

TOP STORIES

Assistance Needed to Update SFA's Fire and Acoustic Guide

The Steel Framing Alliance's (SFA) [Guide to Fire and Acoustic Data for Steel Floor, Wall and Roof Assemblies](#) is in the process of being updated, and assistance is needed to complete the process. [More](#)

Steel Framing Alliance Updates "Thermal Design and Code Compliance for Cold-Formed Steel Walls" Design Guide

The Steel Framing Alliance (SFA) has published "Thermal Design and Code Compliance for Cold-Formed Steel Walls, 2015 Edition," a resource that updates the 2008 edition of "Thermal Design Guide for Exterior Walls." [More](#)

Four Common Myths Driving Wood Use in Mid-Rise Buildings

The wood industry has done a good job of promoting its material as a sustainable choice for mid-rise building construction. [More](#)

COLD-FORMED STEEL ENGINEERS INSTITUTE – NEWS AND UPDATES

CFSEI Announces 2015 Design Excellence Award Winners

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CFSEI Names Bill Babich, P.E. as Distinguished Service Award Winner

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Construction Spending Fastest in More Than Six Years in April

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Cold Formed Steel Vs. Wood Frame Construction

Recently, a major fire raced through the AvalonBay at Edgewater apartment community in New Jersey, destroying several hundred units and displacing the residents of the luxury development in the middle of winter. [More](#)

Nonresidential Construction Spending Surges in April

Today's Census Bureau release regarding nonresidential construction spending did not just offer good news about April; it also supplied upwardly revised spending data for both February and March. [More](#)

NY Code Won't Require Lumber Grade Stamps

Model codes, such as the International Residential Code and the International Building Code, don't let you build with any wood you want to use. [More](#)

High Tech Roofing Brings Energy Efficiency to Department of Defense

Retrofit metal roofing helps heat and cool buildings, produces electricity for the grid, and harvests rainwater. [More](#)

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The Steel Framing Alliance's (SFA) [Guide to Fire and Acoustic Data for Steel Floor, Wall and Roof Assemblies](#) is in the process of being updated, and assistance is needed to complete the process. This document was first published in August 2003. The most recent version, dated June 2013, has 165 pages containing 377 floor, wall (non-load and load-bearing) and roof assemblies relevant to residential and light commercial construction.

The SFA is seeking assistance by soliciting new assemblies and purging obsolete assemblies from the document. If you have assemblies to submit for consideration or suggest removal of something already listed, please send your additions, deletions, and/or comments [online](#) or directly to George Frater at gfrater@steel.org or contact him by phone at 905-946-9607, ext. 112. To be considered for the 2015 update, all details should be received no later than August 15, 2015. Our goal is to have this new version available during the last quarter of 2015.

Your input is always important in developing high-quality resource documents for our industry. To view the current version, [click here](#). This guide is produced cooperatively by the SFA, The Canadian Steel Construction Council (CSCC) and the American Iron and Steel Institute (AISI).

Please contact Maribeth Rizzuto for additional information at mrizzuto@steel.org.

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Steel Framing Alliance Updates “Thermal Design and Code Compliance for Cold-Formed Steel Walls” Design Guide

The Steel Framing Alliance (SFA) has published “Thermal Design and Code Compliance for Cold-Formed Steel Walls, 2015 Edition,” a resource that updates the 2008 edition of “Thermal Design Guide for Exterior Walls.” The new design guide is available to download free of charge at the Cold-Formed Steel Engineers Institute (CFSEI) website at www.cfsei.org.

The updated guide integrates the results of extensive hot box tests of cold-formed steel wall assemblies to provide the most up-to-date and accurate methods for determining the thermal performance of wall assemblies. It also addresses compliance paths and requirements for the two most widely used energy codes and standards in North America—the 2015 *International Energy Conservation Code* and ASHRAE 90.1-2013, *Energy Standard for Buildings Except Low-Rise Residential Buildings*.

