Prefab Construction—June 19 NHCSI Meeting

Our Tuesday, June 19th meeting was held at the offices of Atlantic Prefab in Wilton, NH. Mark Beroney, General Manager/Senior Designer and Otto Kinzel, Sales/Estimator discussed a variety of topics around prefab construction, including how it may benefit a project in the following ways:

- Advantages to Project Schedule
- Safety
- Quality Control

Read More.

The End of Antifreeze in Sprinkler Systems

By Mark Richards, PE, Nortech Systems

Glycol is a combustible liquid that has a history of being used as an antifreeze solution for freeze protection in fire sprinkler systems. Traditionally, the combustibility of glycol was offset by mixing it with water. The solution of glycol and water was thought to be safe, until 2009 when a fire intensified by the activation of a sprinkler system using antifreeze. Afterwards, the National Fire Protection Association (NFPA) issued a Tentative Interim Amendment (TIA) that was incorporated into the following codes: The Standard for the Installation of Sprinkler Systems (NFPA 13), The Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes (NFPA 13D), the Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies (NFPA 13R), and the Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems (NFPA 25).

Read More.
Member Highlights

Chapter Officers:

President: Tom House, CSI, AIA
THA Architects, LLC
105 Willowbrook Avenue
Stratham, NH 03885-2247
603.770.2941
thouse@arthaarc.com

Immediate Past President: Ron Frazier, CSI
Northeast Door Corporation
29 River Road, Unit 6
Bow, NH 03304
603.225.7826
ron@northeastdoorcorp.com

Vice President: Rich Saklad, RA, CSI
Program Chair
NE Region of CSI Director
1 Marjorie Way
Eliot, ME 03903
saklad-r@myfairpoint.net

Secretary / Treasurer: Wayne Wheeler, PE, CSI, CDT
Website / Newsletter Editor
2 Winsor Avenue
Concord, NH 03303
wadowheels@icloud.com

Chapter Director: Dick Crow, Sr, CSI
Construction Services
3 Arrowhead Road
Londonderry, NH 01610
rw.crow@myfairpoint.net

Chapter Director: Bob McEachern, CSI, CCPR
Membership Chair
Roof Tech Sales, LLC
17 Holiday Lane
Hampstead, NH 03801-0395
603.494.3757
bmceachern@rtsreps.net

Chapter Director: Linda McNair-Perry, PE, CSI
Hoyle, Tanner & Associates, Inc.
100 International Drive, Suite 360
Portsmouth, NH 03801
lperry@hoyletanner.com

Living Out of a Box
Thomas House, AIA, CSI
Principal, THA Architects

We’ll accede to the obvious. Yes, a shipping container is just a box. But as the foundation of affordable (and in some cases, unaffordable) housing it can be a gift box.

These spectacularly strong, prebuilt structures can become the key component in dramatic modern and minimalist design, which celebrates rectilinear forms.

As the Redondo Beach House illustrates, if budget is not a restriction, you can build luxury into - and onto - a stack of these highly-utilitarian steel boxes.

Though there are container projects for where making a design statement is the principal, perhaps, the only objective, in most cases, the objective is to reduce the cost of construction.

One of the most visually striking uses of containers is Container City, a mixed use low-income / short-term accommodation project in the UK. There is a more upscale version of this project nearby, designed as studio space.

In Washington DC, Sea UA’s midrange condominiums aimed at millennials have been constructed; and the developer is looking to extend this concept into more traditionally designed neighborhoods.

Just as importantly, businesses can profit as well - both from the low cost, but from having an instantly and uniquely recognizable location: consider the Re: Start Mall built of containers in Christchurch NZ.

For smaller urban areas looking to create a startup zone, an intermodal container project would be an ideal way to create one that will attract the younger entrepreneurs such a project needs to succeed.

At THA Architects, we have begun some exploratory exercises in using these as a core of workforce housing, a genre of high density, low cost housing designed to accommodate a transient workforce.

There are considerations that need to be taken into account.

These begin with the basic structural elements: containers are only at their strongest on their corners, so some creative techniques - such as cantilevering across other containers - will require structural enhancements. And in any event, reinforcement is needed for both roof and ceiling. (cont pg 3)

New Members (2017/2018)
William Badge— September 2017, Allegion
Ken Lambert— February 2017, Red Thread
Linda McNair-Perry— May 2017, Hoyle, Tanner & Associates
Jon Singleton— October 2017, NORBEC Architectural
Christal Vandecar— January 2018, ProCon
Cole Stanton— March 2018, ICP-Construction
Ken Zuckerman— June 2018, Willseal

Renewed Members 5-Year Anniversaries (2017/2018)
Dale Dollar— 40 years
Wayne Wheeler— 25 years
Ned Keating — 20 years
Dick Crow— 20 years
Rob Therrien— 20 years
Such an opportunity awaits your originality and creativity. Such an opportunity comes with equally interesting technical challenges. But it is an alert that a new and exciting design opportunity comes with equally interesting technical challenges.

