CMNEWS
For the concrete masonry and hardscape industry

Volume 38, Number 10 October 2008

Fire Safe Construction Necessary and Affordable

Providing life and property protection is a significant part of the design and building process as well as the focus of the International Building Codes now in place throughout the United States. There is concern that the minimum requirements set by the Codes for fire safety (especially for multi-residential structures: townhouses; dormitories; assisted living facilities; small hotels) may not provide adequate protection for residents dwelling in these units.

A movement is underway to increase the level of fire protection in the Codes for by using the balanced design approach to construction which considers three components:

- *Containment* with structural walls, floors and ceilings of masonry and concrete products that will not burn and will provide 2 to 4 hours of protection;
- *Detection* with smoke detectors to alert residents to evacuate and;
- *Suppression* using sprinklers to control the fire until the emergency responders arrive on the scene.

Detection and Suppression are *active* systems that require a water source and a mechanical and/or electrical system that may, in some circumstances, fail. Containment with compartmentation is a *passive* system that does not require anything to activate.

continued on page 2

Please pass on to:

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FEATURES

DEPARTMENTS

A PUBLICATION OF THE
NATIONAL CONCRETE MASONRY ASSOCIATION
Sustainable Concrete Products for Structures and Hardscapes
90th ANNIVERSARY
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WITH THIS NEW STUDY, the industry has documentation that the cost difference for non-combustible concrete construction is much lower than previously perceived.

The concrete masonry industry must educate the public and code officials about the importance of containment with concrete based products that will never burn and will maintain their structural integrity. If a fire were to start within a given room or compartment of a building, the noncombustible walls, floor and ceiling would contain the fire and to allow time for fire fighters to arrive or for active protection such as sprinkler systems to deploy.

Currently, the Codes provide for detection and suppression but they do not require non-combustible compartmentation between dwelling units. A significant argument made for not using compartmentation has been the misperception that it is cost prohibitive.

It became obvious that in order to clarify and accurately document the actual cost of constructing with non-combustible concrete based products vs. wood, gypsum and steel for interior separation walls, floors and ceilings, a study needed to be implemented by an independent source.

Fire Safe Construction Cost Comparison Study, was commissioned by three Fire Safe Construction Advisory Council (FSCAC) groups—Pennsylvania, Mid-Atlantic, and New York/New England—and the Northeast Cement Shippers Association (NECSA). The study is the first of its kind in the US and was commissioned to be able to address first cost for construction of multi-residential structures using concrete based products vs. wood & steel with gypsum.

The report was prepared by Haas Architects Engineers an architectural and engineering firm located in State College, Pennsylvania. The author of the report, Walter Schneider, PhD, P.E. was principle at Haas Architects at the time and now is a continuing education professor at Penn State, FEMA trained, and a Fire Chief. Dr. Schneider has toured the country presenting the report results to the concrete and masonry industry, AIA chapters and Building Code Officials.

The Fire Safe Construction Cost Comparison Study was based on a four story multi-residential building configured with single and multiple units per floor. The project included schematic drawings that were fully reviewed for compliance with the 2003 International Building Code. The design and costing included a structure that was move-in ready including carpeting, insulation, electrical and plumbing and addressed seismic issues required by the code. Prevailing wage was used for each of the locations. Each building was evaluated for costs in 3 locations (Framingham, MA; Towson, MD; and Harrisburg, PA) under a variety of construction options (conventional wood framing, light gage steel, masonry, precast, ICF) and using prevailing wage. Later, 38 more cities were commissioned, bringing the total to 41.

In 2006, a single wythe addendum was completed to the original *Fire Safe Construction Cost Comparison Study*. This option studies two wall construction types - Split Face Concrete Masonry Unit (CMU) and a SandBlasted Architectural Precast Panel. There are now 29 cities that have this option completed.

With this new study there is now documentation that the cost difference is much lower than perceived. In many cases, the cost differential was 3 - 5% or less. In many instances, the cost for concrete masonry with precast floors and ceilings is actually less thand the cost for a wood/gypsum option. These numbers are backed up by almost 800 pages of data and supporting analysis and should easily withstand hostile scrutiny.

The minimal increase in construction cost will also help pay for itself over the life of the structure. Materials

BALANCED DESIGN is a three-fold approach for fire safety using *Active* and *Passive* protection for occupants, contents and the structure of a building.

Passive

COMPARTMENTATION
Containing a fire to a single area using Concrete based products. In the event of a fire, masonry and concrete walls and floors compartmentalize the smoke and flames with 2 to 4 hours of protection for residents and fire fighters.

Active

DETECTION
Smoke Detectors: sound an alarm to alert residents of smoke and fire in the building.

SUPPRESSION
Sprinklers: introduce water to the area of fire or smoke.

