TOP STORY

Working Together to Grow the CFS Industry - Get Involved!
The strength of steel is undisputed and touches virtually every aspect of our daily lives. Our home appliances, cars, bridges, roads and even the cans that store our food all contain steel More

COLD-FORMED STEEL ENGINEERS INSTITUTE – NEWS AND UPDATES

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Offsite Construction to Ramp Up in 2018
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The commercial office and retail sectors will lead the way in 2018, with a strong bounce back for education and healthcare. More

By all measures, a construction boom is shaping up for 2018
All signs and numbers point to a huge year for the construction industry. Even in December, with much of the nation frozen, the construction industry added 30,000 jobs, according to the Bureau of Labor Statistics. More

HEADQUARTERS
Steel Framing Alliance
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Washington, DC 20001
Tel: 800-797-8335

NEW MEMBERS
- A-LINX Building Technologies
- Carolina Design
- R.E.O. ENGINEERING, P.C.
- Radius Track Corporation
- Tauriainen Engineering and Testing
- WPI Prefab

UPCOMING EVENTS
May 15-16, 2018
CFSEI Annual Expo
San Diego, CA
More

April 26, 2018
CFSEI Webinar on ASTC and Cold-Formed Steel
3:00 p.m. Eastern Time
More
TOP STORY

Working Together to Grow the CFS Industry - Get Involved!

The strength of steel is undisputed and touches virtually every aspect of our daily lives. Our home appliances, cars, bridges, roads and even the cans that store our food all contain steel. While it may not be the primary framing material for every structure, steel provides the needed backbone of strength for most through connections (nails, hold-downs etc.), rebar, decking and more. Cold-formed steel framing continues to make its mark in mid-rise, multi-family and mixed-use buildings throughout the world.

The Steel Framing Alliance (SFA) promotes the use of cold-formed steel framing, and the strength of the SFA is its members. Over the years, SFA members have worked together to provide guidance and volunteer their services and expertise to chart the direction of the cold-formed steel industry. Countless hours of seminars, workshops, and development of the tools of the trade provided by SFA members have grown the industry and continue to be critical to ensuring its competitiveness in the construction marketplace.

While much has changed over the years, the need for continued education and technology transfer remains a priority. The SFA maintains its continuing education registration with several organizations, including the American Institute of Architects, Florida Board of Professional Engineers and others. SFA continues to draw participants to our programs from all areas of the construction marketplace including contractors, regional building code organizations, as well as architectural and engineering associations. Every day, we field inquiries from those new to the industry as well as seasoned veterans of the cold-formed steel family who are seeking information on the latest innovations, direction and resources that the industry has to offer. In just the first two months of 2018, we have already assisted 326 inquirers and seminar attendees.

Continued next page …
Resources to carry out the vast array of requests are provided through our trained member volunteers, who give of themselves for the good of the industry by responding to the needs of others with the critical information necessary to design and build successful projects with cold-formed steel. Without these commitments by others, design and building construction professionals would not have the knowledge or tools required to make steel the material of choice in construction.

In 2018, we want to expand our technology transfer efforts by increasing the participation of SFA members in the activities mentioned above. If you or a member of your organization would like to further impact our industry by joining the current group of dedicated individuals to educate others about cold-formed steel framing, please contact us so we can get you started. Your participation will help make the difference! For more information, please contact us at education@steelframing.org.

Editor, Framework Online
CFSEI Publishes New Technical Note on the Attachment of Cold-Formed Steel Framing to Precast, Post-Tensioned and Hollow-Core Concrete

The Cold-Formed Steel Engineers Institute (CFSEI) has published a new Technical Note, “Attachment of Cold-Formed Steel (CFS) Framing to Precast, Post-Tensioned and Hollow-Core Concrete,” designated as Tech Note F502-18.

The document provides an overview of precast, prestressed, tilt-up, cast-in-place and post-tensioned concrete components for building construction and the various cold-formed steel anchorage options recommended for proper connections, including power-actuated fasteners, drop-in anchors, screw anchors and expansion anchors. Two design examples are provided.

Tech Note F502-18 was developed by Derek Putz, P.E., Project Engineer for Matsen Ford Design Associates, Inc., to assist cold-formed steel design engineers who are challenged with attaching cold-formed steel framing to podium construction. This Technical Note is the latest in CFSEI’s continuing series of instructional documents on topics related to cold-formed steel framing for commercial and residential construction.

CFSEI Technical Notes are available free of charge to CFSEI members at www.cfsei.org. Non-members can purchase them at the online AISI Steel Store at https://shop.steel.org. For more information on joining CFSEI, visit www.cfsei.org.

CFSEI maintains a Steel Framing Hotline to answer inquiries from construction professionals seeking cold-formed steel solutions for their projects. Suggestions for additional Technical Note topics are welcomed. The Steel Framing Hotline is accessible at 1-800-797-8335.
CFSEI Launches Video Series to Answer Frequently Asked Questions about Cold-Formed Steel Framing

The Cold-Formed Steel Engineers Institute (CFSEI) has produced a series of short videos to answer the most frequently asked questions about cold-formed steel framing that are directed to its Steel Hotline, 1-800-79-STEEL. The videos are posted on the CFSEI website at www.cfsei.org.

