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When Disaster Strikes
Hello Readers,

The Modular Building Institute is the only international trade association for the modular construction industry, with member companies in twenty different countries. As such, we wanted to dedicate this issue of Modular Advantage to international markets for modular construction, including interviews and case studies from around the world.

Our lead story is an interview with several MBI members, discussing the similarities and differences of doing work in North America compared to other parts of the world. What we found is that our peers in other parts of the world face many of the same opportunities and challenges as we do here in North America.

Also, be sure to read the guest article from Bob Mears, representing the Modular and Portable Buildings Association. Bob provides some good insights on the impact of Brexit and the current construction climate in the U.K.

As we finalize the agenda for our annual World of Modular Conference next March 22-25th in Hollywood Florida, we are including several sessions with “international appeal.” With over one hundred project case studies on display and thirty-plus breakout sessions, this conference is a great opportunity to share best practices on an international level that would otherwise remain silo’d.

We hope that you find this issue of Modular Advantage both interesting and informative and encourage you to share your feedback with our association staff. Thank you for your continued interest in the modular construction industry and our association.

Mike Rhodes
Silver Creek Industries; Chair, MBI Board of Directors
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SUNBELT MODULAR, INC.
MBI Expands its Footprint to Europe

If your company does business in Europe and you are interested in learning more, contact MBI at info@modular.org
At MBI’s May 2017 Board of Directors meeting, a new European Council was created within MBI to better position the organization to serve its European members. The Council will serve as an advisory board on matters of importance to MBI members doing business in Europe.

The purpose of the Council is three-fold:

1. To provide additional leadership opportunities within MBI for members in Europe.
2. To serve as an advisory board to MBI to ensure the organization better understands members’ needs.
3. To serve as forums for best practices and networking activities to be delivered more effectively by MBI.

“Over the past several years, we’ve seen tremendous growth from international attendees at our annual World of Modular conference.”

- MBI EXECUTIVE DIRECTOR TOM HARDIMAN

“This new council is a way for MBI to further develop those relationships while adding more value to our overseas members.”

It is anticipated that this council will meet at least once annually in person, as well as by conference call, to provide input and advice to the MBI Board of Directors. The initial Council will be made up of a minimum of five MBI members selected by the MBI Board of Directors.

“The modular construction industry truly is global and we hope to be able to learn and share industry best practices with our peers in Europe,” said MBI’s Board Chair Mike Rhodes of Silver Creek Industries.

Paul Bonaccorsi of Intelligent Offsite in the U.K. and Bostjan Jevsek of PivaGroup Spa in Italy were selected as the initial co-chairs of the European Council.
The Modular Building Institute & International Code Council Come Together to Accelerate Modular & Off-site Construction
The Modular Building Institute (MBI) and the International Code Council (ICC) are the driving force behind efforts to accelerate the use of modular construction and eliminate barriers in the industry by developing a series of modular-themed guidelines and resources for code officials.

“The current content of the I-Codes and referenced standards must be updated to address the rapidly growing modular construction industry,” said MBI Executive Director Tom Hardiman. “We are extremely pleased to be working with the ICC to help code officials become better informed on this off-site construction process.”

Tentative plans call for the ICC and MBI to collaborate on a series of guidelines and standards, including a model administrative program as well as more resources for the use of containerized structures.

“Off-site construction can provide real solutions to many challenges facing the construction industry today,” said ICC Chief Executive Officer Dominic Sims, CBO. “The Code Council looks forward to working with MBI and other industry partners to provide a catalyst for the application and use of off-site construction methods.”

The Modular Building Institute and the National Portable Storage Association (NPSA) have finalized an industry white paper regarding the safe use of containerized structures in the construction process. That white paper, available at www.modular.org will be the introduction for working together with the ICC.

Already successful in getting new language included in the 2018 International Building Code specifically addressing relocatable buildings—a significant portion of the modular construction industry—MBI’s new collaborative effort with ICC will focus more on permanent modular construction, bathroom pods and containerized structures.

“We are seeing towns and states across the country struggle with how to address the increasing use of containerized structures,” said Hardiman. “It’s a great concept, but we have to be able to demonstrate that this is a safe process for end users, while also protecting the significant investment that has already been made in these units.”

