BUILD WITH STRENGTH

YEAR IN REVIEW 2016
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>3</td>
</tr>
<tr>
<td>Washington, DC (May 2016)</td>
<td>5</td>
</tr>
<tr>
<td>Seattle (June 2016)</td>
<td>6</td>
</tr>
<tr>
<td>Chicago (July 2016)</td>
<td>7</td>
</tr>
<tr>
<td>New Jersey (August 2016)</td>
<td>8</td>
</tr>
<tr>
<td>New York (September 2016)</td>
<td>9</td>
</tr>
<tr>
<td>Georgia (September 2016)</td>
<td>10</td>
</tr>
<tr>
<td>Maryland (September/October 2016)</td>
<td>11</td>
</tr>
<tr>
<td>Florida (November 2016)</td>
<td>12</td>
</tr>
<tr>
<td>North &amp; South Carolina (November 2016)</td>
<td>13</td>
</tr>
<tr>
<td>Ongoing Rapid Response</td>
<td>14</td>
</tr>
<tr>
<td>Collaborations &amp; Promotions; Investors and Developers Advisory Council</td>
<td>15</td>
</tr>
<tr>
<td>Search Engine Marketing &amp; YouTube Promotion</td>
<td>16</td>
</tr>
<tr>
<td>Concrete Design Center</td>
<td>18</td>
</tr>
<tr>
<td>Insulated Concrete Forms</td>
<td>21</td>
</tr>
<tr>
<td>MIT Concrete Sustainability Hub</td>
<td>22</td>
</tr>
<tr>
<td>Advocacy</td>
<td>23</td>
</tr>
<tr>
<td>What’s Next?</td>
<td>24</td>
</tr>
<tr>
<td>Appendix</td>
<td>25</td>
</tr>
</tbody>
</table>
To combat softwood lumber’s dominance as the preferred building material for low- to mid-rise structures, the National Ready Mixed Concrete Association (NRMCA) launched Build with Strength (BWS) this past year. The national public awareness campaign — rooted in and designed from research — serves as the overall communications umbrella to promote ready mixed concrete as the building material of choice. The multi-million dollar program has established a firm foundation as a legitimate brand through owned, earned, paid and social media. As the campaign grows, BWS will continue to make inroads as a coalition within the design and build community, fire safety officials and legislators as well as expanding through advocacy and business development.

Research

DDC Public Affairs, along with its polling partner Axis Research, conducted survey research to develop the overall campaign message, name, logo and mission statement. We tested over 100 key stakeholders in the design and build community, including architects, builders, contractors, developers and engineers. The research demonstrated that durability, cost and strength were the most important considerations for a project. This insight provided a natural foundation for the nascent campaign. When compared to wood, the design and build community told us concrete’s advantages were fire resistance, strength and durability.

We leveraged the survey research to develop campaign names, logos, taglines and mission statements. They were tested in an online focus group to determine the campaign’s final direction.

The overwhelming favorite name and tagline was:

A Coalition of the National Ready Mixed Concrete Association

A Coalition of the National Ready Mixed Concrete Association

We established BWS’s mission as:

To educate the building and design communities and policymakers on the benefits of ready mixed concrete, and encourage its use as the building material of choice for low- to mid-rise structures. No other material can replicate concrete’s advantages in terms of strength, durability, safety and ease of use.

At the end of the focus groups, participants were asked if their impression of the concrete industry had changed after seeing the BWS brand and its mission. 59% said they were much more likely to use concrete when designing or building a low- to mid-rise structure. This part of the research was crucial to us. It showed that the recommended BWS brand and mission could serve as a credible coalition to change hearts and minds with key stakeholders.
Strategic Framework

To make BWS the authoritative voice of the industry and increase market share in low- to mid-rise structures, the campaign’s strategic approach is to visually show the benefits of ready mixed concrete through owned, earned, paid and social media.

To make the campaign real and recruit members of the design and build community, we have targeted key markets to roll out the campaign across the country. We selected 10 major cities and/or states through a uniquely tailored approach to address the needs of that particular market. While each market launch was different, it included the base elements of the campaign — promotional marketing materials, legislative and political opportunities, coalition building and stakeholder engagement. The campaign officially commenced in April of 2016 with the introduction of the website and public announcement to the press.

Market Rollouts

The following is an analysis of each event and other components of the program, which helped advance the overall mission.
GOAL: Introduce the BWS brand to lawmakers, regulators and influencers inside the Beltway.

HIGHLIGHTS:

- Hosted a roundtable with experts from the design and build community at the International Concrete Sustainability Conference
- Issued a press release and secured earned media from the discussion at the roundtable
- Purchased sponsored content in The Washington Post that further introduced the Build with Strength brand with an opinion piece from NRMCA President Robert Garbini
GOAL: Establish the BWS brand in the backyard of the wood industry and build a foundation for future legislative action in the state legislature in 2017 that would provide the use of Cross-Laminated Timber with a tax credit.

HIGHLIGHTS:

- Issued a statewide press release announcing the BWS campaign that garnered local media coverage
- Developed an infographic showcasing lifecycle costs
- Launched the BWS social media presence (Facebook, Twitter, LinkedIn and Medium)
- Introduced Insulated Concrete Forms as a better material compared to Cross-Laminated Timber
- Discussed fire safety in the context of building materials

ICF: STRONGER, GREENER BUILDING

ICF uses a closed-cell, foam-based insulation that helps the building maintain its shape and perform better than traditional concrete construction. By using building blocks that have a foam core, ICF is able to produce an incredibly strong structure with a very low embodied carbon.

- Elimination of transfer beams.
- Flexibility for residents.
- Designed to last.
- Material savings.
- Innovative 3D modeling.
- Environmentally responsible.
- LOWER GREENHOUSE EMISSIONS

ICF buildings actually save 3-5% in greenhouse gases.”

