require the developer have each purchaser inspect the unit and common areas for defects and sign a certificate of satisfaction.

- Require the developer to incorporate an ADR by Covenant provision.

And….
if you are going to design a condo project, design it without a common meeting space!

Dan Buelow is Managing Director of Willis A&E, a specialty unit of Willis Inc., aninternational brokerage firm. For more information on this topic or Willis A&E contact Dan at Dan.Buelow@Willis.com or visit www.WillisAE.com

The Ins and Outs of Engineered and Composite Wood Doors

by: **Yuri Nekrasov, Business Development Manager**
Doors For Builders Inc.

Industry-leading architects are constantly searching for ways to enhance people's lives through innovative technology and design. When selecting entry doors, architects are faced with a broad variety of choices. More often than not, residential construction requires heightened attention to aesthetics on top of superior performance. Due to such requirements, aesthetics of wood, combined with modern engineering techniques, countless customization options that complement a broad range of architectural styles, are preferred.

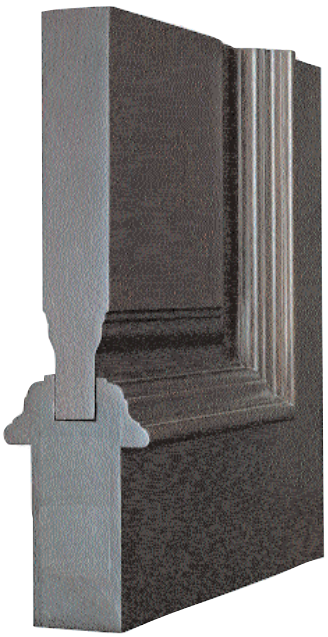
(continued on p. 34)

(continued from page 33)

ENGINEERED WOOD DOORS:

■ Intro

For centuries, natural wood has been used to create a perfect combination of beauty and durability. Each piece of wood is truly unique and naturally becomes the best choice for a sophisticated and individual look. Wood is also a practical choice, known for its natural insulation qualities, and being a renewable material. When properly finished and maintained, wood is exceptionally durable and resistant to time and elements.



■ Construction Techniques and Materials

The best engineered wood doors are built from premium kiln-dried (10%+/-2%) grade wood components. All stile and rail components must be engineered for durability and stability. The finger-jointed and edge-glued core construction creates a system that is more stable than solid wood, reducing the possibility of the door warping, splitting, shrinking or expanding. For enhanced stability, the core of engineered wood doors must contain the same solid wood species as the outer ply i.e. Mahogany, Cherry, Teak, Knotty Alder, Ash. The outer-facing ply of 1/4" thick is preferred as it will allow for multiple refinishing and there is no veneer to delaminate.

For optimal performance, the panels should be free-floating, allowing for slight movement and natural adjustment as the unit ages. This will greatly reduce the risk of the panel cracking. The panels should be completely prefinished and sealed on all six sides before being installed; making sure that no unfinished part of the panel will show up with time.

A factory-finished product, which is stained immediately following door completion, is far superior to alternatives, as it will not allow for moisture penetration. Despite manufacturers' stringent requirements, most architects and builders will agree that it is next to impossible to immediately finish the door system upon installation. In addition, there is no sure knowledge of transportation and storage conditions of your doors prior to delivery. All these factors will negatively affect ultimate durability of your doors.

The best engineered wood doors in the size of 42" wide, 96" tall, and 2-1/4" thick or smaller will optimally perform with a standard mortise lock set; no reinforcement by a multi-point lock system should be required. For the door exceeding the above parameters, the multi-point system is recommended.

■ Ideal Requirements

Direct exposure to extreme weather conditions including direct sun light, rain, and snow will have a negative effect on even the most advanced engineered wood doors over time. A proper overhang is recommended to protect the unit. The proper overhang should project outward at the minimum of one half of the door's height. If there is Western or Southern exposure, direct sun light might still be received. In such cases, the recommended overhang should project outward at two thirds of the height of the unit.

FLUSH / COMPOSITE DOORS:

■ Intro

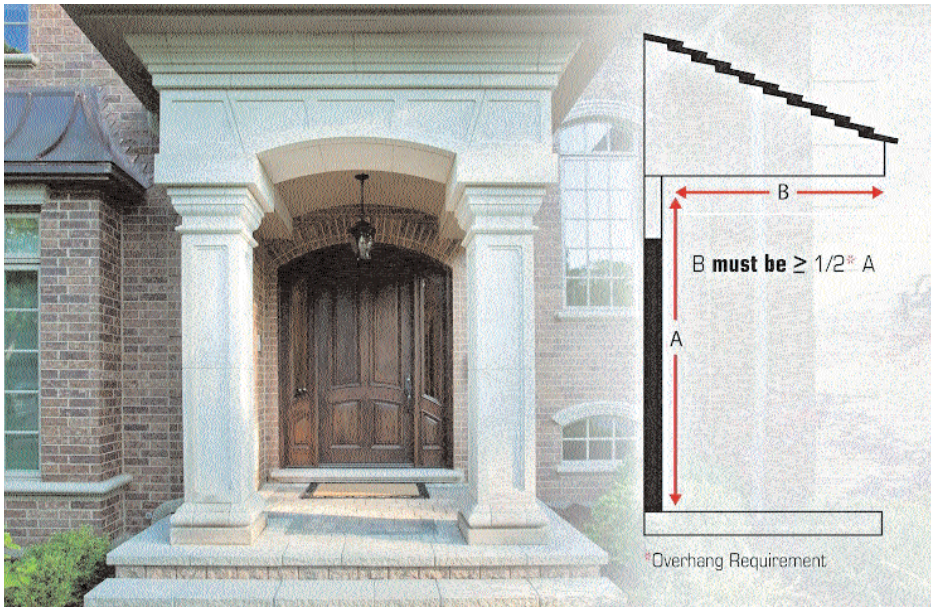
Composite or sandwich construction designed doors are especially perfect for architecture with little or no overhang. Such doors combine the high-end look of a wood door with superior performance and durability.

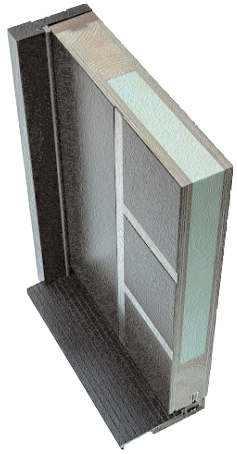
■ Construction Techniques and Materials

Leading sandwich design units include stiles and rails made from hard wood species that are finger-jointed and edge-glued; very similar to the construction of engineered wood doors described above. On top of this, however, layers of aluminum sheets and plywood are applied for superior performance and durability. A real wood veneer would finish off the unit with to give it a desired look. These doors also contain a revolutionary green extruded rigid polystyrene product core.