About the International Code Council

The International Code Council is a member-focused association. It is dedicated to developing model codes and standards used in the design, build and compliance process to construct safe, sustainable, affordable and resilient structures. Most U.S. communities and many global markets choose the International Codes.
Algeco Sells off Williams Scotsman

Double Eagle Acquisitions, a California investment vehicle created by entertainment veterans Jeff Sagansky and Harry Sloan, announced plans to acquire Williams Scotsman from Paris-based Algeco Scotsman in a deal worth $1.1 billion. Double Eagle, along with other stakeholders, will recapitalize the company with about $800 million cash and refocus Williams Scotsman on the U.S. market with an eye toward expansion and acquisitions. Brad Soultz will stay on as Williams Scotsman’s president and CEO, and former CEO Gerry Holthaus will return as chairman. The company will keep its headquarters in Baltimore and trade publicly under the Double Eagle stock, which will be renamed. The deal is expected to close in October.

Vanguard Modular Building Systems Announces Leadership Transition

The Board of Directors of Vanguard Modular Building Systems, LLC (“Vanguard”) announced today that Peter Eberle has been promoted to President and acting Chief Executive Officer effective immediately. Barry DeSantis, who has been President and Chief Executive Officer since
2003, will retire from day-to-day operations but will remain as a consultant to the company. “Peter is a very experienced leader in the modular building industry and is uniquely qualified to lead Vanguard as it continues to grow,” said DeSantis.

John P. Kirwin, III, Chairman of Vanguard’s Board and CEO of Argosy Capital added, “We wish to thank Barry for his years of leadership, navigating Vanguard through some very tough times. The company would not be in the strong position it is today without him. The Board is very confident that Peter’s innovative style and knowledge of the industry will spearhead the team as it executes Vanguard’s strategic growth plan.”

Bird Construction Inc. Acquires 50% of Stack Modular Group of Companies

TORONTO, Sept. 13, 2017 /CNW/ - Bird Construction Inc. (“Bird”) (TSX: BDT) today announced that it has acquired 50% of the outstanding shares of Stack Modular Structures Ltd. and 50% of Stack Modular Structures Hong Kong Limited (together the “Stack Modular Group of Companies” or “Stack”). The undisclosed purchase price and related transaction expenses were funded with existing working capital.

Stack is a modular construction company with production operations in China. Stack produces steel frame modules for permanent construction. The modules are suited for the hotel, senior housing, office space and general housing sectors in the North American market.

Bird and Stack have complementary knowledge, resources and expertise that positions them well to serve the permanent modular construction market in Canada and the United States. “Bird and Stack form a strong partnership, with Stack’s expertise in modular construction complementing Bird’s business as a leading provider of general contracting services. Combining this expertise, the vision is to deliver projects faster and more efficiently to our clients across North America.

Aligned with our strategy, we have been considering a range of ways to further expand our sources of revenue and increase our competitiveness. We believe we can achieve this by participating directly in the modular prefabrication market which we anticipate will present significant opportunities over the coming years”, commented Ian Boyd, President & CEO of Bird.

Operational Change Announcement at Allied Building Systems

We are excited to announce the return of Kevin Peithman as the CEO of Allied Modular Building Systems. After being away from the day to day business for several years, we are all excited to have his energy, excitement and focus on process improvements throughout our organization. His experience in our industry is unparalleled, widely known and valued throughout the market segments in which we serve. Since he founded the company in 1989, we have grown to have three manufacturing plants across the country and are currently one of the leaders at the top of the modular panelized industry. His dedication to service, process and
communication have always been the focal point of our success and we will continue to strive to better serve our customers in ways they deserve & expect.

As our longtime partner in the modular building industry, we value our relationship with you and are committed to continued growth and positive change in the industry together. Furthermore, we recently made some additional organizational changes to better serve our customers, partners, and clients.

Amy Tzonkov will be handling all our custom prefabricated projects which include wall kits, interior offices, modular offices, guard houses, machine enclosures, on-site build outs on relocatable buildings, and a variety of other custom projects. Amy has over a decade of experience in this area, and we are very pleased that she will head up this segment of our business.

Bidding starts on UK’s biggest modular building framework - by Aaron Morby, Construction Enquirer

The procurement is being run by a single east London council but is open to contracting authorities across Greater London, East Anglia and the home counties. This means the four-year framework could have an estimated value of up to £800m, giving it the potential to become the biggest local authority modular building programme in the country.