CONVENTIONAL WOOD FRAMING

Wood-framed buildings typically use solid wood members that are prone to damage from insects, mold and fire. ICF buildings use a closed-cell foam core that provides a barrier against these elements.

- Limited durability
- High water absorbency
- High fire risk
- Lower resistance to insect damage
- Higher water absorption
- Higher embodied carbon.

**CALLING FOR A CONCRETE CHANGE**

New York and New Jersey residents speak out on building code safety in the wake of Superstorm Sandy.

In 2012, Superstorm Sandy left a path of destruction in 24 U.S. states. New York and New Jersey were hit particularly hard; the aftermath rightfully come into question—and local residents are speaking out on strength, safety and the need for a renewed legislative focus on building codes and materials.

If you’re not building with ICFs, it might be time to start. Learn more at buildwithstrength.com
GOAL: Celebrate the concrete architecture of the city, demonstrate the resiliency of some of Chicago’s iconic structures and introduce the BWS’s Concrete Design Center.

HIGHLIGHTS:

- Leveraged the Great Chicago Fire as a starting point that radically shaped the city’s adoption of non-combustible materials like concrete in the development of modern Chicago
- Featured case studies of iconic structures developed with concrete in Chicago
- Issued press release announcing the campaign in Chicago
- Developed and promoted a Chicago brand essence video
- Hosted a blogger webinar to introduce the BWS Concrete Design Center

CHICAGO
JULY 2016

PUTTING CONCRETE TO THE TEST IN CHICAGO

MIT researchers examined the environmental impacts of code-compliant buildings and homes in Chicago over a 60-year period. The results showcased the sustainability, energy efficiency and lasting value of concrete compared to softwood lumber.*

ENVIRONMENTALLY RESPONSIBLE
Over the building’s life cycle, concrete reduces greenhouse gas emissions by 3% to 5% over softwood lumber.

AIR TIGHTNESS AND QUALITY
In a cold climate like Chicago, the tighter and insulation and tightness of materials leads to 23% savings on total operating energy costs.

LASTING VALUE
While initial costs were less than 10% higher than softwood lumber, the energy efficiency, reduced maintenance and building resiliency contributed to overall value savings over the building’s life cycle.

ENERGY EFFICIENT
Concrete’s thermal mass properties saved 5% to 8% annually on energy bills.

*The full report titled Methods, Impacts, and Opportunities in the Concrete Building Life Cycle can be downloaded from the MIT Concrete Sustainability Hub web site at http://web.mit.edu/cshub

WRIGLEY FIELD: A CONCRETE LEGACY

Wrigley Field. Home to the Cubs and to some of the most loyal baseball fans around. But there’s another reason it holds such a lasting legacy; the structure itself. Constructed with over 45,200 cubic feet of concrete, it’s a stadium that hasn’t just lasted the test of time. It’s a shining example of why concrete has been, and continues to be, one of the most resilient building materials on earth.

RESPONSIBLE ENVIRONMENTALLY LASTING VALUE
Wrigley Field is one of the world’s most iconic stadiums. The original construction and renovations as well as the thick steel plates used during the original construction—used for the construction of the field itself—result in 420 lbs of concrete.

STRENGTH BY THE NUMBERS

OVER 100 YEARS OLD
Established in 1914 during the nation’s industrial boom, it’s the second oldest architectural and industrial landmark. It’s the second oldest baseball stadium in the nation.

BUILT WITH CONCRETE
More than 45,200 cubic feet of concrete was used during the original construction—used for 45,200 cubic feet of concrete.

STILL STANDING STRONG
Remains one of the world’s most iconic stadiums. The original construction and renovations as well as the thick steel plates used during the original construction—used for the construction of the field itself—result in 420 lbs of concrete.

KEEPING A GOOD THING GOING
During a recent renovation in 2012, Osborn Engineering chose concrete and reinforced its structure.

Chicago is building with concrete. Are you? Learn more at BuildWithStrength.com.
GOAL: Elevate the debate following the Edgewater fire and support state legislation that would change building codes and insert BWS in the conversation.

HIGHLIGHTS:

- Conducted survey research to share with the press and lawmakers to show support for legislation pending in the New Jersey legislature and the concerns voters had with unsafe building materials like those found in the Edgewater fire
- Launched an action alert to urge the New Jersey legislature to support construction code changes that favor safety
- Hosted a press call with Brenda Gianiny, President, Axis Research (conducted the poll), Assemblyman John Wisniewski (19th District), author of legislation (A1914) to amend safety codes and New Jersey Fire Safety Professionals releasing the findings of the poll
- Secured earned media including in New Jersey's largest newspaper, the New Jersey Star-Ledger
- Launched and promoted a video showcasing the highlights from our survey research

In 2015, a building fire in Edgewater, NJ destroyed 240 apartment complex units and left more than 1,000 people displaced. Since then, building code standards in New Jersey have rightfully come into question—and there is pending legislation that will amend existing construction codes for increased fire safety. As legislators and stakeholders have important conversations to the building community, but also to New Jersey residents who are calling for a renewed focus on safety.

97% feel that fire resistance should be an important consideration in residential building construction.
87% support banning light frame construction (like wood) in multifamily dwellings and densely populated areas to save lives in the event of a fire.
93% support legislation that would require all buildings over three stories high have concrete and steel frames for greater safety and durability.
95% support the state changing construction codes after the Edgewater Fire.
93% believe in legislation that would limit wood-frame construction to three stories high have concrete and steel frames for greater safety and durability.
87% support limiting wood-frame construction to three stories high have concrete and steel frames for greater safety and durability.
95% support the state changing construction codes after the Edgewater Fire.
87% support the state changing construction codes after the Edgewater Fire.