As a thermal insulation it makes a significant contribution to climate protection by reducing CO2 emissions. It is free of ozone-depleting CFC, HCFC, and HFC. The key features of such materials are high compressive strength, low water absorption, and outstanding thermal insulation. It is also rot-proof.

Extruded rigid polystyrene is a superb insulator for high and low temperatures, making it a desirable application in door construction.





Sandwich construction doors are typica3ly thicker when compared to wood doors, measuring 2-3/4" thick. Most American hardware companies will be compatible with such doors across their product lines.

Due to construction techniques these units have a flush surface and are best fitting with modern and contemporary architecture.

■ Testing Parameters

More and more people are conscious of energy efficiency today. Leading architects and builders are constantly looking for products that answer and exceed Energy Star requirements.

Leading sandwich design units that are made in the fashion described above will have U-Value as low as 0.17 for a Blank unit, definitely surpassing national current standard requirements as well as set forth year 2016 requirements. Units containing glass inserts are as highly regarded at U-Value factor of 0.20 for 1/4 Lite unit, 0.22 for 1/2 Lite unit, 0.24 for 3/4 Lite unit, and 0.26 for Full Lite unit.

Such doors have also shown impressive results in Solar Heat Gain Coefficient (SHGC) testing with 0.01 for a Blank unit, 0.07 for 1/4 Lite unit, 0.12 for 1/2 Lite unit, 0.15 for 3/4 Lite unit, and 0.20 for Full Lite unit.

■ Ideal Requirements

Absence of moving parts and layered construction make composite or sandwich construction doors ideal for architectural styles that have no or very little overhang. Manufacturers of such doors typically provide industry-standard limited-time warranty on such units without the requirement of an overhang.

Doors

Glazing Level	U-Factor	SHGC	
Opaque	0.17	No Rating	
1/4-Lite	0.25	0.25	
1/2-Lite	0.30	Northern North-Central	0.40
		Southern South-Central	0.25

FINISHING:

Many manufacturers do not have water-based finish product lines.

Water-based finish, such as by the manufacturer ICA, is always advisable for exterior applications as it has numerous advantages: reduced emissions of solvents into the atmosphere; short application times; superb elasticity of the coating film and resistance to temperature changes and atmospheric agents; and maximum coat ability.

Application methods play as of important of a role as the finish product itself. It is recommended for any unit to be factory-finished by a professional. The proper finishing process is an 8-9 step process that requires multiple sanding and product applications as follows:

1. SANDING *(p 180# recommended)*
2. STAIN *(Manual Wiping)*
3. DRY *(Ambient drying: 25°, H.R.60%. 4 hrs)*
4. PRIMER *(Application by Spray Gun. Two coats of100g/m2, time between coats 1 hr, no sanding)*
5. DRY *(Ambient drying: 25°, H.R.60%. 4-6 hrs)*
6. SANDING *(Manual with p 320#)*
7. COLOR "RETOUCHING" *(Manual Wiping)*
8. TOP COAT *(Application by Spray Gun)*

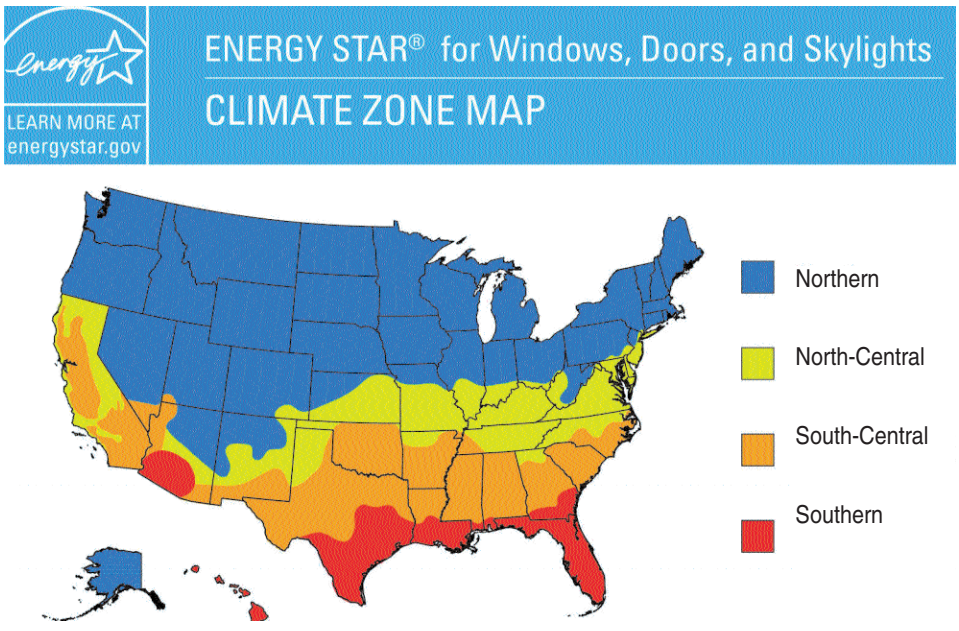
Quantity of top coat applied is a compromise between design of the pore and protection of the wood. Higher application quantity will provide for more protection and durability while resulting in a more closed pore look. Leading waterbased stain manufacturers suggest to work with as high of quantity as possible with a minimum of 180g/m2.

9. DRY. *(1. Ambient conditions (25°, 60%H.R), 45-60 min | 2. Static Oven 30-35°, H.R.40%. 4-6 hours | 3. Ambient conditions (25°, 60%H.R), 24h-48h)*

The above example should be seen only as an overview presentation, designed to show the complexity of the proper stain application techniques. Actual recommended application flow will vary from manufacturer to manufacturer and from application professional to application professional.

CONCLUSION:

When properly built and finished, engineered wood doors and composite sandwich construction doors are optimal products when looking for high-end look, flexibility in design, and superior performance. The cost of using such doors will be quickly offset by reduced energy consumption. These products will provide for a healthier living environment, and will increase the value of any home.■



Association of Licensed Architects
Continuing Education

ALA Continuing Education Questionnaire -

The Ins and Outs of Engineered and Composite Wood Doors

by Yuri Nekrasov,
Business Development Manager Doors For Builders Inc.