The design guide is set up into four chapters that examine: 1) background and overview of the Energy Code, 2) base code U-factors for cold-formed steel assemblies, 3) methods for determining U-factors of cold-formed steel walls, and 4) code compliance options and examples.

“Architects, engineers, designers and builders should have this resource at their fingertips because it provides the most up-to-date technical information on the thermal performance characteristics of the different types of cold-formed steel assemblies used in buildings,” said Maribeth Rizzuto, LEED AP – BD+C, Director of Education and Sustainable Construction for the Steel Framing Alliance and Managing Director of the Cold-Formed Steel Engineers Institute. “It will assist them in complying with major energy codes and standards requirements, and will also inform them about prescriptive and performance compliance alternatives, including approaches that can yield more cost-effective designs.”

- Editor, Framework Online

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Four Common Myths Driving Wood Use in Mid-Rise Buildings

The wood industry has done a good job of promoting its material as a sustainable choice for mid-rise building construction. However, the claims being made don't always measure up. Here are a few of those "myths" and some steel solutions:

Myth #1. Because they are sprinklered and covered with gypsum board, wood buildings offer the same protection as concrete or steel through every stage of the building's life.

You shouldn't yell "fire" in a crowded building, the saying goes. Perhaps it's time to re-evaluate when the time is right to yell, and yell loudly!

Over the past few years, dozens of large fires have occurred in wood-framed buildings during construction. Not only were the buildings a total loss, but they put adjacent property and the general population at risk, closed major roadways, and placed firefighters at risk needlessly.

The DaVinci Apartment complex in Los Angeles, California is perhaps one of the best recent examples of why wood is a danger during construction. This 526-unit apartment building with 1.3 million square feet of floor space burned to the ground in December 2014. The building had five stories of wood framing over a two-story concrete podium. The project was a complete loss. Flames were visible for miles and forced the closure of a major interstate during rush hour. Adjacent buildings suffered exterior and interior damage. One firefighter from Los Angeles claimed: "When you got that bare wood, it burns. It burns good." (<http://www.latimes.com/local/california/la-me-downtown-fire-20141209-story.html#page=1>).

Fortunately, none of the construction-stage fires around the country in these larger wood structures have resulted in loss of life. However, the next time you hear someone promoting the attributes of wood, remind them of the threat it poses during construction. They should also be aware of the lower Builders Risk insurance premium rates that are available for steel framing versus combustible construction.

Myth #2. Once a building is complete, the risk in a wood-framed building is equivalent to buildings framed with noncombustible materials.

After you direct the proponents of this viewpoint to Myth #1 above, have them continue reading on:

On January 21, 2015, a 408-unit 300,000 square foot occupied apartment complex, the Avalon at Edgewater in Edgewater, New Jersey, was a complete loss after being ravaged by fire. The building was built with four stories of wood framing above a two-story concrete parking structure. Fortunately, no one was hurt in this fire.

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The fire began inside the wall of a bathroom during plumbing repairs. The sprinkler systems were of no use when the fire was started inside concealed spaces behind the protective gypsum board. Incredibly, this same building burned down during initial construction in 2002, yet was rebuilt with wood a second time.

Myth #3. Wood is more sustainable than other materials.

First, how sustainable can something be if you have to build it twice when it burns down during construction?

But fire risk issues aside, it's just not the case that wood is the more sustainable material. Steel is the most recycled construction material on earth. According to the American Iron and Steel Institute, steel construction products have a recycling rate of more than 90 percent, meaning that at the end of a steel building's life, more than 90 percent of its steel is recycled into another steel product, using significantly less energy than was necessary to create the original product.

We also hear about wood storing carbon. Don't fall for that whopper either. When wood rots, burns, or otherwise ends up in the waste stream (as it all eventually does), the carbon that is stored is released. Ann Ingerson of The Wilderness Society states: "As a result of wood waste and decomposition, the carbon stored long-term in harvested wood products may be a small proportion of that originally stored in the standing trees—across the United States, approximately 1 percent may remain in products in use and 13 percent in landfills at 100 years post-harvest." ("Carbon Storage Potential of Harvested Wood: Summary and Policy Implications," The Wilderness Society, October 23, 2010, p. 1.)

