

# NEWSLETTER

JUNE 2011



**CFSEI**  
COLD-FORMED STEEL  
ENGINEERS INSTITUTE



## 2011 – OFFICERS:

President: Jennifer Zabik, P.E., S.E.,  
AW Solutions, Inc.

Vice President: Julie Lowrey, E.I.,  
TrusSteel, ITW BCG, Inc.

Secretary: Kenny Pagano, P.E.,  
Scosta Corporation

Treasurer: Bill Babich, P.E.,  
TrusSteel, ITW BCG, Inc.

## 2011 – BOARD OF DIRECTORS:

Adam Russell, E.I.,  
United Structures

Darden Cobb,  
Loadmaster Systems, Inc.

Patricio Romero, E.I.,  
Bowen Engineering

Paul Dalia, P.E.,  
LGSEG, Inc.

Robert Kelzer,  
General Contractor

Tamilselvan Samiappan, P.E.,  
TrusSteel, ITW BCG, Inc.

## IN THIS ISSUE:

The CFSEI Needs You! ..... Pg. 01

CFSEI Florida Chapter – Meeting Announcement ..... Pg. 03

CFSEI National Annual Conference – Florida Chapter Report .....Pg. 04

Hot-Dip Galvanizing for Cold-Formed Steel Members – FAQ’s ..... Pg. 05

Design Considerations for Using Standing Seam Roof System  
In lieu of Metal Roof Deck System on Top of CFS Trusses .....Pg. 08

## UPCOMING EVENTS:

Seminar: ASCE 7-10 – Changes from ASCE 7-05  
ASCE/SEI East Central Branch, Orlando, FL ..... Jun 17, 2011

CFSEI Florida Chapter Meeting: Lessons Learned –  
Truss Design and Installation To Avoid Disaster,  
Championsgate, FL ..... Jul 14, 2011

METALCON International, Atlanta, GA ..... Oct 11-13, 2011

22<sup>nd</sup> Short Course on Cold-Formed Steel Structures  
St. Louis, MO ..... Oct 25-27, 2011

## THE CFSEI NEEDS YOU!\*

CFSEI members know that membership entitles them to a wide variety of invaluable resources, like Tech Notes, Details, Technical Guides, webinars, seminars, conferences, newsletters, and more. But did you know that the things that engineers have come to expect and rely on from CFSEI are made possible by volunteers just like you and I? The cold-formed steel industry relies on those individuals with a vested interest in its success to continue driving it forward by identifying and meeting the needs of the engineers who specify cold-formed steel.



The great thing about volunteerism is that those who freely give of themselves to help a cause really care about and believe in the ultimate goal. The great thing about teamwork is that new faces and fresh perspectives only improve the final product.

The CFSEI Executive Committee is made up of volunteers who represent many faces of the cold-

---

\* Julie Lowrey, E.I., TrusSteel, ITWBCG, Inc.  
Vice-President (2011), CFSEI FL Chapter

formed steel industry and take a lot upon themselves through various committees to make things happen for CFSEI members. They have been monumentally important to this industry and this organization, but the ultimate success of the CFSEI as a whole is dependent upon a steady stream of new faces, fresh perspectives, and volunteers who will continue to carry and pass the torch in the years to come.

The most common concern that prospective CFSEI volunteers have is time. The fact is that every little bit helps, and any way that you can contribute helps CFSEI in its mission. Whatever your strength, be it academics, R&D, practical experience, communication, organizational skills, marketing or even event planning, CFSEI has a place for it! Sometimes just giving your ideas and feedback is help enough! Please consider volunteering for one of the following CFSEI committees. For more information or if you'd like to volunteer, contact information for each committee is given below.

### Technology Development

Identify the need for and aid in the development of new Tech Notes, Details, Technical Guides, Research priorities, and Technical newsletter transmittals.

Contact: Jay Larson ([jl Larson@steel.org](mailto:jl Larson@steel.org))

### Education

Brainstorm new ideas for and aid in the development of webinars, seminars, online learning, and CEU/PDH distribution.