Learning Objectives:

Learn the following about engineered and composite wood doors:

1. **Construction techniques and materials.**
2. **Review the ideal requirements.**
3. **Explore testing parameters for energy efficiency.**
4. **Review the proper finishing process.**

Program Title:

The Ins and Outs of Engineered and Composite Wood Doors

ALA/CEP Credit: This article qualifies for 1.0 HSW LU of State Required Learning Units and may qualify for other LU requirements. (Valid through September 2016)

Instructions:

- Read the article using the learning objectives provided.
- Answer the questions.
- Fill in your contact information.
- Sign the certification.
- Submit questions with answers, contact information and payment to ALA by mail or fax to receive credit.

QUIZ QUESTIONS

1. The best engineered wood doors are built from premium kiln-dried (15% +/-2%) grade wood components.
   a. True b. False
2. Engineered wood doors should not require the assistance of multi-point lock system for stability and optimal performance if door size is:
   a. 36" X 96" X 2-1/4"
   b. 42" X 96" X 2-1/4"
   c. 46" X 96" X 2-1/4"
   d. All of the above
3. Free-floating panels in engineered wood doors are superior to fixed panels due to:
   a. Superior insulation
   b. Ease of staining/finishing the unit after installation
   c. Minimized risk of panel cracking as the unit ages
   d. All of the above
4. Calculate the minimum overhang length/horizontal projection requirement for engineered wood door that faces North and is 42" X 96" X 2-1/4" in size.
   a. 64"
   b. 48"
   c. 96"
   d. 32"
5. Calculate the minimum overhang length/horizontal projection requirement for engineered wood door that faces South and is 36" X 96" X 2-1/4" in size.
   a. 64"
   b. 48"
   c. 96"
   d. 32"
6. Composite doors are mostly chosen due to:
   a. Absence of overhang in the design of the entry of the home
   b. Superior insulation qualities
   c. Light weight construction
   d. All of the above
7. Leading composite doors can reach and exceed the following values:
   a. U-Value of 0.20 for 1/4 Lite unit
   b. U-Value of 0.17 for Blank / No Lite unit
   c. SHGC of 0.01 for Blank / No Lite unit
   d. SHGC of 0.07 for 1/4 Lite unit
   e. All of the above
   f. a. and d. only
8. Staining/finishing the entry unit with water-based product is a simple 3-step process that should be done after the unit has been installed.
   a. True
   b. False
9. Water-based finish is advisable for the following reasons:
   a. Superb elasticity of the coating film
   b. Outstanding resistance to temperature changes and atmospheric changes
   c. Reduced emissions of solvents into the atmosphere
   d. None of the above
   e. All of the above
10. Quantity of the top coat applied is a compromise between design of the pore and protection of the wood.
    a. True
    b. False

Contact Information: _____

Last Name: _____

First Name: _____ Middle Initial: ___

Firm Name: _____

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Address: Association of Licensed Architects,
One East Northwest Highway, Suite 200
Palatine, IL 60067
Attn: ALA/CEP Credit

Certification: (Read and sign below)
I hereby certify that the above information is true and accurate to the best of my knowledge and that I have complied with the ALA Continuing Education Guidelines for the reported period.

Signature: _____ Date: _____

ALA Announces 2014 Student Merit Award Winners

The Association of Licensed Architects congratulates the following students for their academic excellence, numerous awards, honors and significant achievements in the schools of architecture. We believe these winners will be assets to the profession of architecture in the future, and continue to excel in their education and professional pursuits.

(continued on page 38)

Vanessa Abin-Fuentes

University of Minnesota

Vanessa Abin-Fuentes was born in Mexico City and throughout her 26 years, has lived in Mexico, Venezuela and the US. She graduated with a Masters in Architecture from the University of Minnesota. Within that period she traveled and lived in India, China, and Europe. She values her time abroad, and considers it a significant and crucial part for a creative and hard working mind. She is planning on moving to Seattle. She is thankful and appreciative to receive this distinguished award.

Kayla Fuller

Southern Illinois University – Graduate Program

Kayla would like to thank all those who have supported her during her academic career. Following the completion of her Master's degree, she intends on seeking employment in the field of architecture. After becoming licensed, she would like to open her own firm specializing in historic preservation and sustainable design.

James Addison

University of Illinois at Urbana/Champaign – Undergraduate Program

While studying architecture at the University of Illinois, James followed his passion for travel as he studied abroad in Switzerland, attended a Fulbright Summer Institute in Nottingham, UK, and pursued observational research across the US in behavioral psychology. James is currently pursuing a Masters in Architecture at MIT.

Alex Jaskowiak

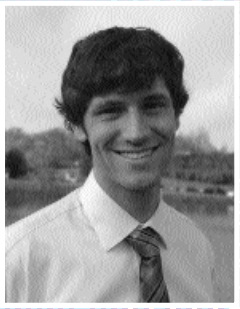
Miami University, OH – Graduate Program

Alex was born, raised and educated in Ohio. He recently graduated with his Masters in Architecture degree from Miami University. He has developed a sensibility for digital design methodologies and wishes to pursue a career in advanced building systems and tectonics.

Jonathan Kyle Clark

Judson University, IL

Jonathan Clark recently graduated with a B.A. in Architecture from Judson University. He is grateful for all of the mentorship and guidance received from the professors at the University. Along with architecture, he has a passion for fishing. Jonathan is excited to be working in the Chicago- land area. He thanks ALA and Judson University School of Architecture for the award.



Richard Martz

The Ohio State University – Knowlton School of Architecture

Richard Martz received his Master's degree in May of 2014 from The Ohio State University, from which he earned his Bachelor's degree as well. As a graduate student he was awarded a fellowship and GA position. Richard holds a full-time position in Columbus. His interests include being outdoors, reading, and working with his hands.

Charles Dana

University of Illinois at Urbana/Champaign – Graduate Program

After working 5 years in high-end residential landscape design, Charles returned to school and achieved numerous honors while obtaining his Master of Architecture and MBA from UIUC. He has interned at Perkins+Will in New York and will be starting a career in healthcare architecture at RTKL in Chicago.

Samuel McBride

Drury University, MO

Sam's love and passion for architecture, and many of the other arts, was fabricated through his studies at Drury University. Throughout his studies he has been blessed with many opportunities and awarded with incredibly mindful mentors and teachers. In addition to this recognition from ALA, he has received the Henry Adams AIA School Medal, Alpha Rho Chi Bronze Medal, and the Librarium Award – most distinguished fifth year thesis project 2013-2014. After graduation he is joining Freecell Architecture of Brooklyn, New York.