The Steel Hotline provides complimentary expert assistance on all topics related to cold-formed steel framing, ranging from sourcing cold-formed steel material for projects to design assistance and questions about support and training. In 2017, the Steel Hotline's team of experts responded to more than 3,700 inquiries from engineers, architects, building officials and contractors.

To expedite and expand the technology transfer process, CFSEI is taking the most commonly asked questions from the Steel Hotline and answering them individually in videos that are less than three minutes in duration. The first 12 videos feature responses from Roger LaBoube, Ph.D., P.E., Director of the Wei-Wen-Yu Center for Cold-Formed Steel Framing at the Missouri Institute of Science and Technology, and an internationally recognized expert on cold-formed steel framing.

The posted videos cover the following topics:

1. What is and when does AISI S220 (North American Standard for Cold-Formed Steel Framing – Nonstructural Members) apply?
2. Web holes: How do I reinforce large web holes in cold-formed steel framing members?
3. Do you have a detail for ___?

Continued next page …
4. Strap bracing: Should the strap be attached to the intermediate studs?
5. Can I place an MEP opening in a sheet steel shear wall and if so, where can I place it?
6. What do I do if my bearing stiffener width-to-thickness ratio exceeds the limit of AISI S100 Section C3.7.1 (which addresses the end-one-flange and interior-one-flange load conditions)?
7. Does membrane fire protection apply when an HSS section is used as a boundary element?
8. What is and when does AISI S400 (North American Standard for Seismic Design of Cold--formed Steel Structural Systems) vs. AISI S240 (North American Standard for Cold-formed Steel Structural Framing) apply?
9. What is an acceptable gap in the stud-to-track connection and how is that gap limitation accomplished?
10. Why does the minimum delivered thickness only have to be 95% of the design thickness?
11. How important is it to consider torsion for a cold-formed steel C-section?
12. Are there floor vibration criteria in the AISI standards?

More videos will be posted during 2018.

Editor, Framework Online
2018 CFSEI Expo to be Held May 15-16 in San Diego, California

The Cold-Formed Steel Engineers Institute (CFSEI) will host the 2018 CFSEI Annual Expo on May 15-16, 2018 at the Wyndham San Diego Bayside Hotel, 1355 N. Harbor Drive in San Diego, California. This event is designed for architects, builders/contractors and engineers, with an educational program geared toward both skilled cold-formed steel (CFS) framing professionals as well as newcomers. The event will provide opportunities for education and networking as well as an exposition featuring state-of-the-art innovations, technologies and principles in cold-formed steel framing. The two-day conference is the only one of its kind dedicated to the cold-formed steel framing industry. Registration is now open at www.cfsei.org.

The Expo will include:

- Several technical sessions providing continuing education credits (topics to be announced);
- A trade show featuring the latest technologies in cold-formed steel framing; and
- Announcement of the winners of the 2018 CFSEI Design and Distinguished Service Awards, with categories featuring Design Excellence, Innovative Detail and Distinguished Service.

CFSEI Expo sponsorship opportunities are available at the Platinum, Gold, Silver, Bronze and Supporter levels.

A special conference rate for hotel reservations at the Wyndham San Diego Bayside Hotel is available through April 14, 2018. Early registration and hotel room reservations are encouraged. For more information on registration, sponsorship opportunities and awards, visit www.cfsei.org.

Editor, Framework Online
CFSEI Accepting Entries for 2018 Awards Program through March 30

The Cold-Formed Steel Engineers Institute (CFSEI) is accepting entries through March 30, 2018 for its annual awards program, which acknowledges outstanding and innovative cold-formed steel (CFS) framing projects and individuals who have advanced the industry through their significant contributions of time and expertise. This year’s awards will be presented in three categories. Winners will be announced at the 2018 CFSEI Expo, which will be held May 15-16 at the Wyndham San Diego Bayside Hotel in San Diego, California.

The 2018 CFSEI Awards Program is seeking entries in these categories:

- **Category 1 – Design Excellence**: The award recognizes projects that exemplify excellence in the structural design of new or renovated structures utilizing CFS products. Entries will be judged on demonstrated excellence and achievement in the use of cold-formed steel based on design creativity, technical innovation and overall project excellence in cold-formed steel utilization. Awards will be presented for First Place, Second Place and Third Place.

- **Category 2 – Innovative Detail**: This award recognizes any cold-formed steel framing detail that exemplifies creativity or ingenuity to solve a design challenge. Participants must submit a single engineered detail along with a brief summary outlining how the detail was used to resolve the design challenge. Submission of additional support documentation (such as calculations or design criteria) is encouraged but not required. Entries will be judged on their ability to solve a cold-formed steel design challenge based on problem-solving creativity. Awards will be presented for an eligible engineered detail at the discretion of the Awards Committee regardless of the total number of entries submitted.