Occasionally, architectural elements will be required - which in the hands of a good designer, can enhance the project with even the simplest of solutions, such as Manifesto House, an exposed home that uses shipping pallets for solar screening. (It is also made of 85% recycled material.)

Finally, shipping containers were not built to be lived in. Permanent housing or office space needs to be intentional about defining and managing utilities and HVAC. The ceiling height is only 9ft, so it is inevitable that raceways for utilities will need to be created above, between, or below living or working spaces.

None of these considerations is any more a deal-breaker than any other constraint an architectural designer or developer faces. But it is an alert that a new and exciting design opportunity comes with equally interesting technical challenges.

Such an opportunity awaits your originality and creativity.

Do Parties Read Div 01 General Requirements?
by Cherise Lakeside, Specifier, LSW Architects, Vancouver, Washington

I know what some of my friendly compatriots are going to say when they see that sentence. They are going to say "Cherise, that's a no brainer!" I mean, really, am I writing a blog about something so simple? Damned right I am.

A few years ago, I wrapped up almost six years of working for an MEP engineering firm. This was a very unique opportunity to work on yet another side of the fence in AEC: to see how the other half lives. It was an opportunity to see why some of the breakdowns I saw were happening between the Architect and the Consultants.

House Bill 1254 – A Legislative Committee to Study the Procedures for Adoption of National Codes by the State of NH
by Linda McNair-Perry, PE, CSI

House Bill (HB) 1254 was originally written to establish a committee of 5 legislators to study the procedures for adoption of national codes in NH. Although, this bill stated that the committee may solicit testimony from those that it deemed relevant to the study; there was no specificity or requirement to include those with involvement in and understanding of the broad spectrum of building design and construction provisions contained in the national codes. On April 18th, NHCSI’s board offered written testimony to the Senate’s ED &A Committee hearing express opposition to this bill that had already passed the House.

HB1254 was passed as amended by the Senate, so it had to go through a Conference Committee to address differences between the House passed version and the amended Senate bill. During this closed door process they extended the moratorium indefinitely; such that no amendment to the state building or fire code shall be made between July 1 and November 1, 2018, unless legislation is brought forth based on the recommendations of the legislative study committee created in this bill, in which case the moratorium shall continue until such legislation has been enacted or rejected.

As of May 23, 2018 this bill (full text) became law. If you want to track how a bill such as this becomes law, see this summary of HB1254’s docket at nh.gov. If you want to offer information or testimony to the legislative committee studying how to adopt and update building codes in NH, please contact NHCSI Director, Linda McNair-Perry. Linda served on the NH BCRB for six years, so she can put you in touch with those who will be working with the study committee.
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Concord, NH City Crosswalks Heaving
By Wayne Wheeler, PE, CSI, CDT

In order to save money three years ago, the City of Concord, NH did not use the consulting engineers proposed design, opting for a less expensive approach for certain sections of the crosswalks in the downtown renovation project. As a result, a series of buckled brick pavers will cost an estimated $45,000 to repair. In the meantime, the affected sections will be patched with asphalt.

According to City Engineer, David Cedarholm, the sections that are failing were proposed to have a concrete base, followed by 1-inch asphalt setting bed and then the brick pavers glued to the asphalt with a neoprene tac coat. The City substituted sand in place of the asphalt and water penetrated the bricks causing the collapse and heaving.

Cedarholm, stated, “All of the downtown’s 23 crosswalks were constructed in the same way; a concrete slab topped with an inch of compacted sand and then brick. The problem with the Warren and Depot Street crosswalks, as well as the Capital Plaza crosswalk, is drainage and wear. Main Street is quite flat and that creates a puddle in those areas that, combined with traffic, stresses out the brick. As water washes away the compacted sand, the bricks can become loose and shift.”

City Councilor Allan Herschlag would have preferred the City to have opted for stamped, pavement texturing instead of brick pavers.

We would like to hear from you and what has or has not worked. Please send us an email with your comments to info@nhcsi.org.