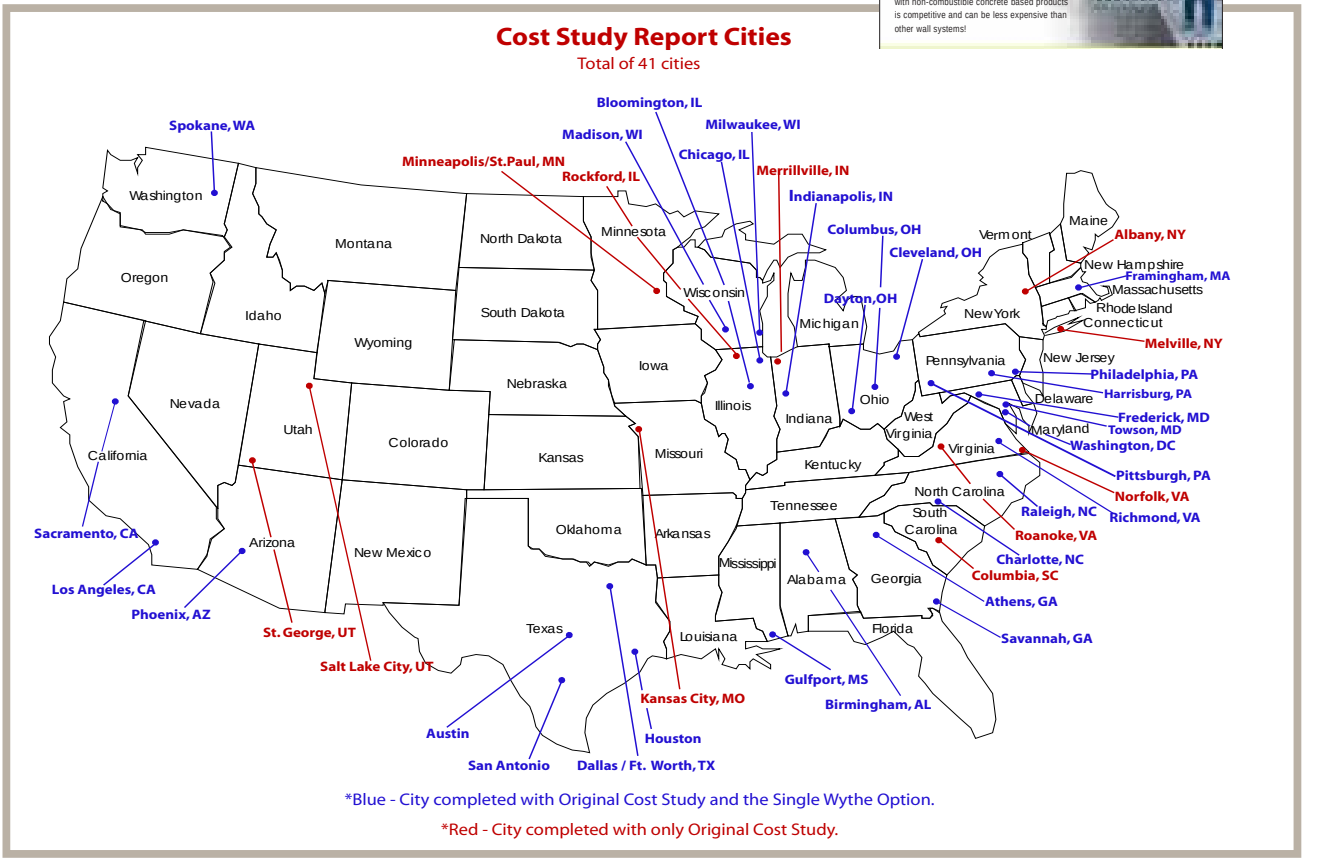
Each of these active systems are important but require other elements: electric, battery, water...and maintenance to work properly. Both are mechanical and/or electrical forms of protection from fire that may in some circumstances fail.

like concrete masonry, precast concrete, and cast-in-place concrete have many other advantages beyond their inherent fire performance. In many cases, with this type of construction the damage outside of the fire compartment is minimal. This provides for reduced cleanup costs and quicker reoccupation of the structure.

In Pennsylvania, the movement to make balanced design mandatory has gained momentum, Code Officials and the AARP have endorsed legislative language developed by the PA Fire Safe Construction Advisory Council (PAFSCAC) that will be presented by a legislator in the near future. If all goes well, other localities and states will make gains as well, leading up to the adoption of fire safe construction codes nationally.

Companies, individuals and state and local groups can contact the PAFSCA to get more information on starting an advisory council or to order the "Don't Get Burned" brochure, Fire Safe Construction Video, initiate cost studies and find out about Dr. Schneider's speaking engagements. CMN

PAFSCAC, P.O. Box 4, 813 Chestnut Street, Lebanon, PA 17042-0004 or www.pafscac.org or call Jan Boyer (717) 279-6346.



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Ensuring Sustainable Fire-Safe Construction with Durable Concrete Masonry

When we talk about sustainable buildings, we generally talk about impacts of buildings with respect to water use, energy requirements, resulting CO2 emissions, waste output, and electrical consumption. We also talk about real and / or perceived advantages of decreased operating costs, increased building values, a healthier indoor environment, and the like.

Little attention is paid however, to durability and longevity of a building, especially with respect to material choices, despite these qualities being addressed in some reference guidelines, such as the Whole Building Design Guide. Yet how durable and maintainable a building is, is paramount when considering a building sustainable. I often muse about the impact asking the following question would have on the construction industry: "How long do we want that building to last?"

In the US construction market, first costs tend to be valued far more than long term costs. This is not new news to any of us. It's been the case in my short time in the field -18 years, and I can only assume that it's been the case for far longer than I could imagine. For all any of us know, the valuation of first costs over long term costs may stretch as far back as the Roman Empire, and beyond. Picture an Emperor "Yes, yes, I do want a temple that is beautiful and reflects our culture throughout the ages. But I don't want to spend a lot. Find the cheapest stone you can and build with that." Perhaps this is the real reason so many buildings built thousands of years ago in Rome lie in ruins today; cheap stone.

I say this in jest of course, as I sincerely doubt this was the attitude, and the fact that these buildings still stand is a testament to durable materials. But when did first costs become the defining way we build most buildings today? Fifty years ago? One hundred years ago? Five hundred years ago? And, more importantly, how has this valuation –or de-valuation, impacted the sustainability of our built environment?

An excellent example of this impact of valuing first costs over long-term costs is reflected in a recent fire in Conshohocken, Pennsylvania. The word fire is of course not often associated with sustainability; again, it's generally about energy and resource efficiency. But when a building burns, how fire resistant the materials are—or are not—have a direct relationship to the sustainability of our built environment.

The Conshohocken fire occurred on August 13, 2008 at an apartment complex. The buildings were wood frame construction, with brick veneer, and wood/fiber board panels, and were roughly four stories high; each had a parking garage at the ground level. The reason behind the original material choices for the complex were undoubtedly made for perceived first cost reasons -many believe it's less expensive and labor intensive to frame from wood (or metal) than to lay units of concrete masonry. Independent third party studies have shown that this is not necessarily the case. See http://www.pafscac.org/home.htm.

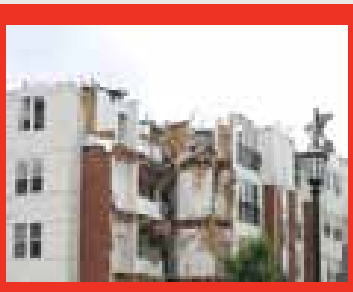
The fire was ignited by a welder's torch in a building still under construction. It spread very fast through this building –being a four-story high wood frame skeleton, it was a matchbox. The fire also jumped an inner drive to two adjacent occupied structures, and continued to spread just as quickly; it is believed to have spread in these latter buildings through the attic.