Continued next page
Category 3 – John P. Matsen Award for Distinguished Service: The award recognizes the contributions of an individual who has volunteered significant time, talent and resources to the cold-formed steel industry. Entries will be judged by the testimony of the nominators on how the individuals advanced cold-formed steel framing in the marketplace. One award will be presented.

The rules of eligibility, entry instructions, and mailing address are available on the CFSEI website at http://www.cfsei.org/2018cfseiawardsprogram.

Editor, Framework Online
MARKETPLACE

Report: Christchurch Shifts from Concrete to Steel in Post-Earthquake

Buffalo, N.Y. — A University at Buffalo engineering professor co-authored a report with potential significant impacts on how modern cities may be reconstructed following earthquakes. "Reconstructing Christchurch: A Seismic Shift in Building Structural System" is a 170-page report that details the reconstruction of Christchurch, the largest city in the South Island of New Zealand, following the 2010-11 earthquake series that shut down the city's central business district for years.

The report examines the types of structural systems used during the reconstruction of the city, and some of the technical, sociological and political choices associated with those decisions. Co-authors Michel Bruneau, PhD, a professor in UB’s Department of Civil, Structural and Environmental Engineering, and Greg MacRae, PhD, a professor at the University of Canterbury in Christchurch, developed the report to provide a resource for other urban areas that experience natural disasters.

Bruneau and MacRae published their findings through the New Zealand Quake Centre (http://www.quakecentre.co.nz), a partnership between the New Zealand government, University of Canterbury and several industry groups. MacRae is a board member of the Quake Centre.

“it is becoming a more widely held belief that preventing loss of life as a seismic performance objective is not sufficient for a good modern structure,” says Bruneau. Currently, the minimum design code regulations are intended to prevent loss of life. However, “what emerged through this study is that many building owners and tenants — and the engineers who design these structures — want to prevent the loss of buildings and minimize damage caused by earthquakes,” says Bruneau.
Bruneau made four trips to Christchurch since 2010 to examine the damage caused by the 2010-11 earthquakes. Prior to that, Bruneau spent three months in New Zealand to share research experiences with MacRae, a longtime professional colleague.

When Bruneau visited the area again in 2016, most buildings in the central business district had been demolished, and rebuilding was underway.

“The breadth of structural systems being used as part of the Christchurch reconstruction, and the significant differences with what used to be the norm before the earthquake, could not be missed. However, the explanations for these substantial changes in structural engineering practice were anecdotal at best,” says Bruneau. “We thought, ‘Why not document the changes?’ Christchurch used to be a concrete city, but this certainly wasn’t the look of the new Christchurch based on sidewalk surveys.”

Reinforced concrete structures are “difficult to inspect, repair and reinstate after a major event. For that reason, reinforced concrete moment frames as lateral-force-resisting systems… are practically non-existent in the central business district rebuild,” according to the report.

The researchers wanted to determine why this change occurred, and when the trend toward steel structures started.

MacRae and Bruneau interviewed different stakeholders. They spoke with structural engineers from the Christchurch firms that designed more than 60 percent of the post-earthquake buildings in the city’s central business district, engineers in New Zealand’s two largest cities (Wellington and Auckland), an architect, a project manager and a developer. The report includes data on 74 buildings.

Following the earthquakes, the number of buildings with steel structures increased substantially. The authors attribute the shift to a number of factors, including the belief that steel is easier to repair than reinforced concrete.

Continued next page …
Two factors that played a major role in determining which types of structural systems to use as part of the Christchurch reconstruction were tenant and owner expectations, and the structural engineers’ professional opinions, according to the report.

The larger impacts of the report could affect seismic design practices in other modern cities in seismic regions, Bruneau says. New Zealand’s building codes and seismic design requirements are similar to those in North America, and Christchurch’s mix and vintage of construction types before the earthquake was comparable to some major North American cities.

“It’s difficult to predict what the report’s impact might be,” says Bruneau. “But I suspect it will reach many engineers, as well as producers and trade groups representing structural engineering materials and devices. It may also affect the way they design for earthquakes and plan for post-earthquake repair and reconstruction. The steel industry, in particular, will likely be keenly interested in the findings of this study.”

The research was funded by the Quake Centre. Download the report at http://resources.quakecentre.co.nz/reconstructing-christchurch.

Source: civil + structural Engineer, January 9, 2018
MARKETPLACE

Construction Spending in a ‘mature’ Period of Incremental Growth

Labor shortages are spiking wages. Materials costs are rising, too.

Construction employment continued to show strength across much of the United States through November 2017, when there were 191,000 more workers in the construction industry than during the same month a year earlier, and the construction unemployment rate fell by 0.7% to 5%, the lowest it’s been on record for the month of November, according to estimates released yesterday by Associated Builders and Contractors, a national trade group representing more than 21,000 members.