Procurement chiefs at the London Borough of Barking and Dagenham have split the framework into four lots - standard modular units for purchase or hire, and bespoke modular buildings worth up to £3.5m and over £3.5m.

Nine months ago, the council awarded a major school building framework for a group of east London councils after they decided to shun the Education and Skills Funding Agency’s framework.

The move into modular building system comes after the ESFA revealed last week it had picked Caledonian and Styles & Woods to pilot the first 16 offsite primary schools under the second wave of the Priority School Building Programme.

The Council will be running the tender process through its e-tendering portal, with PQQs completed by 29 September. The framework will be available for use by public sector contracting authorities in the Greater London area as well as contracting authorities located in the counties of Essex, Hertfordshire, Suffolk, Norfolk, Cambridgeshire, Northamptonshire, Bedfordshire, Buckinghamshire, Oxfordshire, Berkshire, Surrey and Kent.

European developers plan Chicago modular home development - by Kim Slowey, Construction Dive, Aug. 9, 2017

Two European developers are planning a mixed-use development that could include up to 20,000 modular homes on the former site of a U.S. Steel plant in Chicago, according to the Chicago Tribune.

A division of Irish firm WElink Group and Spain-based Barcelona Housing Systems (BHS) made a deal to purchase the 440-acre site. They
have five months to close on it. WElink builds energy-efficient modular housing, and BHS uses solar power and recycled materials in its homes. The development would likely include low- and mid-rise buildings, parks and a marina. Earlier attempts to redevelop the industrial site, which is surrounded by lower-income neighborhoods, have been unsuccessful.

The Modular Building Institute strongly encourages all of its manufacturer members in the United States and Canada to support the SEALS program by acquiring one MBI seal for each module (floor, box) manufactured.

This revenue source will be earmarked and allocated towards addressing building code, regulatory, legislative, and legal barriers in the United States and Canada.

Additionally, we are encouraging all of our fleet owners to retroactively acquire one seal for each unit in their fleet that does not currently bear the seal. Any member experiencing issues in the US or Canada may request support from MBI’s Government Affairs Committee.

Purchase your SEALS here bit.ly/MBI_SEALS
5-In-5 Research Update
Offsite Construction

NORTH AMERICAN PERCEPTIONS
As part of its market-share growth initiative, MBI is currently funding research aimed at identifying factors that lead to a greater adoption rate of modular construction in some parts of the world when compared to North America. Professor Ryan E. Smith at the University of Utah is leading the 5 in 5 Research Initiative to determine how the North American modular market may grow to 5% in 5 years. His report is due in spring of 2018. In a recent conversation, he reported on some of the findings of this research.

“Our international research shows that there are key contextual parameters that give rise to modular proliferation. Fundamentally, there are the three L’s of locations: Land, Labor and Latitude. In locations where land is expensive and unavailable, and labor is skilled but experiencing a shortage, modular construction is more prevalent. Also, in geographies (latitudes) where precipitation and colder temperatures frequent see more modular construction.”

According to Smith however, for the most part North America real estate market has access to relatively affordable land, the labor is unskilled and plentiful immigrants, and the weather is relatively mild with long construction seasons. Just ask Scotland about the weather, which is where Professor Smith spent a sabbatical year in 2012-2013, noting not only these location attributes, but others for which North American industry can more readily take action.

In Scotland, and the larger UK, there are significant government initiatives to reach carbon neutrality, specifically in the area of buildings and infrastructure. The UK government supported and widely marketed research reports that identify low carbon construction materials (i.e. wood) and more sustainable building production practices (i.e. offsite modular). This carbon cultural engineering by the government was coupled with a mid-2000’s government investment into affordable housing at scale, which allowed numerous contractors and manufacturers to take advantage of predictable volume throughput and set up wood frame panel and modular factory operations. Scotland housing market is 75% prefabricated.