A few class-action lawsuits have already been filed in response to the fire, the focus being on the sprinkler system and other life-safety measures. Apparently, a variance was granted to the developer for installation of a more residential grade sprinkler system in exchange for more firewalls of fire-rated GWB. The lesser grade sprinkler system meant that concealed spaces such as attics were more than likely not sprinklered, which would have of course aided the quick spread of the fire.

I have little doubt that these buildings were built to the letter of the code. In spite of the base requirements for any life-safety measures, there are always trade-offs with the code, as we all know. The fact that the developer received a variance for a lower grade sprinkler system in exchange for more firewalls of a combustible nature is a case in point.

WHEN A BUILDING BURNS, HOW FIRE RESISTANT THE MATERIALS ARE—*OR ARE NOT*—HAVE A DIRECT RELATIONSHIP TO THE SUSTAINABILITY OF OUR BUILT ENVIRONMENT.





In my opinion, another area of focus for the lawsuit would be the material choices, how durable and fire-resistant they were–or were not. Had this particular complex been constructed of the more durable and fire-resistant material masonry, what might the impact have been with respect to a more sustainable built environment? I see several right off the bat: the fire contained in a much smaller area, less water needed to fight the fire, less money towards fuel and energy costs –and the resulting carbon footprint, of fighting the fire in equipment, news media coverage and the like, less risk to the fire fighters, less burned debris to landfills (since little to none of it can be recycled), residents not losing their homes and possessions, less time and money tied up in litigation (this fire and subsequent lawsuits will more than likely take years to resolve), less costs towards material replacement and labor for rebuilding, and finally –and most important, the probability that the fire would not have started.

Thankfully no one was killed in this fire, although unfortunately, numerous pets did lose their lives. There are however 375 displaced residents, a tremendous loss of property –personal and real estate, burned debris going to landfills, lawsuits being filed, and the loss of increased economic and community impacts to Conshohocken. How sustainable is any of this?

We are not building for longevity beyond 50 years, perhaps even 25 years and maybe less. And we will not attain a sustainable built environment until we begin to scrutinize our material choices for durability and longevity.

Part of the issue is a mindset around how we build, which revolves around the profit associated with building. How much will it cost, how much will I make in return, and what's my margin? Another issue is the codes. Codes are meant to protect us –and they do. But we need to remember that the code in reality is also the minimum standard regulating how we build. In the case of the example in this article, the codes allowed multi-story, dense unit apartment buildings to be built of wood frame with a lesser grade sprinkler system.

What's to be done? Economic factors will always be an issue; I'll be honest, I want to make money too. But while sustainability arguments such as increased ROI and productivity may be valid, they only scratch the surface. What about looking at the short and long term economic impacts of stewardship –or lack thereof? For example, if buildings such as this apartment complex had truly had long term stewardship in mind (think 100 years from now), of ROI, of residents, of maintenance and operations, and of the vitality of the larger community, would the same building materials have been selected?

Codes need scrutiny, with respect to what's allowed. They need to be transformed with long-term stewardship in mind. We also need to ask what building materials are appropriate, and when and where are they appropriate. And finally, we need to ask questions about how long a building will last –or won't. What will the ROI be in each of these cases? Revolutionary.

This is a unique time for the masonry industry. It is poised to become the next great building material, or, in reality, reclaim its position as the building material, as we move towards a more sustainable way of building. It is one of the most durable and maintainable of building materials. And think about its enduring qualities, reflected in the Roman Ruins, Gothic Cathedral's, and so many building's standing in the communities many of us live in; built of masonry, still standing, still being used –some for the same original use, some for new uses.

The masonry industry is committed to building a truly sustainable, maintainable and enduring built environment. To be fair, masonry won't always be the most appropriate choice. But in many cases, it will be. It is time to change the way we build and to build the legacy that truly reflects who we are, people who care about the future and the imprint we leave behind. Masonry will lead the charge. CMN

Sara Sweeney, RA, CSI, CDT, LEED AP is Founder and Principal of EcoVision Green Solutions Services LLC, a solutions based sustainable building research and consulting firm. She is also an adjunct professor at Philadelphia University where she teaches a course in building materials and systems. Sara did her Masters thesis on brick, and is a member of The Masonry Society and serves on their Sustainability Committee. She is a champion of masonry construction. She can be contacted at sara@ecovisionllc.com.

The Form and Function of Fire Safety: Foundation-Sponsored Architecture Student Design Competitions Address Real-World Issues

For several years, the NCMA Education and Research Foundation has provided grants to support college architecture and engineering student design competitions. Since the Foundation published a grant application template for this type of program in 2006, fifteen competitions have been funded at eleven universities.

At Carnegie Mellon University (appropriately known as "CMU"), the competition was organized by Professor Kai Gutschow. Fifteen 2nd-year students competed to design a fire tower featuring masonry construction, adjacent to the South Side Works in Pittsburgh, Pennsylvania. The students were told to design the tower to function both as a poetic landmark for the community and as a functional fire training tower for the fire department.

To "cap of " the annual competition, now in its third year of support from the Foundation, CMU and NCMA hosted a public lecture on 24 March 2008, featuring Lisa Iwamoto of the firm Iwamoto Scott, a San Francisco based architecture and design practice she leads with her partner, Craig Scott. Professor Iwamoto's research and exploration into digital fabrication, digital modeling, and parametric design practices, both with her firm and in her work as an Associate Professor at the University of California at Berkeley, fit well with the intent of the 2nd-year studios and the NCMA competition.

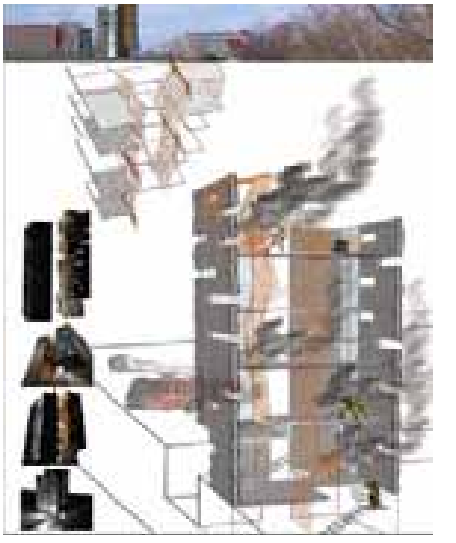
After the lecture, as part of a larger departmental awards ceremony, Professor Kai Gutschow and NCMA Foundation representative J. David Rozsa announced the competition winners and handed out awards. The jury was comprised of: Dutch Macdonald, AIA (Maya Design); Ron Dulaney (Bolin, Cywinski, Jackson); Lee Calisti, AIA (LeeCalisti Design); Professory Jeremy Ficca, AIA; and Kurt Rosander (CEMEX).