However, the industry still struggles with labor shortages that could be inhibiting investment and new construction.

During the first nine months of 2017, month-by-month employment growth was “minimal,” due primarily to “historically low unemployment” that limited the new construction talent pool, according to JLL’s Construction Outlook for the third quarter of 2017, which the market research and consulting firm released late last month.

During the third quarter of 2017, construction-related spending inched up by only 1.9% from the same period in 2016. “While topline spending is still increasing, consecutive quarters are demonstrating smaller and smaller gains over past years—underlining the trajectory towards a mature and stable industry,” JLL writes. Percentage growth of year-over-year spending decreased for nine out of the preceding 11 months, but was still above zero, “pointing to a tapering growth curve.”

Citing Census Bureau estimates, Associated Builders and Contractors posted that nonresidential construction spending declined in November by 1.3%, to $719.2 billion, compared to the same month a year earlier. Private nonres spending was down by 3.1%, while public-sector nonres spending grew by 1.7%. The gainers included commercial, educational, lodging, transportation, healthcare, and public safety. Manufacturing construction took the biggest hit, down 15.6%.

Continued next page …
Commercial real estate has proven over the past several years that it can perform well regardless of how the economy in general is growing. “Right now we see little in fundamentals to cause concern about real estate as an asset class,” JLL writes.

Public construction, infrastructure and public works projects picked up steam during the third quarter of 2017, while single-family home construction grew at nearly double-digit annualized growth, which is expected to continue in 2018. Multifamily starts, on the other hand, dipped.

While the groundbreaking of large scale private commercial projects began to scale back due to stretched-out timelines, commercial renovation and fit-out work strengthened, and should prevail through the next several quarters and beyond into 2019, JLL predicts.

The cost of building slowed in the third quarter, up by just 3% from third quarter 2016. But it still grew faster than construction spending primarily because of increasing labor costs. (Wages grew by nearly 3.4%, on an annualized basis, in the third quarter of 2017.) Indeed, JLL expects labor shortages to persist through 2018, at least, and for construction costs to be up another 3% this year. JLL expects wage growth to accelerate, potentially hitting 5% or higher during peak building seasons.

The severe weather events that hit certain areas of the country had a surprisingly minor impact on the availability of most building materials. Nevertheless, materials costs rose by 3% in the third quarter compared to the same period a year ago, and those costs “are beginning to outpace current demand,” says JLL. Impending tariffs on Canadian lumber imports could jack up lumber prices for U.S. purchasers by 20% this year.

Manpower shortages, and the prospect that labor and products will cost more, could finally push the construction industry to embrace technology to a greater degree than it has done so to this point. JLL sees BIM, artificial intelligence and big data, and prefab and offsite construction as the three technologies that show the most promise this year.

Source: Building Design + Construction, January 4, 2018
MARKETPLACE

8 Construction Trends to Watch in 2018

After a robust 2017, commercial construction companies are anticipating an even stronger 2018, with the majority reporting they plan to expand their staffs, according to Dodge Data & Analytics.

As professionals seek to map out 2018 and beyond, there are a number of trends shaping the construction industry. Some are evolutions of past years, such as offsite construction and an increasing reliance on technology, and some trends are new, such as a focus on resiliency after the most damaging hurricane season on record and devastating fires in California.

Other trends that will shape construction revolve around policy, both federal and state, the ongoing labor shortage and gargantuan projects, including Amazon’s much-anticipated HQ2.

Read on for our list of the top eight trends to monitor this year.

Resiliency takes center stage

Resiliency is set to be one of the construction industry’s watchwords for 2018 after last year’s onslaught of hurricanes, heat waves, cold waves, flooding, tornadoes and wildfires. Property owners took a total financial hit that is still climbing and could reach nearly $400 billion, according to Vox.

Rather than throwing up duplicate replacement structures, more owners will likely heed the call of organizations like the U.S. Green Building Council and demand resilient site and structure features. The USGBC in November announced it would adopt construction standard RELi, which awards points for resilient features such as adaptive design for extreme weather events and their resulting hazards, communications and first-aid resources.

Continued next page …
The Trump administration also used last year’s natural disasters to underscore how important building for resiliency is by declaring November 2017 as Critical Infrastructure Security and Resilience Month. The administration's proclamation was intended to highlight how important it is to keep vital infrastructure up and running — no matter the weather or other extreme conditions — for national security purposes.

In the coming year, the industry may see more resilient projects mimic those already underway, like the raising of streets in Miami Beach or the building of earthquake-resistant skyscrapers sans rebar in California. Certainly architects, engineers and contractors will be critical to rebuilding efforts, but business as usual could be a thing of the past.

Short on labor — still
The construction industry will continue to contend with a limited supply of skilled craft workers. Officials in various parts of the country have used words like "dire" and "scary" to describe the availability of qualified labor as younger individuals resist construction as a career option and more baby boomers retire. The Associated General Contractors of America (AGC) reported in December that November construction employment increased to its highest level since the same month in 2008, but that this has resulted in a smaller pool of candidates, likely constraining future hiring efforts.