Wood is not harvested following sustainable practices, as we are often led to believe. Eighty-one percent of forests in the United States are not certified under a sustainable harvesting program. Of those that are, only 7 percent meet the Forest Stewardship Council's criteria to be truly sustainably grown and harvested. ("Forest Certification Around the World: Georgia-Pacific, Sustainable Forestry and Certification," Georgia-Pacific, 2014). Clearcutting, massive soil erosion, and other methods that damage the land and habitat long-term continue on many lands.

Myth #4. Wood buildings are more energy-efficient than steel or concrete buildings.

Steel-framed buildings are built every day that are part of high-efficiency buildings. Steel-framed buildings can meet or exceed the rigorous requirements in the ASHRAE 90.1 energy efficiency standard for commercial buildings and the International Energy Conservation Code, and even state codes such as Title 24 in California. In fact, with today's insulation practices, the building envelope with which steel interacts is a secondary issue as far as determining energy efficiency in commercial buildings. Energy use associated with windows, heating and cooling efficiency, air leakage, lighting, and other loads typically dominate the performance in a modern building, not the choice of framing material.

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Cold-formed steel framing offers many advantages over other types of construction. When steel is used, everyone benefits from a superior product that:

- Reduces the fire risk to occupants, firefighters and property/business owners.
- Is sustainable, and the most recycled building material that exists.
- Provides a significantly greater strength-to-weight ratio than wood.
- Has the flexibility in bay spacing and framing layout to maximize usable floor space for owners and tenants.
- Is typically fabricated off-site, reducing on-site labor.
- Results in less scrap and job site waste than lumber.
- Reduces construction cycle time, resulting in earlier occupancies and lower financing costs.
- Is a resilient material, with reserve strength and ductility that result in significant advantages in natural disasters such as hurricanes and earthquakes.
- Employs quality control and quality assurance procedures to ensure that the project requirements are met.

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CFSEI Announces 2015 Design Excellence Award Winners

The Cold-Formed Steel Engineers Institute (CFSEI) presented three Design Excellence Awards on May 19 during the 2015 CFSEI Expo held at the Rosen Centre Hotel in Orlando, Florida. The winners were: a) First Place – ClarkDietrich Engineering for AQ Rittenhouse, Philadelphia, PA; b) Second Place – DSi Engineering, LLC for Elan Westside Apartments, Atlanta, GA; and c) Third Place – CEMCO for Plaza at Pearl City, Pearl City, HI. The CFSEI Design Excellence Award recognizes small and large projects that exemplify excellence in the structural design of new or renovated structures utilizing cold-formed steel products.

“Congratulations to each of these companies for overcoming significant design challenges with innovative solutions utilizing cold-formed steel framing,” said Maribeth Rizzuto, LEED AP – BD&C, Managing Director of the Cold-Formed Steel Engineers Institute. “There are so many creative ways to use cold-formed steel framing for mid-rise building projects, and we received many excellent submissions for this award. It was difficult to make the final selections. We greatly appreciate all of the entries that were sent in.”

About the Projects

First Place – ClarkDietrich Engineering – AQ Rittenhouse, Philadelphia, PA

The original property was a four-story structure in downtown Philadelphia that had been abandoned for 23 years. Aquinas Realty Partners purchased the property with a vision to raze the existing building and create a new 12-story luxury apartment complex. The construction team had to find a way to install exterior, cold-formed steel stud framing in very tight quarters and within a high traffic area, with an expedited construction timeline. The team initiated off-site panelization and developed details with Building Information Modeling (BIM), which required modeling every stud and track on the exterior of the building. The project was completed in December 2014. [Read more here.](#)