Interestingly, Sweden, where Smith visited recently with Professor Ivan Rupnik, co-investigator on the growth initiative research, is the only highly developed western European country to not have government sponsorship of industrialized building methods. Despite the lack of public investment, it is estimated that 90%+ of the single and multi-family sectors in Sweden are wood frame panel and modular product. However, wood is the national resource, and integrally linked to livelihoods outside of construction as much as within. After the world wars, a dearth of housing availability brought on significant growth. From 1965 - 1975 some
1,000,000 dwellings were produced. Although much of Swedish housing from 1965 forward has been panel construction, the last decade to the present has seen a dramatic increase in panel factories building modular due to the market trend shifting from single family detached to mid-rise multifamily. While not all factories are automated in Sweden, there is certainly a higher percentage of automated factories than in US and Canada. That being said, the most significant lessons to be learned from Sweden are not regarding automation, but with respect to process and product platforms (forest resource to factory operation optimization and lean tactics), and market platform (position) that together form the business model.

Sweden on average has a short building life expectancy at 25-50 years. But Japan, where Smith and Rupnik will travel this fall, has an even stronger scrap and rebuild culture (20 years) linked to local religious Shinto traditions of renewal. There are approximately 160,000 modular housing units produced annually in Japan, the equivalent to the entire housing stock production including stick and factory built methods in the UK per annum. The majority are hot roll steel framed modular. Modular manufacturers capitalize on an understanding of the cultural climate, and on having identified a competitive niche in the building market. The modular home builders don’t target low priced multi-family housing market with a race to the bottom, rather, they target mid to high range buyers with detached homes. Prefab modular home builders understand that competing on price is not their strength, they chose to focus on safety/environmental innovations (earthquake and tsunami proof modular housing). Manufacturing is in the cultural DNA of Japan. Impressively, housing manufacturers in Japan have developed sophisticated relationships with both their suppliers and sub-contractors who deal with on-site processes. This is because for better or worse, only ten suppliers dominate the prefabricated housing market, producing 97.2% of all new prefabricated detached homes in 1995. With high demand for new builds and little competition, the few individual prefab modular manufacturers have greater ability/opportunity for R&D (larger sample size), and streamlining production processes.

Other construction cultures are being evaluated by Professor Smith and his team including Germany/Austria, Poland, and Australia. The later has recently had a spike in the use of modular with housing shortages, government investment, and university interest converging to give rise to more industrialized methods including modular. This brief interaction with Professor Smith is demonstrative of the larger growth initiative team report that will cover regulations, financing, government incentives, sales, marketing, and other contextual aspects by which lessons can be adopted to the North American modular market. In addition to the country visits and interviews with modular stakeholders in these contexts, the researchers are conducting a North American mass survey to determine the perceived and actual barriers to the uptake of modular in the traditional construction sector. The goal of the research is to create a 10-year roadmap for strategic growth of modular in North America.
The Modular Building Institute is the only international modular construction trade association serving over 300-member companies in sixteen different countries. Despite these numbers, however, MBI is still largely viewed as a North American association.

To help address that perception, and to develop stronger relationships in other parts of the world, the MBI Board of Directors recently voted to create two new geographic councils: MBI Canadian Council and MBI European Council.

The purpose of these councils is to create additional opportunities for MBI members in those regions to get more involved with the association and to advise the board of directors on ways to make membership more valuable.

MBI currently has about 50-member companies in Canada and about a dozen in Europe. Modular companies around the world experience many of the same challenges as companies in North America. At MBI’s annual World of Modular conference, delegates from around the globe participate in breakout sessions, roundtable discussion, and share case studies. It is the commonality and willingness to share within the modular industry that brings people to this event.
MBI asked Bostjan Jevsek of PivaGroup Spa in Italy what are the similarities in doing business in Europe compared with business in North America?

In my experience, doing business anywhere in the world, including Europe and North America comes down to a couple of very basic things:

• You have to have the right product or service for the market including, of course, the right price for it.

• You have to be open and honest with your clients / partners. The relationship builds over the course of time and people like to work with open, frank and honest partners who are not afraid of admitting they made a mistake (if so) and then communicate how it is going to be corrected and what is going to be done to not make the same mistake in the future.

• Business is all about the people - you have to have the right people in the right position, people who are competent at their job and passionate about what they do.

Bill Haliburton of ATCO Structures and Logistics of Calgary, Alberta agreed. “Knowing your customers and their needs is similar no matter where you do business”, Haliburton said. “I’ve also found that cost is often the primary winning proposal component.”