Industry groups like the AGC and the Associated Builders and Contractors (ABC) have for years lobbied lawmakers for increased federal, state and local funding for trade school, high school and middle school trade education programs as a way to help create a construction industry labor pipeline, and those efforts could pay off and help ease the problem.

Meanwhile, the industry is turning to alternative construction methods to make up for the short supply of workers. Offsite construction and prefabrication, for example, are helping contractors sidestep some labor issues.

Continued next page …
Gaston Electrical principal Bill Weber told Construction Dive in June that prefabricating MEP racks — 20- to 30-foot panels that are pre-fitted with ductwork, piping and raceways — allow MEP contractors to make their final connections more quickly on the jobsite and require up to 50% less labor.

Along those same lines, increased use of modular construction in 2018 and beyond could also reduce the need for additional workers. Its use has taken off in the hotel and multifamily sectors, and, according to Ladd Dawson, founder and former CEO of Guerdon Modular Buildings, in Boise, ID, offsite construction can absorb up to 60% of a project's labor requirements.

**Offsite construction on the rise**

For much of 2017, offsite construction and investment in the delivery method was a key trend. Offsite startups like Katerra and FullStack snagged millions in funding, while a growing number of U.S. contractors partnered with prefab companies to fold the method into their operations.

"With companies like Google, Marriott, Starbucks and other high-tech firms like Autodesk embracing offsite, there is a ton of investment money looking to revolutionize the construction industry," Tom Hardiman, executive director of the Modular Building Institute, told Construction Dive in October. "It's going to change so fast in the next year."

Increased pressure from supply-side challenges and a growing need to jumpstart productivity will continue to drive offsite into the mainstream. Traditional contractors' desire to increase project efficiency with offsite components is opening the door to greater collaboration between general contractors and offsite fabricators. Less than a decade ago, many projects were modular or conventional, Hardiman said.

Today, many are a hybrid of the two. And with larger companies like Turner Construction and Gilbane adding project manager roles for offsite to their payrolls, the delivery method only stands to build momentum.
Suppliers, too, are building up their operations with the segment in mind. Until recently, many had not created product lines specifically for offsite. Now, suppliers like Tremco are developing lines for the market to help streamline operations.

But perhaps one of the biggest disruptors in offsite’s expansion will be Marriott International’s use of the method. The hotel chain plans to add seven offsite manufacturers to its existing lineup this year, and will do so while developing a set of goals to compare offsite projects against their site-built equivalents.

**Investment up for public transportation**

Former transportation secretary under President Barack Obama, Anthony R. Foxx, talked at Autodesk University in November about the state of infrastructure in the U.S. He said that focus now is on integrating existing infrastructure because end-to-end systems already are in place. “We can’t look at modes of transportation as separate an distinct anymore,” he said. “It’s all one whole.”

Nashville, TN’s, ambitious $5.2 billion infrastructure and transit plan, which citizens will vote on in May, is just one example of cities making big investments in transportation. The plan would not only link parts of the city to each other, but better connect it with surrounding Davidson County communities.

Although Nashville’s proposed plan is among the largest, it isn’t the only notable project underway. Minneapolis’s $1.9 billion Southwest light-rail has encountered a slew of obstacles, largely relating to financing. Nevertheless, the Metropolitan Council expects to award the contract in the first quarter of this year, with construction commencing in the spring. Boston’s Green Line light rail is undergoing a $2.2 billion reboot, which will add 4.7 miles and seven stations to the system between Cambridge and Medford, MA. Beyond traditional rail and bus systems, the country is exploring higher tech options, such as high-speed maglev trains and hyperloop systems, several tunnels of that have been okayed in Maryland and California.
Technology and automation tackling jobs
At Autodesk University in November, Autodesk CEO Andrew Anagnost grabbed the automation bull by the horns, saying, "Instead of worrying about automation taking our jobs, let's have a conversation about where automation can take us."

Look at 3-D printing. In the final quarter of 2017 alone, the industry boasted several innovative projects, such as Europe’s first 3-D printed building built in Denmark, a 3-D printed concrete bridge in the Netherlands and the issuing of a grant to 3-D print concrete turbine towers in California.

Machines also are tackling jobs that are traditionally dangerous for humans, such as the tele-operated humanoid robot RoboMiner going into pit mines. A Pittsburgh-area robot ties rebar to form bridge decks, which halves labor hours compared human labor, as well as reduces injuries workers sustain while straddling rebar frames.

Construction tech earned the distinction as Trend of the Year in the 2017 Construction Dive Awards. The industry saw $433 million of funding in the first nine months of 2017 alone. Out of the 56 total deals, two of them were valued at more than $50 million. One of those large deals was Innovator of the Year, Katerra, which uses factory-based construction to automate and standardize design and construction to create a continuum of services to replace the typical chain of handoffs.