Second Place - DSi Engineering, LLC – Elan Westside Apartments, Atlanta, GA

The project scope was an eight-story building with 197 apartments and 11,000 square feet of retail space, with six of those stories consisting of load-bearing cold-formed steel framing on top of two levels of concrete parking structure. The contractor faced the challenge of a very short construction timeframe. DSi developed a single innovative BIM model that provided structural framing drawings, layout drawings, shop drawings and material rolling information. Fabricated cold-formed steel walls and truss panels were used to expedite the construction process. The project was completed in April 2014. [Read more here.](#)

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Third Place – CEMCO – Plaza at Pearl City in Pearl City, HI

Plaza at Pearl City is a 107,000 square foot assisted living facility constructed of four levels of load-bearing cold-formed steel wall framing on a single level of concrete podium. Three of these assisted living facilities had already been built, but this was the first project to utilize this structural system. The load-bearing cold-formed steel system combined with a framed floor system with Structo-Crete® panels enabled the builder to reduce the dead load of the structure compared to traditional building materials. Panelization consistency was critical to success as well as the ability to meet a tight construction deadline. The project was completed in September 2014. [Read more here.](#)

All CFSEI award entries were judged by a panel of cold-formed steel professionals on demonstrated excellence and achievement in the use of cold-formed steel based on the following criteria: design creativity, technical innovation, system efficiency and economy, constructability, complexity of problems solved, and design integration.

- Editor, Framework Online

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CFSEI Names Bill Babich, P.E. as Distinguished Service Award Winner

The Cold-Formed Steel Engineers Institute (CFSEI) has named Bill Babich, P.E., Director of Engineering for Alpine TrusSteel in Orlando, Florida as the recipient of its 2015 Distinguished Service Award. The award, which recognizes the significant contributions of an individual who has volunteered time, talent and resources to the cold-formed steel industry, was presented May 19 during the 2015 CFSEI Expo at the Rosen Centre Hotel in Orlando, Florida.



“Over the years, Bill has been actively involved at the committee level with many cold-formed steel framing organizations, with a strong commitment to advancing products and technologies and then taking that information directly to architects, engineers, contractors, building officials and others who can use it,” said Maribeth Rizzuto, LEED AP – BD+C, Managing Director of the Cold-Formed Steel Engineers Institute. “No request is too small, and his reliability is exceptional. An example is Bill’s voluntary position as moderator of the CFSEI Webinar series. For the past six years, we’ve hosted 30 CFSEI webinars on a wide range of technical topics, and Bill has moderated all but two of them. He is equally committed to other industry organizations, to the great benefit of all. It is fitting and personally rewarding as well to recognize Bill with our highest award for individual achievement.”

Bill Babich has been involved in the prefabricated truss industry for more than 29 years, with focus on cold-formed steel trusses since 1997. He is a member of the American Society of Civil Engineers (ASCE), the American Institute of Steel Construction (AISC), the American Iron and Steel Institute (AISI) Committee on Framing Standards (COFS), the Structural Building

Components Association Cold-Formed Steel Council (CFSC), the Steel Framing Alliance (SFA), and the Cold-Formed Steel Engineers Institute. He is chairman of AISI’s COFS Truss Subcommittee and a past chairman of the CFSEI Executive Committee.

The 2015 CFSEI Annual Expo and Meeting was attended by architects, builders/contractors, engineers and other construction industry professionals. The event provided opportunities for education, networking, and an exposition featuring state-of-the-art innovations, technologies and principles in cold-formed steel framing. This is the only event of its kind dedicated to the cold-formed steel framing industry and is held on an annual basis.

- Editor, Framework Online

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AISI Report Introduces New Design Methods for Load-Bearing Clip Angles

WASHINGTON, D.C. – The American Iron and Steel Institute (AISI) has published a research report introducing new design methods for three limit states of cold-formed steel clip angles: shear, compression and pull-over of the screw connections. Details of the testing and results are included in “RP15-2: Load-Bearing Clip Angle Design.” A free download is available [here](#) (58 pages).

