



NH forum

AIA New Hampshire

For those who shape the built environment



Celebrate Architecture on Jan. 22



Please join us on January 22 for our 32nd Annual AIANH Design Awards Gala at LaBelle Winery in Amherst (snow date: January 24). This is one of the Chapter's most popular events, bringing architects, contractors, engineers, owners, and other building design professionals together for camaraderie, good food and drink, the celebration of good design, and recognition of individuals who have made major contributions to the design and construction industry.

You don't have to be winning an award to attend, as it is a fantastic evening out for everyone. Bring along your spouse or partner, staff members, and friends for a great time!

We're all anxiously awaiting the announcement of the winners, but right now you can vote for YOUR favorite projects in our **People's Choice Awards** program. All submissions are on-line – view them and vote at: www.aianh.org/vote-design-awards. We'll announce the People's Choice winners the night of the banquet. At the Gala, we'll also take a look at the Emerging Professionals Network Design Competition entries and find out who those winners are.

We extend another huge thank you to our terrific lead Platinum sponsors for the AIANH Excellence in Architecture Awards Program, **Spaulding Brick Co.** and **Charron Inc.** Please let

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The editors of the *NH Forum* seek to encourage a lively discussion of design and other topics of concern to designers. Opinions and proposals presented in the newsletter are those of the writers to whom they are attributed and are not a statement of official policy by AIANH, unless so stated.

AIANH
310 Marlboro St., 2nd Floor
Keene, NH 03431
Tel: 603-357-2863; Fax: 603-357-0835
E-mail: office@aianh.org
Visit our Website at www.aianh.org

Perspective

Point of view from the President of AIANH
Paul Bourbeau AIA



A Visit to the Great Smoky Mountains

I recently became visitor 7,600,000-ish to the Great Smoky Mountains over the first week in November of 2015.

There are approximately 9,000,000 visitors to the park each year which makes it the most visited National Park in the country, nearly twice as many as any other park in the country. My trip took me to Gatlinburg, TN, considered the “Gateway” to the Great Smoky Mountains. As it turns out, it’s a great launching point to access the many attractions throughout the Park including; Cades Cove, Clingmans Dome (the second tallest mountain east of the Mississippi and the highest point along the Appalachian Trail) and Newfound Gap just to name a few. The Great Smoky Mountains were once the ancient homeland of the Cherokee Indians, descendants of the Iroquois of New England. They were driven out of their ancestral homeland by the Federal

Government to Indian Reservations west of the Mississippi in 1838 as part of the “Indian Removal Act of 1830” on what is now known as the “Trail of Tears.” Approximately 2,000-6,000 of the 16,543 relocated Cherokee perished along the way.

I am not writing this month’s *Perspective* as a history lesson per se, but more as a way
Continued on page 12

I am not writing this month’s forum as a history lesson per se, but more as a way to demonstrate that sometimes, even in the most commercial and “tourist trap” type of settings, it only takes a small effort to peel off the layers of modern civilization to see where we have come from, what are history tells us about who we are and where we are going.



Gatlinburg, TN, as seen from the Parkway By-pass looking south toward the Great Smokey Moutains

Emerging Professionals Network

Point of view from the AIANH Associate Director & EPN Chair
Tony Nazaka



The Architect Says

One of the most famous quotes in the architectural world is Mies van der Rohe's exclamation, "Less is more." This quote, along with his style of a minimal

framework to express a "skin and bones" style of architecture, has helped a generation of architects try to justify design moves and explain architectural ideas. It can, and will, be forever uttered by a boss, a studio professor, a juror, and probably by each of us at some point in our architectural career to help sell an idea. A less common, seldom used phrase has also been said about architecture, which is Venturi's claim that "Less is a bore," which was apparent in his exploratory design style. So, who is right?

Fortunately, architecture is a field in which both can be right. Big name architects can claim brilliance to their own work through a series of simple sketches, parti diagrams, or even quotes. Whether the design is a simple, modernistic cube (less), or an overwhelming and quirky design (more), they need not overly indulge their design process; we have to simply take their word for it as we read about it in *Architecture* magazine.

Unfortunately for the majority of us, we are not big name architects. The chance of any of us getting to that level is slim, at best. We must prove to clients, coworkers, bosses, peers, and so on, every design move we make, and what makes it good design. Furthermore, I would be willing to bet that the majority of

The purpose of this month's article is not to downplay great designs of some of the big name architects.... It is to try and get readers to think of how and why they design the way they design.

us architects and aspiring architects design by the basis "form follows function," to which Richard Rodgers responded "form follows profit." Form following profit is quite possibly the rule we all follow, at the very least, subliminally. In this field, and this day and age, instead of hearing "why" to explain a design idea, we will probably more often hear "how much."

The purpose of this month's article is not to downplay great designs of some of the big name architects, or say that we should all be following what an architect said 70 years ago; quite the contrary. It is to try and get readers to think of how and why they design the way they design. You should challenge your peers, coworkers, and superiors on what makes good design, and should expect to be challenged when you think you have a good design. You don't need to use dated ideas to define yourself as designers, but rather define what makes your design relevant now. You can, and should, show your clients how your design is profitable for them, if that's what they want. You should be able to have a rebuttal if a seasoned architect or studio juror smugly tells you "less is more" because, well, they might be wrong. ■

Details...