Jevsek added, “I also find that it is generally the accepted norm in Europe and USA that the products will meet the standards, they will be of a consistent quality all the time, and that partners can be relied upon to always execute properly when certain specs and materials are agreed upon in the product, so that this does not have to be verified all the time.”

Harry Klukas of Black Diamond Group added, “Product specifications and manufacturing processes are different, and address the local climate, codes and materials available. The size of (modular) units will be based on access, roads, availability of equipment and type of transport”.

Another element is that a lot of modular in North America is still using timber, whereas in many parts of Europe its at least 85% steel frame, said Paul Bonaccorsi of Intelligent Offsite in the U.K.

MBI estimates that about 70% of its North American manufacturers fabricate wood framed modules for projects, but that number has been shifting more towards steel over the past five years. The availability of materials, in this case wood, is a driving consideration.

Density also plays a big role in material selection and use. Many parts of Europe have higher concentrations of buildings and people per square mile than in North America. In the United Kingdom, the population density is approximately 650 people per square mile, compared to just 84 people per square mile in the U.S.

A modular company in North America may construct a 200,000-square foot building that is only two or three stories tall because the land is available and the U.S. companies have not been forced to “build up.” At three people per square mile, Canada ranks among the lowest countries in terms of population density - and there is also a LOT of wood!
RELIANCE ON SKILLED LABOR VS AUTOMATION AND INDUSTRIALIZATION:

Bonaccorsi cited some key differences as well. “In the UK, we have used quite a few labor-saving elements such as modular wiring, fast fit plumbing and pre-decorated wallboards (mainly for ceilings) which I have never found in North America to any great degree. Whilst modular wiring is more expensive as a material cost, when you factor in the labor it’s about 60% cheaper to use. Additionally, the plumbing codes in the U.S. are different. For example, in North America most terminations are through the floor, which makes connections difficult. In Europe its all through the side, making both connections and future maintenance much easier.”

Bonaccorsi added, “Most modular and pod companies in Europe have very little, if any, skilled operatives and most European modular companies consider themselves as manufacturers rather than builders, while the opposite is true in the U.S."

Haliburton supported that comment by stating that the level of integration of technology and telecommunications is “likely more advanced in Europe than North America and it definitely has an impact on productivity.” He continued, “There are varying levels which are influenced by individual company systems and processes including employee on-boarding and training. I view skilled trades in North America to be more efficient than in other developing nations on the basis of a combination of productivity and quality. However, there is an overall concern in North America of skilled trades shrinking as today’s generation is attracted to professional careers in technology, business, financial, medical & other curriculums.”.

Klukas added, “The integration between site construction and installation of buildings with manufactured product from the plant is consistently a friction point, particularly as it relates to more complex projects. There is more foreign investment and ownership with multinationals diversifying into other markets. In dealing with the multinationals they impose their standards for products and health and safety compliance for mega projects. They prefer to deal with a prequalified short-list of reputable established companies that can successfully execute the projects and comply with their increasingly rigid contract terms and conditions”.

All agreed that workforce culture, impacted by religion, ethics, and unions (among other things) differed by country and region as well.

Regarding differences, Jevsek stated “The US is basically one giant single market where there are certainly some local differences, but the general conduct of business is largely the same: economic parameters, banking structure, payments, authorities, judicial system. There are 28 different countries in the EU, but only 19 in the Eurozone (using single currency EUR). The rest have their own currencies. Even among 28 EU countries there are different rules and standards and although products with CE certification are supposed to be able to be sold anywhere in the EU sometimes that is not the case in the practice.

Additionally, the European Union has 24 official languages and in order to be successful in France, Germany, Italy, Spain or anywhere, you are expected to be able to communicate with the clients in their own local language.
On the positive side: Europe is much smaller than North America, so logistics is simpler and cheaper. So, even though EU is a single market and doing business in EU is much simpler than it was 30 years ago, it has its quirks, which need to be taken into consideration before entering the market.

In the past three years however, there has been an increase in 5-plus story modular structures in North America. Simultaneously, there has been a push for taller wood structures, utilizing cross laminated timber (CLT) in building codes and regulations. In parts of Canada, the codes now allow for six-story wood frame structures, with taller wood frame projects utilizing CLT recently completed. It remains to be seen in North America if the modular industry more fully embraces steel frame construction or CLT (or both) for these taller builders.

WHAT’S NEXT?