The research was conducted by Cheng Yu, Ph.D., Associate Professor at the University of North Texas, and his team. The scope of the project was to investigate the behavior of load-bearing cold-formed steel clip angles and develop appropriate design methods for their use when subjected to three different loading conditions. For each limit state, a test program was conducted to investigate the behavior, strength and deflection of the clip angles. The test results were then compared with existing design methods for members similar to, but not exactly the same as, cold-formed steel clip angles. The research team developed new design methods for each of the three limit states studied in the project. LRFD (Load and Resistance Factor Design) and LSD (Limit State Design) resistance factors and ASD (Allowable Strength Design) safety factors were provided to apply to the proposed design equations for nominal strength.

“This comprehensive research is significant because it provides a method for designers and specifiers to more accurately predict the strength of cold-formed steel clip angles,” said Jay Larson, P.E., F.ASCE, Managing Director, Construction Technical Program. “We appreciate the detailed work and new design methods developed by Dr. Yu and his team, which will advance cold-formed steel design practices in the marketplace.”

Source: Construction Market Council of the Steel Market Development a business unit of AISI April 20, 2015

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MARKETPLACE

Construction Spending Fastest in More Than Six Years in April

WASHINGTON (MarketWatch) — Construction spending in April reached the fastest pace in more than six years, due to building of apartments, commercial buildings and roads.

Building outlays grew 2.2% in April to reach a seasonally adjusted annual rate of \$1.01 trillion — the highest annual pace since November 2008 — thanks to more private and public spending, the [U.S. Commerce Department reported](#).

More construction is good news for at least two reasons. Faster building rates show that developers see demand for more homes, stores and such. More construction also means more jobs, growth that lends support to the broader economy. Last month, after the government reported a surge in new home construction, economists said the [housing market may help the economy](#) recover from the first quarter, when [gross domestic product contracted](#).

April's building increase "is very positive" for economic growth in the second quarter, said Jim O'Sullivan, chief U.S. economist with High Frequency Economics.

Private construction spending in April rose 3.1% for apartments, 3.2% for commercial buildings and 4.6% for facilities such as power plants. Meanwhile, public construction spending rose 3.6% for educational facilities and 8.5% for highways and streets.

After Monday's data release, Ted Wieseman, an economist at Morgan Stanley, raised his estimate for annualized second-quarter GDP growth to 2.1% from 1.6%.

"Very strong report, significantly exceeding elevated expectations, as much better results for private nonresidential and government spending added to a surge in homebuilding activity," Wieseman wrote in a research note.

Source: MarketWatch, June 1, 2015

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Cold Formed Steel Vs. Wood Frame Construction

Recently, a major fire raced through the AvalonBay at Edgewater apartment community in New Jersey, destroying several hundred units and displacing the residents of the luxury development in the middle of winter.

As dramatic as this enormous fire was, it was by no means a singular event. In fact, even as you read this article, firefighters somewhere may be responding to yet another huge apartment blaze. The reason: The proliferation of wood-framed construction in mid-rise buildings.

One need only look at the record. In the first few months of 2014, for example, fire disasters fueled by wood framing destroyed a four-story apartment community under construction in Salt Lake City; the five-story, 396-unit Axis Apartments building in Houston; and the 300-unit Gables Upper Rock apartment community under construction in Rockville, Md. Similar events occurred throughout the year, culminating in December with one of the most spectacular mid-rise blazes of 2014 when the five-story, 526-unit DaVinci Apartment Complex under construction in Los Angeles burned to the ground.

Insurers have long been wise to these risks. “Wood” construction has a greater likelihood to burn or be damaged by fire and will be a total loss versus a partial one. Loss history for wood construction has been poor, and carriers are very restrictive of the amount of risk they will take. This drives up the cost to the builder, and actually weakens the pro-wood argument that it is less expensive than other materials. The recent major wood frame fires calls for a need to look at cost savings and particularly insurance more closely.

But insurance is more than a line item, and can seem to have as many variables as a project itself. That’s because a single commercial building project requires a range of insurance products, including property insurance, workers compensation, course-of-construction liability insurance and builders risk insurance. Complicating matters further, the cost of each of these types of insurance depends on factors unique to each individual project.