Lisa DeStefano AIA was honored at the 13th annual NH Business Review Business Excellence Awards with a leadership award for Excellence in Real Estate and Construction – Small Business. The award winners are acknowledged for setting inspiring examples of business success throughout the state and for being businesspeople whose accomplishments can serve as inspiration to other entrepreneurs.



In a nomination letter penned by Steven Marchand, former mayor of Portsmouth and current Principal of SRM Consulting, said this of DeStefano: "We are very fortunate to have Lisa's fingerprints on the future of our community".

Principal architect and owner of **DeStefano Architects**, Lisa has provided New England clients with residential and commercial architectural design for over 20 years. She has focused her strong sense of community and expertise in current and past participation in a wide variety of boards, committees, and volunteerism. She is passionate about inspiring and mentoring youths interested in the field of architecture – her firm annually participates in the "World of Work" program at the Portsmouth Middle School.

Asim Azam, EIT has recently joined **TFMoran's** civil engineering department serving as a Project Engineer. Mr. Azam has a Bachelor of Science degree in Civil En-



gineering from Northeastern University. His experience includes developing SWPPP plans, site inspections, civil/site design, environmental permitting, and construction management of residential and commercial projects.

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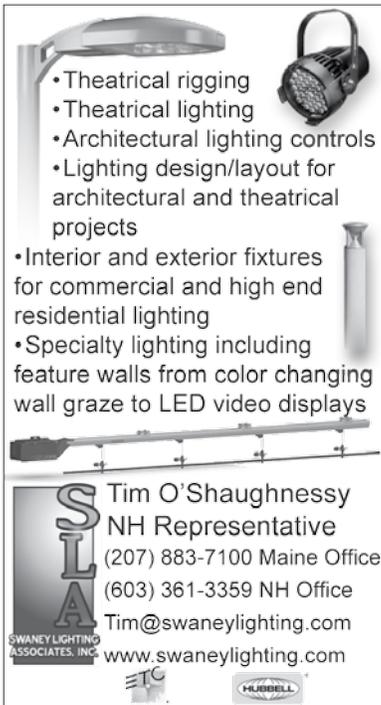
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Final 2015 Chapter Meeting at Portwalk Place



Jim Loft AIA of PROCON, Inc. ushers in the last of the tour participants at our November 12 Chapter Meeting at Portwalk Place. It was damp out, but the rain held off. Following the tour, guests sampled heavy appetizers and drinks at The 100 Club before listening to a presentation by PROCON Project team leaders Lance Bennett, Chris Lizotte AIA, and Matt Wirth, plus Lisa DeStefano AIA of DeStefano Architects, who spoke about the overall planning of the multiple stages of this project. *Photos by John W. Hession*



Lisa DeStefano AIA and Phyllis Stibler ASID

68 AIA New Hampshire Members and guests attended the November 12 event. The mood was celebratory as we headed into the final days of a busy year.



The tour began at the Residence Inn

Structural Column

by Jeff Karam PE



Wet sticking rebar

From time to time I'm asked if it is OK to 'wet stick' rebar. Wet sticking is the practice of placing reinforcement after the concrete has been placed. Similarly, in masonry construction it refers to placing the rebar after the grout has been placed. Usually the question is asked in reference to the dowel shown coming out of the footing and into the stem wall. I appreciate the question because it certainly would be easier than tying rebar and/or using bar supports.

For concrete construction the American Concrete Institute Building Code Requirements for Structural Concrete, ACI 318-08, is the referenced standard within IBC 2009. In ACI 318 it is clearly not permissible. In chapter 7 it states "Reinforcement...shall be accurately placed and adequately supported before concrete is placed, and shall be secured against displacement..." (Emphasis by author) That's pretty clear that wet sticking of reinforcement is not permissible as far as ACI and thus IBC are concerned. Within IRC there are few locations where similar language occurs. In Chapter 4, which covers foundations, section R404.1.2.3.7.4 states that "reinforcement shall be secured in the proper location in the forms with tie wire or other bar support system to prevent displacement during the concrete placement operation." This section in particular covers foundation and retaining walls, so perhaps you could interpret that to not cover the bar coming out of the footing. Later, within the wall construction chapter of IRC section R611.5.4 also states that "Reinforcement shall be secured in the proper location in the forms with tie wire or other bar support system to prevent displacement during the concrete placement operation." So exactly the same language for the foundation chapter and for the wall construction chapter and there isn't much room for interpretation that would say wet sticking is permitted for the vertical concrete elements.

For masonry construction the appropriate code is the TMS 602/ACI 530.1/ASCE 6, Specification for Masonry Structures. This too is the referenced standard from IBC and it too is very clear. Within the code it states

Why would wet sticking not be permitted? Voids may be created around the rebar and full bonding between the rebar and the concrete may not occur... the strength expected may not be achieved...

"Place reinforcement and ties in grout spaces prior to grouting." (Emphasis by author)

Why would wet sticking not be permitted? Voids may be created around the rebar and full bonding between the rebar and the concrete may not occur. In this case, the strength expected may not be achieved. Additionally, wet sticking rebar does not allow easy inspection compared to bars placed prior to forming. If a specified embedment is required there is no easy way to assure that it has been provided except by observing the length of bars and measuring the remaining length sticking out of the uncured concrete. In reality this would mean an additional site visit. Assuring the proper bar location is also difficult with wet-sticking.

For the detail of a footing to the stem wall, I typically show dowels with the standard hook. Trying to wet stick those would be difficult. So, the next time you are asked if wet sticking is permissible I'd suggest you say no and rely on the language above, even for the dowel out of the footing.