First-place winner Adam Aviles's project was described by one juror as follows:

"This fire tower of ers a clear diagram that expresses the power of fire and concrete block in a straight-forward way, and leads to a good balance of form and idea. Details such as the perforated masonry wall generate both surface variation and light modulation, as well as a visible symbol of the fire inside. The masonry is confronted almost as one confronts a fire: It is with respect and care, without the use of tricks."

At the University of Idaho, the competition was organized by Professor Diane Armpriest, who had helped the Foundation develop the student design competition grant application template. 42 students competed to design a fire station located in Boise, Idaho. The competition's guidelines required that the building and site design explore the possibilities for creative expression featuring the use of the range of concrete masonry products. As noted in the students' project overview:

"During the last four centuries, the fire station has become an essential public building in every community. It is unique because it houses both institutional and domestic functions: An extensive garage for the fire engines and related equipment; of ces; and a home-like living area for the fire fighters. It is a highly identifiable public building with associated ceremonial functions, yet it is also required to accommodate user needs very ef ciently. There is a long architectural tradition of making fire stations that accommodate these diverse programmatic needs while responding to changing fire-fighting methods and technologies. As a type it has evolved from the early privately-owned fire shed, to 19th Century storefronts, castles, and barns, to contemporary projects ranging from Fire Station 4 by Venturi and Rauch to the Vitra Fire Station by Zaha Hadid. The challenge of this studio is to interpret the fire station building type as it continues to evolve and to use concrete masonry as the primary material."



Adam Aviles's winning project: Fire Tower
Carnegie Mellon University

Christopher Olenyik won first place in this competition, and he presented his

Christopher Olenyik's winning project: Fire Station
University of Idaho

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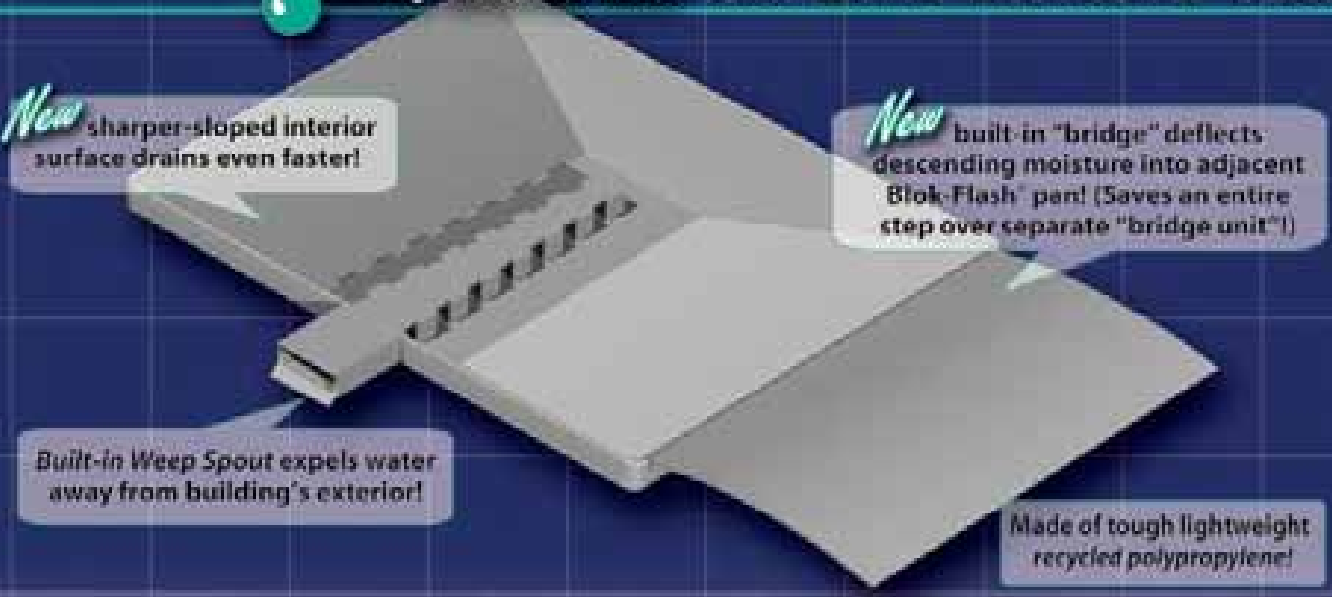

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ARCAT

winning design at the 2008 NCMA Midyear Conference in Huntington Beach, California.

The Foundation grant application process is simple, user-friendly, and f exible, thanks to an application template that can be modified to suit the objectives and characteristics of each school's competition. Additional funding is available for competitions that incorporate concrete hardscape design, and for competitions in which architecture students are partnered with engineering students. To ensure that local industry resources (speakers, facilities, plant tours, materials, and expertise) are available to support the competitions, each application is endorsed by the local NCMA State and Province Alliance association or by a local NCMA Producer Member company.

To help your local college organize and secure funding for a student design competition, download the grant application template at: www.ncma.org/foundation

For more information about the Foundation's student design competition grants, please contact NCMA Manager of Education and Certification J. David M. Rozsa, at drozsa@ncma.org or 703-713-1900.

TEK 13-4 Outside-Inside Transmission Class of Concrete Masonry Walls

Although not yet addressed in the building codes, there have been a significant number of requests for Outside-Inside Transmission Class (OITC) information for masonry walls. This rating system uses the same criteria as for Sound Transmission Class (STC) but uses a dif erent formula developed by the transportation industry that is better suited to the lower frequencies generated by vehicles such as highway, airport, and railway noise. *TEK 13-4 Outside-Inside Transmission Class of Concrete Masonry Walls* is a new TEK that provides information and guidance on this new sound rating system.