David Morales

Triton College, IL

It has been two years since David Andre Morales came to the United States when he was eighteen years old. His biggest passion has always been architecture. In order to pursue his goal of becoming an architect, he began to study architecture in high school in Guatemala. He is currently an architecture student at Triton College.

Andrew Ng

University of Michigan

Andrew Isaac Ng is an architectural designer based in both Ann Arbor and New York City. He received his M. Arch. from the University of Michigan, and he received his B.S. in Architecture at the University of Waterloo in Canada. He is currently working on various publications -- one in particular which investigates the diminishing efficacy of traditional architectural representation with regard to contemporary building practice.

Jacqueline Oberlander

University of Notre Dame, IN

Jackie is a Graduate of Architecture from the University of Notre Dame with a minor in Sustainability and a member of the Glynn Family Honors Program. She has been selected for several awards, including receiving the Brian Crumlish Scholarship for excellence in structures and building technologies. She has been involved in numerous campus organizations as well as acting as a Teaching Assistant for multiple courses.

Matthew Ollmann

Southern Illinois University - Undergraduate Program

Matt finished his undergraduate Bachelor's degree majoring in Architectural Studies with a minor in Business Management at Southern Illinois University, with honors and Magna Cum Laude status. He has worked as an Undergraduate Research Assistant, the PCI Student Organization President as well as an officer in the AIAS chapter. He is also a member of the Tau Sigma Delta Architectural and Allied Arts Honors Society. He plans to attend graduate school to receive a Masters of Architecture degree as well as Masters of Business Administration concurrently. He is honored to receive this award from ALA and would like to thank the faculty at the SIU School of Architecture and his family.

Aubree Park

University of Wisconsin-Milwaukee

Aubree graduated with a Bachelor of Science degree in Architectural Studies and certificate in high honors from the University of Wisconsin-Milwaukee, School of Architecture and Urban Planning (SARUP). She was awarded two full-ride scholarships upon entering college. A sponsored Building Information Modeling Studio, where she traveled to New York City, and the Marcus Prize Studio with Sou Fujimoto were among two of the program's distinguished courses Aubree had the privilege to work with while at SARUP. She volunteers with Big Brothers Big Sisters and holds the Presidential Position for UWM's AIAS chapter. She is currently working at HGA Architects and Engineers. Within a couple years, she plans to move to New York City.

Pankil Patel

William Rainey Harper College, IL

Pankil just received his Associates in Applied Arts from William Rainey Harper College. This fall he will be attending Southern Illinois University where he plans on completing his undergraduate studies. Post graduation, Pankil has high ambitions to work in an architecture firm in Chicago.

Tom Savoca

William Rainey Harper College, IL

Tom Savoca is currently working on obtaining his Associates in Applied Science Degree at William Rainey Harper College. In the future, he plans on attending the Illinois Institute of Technology in pursuit of a Bachelor's Degree in Architecture. He is very honored to receive this award and would like to thank the ALA and the faculty at William Rainey Harper College.

Adam Strobel

Washington University in St. Louis, MO

Adam Strobel graduated from Washington University in Saint Louis with a Bachelor of Arts in Architecture and Anthropology. Outside of studio, he is a member of the Philon Chapter of Alpha Rho Chi and was involved with the Performing Arts Department through acting and set design.

Julia Suriano

College of DuPage, IL

Julia just finished her second year in the pre-architecture program at the College of DuPage. This fall she will attend the Illinois Institute of Technology, where she will complete her Bachelors in Architecture. An activity that has been a huge part of her life is dance. For the past 18 years she has been taking dance classes and finding different ways to share her passion for dance in her community.

Allison Wilke

Miami University, OH - Undergraduate Program

Allison Wilke graduated with her Bachelor of Arts in Architecture from Miami University with departmental honors. Over the past summer she was an intern with the Lawrence Group in St. Louis. This fall she will attend the University of Kansas to pursue a Master of Architecture degree. She is very appreciative of this award.

Nichole Tortorici

University of Illinois Chicago

Nichole graduated with a Bachelors of Science in Architecture from the University of Illinois Chicago. Some of her highlights at UIC were studying abroad in Berlin and Rome, working in the office, and helping with faculty projects. She is looking forward to making a move to LA in the fall for an internship.

Dante Wilkins

School of the Art Institute of Chicago, IL

Dante is a Masters of Architecture candidate concentrating on Interior Architecture. He is deeply committed to excellence in design practice in the field and leadership on campus as President of the USGBC Student chapter at The School of the Art Institute of Chicago. Upon graduation he plans to join a local design studio and begin his journey to becoming a licensed Architect and NCIDQ certified Interior Designer.

Ashleigh Walton

Andrews University, MI

Ashleigh is a graduate of Andrews University School of Architecture, Art, and Design's M. Arch. Program. She is the Past President of AIAS chapter. Her interests include sketching, reading, and running, having completed the Bank of America Chicago Marathon twice. Ashleigh is excited about her future working with a New Urbanist Developer in Galveston, TX.

Daniel Zweig

Illinois Institute of Technology, IL

Daniel Zweig graduated with his Bachelor's degree in Architecture and a minor in Structural Engineering from Illinois Institute of Technology. He is an aspiring IIT architecture student leader of AIAS, SEAOI, EWB, SPE, and IIT's Rock Climbing club. He is actively applying to firms from New York to San Francisco.

CONTRIBUTED ARTICLE

Record Keeping Roulette

by Lexi Selvig,
President of LS Credentialing Services

Securing and preserving professional credentials serves as the foundation for successful career development and effective practice management for architects, engineers, landscape architects, and all other licensed built environment professionals. Managing your professional credentials is an important priority.

The last few decades have seen an increase in the demands and challenges of staying current with varying state protocols and requirements. Some of these complexities include different renewal cycles, differing continuing education requirements, and inconsistent reporting processes. Additionally, states and professional organizations require different fees, payment options and systems of record retention in the event of an audit.

What recordkeeping method are you using to stay on track with your license/s renewal, your continuing education and maybe even your professional memberships in ALA, AIA, NSPE, ASLA, IIDA among others? Are you shuffling spreadsheets and file folders? Do you as a Principal of your firm assume responsibility for credentials management, or do you delegate the task to an executive assistant? Is there an administrative assistant assigned to your project team? Or, maybe you rely on your membership benefits within a professional affiliation to record your continuing education on a transcript.

