National Institute of BUILDING SCIENCES

The Multihazard Mitigation Council

Testimony of Gerald H. Jones, P.E.
provided to
The House Committee on Homeland Security
United States House of Representatives
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FEMA Housing: An Examination of Current Problems and Innovative Solutions

An Authoritative Source of Innovative Solutions for the Built Environment

Mr. Chairman and Members of the Committee,

My name is Gerald Jones and I am a professional engineer. Before retiring in 1994, I served as building codes administrator for Kansas City, Missouri, for 14 years. Prior to that, I was building codes administrator for Overland Park, Kansas, for 11 years. I worked as a partner and chief engineer for a metal building design and construction firm for 20 years before entering into the building official profession. I am testifying before this committee as a volunteer member of the National Institute of Building Sciences (Institute). I currently serve on the Institute's Multihazard Mitigation Council (MMC) Board of Direction. I have attached a copy of the MMC Overview including a membership listing for the MMC Board of Direction and Member organizations (Exhibit 1).

I previously chaired the Institute's Board of Directors and its Building Seismic Safety Council Board of Direction. I also served as chair of the Council of American Building Officials and president of the Building Officials and Code Administrators International (two predecessor organizations of the International Code Council). Over the years, I have worked closely with the Federal Emergency Management Agency (FEMA). FEMA honored my service with an Outstanding Public Service Award for recognition of extraordinary contribution to improving seismic safety to the nation's buildings and occupants.

The National Institute of Building Sciences is a private, non-profit organization established by Congress through the Housing and Community Development Act of 1974 (Public Law 93-383) as a single authoritative national source to make findings and advise both the public and private sectors on the use of building science and technology to achieve national goals and benefits. The Institute is a public/private sector partnership governed by a Board of Directors that represents all sectors of the building community, including six public interest appointees by the President of the United States.

The Institute serves the nation and the public interest by initiating advances in building science and technology and supporting their application to improve the built environment. As a nonprofit, nongovernmental organization, the Institute brings together representatives of government, the professions, industry, labor, and consumer interests to focus on the identification and resolution of problems that hamper the construction of safe, affordable structures for housing, commerce, and industry throughout the United States.

The MMC works to reduce social and economic losses from natural hazards. Established in 1997 as a voluntary advisory facilitative body, the MMC works to achieve its purpose by conducting activities and providing the leadership needed to:

- Improve communication, coordination, and cooperation among all entities involved in mitigation.

- Promote deliberate consideration of multihazard risk reduction in all efforts that affect the planning, design, construction, and operation of the built environment.

- Serve as a focal point for sage counsel as well as the dissemination of credible information on major policy issues involving multihazard risk mitigation.

Since its creation, the MMC has worked closely with FEMA to stimulate hazard mitigation planning and activities across the nation and to explore how best to manage post-disaster information and ensure that "lessons learned" from each disaster event are documented and disseminated. It currently is developing mechanisms for creating a network that will foster disaster-related, peer-to-peer mentoring. Examples of the MMC's collaborative work including:

- In 2007 and 2008, assisting FEMA and the Joint Housing Solutions Group to explore and assess innovative solutions for post-disaster housing needs.

- Issuing an independent report in 2005, making an assessment for FEMA[1] of the future savings from mitigation activities, which provided the federal government with quantitative evidence that every dollar spent on hazard mitigation activities results in $4 in benefits to society as a whole. (Exhibit 2)

- Since 1992, the National Institute of Building Sciences has provided the organizational home for the FEMA-funded HAZUS®MH program. This geographic information system (GIS) based software program estimates the consequences of a natural disaster before it happens, which is useful in assessing the costs and benefits of alternative mitigation actions.

- Managing the American Lifelines Alliance (ALA) for FEMA for the past seven years. This private-public partnership builds upon established industry practices to support the development of national consensus guidance for the design, construction, and retrofit of new and existing lifelines.

A more complete listing of work within the MMC with FEMA is contained in the MMC Background document. (Exhibit 1)

The MMC began its work for FEMA in support of the Joint Housing Solutions Group (JHSG) in late 2006. Its charge was to:

- Assist the JHSG in developing criteria and methodologies for determining the suitability of temporary housing structures, including safe and hazard-resistant design and materials.

- Take into account geographic location and prevalent hazards, weather and environmental requirements, cost, delivery, and other various factors that must be considered in reacting to a large disaster.

