DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
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February 22, 2008

TO: State of Hawaii – Senate
Committee on Ways and Means (WAM)
State Capitol, Conference Room 211

SUBJECT: **SB2783 SD2 - Relating to Loss Mitigation**
Hearing Date: Friday, February 22, 2008, 11:00 AM.

ATTENTION: Chair Baker, Vice Chair Tsutsui, and Members of the Senate Committee on Ways and Means

I am a professor of structural engineering in the department of civil and environmental engineering at the University of Hawaii at Manoa. I am also principal investigator on a project funded by State Civil Defense to develop a hurricane saferoom test facility at the Diamond Head Civil Defense Operation center. I am submitting this testimony in my capacity as PI on this project, and as a private individual.

Because of my background in hazard mitigation research and preparedness, I am in strong support of SB 2783 SD2. However, I would like to suggest an amendment to the bill appropriating funds for annual operation of the SCD/UH Hurricane Saferoom Test Facility.

The SCD/UH hurricane saferoom test facility will enable the testing of hurricane resistive saferooms and window and door opening protection systems when subjected to wind-borne debris and cyclic wind loading pressures. Design of the test facility is now complete and the various components are being ordered. The test equipment will be assembled and installed in an existing warehouse facility at SCD Diamond Head facility this summer.

Residential construction in Hawaii often differs significantly from that used in the rest of the US. A prime example is the use of single wall construction in older residential buildings. Hurricane protective systems that have been tested on double wall construction may not perform adequately when applied to windows and doors of single wall buildings, hence the need to test these systems here in Hawaii. Much of the research and development of saferooms in the US has focused on providing refuge from tornados when a basement is not available. In Hawaii, however, saferooms are needed for hurricane conditions, which will allow for somewhat more economical saferoom designs. These designs must be tested before they can be approved as part of the Loss Mitigation Grant Program. In addition, this test facility will encourage local innovation of improved saferoom and hurricane protective systems with the convenience of being able to verify performance locally rather than shipping test specimens to similar

There is considerable interest from the local construction and material supply industry for testing of locally manufactured saferooms and hurricane protection systems. It is anticipated that after two years of operation the test facility will be self-sufficient based on revenue generated by its testing operations. However, for the first two years, preliminary saferoom testing and single wall construction tests, as well as educational and outreach activities to inform the public about the consequences of seeking protection in a home without hurricane resistive devices.

The 2007 legislative appropriation of $450,000 was for a one year period to cover the design, fabrication and installation of the test facility. Operation of the facility for the first year of testing is estimated at $150,000 to cover salary and benefits for the research technician operating the facility, and funds for maintenance and repair of the equipment, and fabrication of test specimens. Funds are also included for certification of the test facility by the International Code Council (ICC) so that products tested at the facility will qualify for ICC certification. This is highly desirable so that these products can then be used throughout the USA, and not only in Hawaii.

It is therefore requested that the appropriation for SB2783 include an allocation of $150,000 for operation of the SCD/UH hurricane saferoom test facility for the 2008-2009 fiscal year.

Thank you very much for this opportunity to express my strong support for this bill, and request an appropriation to support the operational costs for the SCD/UH hurricane test facility.

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