If you’re not building with concrete, you’re playing with fire. Find out how you can stand up for safer building codes at BuildWithStrength.com.
GOAL: Educate key decision makers in the state that citizens still had concerns over building resiliency and safety.

HIGHLIGHTS:

- Conducted survey research showing voters wanted building codes to reflect the use of more durable products following Superstorm Sandy
- Issued a press release on the findings and secured local earned media
- Developed case studies to showcase the use of concrete, including the new Freedom Tower
- Launched and promoted a New York brand essence video

A SHINING BEACON OF STRENGTH.

ONE WORLD TRADE CENTER

285 Fulton Street, New York City, New York 10007

Opened: October 2014        Height: 1,776 feet
Floors: 104
Architect: Skidmore, Owings & Merrill (David M. Childs)
Owner: Port Authority of New York and New Jersey
Concrete Subcontractor: Collavino Construction Co. of Jersey City, NJ

CHANGING THE FACE OF LEARNING.

QUEENS LIBRARY AT HUNTERS POINT

47-40 Center Blvd., Long Island City, NY 11109

Completion: Early 2017        Height: 81 1/2 ft
Floors: 5
Size: 22,000 sq ft
Architect: Steven Holl Architects

www.BuildWithStrength.com
GOAL: Showcase support for recent actions by the city of Sandy Springs, which banned the use of the softwood lumber on buildings three stories or higher.

HIGHLIGHTS:

- Conducted survey research showing voters in Georgia supported the action by the city of Sandy Springs and were supportive of similar action in their local community
- Launched a petition in support of the Sandy Springs legislation and calling on local Georgia leaders to pass similar legislation
- Hosted a roundtable with 20 local officials to discuss the findings and secured local media with Dr. Jeremy Gregory of MIT and Lionel Lemay of the NRMCA
- Organized a packet that was sent to local officials to help them understand the action by Sandy Springs
- Developed local case studies
- Hosted a roundtable with 20 local officials to address lifecycle costs with Dr. Jeremy Gregory
GOAL: Promote the coalition supporting passage of the building fire safety legislation pending in the state legislature.

HIGHLIGHTS:

- Secured placement of an op-ed signed by Hagerstown Fire Chief Steve Lohr in support of HB 1472
- Developed local case studies
GOAL: Promote the MIT Concrete Sustainability Hub’s analysis on risk mitigation and building lifecycle costs following Hurricane Matthew that hit the state in September.

HIGHLIGHTS:

- Developed an infographic on the risk mitigation analysis by MIT to share with local officials
- Issued a local press release on the need for building codes to reflect durability and resiliency following Hurricane Matthew
- Hosted a local press call with Dr. Jeremy Gregory
- Hosted a roundtable with local officials and Dr. Jeremy Gregory
GOAL: Promote the MIT Concrete Sustainability Hub's analysis on risk mitigation and building lifecycle costs following Hurricane Matthew that hit the state in September.

HIGHLIGHTS:

- Developed an infographic on the risk mitigation analysis by MIT to share with local officials
- Issued a local press release on the need for building codes to reflect durability and resiliency following Hurricane Matthew
- Hosted a local press call with Dr. Jeremy Gregory

WEATHERING THE STORM.

MIT research shows the importance of disaster-proof structures.

Hurricane Matthew caused more than $10 billion in damage across the southeastern U.S. now the recovery begins—a monumental effort that could have been minimized by using disaster-proof construction techniques up front. In fact, MIT research shows that investing in hazard mitigation actually saves money in the long run. Here’s how.

What is hazard mitigation?

Simply put, building stronger, more resilient building techniques upfront to help prevent long-term safety risks and property damage due to environmental hazards.

Calculate the right investment to reduce lifecycle costs.

Research shows that investing in quality construction upfront can actually save money over the building’s lifetime, because it creates a durable and resilient structure that can stand up to extreme weather. That’s why MIT created the Break Even Mitigation Percent (BEAP) Model. It’s designed to help you calculate the right amount to invest in hazard mitigation, although will pay for itself over the building’s lifetime. It incorporates hazard-related losses due to more resilient construction.

<table>
<thead>
<tr>
<th>Hazard Mitigation</th>
<th>Initial Cost</th>
<th>Break Even Mitigation Investment</th>
<th>$0.5M</th>
<th>$1.5M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Design</td>
<td>$10M</td>
<td>Enhanced Design (Non-Engineered)</td>
<td>$0.5M</td>
<td>$1.5M</td>
</tr>
<tr>
<td>Enhanced Design</td>
<td></td>
<td>Enhanced Design (Engineered)</td>
<td>$1.5M</td>
<td></td>
</tr>
</tbody>
</table>

An MIT study estimated that if $100,000 were spent on hazard mitigation in lieu of a $50,000 investment, the additional money would mitigate enough storm damage over the structure’s lifetime to pay for itself.

INFOGRAPHIC

VIDEOS

NOVEMBER 2016

www.BuildWithStrength.com
While we have been focused on a market-by-market rollout strategy, we monitor developments that occur through our digital, social and rapid response channels. This allows us to identify key items that need quick responses and insert our voice into the dialogue and shape the conversation.

**KEY PRESS HIGHLIGHTS INCLUDE:**

- **CONCRETE CONSTRUCTION**
  - Fighting Fire with Fire.

- **DJC Oregon**
  - Cross-Laminated Timber: Against the grain.

- **The Washington Post**
  - Concrete: DC’s most sustainable, durable construction product.

- **Builder**
  - A Coordinated Campaign to Educate the Design/Build Community about New Types of Concrete Construction.

- **The Star-Ledger**
  - Inside the plans to rebuild luxury apartments destroyed in historic fire.

- **The News Tribune**
  - Why we fight for concrete.

