After what many are calling the most challenging year this industry has ever witnessed, MBI wanted to take this opportunity to share some of our industry’s successes in 2011 and goals for 2012.

In 2011 about 225 companies retained their membership. This core base of membership coupled with a successful annual convention allowed MBI to finish the year with a modest surplus, ahead of the anticipated budget.

MBI planned and hosted its first ever international best practices tour, visiting three cities, three factories and two high rise modular projects in England. Over 30 industry participants from eight different countries participated in the tour with feedback showing 100% rating the event as “excellent.” Plans are in the works for a second tour in late 2012.

2011 also saw the successful launch of the Modular Building Institute Canadian Foundation to compliment the efforts of the MBI Educational Foundation (MBIEF). In addition to offering tax deductions for contributions, these entities will serve as the catalyst to ensure future generations are familiar with the advantages of modular construction.

Along with supporting the newly created Industrialized Building Program at the University of Alberta’s School of Engineering, the foundations will continue to work with students and instructors in the fields of architecture, engineering and construction management. To help ensure these goals are realized, the MBIEF hired Susie Miller to focus exclusively on foundation activities.

MBI was successful in helping to shape the International Green Construction Code in a more modular-friendly manner. Overall, over a dozen MBI-submitted comments will be included in the first edition of the code — the 2012 IGCC which is due in March. These comments not only defined and provided relief for the relocatable buildings segment, but also carved out specific advantages for permanent modular construction. Heading into 2012, MBI has identified key objectives for each of its two councils.

**Key Objectives for MBI Relocatable Buildings Council (RB)**

MBI’s key objectives for the RB Council are to focus on those areas where the association can have an impact on improving utilization. Specifically, MBI will work with the International Code Council (ICC) to make changes to the International Building Code (IBC). MBI submitted comments for the 2015 IBC in January 2012, and two public hearings are set for later in the year. MBI’s goal is to get RBs defined in the IBC, and add specific code language on how to treat these units. MBI will also work with the ICC to develop an ICC Guideline for the Administration of Relocatable Buildings. This document will cover the gap on all the non code related administrative issues as well as serving as a template for states without modular programs.

MBI will also be working with various state program administrators to strengthen our working relationships. Currently, issues have been identified that need to be addressed in Pennsylvania, California, Missouri, and Kentucky. Additionally, MBI will track and monitor legislation and regulations in all 50 states.

MBI is frequently contacted by members and end users for industry data. While our annual PMC and RB reports are good informational and promotional tools, they lack much of the specific data requested. Our second objective is to collect and disseminate higher quality data including quarterly data on regional levels.

Finally, MBI aims to help raise the level of professionalism in the RB segment and help members distinguish themselves from non MBI competitors. Obviously, this objective will only be successful with full and active member participation. MBI will launch its new industry professional designation program to encourage and promote continuing education and ethical conduct in the industry.

**Key Objectives for MBI Permanent Modular Construction (PMC)**

MBI currently serves about 45 direct manufacturers and five contractors, plus 100 or so associates located primarily in North America, in addition to a handful of companies internationally. MBI’s key objective is to continue to raise the level of awareness and acceptance of PMC to owners and architects.

MBI will create an industry-wide, high level awareness campaign to reposition PMC, targeting North American owners and architects.

MBI’s goal is to create a campaign that can be funded by the Seals Program as well as being adopted and implemented by MBI members to deliver a consistent, professional message that resonates with the target audience. (Continued on page 3)
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- FR Deck Panel reduces installation to a four-step process.
- Water Base Bonding Adhesive reduces EPDM and FR Deck Panel installation time with its single-side wet application.
- TPO special roll sizes meet the growing need for white roofs on modular units.
- DecTec® Walkable PVC offers virtually maintenance-free roof or ground level decks.
- Elastomeric Acrylic Coatings, Seal-Fast® Tapes, and EPDM Tapes are ideal for retrofit of roofs on lease fleets.
- Self-Bridging Mate-Line™ decreases multi-unit setup time with a one-piece, one-step design — it’s a Mule-Hide exclusive that’s patent pending.

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MBI's second objective within PMC is to offer programs and services aimed at further distinguishing MBI members from non-members in areas of quality, service, and professionalism. This objective will be met through the aforementioned professional designation program as well as through continued educational offering in Project Management, BIM, and globally sharing best practices.

There has been a great deal of discussion about how to expand the membership in a declining economy with several possible scenarios explored including international growth, expanding into the residential modular segment, and appealing more to contractors and architects as possible members. At the end of the day, all are viable options, but the MBI leadership felt it was best to stay focused on current member service offerings, and if those services appealed to ANY company or individual, they should be invited to join MBI. However, MBI does not have plans to expand its scope of services in order to attract those audiences. The board did feel that the current bylaws were too restrictive in language and voted to recommend the following changes that will be voted on by the general membership at the 2012 World of Modular annual conference. You can view a draft of the bylaw changes here: www.modular.org/marketing/documents/Draft_bylaw_changes.pdf.