Klukas also highlighted another similarity. “The advantages of modular construction are not fully recognized or appreciated. Some countries are more receptive to and advanced in using this type of construction. However, there is now a more intense level of awareness and interest, and applications for modular buildings are typically increasing. Coupled with a global awareness of activities in the industry, escalated through technology and trade associations, there is greater emphasis on value add proposals to improve efficiencies and costs for products and services provided.”

As part of its market-share growth initiative, MBI is currently funding research aimed at identifying factors that lead to a greater adoption rate of modular construction in some parts of the world compared to North America. See the related article on page 13 for more about MBI’s “5 in 5 initiative.”

CODES AND REGULATIONS:

Building codes and regulations are another area potentially impacting greater implementation of modular construction processes. “Not surprisingly building codes differ, but just as importantly, so does the level and method of enforcement. Another consideration related to codes is the frequency of review and change,” said Klukas.

Until recently, wood frame construction, the majority of modular projects in North America, was only allowed up to four stories in the U.S. Given that most of the modular projects are four stories or less, that didn’t seem to be a barrier.
News From Across The Pond

BOB MEARS, MPBA - UK
Whist the subject is still undoubtedly on the minds of the modular industry, Brexit and the concerns surrounding any potential trade deals that can be negotiated with the rest of the EU do seem to have been put to one side in favour of the British approach of “keep calm and carry on”, perhaps because the majority of UK production is for the home market rather than export.

Whatever the reasons, since the outcome is far from determined, this would certainly seem to be the most logical approach right now and with Offsite technologies finally being recognised as a potential solution to a number of construction challenges, not least of which is the shortage of new build housing, it is good to see reports of substantial investment by a number of manufacturers in UK based facilities to meet these demands.

A UK housing association has signed a landmark £2.5bn joint venture with a Chinese state-owned construction company to build 25,000 modular homes over the next five years. Your Housing Group, which currently manages 33,000 affordable homes across the North West, Yorkshire and the Midlands, has agreed to partner with China National Building Material Company (CNBM) to build the homes, alongside WeLink, a renewable energy company. As part of the deal, which has the support of the Government, CNBM will build six factories in the UK, creating 1,000 new jobs.

From its 550,000 sq ft. factory in North Yorkshire and using volumetric assembly techniques, Legal & General Homes Modular is working in close collaboration with clients to design and deliver precision-engineered accommodation modules, formed from cross-laminated timber (CLT) panels.

L&G are so confident in the finished product that they are able to offer a 10-year structural warranty and 60+ year design life assessment.

In London alone there is a need for 50,000 new homes a year and the latest report from The London Assembly Planning Committee: “Designed, sealed, delivered: The contribution of Offsite manufactured homes to solving London’s housing crisis”, makes a number of recommendations to the Mayor including:

- Provide clear and strong leadership in raising the awareness of OSM’s potential. (OSM = Offsite Manufacturing)
- Work towards defining and adopting a Manufactured Housing Design Code.
- Look at the potential of using TfL (Transport for London) – owned land to stimulate the OSM sector.
- Set up a dedicated OSM-specific procurement framework for London.
Picking up on the second point, to date there have been no specific standards for Offsite manufactured technologies. So long as all the elements used and the methods of assembly / final on-site works met with UK Building Regulations you were good to go. There are now moves to have a set of new regulations that relate specifically to Offsite, which personally I am not sure are a necessary complication.

The generic term Offsite covers a whole host of different technologies, systems and materials, so any new rules will have to take account of all of these variations to ensure that we don’t end up excluding any of the available options. No wait! . . . doesn't that already exist?

Having said that, new regulations could be an opportunity to address the issue of external cladding which is a huge conversation in construction at the moment after the tragedy of the Grenfell Tower fire in London on the 14th June this year where at least 80 people lost their lives. Grenfell was a traditionally built structure but steel cladding similar to the system that was retro fitted in the refurbishment of the tower block is also used in Offsite projects.

Whatever happens in regard to British Standards and Building Regulations, I can’t see the suggestion on the grapevine that Chinese parties interested in the UK market are seeking a GLOBAL standard for Offsite getting very far.

In China itself, the Government have established a blueprint that will see a number of regions committed to building up to 30% of new build using Offsite technologies by 2020. There will be government subsidies available and deals on state owned land to help support the initiative.