The MMC initially helped the JHSG refine a tool that would provide for the evaluation of innovative models for emergency housing. In general, the emergency housing is expected to be deployed for a maximum of 18 months but some alternatives have the potential to evolve into permanent housing. Essentially, the housing assessment tool (HAT) is a web-based spreadsheet that permits the collection of information on housing alternatives from housing manufacturers, vendors, and builders. The HAT provides a standard frame of reference that permits the comparison of traditional and innovative emergency housing alternatives.

[1] FEMA funded this independent study in response to a mandate by the Senate Appropriations Committee, Subcommittee for Veterans Administration, Department of Housing and Urban Development, and Independent Agencies of the 106th Congress (Senate Report 106-161).

MMC representatives also participated in HAT field tests as members of teams that visited alternative housing models and manufacturing facilities in the United States, Puerto Rico, and Canada. In addition, the MMC worked with a testing facility to develop a draft testing protocol for FEMA personnel. The protocol could be used to verify the physical characteristics of housing alternatives and their conformance with a variety of codes and standards.

Based on feedback from HAT team participants, the Institute understands that information from the field assessments was used to identify potential candidates for temporary housing. It also appears those candidates chosen for further consideration were ones that rated well during the field assessments. The Institute supports the work done by the JHSG and believes that significant progress has been accomplished.

However, work is not yet complete in dealing with the many issues surrounding emergency housing and requires additional consideration. While the HAT now serves as an excellent tool for assessing housing options, it does not yet provide a complete set of specifications that reflect the full range of considerations for temporary or transitional housing.

The direction taken by the JHSG in assessing the use of temporary housing has been influenced by disaster events that occurred over the past couple of years, including the problems attributed to the use of temporary housing. What is needed now is a comprehensive post-application examination and expansion of the JHSG findings and the HAT to ensure that the broad range of local community attributes and acceptance issues are addressed. Among the matters of concerns are attributes and issues surrounding the location and placement of various temporary housing alternatives in a community environment; potential social impacts, local sensitivities, and preferences regarding housing design and appearance; and the potential costs and benefits of housing re-use, re-sale, and related storage and rehabilitation considerations.

This could result in the creation of an additional tool used to provide a framework for exploring these community-based issues in ways that are consistent with federal, state, and local government needs and priorities, as well as those of disaster victims. This framework would provide further information for decision-making in the future and support efforts to ensure temporary housing alternatives deployed in communities are acceptable in several respects.

Flexibility remains essential to providing temporary housing on a large scale. Nevertheless, many factors still require consideration in a performance context. The opportunity for collecting and analyzing real-time performance feedback should not be overlooked. A comprehensive set of standards should include a range of attributes to provide for flexibility in providing temporary housing throughout the United States.

Thank you.

Exhibits:

1. MMC Background including Board of Direction, Members Organizations, and Projects and Activities.
2. Natural Hazards Mitigation Saves Lives: An Independent Study to Assess the Future Savings from Mitigation Activities

Exhibit 1

Multihazard Mitigation Council
a council of the National Institute of Building Sciences

BACKGROUND

The purpose of the Multihazard Mitigation Council (MMC) is to reduce the total costs associated with natural and other hazards to buildings by fostering and promoting consistent and improved multihazard risk mitigation strategies, guidelines, practices, and related efforts. Total costs are considered to include the direct and indirect cost of deaths and injuries; property damage; business, personal, and governmental/civil disruption; disaster assistance and emergency services; and redundant or duplicative mitigation measures associated with training, planning, programming, design, construction, operation, maintenance, and enforcement.

The scope of the Council's interests is diverse and reflects the concerns and responsibilities of all those public and private sector entities involved with building and non-building structure and lifeline facility research, planning, design, construction, regulation, management, and utilization /operation and the hazards that affect them. In recognition of this diversity, the Council believes that appropriate multihazard risk reduction measures and initiatives should be adopted by existing organizations and institutions and incorporated into their legislation, regulations, practices, rules, relief procedures, and loan and insurance requirements whenever possible so that these measures and initiatives become part of established activities rather than being superimposed as separate and additional. Further, the Council's activities are structured to provide for explicit consideration and assessment of the social, technical, administrative, political, legal, and economic implications of its deliberations and recommendations.

To achieve its purpose, the Council conducts activities and provides the leadership needed to:

- Improve communication, coordination, and cooperation among all entities involved with mitigation.