Thank you for reading. If you have comments or suggestions for future columns relating to the practice of structural engineering please contact me via jeff@evergreenstructural.com. ■

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Donations to the NH Architecture Foundation are used to support education programs, Emerging Professional /Intern Development programs, and scholarships to architecture schools.

Please add your name to the above list as a generous donor and help encourage and support our future architects! Send donations to NHAf, c/o AIANH, 310 Marlboro St., 2nd Floor, Keene, NH 03431 or go to our website and click on the "donate" button, www.aianh.org.

The NHAf is a 501 (c) 3 and as such, donations are tax deductible.

Details...

Fulcrum Associates, Inc. has broken ground for the new 28,400 sq. ft. Newport Health Center operated by New London Hospital, a Dartmouth Hitchcock affiliate, at the Newport Shopping Center in Newport, NH. Dignard Architectural Services provided design services and CHA Consulting provided civil engineering services for the project.

The new building will be replacing the existing center that offers primary care, pediatrics, gynecology, podiatry, occupational health, laboratory, x-ray, mammography, and rehabilitation services. The plan calls for the demolition of the former bowling alley to provide expanded parking and to allow for the construction of the new building in the Northeast quadrant of the site. The existing center will remain operational for the duration of construction at which point the center will re-locate to the new space and current building will be razed.

The new two-story building is designed to a transitional New England architectural style with a complement of brick veneer, clapboard and shake siding. Accent trim banding, roof cornice trim and reverse slope entrance canopy punctuate the design.

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Architectural Splendor at Siem Reap

Text & Photos by Bruce Hamilton AIA



For the purpose of exploring its many ruins, Angkor Wat has been on my bucket list for a number of years. Now, walking through the airport in Siem Reap, Cambodia with luggage and camera, I could hardly believe that I was about to journey through Angkor Wat with its magnificent towers and multitude of decorations. Although my travels had brought me to neighboring Vietnam, this was my first journey to Cambodia. As I thought about the two days that our tour group would spend at Angkor, I wondered what mysteries waited for us inside those ancient walls.

mense determination it must have taken to create this dream in stone.

As we approached the grounds of Angkor Wat on the first day, we were amazed by the number of people filling the foreground of the temple pond that renders a reflection of the Angkor Towers. Angkor Wat itself seems to come to life as the sun rises to the highest peak, aligned with the beauty and power it was built to represent. The process of exploring the sun rising, the birth of a new day, liberated our tour group prior to entering into the heart of the monument – then we were able to sense the humanizing reality and history of the temple.



Reflection of Angkor Wat Towers at the Temple Pond

Integrated with the architecture is Angkor's extensive decorating, which predominantly takes the form of base-reliefs. By their beauty, they first attract, and by their strangeness, they hold attention. The gallery of base-reliefs, surrounding the first level of Angkor Wat contains 12,917 square feet of sandstone carvings. The relief covers most of the inner wall of the four sides of the gallery and extends for seven feet top to bottom. On the eastern gallery is one of the most celebrated scenes, the Churning of the Sea of Milk, which illustrates 92 asuras and 88 devas

using the serpent Vasuki to churn the sea.

From the small town of Siem Reap, we traveled along straight roads lined on both sides by evergreen forest that were populated by monkeys, until we encountered the moat that surrounded Angkor Wat, the world's largest religious temple. Only jungle and massive woods are visible across the dark water. Wide steps guarded by grand stone lions, lead onto a broad sandstone causeway which reaches across the water towards the temple's outer wall. In the distance beyond and above an impressive entrance gate, five towers, only three of which are clearly visible, reach into the tropical sky like medieval rockets ready for take-off. This first view of Angkor Wat is so sublime that it affected our tour group in an almost physical way. For me, I simply stood to soak up the dimensions and design, to appreciate the timeless grandeur and im-

Angkor evokes the image of a giant palimpsest – like a medieval parchment erased and overwritten repeatedly. Over time, a dense and complex matrix was created, evident primarily by the spectacular succession of monumental temples. These grandiose



Extensive Decorating of Base-Reliefs



**Globetrotter at
Angkor Wat**

structures made of brick and sandstone have survived the passage of time. None the less, the remaining skeleton is so impressive that one tries to imagine the temples at the time of their splendor, bustling with life and color. Experiencing Angkor is about enjoying the diverse environment and the richness of these temples. Key features of Angkor Wat:

- The inside and outside walls of the temple are adorned with base-reliefs and carvings.
- There are carvings of almost 2,000 Apsaras (celestial dancers).
- Just about every surface in the maze of chambers and courtyards is decorated with carved base-relief scenes of wars, everyday life, and Hindu legends.
- The main tower on the third level is the top-most part of the temple and contains four Buddha statues with each facing a different point on the compass.

A visit to Angkor Wat will take away varied impressions of these amazing temples. Some may gain insight into Buddhism or archeology and others may relate their experience as connecting with the spiritual energy of the temples. From a personal perspective, the common threads were the reflections

**An Iconic Strangler Fig
has Grown Out of the
Ruins**



on the pond of Angkor Wat during sunrise and sunset.

Today, some two million foreign visitors see Angkor Wat every year. And while the sheer number of foreign visitors is starting to put a strain on the ruins, the world's greatest religious building is unlikely to lose any of its allure any time soon.