Typical methods of recordkeeping may have unlimited potential for failure and may result in serious repercussions. Among the many documented examples are, "My basement flooded and all my records were destroyed", "I lost my job and I was forced to leave all my records behind and I have no access to the files", "I didn't receive my renewal postcard because the state licensing board data base failed".

Tony Whitt, Continuing Education Coordinator at the Texas Board of Architectural Examiners quoted in his column, *CE Documentation* in the June 2012 biannual *Licensing News:* "A common problem I hear when I fail to get the proper documents is that: 'I went to a brown bag lunch and learn and they don't give out certificates.' To be blunt, if you can't provide the proof of attendance, then (from my auditing standpoint) you were not in attendance."

Staying current with your continuing education, license renewal and professional organization membership requirements is obviously best before negative issues and destructive consequences occur. Are you prepared to endure major financial losses for failed recordkeeping like fines in access of $20,000 and public exposure on a state licensing board website?

Violation, or the voiding of contracts due to an expiring license, is different from state to state. Some states have statutes that treat residential contracts differently from commercial contracts - and hold the residential contract void for lack of a license.

It's best to know what the laws are in the states where you practice. Or better yet -- don't let your licenses lapse!

Some states hold that the unlicensed contractor or professional can recover no fees for the services performed without a license.

The following excerpt taken from an article, "**Architect Not Entitled to Recover Fee for Services on Foreign Embassy Because Not Licensed in Washington, D.C.**", written by J Kent Holland, Jr., Atty of Construction Risk Counsel, PLLC and the ConstructionRisk.com Report, Vol. 13, No. 7 (July 2011), demonstrates the severe consequences when credentials are not properly managed.

"An architect licensed in the state of Maryland but not in Washington, D.C. entered into, and won, a competition for the architectural design of a new embassy and chauncery building in Washington, D.C. for the United Arab Emirates ("UAE"). Because she was not licensed in Washington, she was found by the court to have violated the licensing statute and therefore not entitled to recover any fee from the UAE for the services she had performed. The architect argued that she was not required to have a license as of the date she entered into the competition but that she would have obtained the license once she had a signed contract. In rejecting that argument, the court stated that the architect went beyond submitting bids and actually performed architectural services without a license. The court concluded: "District of Columbia law bars an architect from recovering (i) on a contract to perform architectural services in the District or (ii) in quantum meruit for architectural services rendered in the District, if the architect lacked a District of Columbia architect's license when he or she

(Continued on page 46)

16th ANNUAL

ALA MIDWEST ARCHITECTURE CONFERENCE + PRODUCT SHOW | 2014

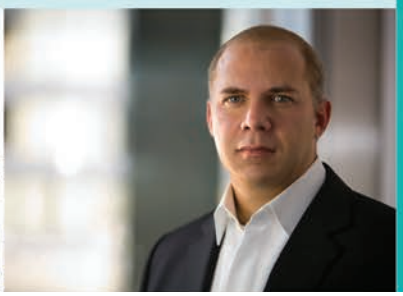
Experience More This Year At The ALA 2014 Conference!

Earn Up To 8.25 Continuing Education Credits

Tuesday, September 30th

Register now for the 16th Annual ALA Midwest Architecture Conference & Product Show, Tuesday, September 30th at Drury Lane Conference Center, Oakbrook Terrace, IL.

Hear leading industry speakers, earn up to 8.25 continuing education credits, attend the "After 5 Networking Social". Talk to providers of products and services for the design and construction industry.



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- Evening seminar starts after the social
- All seminars are 1.0 LU
- Keynote is 1.25 LU

Our Keynote Speaker:

Gordon Gill, Adrian Smith + Gordon Gill Architecture LLP

"The Beauty of Utility" – the presentation will focus on the exploration of designs and platforms that expand the concept of beauty beyond the aesthetic to include purposeful performance based solutions at all scales of the built environment. Recent AS+GG projects that Gordon will discuss include the Astana Expo City 2017 Master Plan, Chengdu Great City Master Plan, FKI Tower, Beijing Waldorf-Astoria, Dancing Dragons Towers, Kingdom Tower and Masdar Headquarters.

25 Educational Sessions:

Understanding Moisture Dynamics in Building Envelopes
Dr. James Wells, Tremco

Selected Changes to the 2015 I-Codes
Kelly Reynolds, Kelly P. Reynolds & Assoc.

Heat Recovery Ventilation: Why Efficiency Matters
Kevin Rapp, Zehnder America

2012 Illinois Energy Code - Pathways to Compliance Overview
Matthew Brown, Energy Diagnostics Inc.

NCARB & You: IDP, ARE & Certification
Harry M. Falconer Jr., AIA, NCARB

Wall Performance by Design: The Role of Rainscreens in Moisture Management
Michael Coulton, BEMMI

IL Energy Code for Roofs - Now and into the Future
Bill McHugh and Rod Petrick, Chicagoland Roofing Council

Self-Adhered Modified Bitumen Technology
Doug First, CCCA, RRO, Polyglass USA

ALA Contracts: Analysis and Interpretation of Owner-Architect Forms
Werner Sabo and Shawn E. Goodman, Sabo & Zahn

Daylighting with Electrochromics
Andrew Hulse, SAGE Electronics

BIM for Small Firms
Kent Brown, GRAPHISOFT

Terrazzo: The Original Recycled Floor
Mike Brawley, Terrazzo & Marble Supply

Contracts and Claims in Green Construction (a/k/a Green Achers)
Melissa Roberts, USI Midwest and Eric Singer, Ice Miller, LLP

ComEd and Nicor Gas New Construction: Financial Incentives and Technical Assistance
Erikka Byrge, WRID, LEED AP ID+C, Energy Center of Wisconsin

Meeting Fire Codes with OSB
Mike Huddy, LP Building Products

Understanding Fenestration U-Factors
Tom Minnon, CFM, CDT, LEED AP; Tubelite, Inc.