This TEK is appropriate for distribution to architects, engineers, contractors, building of cials, producers, and inspectors. To order copies of the publication, call NCMA at (703) 713-1900.CMN

New Members

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Heavy construction, provision of general design and contracting services, including urban mass transportation systems and railways, tunnels and bridges, industrial buildings, restoration and strenghthening, housing complexes, general public buildings, hotels and tourist complexes; prefabrication including prefabricated concrete industry, panelton prestressed, hollow core slabs and wall elements, prestressed bridge girders, prestressed structural elements, interlocking pavements, border stones and a concrete masonry unit; prestressing including application of high tech construction methods, prestressing concrete technology, heavy lifting-supporting-stressing systems, connection-bearing-anchoring elements.

Present Your Products and Services at the Next PDCC Forum

Would you like the opportunity to present your latest product or innovation to the movers and shakers of the industry? If so, the Product Development & Creative Concepts (PDCC) committee is now accepting submissions for presentations at the **Product Development & Creative Concepts Forum** at NCMA's annual meeting February 25th 2009 in Indianapolis.

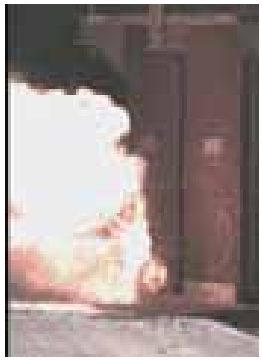
In order to be considered, presentations should be centered on products or services of interest to producers and distributors of concrete masonry and hardscape products. Products and services submitted for presentation should provide cost savings, increased safety, enhanced production, improved quality, innovative block and brick designs, or systems integration.

All presentations that meet one of more of these criteria's will be considered by the committee for one of the presentation slots at the forum in February. If you would like to submit a presentation, or if you have any questions regarding the submissions or the criteria, please contact Ron Churchill 703-713-1900 or rchurchill@ncma.org. CMN

Blast Resistance of Concrete Masonry

An NCMA Education and Research Foundation Funded Project

Over the past two decades, the US government has encouraged and sponsored research towards developing construction methods to better protect occupants of buildings from the effects of external explosions. The need for new resilient structures technologies is emphasized by terrorism incidents such as the bombing of the US embassies in Nairobi, Kenya and Dar es Salaam, Tanzania (August 7, 1998) and the Khobar Towers attack, Dhahran, Saudi Arabia (June 25, 1996), where the majority of injuries result from the fragmentation and intrusion of windows and exterior walls facing the blast origin. The effects of car bombs in Iraq and other Middle East countries on buildings adjacent to the blast origin also illustrate the susceptibility of injury-causing failure of wall structures due to blast. Unfortunately, some common masonry construction practices can result in catastrophic conditions when subjected to relatively minor airblast loading.



National Concrete Masonry Association
FOUNDATION

The Airbase Technologies Division of the Air Force Research Laboratory (AFRL) has been a leader in the development of innovative blast reinforcement technologies over the past two decades. In early 2005, NCMA and other concrete industry associations joined with AFRL to examine the blast resistance of common concrete wall construction and to identify methods of improving blast resistance. A Cooperative Research and Development Agreement (CRADA) entitled "Blast Resistant Concrete Products" was established between AFRL and the Portland Cement Association (PCA), and it was agreed that the involvement of other organizations could be worked through the auspices of the AFRL-PCA CRADA. The stated objective of the program is "to develop blast protection data for concrete building products typically used in construction and to develop improvements to these designs as needed to improve blast resistance."

As part of this exciting program, NCMA proposed five wall section designs for testing. The first phase of explosion testing was completed in July 2007, and involved loading of 7'-4" wide by 11'-4" tall masonry walls with up to 1000 lb explosives detonated at varying distances from the test structures. The loading was designed to explore the ultimate resistance capacities of the test articles when subjected to impulse load from a high order detonation. Three CMU wall designs were involved in Phase I: (Wall 1) solid grouted 12" wall that served as the "control" test panel; (Wall 2) conventional block with brick veneer; and (Wall 3) A-block with brick veneer. All of the concrete masonry wythes were fully grouted. The veneer sections were insulated with 2" rigid board extruded polystyrene insulation, and tied to the structural wythe using eye and pintle ties at 16" spacing (horizontal and vertical). Two each of the three Phase I designs were tested in three detonations (six walls total).

Auburn University was sponsored by an NCMA Education and Research Foundation grant to conduct the pre-test prediction analyses and post-test studies using advanced simulation technologies. High fidelity computation studies are an essential component of blast research programs due of the extreme expense of full scale explosion testing. Furthermore, the short duration of loading and response, plus the destructive result of the testing eliminates the opportunity for thorough understanding of structural response being gained exclusively from explosion tests. Auburn's work included the use of advanced finite element software as well as the development of single and multiple degree-of-freedom models. After validation of the models with full scale explosion testing, parametric studies were conducted to expand the behavioral knowledge gained from the full scale testing.

The masonry walls tested thus far demonstrated excellent resistance to extreme blast impulse loading. The structural wythes were able to withstand dynamic deformations exceeding 10 inches without spalling or collapse. The total resistance demonstrated was comparable to a reinforced concrete flexural system, with the properties of the grouted structural wythe plus the mass of the brick veneer. Post-test forensics and numerical analyses indicated that the ties transferred practically all of the blast impulse, and that the foam insulation was not significantly loaded. Additional research is on-going that will quantify the potential of insulating foams to contribute to the blast resistance of multi-wythe masonry walls. Now that the Phase I testing and analysis is complete, the NCMA-AFRL-AU team is developing plans for additional CM research. Based on the lessons learned from the research completed thus far, the Team plans to return to the structures laboratories to complete full scale static tests to further define the ultimate resistance of multi-wythe insulated CM walls subjected to uniform lateral pressure. A final report on the Phase I testing is expected in October. The Team also plans to continue working together towards advancing the engineering methodology and design doctrine for concrete masonry walls for blast loads. CMN

Contacts: Jim Davidson, jim.davidson@auburn.edu and Dennis Graber, dgraber@ncma.org

NCMA laboratory Undertakes First Unit Production Research Project

The NCMA's Production Technology Sub-Committee has scheduled the first industry research project to be conducted utilizing the NCMA's Unit Production Research Facility. The research project will investigate optimizing various cementitious and pozzolanic blends with various curing methods. This research project will help to establish a logical understanding and correlation between curing method, temperature and cementitious material loading of dry cast concrete mix design to maximize production economy and improve environmental attributes while maintaining product quality.