New policy regulation impacting businesses
The House and Senate approving President Donald Trump’s tax overhaul capped 2017. Although not construction-specific, it certainly will have a significant impact on businesses. The public construction sector will benefit from private-activity bond (PAB) financing and contractors structured as C-corporations and pass-through entities will benefit from tax relief. PAB use, however, may limit and lock out design professionals from taking advantage of the new lower pass-through tax rate.

Continued next page …
Beyond federal policy shaping the industry, some cities, states and agencies are passing regulation as well. New York City Mayor Bill de Blasio in October signed Intro 1447, a controversial law that requires construction workers to undergo at least 40 hours of safety training.

California Governor Jerry Brown signed a law in October requiring contractors acting as direct contractors on private construction projects to be financially responsible for any wages, fringe benefits and union contributions left unpaid by subcontractors and their sub-tiers. Los Angeles also kicked off its seismic retrofit program by sending notices to owners of an estimated 1,200 older concrete buildings that fall under the new ordinance.

Many also will be keeping an eye on the infrastructure bill, which may be revealed later this month, and has the potential to put up to $1 trillion into the pipeline. Several companies have engaged in large acquisitions, such as Jacobs Engineering Group acquiring CH2M Hill and AECOM’s acquisition of Shimmick Construction, in preparation to take full advantage of the anticipated work.

**Giant companies expanding spaces**

While last year saw the addition of new high-tech campus facilities from the likes of Google and Apple, 2017’s hype around a second new North American Amazon headquarters will likely fuel increased momentum for similar expansions in 2018.

Software giant Microsoft is slated to begin a multi-billion-dollar redevelopment of its existing Redmond, WA, campus later this year, joining Apple, Google and other tech giants that are expanding their capacities “at home.” Meanwhile, companies like Marriott and General Electric are expected to break ground on new headquarters developments.

As more firms continue to build out their facilities, many are also likely to add infrastructure needed to support their operations. Data center construction, especially, is taking off as companies increasingly amass unprecedented amounts of information in their servers.
By the first half of 2017, data center investments had already doubled those made in 2016, coming in at $18.2 billion. And if the market maintains that pace, investments in the category this year could exceed the combined total of the past three years.

“Driving the market will be companies you’ve never heard of doing things we can hardly imagine,” Todd Smith, chief technology officer of data center solutions at national commercial real estate firm Transwestern, told Construction Dive in November.

**AR/VR, wearables and drones transforming jobsites**

In the face of mixed-reality headsets, such as Microsoft’s HoloLens, and wearable devices, such as Triax’s Internet of Things-enabled sensors, it’s a safe bet that high-tech wearables and augmented and virtual reality will continue to infiltrate jobsites. Two of the greatest benefits these technologies offer are safety and efficiency — both areas where the construction industry tends to struggle.

Beyond the innovations and investment in con-tech, it’s also possible that technology will help recruit younger workers into a field plagued by a labor shortage. Garrett Harley, vice president of strategic accounts for Aconex, told Construction Dive that “Technology is another emerging way to get people into this business. Not many people coming out of school understand there’s this much tech in construction. It’s an exciting time to be a part of it.” These technologies include gamify safety training courses, which can improve learners’ engagement and retention rates.

Construction is a notoriously dangerous profession — construction worker fatalities increased 6% from 2015 to 2016 — and these technologies can be a major boon to increasing safety. Although wearables are slow to be adopted, according to the report Safety Management in the Construction Industry, 82% of adopters say they have a positive impact. Meanwhile, more contractors are looking to drones to survey sites and improve upon worker safety as well.

*Source: ConstructionDIVE, January 8, 2018*
MARKETPLACE

Offsite Construction to Ramp Up in 2018

- Modular construction, also known as offsite, is expected to take off in 2018, contributing to its projected global increase of 6% by 2022, according to ForConstructionPros.
- The rise in offsite manufacturing and construction will be driven by a number of factors, including contractors' difficulty filling skilled labor positions and the need to complete projects faster and with fewer resources.
- New technologies, like 3-D printing, and a growing number of globally sourced custom components and elements are also expected to ramp up offsite's global market presence.

Less than 10 years ago, construction projects were either modular or conventional. Now, the rise of offsite construction has been a key trend for U.S. construction companies in recent years — and that trend doesn't seem to be going away anytime soon.

Though offsite is a defined market segment in European and Asian markets, the delivery method is starting to gain steam in the U.S. as more contractors turn to offsite. Some big-name contractors like Turner Construction and Gilbane have even created project manager positions for offsite, marking a vote of confidence for the method's long-term staying power. Suppliers, too, are placing their bets on offsite and building out their operations with the method in mind.

And investors are taking note — offsite startups like Katerra and FullStack Modular collected millions in funding last year alone. That pattern will likely continue as big-name adopters, including Google and global hotel chain Marriott, continue to tap the method for their developments. Marriott, which already has six offsite manufacturers as contractors, expects to add seven more to its operations this year, contributing to its goal of delivering more hotel projects through offsite construction.