Another strategic decision will reduce the board size from its current 20 members to 16 in 2012, eight each from the RB and PMC councils. Individuals will be invited to participate on committees and at the council level, but it was not felt that every council member must also serve on the larger MBI board. As such, the nominations committee presented the following slate to the board in November, which was approved and recommended to be sent to the general membership for approval in March 2012. You can view the 2012 slate of directors here: www.modular.org/marketing/documents/2012StateDirectors.pdf.

MBI will retain the services of professional consultants working on behalf of the industry including:

- **Intercode Consultants** – IBC initiatives
- **TheGreenTeam** – sustainability experts
- **Miller/Wenhold Capital Strategies** – an advocacy firm in Washington, D.C.

For more specific data on any item mentioned in this summary, or to find out how your company can get more involved with MBI, contact dave@modular.org. On behalf of the staff and Board of Directors of MBI, I want to express our sincere thanks and gratitude for your continued support. **We look forward to working together in 2012.**

Sincerely,

Tom Hardiman
MBI Executive Director

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**2015 IBC PLAN**

In an effort to help clarify the base model code and address an issue long plaguing the industry, MBI has worked with the International Code Council (ICC) to submit numerous comments to be considered for inclusion in the 2015 International Building Code (IBC). The IBC is the base model code for commercial applications in force in most U.S. states and adopted in various other regions outside the U.S.

Unique to this round of code development, MBI was able to successfully lobby the ICC to create their own task force to review potential changes to the code relating to relocatable buildings. The ICC's Code Technology Committee worked with the industry and identified several areas that needed to be addressed.

Specifically, the ICC's Code Technology Committee will be seeking an exemption to section 3410 Moved Structures which states that:

**“Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.”**

This language is obviously problematic for the industry however it leaves no room for interpretation for the code official to offer exceptions.

Our proposed solution simply provides an exception to 3410 - Existing relocatable buildings moved into or within the jurisdiction shall be permitted to comply with the provisions of Chapter 13 of the International Existing Building Code. This language ensures a relocated building is safe, but does not require an existing code-built structure to be brought up to new energy or green code requirements.

To address newly constructed relocatable buildings, the committee felt it was necessary to add new language under Chapter 31 – Special Construction. This new section sets for the requirements for newly constructed RBs and primarily focuses on documentation the industry already provides on the manufacturer's dataplate.

All proposed changes to the 2015 IBC will be published soon, with the first public hearing set for late April in Dallas. **MBI will be on hand to advocate for these critical changes.**


BUILDINGS DON’T OPERATE THEMSELVES – PEOPLE DO!

By Lorenz Schoff

Emphasis on green building design and construction began toward the end of the 20th century with modular builders being an integral part of this movement. In 2000, MBI became a strategic partner with the U.S. Department of Energy’s Rebuild America/EnergySmart School initiative, supporting the construction of energy efficient and high performance educational buildings.

MBI and its members at the turn of the 21st century were involved with HP educational projects across the country aimed to demonstrate and prove modular buildings are energy efficient and sustainable. Some of the projects were: 1) Southern California Edison demonstration classroom (2000-2001); 2) building a complete modular school: LELA Alston Elementary in Phoenix, AZ (2002); 3) Construction of a demonstration classroom showing technology at the American School Business Officials Annual conference in 2002; and 4) support to the Florida Solar Energy Institute in building and evaluation of energy efficient modular designs in Florida, North Carolina, and New York (2003-04).

Since 2000, the author has participated as a judge for the MBI Awards for Distinction. During my 12 years of judging, projects have increasingly included energy efficient and sustainable design elements. This year, based on project review and evaluation, more energy efficiency features were included with more having a goal to achieve LEED® certification. Based on 27 years of experience in educational facilities including visits to over 1,100 schools during the past 13 years, it became apparent one eventuality should always be considered for any building, whether site-built or modular — “Buildings Don’t Operate Themselves – People Do!” To counter this fact, the following strategies, systems and items are recommended which MBI members should consider to improve the energy efficiency and sustainability of future projects.