Recognizable benefits of the research data will include, but are not limited to:

- The use of post-consumer materials for sustainable products.
- Potential energy cost savings of curing fuels through the identification of optimum curing temperatures also resulting in a lower carbon footprint for a manufacturing operation.
- A point of reference for pozzolanic replacement based on a manufacturers' curing system.

If you are interested in joining the Production Research Project Task Group, which will oversee this research effort, please contact Mike Maroney at mmaroney@ncma.org or 703-713-1900.

Self-Consolidating Grout Research

Further research into the use of self-consolidating grout (SCG) is scheduled to begin shortly at the NCMA Research and Development Laboratory. This research will involve ten concrete masonry piers of varying configuration to better quantify the differences in performance characteristics between SCG and conventional masonry grout. The full matrix of the testing program can be found here. Additionally, another phase of research is scheduled for 2009. The Self-Consolidating Grout Task Group will developing a scope for this next research phase. For more information, contact Nick Lang or Dennis Graber at 703-713-1900. CMN

The NCMA Research Lab is Celebrating Fire Safety Month with a Smok'n Hot Special!

Get a Free Fire Rating Certification with an ASTM C140 Test on CMU

What do I need to know?

1. It's a limited time offer, expires on October 31, 2008
2. The units must meet the physical requirements of ASTM C90 or C55 in order to be eligible for a free fire rating
3. A calculated fire resistance rating can be only issued for units that are manufactured with the aggregates specifically listed in the ACI216.1/TMS0216
4. This offer is available on unlimited sets.

What do I need to do?

1. Contact the NCMA lab to get the appropriate paperwork. Call 703-713-1900, e-mail ssvensson@ncma.org or fax this announcement to 703-713-1900.
1. For each set being tested, send in at least six (6) CMU of identical configuration
2. Attach a "Mix Design Information Sheet" and "Fire Rating Coupon" for each set
3. Paperwork is due to the lab by November 14, 2008.

☑ YES! I want to receive a **FREE Fire Safety Rating**!

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Educational Opportunities

If challenging economic times find you slashing your company's expenses, that is a good thing; obstacles help motivate us to get creative and find more ef cient ways to accomplish our goals—but be careful not to take a good idea too far. After all, you cannot earn a profit without making an investment. Just as cancelling your account with the power company might not be the most strategically sound way to increase net revenue, neither is failing to invest in the continuous professional development of yourself and your employees. If you do not keep learning better ways to do your job, you can rest assured that one of your competitors will.

That is where Concrete Products University℠ (CPU℠) comes into the picture. CPU provides the tools you need to overcome the challenges confronting you, through:

- Cutting-edge courses that teach you how to improve your production process, become more successful at your job, and add value to your business;
- Train-the-trainer sessions that arm you with the knowledge and credibility you need to penetrate specific markets;
- Conference education sessions that address critical issues facing the industry; and
- Certification programs that help you market your verified industry expertise.

To register, call NCMA Schools Administrator Brittaney KamHong Thompson at 703-713-1900 or email her at bkamhong@ncma.org.

For the skills and knowledge you need to succeed, turn to Concrete Products University.

Block Plant Safety Course

13-14 November 2008 @ NCMA Headquarters

This two-day course will train concrete masonry and hardscape production, operations, and safety managers and personnel how to enhance worker safety & minimize injuries. Participants will receive the OSHA 10-hour course completion card and a free, one-year subscription to the NCMA Safety Software. Topics include:

- OSHA Compliance
- Machine Guarding (Including Lock Out / Tag Out)
- Insurance and Cost Savings
- Forklift Safety
- Flammable and Combustible Liquids
- Exit Routes, Emergency Action Plans, Fire Prevention Plans, and Fire Protection
- Safety and Health Programs (Including Confined Spaces and Fall Protection)
- Electrical
- Personal Protective Equipment
- Hazard Communication

Tuition is $650 for NCMA Members, $1,300 for nonmembers.

Block and Hardscape Products Sales Course

17-20 November 2008 @ NCMA Headquarters

This course provides entry-level sales professionals with an overview of concrete masonry and hardscape products and systems. In addition to product training, participants learn from industry experts about market trends and how to sell to designers, contractors, and landscape architects. The course agenda is balanced between concrete masonry product knowledge, hardscape product knowledge, and fundamental sales skills. Participants gain a solid foundation for selling products with confidence and dealing effectively with customers.

The Block and Landscape Products Sales Course is open to new personnel responsible for selling concrete masonry systems and to seasoned sales personnel in need of additional training or refresher tips.

Tuition is $975 for NCMA Members, $1,500 for nonmembers.

SRW Installer Train-the-Trainer Course

3-4 December 2008 @ NCMA Headquarters

The SRW Installer Course and Certified SRW InstallerTM (CSRWITM) exam are delivered locally by NCMA-authorized industry representatives (SRW Installer Trainers). NCMA Members whose employees complete the SRW Installer Train-the-Trainer Course can provide a valued service to and build relationships with SRW installer contractors by sponsoring local course sessions and certification exams.

In the past five years, NCMA's SRW Installer Trainers have taught the SRW Installer Course to more than 7,500 installers. As installers become better trained, wall failures decrease, which promotes the SRW market and helps you sell more units.

The two-day SRW Installer Train-the-Trainer course teaches fundamental SRW installation guidelines, material and system component properties, soils and compaction, the effect of water, site practices, and how to teach this subject to installers. Attendees learn effective presentation skills in the context of adult education, and how to become a knowledge resource for business partners.

Tuition is $250 for NCMA Members only.

Sponsored Production Courses

The NCMA Research and Development Laboratory staff can create production-related courses on demand, tailored to fit your company's needs. The NCMA Laboratory, production facility, and newly-renovated, state-of-the-art, Concrete Products University classroom are all available to host your custom course. Call NCMA Production Specialist Mike Maroney at 703-713-1900 to explore your options.