Because insurance is necessary, even if a builder shops for insurance with close attention to cost, the prevailing attitude may be to “bite the bullet” and accept insurance expenses as the “cost of doing business.”

But for a range of low- and mid-rise construction projects, there are a few options. Builders may be missing a major opportunity to trim their insurance costs where they might least expect it—through the use of cold-formed steel framing.

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The simple reason is that cold-formed steel is non-combustible: It simply does not burn or contribute to the spread or intensity of a fire.

One insurer, the [US Assure Builders Risk Plan](#) insured by Zurich American Insurance Co., for example, offers a builders risk insurance plan specifically designed for steel-framed projects. The firm says the plan is the first offering explicitly based on the non-combustibility of steel versus wood.

According to the company, the plan establishes builders risk insurance rates for cold-formed steel framing in commercial and multifamily construction projects that are significantly lower than the premiums available for wood-framed projects. Of course, all this is subject to underwriting.

For insurance purposes, a noncombustible designation for a commercial project depends largely on the classification of the load-bearing material used to support walls, floors and roofs. This is key, because insurers look at the individual parts of the project, which for underwriting purposes may be classified under one of five other designations—frame, joisted masonry, masonry non-combustible, modified fire resistive and fire resistive.

This is an important consideration for builders, because although a project may contain a majority of noncombustible components—like walls and floors—if the roof trusses are made from wood, the entire project cannot be classified as noncombustible. Each component matters in an insurer's eyes.

Once a project is properly qualified as noncombustible by an underwriter, it may also qualify for discounts on other kinds of insurance, such as property insurance.

Of course, while the potential for savings by using cold-formed steel framing is there, other factors also affect the cost of builders risk insurance, including geographic location, catastrophic surcharges, deductibles, the contractor's history of loss, and so forth. The same holds true for the cost of property insurance, which may be affected by intended building use, fire protections, adjacent risks, geographic location and other factors.

But cold-formed steel offers more than an insurance advantage. It has the highest strength-to-weight ratio of any construction material. And it enjoys definite advantages over wood in terms of durability, moisture- and mold-resistance and recyclability.

Most builders who have followed the recent trend toward using wood in nonresidential construction often use "cost" as their motivation. That is certainly understandable in today's tough economic and competitive construction market. However, there can be substantial savings associated with noncombustible materials, and they could be selling themselves short if they're not exploring the impact of lower insurance costs. As the market adjusts to the upswing in major claims from the recent fires, this could be even more important in the future.

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Charles Specht is an independent insurance consultant at Constructive Risk, specializing in construction insurance in the cold-formed steel market. He was previously an area vice president at one of the world's leading insurance brokerage firms in California.

Source: Multi-Housing News, April 9, 2015

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Nonresidential Construction Spending Surges in April

Today's Census Bureau release regarding nonresidential construction spending did not just offer good news about April; it also supplied upwardly revised spending data for both February and March. Nonresidential spending expanded 3.2 percent on a monthly basis in April and spending totaled \$646.7 billion on a seasonally adjusted, annualized basis, according to the government's initial estimate. Nonresidential construction is up by a solid 8.8 percent over the past year, consistent with ABC's forecast of high single-digit growth. The Census Bureau also revised March's nonresidential spending figure from \$611.8 billion to \$626.7 billion, and February's figure from \$613.1 billion to \$618.4 billion. Initial estimates suggested that nonresidential construction was sagging during the early months of the year; however, the new data indicate spending has expanded during each of the previous three months.

"The upbeat assessment of nonresidential construction in April has been rendered more meaningful by the upward revisions for prior months," said ABC Chief Economist Anirban Basu. "The presumption had been that nonresidential spending construction data would improve as we approached the summer, and the outlook ahead remains solid. There is a considerable amount of financial capital available to move construction projects forward and low interest rates certainly help. While the availability of substantial financial capital may eventually produce over-built private construction markets, for now the expectation is that progress will continue."