Contact: Sutton Stephens ([sstephen@k-state.edu](mailto:sstephen@k-state.edu))

### Alliances, Chapters & Meetings

Liaison with Alliances and Chapters, aid in the start-up of new Alliances/Chapters, help plan Annual Conference, Executive Committee face to face meeting at Metalcon and Awards Program.





**LOCATION** **ChampionsGate Golf Resort**  
*(presentation in Champs Hall)*  
1400 Masters Boulevard  
ChampionsGate, FL 33896  
(407) 787-4664



**TITLE** **Lessons Learned – Truss Design and Installation to Avoid Disaster**

**CONTINUING EDUCATION** **1.0 PDH Available**  
(SFA FBPE Provider # 0005013 and FBPE Course # 0006293)

**SPEAKER** **Sowri Rajan, PE**



Sowri Rajan, P.E., Chief Engineer for the Alpine Structural Consultants (ASC) department of TrusSteel, has been involved with Cold-Formed Steel (CFS) for the past 15 years. After obtaining his first Masters in Structural Engineering from India, Sowri worked in designing power plant structures with red-iron steel and concrete, before moving to the USA. He got his second Masters in Civil Engineering from Florida Atlantic University and joined Alpine Engineered Products. After six plus years of being a Research Engineer working on metal plate connected wood trusses (MPCWT) and TrusSteel trusses, Sowri joined the TrusSteel Division to offer consulting design service thru ASC. In 2004, he became the Chief Engineer of ASC. Sowri's expertise is in the design of CFS framing for both roofs and walls with TrusSteel and C-studs, as well as related detail engineering of truss bracing and connections. Sowri's a member of AISI Committee on Specifications, Task Group on CFSEI Engineer Certification and Truss Plate Institute's Project Committee 3 on Bracing Design for MPCWT trusses.



**DATE / TIME** **July 14, 2011 (Thursday)**  
Registration and Happy Hour *(cash bar)*: 6:00 PM to 7:00 PM  
Appetizer Extravaganza served from 6:00 PM to 7:30 PM  
Presentation and Discussion: 7:00 PM to 9:30 PM

**COST** **Members & Guests: \$25.00 in advance or \$30.00 at the door**  
(food and soft drinks included) Appetizer Extravaganza to be served from 6:00 PM to 7:30 PM including *Assorted Meat and Cheese Platter* with rolls and baguettes, *Chicken Saté Skewers* with Garlic and Herb, East Indian and Peanut dipping sauces, *Mini Pizzas* with tomato basil, grilled vegetable, meat lovers, and ham and pineapple toppings, and *cookies and cannolis* for dessert.



**OVERVIEW** Cold-Formed Steel trusses play a vital role in optimizing the design and construction of contemporary structures which utilize CFS framing. With their use comes the responsibility of knowing how to use them. This presentation will examine the techniques needed to properly specify, design and install CFS trusses so that your project proceeds smoothly. By reviewing our history, we can recognize the good, bad and the ugly situations that have occurred and how to offer solutions to insure success.

*Photos/graphics courtesy of SBCA's Cold-Formed Steel Council (CFSC), [cfsc.sbcindustry.com](http://cfsc.sbcindustry.com)*

For reservations, register online with your credit card (Visa/MasterCard/American Express) at <http://www.cfsei.org/florida.htm>

**Note: To receive a refund or to have payment applied to the next meeting, cancellations must be made at least (3) days prior to the event. Otherwise, payment is forfeited.**

Upon registration, an e-mail confirmation and receipt will be sent to you. If you have any questions, contact Bill Babich at (800) 755-6001 (X4762)

**This meeting made possible by our valued sponsors:**



## CFSEI NATIONAL ANNUAL CONFERENCE - FLORIDA CHAPTER REPORT \*



**May 23-24, 2011  
Annapolis, Maryland**

The CFSEI National Annual Meeting took place in Annapolis, Maryland on May 23rd and 24th. Julie Lowrey (Chapter Vice President) and Bill Babich (Chapter Treasurer) were in attendance, representing the CFSEI Florida Chapter. Here are some meeting highlights and a recap for our Chapter audience:

### CFSEI National Board Meeting

On the morning of day one, the CFSEI National Executive Board met for a face to face meeting. Julie Lowrey was invited to attend this meeting as Florida Chapter Vice President and update the Executive Board about our activity so far in 2011 and our plans for the rest of the year. During the meeting, it was noted that the Florida Chapter has the largest number of members and is the most active of the Chapters.