Visit www.ncma.org/cpu for a schedule of upcoming courses and for more information about these educational opportunities.

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Preventing Workplace Fires

Throughout U.S. history there have been near legendary workplace fires. Back in 1911 the Triangle Shirtwaist Factory fire in New York City led to 150 deaths. As recently as 1991 a fire at the Imperial Foods poultry processing plant in North Carolina caused 25 worker deaths and 49 injuries. The cause of both of these fires, and many others, was locked fire exits and faulty or inadequate fire extinguishing systems. In 1988 the National Safety Council estimates that workplace fires led to losses of $3.1 billion and more than 360 fatalities. One of OSHA's prime concerns is to prevent fires thus reducing injuries and fatalities. This is done through job site inspections to be sure that standards dealing with fire safety (29 CFR Part 1910 Subparts E ad L and Part 1926 Subparts C and F) are being followed.

Employers are responsible for training their workers on potential fire hazards in their workplace and what to do in case of a fire. Much of what the employees are to do in case of an emergency are covered in the employer's Emergency Action Plan. This will determine if the employees are to evacuate or stay and fight a fire. Either way the employer must train the employees on either how to escape the work site or supply the workers with training and equipment to fight the fire. Whether employees are to fight or f ee, OSHA standards require work sites to be equipped with proper emergency exits, fire fighting equipment, emergency plans and training to prevent fire related deaths and injuries.

The evacuation portion of the fire safety plan should be periodically reviewed to ensure that exits are kept clear and available in case of emergency. During the review process it may be helpful to develop a "punch list" of the plan that requires special attention. This list may include:

- All workers at the site need to know how to respond to a fire alarm signal. This would involve informing workers which are to evacuate and which are responsible for staying and trying to contain a fire.
- Evacuation procedures should mirror any changes in the physical layout of the work site as well as any changes in the fire alarm system.
- Any device used to signal the need for an evacuation should be audible above normal background noise at the site. The alarm should also be unique to signal a fire and be recognized by all working at the site.
- Whenever possible at least 2 escape routes that allow workers to leave the site in dif erent directions should be provided.
- ALL escape routes must be kept clear at all times.
- Fires doors must be kept closed and clear for evacuation.
- If work is to be done at the site at night, the site needs to be fitted with the appropriate emergency lighting.
- When employees are working in isolated areas (mechanical or electrical rooms) provisions need to be made to alert them to any emergency situation.

There are two ways to look at the problem of fire safety; protection and prevention. Protection helps to ensure that a minor event, a small fire in a trash can, doesn't burn down the whole building, causing deaths or injuries and potential disaster for the employer. Protection would be included in the portion of the emergency plan that deals with evacuation and fighting a fire already in progress. Prevention, on the other hand, would see that the fire never started in the first place. There are aspects of fire prevention that are included in an employer's safety program that aren't specific to fire at all. Good housekeeping at the job site is a good safety practice that also helps to prevent fire. During the construction process, any form and scrap lumber should be cleared out of the work area at regular intervals. The logic behind this is simple, if there is no wood lying around to catch fire then it there won't be a fire or it will be more easily contained. Good cleaning habits also include f ammable and combustible materials. These materials should be properly stored and any spill of grease, oil or gasoline need to be cleaned immediately.

Another aspect of fire prevention involves employee training. It is important to include housekeeping and the value of good work habits when training new employees or retraining existing employees. If trained to include smart thinking about potentially dangerous situations, workers can help to keep themselves safe and prevent fires. For example, when welding occurs at a job site, a close eye should be kept on the area where this hot work occurred for several hours after the work is completed. This will help prevent an injury for the hot surfaces as well as helping to prevent a potential fire.

Regular periodic work site inspections will also help to prevent a fire from starting. These inspections help to keep workers alert to their work habits and work areas and keep their attention on periodically removing any f ammable materials from the work site.

Ideally, by focusing on fire prevention, fewer fires will start thus taking some of the stress of fire protection. It is far easier and cost ef ective to keep a fire from starting then trying to put it out, and clean up afterward. Experts from Factory Mutual, a group of property and causality insurance companies and safety engineering companies, state that close to 60% of fires and 75% fire related property damage could be avoided through preventive actions, including preventive maintenance, frequent inspection and testing of equipment. Fire prevention has many benefits for both employers and employees including saving money, equipment and lives by not allowing a fire to start in the first place.

For additional help with safety and OSHA compliance, take advantage of the resources available through NCMA and NCMA's safety provider, INTEC, Inc. These resources include the NCMA Block Plant Safety Software and INTEC's onsite consultation and training services. The software is available from NCMA at (703) 713-1900 ($150/plant/year, nonmember $450.) Additional information about INTEC's onsite services can be obtained by contacting Joe O'Connor at (607) 624-7159 or by email at joconnor@intecweb.com. CMN

Education-Training From a Local View

Hollywood, Alabama, Program Finds Another SkillsUSA Star

Vince Wright is getting used to surprising people. Not long ago he was building a foundation near his home in Pisgah, Alabama, when a car pulled up. "People came up to see what I'm doing. They thought they were going to see somebody about 50–and they see me, and I'm 18."

Newly graduated from the masonry program at the Earnest Pruett Center of Technology ("EPCOT" for short) in Hollywood, Alabama, Wright has been demonstrating – and reaping the benefits – of his masonry training. In addition to his post-graduation summer employment, he won the gold medal in the high school category at the SkillsUSA 2008 national competition, held in Kansas City in June. And when the fall semester began, Wright entered Wallace State Community College, in Selma, on a masonry scholarship.

Wright's success is not a new experience for Charles West, masonry instructor at the Earnest Pruett Center. West has had national winners at SkillsUSA for the last seven years. His three-year masonry program draws students from eight high schools in the northeast corner of Alabama.

The program's 10th, 11th and 12th graders share class time and work in the lab together, says West, who has taught masonry for 27 years. "It's tough, but we make it work. We let each student advance at his own speed. And the older students sometimes help the younger students along."

Students have three hours of masonry instruction daily, and spend the rest of the day at their home high schools for their academic subjects. West has about 12 students in separate morning and afternoon sessions. "That's about all we can handle at one time."

This fall, West introduced the curriculum developed by the National Center for Construction Education and Research (NCCER).