It is an exciting time for Offsite here in the UK, indeed for many other International markets too and it will be interesting to look back in 5 years’ time and see how far we have got and how we all compare at that point. I know it’s wrong to wish time away but I can’t wait!

Bob is Managing Director of bmp Offsite Consultancy Services Ltd, and serves on the Marketing Committee of the Modular and Portable Building Association (MPBA). He has a background of more than 35 years working in sales and marketing within the construction industry in the UK, Australia, Europe and both South and North American markets. In conjunction with the Royal Institute of British Architects, he wrote one of the first CPD presentations dedicated to covering the design and use of pre-fabricated concrete pods and their alternatives. He has helped design new products, production facilities and supply chain networks in a number of global markets.
Updates from Down Under

WARREN MCGRGOR, PREFABAUS

In this update from Australia we touch on our PrefabAUS Study Tour to Sweden, Australia’s tallest prefabricated building which was completed recently, our just held annual conference, how digitalisation is powering offsite construction, and the newly launched Handbook for the Design of Modular Structures.

SWEDEN STUDY TOUR - In May this year I had the pleasure to accompany 26 PrefabAUS members on a study tour to Sweden to investigate the so called Swedish panelised building system, which traces its origins back to the 1940s. The depth of the Swedish experience provided a unique opportunity for our tour group to gain important insights into a mature and finely-tuned industry. By contrast, in Australia we have only a handful of players who have adopted the European (principally Swedish and German) automated panel making technologies.
One learning of note was that a variety of levels of automation can successfully be applied to factory production of housing components. We saw both highly automated factories with production labour engaged in repetitive manufacturing of individual elements or panels, as well as less automated factories employing highly skilled trades where the same team of workers successively built all the elements of the house. Building on the success of this trip, we are looking to arrange more study tours in 2018.

AUSTRALIA’S TALLEST PREFABRICATED BUILDING - At 44 levels in total this La Trobe Street apartment tower in the Melbourne’s CBD is Australia’s tallest prefabricated building. Sitting on two levels of conventionally construction podium, 42 of the floors were built using the Hickory Building System which utilised factory-built structural modules (steel chassis, concrete floors and pre-attached facades) together with bathroom pods to streamline the assembly of the structure, with the trades for the balance of the fit-out fit following quickly behind.

As well, this was the first CBD project where works occurred at night (image on next page - Hickory 323 Topping out), reducing the construction time and the disruption to daytime city traffic.

PREFABAUS CONFERENCE 2017 - Just two weeks ago we held our fourth annual PrefabAUS conference, this year returning to Melbourne. With 250 delegates and speakers from across Australia, New Zealand, UK, USA, Poland, the Czech Republic as well as a delegation from Chile there was a vibrant exchange of ideas and many valuable relationships forged.

Headlining the impressive speaker line-up was International Keynote Mark Farmer, author of the UK Government-commissioned Farmer Review of the UK construction industry. With a construction pedigree spanning almost 30 years, Mark is eminently qualified for the role. His report boldly entitled ‘Modernise or Die: Time to Time to decide the industry’s future’ sets out a comprehensive vision for a construction industry at a critical juncture and in need of widespread transformation. Low productivity, outmoded delivery models and a lack of technological innovation are just some of the pressing problems Farmer diagnoses.

One of Farmer’s more radical proposals is that governments should be in the role of mandating innovation through progressive regulations that encourage the use of prefabrication. For example, Singapore’s Building and Construction Authority works with industry to raise construction productivity and fundamentally change the design and construction processes, encouraging the
adoption of Design for Manufacture and Assembly (DfMA) and, in particular, the use of Prefabricated Prefinished Volumetric Construction (PPVC).

DIGITALISATION POWERS OFFSITE CONSTRUCTION - Advances in the use of digital technologies continues to drive ever more impressive offsite construction across a range of materials from timber framed panels, light gauge steel framing systems and engineered timbers such as CLT, Glulam and LVL. Specific examples include the Cross Laminated Timber (CLT) panels being used for a childcare project and the 3-level townhouses taken from slab to ‘lock up’ (i.e. weather proof and complete with all walls, floors, roof, windows and external doors) in only two days by adopting prefabricated and already externally clad wall panels and floor and roof assemblies.