There was discussion about a new “Certified CFS Engineer (CCFSE) Program” (chair: John Lyons), as well as the venue for a new CFS learning session. Brand new and Upcoming Tech Notes were also discussed.

---

\* Julie Lowrey, E.I., TrusSteel, ITWBCG, Inc.  
Vice President (2011), CFSEI FL Chapter

### Networking

One of the benefits of attending the annual meeting is making face to face contact with the National Executive Board Members as well as all the other various CFS industry professionals in attendance from all over the country. Spending two days immersed in the discussion of cold-formed steel with all of these people forces you to give the topic undivided attention for a long enough time to hear the opinions and issues that everyone else is bringing to the table, really consider the state of the industry and why you think it’s important to advance it, how to implement the newest ideas and technical advancements into your daily practice, and how you can call on your new found contacts for feedback and ideas.

### Educational Sessions

There was really something for everybody at this conference. The CFS educational sessions included green building, frequently asked questions, design/build and insurance liabilities, brick veneer supported by CFS framing, delegated design, strength of CFS joists or columns with holes, sheathing braced design, new twists for CFS designs, anchor bolts connecting CFS track to concrete, solutions for CFS framing through innovation, structural seismic food for thought, international opportunities, curtain wall considerations and truss design and installation to avoid disaster.

### Keynote Speakers

On day one, Mike Anderson, Vice President Northeast Operations for Gypsum Management and

Supply, Inc., addressed the state of the industry. Mike's experience with steel framing (which started at the age of 11!) and his take on the direction of the industry as a supplier was a different and interesting view for an audience of mainly engineers. In addition, Mike thanked engineers for being the "unsung heroes of the CFS industry". On day two, Mark Nowak, President of the Steel Framing Alliance spoke about energy codes and structural design. This was a wake-up call for engineers that energy codes are here and they will eventually become an essential part of our design process that the CFS industry must adapt to. He reminded us that we are the people who must be proactive about creating energy efficient solutions for cold-formed steel framing, or this industry will miss the boat and lose out to other structural materials.

### Annual Meeting

Last but not least, the Annual Meeting took place, where Bill Babich ended his executive committee chairmanship. Ed Kile was sworn in as the new CFSEI National Executive Chairman. Jay Larson and Nabil Rahman were re-elected to the Board, and the Board welcomed a new member, Steve Tipping. In his final state of the institute address, Bill Babich urged the CFSEI audience to volunteer for the various committees which have been realigned to better fit the strategic initiatives of the CFSEI. He also reviewed the "technology transfer" of the past year of webinars which have been a big success, and new and upcoming Technical Notes.

## HOT-DIP GALVANIZING FOR COLD-FORMED STEEL MEMBERS - FAQ'S\*

For those of you who missed the excellent April 28th presentation, "Galvanize It!" from the American Galvanizers Association (AGA), one of our guest speakers, Tim Lockhart, Sales Manager for Industrial Galvanizers – Tampa, was kind enough to put together a summary of some of our questions regarding the hot-dip galvanizing process for cold-formed steel members.



*Tim Lockhart (above) and Mark Mellon (below) presenting at the April 28<sup>th</sup> CFSEI FL Chapter meeting*

\* Tim Lockhart, Sales Manager, Industrial Galvanizers.  
(Intro by Julie Lowery, CFSEI FL Chapter)

The AGA website ([www.galvanizeit.org](http://www.galvanizeit.org)) gives a lot of good information as well. If you have further questions, and would like to contact Tim directly, you can email him at [tim.lockhart@valmont.com](mailto:tim.lockhart@valmont.com).