- Promote deliberate consideration of multihazard risk mitigation in all efforts that affect the planning, design, construction, and operation of the built environment.

- Serve as a focal point for sage counsel as well as the dissemination of credible information on major policy issues involving multihazard risk mitigation.

PROJECTS AND ACTIVITIES

Since its establishment in 1997 as a voluntary advisory, facilitative body of the Congressionally authorized, nonprofit National Institute of Building Sciences (the Institute), the MMC has conducted a variety of projects:

An assessment for the Federal Emergency Management Agency (FEMA) of the future savings from mitigation activities that provided the agency with quantitative evidence that every dollar spent on hazard mitigation activities results in $4 of benefits to society as a whole.

Assisting FEMA and the Joint Housing Solutions Group in exploring and assessing innovative solutions (e.g., the latest in factory-built contemporary housing, modular homes based on universal design, housing built from recyclable materials) to post-disaster temporary housing needs.

Providing the organizational home within the Institute for the FEMA-funded HAZUS®MH software that facilitates assessment of the risk from hurricane winds, riverine flooding, and earthquake events.

Operating, with FEMA funding, the American Lifelines Alliance (ALA), a public-private partnership that builds upon established industry practices to support the development of national consensus guidance for the design, construction, and retrofit of new and existing lifelines.

Exploring for FEMA of ways to optimize the role of building code enforcement officials in disaster mitigation, preparedness, response, and recovery and providing disaster-susceptible communities with a resource to assist them in preparing for and recovering from disaster events.

Administering a community planning fellowship program for FEMA.

Developing, managing, and conducting the Multihazard Building Design Summer Institute (MBDSI) for the Emergency Management Institute.

Assessing for FEMA the state-of-the-art of hazard mitigation in graduate-level mitigation planning curricula and formulating a preliminary strategy for stimulating the integration of hazard mitigation courses into such curricula.

Assisting FEMA in responding to its responsibilities under the Earthquake Hazards Reduction Program Authorization Act of 2000.

Assisting the National Institute of Standards and Technology (NIST) in translating appropriate recommendations from its World Trade Center investigation into building codes and standards.

Assisting NIST in developing guidance concerning progressive collapse prevention and fire safety design.

Organizing for NIST a building egress workshop intended to foster out-of-the-box thinking concerning egress from tall buildings.

Conducting a workshop on the vulnerability of buildings to chemical, biological, and radiological attack under a grant from the Alfred P. Sloan Foundation.

MMC BOARD OF DIRECTION

Chair
Brent Woodworth, Global Crisis Services, Inc. (representing the building/facility owner community)

Vice Chair
L. Thomas Tobin, Tobin & Associates (representing government and policy)

Secretary
Ann Patton, Ann Patton Company, LLC, Tulsa, Oklahoma (ex-officio member representing community interests)

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Klaus H. Jacob, PhD, Columbia University, Lamont-Doherty Earth Observatory (representing the geological hazards research community)
Gerald H. Jones, retired building official, Kansas City, Missouri (representing the building code enforcement community)
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Nancy McNabb, National Fire Protection Association (representing the fire hazard mitigation community)
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Timothy Reinhold, PhD, PE, Institute for Business and Home Safety (representing the insurance community)
Alex Tang, PEng, C Eng, Chair, ASCE Committee on Lifeline Earthquake Engineering, Mississauga, Ontario (representing the lifelines community)
Charles H. Thornton, PhD, SE, CHT and Company, Inc. (representing the structural engineering community)
Eugene Zeller, retired building official, City of Long Beach, California (representing the seismic hazard mitigation community)

MMC MEMBERSHIP Organizational Members

American Forest and Paper Association, Washington, D.C.
The American Red Cross, Washington, D.C.
Association of State Floodplain Managers, Inc., Madison, Wisconsin
Consortium of Universities for Research in Earthquake Engineering, Richmond, California
Earthquake Engineering Research Institute, Oakland, California
Factory Mutual Insurance Company, Norwood, Massachusetts
GE Global Asset Protection Service, Hartford, Connecticut
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Institute for Catastrophic Loss Reduction, Toronto, Ontario, Canada
International Code Council, Inc., Country Club Hills, Illinois
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Multidisciplinary Center for Earthquake Engineering Research, State University of New York, Buffalo
National Fire Protection Association, Quincy, Massachusetts
National Fire Sprinkler Association, Patterson, New York
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Natural Hazards Center, University of Colorado, Boulder
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