The masterpiece of Angkor Wat is Cambodia's most beloved and best preserved temple. The 500-acre complex represents the architectural pinnacle of the Khmer Empire. Originally dedicated to the Hindu God Vishnu, it has remained a place of worship since its founding in the 12th century. Its composition of towers, moats and concentric walls reveals an architectural sophistication and the base-reliefs with their plump figures and triumphal battle scenes reflect a robust, healthy and wealthy period of history. ■

Details...

Ken Grasset has joined **Eckman Construction** as a project manager, bringing 30 years of industry experience to the Bedford-based firm. Having completed



projects for some of New Hampshire's largest healthcare organizations including Dartmouth-Hitchcock, Catholic Medical Center, St. Joseph Hospital and Southern New Hampshire Medical Center, Ken will be leading Eckman's future medical projects.

"Ken is a well-respected construction professional with a wealth of knowledge and has established relationships that will serve him well in this position," said Mark Walsh, President and CEO, Eckman Construction. "Ken's impressive portfolio of work speaks for itself, particularly in the healthcare market. He's a tremendous asset to our team and we are happy to have him on board."

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Commercial Building Enclosures: The Design and Details of High Performance Building Assemblies

Overview by David Ely AIA

Session 3 Summary from Wednesday, November 4, 2015: *Commercial Building Enclosures – The Design and Details of High Performance Building Assemblies*

Presenter: Wagdy Anis, FAIA, CSI, LEED AP



Wagdy Anis of Building Enclosure Consulting reviewed the good the bad and the ugly of commercial building envelopes.

Thank you Wagdy for sharing the details of so many components. I have quoted and excerpted from that presentation here.



Standing with Wagdy Anis FAIA (Far right) are 2030 & Beyond program planners: Dana Mosher, Paul Leveille, David Ely AIA, and Sheldon Pennoyer AIA. Photo by John W. Hession

As with Peter Yost’s presentation, Wagdy got right into rain wetting and moisture penetration. As our envelopes get tighter we have a greater responsibility to ensure liquid water and water vapor are controlled and allowed to escape if they enter an assembly.

Exterior cladding is the first line of defense against moisture penetration. Wind driven rain is the main, but not only, reason for moisture related building failure. All flashings must be able to withstand moisture intrusion from:

- Kinetic (wind) energy; use a dam
- Surface tension; use a drip
- Gravity; use a sloped surface
- Capillary action; use a gap
- Air pressure; use an air barrier

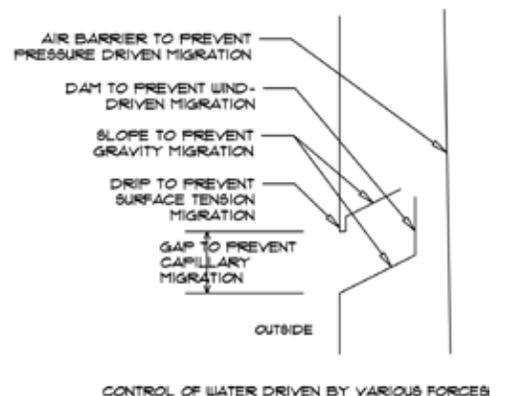
Water acts on various building planes in different ways. A stagnation point can occur

on the windward face of a building where you would expect large positive pressure. Corners will experience higher wind driven rain loads with both positive and negative pressures. The leeward side of a building will experience both positive and negative pressures. At ground level a standing vortex will exert various pressures. The roof of the building will also experience pressure and all membranes, insulation, and decks must be detailed to withstand upward pressures which are greatest at corners.

With open joint cladding the majority of pressure, as much as 97%, acts on the air barrier, not the cladding. If joints are properly detailed water is unlikely to penetrate unless it actually bridges the joint. The inner line of defense, the air/moisture barrier, is therefore not likely to become wetted and if drainage is also provided then incidental penetration of small amounts of water is easily overcome. In the “Face-Seal” approach the entire pressure is taken across the cladding. If there is any gap the entire pressure will act across that gap because no inner seal is provided. Because the hole or crack is relatively small it gets bridged easily by water, and water penetrates readily under high pressure.

It’s logical, therefore, to have open joints in the façade with a second line of defense that is as airtight as possible. Key points are to

have open joints in the façade with a second line of defense that is as airtight as possible. Key points are to





Standing with Wagdy Anis FAIA (Far right) are 2030 & Beyond program planners: Dana Mosher, Paul Leveille, David Ely AIA, and Sheldon Pennoyer AIA. Photo by John W. Hession

maintain the cavity behind brick, use weep-holes to help with pressure equalization, and keep wind-driven rain out. Flashings should have an upstanding leg higher than the maximum pressure expected across the inner wythe; 6-8" is a reasonable choice for an average building in a major storm. Taller buildings need to be evaluated individually. Pressure equalization relies on compartments in the cavity to prevent pressure build-up at key points such as corners.

Wagdy provided many details demonstrating strategies for pressure equalization. He also had some very scary slides of efflores-

cence and masonry spalling due to improperly detailed or constructed air barriers. When warm, moisture laden interior air is allowed to come in contact with the back side of cold masonry it will condense and the moisture will migrate through to the outside, especially through the mortar and will carry salts which will stain and damage the face of the masonry.