He says a senior graduating from his program is prepared to enter college. "And if they've applied themselves, most will be able to go to work immediately, making journeyman's wages."

West says. "The emphasis here is on the quality of work, not the quantity. Plumb level, square, straight, neat–that's what SkillsUSA wants and that's what we expect in northern Alabama."

When Vince Wright entered the program at Earnest Pruett as a 10th grader, he was hardly the best student in the class. "But he had already decided," West says. "He worked hard. By his second year he was the best in the class."

With that track record, it won't be surprising to see another star from Hollywood, Alabama, at next summer's SkillsUSA competition. CMN

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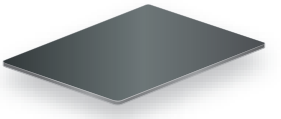

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October

8 Rocky Mountain Masonry Institute ■ So You Bought a Historic Masonry Building…Now What Seminar ■ Denver, Colorado ■ RMMI Of ces ■ www.rmmi.org

10 NCMA, International Masonry Institute (IMI), and Masonry Institute of Michigan ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Ypsilanti, Michigan ■ Marriott Eagle Crest ■ www.imiweb.org

14 NCMA, IMI, and New England Concrete Masonry Association ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Boston, Massachusetts ■ Radisson Hotel ■ www.imiweb.org

15 NCMA, IMI, and New England Concrete Masonry Association ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Hartford, Connecticut ■ Crown Plaza Hotel ■ www.imiweb.org

16 The Masonry Society ■ Inspection of Masonry Construction Seminar ■ Salt Lake City, Utah ■ Sheraton City Centre ■ www.masonrysociety.org

16 The Masonry Society ■ Designing Masonry to the 2008 MSJC/2009 IBC Seminar ■ Salt Lake City, Utah ■ Sheraton City Centre ■ www.masonrysociety.org

16-21 The Masonry Society ■ Annual Meeting ■ Salt Lake City, Utah ■ www.masonrysociety.org

19 The Masonry Society ■ Investigating Disasters Workshop ■ Salt Lake City, Utah ■ Sheraton City Centre ■ www.masonrysociety.org

22 IMI ■ 7th Annual Masonry Restoration Workshop ■ Chicago, Illinois ■ sconwell@imiweb.org

22 International Masonry Institute ■ LEED for Masonry Lunch & Learn ■ Louisville, Kentucky ■ Luckett & Farley ■ dcollins@imiweb.org

22-23 Interlocking Concrete Pavement Institute ■ Certified Instructor's School ■ Portland, Oregon ■ www.icpi.org

23 Masonry Association of Florida ■ Structural Masonry Design Seminar ■ Fort Myers, Florida ■ www.masonryeducation.org

23-25 NCMA ■ Testing Procedures Course and CCMTT Certification Program ■ Herndon, Virginia ■ NCMA Headquarters ■ nlang@ncma.org

23-25 NCMA ■ Executive Committee Meeting ■ Austin, Texas ■ The Driskill Hotel ■ dmorris@ncma.org

23-25 NCMA ■ Concrete Masonry Testing Procedures Course ■ Herndon, Virginia ■ NCMA Headquarters ■ bkamhong@ncma.org

24 International Masonry Institute ■ Masonry Restoration Lunch & Learn ■ Albany, New York ■ State University Construction Fund ■ pconway@imiweb.org

29 NCMA and IMI ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Indianapolis, Indiana ■ Ritz Charles Hotel ■ www.imiweb.org

29 The Masonry Society and Masonry Institute of Oregon ■ Masonry Inspection Seminar ■ Portland Oregon ■ University Place ■ inf@mioctio.org

November

5 Rocky Mountain Masonry Institute ■ Web Based System Learning – How to Test and Evaluate Masonry ■ Denver, Colorado ■ RMMI Headquarters ■ www.rmmi.org

5 The Masonry Society and Masonry Institute of Oregon ■ Masonry Inspection Seminar ■ Portland, Oregon ■ University Place ■ inf@mioctio.org

5 NCMA and IMI ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Fort Wayne, Indiana ■ www.imiweb.org

6 NCMA, IMI, and Arizona Masonry Gulde ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Phoenix, Arizona ■ New Horizons Learning Center ■ www.imiweb.org

12 Rocky Mountain Masonry Institute ■ Review of Documented Green Masonry Research Seminar ■ Denver, Colorado ■ RMMI Headquarters ■ www.rmmi.org

12 NCMA and IMI ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Milwaukee, Wisconsin ■ www.imiweb.org

12-13 Interlocking Concrete Pavement Institute Northern California Chapter ■ Level I Concrete Paver Installer Certification School ■ Seaside, California ■ GraniteRock ■ www.icpi.org

13 NCMA, IMI, and Masonry Advisory Council ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Chicago, Illinois ■ South Dearborn ■ www.imiweb.org

13 Masonry Institute of Iowa ■ Annual Seminar ■ Des Moines, Iowa ■ info@masonryinstituteofiowa.org

13-14 NCMA ■ Block Plant Safety Program ■ Herndon, Virginia ■ NCMA Headquarters ■ drozsa@ncma.org

16-19 National Association of Home Builders ■ Showcase 08 ■ Memphis, Tennessee ■ The Peabody ■ www.nahb.org/showcase

17-20 NCMA ■ Block & Hardscapes Products Sales Program ■ Herndon, Virginia ■ NCMA Headquarters ■ bkamhong@ncma.org

18 NCMA and IMI ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ New Brunswick, New Jersey ■ Hyatt Regency ■ www.imiweb.org

19 NCMA and IMI ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Philadelphia, Pennsylvania ■ Engineers Society ■ www.imiweb.org

19 International Masonry Institute ■ Masonry: Beyond the Detail ■ Chicago, Illinois ■ sconwell@imiweb.org

19-21 US Green Build Council ■ GreenBuild ■ Boston, Massachusetts ■ Boston Convention Center ■ www.greenbuildexpo.com

20 NCMA and IMI ■ New Software Options for Hybrid Masonry/Steel and Load Bearing Masonry Seminar ■ Harrisburg, Pennsylvania ■ Sheraton ■ www.imiweb.org

20 NCMA ■ CPU Instructor Training ■ Herndon, Virginia ■ NCMA Headquarters ■ drozsa@ncma.org


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