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COLD-FORMED STEEL ENGINEERS INSTITUTE – NEWS AND UPDATES

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Dodge Data & Analytics Presents Latest World Green Building Trends

The findings from the preeminent study on green buildings have been released and the results are both surprising and encouraging. More

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TOP STORIES

Challenges Continue for Recycling at ASTM E60

At the recent meeting of ASTM E60 held in Conshohocken, Pennsylvania, discussions continued about the types of products that can be claimed as recycled. As we reported in 2017, the actual ASTM definition of "recycle" was under attack by the biodiesel industry as it attempted to change the definition to include materials that are transformed for the sole purpose of being burned through combustion. Fortunately, we were successful in averting that attempt— however, the battle continues.

The latest attempts by the biodiesel industry include referencing alternative definitions (other than ASTM's) to make an end run around the issue as part of the new Recycling in Life Cycle Assessment work item. While we recognize there is a long history of recycling spent motor oil and converting cooking oils back into new products like motor oil and carpeting to be used again (not just burned off for energy or combustion), that is not the case with biodiesel. Clearly, the U.S. Environmental Protection Agency's hierarchy of solid waste recognizes the different end-of-life paths that include reduce, reuse, recycle and waste to energy, with biodiesel falling into the last category. We continue to persevere against threats to devalue the recycling process, not just in the world of construction but in other product lines as well.

For more information on how you can be engaged with this issue, please contact Maribeth Rizzuto at mrizzuto@steel.org.

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Reminder: Calling all Fire and Acoustic Assemblies – Deadline Extended to December 15

Don't be left out in the cold!

The Steel Framing Alliance (SFA) is in the process of updating the "Guide to Fire and Acoustic Guide for Cold-Formed Wall, Floor and Roof Assemblies," and your assistance is needed to complete the process. Both the printed and online searchable directories will be updated for 2019, with the targeted completion timeframe as First Quarter 2019.

The first edition of the guide was published in 2003. The most recent version was published in 2017 with 177 pages. It includes assemblies for floors, walls (both structural and nonstructural) and roofs.

The goal of SFA is to produce high-quality, up-to-date resources for both the residential and commercial construction marketplace. If you would like to submit new tested assemblies or suggest removal of obsolete assemblies, you may do so by submitting them online here or by sending them directly to George Frater, who is leading this project, at gfrater@steel.org.

The deadline for inclusion in the 2019 version has been extended to December 15, 2018.

This guide is produced cooperatively by the SFA, The Canadian Steel Construction Council (CSCC) and the American Iron and Steel Institute (AISI).

For additional information on this project, please contact Maribeth Rizzuto at mrizzuto@steel.org.

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Did You Say FREE Webinar and 1.5 PDHs?????

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The webinar will be conducted by Roger LaBoube, Ph.D., P.E., and will focus on the extended scope and significant changes to the suite of 2015 edition cold-formed steel framing and 2016 edition cold-formed steel member and profiled steel diaphragm design standards published by AISI. Particular focus will be placed on clarifying adoption of these standards in the 2018 International Building Code.

The webinar will focus on the following standards:

- AISI S220-15 – *North American Standard for Cold-Formed Steel Framing – Nonstructural Members, 2015 Edition*
- AISI S240-15 - *North American Standard for Cold-Formed Steel Structural Framing, 2015 Edition*
- AISI S400-15 – *North American Standard for Seismic Design of Cold-Formed Steel Structural Systems, 2015 Edition*
- AISI S310-16 - *North American Standard for the Design of Profiled Steel Diaphragm Panels, 2016 Edition*
- AISI S100-16 - *North American Specification for the Design of Cold-Formed Steel Structural Members, 2016 Edition*

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It will also highlight available design aids provided by AISI such as AISI D110-16, *Cold-Formed Steel Framing Design Guide*, *2016 Edition* which has been updated to reflect the design requirements of AISI S240-15. An overview of the soon-to-be-published design guide AISI D113, *Cold-Formed Shear Wall Design Guide*, will also be provided.