Below grade moisture can migrate up into masonry and cause efflorescence due to capillary action. Salts will increase capillary suction and can spall masonry. Radon can also be present below grade and it's a good idea to provide an under-slab suction pit and provi-

Continued on p. 14



Our Platinum Sponsor for the 2015 2030 & Beyond Series was The Garland Company. Scott Livernois (second from right) gave a brief presentation about their products at Session 3. Photo by John W. Hession

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Details...

DeStefano Architects (DJA) has announced the completion of a new 7,000 square foot business suite at the Sundial Center in Manchester. The suite will serve as the Manchester Regional Office for the New Hampshire Department of Education's Vocational Rehabilitation program. The new space will support the mission of the program; to assist eligible New Hampshire citizens with disabilities secure suitable employment and financial and personal independence by providing rehabilitation services.

The Sundial Center is a 360,000 square foot former mill building that serves as a showcase for commerce and education for the city of Manchester. The building is currently being repositioned as a mixed use occupancy facility to include commercial offices, residential units and centers for research and development.

DJA teamed with CP Management of Exeter to establish the new suite within the Sundial Center. CP Management oversees management of the Sundial Center and recently established their own on-site suite within the building.

A/E's Help in Disaster Situations



Over three years ago AIA New Hampshire created a new committee with the focus of preparing architects, engineers, and other design professionals to assist in the event of a disaster, such as a hurricane or flooding. New Hampshire has undergone severe damage over the past number of years due to such events. Going back to 2006, we've experienced that year's 2006 Mother's Day Flood, the floods in April 2007, the 2008 ice storm and a major wind storm in that year, plus Hurricanes Irene and Sandy. In 2013 we had severe winter and summer storms with flooding and landslides, and just this past winter we had a severe winter storm and snowstorm with a disaster declaration.

It is probably only a matter of time before another severe incident hits our State or that of our neighbors. A major natural disaster occurs worldwide, on average, 10 times a year, with minor disasters striking as frequently as once a week. These include floods, tidal waves, tornadoes, ice storms, fires, land-

slides, hurricanes, and earthquakes, and the damage can range from a few uprooted trees to the near obliteration of entire communities. Every state in the eastern U.S. and Canada has been affected by tropical storms and hurricanes. The possibility of disaster is a constant feature.

We knew that the unique skills of architects and engineers could be applied broadly and visibly in lending assistance in assessing damage during a disaster and getting communities back into their homes and businesses.

The committee (NH Architects & Engineers Emergency Response Task Force or NH AEER TF) began with three major needs: find volunteers, protect them from civil litigation, and train them.

Architects and engineers can face substantial liability exposure when performing voluntary services. We therefore began an intense effort to add them to the State's Good Samaritan law. In 2014 it failed to pass, but we are thrilled that the 2015 Legislature saw the benefit of this assistance and passed HB

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Meet Patrick Gordon, your locally grown New Hampshire Marvin Representative.

Some of his local favorites:
Caffe Kilim, Strawberry Banke's Skating Rink, skiing at Sunapee Mountain, and his favorite Marvin product is the Next Generation ultimate Double Hung Window.

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Welcome to these New AIANH Members:

New Associate AIA Members

Jonathan Allard, Assoc. AIA, Bruce Ronayne Hamilton Architects
 Brittany Messier, Assoc. AIA, Bruce Ronayne Hamilton Architects
 Michael Pritchard Assoc. AIA, Bonin Architects & Associates
 Caitlin J. Taube Assoc. AIA, BMA Architectural Group

New Professional Affiliate Members

Doreen Athans, Visible Light, Inc.
 Steven Barlock, Visible Light, Inc.
 Michael Becker, Inofab, LLC
 Steven Taylor, Visible Light, Inc.



AIA
 New Hampshire

292, an act expanding the good samaritan law to engineers and architects. It was signed by the Governor on July 6, effective as of that date.

During the time it took to get the bill passed, we were also working on organization and training. We developed an MOA with NH Homeland Security/Emergency Management (NH HSEM), which is now approved by both parties.

All NH AEER TF members must take the Incident Command System 100 level course offered by FEMA, and the California OES Safety Assessment Program (SAP) evaluation training. Both courses were offered in the winter of 2013-2014 and over 40 people attended. ICS 100 can also be taken online via the FEMA website. We are considering setting up another onsite session as well, and we are definitely planning another offering of the Cal OES SAP training.

In addition to the training, all volunteers must sign the MOA with NH HSEM and undergo a criminal check. When all is completed, they will be issued an ID from NH HSEM. Not-yet-licensed architects and engineers and other building industry professionals can participate on a team as well, but cannot make building assessment decisions.

For governmental and statistical purposes, a major natural or man-made occurrence is a "disaster" when so declared by the Governor of the state in which it occurs. This declaration triggers action from various state agencies, the federal government, relief organizations, and other nonprofit groups.

NH AEER TF members will be activated through NH HSEM in the event of a declared disaster and in the field will work under the

Fire Marshal's office.

Given the nature of disasters, we need a large number of volunteers on this team. Could you help out? The sole job when we go into the field is to assess the safety of structures. Are they perfectly safe and people can reoccupy? Are they at risk, but people could go in and retrieve belongings before evacuating? Are they dangerous, and therefore no one should enter? We are classified as second responders, and our duties do not extend any further.

Currently a subcommittee of the NH AEER TF is working with NH DOT and the Fire Marshal to establish process and procedures for activation and deployment. Thanks to Paul Bourbeau AIA and Jonathan Hallé, NH AEER TF co-chairs; Paul Hemmerich AIA; Bob Champagne PE; Linda McNair-Perry PE; and Bill McKinney, Building Official/Manager in Nashua; who will be working on this with State DOT and Fire Marshal representatives.