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A growing body of work pointing to offsite's benefits will likely continue to stoke interest in the coming years alongside growing demand for new developments and stagnation in industry productivity. According to the National Institute of Building Sciences, the method's key benefit is its ability to compress project timelines and lower costs. And though 93% of AEC professionals surveyed by the organization reported having used offsite methods in 2014, that number stands to rise as companies and organizations work to more clearly measure and promote offsite projects' outcomes against site-built projects' outcomes.

Source: ConstructionDIVE, January 17, 2018
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Does Steel Framing Shine in Multifamily Construction?

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Editor’s Note: We continue to highlight the marketing efforts of cold-formed steel advocates to ensure component manufacturers are aware of the framing alternatives builders may consider, particularly as softwood lumber costs continue to remain at record highs.

The demand for multi-family housing is growing. A study commissioned by the National Multi-Family Housing Council and National Apartment Association found that population growth and a preference for multi-family rental units will require 4.6 million new apartments by 2030. Fewer renters are interested in swapping out their apartments for homeownership, and more seniors are choosing to rent.

Another growing segment of the multi-family housing demand is student housing. While historically a small portion of the multi-family sector (6.6 percent of total multi-family transaction volumes in 2016), student housing hit record levels in 2016, producing $9.2 billion in transaction volumes. Experts predict that university enrollment figures will continue to rise, which means more student housing will be needed in the coming years. While most construction productivity isn’t keeping pace, the use of cold-formed steel framing (CFS) can help speed construction time and cut costs to help multi-family projects meet demand and produce quality residences.

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Timely Construction

Cold-formed steel framing and the ability to prefabricate panels offer multiple benefits. Multi-family developers know that the sooner a project is completed and occupied, the sooner they can begin to generate a return on their investment. CFS helps fast track construction projects, which can help building owners begin collecting revenue sooner. For example, Poly Canyon Village, a student housing complex in California, was completed in six months less time by using CFS framing compared to the schedule for a concrete structural frame.

In addition, inclement weather won’t dampen the project schedule, as CFS structural components can be manufactured offsite in dry conditions to reduce construction delays. Once on site, CFS’ durability helps prevent cracking, warping and mildew from exposure to the elements, and steel’s strength can remove the need for construction scaffolding. In addition, because CFS panels are lightweight and consistent (without imperfections like knots or warping), they’re quickly and easily installed — and ultimately, can help a project get completed in less time and with fewer workers.

All of these efficiencies save labor costs and time to help multi-family projects open faster to residents.

Tight Sites

Urban markets and campuses bring specific challenges for constructing apartments, senior housing, condominiums, and student housing. Tight sites wedged between existing buildings, neighborhoods, and active populations require careful planning.

In high-traffic areas, a construction schedule can be significantly impacted by material deliveries and having to store materials on site or on the street. Because CFS panels can be delivered to a job site and often installed on the same day, that kind of storage is not always required.
In addition, because CFS is lightweight, it’s an ideal material choice when builders want to add stories to existing structures. For example, the developers of Piatt Place in Pittsburgh added three stories of condominiums on top of what was originally a four-story department store. By building upward, developers can maximize the space in urban markets.

Design Flexibility

Open-loft floor plans and large windows are in vogue for condominium construction — especially in urban developments, where residents can enjoy sweeping city views. CFS framing’s strength helps support the loads needed for these popular spacious designs and reduces the load the foundation must carry to offer financial savings.

Architects are frequently inspired by the building’s surroundings, site limitations, or desired project amenities to create unusual design forms. Unique geometry can add to a multi-family building’s appeal, but it can also place a burden on contractors to find cost-efficient solutions to complete the project. CFS can be designed and accurately detailed to support non-liner forms and achieve the design goal.

No Compromise

In addition to saving time and cost during construction, CFS framing and prefabricated panels offer durability and consistent quality. Because multi-family housing projects typically use replicable designs between floors and across multiple projects, developers can benefit from using CFS panels, which can be prefabricated to exact standards. In addition, the inherent stability of CFS offers project longevity and fewer future warranty claims.

Another avenue for cost savings from CFS framing and prefabricated panels is that steel is noncombustible. With less risk of fire damage, insurance carriers are prompted to lower risk premiums and property insurance costs compared to wood construction. Multi-family developers save money at the outset and on insurance payments over time.

As owners and contractors look to meet the demand for multi-family construction, CFS components are an efficient choice to realize cost and time savings during construction and provide safety and predictability over a project’s lifespan.
If you have additional questions about incorporating CFS elements in your next multi-family housing project, request complimentary support from our team of experts. BuildSteel is a partnership of manufacturers, suppliers, producers and industry organizations offering resources and free project assistance for building professionals.

Source: SBC Magazine, January 22, 2018

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AIA Consensus Forecast: 4.0% growth for nonresidential construction spending in 2018

The commercial office and retail sectors will lead the way in 2018, with a strong bounce back for education and healthcare.

