

## **SG Blocks Testimony Submitted to the 111<sup>th</sup> Congressional Committee on Homeland Security U.S. House of Representatives Hearing, Scheduled for July 8, 2009**

**Public Policy Issue Response:** The need for quick, reactive, durable, economical housing relief in disaster situations is a national priority. The country's ability to respond to virtually any size disaster that involves the need for emergency shelter has been tested on numerous occasions, only to be met with inconsistent results. A comprehensive approach has been elusive until now. SG Blocks offers an affordable, immediate, sustainable answer with the **SG Blocks Disaster Relief Unit**.

**Multi-faceted Solution:** SG Blocks provides an integrated and multi-faceted solution for housing needs brought on by population displacement from disasters both at home and abroad. Published on January 16, 2009, FEMA's National Disaster Housing Strategy highlights an essential need for disaster housing to "leverage emerging technologies and new approaches in building design to provide an array of housing options." There is a stated emphasis on understanding and meeting individual household needs, while providing a full range of flexible and adaptable housing options. The SG Blocks approach provides both; employing a sophisticated, logistically driven management and deployment system with numerous benefits:

- Ability to flexibly build up inventory as required by FEMA.
- A service life of 25-75 years, depending on the application.
- Flexible, durable and affordable storage capability for multiuse purposes.
- Stackable to maximize storage in a way traditional modular housing cannot.
- Design integration for expandable transitional shelter that can be converted to permanent housing.
- A safe, sustainable, energy saving green product with an exceptionally low carbon footprint.
- Highly transportable and demountable for rapid deployment, reconfiguration or reuse.
- Built to meet or exceed HUD and other building codes.
- Fitted for persons with special needs, including the elderly and the disabled; this group is disproportionately impacted during disaster emergencies.

SG Blocks Disaster Relief Units offer inherently protected interior space. Selected units can be pre-configured and simultaneously deployed. They provide a safe and secure environment for transporting emergency water, food, blankets and medical supplies, power generating and water treatment equipment. Once on site and unloaded, the pre-configured units convert into shelter as standard SG Blocks Disaster Relief Units.

The system is proven through its use by the military. CHU's (Containerized Housing units) have previously been deployed through multiple applications. A large complex was built by SG Blocks for the 249<sup>th</sup> Engineering Battalion Command at Fort Bragg.

The SG Blocks system conforms to U.S. government mandated COTS ("Commercial off the Shelf") initiatives for products and service. It meets or exceeds all COTS specifications including: storage, deployment, re-deployment, inspection, maintenance and repair capabilities. The interior of an SG Blocks Disaster Relief Unit uses commercially available off-the-shelf components throughout: doors, windows, flooring, interior sheetrock, electrical, and plumbing approved for use and routinely installed in modular and factory built housing. Zero formaldehyde standards are applied to all interior components. At the heart of the system is the Value-Cycled™ SG Block; a cargo container that is efficiently modified and re-purposed from an international instrument of trade carriage to an international instrument of housing. SG Blocks Disaster Relief Units can be easily converted to permanent installation, as the fundamental building block (container) is designed to be grouped for easy expandability and connectivity after deployment. When the SG Block is used in multiple configurations, the company's proprietary engineering and linking methods create honeycomb design strength.

Addressing available housing options (pg 31 NDHS), FEMA states: "The range of available housing options sets the parameters for the type of assistance that can be provided and challenges planners to be creative in seeking innovative solutions. Disaster housing must include a sufficient range of options that are compatible with the community characteristics, including population density, climate, geography, and land availability. They must be safe, durable, physically accessible, and cost effective. Viability may also hinge on timely availability and sufficient capacity to meet the size and diversity of a household, as well as cost effectiveness."

The SGB Disaster Relief Units address every one of those needs. The Units will contain all the basics required for sufficient housing. Kitchen, baths, living and sleeping space will be included along with standard appliances and home features. The building façade may be aesthetically adjusted to fit into any landscape, and as necessary, can be regionalized to suit any climate. Should the SGB Disaster Relief Unit ultimately become permanent, exterior modifications can easily be made; enabling the permanent home to seamlessly integrate into any environment. With extraordinary structural integrity, SGB Disaster Relief Units are more durable and weather resistant than other shelters, conveying a sense of personal safety, strength, security and well being. This inherent stability aids in the recovery from psychological trauma during and after a disaster and the displacement that follows.

**The Logistical Advantage:** There is a significant logistical advantage when using the SG Blocks system. The supply source is part of a global logistical shipping network. The existing manpower, equipment and organization mobilize immediately for quick and efficient deployment. EDI data management software is already in place; and uniquely flexible equipment handling and transport options provide unmatched deployment capabilities. A rapid dispatch rate is estimated at 45 units per hour. SG Blocks Disaster Relief Units may be transported on intermodal chassis trailers, flatbeds, tilt-beds, step-decks, railroad, ocean barge, inland barge, or on container vessels. The mission changes but the execution mirrors the daily logistical operations that the depots routinely handle with containers. Industry accepted inspectors are based at the deployment site and are available around the clock to receive, inspect and certify SG Blocks Disaster Relief Units.