- **The Hill**
  - Protect our buildings and homes now before the next big one.

- **NorthJersey.com**
  - Fire safety must trump business factors in construction.

- **The Telegraph**
  - Sandy Springs City Council stands strong for durable buildings.

- **Chicago Business Journal**
  - Long-term costs must be considered in building Chicago’s skyline.

[www.BuildWithStrength.com](http://www.BuildWithStrength.com)
In September, the Build with Strength Investors and Developers Advisory Council was launched to further educate developers and investors on the benefits of building with ready mixed concrete and showcase the many resources available from Build with Strength. Jonathan Arnold and Jack Holland were recruited by DDC to serve as honorary co-chairmen and ambassadors for the program.

HIGHLIGHTS:

- Issued a press release announcing the council
- Secured local and industry media coverage
- Developed and promoted a video on the Second & Delaware Project being developed by Jonathan Arnold and Jack Holland
- Identified developers across the country and mailed them a resource packet of information
In June, DDC began running Google Search and YouTube video ads to promote and raise awareness of BWS. This report encompasses data from June 15 through December 6. Our search ads are targeted into four ad groups (construction, environment, ready mix concrete and wood hazards/problems). Our YouTube campaign promoted three videos. Based on overall ad group performance, as well as individual ad and video performance, we believe the content illustrating the benefits of concrete to the construction industry performs best. For example, the top four ads, measured by click-through rate, are:

**#1** “Concrete is strong so we use less & reduce GHG emissions. Learn more.”

**#2** “Concrete structures typically save 5-8% energy cost compared to wood.”

**#3** “Concrete: Strong. Durable. Safe. Learn more about its resiliency.”

**#4** “Concrete structures last centuries, only getting stronger with time.”

Additionally, the top keywords are aligned with users who are likely interested in the benefits of concrete to construction. The top keywords, measured by click-through rate are:

- “Precast concrete walls for homes”
- “Precast concrete storage buildings”
- “What is the best material to build a house”
- “Concrete garage plans”
- “Poured concrete homes plans”
- “Concrete homes plans”
- “Build with strength concrete”
- “Prefab concrete house”
- “Concrete house plans”

Below are key stats for the Google Search and YouTube campaigns, as well as takeaways and next steps.
**Takeaways**

Google prioritizes ads that it believes will be most useful or interesting to users. Thus, we expect to see the construction-related search terms generating the most impressions and clicks. With terms such as “Home plans” and “Building with concrete,” it’s safe to assume that users who are already interested in Build with Strength content will be shown these ads (i.e., someone who searches “Concrete home plans” likely has an intent to learn more). Conversely, we expect to see the remaining search terms to generate fewer impressions overall, as they are targeted more broadly and to users who portray lower interest levels. Going forward, we will continue to increase our keyword targeting’s specificity so that we are not wasting impressions on users who are not interested in Build with Strength content.

Similarly, our keywords that generated the most YouTube video views include construction-related terms (“Concrete structure advantages”, “Concrete construction”, “Building an apartment”, and “Concrete foundation” were among the most successful video search terms), indicating that the most successful content is related to the benefits concrete can provide to the construction industry.

**Key Metrics**

**2016 Totals**

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Earned Media Hits</td>
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</tr>
<tr>
<td><strong>PAID MEDIA</strong></td>
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</tr>
<tr>
<td>Ad clicks</td>
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<td>Youtube Ad Views</td>
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<td>Total Engagements</td>
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<tr>
<td>Total Posts</td>
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<td><strong>WEBSITE TRAFFIC</strong></td>
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<tr>
<td>Page Views</td>
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<tr>
<td>Visitor Return Rate</td>
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<tr>
<td>Video Views</td>
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<td>News Releases</td>
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<tr>
<td>Press Events</td>
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<tr>
<td>Requests for “Sign up for Email”</td>
<td>148</td>
</tr>
<tr>
<td>Submissions Asking for Design Assistance</td>
<td>33</td>
</tr>
</tbody>
</table>
Energy Analysis
Using energy simulation software, we can verify the effect of thermal mass in concrete frame buildings to show significantly lower energy use. The overall effect of thermal mass in concrete buildings will translate to energy cost savings over wood or steel framed buildings.

Cost Estimating
We will help assemble a team of contractors and concrete suppliers to estimate the cost of building with concrete to meet your upfront and long-term budget needs.

LEED Optimization
Our design team of green building experts can help optimize LEED certification using concrete building systems. We can demonstrate how concrete systems can impact credits including energy, life cycle assessment, environmental product declarations, noise reduction and indoor environmental quality.

Structural Design
Our expert team of structural engineers and architects will help you select the most appropriate concrete system to take advantage of concrete benefits including economy, resilience, and sustainability.

- Concrete frame and post-tension flat plate systems
- Voided slab systems
- Insulating concrete forming (ICF) systems
- Tilt-up concrete wall systems
- Multi-family residential/mixed use
- Dormitories
- Long-term care
- Hotels and motels
- Office buildings
- Industrial
- Commercial
- Education
- Healthcare

Our technical experts offer free concrete project design assistance for structural and architectural design, cost estimating, codes and green building standards for any building type.

Get off to a solid start with our professional design team.

Show your strength. Build with concrete.

1. Energy efficiency.
Concrete's thermal mass properties can save 5% or more in annual energy costs compared to softwood lumber.

2. Lifecycle savings.
Using quality materials during construction means having a structure that lasts longer and reduces overall lifecycle costs.

3. Resources that last.
Starting with a strong material like concrete means you can actually use less—and get more—helping you save on upfront costs.

4. Stands the test of time.
Concrete structures are designed to last for centuries. Unlike other materials, concrete only gets stronger over time.