Despite labor shortages and rising material costs that continue to impact the construction sector, construction spending for nonresidential buildings is projected to increase 4.0% this year and continue at a 3.9% pace of growth through 2019.

The American Institute of Architects (AIA) semi-annual Consensus Construction Forecast indicates the commercial construction sectors will generate much of the expected gains this year, and by 2019 the industrial and institutional sectors will dominate the projected construction growth.

“Rebuilding after the record-breaking losses from natural disasters last year, the recently enacted tax reform bill, and the prospects of an infrastructure package are expected to provide opportunities for even more robust levels of activity within the industry,” said AIA Chief Economist, Kermit Baker, PhD, Hon. AIA. “The Architecture Billings Index (ABI) and other major leading indicators for the industry also point to an upturn in construction activity over the coming year.”

Even eight and a half years into this current national economic cycle, the US economy remains on solid footings. Given the strong levels of business investment, economic growth is estimated to have been 2.2% to 2.3% range last year, easily topping the 1.5% growth from 2016. Over two million new payroll positions on net were added to the economy last year, the seventh straight year that payroll growth exceeded that level.

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The national unemployment rate ended the year at 4.1%, its lowest level since 2000. And while low interest rates have helped to fuel this growth, rising stock prices have ensured that public companies have had access to capital to expand their operations. The Dow Jones industrial average increased almost 25% during the year.

However, in the face of a supportive economy, construction spending on nonresidential buildings disappointed last year. Overall spending on these facilities grew by only about 2.5%, with spending on manufacturing facilities seeing a steep double-digit decline.

The only sector achieving healthy growth was retail and other commercial facilities, an odd result given the numerous reports of failing shopping centers due to strong growth in e-commerce sales. However, much of the spending reported in the retail and other commercial facilities category was for distribution facilities and related logistic operations to support a more efficient e-commerce system.

Still, the slowdown in spending last year was sharper than expected. Annual 2015 increases were almost 16% across the entire nonresidential building category, with the office and lodging categories realizing strong gains, and the institutional categories posting increases of almost 8% overall.

Growth in activity eased in 2016, with overall spending on nonresidential buildings increasing by only 6% even though the office and lodging categories posted gains of nearly 25%. Spending on institutional facilities was disappointing, with increases totaling less than 2% in this category.

Source: AIA, January 30, 2018
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By all measures, a construction boom is shaping up for 2018

- The construction industry added 30,000 jobs last month, according to the Labor Department.
- That brings the sector’s 2017 gains to 210,000 positions, a 35 percent increase over the previous year.
- Construction spending is also soaring, up to a record $1.257 trillion in November, according to the Commerce Department.
- Optimism among construction contractors is also at a record high.

All signs and numbers point to a huge year for the construction industry. Even in December, with much of the nation frozen, the construction industry added 30,000 jobs, according to the Bureau of Labor Statistics.

For all of 2017, construction added 210,000 jobs, a 35 percent increase over 2016.

Construction spending is also soaring, rising more than expected in November to a record $1.257 trillion, according to the Commerce Department. That was up 2.4 percent annually. Spending increased across all sectors of real estate, commercial and residential, with particular strength in private construction projects. The only weakness was in government construction spending.

Construction firms are clearly looking to hire more workers. Three-quarters of them said they plan to increase payrolls in 2018, according to a new survey from the Associated General Contractors of America. Industry optimism for all types of construction, measured by the ratio of those who expected the market to expand versus those who expected it to contract, hit a record high.
“This optimism is likely based on current economic conditions, an increasingly business-friendly regulatory environment and expectations the Trump administration will boost infrastructure investments,” said Stephen Sandherr, the association’s CEO.

Contractors are most optimistic about construction in the office market, which has seen little action since the recession. Transportation, retail, warehouse and lodging were also strong in the survey. Respondents were less encouraged by the multifamily apartment sector, which is just coming off a building boom.A construction worker carries a sheet of plywood as he and co-workers install the sub-floor of a home onto pilings.

The biggest concern for the industry is the severe shortage of labor. This is slowing what could be a far more robust recovery in the residential housing market, which desperately needs more homes. December’s employment report did show the biggest monthly rise in residential construction jobs of 2017, but homebuilders are still looking for skilled labor. Housing starts are increasing slowly, but they are not even close to meeting the strong demand.

Construction firms are adding jobs, but workers are also leaving the industry, aging out. In 2017, a net 190,000 new workers entered the construction industry, far lower than the prior three-year average of 284,000 annual additions. The National Association of Realtors, which is essentially begging builders for more homes, points to this as a huge problem and is appealing to Congress for new policies to ease the worker shortage.

“There needs to be serious consideration in allowing temporary work visas until American trade schools can adequately crank out much needed, domestic skilled construction workers,” NAR chief economist Lawrence Yun wrote in response to the monthly employment report.

Source: CNBC, January 5, 2018