Air/Vapor Barriers - Success is in the Details
Elizabeth Rodenkirch, LEED AP BD&C, EIT and David Cook, RA; CTLGroup

Energizing Outdoor Environments with Usable Space
Greg Bednar, GMB & Associates, LLC

PDF Construction Document Management and Collaboration
David Lyle, Konica Minolta Business Solutions

High Performance Precast Concrete Envelope Systems
Dawn Parker, PCI – IW and Brian Miller, P E LEED AP, PCI

Current Home Technology and Infrastructure Options
Peter C. Cook, Automation Design + Entertainment, Inc

Performance Glazing – Coatings, Layers & Gases
Dan R. Smith, CSI, CCPR, LEED AP, Marvin Windows and Doors

Moisture and Concrete Floor Slabs
Heather Yario, MAPEI

Designing With Tile
Scott Conwell, International Masonry Institute (IMI)

Air Barrier Performance Levels vs. Building Envelope Design Criteria
Maria Spinu, PhD, LEED AP and Benjamin Meyer, MArch, DuPont Building Innovations

Association of Licensed Architects

Questions:
Call ALA at 847-382-0630.

Exhibitor list

Advanced Building Products, Inc.
Aetna Plywood
ALCOA Architectural Products
All About Access
Allegion
Ambiance Lighting Systems
Amerimix
Ameristar Fence Products
Andersen Windows, Inc.
Arc Imaging Resources
Building & Fire Code Academy
CFI FOAM
Chicago Plastering Institute
Chicago Regional Council of Carpenters
Chicagoland Roofing Council
Cook County Lumber
County Materials Corporation
CPI Daylighting
Custom Building Products
Custom TVIS
Daltile
Doors For Builders
DuPont Tyvek/Parksite
EHLS/To The Top Home Elevators
Fasten Master
Financial Security Group
GACO Western
Graphisoft
Henry Company
Hoover Treated Wood Products, Inc.
Huber Engineered Woods
Icynene
IKO Midwest
Illinois Brick
Image Grille
Indiana Limestone Company
InPro Corporation
International Beams
International Masonry Institute
J.N. Lucas & Associates Inc.
Konica Minolta Business Solutions, USA Inc.
LeafGuard Chicago LLC
LP Building Products
M.G. Welbel
Major Industries, Inc.
Marvin Windows and Doors
MetI-Span
Moen
Morin
NCARB
Northfield, an Old Castle Company
NSG Group-Pilkington North America
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Pittco Architectural Metals, Inc.
Polyglass USA, Inc.
Professional Underwriters Agency, Inc.
Rauch Clay Sales Corp.
Royal Aluminum & Steel, Inc.
S. J. Mallein Company
Scranton Products
Shaw Industries
Simpson Strong-Tie Company, Inc.
SPEC MIX/QUICKRETE Chicago
Stone Design Inc.
The Blue Book and Construction
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REGISTRATION FORM

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(for confirmation)

FULL DAY

Early Bird, Until September 12th
- Member: $150
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- Students: $35
- New Graduate Member: $35
- Student Non-Member: $45

After September 12th
- Member: $175
- Non-Member: $200
- Students: $45
- New Graduate Member: $45
- Student Non-Member: $55

MODIFIED DAY

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- Member: $85
- Non-Member: $110
- Students: $25
- New Graduate Member: $25
- Student Non-Member: $35

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- Students: $35
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- Student Non-Member: $45

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or register online at
www.ala2014.com

Check box for each seminar you plan to attend (only one seminar per time period)

SESSION 1: 8:00am – 9:00am

- ☐ **1A:** IL Energy Code for Roofs - Now and into the Future
- ☐ **1B:** Understanding Moisture Dynamics in Building Envelopes
- ☐ **1C:** Daylighting with Electrochromics
- ☐ **1D:** BIM for Small Firms
- ☐ **1E:** Terrazzo: The Original Recycled Floor

SESSION 2: 9:30am – 10:30am

- ☐ **2A:** Selected Changes to the 2015 I-Codes
- ☐ **2B:** Heat Recovery Ventilation: Why Efficiency Matters
- ☐ **2C:** Contracts and Claims in Green Construction
- ☐ **2D:** Self-Adhered Modified Bitumen Technology
- ☐ **2E:** ComEd and Nicor Gas New Construction

SESSION 3: 11:00am – 12:00pm

- ☐ **3A:** Meeting Fire Codes with OSB
- ☐ **3B:** ALA Contracts: Analysis & Interpretation
- ☐ **3C:** Air/Vapor Barriers - Success is in the Details
- ☐ **3D:** Understanding Fenestration U-Factors
- ☐ **3E:** Energizing Outdoor Environments with Usable Space

SESSION 4: 1:00pm – 2:00pm

- ☐ **4A:** Wall Performance by Design: The Role of Rainscreens
- ☐ **4B:** High Performance Precast Concrete Envelope Systems
- ☐ **4C:** Current Home Technology and Infrastructure Options
- ☐ **4D:** PDF Construction Doc. Management & Collaboration
- ☐ **4E:** Moisture and Concrete Floor Slabs

SESSION 5: 2:45pm – 3:45pm

- ☐ **5A:** 2012 Illinois Energy Code - Compliance Overview
- ☐ **5B:** Air Barrier Performance Levels vs. Building Envelope
- ☐ **5C:** Designing With Tile
- ☐ **5D:** Performance Glazing – Coatings, Layers & Gases
- ☐ **5E:** IL Energy Code for Roofs - Now and into the Future

KEYNOTE 4:15pm – 5:30pm

"The Beauty of Utility"

EVENING SESSION: 6:30 pm – 7:30 pm

- ☐ **6A:** Selected Changes to the 2015 I-Codes
- ☐ **6B:** NCARB & You: IDP, ARE and Certification
- ☐ **6C:** Wall Performance by Design: The Role of Rainscreens
- ☐ **6D:** Heat Recovery Ventilation: Why Efficiency Matters

Cancellations must be received by 5 PM September 12, 2014. "No Shows" are responsible for applicable fees, and will be billed in not pre-paid.

CHAPTER NEWS

ALA ILLINOIS

Todd Wenger and John Latko of the Schweikher House Preservation Trust spoke to ALA members at a luncheon meeting and tour of the historic Schweikher home.

(L) Director Jeff Whyte, ALA, led guided tours of the Schweikher House in Schaumburg, IL. All attendees, including ALA Director Rick Gilmore pictured with Jeff, enjoyed a summer afternoon on the grounds of this beautiful estate.