More information on the webinar and registration is available at https://www.cfsei.org/webinar-december-13-2018.

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Nominations for CFSEI Executive Committee are Now Open

Nominations are now being accepted for the 2019-2020 Executive Committee of the Cold-Formed Steel Engineers Institute. The Executive Committee is responsible for setting the agenda and direction of the Institute. Committee members work through several subcommittees including Membership, Education, Technical Resources, and Marketing. Members are elected by the CFSEI membership at large each March and serve two-year terms. Eligible nominees must be members of CFSEI in good standing and commit to monthly hour-long meetings and one face-to-face meeting at the annual CFSEI Expo held every May.

For more information or to submit a nomination, send an email to nominations@cfsei.org or contact any CFSEI Executive Committee member no later than January 15, 2019.

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Save the Date for the 2019 CFSEI EXPO

My Kind of Town – Chicago is the setting for the 2019 CFSEI Expo which will be held May 21-23, 2019. The Expo has become a must-attend event for all interested in the cold-formed steel industry and is the only venue dedicated to cold-formed steel framing. While details have not yet been finalized, the program will include educational sessions for continuing education, tabletop displays featuring the most useful information for the industry, a pre-Expo tour, and more.

This Expo is being hosted by USG Structural and will definitely include a few surprises. Stay tuned for more information.

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"RP18-2: Design Example for Analytical Modeling of a Curtainwall and Considering the Effects of Bridging (All-Steel Design Approach)" illustrates how to apply the provisions in AISI S100-16, *North American Specification for the Design of Cold-Formed Steel Structural Members, 2016 Edition* in a practical example by analytically modeling a curtainwall and considering the effects of bridging. The modeling procedure may also be applicable to other framing systems. The example uses two software packages, MASTAN2 (a structural analysis program) and CUFSM (a cold-formed steel member finite strip analysis program). The input data used in the example can be downloaded via the link provided in the research report.

"RP18-3: Determination of Effective Standoff in Standing Seam Roof Systems" documents the results of a test program undertaken to better understand the horizontal force transfer between a purlin and standing seam sheathing. A series of 25 tests was performed on a variety of clip, panel, seam and insulation configurations to determine both the effective standoff and rotational stiffness of the panel-clip connections. The test program was intended to represent a broad sample of systems in use by the industry.

"These two projects ranged from the performance of component level testing to increase the body of knowledge on the behavior of cold-formed steel roofing systems to the development of design examples to illustrate how to apply new design provisions for cold-formed steel framing," said Jay Larson, P.E., F.ASCE, managing director of AISI's Construction Technical Program. "The projects illustrate the variety of applications and breadth of activities needed to support the use of cold-formed steel in construction.

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AISI and SMDI (Steel Market Development Institute, a business unit of AISI) member companies recognize the strategic importance of technical research and development to provide substantiation for advances in the codes and standards arena, and they also understand the need for technology transfer to ensure that knowledge generated has its full impact in the marketplace."

Source: American Iron and Steel Institute, October 9, 2018

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AISI Publishes New Cold-Formed Steel Research Report on Load Bearing Clip Angle Design

The American Iron and Steel Institute (AISI) has published a new cold-formed steel research report on load bearing clip angle design. The report presents the second phase of a research project aimed at developing design methods for three limit states of cold-formed steel clip angles—shear, compression, and pullover of the screw connections. "RP18-4: Load Bearing Clip Angle Design – Phase II" is available for free download here.

During the first phase of the research, new design methods were developed for the three limit states. Load and Resistance Factor Design (LRFD) and Limit State Design (LSD) resistance factors and Allowable Stress Design (ASD) safety factors were also provided to apply to the proposed design equations for nominal strength. In the second phase, the research focused on investigating: 1) the fastener pattern effects on the behavior and strength of clip angles, 2) the serviceability of clip angles subjected to tension, and 3) the design of clip angles subjected to combined shear and bending with different boundary locations.