5. Durable and resilient.
Concrete is one of the few materials that can outlast natural disasters like hurricanes and tornadoes, but also stands up to man-made threats.

6. Safe and strong.
Building with concrete gives you a fire-resistant structure. When combined with other fire safety requirements, you can exceed building requirements — instead of just meeting them.

To learn more, visit: www.BuildWithStrength.com

Think of us as part of your design team (Except we’ll work for free)
Put our Concrete Design Center to work. Maybe you have a big idea for your next project, but you need a little help getting it off the ground. Or you’re looking to lower costs and minimize resources. Whatever you need, our Concrete Design Center can help get you off to a solid start. Because the only thing we love more than talking about concrete is helping you do something amazing with it.

Go ahead and tell us about your next project.
Visit BuildWithStrength.com, call 1-888-864-7622, or email gloriaw@nrmca.org or mryeard@nrmca.org.

www.BuildWithStrength.com
To date, NRMCA has interacted with more than 150 multi-family and commercial developers nationally to better understand attitudes about concrete and determine their level of interest in the Concrete Design Center. We have active working relationships with more than 100 developers nationally. Because of the time required to move one of these projects from initial contact to when a project might be best positioned for the Concrete Design Center and conversion, these must be viewed as long-term relationships. We are working with several developers on active projects:

- Due in part to our relationship and support of their efforts, **EYC Companies of Charleston, South Carolina, a multi-family developer, is now using ICFs on their current project (17 South)** and will integrate them into three upcoming multi-family projects in the Carolinas totaling more than 1,000 units. We continue to work with EYC to assist them in broadening their use of concrete beyond the envelope of the projects and the foundation systems. EYC continues to be a concrete champion working on NRMCA’s behalf to promote concrete construction to other developers.

- We are **actively working with two multi-family developers in New Jersey.**
  
  » We are providing Concrete Design Center services on the 150 Lofts project for Quantum Developers. This relationship was initiated more than 18 months ago, and this is the first new project the developer has initiated since that time.

  » We are in discussion about providing Concrete Design Center services to a second developer who has expressed interest in building with concrete for a multi-family project in New Brunswick, NJ. This will be in conjunction with Premier Properties, with whom we have already worked on the conversion of a second project in New Jersey that is still awaiting financing.

- **Continue to work with Arnold Development Group of Kansas City, Missouri,** to showcase their upcoming Second + Delaware multi-family project as a case study and model for other developers.

- We’re working with **Drury Inn to highlight the hotel chain’s success in building all of their hotel projects using ICFs as a case study and model for other hotel developers.**

- We have **converted two projects in Maryland to concrete and ICF construction.**
  
  » The first phase of a multi-family project on Kent Island called Chesapeake Village Center is now under construction. This project was originally slated to be wood construction, but NRMCA and a local ICF installer collaborated to guide the developer to ICF.

  » Initial government approvals for a second ICF project in Maryland (Solomons Island) are currently under way. The construction start for this mixed-use project in the center of Solomons Island is slated for Summer 2017.

- We have **provided Concrete Design Center services for a multi-family project outside of Austin, Texas (Bee Cave).** The developer is evaluating cost options and working with local GCs and ICF installers to get the best pricing to decide whether ICF is possible for this project.
- We have provided Concrete Design Center services for a large, senior living facility in Manassas, Virginia. The developer, Forum International, has expressed interest in trying ICF construction. We continue to work with the project team to overcome reluctance to change the project from block and metal studs to ICF.

- We submitted a Concrete Design Center Report to Primrose Properties in Connecticut for a 300-unit, multi-family project. The development team is considering the proposal and asked for additional cost information to help them make their final decision.

- We have submitted our most comprehensive Concrete Design Center project to date for The Berkleigh multi-family project in Baltimore, Maryland, for St. John Properties. This project was an excellent example of a NRMCA member leveraging their professional relationships to promote the Concrete Design Center and concrete buildings. NRMCA developed cost comparisons for wood vs. concrete for the project, and the developer is in the process of evaluating this latest information.

- We have worked to influence two Culver’s restaurants, influencing the roof and full ICF design of a second. We have been discussing the specification for their national design as a result of these projects.

- We have provided a Concrete Design Center Report for Meridian on the Port. Through a relationship with MMC, we submitted the ICF option for the project team. The Meridian at the Port in Mobile, Alabama, is an extremely significant multi-family development. This 266 dwelling unit facility is the first large-scale apartment building to be constructed in Mobile, Alabama, since 1950.

- We have provided Concrete Design Center services for Warfield Place, a multi-use building in Pensacola, Florida. This project was converted from wood due to the ongoing meeting with the contractors and owners.

- Green & Phillips Attorneys - Three-story ICF office building in Mobile, Alabama. NRMCA worked with the local ICF manufacturer regarding roof options and ICF manufacturer opportunities.

- The Lofts of Fairhope, Alabama, is a large project planned to be in wood. Due to NRMCA engagement, the drawings are being redone to bid a concrete wall/ICF options.

- Holiday Inn Express, Lancaster, Pennsylvania – we completed a Concrete Design Center Report for the prototype of four Holiday Inn Express hotels in Pennsylvania. NRMCA is working on budget and energy modeling to validate the increased value of the ICF option.

- We provided a Concrete Design Center Report for a daycare facility in Oklahoma City, Oklahoma. This 50,000 sq.ft building will be privately owned. NRMCA has also provided LEED consulting and energy performance guidance.

- A 200-unit, multi-family project in Ardmore, Oklahoma, has Concrete Design Center services underway with E4 Development.
To position itself as innovative, cost-efficient, durable and fire-safe, the softwood lumber industry has been heavily touting Cross-Laminated Timber (CLT). While not necessarily a new product, it most certainly is gaining considerable traction with the press, social media and design and build community. CLT allows the wood industry to shape the conversation about the future of their industry.