A significant space saving advantage is inherent in the ability to stack the SG Blocks Disaster Relief Units. **90 units per acre are typical of non-stackable modular or trailer housing currently being deployed. In stark contrast, SG Blocks Disaster Relief Units may be stacked vertically 8 high, creating a vastly enlarged site storage capacity of 1,040+ SGB Disaster Relief Units per acre** This translates into high density site storage and maximized use of available space.

## Single Unit Scalable System

**The Structure:** The SGB Disaster Relief Unit is a highly transportable, low maintenance, long lasting structure built from Value-Cycled “green” engineered containers, utilizing oxidation resistant COR-TEN heavy gauge steel. Designed to carry up to 60,000 lbs. on ships, the containers are converted for shelter by SG Blocks and re-engineered to meet and exceed FEMA specifications.

SG Blocks proposes to deploy the Disaster Relief Units and provide full logistical support and maintenance management.

### Key Features:

- Options for 1, 2, and 3+ bedroom units with the ability to incorporate into transitional and more permanent housing.
- Rapidly transportable and highly deployable units; multiple modes of transportation to choose from to assure quick and dependable delivery to a designated site.
- Continual, abundant supply at multiple and strategically located U.S. and internationally based depots.
- Rapidly deployable, both domestically and internationally.
- Designed to meet all Federal fair housing requirements along with Federal and local accessibility requirements for disabled occupants; this includes ramping, grab bars, appropriate turning radii, corridor width, appropriate hardware, accessible showers and/or tubs. Depending upon end users needs, a specific number of compliant units may be provided, or all units can be designed to be in conformance.

- Constructed of heavy gauge, oxidation resistant COR-TEN steel, the SG Block Disaster Relief Unit meets and exceeds published requirements of the U.S. government for emergency housing. The system includes the disaster unit, full logistical control of deployment, re-stocking support, inventory control and the capability of conversion into on-site permanent housing. The interiors incorporate robust paperless drywall proven suitable for transport as demonstrated in the modular housing industry. SG Blocks has selected steel cabinetry and furniture in addition to other sustainable interior components. Compliance with all interior air quality standards is assured. These units contain no formaldehyde glues or any building materials that have the potential to give off formaldehyde gas.

**Flexible, Demountable and Adaptable:** SGB has designed a livable and versatile unit with the needs of the occupants in mind. As families expand or contract, our system may be expanded or reduced to efficiently meet these changing needs.

Designed for scalability and exceeding government requirements for 1, 2, & 3 bedroom units, SG Blocks Disaster Relief Units have additional applications as well. The units may be easily deployed as office space, relief worker live/work space, or as clinics, with geographic flexibility for all topography and weather variables. As a stand-alone or multi-unit structure, the uniformity and integration options of the SGB Disaster Units will result in substantial cost savings to the government.

Chapter 3 of NDHS focuses on Interim Housing. Point 11 addresses its temporary nature. “Whenever possible, disaster victims should be moved directly to permanent housing. In creating interim housing plans, officials must balance the intensive effort to supply temporary housing with the need to immediately start developing plans for restoring permanent housing...During this period, the State should also be ready to resume responsibilities once Federal assistance ends. These fundamental expectations must be established at the beginning of the interim housing process and guide decisions throughout.” The professional and experienced staff of SG Blocks has worked seamlessly at the municipal planning levels for permits and approvals and can easily be integrated in the transition phase of temporary to permanent housing.

The use of SG Blocks Disaster Relief Units provides significant advantages over modular and travel trailer housing currently being deployed. While these incumbent structures are deployable, they do not share the logistical benefits and support provided by the SG Blocks system. Modular and travel trailer housing has proven to have a comparatively short service life; they are not built for long term durability. The SG Blocks Disaster Relief Units are durable, rugged steel framed buildings that last for 25-75 years; they are less susceptible to moisture damage and provide full compliance with wind and seismic design codes. Further, scalability and storage capacity of the SG Blocks unit is over 10x the level of the modular and travel trailer housing currently being deployed.

SG Blocks Disaster Relief Units far surpass available alternatives in meeting the disaster housing parameters set forth by FEMA. Inherent logistical control and geographic proximity both support rapid and efficient deployment. Multiple modes of transportation enhance rapid deployment options. SG Blocks Disaster Relief Units are stronger, safer and greener. They are more durable, stackable, expandable and affordable and can be converted to permanent housing. The SG Blocks approach is comprehensive; what makes the SG Blocks system so compelling resides in the sum of its parts.