"Clip angles are widely used in cold-formed steel structures, and the completed phases of this research provide us with a better understanding of their behavior," said Jay Larson, P.E., F.ASCE, managing director of AISI's Construction Technical Program. "The results of this work will enable improved guidance and aids for designers of cold-formed steel structures."

Source: American Iron and Steel Institute, October 30, 2018

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Steel Framing and Panelization Chosen for Mid-rise Retirement Residence

Cold-formed steel (CFS) construction has evolved into a logical and efficient way to build many structures. Further, steel framing can be combined with offsite construction techniques to fully capitalize tighter tolerances and precision assembly processes.

This was the chosen method for building the Seasons Retirement Community in Cambridge, Ont. But it was not the original plan.

Originally, the building came to structural engineers Atkins + Van Groll Consulting Engineers as an all-concrete structure. At the client's request, the firm redesigned the building to employ light-gauge steel framing. The selected composite steel/concrete floor systems uses about half the amount of concrete of cast-in methods, and thus is generally more cost-effective for this type of structure.

Seasons' Cambridge facility consists of about 125 suites in a 11,706-m2 (126,000-sf) main building plus a memory care wing. The structure also incorporates 2611 m2 (28,100 sf) of parking. The building's superstructure is comprised of a poured concrete foundation, light-gauge steel frame, and composite steel/concrete flooring system.

The new apartment building will offer residents a range of care options including independent living, assisted living, and memory care. It will also feature amenities like a café/pub, recreation areas, an exercise room, theatre, hair salon, dining room, wellness centre, and a 1486-m2 (16,000-sf) green-roof terrace located over the parking structure at the second-floor level.

Floors three to eight are strictly light steel framing (LSF). The basic building blocks of LSF construction are steel channels, coated with a zinc or aluminum-zinc alloy coating.

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For Seasons' Cambridge building, both the exterior walls and interior main partitions walls are loadbearing. The exterior walls employ 152.4-mm (6-in.) structural steel stud with 41.3-mm (1 5/8-in.) flange, 0.84 or 1.09 mm (33 or 43 mil). Additional CFS sections were 92-mm (3 5/8-in.) steel framing or 152.4-mm steel framing. The steel deck of the composite floor is G90 18-gauge galvanized steel.

A distinctive feature of this building is the construction method of the exterior steel walls. These were constructed offsite, as a pre-finished panel. The exterior insulation and finish system (EIFS) is pre-installed onto the panel allowing the panels to be placed by crane around the exterior and secured. The EIFS are finished in either stucco or faux brick. This method eliminates the need to go back and apply exterior insulation and finishes once the structural work is complete.

The selected EIFS system consists of the following layers: expanded polystyrene (EPS) insulation with factory cut channels, insulation adhesive, glass fibre reinforcing mesh, base coats, and a finish texture coat. This 10-mm system is Underwriters Laboratories Canada (ULC) rated as non-combustible cladding, meeting building code requirements for non-combustible construction.

Panelization extends the speed and quality control advantages of mass production to the fabrication of complete assemblies. Loadbearing wall panels for this building were pre-built offsite and erected upon a 1301-m2 (14,000-sf) floorplate. Window openings are prefabricated as part of the pre-assembled panel, so as each storey is completed, windows can be installed.

Platform-type construction was used for upper levels of this project, meaning each floor acts as a working "platform" for the next storey.

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Another potential benefit of the pre-assembled LSF construction method is its ability to have one construction contractor perform multiple functions. On the Seasons Retirement Community project, the same company erected the interior loadbearing steel-framed walls, installed the pre-assembled LSF wall panels on the outside, and installed the steel deck and the concrete for the composite floor.
Shane Mitchell of Glos Associates, the architect on the project, says the LSF system contributes to erecting a building quickly, in part because it allows panelizing walls in a plant before they are delivered to the site.