**Lighting Strategies**

- If several lighting switching schemes are designed into a classroom or office, place one switch at the door and other switches as far away from the door as possible – encourages use of only lighting needed. When natural light is present, control light fixtures with one switch and daylight sensor, parallel with natural light source.
- Lighting in classroom, office, storage or areas infrequently occupied should be controlled by an occupancy sensor (dual technology).
- (a) Hallway lighting is a source of wasted energy, normally full lighting is not needed throughout the day. Hallway lighting should only be full on in a hallway segment occupied. Occupancy sensors should control up to 66% of the lighting by hallway segment. (b) If a building is secured at night, when a security is activated, no hallway lights are needed. With a contactor connected to the security system, all 24/7 lights are turned off after a given delay. If the security system is breached, all hallway lighting comes on. (c) Control lighting in hallways and areas where natural daylight normally is introduced through windows/doors: use daylight sensors to control (turn off) those fixtures where day-lighting raises the FC level above design levels and only allow them back on when natural lighting goes below 50% of design FC level.
- With outdoor security lighting: wall packs and parking lot lighting, consider the use of fluorescent or LED fixtures. Use of sector/movement control will reduce overall lighting costs and enable use of variable light levels.

**Plug and Phantom Loads**

- P1 – Control of plug and phantom loads in an office or classroom. Currently, electrical items left on when not needed in an office or a classroom can account for up to 25% of the electricity used by these items. A Phantom load is the electrical energy needed by a device when turned off and power still connected and accounts for up to 5% of the energy used through the outlets.
- Dry distribution transformers installed since the '50s were designed to support electrical loading known as “linear” – incandescent light bulbs, adding machines, typewriters, electric heaters, thermo-fax machines, tube type televisions, etc. These transformers efficiency decrease with the introduction of computers, copiers, digital prints, fax machines, CFLs, microwave ovens, and any equipment containing computer – non-linear loads. These transformers were UL approved for no more than 5% non-linear loads with non-linear loads above that level, resulted in the use of more energy (increased cost). The non-linear loads in today schools are above 67%. Typical loading on transformers today average around 20%, well below the design level of 35-50%.

The one electrical system item consumes electricity 24/7 for the life of the facility whether loaded or not and resides behind closed doors – distribution transformers (480/277 to 208/120 volt). Realizing, distribution transformers were a large source of energy inefficiency, the U.S. Department of Energy studied how to improve their efficiency and published the report in 2004. It was estimated the over 40 million existing dry distribution transformers were wasting the equivalent of 9 days of electrical generation in the nation annually. Five Design Standards were published in the report CSL-1 to CSL-5. The CSL-3 design was determined to have the lowest life-cycle cost. There were 5 levels studied included in the report. These were classified as CSL-1 through CSL-5 with the CSL-3 determined to have the lowest life cycle cost.

As part of the Energy Bill passed in 2005, legislation deemed the CSL-1 as the minimum level transformer that could be installed beginning in 2007. The CSL – 3 is 30% more efficient than the CSL-1 or TP-1 and is UL approved for 100% non-linear loads. The CSL-3 is more efficient at low loading than the TP-1. The installation of the CSL-3 in modular buildings when required will insure energy efficiency will be part of the building during its entire life.

The key to success of all the strategies mentioned and equipment/systems installed is understanding and awareness by the persons who both operate and occupy the building. Energy Awareness / Energy Education are the foundation for the success. All personnel must understand, in basic terms, how a system operates, limitations of systems, and why design strategies were selected and used. Remember “Buildings Don’t Operate Themselves – People Do” and only with Energy Awareness training will the building achieve the energy efficiency it is capable of and desired with the use of energy efficient strategies, systems and equipment.

**About the Author**

Schoff has worked in facilities management for over 47 years and 27 years with educational facilities. He currently provides energy consulting services to K-12 schools, colleges and universities. He is a registered professional engineer and President of Energy Efficient Solutions. He can be reached at lschoff@rex.net.
World of Modular Exhibitors

This March, World of Modular will bring together hundreds of modular construction professionals. As the premier event for the modular construction industry, the convention and tradeshow provides the best networking, education and exhibits. These are the companies that will be exhibiting their latest products, services and technologies so far at World of Modular March 25, 2012 in Orlando, FL (as of 1.27.12).

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ABC Supply
American Bedding Mfg., Inc.
Art’s-Way Scientific, Inc.
Bard Manufacturing Co.
Complete Access
Eemax, Inc.
Firestone BP
Friedrich Air Conditioning Co.
Guardian Fiberglass
Inovia Pods
Interline Brands
K-Bags, Inc.
Lord Corporation
LP Building Products
Marsh Industries
Miami Modular, Inc. dba Worldwide Modular
Minute Man Products
Modular Elevator Manufacturing
MRV Services
Mule Hide
NRG Equipment, Inc.
NTA, Inc.
Nudo Products, Inc.
Phoenix Modular Elevator
Piva Group, S.P.A.
PTI Group, Inc.
Sapa REDD Team
Skyline Building Systems, Inc.
Syntheon, Inc.
Tell Manufacturing, Inc.
Tink, Inc./Translift
Tri-Arc
Wesco Distribution, Inc.