Similarly, we realized we needed something tangible to promote as well. From our research and external discussions, Insulated Concrete Forms (ICF) emerged as the most impressive product within the concrete industry. We’ve been researching and profiling several ICF projects over the past eight months. ICFs have given us considerable content to not just combat CLT but also position ready mixed concrete as America’s leading building material.

The following are examples of some of the materials we’ve produced this past year:

ICF: STRONGER, GREENER BUILDING
Seattle-based ER doctor, Dr. Eric Friedland, was looking for an investment property when he decided to build his own—entirely out of Insulated Concrete Forms (ICF). ICF was chosen due to its strength, durability, sound insulation, and energy efficiency. Traditionally used for foundations and stem walls, ICF proved to be an innovative building material for this micro-apartment style multi-family building.

1. Structural strength is a reinforced wall. Beyond the obvious strength upgrade of concrete, ICFs help build the structure.
2. Environmentally responsible. The exterior layers of ICFs can include acrylic foam or other layers of a high-reflective concrete. The blocks are stacked, locking in a continuous insolation on the exterior and interior of the project.
3. Designed for light. The precision engineering associated with ICF construction makes the building incredibly light in feel. The light and airy feel in the project was measured in 2 cm change per hour of air exchange.
4. Innovative 3D modeling. The software allows one to map out the entire concrete building project, resulting in a more efficient and safer process. Insulated Concrete Forms are an efficient and cost-effective concept for the building’s occupants.

Insulated Concrete Forms. The building blocks of strength. Insulated Concrete Forms (ICF) are already becoming a standard building strategy for small family residences, which are commonly found in colder climates. These concrete blocks are an efficient and cost-effective concept for your next building project.

ICF IS A FAR BETTER PRODUCT THAN ANY WOOD WALL.


www.BuildWithStrength.com
Far from an ordinary tool in BWS’s toolbox, the MIT Concrete Sustainability Hub is one of the strongest assets we have when talking about concrete. MIT allows us to take meticulously tested research from America’s most trusted university and dispense it with key stakeholders and the media. We cannot overstate the benefits of MIT and its relationship with concrete. We have translated MIT’s academic reports into digestible and visually appealing content and pushed it out to the design and build community, press, legislators and fire safety officials through events, press releases and social media.
So far in 2016, NRMCA has put forth a very strong effort for a new program in its first year.

**State and Local Advocacy**

- We have **defeated a bill in Washington state** that would have given a huge advantage to CLT construction through a large statewide tax credit (HB2857). This effort was an early test for our effort and DDC’s. We provided the affiliate with talking points, handouts, draft testimony, and high-level grassroots-style intervention with the committee hearing the legislation.

- We are in the **final stages of defeating an effort in Mississippi to roll back the state’s energy code to the 2003 version.** 
  NRMCA staff travelled to Mississippi and met with the State Building Code Council and our affiliate. We presented to the Council information regarding the federal statute requiring states to adopt the newest version of ASHRAE 90.1 within two years of its publication for commercial and public buildings. We also raised the issue with the State Attorney General representative, Mark Lampton (who is working for the Insurance Commissioner/State Fire Marshal’s office), to ascertain which entity in Mississippi (Mississippi Development Authority or the Council) actually has the authority to adopt the energy code in Mississippi. This is being reviewed by the Attorney General currently. Moreover, there is some confusion as to what standards have been adopted by the Authority as related to energy codes, as opposed to the Council. As long as it is determined that the authority to adopt rests with the Development Authority in Mississippi, and as the Authority has adopted 90.1 in the past (albeit slowly), this should be an easy win for NRMCA. The Council has also asked for our assistance in helping them develop language for legislation to adopt the newest I-Codes much more regularly.

- There was a **proposed regulation in New York state with respect to using wood as a temporary alternative material for use in buildings.** NRMCA, with assistance from CRSI, was concerned that this may be a slippery slope that can eventually lead to a permanent decision that would allow wood and possible CLT (Cross-Laminated Timber) in construction of mid-rise buildings in New York state. We suggested a stance to our member, Joseph Ferrara, as to how they might be opposed to this, or at least modify to say only buildings of Type 1 qualify, since Type 1 is the most robust and can qualify for all occupancy types. Ultimately, the proposal was defeated by the New York State Code Council’s vote.

- We have **active legislation moving in Maryland and New Jersey that bans wood above three stories.** HB1472 in Maryland and A1634 in New Jersey were promulgated earlier this year.
  - We have redrafted 1472 in Maryland to further reflect the concerns of the Metro Fire Chiefs (who now fully support the bill), and it has garnered the full support of the Red Cross for the state of Maryland. The Maryland Red Cross will testify and lobby for us and advertise our efforts through their channels. Moreover, they have been given the authority to speak for the entire state (to include the DC/Maryland National Capital Chapter), and according to the Maryland Chapter CEO, the National Red Cross fully endorses our legislation. This carries to ANY state in which we will try to get our fire safety legislation passed. All we will have to do is contact the Red Cross state chapter in any state and refer them to the national group. HB1472 will be renumbered and redrafted with a new sponsor, and possible co-sponsors, for the 2017 session, and it will be heard by the Environment and Transportation Committee and potential votes.
  - A1634 in New Jersey has four to five different pieces of legislation that seek similar remedies with separate sponsors. The bills all carry over to the 2017 session for hearing in the Housing and Community Development Committee and potential votes.