The design of the building required consideration of the character of the heritage area in which it was being constructed. The architects chose two types of materials: primarily masonry (brick and stone) for the base of the building, and LSF assemblies for the tower. The prominent scale of a building in that neighbourhood is two to three storeys. Since they were introducing an eight-storey building into the neighbourhood, Glos Associates wanted to "reflect the architecture and the scale of the street with a two-storey masonry podium." Then, the tower rising from the podium could be a lighter, more modern material.

This typology of building adapts well to stacked, prefabricated units. Panelization and LSF are often well suited for student residences, retirement homes, hotels, and condos if they have square footprints moving up vertically.

With this type of construction, the fabricator of the walls typically builds as much of the structure as possible offsite. This generally includes all of the light-gauge steel walls, both interior and exterior. The exterior walls will have the sheathing (or in this case, EIFS) already installed. One touted benefit of offsite factory built assemblies is the resulting higher level of quality assurance, due to the controlled working environment. With this type of prefabricated LSF, lighter gauge steel can be employed on upper floors. Dino Fantin, construction manager for the wall assemblies supplier, explains how, in a 10-storey building, the lower floors would likely use 12-gauge steel for the loadbearing walls. Then walls could incorporate lighter gauge steel in the upper levels.

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Although the building materials are lighter with the higher floors, Fantin says the structure itself is still very secure. The composite floor, formed of concrete poured on top of the steel deck, functions like a beam on top of every wall. This makes the system very stiff. Stair towers and the elevator towers give the structure lateral support.

The composite floor system used in Seasons' Cambridge facility is two-hour fire rated, designed for use in hotels, multistorey residential buildings, schools, and office buildings. This type of floor will accommodate a variety of wall systems, including lightweight steel framing, structural steel, masonry or poured concrete, insulated concrete forms, or wood framing construction.

A lightweight steel-framed structure may also be beneficial on projects having poor soil conditions, because this type of building is lighter than a conventional concrete building and the foundation will have to support less weight (Information regarding structural design with lightweight steel framing is contained in the Canadian Standards Association (CSA) S136, North American Specification for the Design of Cold-Formed Steel Structural Members.).

Source: Construction Canada, November 13, 2018

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Cold-Formed Steel Design for Acoustic Code Compliance (Canada)

The North American steel industry has completed a research program to develop the necessary tools to meet code requirements for acoustic separation in cold-formed steel frame construction.

For decades, Canada's building codes for residential construction only took sound transmission through separating walls or floors into account when assessing acoustic separation and performance. Known as sound transmission class (STC) ratings, this system led to innumerable situations where inadequate acoustic separation between neighbours was blamed on design or workmanship of those assemblies, often focusing remediation efforts in the wrong place. This problem was especially evident in multifamily housing projects where privacy and sound transmission between units are a major concern for owners and residents.

The *National Building Code of Canada* (*NBC*) has evolved to consider additional paths for sound waves, including flanking transmissions through shared ceilings and floors. "Flanking transmissions" simply means sound waves in a room engaging with all of the room's surfaces, including ceilings and floors. When those ceilings and floors are shared with adjacent rooms, the transmitted vibrations are expressed as sound next door regardless of the acoustic separation designed into the shared wall between the two rooms that was the focus of previous *NBC* editions.

As 2015 *NBC* is adopted throughout the country, architects and specifiers are designing to this more holistic understanding of sound transmission, referred to as apparent sound transmission class (ASTC) ratings, for their assemblies. This evolution in treatment of sound in residential construction can reduce sound transmission between rooms and units, but it also creates new challenges and requirements for architects and specifiers.

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Those challenges are frankly why it has taken so long for building codes to catch up to what has been widely understood for decades. ASTM E336, *Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings*, providing an ASTC rating, was first published in 1997. However, while measuring acoustic performance is one thing, offering architects the tools to reliably predict the performance is another. While some European building codes have used the 2005 International Organization for Standardization (ISO) 15712-1, *Building acoustics — Estimation of acoustic performance of buildings from the performance of elements — Part 1: Airborne sound insulation between rooms*, these methods have not found broad adoption in North America. This is because they largely provide reliable estimates for buildings constructed from heavy, homogeneous building elements, and not for structures constructed from lightweight-framed elements widely used in mid-rise construction projects in North America. Additionally, from a practical perspective, ISO standards for building acoustics have many differences from the ASTM standards used by the North American construction industry—both in terminology and in specific technical requirements for measurement procedures and ratings.