Team members John Lavigne PE, Paul Hemmerich AIA, Chris Williams AIA, Tom Lamb PE, and Bill McKinney are working on the NH AEER TF bylaws.

We'd like to also thank these additional NH AEER TF members who, beyond attending the training, have attended meetings, presented programs, and testified before the legislature, helping us to get this program off the ground: Mark Goldstein, Tim Smith, Roger Kielig PE, Eric Flanders AIA, Tom House AIA, Alex Azodi PE, Chris Urner, Jeff Trexler PE, and Nicole Martineau AIA.

Please contact the AIANH office if you would like to to be a NH AEER TF member, office@aianh.org or 603-357-2863. ■

Job Opportunities, Positions Sought

Job listings and positions sought listings are on the AIANH website: www.aianh.org/careers. To submit an ad, please email ad text to office@aianh.org. Job opportunity listings are free for AIANH members and \$80 for four months for non-members. Listings for Positions Sought are free for everyone. Please include your contact information with your ad listing.



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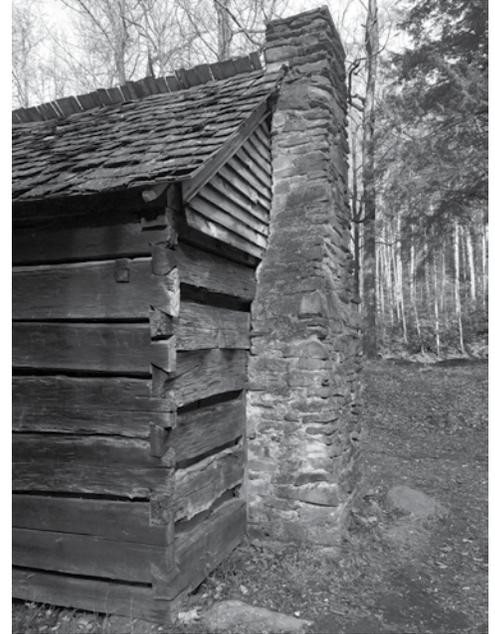
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Please contact Carolyn Isaak, office@aianh.org, 603-357-2863. Or find the prospectus at: <http://www.aianh.org/content/sponsorship-advertising>.

BOURBEAU Cont'd from page 2

to demonstrate that sometimes, even in the most commercial and “tourist trap” type of settings, it only takes a small effort to peel off the layers of modern civilization to see where we have come from, what our history tells us about who we are, and where we are going. Anyone who has ever visited this area is struck first by the 1-mile long stretch of arcades, candy shops, moonshine parlors and restaurants. On the surface, it is as garish and over the top as any vacation resort you have ever visited. What makes it unique is the rugged natural setting that not only surrounds it, but embraces it. If one were to spend their entire vacation on this one mile strip of honky-tonk hedonism, then one would be doing themselves a huge disservice. Literally just steps from the downtown area is the Parkway by-pass that runs east to west and over-looks the city to the south with the wide expanse of the Smoky Mountains acting as a natural backdrop to the cascading foliage and fauna that envelopes the area this time of year. It’s no wonder that the Cherokee and later, early settlers found this area to be a sacred and mystical place. It’s hard to imagine that now, but as I said, it’s a short



Ephraim and Minerva Bales House circa 1890, Gatlinburg, TN

drive or walk outside the city limits before you are transported to a more simple time.

Remnants of early life in the mountains are all around. Abandoned log cabins, corn cribs and stables appear scattered throughout the park as reminders of a time long since removed from our collective memories. Even so, the lessons these simple buildings offer are as constant as the cool, fresh, clear water running down the mountain into the creeks and rivers that were essential to their survival.

“Cherokee Indians lived in small communities, usually located in fertile river bottoms. Homes were wooden, circular frames covered with woven vines and saplings plastered with mud. Each village consisted of up to 50 log and mud huts grouped around the town square, called the Council House, where ceremonial and public meetings were held.

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For more information or to learn more about membership contact the Chapter office: 603-226-4789

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View from Newfound Gap looking west and the dedication site of the Park on September 2, 1940

The council house was seven-sided to represent the seven clans of the Cherokee: Bird, Paint, Deer, Wolf, Blue, Long Hair, and Wild Potato.”

Like the Cherokee, early settlers made their homes along many of the rivers and creeks that run through the mountains here. Their homes were expectedly simple structures often times with just doors and few, if any, windows. Sometime broken into two different sections; one for the family to gather, eat and sleep and the other for cooking. The land is rugged, rocky, and steep and as such it is extremely difficult to cultivate for farming. All of the structures made in the early part of the 19th century are from old- growth forest that once dominated the landscape before the lumber industry destroyed nearly 2/3 of the forest by the early 20th century.

The homes were situated to take advantage of the natural resources available on site and oriented to be sheltered from winters winds, rain and snow that can be extremely harsh in this part of eastern Tennessee. There are examples of modern structures in the area that have utilized old timbers and reclaimed architectural trim and stone for their own structures.



Although only caricatures of authentic “mountain structures” they do keep to the tradition of using the natural resources available in the area to build and design from.

What is most compelling about the history of this place is that we as a people realized at some point in the early 20th century that the ravages that were bearing down on this area were not sustainable.