Both these projects were featured in the Site Visit Program on the first day of our conference.

HANDBOOK FOR THE DESIGN OF MODULAR STRUCTURES - Another feature of the Conference was the Australian launch of the Handbook for the Design of Modular Structures. Begun as a passion project of sorts by founder James Murray-Parkes and spearheaded by Monash University, the Handbook initiative was jointly funded by the Victorian Government and private industry and has already gained recognition both locally and internationally as a unique document that will play a vital role in improving knowledge and confidence around technical aspects of modular and offsite construction.

In particular, the Handbook seeks to provide guidance to the industry on the design and construction of modular structures by consolidating leading-edge experience and knowledge of advances in modular manufacturing and construction for improving safety, productivity and quality in industrial practices.

PrefabAUS is Australia’s peak body for the modular / prefabricated /offsite building industry. Our membership includes a wide cross section of the construction industry. Warren joined PrefabAUS as CEO in 2015. He has an extensive consulting background in Australia and South-East Asia, including with KPMG, together with a property emphasis for the past 12 years, including research, project management, development and funding. He holds economics, accounting and applied finance qualifications.
When Disaster Strikes
As unfortunate and unpredictable as natural disasters are, one thing is for certain - they will happen. And when they do, government relief agencies often find themselves scrambling to provide the necessary rescue, relief, and rebuilding resources.

But it doesn’t have to be this way. In 2004, before Hurricane Katrina even thought about devastating New Orleans, MBI reached out to FEMA officials to recommend a partnership allowing the industry to rapidly deploy building assets after natural disasters. That meeting never happened.

The modular industry did step up after Hurricane Katrina in 2005, but not as a result of FEMA’s efforts. MBI members worked directly with non-governmental organizations (NGOs) with experience in the affected areas. MBI members were able to donate office space, a medical clinic, and a dental clinic to the Volunteers of America as part of their efforts to get communities back on their feet. Other MBI members deployed assets into the region and were able to sell or lease units in a matter of weeks, providing space for relief workers, temporary detention centers, and shelter.

A few weeks later in September 2005, MBI submitted testimony about the charitable donations coordinated through MBI to The United States Senate Committee on Finance hearing “Charities on the Frontline: How the Nonprofit Sector Meets the Needs of America’s Communities.”

Meanwhile FEMA did what they know best, and ordered tens of thousands of HUD coded-manufactured homes and even recreational vehicles for victims. FEMA stored many of these units, unoccupied, for months on end in the most humid of environments. The result was a public relations disaster as “moldy FEMA trailers” became a daily headline in the press.

After the massive earthquake devastated Haiti in 2010, MBI members again responded, providing space for volunteer relief workers through another NGO on the ground.

When an F5 tornado destroyed St. John’s Regional Medical Center on May 22, 2011 in Joplin, Missouri, no one would have thought that a new 150,000 square foot hospital would take its place and open its doors in less than a year. But eight and a half months later, using modular construction, the community had a 150,000 s.f. facility that was 30% stronger than the original hospital.

In 2012, Superstorm Sandy blasted the northeast United States and left thousands in New Jersey and New York homeless. And by this time, FEMA had learned a few lessons from the past and
focused on better short-term housing solutions and faster recovery and rebuilding efforts. The modular home industry stepped up and has built hundreds of new code-compliant homes over the past five years. But hundreds, perhaps thousands more are needed.

With the latest shots from Hurricanes Harvey, Irma, and Maria, FEMA once again finds itself scrambling for resources. The agency has under 2,000 HUD code manufactured housing units on hand, but put out an order for 4,500 more. But these storms damaged or destroyed hundreds of thousands of homes and buildings in Texas and Florida and completely devastated Puerto Rico.

No other industry is better positioned to provide fast and safe buildings immediately after a disaster. And no other industry is better positioned to restore a sense of normalcy to a community after disasters. And yet, after each disaster, the scramble begins anew.
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Together we bring a seamless option between site and off-site construction methods and a cohesive collaboration between general contractor, manufacturer and stakeholder assurance to deliver integrated turn key projects.
Join hundreds of modular construction professionals for our 35th Annual World of Modular in Hollywood, Florida! For 35 years, MBI has provided professionals in the modular building industry a place to network, exchange ideas, learn from experts, discuss issues, display new products and receive well-deserved recognition!

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