To address these challenges, the National Research Council Canada (NRC) and the Canadian Sheet Steel Building Institute (CSSBI) undertook a project with co-funding support from the Steel Market Development Institute (SMDI) and other steel industry partners to support the transition of construction industry practice to using ASTC rather than existing STC ratings for sound control objectives in *NBC*. In addition to supporting code compliance, the study report also facilitates design for enhanced levels of sound insulation in applications where desired, and should be generally applicable to construction with cold-formed steel-framed assemblies in both Canada and the United States.

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Thanks to this research, architects and designers will be able to use the NRC's soundPATHS prediction tool for the calculation of direct and flanking sound transmission between adjacent rooms. This web application incorporates data from this research to help builders accurately predict ASTC performance. For more complex environments, the NRC report titled "Apparent sound insulation in cold-formed steel-framed buildings" outlines the steps of the process and standard measurement data required for the calculations necessary to translate the normal calculation procedure of ISO 15712-1 to ASTC in compliance with 2015 *NBC* requirements.

Researchers tested a variety of cold-formed steel wall and floor assemblies at the NRC's wall and floor sound transmission facilities in Ottawa, according to ASTM E90, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*. To measure all potential permutations of flanking sound transmissions between various rooms, an eight-room structure (two floors of four rooms each) was constructed in the facility. Researchers tested combinations of loadbearing and non-loadbearing cold-formed steel stud walls, cold-formed steel C-section floor joists, gypsum board, insulation, resilient channels, gypsum-concrete floor toppings, and floorcoverings.

The full report offers detailed discussions of experimental factors and findings. It also provides specific STC test values for almost 50 different common wall assemblies and more than a dozen floor or ceiling assemblies.

In addition to these specific measurements, researchers identified some larger trends and best practices that can inform broader strategies for residential design.

Broad trends

One key experimental takeaway is continuous surfaces between rooms are a threat to effective acoustic separation.

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Experimental results across a variety of constructions make it clear a subfloor which is continuous across the junction can cause serious flanking sound transmission via the floor surfaces of a wall/ceiling junction with continuous subfloor, when compared to a wall/ceiling junction with discontinuous subfloor. With a continuous subfloor, the ASTC values were at the lower limit of acceptability. Breaking the subfloor with an intervening wall assembly can provide significant ASTC value, on the order of 15 to 20 points.

The flanking transmission at wall/wall junctions also depends significantly on the way gypsum board is attached to the wall framing. Gypsum board continuous across the junction was shown to decrease the ASTC rating by about 30 points compared with gypsum board interrupted at the junction. Continuous gypsum board on flanking walls provides an effective path for sound transmission between adjacent rooms and can significantly affect the apparent sound insulation, independent of the design of the separating wall. When the gypsum board and wall studs are well-separated, ASTC values for the wall-to-wall path can be reduced by almost half.

In loadbearing junctions, the continuity of the joists affects both the flanking sound transmission via the floor surfaces and the transmission via the ceiling. Joists continuous across the junction allow sound to travel uninterrupted, and therefore should be avoided where possible. In the study, ASTC values for the ceiling-to-ceiling path for discontinuous joists were 10 points higher than for continuous joists.

Continuous cavities are also conducive to sound transmission. Fortunately, many best practices in design to limit smoke and fire penetration also contribute to sound insulation by eliminating cavities that can provide acoustic flanking paths. Adding a fire block at the wall-to-floor junction does improve the STC flanking rating for floor-to-floor and ceiling-to-ceiling transmission, but its impact on the rating is often minimized by limited performance at some frequencies.