2012 Awards of Distinction Judges

The Awards of Distinction contest recognizes the best in modular construction. Entries are judged by an impartial panel on architectural excellence, technical innovation, cost effectiveness/energy efficiency, and calendar days to complete. Winners are announced at a special banquet at World of Modular. This year’s contest included 147 entries and a reputable lineup of judges for this year’s contest:

Robert Cassidy
Editor-in-Chief
Building Design + Construction Magazine

Mohamed Al-Hussein, PhD, PE
Industrial Research Chair
University of Alberta

Dru Meadows, AIA
Principal
theGreenTeam, Inc.

Robert Kobet, AIA, LEED
Faculty
Sustainaissance International

Lorenz Schoff, PE
President
Energy Efficient Solutions

Kelsey Mullen,
LEED AP
Director of
Residential Business Development
U.S. Green Building Council

Ryan E. Smith, AIA
Director
Integrated Technology in Architecture Center
University of Utah College of Architecture + Planning

David Corson
Publisher
Commercial Construction Magazine
IN REMEMBRANCE

Bruce E. McDonald, age 72 of Birmingham, MI, passed away January 10, 2012.

Bruce was the President and CEO of McDonald Modular Solutions and was a past member of MBI’s board of directors. Bruce also received MBI’s Outstanding Achievement Award in 1994 and was inducted into our Hall of Fame in 2006. McDonald was also one of the original members of the association joining in 1983, when we were known as the Mobile and Modular Office Association.

In an era when so many businesses focus strictly on “return on investment” it was refreshing to have someone like Bruce to support us for two reasons: ROI and because he felt it was the right thing to do. His unwavering commitment, leadership, and generosity to the association and the industry will be greatly missed. Our thoughts and prayers go out to this family and the team at McDonald Modular. His obituary is available at www.tributes.com/show/93092339.

AFFORDABLE STRUCTURES DONATES 6,500 SQ. FT. CHILD CARE CENTER TO KIDS OF DISTINCTION

Affordable Structures of Tavares, Florida, made a donation of a 6,500 sq. ft. Child Care Center to Kids of Distinction earlier this year. Estimated value of more than $450,000, the building was the former home of Central Florida HealthCare Alliance Childcare Center owned by Affordable Structures. On December 6, 2011, construction for the Childcare Center began and the big move was the week of December 13.

“This is a blessing that will transform our childcare system here in Lake County and allow us to provide a better service and product for our families,” states Pastor John Christian. Kids of Distinction is a ministry of the Christian Worship Center and was the vision of Pastor Christian to provide quality child care at an affordable price to families.

For more information on this project, visit www.kidsofdistinction.org.

DELUXE OPENS A FACILITY TO MANUFACTURE PRECAST CONCRETE PANELS

DeLuxe Building Systems, Inc. has announced the opening of a new, onsite production facility to manufacture precast, noncombustible concrete panels.

Having a concrete facility onsite means that the pre-cast concrete panels used in the manufacturing process can be made in advance, saving a considerable amount of time. Instead of pouring the concrete floor panels on the production line, the precast panels have already been poured and cured as early as a month before they are needed. As a result, the overall production time is significantly lessened and the manufacturing process is more efficient.

In addition to increased productivity on the assembly line, the non-combustible concrete panels have improved dimensional stability as well as rot, mold, and insect resistant properties.

A video tour of the new concrete manufacturing facility is available at: www.deluxebuildingsystems.com/blog/post/2011/10/21/DeLuxe-Manufactures-Pre-Cast-Concrete-Panels.aspx
In an effort to help spread the good word about modular to more architects, MBI is hosting several modular construction workshops in 2012 by Ryan Smith, professor of architecture at the University of Utah.

**Here are the details:**

- **Orlando, FL** May 27
- **Chicago, IL** TBD
- **Washington, D.C.** June 28
- **Philadelphia, PA** September 27
- **San Diego, CA** July 25
- **Seattle, WA** TBD
- **Dallas, TX** TBD
- **Phoenix, AZ** TBD

The workshops are available for AEC continuing education credits. Topics include History of Industrialized Building; Prefabrication Contexts; Cost, Time and Schedule; Principles of Production; Structure, Enclosure, Interiors; Components, Panels, Modules; Assembly and Stitching; Sustainability and Prefab; Current Case Studies and more.

Professor Smith is the director of an interdisciplinary research group dedicated to lean and sustainable design and construction inquiry called the Integrated Technology in Architecture Center. He is a researcher, educator, author and speaker on the integration paradigm and building technology. He is author of *Prefab Architecture: A Guide to Modular Design and Construction* published by Wiley in 2010, serves as the educational liaison on the AIA Center for Integrated Practice Leadership Group, and is a member of the Lean Construction Institute and MBI.

Professor Smith is also currently seeking industry partners to help sponsor each event. To find out more about the tour, email Smith directly at: resconsulting@me.com, or visit: web.me.com/resconsulting/Prefab_Education/Workshops.html.
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