### 1. What is the difference between G60, G90, and HDG?

Continuous sheet galvanizing is often confused with after-fabrication hot-dip galvanizing. Both processes involve dipping steel in a tank of molten zinc, but in the continuous sheet process, the sheet metal is fed rapidly through the zinc at a controlled rate, and thus picks up a minimal coating compared to hot-dip galvanizing. The most commonly specified galvanized sheet steels are G60 and G90. The numbers represent the weight of zinc per total surface area for both sides of the steel sheet. So, a G60 coating has about 0.30 Oz/ft<sup>2</sup> of zinc or approximately 0.54 mils per side. Continuous galvanizing, like hot-dip galvanizing, does provide cathodic and barrier corrosion protection, and has minimal zinc-iron alloy layers. The thinnest zinc coating allowed in ASTM A123 "Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products" is for wire and is 1.4 mils. Due to the nature of the hot-dip process, typical structural materials come out with an average of 3 mils on every surface.

### 2. What kinds of cold-formed steel members can be hot-dip galvanized, and what design considerations should be taken into account?

Many cold-formed steel members can be hot-dip galvanized. Symmetrical shapes are best to reduce the opportunity for distortion. Thinner materials may be more susceptible to distortion. Other considerations are steel chemistry, venting and drainage during the hot-dip process, material handling during and after the hot-dip process, dissimilar material thicknesses and member size. It is always best to consult with your local galvanizer

to determine what will work in your instance. Sample pieces can be galvanized and tested before further commitment to a project.

### 3. What type of fasteners should be used with HDG members?

It is always best to use hot-dipped fasteners with HDG members to lessen the possibility of dissimilar metal corrosion. Utilize the "Galvanic Series of Metals" chart to determine the opportunity for corrosion between the members and hardware.



For example, stainless steel fasteners should not be used with HDG members, since the zinc and the steel will both sacrifice themselves for the stainless steel.

### 4. What should be done about corrosion protection for holes drilled after members have been hot-dip galvanized?

Corrosion will be limited to the surface thickness of the material around the circumference of the hole. The cathodic properties of the zinc will keep the corrosion from traveling any further. ASTM A780 provides details on the proper repair of uncoated areas of hot-dip galvanized coatings. Per this specification, zinc paint can be used on the bare steel areas in order to give them proper protection.



## DESIGN CONSIDERATIONS FOR USING STANDING SEAM ROOF SYSTEM IN LIEU OF METAL ROOF DECK SYSTEM ON TOP OF CFS TRUSSES\*

As a CFS truss designer, 90% of the projects I deal with call for metal roof deck attached to the top chord of CFS trusses. What if the customer/building designer requests to use a standing seam roof panel system instead? What considerations for the truss design should be looked at when doing this type of design as opposed to metal roof deck? This design tip will highlight the main design considerations to take into account.

### Application of Loads:

- When designing trusses with metal deck, all loads are considered uniformly distributed across the roof, therefore loading on the top chord is based off of the tributary area (span x spacing) of the truss.
- A standing seam panel system will require purlins at a given spacing to be attached to the top chord of trusses. This purlin spacing will be governed by the standing seam manufacturer's recommendations. Typically, an on center spacing of 4'-0" or so is required, therefore loads are no longer uniformly distributed. The purlin will induce a concentrated point load at each top chord connection. Truss design software can check for this concentration of load with the application of concentrated loads

instead of a uniform load. In this instance, web crippling of the top chord and purlin will need to be checked. One way to eliminate the need to apply concentrated loads is to make the purlin spacing less. Typically, 2'0" purlin spacing is adequate in order to assume a uniformly distributed load when designing trusses.

### Truss Top Chord Bracing:

- With metal roof deck, truss design software analyzes trusses as being continually bracing along the top chord. This allows for a much more economical design due to the ability to optimize the web configuration.
- With the standing seam/purlin system, the truss top chord will need to be analyzed as being braced only at the purlin locations (purlin spacing). This will require either a web configuration modification and/or could require a heavier top chord member.

### Diaphragm Load Transfer:

- Metal roof deck is generally accepted as the roof diaphragm and is designed using industry accepted procedures.
- Standing seam roof panels are not typically assumed to act as a diaphragm. Some manufacturers will provide the designers with allowable diaphragm shear values that their panels can take, but this is not typically the case. Therefore, the purlin system will need to be designed to resist and transfer all lateral loads as well as the truss buckling forces from the roof plane down to the structures' supporting members.

---

\* Adam Russell, E.I., Design Engineer, United Structures.  
Board Member (2011), CFSEI FL Chapter