All but one nonresidential construction sector experienced spending increases in April:

- Manufacturing-related construction spending expanded 2.6 percent in April and is up a whopping 52.9 percent on a yearly basis.
- Office-related construction spending expanded 3.7 percent in April and is up 8.8 percent compared to the same time one year ago.
- Construction spending in the transportation category grew 1.6 percent on a monthly basis and has expanded 11.6 percent on an annual basis.
- Lodging-related construction spending was up 5.5 percent on a monthly basis and 17.6 percent on a year-over-year basis.
- Health care-related construction spending expanded 2.1 percent for the month and is up 2.6 percent compared to the same time last year.
- Spending in the water supply category expanded 0.7 percent from March and is up 0.8 on an annual basis.
- Public safety-related construction spending gained 2.3 percent on a monthly basis, but is down 5.6 percent on a year-over-year basis.
- Commercial construction spending expanded 2.7 percent in April and is up 17.5 percent on a year-over-year basis.
- Religious spending gained 3.3 percent for the month, but is down 7.8 percent compared to the same time last year.
- Sewage and waste disposal-related construction spending gained 0.5 percent for the month and has grown 14.9 percent on a 12-month basis.

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- Power-related construction spending grew 2.5 percent for the month, but is 11.3 percent lower than the same time one year ago.
- Highway and street-related construction spending expanded 8.5 percent in April and is up 4.8 percent compared to the same time last year.
- Conservation and development-related construction spending grew 3.7 percent for the month and is up 17.2 percent on a yearly basis.
- Amusement and recreation-related construction spending improved 2.5 percent on a monthly basis and is up 23.3 percent from the same time last year.
- Education-related construction spending gained 3.2 percent for the month and is up 0.4 percent on a year-over-year basis.

Spending declined in only one nonresidential construction subsector in April:

- Communication-related construction spending fell 5.9 percent for the month and is down 5.5 percent for the year.

Source: *Contractor*, June 1, 2015

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NY Code Won't Require Lumber Grade Stamps

Model codes, such as the International Residential Code and the International Building Code, don't let you build with any wood you want to use. They only allow structural lumber that has been graded by the rules set by national grading agencies, with occasional spot-checking by experts from those groups.

But that requirement rules out a lot of perfectly sound lumber that's produced on small woodlots, and sawn by small sawmills who don't have the money to pay for grading by a big agency. In places like wooded, rural upstate New York, that's an unpopular (and impractical) policy.

So New York code officials have ruled, once again, that the requirement for grade stamping won't be included in the New York code when the next version is published. The Watertown Daily Times has this report (see: "[NYS Fire Prevention and Building Code Council decides to not change lumber rules](#)").

The New York Farm Bureau, an organization of small landowners, praised the move in a press release (see: ""). "New York State has over 450,000 people who own small tracts of forests less than 25 acres in size that are in need of harvesting," the Bureau statement noted. "An exemption provides an important local market for lumber produced from these smaller tracts of forests. There are many remote areas in New York State that are far from retail outlets, and there is no qualified inspection agency within hundreds of miles so it is extremely difficult for rough cut lumber to be graded professionally. Local sawmills are able to step-up and fill that niche to produce lumber that meets the criteria for load bearing use and consumer demand."

The issue is not a new one in New York. Back in 2007, the upstate Watershed Agricultural Council asked lumber expert Al DeBonis of [Wood Advisory Services](#) in the Hudson Valley to educate local lumber producers in how to properly identify the characteristics of wood suitable for structural use.

"When you grade lumber, you look at several different characteristics," DeBonis said at the time (see: "[Lumber Grading Workshop Educates Local Building Code Officers & Sawmill Operators](#)"). "Two of the most important are the size of the knots and the orientation of the grain, which are two of the strength producing characteristics. In our course, we show people how to guarantee they are producing good quality material."

In an email to JLC, DeBonis said that since he taught his 2007 lumber-grading classes, the program has been discontinued (the official responsible for organizing the effort has moved on to another position). But interestingly, DeBonis says that at the time, the mills he worked with were already marketing high-quality lumber. "I don't know whether most mills cull the worst defects in response to customer perceptions of quality," DeBonis said. "But the mills that participated in these seminars that I am familiar with, do."