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Wall assemblies

Researchers measured direct sound transmission loss through wall assemblies comprised of a frame of cold-formed steel studs with gypsum board attached on both sides of the studs. The gypsum board was either fastened directly to the studs or supported on resilient metal channels. Most of the tested assemblies had sound absorbing material in the cavities between a single row of loadbearing cold-formed steel studs. (A complete description of all tested assemblies with individual STC test ratings is included in the report.)

Some significant takeaways from the research process include:

- adding extra layers of gypsum board in the construction detail had the most obvious effect on sound transmission loss values of cold-formed steel-framed walls;
- the change in STC rating due to filling the inter-stud cavities with sound absorbing material is similar to the improvement observed when the layers of gypsum board are doubled on both sides (partially filling the cavity provides most of the effect);
- although differences are evident among the sound transmission loss data with the three tested types of sound absorbing materials (glass, mineral, and cellulose fibre), the differences are insignificant in the sound frequencies dominant for determining STC ratings;
- adding sound absorbing material to the wall cavity has a major effect if the gypsum board on at least one side is mounted on resilient metal channels;
- thickness of the material used to fabricate the cold-formed steel studs has only a small effect (the STC rating increases by one to two points if studs with thinner steel are used);
- increasing the spacing between the cold-formed steel studs from 406 mm (16 in.) on centre (o.c.) to 610 mm (24 in.) o.c. increases the STC rating by one to two points for the walls used in this study, and a similar effect was observed when increasing the spacing between resilient metal channels;

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- changing the depth of the steel studs from 92 to 152 mm (4 to 6 in.) studs can increase the STC rating by up to four points on walls with resilient channels; and
- the use of flat straps and bridging channels in loadbearing cold-formed steel-framed walls was found to have a negligible effect on the STC rating.

Floor and ceiling assemblies

Researchers tested floor assemblies with cold-formed steel joists spaced 406 mm o.c., and all had resilient channel spacing of 406 mm o.c. or less. These common features of the floors rule out demonstrating the acoustical benefits of changing these parameters, but ensure adequate fire resistance.

Some important takeaways from the research include:

- the mass per area of the top floor surface was the primary factor in sound transmission loss;
- regular concrete's 16 per cent higher density when compared to gypsum concrete gave significant increase in mass per area and hence higher sound transmission loss;
- the subfloor is secondary to sound transmission (while thinner joists and increased spacing between resilient channels provide small improvements, they are overshadowed by mass per area of the top surface);
- doubling layers of 15.9 mm ($^{5}/_{8}$ in.) fire-resistant gypsum board on a ceiling consistently increased the STC rating by about four points;
- filling about 40 per cent of the cavity volume between floor joists increased STC ratings by almost 10 per cent (increasing the fill to almost 100 per cent provided a benefit only a third as large, but in total, filling the cavity with absorbing material was roughly equal to the percentile increase in STC rating from doubling gypsum board layers);
- as with walls, the study suggests no significant change in the STC rating due to the type of sound absorbing material used;

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- in studies between cold-formed steel-framed floors with a joist depth of 254 mm (10 in.) and a nominally identical cold-formed steel-framed floor with a joist depth of 317 mm (12 in.), STC ratings differed by one point at most (cavity depth does not significantly influence sound insulation);
- while carpet and laminate flooring perform better than vinyl flooring at higher frequencies, the impact for all three in STC ratings is small because of poor low-frequency performance; and
- adding gypsum board to ceilings increases not only the direct sound transmission loss for the floor-to-ceiling assembly, but also the flanking transmission loss for paths including ceiling surfaces.

The ability to use thinner studs when building with steel gives the material an inherent advantage over thicker alternative materials in terms of acoustic performance. These findings, detailed in the NRC research report and the associated tools, will help builders maintain compliance with updated ASTC rating requirements in the national codes while taking advantage of the many benefits of cold-formed steel construction, from sustainability and resiliency to design flexibility and adaptability and changing occupant demands.