## Conventional Container Storage with Multiple US Locales

The System encompasses the following locales for Storage and Dispatch.



### Rapid Deployment Facilities

- Alameda CA
- Atlanta GA
- Baltimore MD
- Charleston SC
- Chicago IL
- San Ramon CA
- Houston TX
- Jacksonville FL
- Los Angeles CA
- Memphis TN
- New Orleans LA
- Norfolk VA
- Portland OR
- Savannah GA
- Seattle WA
- Tacoma WA

Additional facilities may be available in the future.

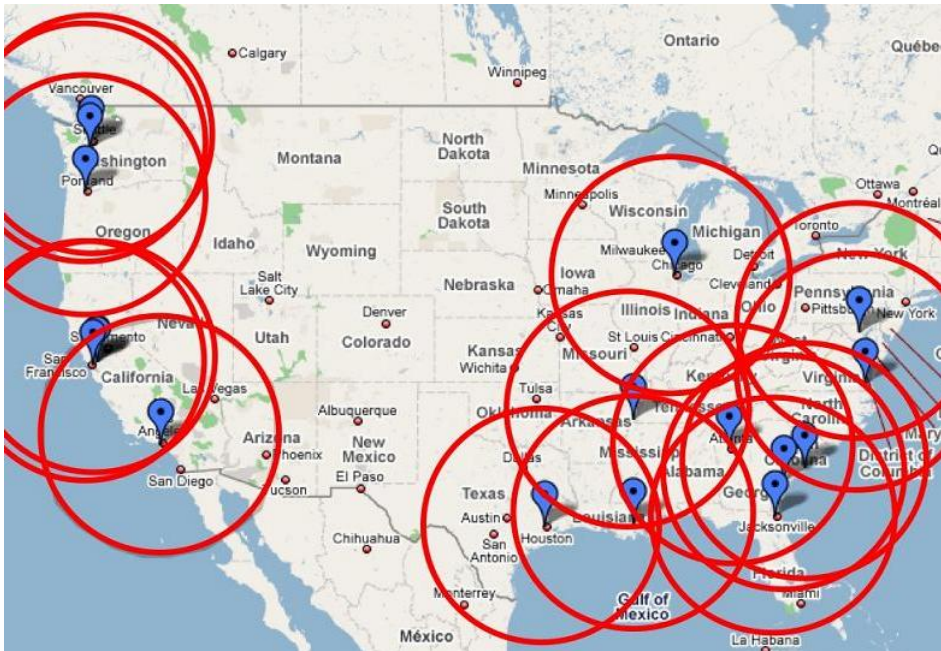


Storage of Disaster Relief Units prior to and after disaster deployment is available at 17 depot locations domestically as well as at 118 facilities worldwide. Distribution would be strategically based on potential and timing of deployment.





# Deployment



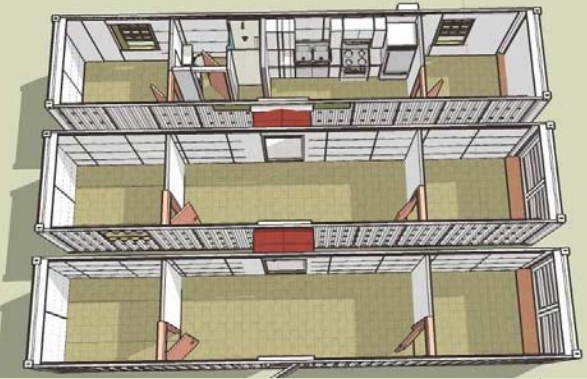
Map demonstrates 400 mile radius from depot locations

Deployment may take place immediately upon notification of need; and units can be on site within 400 miles of depot locations in 8 hours or less and within 750 miles or within one trucking day. All transport methods currently work with the SG Blocks system, and no special escort required.



The system may be set in the field quickly through several methods -- with some positioning requiring no additional equipment. Large scale deployment or multi-story construction would require a crane or forklift.

The system is based upon the one bedroom SG Blocks Disaster Relief Unit, shown below. Two and three bedroom configurations and a quadplex version, are shown to the right.



**SG Blocks Disaster Relief Units may be combined and configured into an expandable system**



## About SG Blocks...

SG Blocks LLC is the premier provider of code engineered cargo shipping containers specifically Value-Cycled™ to meet the growing demand of safe and green construction. SG Blocks capitalizes on the structural principles associated with the hostile dynamic life a shipping container is exposed to aboard ship, modifying them into significant building components that usually exceed building code requirements. The company has been the leader in establishing container technology for building code permitted sustainable building. SG Blocks, LLC management team has disciplines in structural & civil engineering, building codification, real estate development, management, architecture and intermodal logistics.