Something had to be done to keep what natural resource remained intact and here for future generations to enjoy. Franklin Delano Roosevelt started the CCC (Civilian Conservation Corps) in the middle of the Great Depression as a way of putting able bodied men to work for the good of the country.

“The CCC was the first of several federal job programs designed to lift the nation out of the Great Depression. Created by President Franklin D. Roosevelt in 1933, the CCC employed three million men, most of them between 18 and 25 years old. Roosevelt declared their work “of moral and spiritual value, not only to those.... taking part, but to the rest of the country as well.” Roosevelt went on to formally dedicate the park on September 2, 1940.

The legacy of preservation is alive and kicking today not only in the Great Smoky Mountains, but all over our country. We as a people have realized, and perhaps not too late, that the great natural resources that make this country what it is are worth preserving for all future generations to enjoy and the sustainability of our planet. ■



Smoky Mountain Brewery circa 1996, Gatlinburg, TN

Details...

On November 20th as **PROCON** of Manchester, Rand-Whitney of Portsmouth, neighbors and local officials celebrated groundbreaking on a new 118,600 sf Rand-Whitney Container facility at Stonewall Industrial Park in Dover, NH. Rand-Whitney is a household name known for pioneering innovative and environmentally friendly corrugated packaging. PROCON is the designer and construction manager, and Summit Land Development of Dover is the developer.

Earlier in the month key players in the Stroudwater Lodge development began construction of the Stroudwater Lodge Residences. Construction Manager **PROCON** worked with the developer, Northbridge Companies, and the real estate firm, Sandy River Company on this project. Gawron Turgeon Architects of Maine designed the 3-story, 95-unit, state-of-the-art senior assisted/independent living facility.

Stroudwater Lodge offers residents a new standard of living for the next generation of senior residents in New England. Conveniently located just off I-95 near bustling downtown Portland, residents will have accessible shopping, entertainment and medical services at their fingertips.

Submit Your Details...

Do you have an interesting job on the boards or one that is newly completed? How about a new hire, a promotion at your firm, or someone had a baby? Maybe you've recently received an award or had your project featured in a magazine?

Send us the information and we'll print it in our "Details..." columns. Email to office@aianh.org. Photographs can also be used (300 ppi).

2030 & BEYOND, Continued from page 9

sion to vent the gas in the event it's detected.

Air barriers should be designed for air impermeable continuity across six sides of the box. It must be supported structurally and be durable. This will ensure code compliance, sustainability, energy conservation, comfort from drafts, durability, and prevent moisture and mold accumulation. In a cold climate the air barrier can easily reduce the heating load by as much as 34% - 40%. The "Pen Test": simply draw a continuous line around the building at the air barrier and detail all transitions. Do it in section and in plan.

Building materials must have joints designed to react to movement due to temperature (ambient and solar heat gain), moisture and structural loads due to creep or deformation. Wagdy provided a very useful "Sol-Air" chart to determine temperature of light and dark colored materials based on solar gain and ambient temperature. He also provided Wagdy's Equation for Sealant Joint Size Calculation: $\text{Joint size} = E \times 2 + 1/8"$ Where E= calculated expansion plus 1/8" for construction tolerance. Example:

Brick wall in Boston facing west, 30' be-

tween expansion joints. Calculate the joint size:

- $30' \times 12" = 360"$
- Sol-Air temperature in summer: $91 + 74 = 165$ deg f. (ambient plus solar gain)
- Sol-Air temperature in winter at night = 7 deg + $0 - 7$ deg.
- $\Delta T = 165 - 7 = 158$ deg f.
- Expansion = $360" \times (.0005 + (158 \text{ deg} \times .000004)) = 3/8"$. (.000004 is coefficient of expansion in brick)
- Joint size = $E \times 2 + 1/8"$ or $3/8" \times 2 + 1/8" = 7/8"$

Subgrade design can only be effective after exploration and analysis of the existing site; surface drainage, storm water, existing hardscape, geometry, bearing pressures, water levels, soils characteristics, hazardous materials, and risk factors. Redundant strategies are best. A membrane barrier and crystalline waterproofing will keep out liquid water and prevent capillary action. There is typically one chance to install a good water barrier on the outside of foundation walls and under slabs.

Many factors are part of roof design: low slope or pitched, vented or unvented, fire rating, use by owner, energy efficiency, solar panels, reflectance/emissivity, green roof, roof/wall integration, air barrier, and on and on. Environmental drivers include IECC, ASHRAE 90.1, certification programs such as Energy Star, LEED, and others. Commercial property insurer FM Global has quantified wind uplift ratings for roofs. Insulation should be installed in two layers with joints staggered. A cover board will protect insulation from compression. Avoid thermal bridges of fasteners that penetrate the entire assembly. Roof and wall should be integrated to ensure continuous thermal, air and moisture barriers.

Windows, storefronts, curtainwall, and skylights can include strategies such as pressure equalization, low-E glazing, low conduction or SS spacers, metal backpan pressure equalized rainscreen air barrier at spandrels, and unitized systems. All three types of heat transfer in glass, conduction, convection, and radiation are reduced by multi-panes. Heat mirror film performs the same function as triple or quad glazing, and low-E coatings help keep heat in. Aluminum storefront

Continued on next page



Photo courtesy of Christopher Simmonds Architect

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Construction Summary

Project Type: Architectural Services
(Statewide Projects)

Location: Statewide NH

Owner: State of NH

Architectural Contractors: Tennant /
Wallace Architects, Oak Point
Associates, Dignard Architectural
Services, Christopher P.
Williams Architects,
Architechnology

Project Type: Westmill Senior Housing
(26 Units)

Location: Keene, NH

Owner: Southwestern Community
Services Inc.