- In a unanimous decision, **the Sandy Springs, Georgia, City Council instituted a permanent ban on all light-framed combustible construction in order to preserve the safety of their constituents that inhabit and work in buildings above three stories and exceeding 100,000 square feet.** In the ordinance, the Council stated that they wished to institute a requirement for construction with enhanced quality materials that increase the durability and longevity of the buildings. The
ordinance, No. 2016-08-23, amends “the state minimum standard building code to provide for increased building quality, sustainability, durability, and longevity while revitalizing the areas zoned for uses other than what is currently developed.” The only construction that will be allowed in the town moving forward shall be of non-combustible Type I or Type II construction and takes effect immediately. Projects submitted to the city to begin the Land Disturbance Permit process prior to August 16, 2016, and permitted by February 16, 2017, shall be grandfathered and not have to comply with this requirement. It should also be noted that the Georgia Dept. of Community Affairs (Codes and Industrialized Buildings Section), which promulgates the Georgia State Building Code, did not object to the local amendment.

» DDC has contacted every municipality over 10,000 people in Georgia to inform them of the Sandy Springs’ action, and Jimmy Cotty is working on several municipalities surrounding Atlanta who have expressed interest in undertaking similar action.

» NRMCA is hosting ongoing events showcasing resilient and disaster-resistant construction, as well as life cycle over first cost analyses.

• NRMCA staff has developed a resiliency appendix in conjunction with AIA California Council and The California Homebuilders for consideration and insertion into the CalGreen Building Standard. This effort is ongoing, but may result in an optional resiliency appendix for all of California.

» NRMCA has also been contracted for energy modeling to showcase ICF construction in California and how it could be considered a viable option for inclusion in the update to the next version of the California energy code. This modeling will result in a CASE Study (an acronym) that is paid for by the California utilities. These studies become fodder for how the Energy Commission chooses what gets included in the updates to the energy code.

• Los Angeles City Councilman Bob Blumenfield recently put forth a motion in the Council’s Planning and Land Use Management Committee that calls on the Planning Department, Department of Building and Safety, Fire Department and Bureau of Engineering to provide clarity on the city’s policies on wood-frame construction.

» The City of Los Angeles is the third-largest city in the United States, and unlike its sister cities, New York and Chicago, does not ban the use of combustible, light-framed wood construction within the city limits. But recently, large-scale fires in Los Angeles, like the DaVinci development fire, have brought the issue front and center for the Los Angeles City Council.

» Specifically, Blumenfield makes the following queries:
  » At what size does wood-frame construction no longer make sense for residential buildings?
  » Multi-family buildings of four stories or less permit wood-framing by code. However, four-story commercial buildings are not allowed to be wood-framed. What explains this and what are the reasons?
  » Wood is a fire hazard in high-occupancy buildings; therefore, why does the city permit large residential projects to be built with wood?
  » Should there be a housing density limit and better fire separation between units?
  » Is a 20- or 30-unit building the maximum that should be permitted for wood-frame construction, and should these maximum criteria be codified in city codes?
  » Should the height limit for wood-frame construction be reevaluated?
  » What explains the intensity of the fire at the apartment complex, inasmuch as it went up like match sticks?
  » What are the best policy solutions the city can enact as to the permitting and inspection process to prevent future fires at under-construction development projects?
In 2017, we plan to further make inroads with BWS as the established and authoritative voice of the industry.

We will continue to build and launch our regional market promotion team by:

- Identifying key markets to meet with developers, investors, architects, engineers and contractors to introduce campaign
- Making presentations and develop collateral
- Building relationships
- Incorporating NRMCA members in follow-up meetings we identify as prime targets

**Research**

We will establish a yearly baseline poll in April to monitor the campaign’s progress and pivot if necessary. We will conduct an online survey of 400 architects, developers, builders, engineers, designers, construction managers and urban planners to measure movement in key areas:

- Image of the industry
- Material preferred for low- to mid-rise structures
- Benefits of concrete over wood
- Improve our key messages

**Coalition Building**

We will continue to launch a surrogate network:

- Develop a bullpen of voices who can participate in rapid response activities
- Leverage voices for proactive activities
- Provide media training and educational activities

We will grow the BWS Investors and Developers Advisory Council by formalizing the coalition and real faces from our target audience who understand the benefits of concrete, and launching efforts with contractors, engineers and designers.
WHAT'S BEHIND THE WORLD'S MOST ENERGY-EFFICIENT BUILDING?

It's hard to imagine a more perfect example of multi-residential construction than the Second and Delaware project. This building takes every expectation you could possibly have—and blows it completely out of the water. (Yes, even when it comes to cost.)

**90% MORE ENERGY EFFICIENT**

over wood frame construction.

**19% LOWER LIFECYCLE COSTS**

per square foot than wood frame construction.

**LOWER FIRST COSTS**

on total operating costs.

**90% SAVINGS**

in reduced greenhouse gas emissions over the building's lifecycle.

**SAVES 480,000 TONS**

Learn more about the Second and Delaware project at BuildWithStrength.com.

A coalition of the National Ready Mixed Concrete Association Chicago is building with concrete. Are you? Learn more at BuildWithStrength.com.

Wrigley Field. Home to the Cubs and to some of the most loyal baseball fans around. But there's another reason it holds such a lasting legacy; the structure itself. Constructed with over 45,200 cubic feet of concrete, it's a stadium that hasn't just lasted the test of time. It's a shining example of why concrete has been, and continues to be, one of the most resilient building materials on earth.

**OVER 100 YEARS OLD**

Established in 1914 during the nation's largest architectural and industrial boom, it's the second oldest baseball stadium in the Americas.

**Nearly 3 million people go through the gates of Wrigley Field each year—a testament to lasting durability and resilience.**

**STRENGTH BY THE NUMBERS**

During a recent renovation in 2012, Osborn Engineering chose concrete construction for a new Wrigley Field observation deck, resulting in 420 cubic feet of concrete.

**KEEPING A GOOD THING GOING**

More than 45,200 cubic feet of concrete was used during the original construction—and it's one of the core materials used for renovations as well.