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DeBonis explains: "New York State allows sawmills to self certify lumber. It is up to the local building inspector to allow it or not. There is a form that the sawmillers would fill out which said they certified it for general construction purposes. For a couple of years I was actively involved in providing seminars throughout New York State to small sawmillers and building officials. We would go over grading, and I would show them ways to easily provide No. 2 quality material. These seminars were often held at sawmills, or sawmillers would bring lumber to the seminar to use for demonstrations. It was pretty successful and was funded by a New York State program. The individual who spearheaded this program moved on to a different job and the seminars ceased."

"The interesting thing was that I had to bring defective wood samples with me because the material these small sawmillers would cut was generally well above No. 2. They would often say that if they cut material that bad, they would lose customers. Also, the self certified material was most commonly used for homes, barns, farm structures, et cetera. If it was highly engineered and needed something better than a No. 2 this process would not be valid."

Source: *Journal of Light Construction*, May 29, 2015

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High Tech Roofing Brings Energy Efficiency to Department of Defense

Retrofit metal roofing helps heat and cool buildings, produces electricity for the grid, and harvests rainwater.

CHICAGO, IL – June 25, 2015 -- The nation's largest energy user, the Department of Defense (DoD), is learning how to transform some of its 577,500 buildings and structures into state-of-art energy-saving powerhouses, by retrofitting old buildings with new high-tech roofing systems. In partnership with the Metal Construction Association (MCA) and the Department of Energy's Oak Ridge National Laboratory, the DoD is host to a demonstration project for reducing a building's carbon footprint and lowering demand for energy and water. The demonstration project was part of the DoD's Strategic Environmental Research and Development Program (ESTCP) at Goodfellow Air Force Base (GAFB) in San Angelo, Texas. The model will be replicated at potentially thousands of DoD buildings throughout the country.

"We are thrilled to see this technology come together. Both the MCA and DoD see a great benefit to the broader U.S. economy when new and retrofit buildings throughout the country adopt this high performance roofing design, and work toward net-zero energy buildings," says Scott Kriner, Technical Director, Metal Construction Association.

The dynamic roofing system was installed at the Security Forces Building at GAFB and performs many functions, using a combination of technologies that heat and cool air and water, produce electricity, and collect rainwater. The metal roof retrofit system can be installed over an existing roof, saving installation costs and keeping old roofing material out of landfills. What makes this roofing system unique is that it brings together multiple functions in one holistically designed, integrated building envelope system that can be used on flat or sloped roof designs.

The technology used is a hybrid of metal roofing, insulation, hydronic solar thermal systems, engineered air pathways, and photovoltaic (PV) cells, all designed to work symbiotically. This high performance system includes a retrofitted metal roof installed over the existing roof, which creates a cavity between the existing and new roofs. Within that cavity insulation, solar thermal heating systems and cooling of air and water for the building can be installed. More specifically, the technologies incorporated into the metal roof system are:

1) Cool metal roofing: high solar reflectance coatings on metal save up to 25% in summer cooling energy costs and helps mitigate the heat island effect in urban areas.

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2) Solar thermal water heating: sun is used to preheat water for use inside the building, reducing the use of fossil fuels or electricity for hot water heaters. The heated water can also be used for space heating using a heat exchanger.

3) Rainwater harvesting: this subsystem harvests, manages and reuses rainwater for non-potable applications such as watering landscaping or flushing toilets.

4) Solar electric (PV) panels: thin film solar panels laminated on the roof provide energy for the building and even allow electricity to be sold to the grid.

With the roofing system installation at GAFB, the Department of Defense and the Metal Construction Association are demonstrating how integrating energy efficiency and solar technologies with a retrofit metal roofing system can reduce energy and water consumption, mitigate the building's environmental impact, and lower construction and operating costs.

Source: *Metal Construction Association, June 25, 2015*

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