Upcoming Events:

September 30: 2014 ALA Midwest Architecture Conference - Oakbrook, IL

October 21: SC Johnson Research Tower Tour, Racine, WI

October 22: Illinois Accessibility with Doug Gamble, Bloomington/Normal, IL

November 12: Marketing Your Firm – Jean Leathers, Maggianos, Schaumburg, IL

November 14: ALA Design Awards Banquet, Metropolis Ballroom, Arlington Heights, IL

December 9: ALA Annual Meeting and Holiday Party, Pete Miller's, Wheeling, IL

Registration and more information on these and other ALA events can be found at www.alatoday.org.

ALA MISSOURI

Upcoming Events:

October 14: "Round Table Discussion: Architect Liabilities"

December 9: "The Importance of a Professional Geotechnical Report"

Online registration is available at alatoday.org or call the ALA office at 847-382-0630.

ALA Missouri presents its 2014 Continuing Education Series. This series allows architects to acquire 12 Learning Units per year in 6 convenient sessions. The sessions are scheduled every other month over an extended 2-hour lunch period – a boxed lunch is included. All seminars are held at the Masonry Institute of St. Louis, 1429 Big Bend Blvd., St. Louis, MO 63117.

ALA WISCONSIN

Forty ALA members enjoyed this unique opportunity to view the latest in wood research at the USDA Forest Laboratory Tour in Madison, WI.

Upcoming Events:

September 30: 2014 ALA Midwest Architecture Conference - Oakbrook, IL

October 21: SC Johnson Research Tower Tour, Racine, WI

November 13: Marketing Your Firm – Jean Leathers, Italian Conference Center, Milwaukee, WI

December 9: ALA Annual Meeting and Holiday Party, Pete Miller's, Wheeling, IL

Please see the ALA website at www.alatoday.org for registration and more information on all upcoming events.

CODE CORNER

(continued from page 10)

QUESTION? *"When is rooftop access required for mechanical equipment access?"*

ANSWER: The ***IBC*** requires a stairway to the roof where the building is located 4 or more stories above grade. Where the building is less than 4 stories the ***IBC*** does not require access to the roof. The ***IMC*** requires access to a roof that exceeds 16 feet in height from grade where mechanical equipment and appliances are installed on the roof. This section also has the minimum design criteria for permanent ladders.

In a building that is less than 4 stories but greater than 16 feet in height with mechanical equipment installed on the roof a permanent approved means of access must be provided to the roof. That access can be via a ladder that meets the requirements of ***IMC***. If the building is 4 or more stories in height a stairway is required by the ***IBC***.

QUESTION? *"What is ponding and how do you design for it?*

ANSWER: **Ponding** is the accumulation of water or the build up of ice on a roof. The model codes require the design professional to consider loading that could result from the ponding of water on the roof. In 1998, the roof of a casino in Las Vegas collapsed due to the weight of the accumulated water on the roof.

The designer has two options for solving the ponding problem: 1) Install a secondary roof drainage system to relieve the accumulation of water through scuppers, overflow weirs or secondary drains; 2) Design the roof structure to support the water load.

QUESTION? *"What is slip-resistant flooring? The code calls for it, but how is it measured or determined?"*

ANSWER: Slips and falls are the second most work related injury. In 1999, they accounted for $12 billion in lifetime costs. The standard established by **OSHA** for determining proper slip resistance of floors is 0.5 static coefficient of friction (SCOF) and is measured under dry laboratory conditions. The **ADA** recommends the standard be raised to 0.6 SCOF, but that is not a statute. Tests have shown that floors having a high coefficient can actually cause more problems as trip hazards. One of the most frequently cited standards in U.L. where their benchmark is 0.5 SCOF. However, **U.L.** does not certify products as slip resistant. Three factors actually affect the slipperiness of flooring: 1) The Surface - flooring material; 2) The Individual - footwear, weight, velocity, vision; 3) The Environment - temperature and humidity.

QUESTION? - "Does a walk-in or freezer for employees only have to be accessible?"

ANSWER: Section 1103.2.15 of the *2012 IBC* exempts these locations from having to be accessible.■

If you are an ALA member and have a code question, you can call me at 1-800-950-2633 or e-mail at codexperts@aol.com.

(continued from page 29)

2. Marketing Plan – what is your strategy for acquiring work?
3. Operations Plan – how will decisions be made and projects executed?
4. Financial Plan – how much revenue will it take to support a profitable firm?

Although both these lists make the parts of the business plan seem as if they are separate and distinct, in reality they are interconnected. Each aspect is a part of a whole firm system and as such, they impact each other continuously. For example, marketing efforts must link closely with aspirations, which often determine operational choices; operational effectiveness will impact financial growth, and market position may determine what is possible financially.

Figure 4: All Aspects of Business Planning are Interconnected

Figure 4 illustrates the interwoven relationships between the parts of a business plan by using a fractal model. Each aspect of the business plan has the others within. For example, consider the Marketing quadrant in the lower left hand corner of the diagram – each quarter of the Marketing quadrant is related to one of the major quadrants. The finance aspect of Marketing is a marketing budget (upper right corner); the purpose aspect of Marketing is alignment of the marketing message with vision (upper left corner); the operations aspect of Marketing has to do with improving job acquisition processes such as the proposal writing (lower right corner); and finally, the marketing aspect of the Marketing quadrant is outreach to new prospects and relationship marketing (lower left corner).

Similarly, each of the four sections in each main quadrant can be assigned to their corresponding quadrant. So the operational aspects of Finance may be to reduce waste or conserve energy and the operational aspects of Purpose may be to deliver jobs ethically and to consider the firm's social responsibilities, and so on, with each lower right hand quarter in each quadrant relating to operations. Each of the sixteen items named in Figure 4 could be seen as a strategic project in itself. Firm owners can customize this diagram as they consider, for instance, what is the "marketing aspect of finance?" (Shown here as community giving or pro-bono work.) These strategic firm development projects will change as some are completed and some are altered by external circumstance. This fractal diagram can be used as a tool to plan and track firm development activities over time.

Continuous Planning

Figure 4 illustrates another important connection between business planning and design. Like design, business planning is an iterative process – not one that is done, complete, and never adjusted again. On the contrary, the business plan gives firm owners a basis by which to make strategic decisions in the course of daily business operations. Should I accept this commission even though it is off track from my stated purpose? When should I hire someone and how will that impact my financial goals? How can I best position myself in a changing market?

Strategic thinking and innovative solutions to business dilemmas start with planning for a preferred future rather than just being opportunistic in the present. As the recovery continues, established firms and start-ups will be able to choose projects, clients, and forward thinking strategies that are reflective of the owners' highest aspirations. Applying design thinking to business processes is the key to this transformation. Design is not adversarial to business. Design thinking is business thinking.

