Building Resilient Communities through Private Partnership

Located under the FEMA Federal Insurance and Mitigation Administration (FIMA) Risk Reduction Division, the Building Science Branch develops and manages hundreds of multi-hazard technical guidance documents and tools to support the effective implementation of risk reduction strategies and foster disaster resilience in the built environment. This includes support to building codes & standards, guidance on best engineering practice, construction, and mitigation techniques, and other resources and activities that fuel local risk reduction efforts. In fact, its mission and activities cannot be performed successfully without the effective support and partnership from a variety of stakeholder organizations, particularly the private sector. Through private sector and stakeholder partnership, and education of their corporate managers, employees, and customers, these tools & partnership help advance mitigation practices at home, businesses, and local communities.

Below are some of the most notable private sector partnerships that the Building Science Branch accomplished over the years:

1. ***Building Codes & Engineering Standards:*** The Building Science Branch regularly partners and coordinates very closely with developers, building professionals, scientific organizations, the International Code Council (ICC), the American Society of Civil Engineers (ASCE) and standard committees to participate in, and often lead, the development and implementation of multi-hazard-resistant building codes and standards. These partnerships have led to successful incorporation of best practices and sound disaster resilient policies into the nationwide model building codes and engineering standards that form the basis of the building regulations available for adoption and implementation by local communities to reduce risks. For instance, the management and deployment of the Mitigation Assessment Team (MAT), a team that draws on the combined resources of a federal, state, local, and private sector partnership, performs post-disaster forensic engineering and investigation to capture lessons learned and incorporate them into building code revisions and rebuilding strategies. For more information, visit: http://www.fema.gov/rebuild/mat/mat_faqs.shtm. Additionally, the *National Earthquake Hazards Reduction Program (NEHRP) Provisions*, a nationally recognized code and standard development resource document for improving seismic design standards and model building codes, is developed in strong collaboration and partnership with the private sector, particularly engineers, building and construction associations, and other private industry professionals.

2. ***National Earthquake Hazards Reduction Program (NEHRP):*** NEHRP is a collaborative effort between four major federal agencies: 1) National Institute of Standards and Technology (NIST), 2) United States Geological Survey (USGS), 3) National Science Foundation (NSF), and 4) FEMA with strong support from the White House Office of Sciency and Technology Policy (OSTP) and the Office of Management and Budget (OMB). FEMA's responsibilities under NEHRP are managed by the Building Science Branch to support the effective outreach and implementation of earthquake mitigation standards and techniques. For instance, following the 1994 Northridge earthquake, FEMA initiated a six year, $12 million project that was funded by both the Congress and the President to address the unacceptable performance of steel moment resisting frame buildings. Released in 2001, this effort resulted in the development of multiple guidance for the design of new steel frame construction, the evaluation and upgrading of existing buildings, and the inspection and repair of damaged buildings. It was the first FEMA project to combine academic research with partnership with the private industry and integration with practical engineering expertise to develop technical guidance products. Ultimately, the project received an industry award from the American Institute for Steel Construction (AISC).

   Moreover, the Building Science Branch manages QuakeSmart, which supports earthq***u***ake mitigation awareness for businesses. Under QuakeSmart, informational materials are developed and relevant training are conducted and delivered to private sector partners to enable their organizations analyze their risks, make a plan, and take mitigation actions, which also enables them to communicate risk reduction principles to their employees, customers, and their respective families and communities. Moreover, FEMA NEHRP under its Earthquake State Assistance cooperative agreement program partially funds local "Shakeout" events, which help boost private partnership and grassroots earthquake preparedness and mitigation awareness. For more information, visit: http://www.fema.gov/hazard/earthquake/index.shtm.

3. ***Safe Room Program Outreach***: Building Science Branch remains the leader in fostering life-safety protection from extreme-wind events such as tornadoes and hurricanes. In constructing or purchasing any safe room, the homeowner should be assured that the safe room they're constructing or purchasing provides the protection level desired. Since FEMA does not certify or inspect products or construction, a need existed to provide documentation that a safe room meets the standard safe room design and protection criteria delineated in *FEMA 320 Taking Shelter From the Storm: Building a Safe Room Inside Your Home or Small Business*. As a result, the Building Science Branch partnered with the National Storm Shelter Association (NSSA), an association consisting of private vendors who provide safe room construction services to individuals and communities. This partnership allowed FEMA to work directly with the industry to develop a process that provides the needed third-party design reviews to ensure verification of compliance with the design criteria in *FEMA 320*. The NSSA is also helpful validating vendor claims of compliance with FEMA criteria for safe rooms. For more information, visit: http://www.fema.gov/plan/prevent/saferoom/index.shtm

4. ***Disney's Stormtruck:*** The Building Science Branch, through its partnership with the Federal Alliance for Safe Homes (FLASH) and its affiliates, was able to provide technical support to the development of Walt Disney World's StormStruck experience at EPCOT's *Innoventions*. StormStruck enables guests from around the world to experience the power of a weather event while learning how to best prepare their homes to better resist the effects of floods, hail, high winds, lightning and more. The exhibit features a spectacular, simulated, 4-D weather experience that combines a variety of weather hazards into one "storm". After guests have experienced the storm, they learn about innovative scientific research and new construction technologies that can protect their home. For more information, visit: http://stormstruck.org/

Today, more and more private sector partnership and activities are continuously being performed by the Building Science Branch. Essentially, it supports the effective implementation of local risk reduction strategies and individual, business, and community resilience.

For more information about the Building Science Branch, its activities, publications, and resources, please visit http://www.fema.gov/rebuild/buildingscience/index.shtm or contact the Building Science Helpline at 1-866-927-2104 or at FEMA-Buildingsciencehelp@dhs.gov.