Source: Construction Canada, October 30, 2018

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MARKETPLACE

Dodge Data & Analytics Presents Latest World Green Building Trends

The findings from the preeminent study on green buildings have been released and the results are both surprising and encouraging. Forty-seven percent of those participating in the World Green Building Trends 2018 SmartMarket Report expect to do the majority of their projects (more than 60 percent) green by 2021. Published today by Dodge Data & Analytics, the new industry report indicates that the international market for green construction projects has grown significantly in the last 10 years and demand for green building activity is poised to grow—to even double in some regions. In fact, the report found a 20 point projected jump from those who currently report a majority of green projects.

"As the world's largest provider of building technologies, we've seen the shift toward more efficient, sustainable buildings," says Chris Nelson, President, Commercial HVAC for Carrier, premier sponsor of the study. "The fact is, green buildings provide a triple win—delivering measurable benefits for building owners, occupants and the public from reduced operating costs, improved indoor air quality and reduced energy consumption. The trends uncovered in this report reflect what we're seeing in our business—building green is good for the public health, the environment, and the bottom line."

Nineteen countries are featured in the report, spanning six continents, and substantial growth in the percentage doing the majority of their projects green is expected in each. "Enthusiasm for green building is clear in all major markets measured, and that is driven by the business benefits they receive, which have stayed consistent since 2012," says Donna Laquidara-Carr, Ph.D., LEED AP, Industry Insights Research Director with Dodge Data & Analytics. "These benefits include eight percent operating cost savings in the first year and increased building asset values of seven percent for new green buildings, which are clearly influencing all those who do green building to deepen their engagement with green."

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Similar benefits were reported for green building retrofits and renovations. “Retrofitting buildings is critical to meeting our carbon-neutral goals,” said American Institute of Architects (AIA) 2018 President Carl Elefante. “This data shows that not only is it good for our planet, but it can also mean an operating cost savings of almost 10 percent in the first few years. While that may serve some motivational value, greater incentives and improved policies are necessary in the United States and beyond to make the meaningful building retrofits that we need a reality.”

The report also found that the biggest challenge to increased green building—the perception that it costs more than traditional construction—declined dramatically from over three-quarters in 2012 to under half today.

Another noteworthy highlight is that many respondents plan to build green in the next three years without seeking certification. However, over two thirds of study participants using certification find that doing so allows them to create better performing buildings; a finding echoed by other studies.

Healthier buildings also emerged as a top green priority in the study. For example, the top social drivers for green buildings included improved occupant health and well-being and increased worker productivity. Other social impacts becoming increasingly important include creating a sense of community and supporting the domestic economy. “The study, supported by our Green Building Councils in five regions, demonstrates that green building is seen by the industry as a key business benefit. Additionally, around the world, green building is considered to have an impact beyond significant environmental benefits, such as increased employee productivity and satisfaction,” says Terri Wills, CEO of the World Green Building Council.

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The report also features a special section on green technology, including the insights of nine subject matter experts on the technologies currently improving building performance and what they believe will be most influential in the near future. “As the industry continues to embrace technology, our customers are taking advantage of automated workflows that put real-time data at the center of each project and allow teams to collaborate during all stages.” said Lynelle Cameron, VP, Sustainability, Autodesk & CEO Autodesk Foundation. “Energy analysis tools and generative design also allow designers to use data to create better options.”

Participants included over 2,000 architects, engineers, contractors, owners, specialists/consultants and investors from 86 countries. The report aims to analyze the level of green activity, the impact of green building practices on business operations, the triggers most likely to spur further green market growth and the challenges that may impede it. Dodge Data & Analytics produced the study in partnership with Carrier, with major support by the AIA and Autodesk, additional support from the U.S. Green Building Council (USGBC) and participation as a premier research partner by the World Green Building Council.

For more information on the overall findings, or the specific findings in Australia, China, Europe, India, Middle East/North Africa, North America, South Africa, South America/Central America/Caribbean and Southeast Asia, download the free report at https://www.construction.com/toolkit/reports/world-green-building-trends-2018.

Source: Metal Architecture, November 13, 2018

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