**BUILT WITH CONCRETE**

Remains one of the world's most iconic stadiums. While other stadiums have been completely rebuilt due to deterioration, Wrigley Field has only maintained and reinforced its structure.

**STILL STANDING STRONG**

Given its age, many people are concerned about its stability. But thanks to its concrete construction, Wrigley Field has only been strengthened over the years.
APPENDIX

CASE STUDIES

MERCHANDISE MART

HISTORY (STILL) AT WORK.

Floors: 18 base, 25 tower
Height: 340 ft
Completed: 222 Merchandise Mart Plaza, Chicago, IL 60654

MERCHANDISE MART

Architect: Graham, Anderson, Probst and White
Owner: Vornando Realty Trust
Size: 4,000,000 sq. ft.

Built nearly a century ago, Merchandise Mart (the Mart) revolutionized American commerce, and still plays an important role in it today. Once considered the world’s largest wholesale market, the Mart is now a thriving metropolis of trade and commerce, and a bustling hub of innovation and growth. It is a testament to the enduring strength and durability of concrete, which has allowed the Mart to weather the storms of history and continue to serve as a beacon of economic prosperity.

With more than 1,000,000 visitors each year, the Mart is one of Chicago’s top international business locations with nearly 25,000 visitors a day. The Mart is a true icon of American business, and its legacy continues to inspire and influence the world’s economy.

CONCRETE CASE STUDY: STRENGTH AND DURABILITY

Built in one of the most active earthquake zones in the world, the ductile concrete frame will withstand seismic loading. Even if water does get in, the concrete structure is unaffected. With the Northwest’s rainy weather, it’s important to keep rain out. But with in-cavity insulation supported by the concrete floor system, the discomfort is a thing of the past.

External walls incorporate high-performance “rain screen” construction to combat moisture. To keep their new structure standing tall into the next century, the architects and builders of the Richard L. Harris Building in Portland, Oregon, chose concrete. The 12-story high rise provides transitional housing for low-income and special-needs individuals and incorporates a highly efficient community kitchen, a large multi-purpose room, and two classrooms.

A LESSON IN STRENGTH AND DURABILITY

T o combat an institutional facility look, the architects used a minimal concrete frame with long span, post-tensioned concrete slabs and a resulting minimal column layout. Concrete’s superior strength allows for long spans, thus eliminating the need for large columns and bearing walls. The floors were constructed using 8” precast planks with a 3”concrete topping. This design allows for shallow floor-to-floor heights and ease of construction. To keep the columns of the Martin Hall building at the Eastern Kentucky University, provides students the comfort and safety only concrete can afford. The buildings will not only serve the students living in them, but the entire EKU community. Each structure features a recreational room, private study areas, and group study areas, a community kitchen, a large multi-purpose room, and two classrooms.

With reinforced concrete joists. The foundation is supported by 458 reinforced concrete caissons, sunk between 80 to 100 feet below ground.

A project of sheer magnitude.

01. A project of sheer magnitude.

02. A durable structure.

03. Resistant to Mother Nature.

04. A strong building starts with a solid foundation.

05. Job creator during the Great Depression.

Nearly 2,500 men were continuously employed during the construction project, which lasted into the start of the Great Depression.

In 1930, the building opened, and the government offices during World War II, to its current use as open office space for the next generation of office workers.

02. External walls built for strength and durability.

03. Meeting the needs of today.

04. A strong building starts with a solid foundation.

05. Job creator during the Great Depression.

DIGITAL PLATFORMS

FACEBOOK

TWITTER

LINKEDIN

MEDIUM

YOUTUBE

www.BuildWithStrength.com
APPENDIX

SHAREGRAPHICS AND GIFS

CONCRETE CASE STUDY
JOHNS HOPKINS HOSPITAL
NEW CLINICAL BUILDING
BALTIMORE, MARYLAND

A 60-year concrete lifecycle study shows:
ENERGY SAVINGS OF 5% TO 8%

CONCRETE CASE STUDY
BUILDING A STORM-RESISTANT HOME
PASS CHRISTIAN, MS

CONCRETE CASE STUDY
1075 PEACHTREE
ATLANTA, GEORGIA

INVESTING IN THE FUTURE
December 7, 2016 | 11:30 am - 1:00 pm
Cherokee Town & Country Club | Atlanta, GA

"We must all adapt to the reality of a CHANGING ENVIRONMENT, and that starts with building with STRENGTH and RESILIENCY."

Jeremy Gregory, Executive Director, Concrete Sustainability Hub

THINK OF US AS PART OF YOUR DESIGN TEAM (EXCEPT WE'LL WORK FOR FREE)

Visit www.BuildWithStrength.com
When you’ve got a multimillion-dollar project on the line, it’s easy to get caught up in the initial costs. But using cheaper materials can actually cost you more in the long run. That’s why Build With Strength is partnering with the MIT Concrete Sustainability Hub to highlight why the building materials you choose matter.

Panelist: Jeremy Gregory, PhD.
Executive Director, Concrete Sustainability Hub at MIT

Where: Cherokee Town & Country Club
155 West Paces Ferry Rd NW
Atlanta, GA 30305

When: December 7, 2016
11:30 AM – 1:00 PM

Life Cycle Assessments
and Risk Mitigation
Dr. Gregory will explain how MIT’s long-term data and analysis on life cycle costs and hazard mitigation can lead to more informed design decisions.

MIT Concrete Sustainability Hub
A coalition of the National Ready Mixed Concrete Association

MIT’s Concrete Sustainability Hub Presents
A Roundtable on Life Cycle and Risk Mitigation Savings, Long-Term Value, and Cost-Effective Structures in Georgia.

www.BuildWithStrength.com
Visit www.BuildWithStrength.com today or call 1-888-864-7622 to get started.