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In this edition of RMCREF Spotlight, we feature concrete buildings work supported by the RMC Research & Education Foundation. Concrete has always been a primary material used in buildings construction. Only within the last couple of decades have the numerous additional benefits of building with concrete – sustainability, resilience, and energy efficiency among others – been highlighted to a much greater degree and the work of the Foundation is instrumental in demonstrating the positive impacts these benefits have on communities.

When the United States Green Building Council (USGBC) unveiled their Leadership in Energy and Environmental Design (LEED) program, the Foundation came out with a guide on how ready mixed concrete producers could help gain additional points in LEED projects. As the LEED program evolved, new guidance was necessary and the Foundation partnered with the National Ready Mixed Concrete Association (NRMCA) to release the [NRMCA Material Ingredient Reporting Guidance](#) document.

While the USGBC's LEED program was a step in the right direction, leaders in the concrete and cement industries felt even more could be done to research, improve and apply all the benefits that concrete offers the building and construction communities. To that end, the Foundation and Portland Cement Association founded the [Concrete Sustainability Hub](#) (CSHub) at the Massachusetts Institute of Technology (MIT). The researchers at the CSHub have done amazing work in the areas of life-cycle assessment (LCA) and life-cycle cost analysis (LCCA), resilience, hazard mitigation, urban heat island, and others and a great deal of information on their work may be accessed from their [buildings research page](#), with additional resources also available, including from the CSHub's [YouTube page](#) and [upcoming webinars page](#). The CSHub's work has also been featured in major publications, including this recent US News & World Report article "[Building to be Resilient](#)" where CSHub Executive Director Jeremy Gregory, in light of the start of this year's hurricane season, discusses the benefits of building structures that can more easily weather a major storm.

The groundbreaking work performed at the CSHub provided the backbone for the development of NRMCA's [Build With Strength](#) (BWS) program. In fact, many of the infographics used as part of the initiative, such as this one on [value](#), include data from the CSHub and several BWS videos feature Dr. Gregory, such as this [one on the benefits of using concrete](#) and this [one on the resiliency of concrete](#). Hazard mitigation is also a major element of BWS and their [hazard mitigation page](#) features a great deal of research from the CSHub. The BWS effort has also had a significant impact in the strengthening of building codes in several areas around the country, not only in response to weather-related hazards but to the significant safety hazards posed by the threat of fire as well.

Last year, the Foundation was proud to partner with the National Association of State Fire Marshals (NASFM) on the [Factually Analyzing Integrated Layers of Safety Against Fire's Effects \(FAIL-SAFE\)](#). The project, which took place at the Worcester Polytechnic Institute, studied the interaction between active and passive fire protection systems. A main concern inspiring this project surrounded the increased reliance on the use of sprinkler systems as a trade-off in foregoing other fire safety protection measures. The preliminary data indicate that such trades-offs have indeed led to a decline in building fire safety scores since the trade-offs were implemented in building codes starting in 2000. The project includes several deliverables and was featured in this [video](#) on the Build With Strength site. A very short summary of the project may be found [here](#).

Another major building research project funded by the Foundation is the major forensic evaluation of how different building systems withstood the massive wind, rain, flooding and projectile damage from Hurricane Katrina. The report, "Coast in the Eye of the Storm – Hurricane Katrina: August 29, 2005",

was prepared by Mississippi State University and was successfully used to help strengthen building codes along the coast of Mississippi. Although this study was performed in 2005, its findings are still highly relevant and being used today. The report may be accessed from the Foundation's [Health & Safety projects](#) page.

For more information on the work of the RMC Research & Education Foundation, please visit [www.rmc-foundation.org](http://www.rmc-foundation.org) or contact [Julie Garbini](#) or [Jennifer LeFevre](#).

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