Architect: Burnell Johnson Architects

Engineer: SVE Associates

Const. Mgr.: Cheshire Builders

**Construction Summary is provided by
Construction Summary of NH, Inc.
734 Chestnut St., Manchester, NH 03104**

Project Type: Samuel Read Hall Building
(Department of Physical Therapy
Renovations)

Cost: \$309,000

Location: Plymouth, NH

Owner: University System of NH

Architect: Harriman Associates

Gen. Cont.: Bauen Corp.

Project Type: Strafford County Jail Facility
Upgrade Modifications

Cost: \$208,000

Location: Dover, NH

Owner: Strafford County

Architect: McHenry Architecture

Gen. Cont.: Careno Construction Co.

Project Type: Health Center

Cost: \$9,000,000

Location: Newport, NH

Owner: New London Hospital

Architect: Dignard Architectural Services

Const. Mgr.: Fulcrum Associates

Project Type: Sundial Residences
(Renovations To Existing Mill
Building) (87 Apartments)

Location: Manchester, NH

Owner: c/o Architect

Architect: Destefano Architects

Engineer: Zade Associates

Gen. Cont.: Martini Northern Inc.

Project Type: Somersworth Career
& Technical Center Renovations

Cost: \$5,500,000

Location: Somersworth, NH

Owner: Somersworth School District

Architect: Banwell Architects

Const. Mgr.: North Branch Construction

Project Type: FMS 4 Renovations
(NH Army National Guard)

Cost: \$1,074,336

Location: Hillsboro, NH

Owner: Department of Army,
USACE New England District

Architect: HL Turner Group

Gen. Cont.: Ironclad Services Inc

A2030 & BEYOND

Continued from p. previous page

glazing is available with thermally broken frames which greatly reduces thermal bridging. Proper installation includes a flashing membrane to continue the air barrier to the window. Again, Wagdy had many details of various glazing types and how to seal them to the air barrier. Finally, Unitized Curtainwall systems can facilitate air sealing and pressure equalization.

Summary:

- Pressure equalized rainscreen cladding is often the best choice for managing water.
- Detail below-grade assemblies with redundancy.
- Air/moisture barriers should be continuous around corners and on all sides of the box.
- Design expansion and other joints to accommodate all types of movement in materials.
- Specify glazing components with energy efficient glazing, low conduction spacers, thermally broken frames, and seal to the air barrier. ■

AWARDS GALA *Continued from p. 1*

Jeff Shinn and Rik Gelinis from Spaulding Brick Company and Dan Barnard, Michael Beliveau, and Louis Gagnon from Charon know you appreciate their long-time support of the Design Awards program.

This year we also have some new sponsors. We're happy to welcome: *Gold Sponsor Marvin & Integrity Windows and Doors* and *Silver Sponsors PROCON, Inc.* and *RPF Environmental*.

We would be unable to finance this program without our sponsors!

Also, this year, we welcome *NH Home Magazine* as a *Media Sponsor*. Thanks to *NH Home* for all of their support of our Design Awards program.

If you'd like to sponsor the 2017 Awards program, sign up now for maximum exposure. Contact the AIANH Office.

Watch both your email and the post for your invitation to the Annual Meeting and Awards Banquet. We hope to see you there! (You can register online at www.aianh.org/news/aianh-events.)

In the meantime, the AIANH Board and Executive Director wish you the happiest of holidays. ■

Project Type: Kennedy Building Entrance
Renovations

Cost: \$188,059

Location: Concord, NH

Owner: Concord Housing &
Redevelopment Authority

Architect: SMP Architecture-

Gen. Cont.: Cobb Hill Construction

Project Type: Community Center
(Boys & Girls Club & Suncook
Senior Center Building)

Location: Allenstown, NH

Owner: Town of Allenstown

Architect: Architectural Link

Engineers: Hoyle Tanner & Associates
Inc., Ackroyd Engineering, Design
Day Mechanicals Inc., Steffensen
Engineering

Const. Mgr.: Milestone Engineering
& Construction

Project Type: Student Residence Hall

Location: Canaan, NH

Owner: Cardigan Mountain School

Architect: Banwell Architects

Gen. Cont.: North Branch Construction

Calendar of Events

Jan 22 **32nd Annual AIANH Awards Banquet:** Join us for our annual Awards Gala at LaBelle Winery, Amherst, NH, 6 - 9:45 pm. This is an evening of celebration...of architecture and of Chapter activities. All submissions to the Design Awards program will be on exhibit and will be featured in a running slide show. Join us for what is always an enjoyable, entertaining evening! More information and registration at www.aianh.org/news/aianh-events.

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Photo of the Month



**The Cathedral of Christ the Light,
Oakland, CA**

"Exquisite detailing and juxtaposition of materials throughout...I recommend checking it out if you are in the area."

**Photo by
Randall Walter AIA, Bensonwood**

Do you have an interesting photo? Why not send us one to print? 300 ppi jpegs, approximately 4 x 6 inches, BW or color. (photos are also posted on the website at www.aianh.org/news/photo-of-the-month.) Send along a title, caption, and your name, to office@aianh.org.