About the Author

Rena M. Klein, FAIA is the author of The Architect's Guide to Small Firm Management (Wiley, 2010) and principal of RM Klein Consulting, a firm that specializes in helping small firm owners run their firms better.

CONTRIBUTED ARTICLE

(continued from page 41)

began negotiating the contract, entered into the contract, or performed the architectural services, even if the architect was licensed to practice architecture in another jurisdiction at such times . . . There is no exception for international design competitions or the submission of bids to perform architectural services for foreign embassies (or public buildings or monuments) in the District."

The future of professional development for licensed professionals of the built environment, includes additional challenges. For example the requirement of "proof of competency" upon completion of continuing education courses/credits. As the global economy draws us in to practice internationally, licensing requirements and processes differ. Jurisdiction issues such as the statute changes in Kansas as of July 1, 2014 and the interdisciplinary practice competition studied and temporarily enacted in Texas represent the most recent challenges.

The 21st century means consistent change and more vigilant attention to education and professional credentials management. To avoid some of the major consequences described plus the forthcoming challenges for licensing, the question is:

Are you prepared?

Lexi Selvig, President of LS Credentialing Services, provides a solution to A/E professionals and firms for organizing, maintaining and managing licenses and certifications, continuing education requirements, and professional affiliations. She can be reached at lexi@aecredentialing.com and you can check out her company's website at www.aecredentialing.com.

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Economics of Ergonomics

How your office furniture can be a real pain in the neck

by Ruth Minnick, LEED Green Associate, ASID
Chicago Loop Team Leader at Rightsize Facility Performance

Ergonomics in the workplace is not just a trend in office furniture – it not only has the power to impact the health and happiness of employees, but also the overall productivity of a workforce. Besides employee retention, providing non-ergonomic furniture to employees could negatively impact your bottom line. Which is a total pain.

So let's start with the basics. Ergonomics is the study of how employees interact with their work environment. Most of the time it pertains to how office furniture can impact the productivity and health of the employees. According to Global Total Office, one of the largest furniture manufacturers in the world, an ergonomic office space provides a reduced risk of injury, and increased safety, comfort and overall productivity.

Health Repercussions

Ignoring ergonomics in the workplace can have severe health implications for employees, including headaches or eye strain, neck and back pain and the development of Carpal Tunnel Syndrome. But it doesn't stop there.

According to **James A. Levine, M.D., Ph.D. with Mayo Clinic**, researchers have linked sitting for long periods of time with a number of health concerns, including obesity and metabolic syndrome — a cluster of conditions that includes increased blood pressure, high blood sugar, excess body fat around the waist and abnormal cholesterol levels.

In addition, recent studies show that sitting in a desk for multiple hours a week can limit one's life expectancy by fifteen years. But the truth is that office ergonomics can help employees be more comfortable at work, including lowering stress, increasing productivity and preventing long-term injuries overall.

Impact on Productivity

A workplace that incorporates ergonomic furniture has an increased rate of productivity. Steelcase conducted a wide-scale study in 2010 with over 450 employees using their ergonomically equipped Leap chair. After one year, the group using the Leap chair, with ergonomic training, showed a 17.8% increase in productivity.

In the study, the research team from W.E. Upjohn Institute for Employment Research concluded that it is not surprising that workers do a better job when they experience fewer aches and pains while sitting in front of the computer.

Ultimately, the benefits of providing an ergonomically sound office space for employees far outweigh the expense. It can improve employee productivity, enhance worker retention and lead to increased profits. Applying best practices in ergonomics can truly impact the success of a workplace.

Furnishing an Ergonomic Workspace

Furniture manufacturers are paying attention to the value of ergonomics and developing a wide range of new products that afford the utmost in comfort and aesthetics. Architects, interior designers and furniture dealers have a responsibility to educate their clients about economics of ergonomics. The long-term consequences of reduced productivity and employee wellness might not be worth the short-term financial impact of purchasing non-ergonomic, cost-effective furniture.

When recommending the purchase of ergonomically-friendly office furniture, make sure the client has the opportunity to examine the options before making any purchases. And be sure to focus on the following areas to help your client achieve a more ergonomic workspace.

Office Chair

Arguably the most critical piece of furniture in the world of ergonomics is the desk chair. Make sure that the desk chair has a comfortable cushion, arm rests and adjustable seat and backrest height. The armrests should be low enough that shoulders are relaxed and elbows bend at about 90 degrees. The chair height should be adjusted so that your thighs are parallel to the ground with feet flat on the floor. Lumbar support for your lower back is also a key feature to look for.

Desk Set Up

When getting situated at your desk, the order of the materials does make a difference. Start by placing your mouse and keyboard as close together as possible. Adjust your monitor so that it's about an arms length away from your seat to prevent eyestrain. You could have a perfectly ergonomic desk and chair, but if you don't have your desk properly situated, it won't do as much good over the long-term.

Adjustable Height Desks

When it comes to ergonomics, adjustable height desks are a great option to provide employees. There is an increased demand in the market for these types of desks, and more and more manufacturers adding these to their product catalogs. These desks can be raised or lowered to accommodate the height of the individual employee. And for those who want to take it a step further, there are standing desks that allow workers to stand while they work. Research shows that there are numerous health benefits for standing up even for just 15 minutes each hour so this option might be highly encouraged to those clients who have strong emphasis on employee wellness. Another option is to create pods of standing desks in hoteling space where employees can step out of their office, stretch their legs to increase blood flow, but continue to be productive.

Posture

Poor posture can lead to several musculoskeletal disorders, which include injuries to the lower back, right shoulder and left lower limbs. Be sure to sit up straight to promote blood circulation and reduce muscle pain. After purchasing ergonomic chairs, some businesses may consider providing ergonomic training to teach employees how to properly adjust their positioning, which can help aid in establishing posture that is much more effortless.

Lighting and Visibility

A poorly lit office space can have the same negative impact as an uncomfortable chair, both in terms of employee health and satisfaction. Make sure that work areas are well lit to prevent eye strain. If possible, invest in large monitors to make it easier for employees to read their computer screens.

Take breaks

Staying in the same position all day long can negatively impact blood flow and cause muscle pain. No matter the amount of ergonomic furniture purchased, employers still need to encourage their employees to stand up, stretch and walk around the office at least every hour. Creating a healthy culture at work is more than just providing comfortable working conditions — which at the end of the day is what an ergonomic environment is all about.■

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