
Rebuilding Haiti

Build Change

→501(c)3 non-profit social enterprise

→founded in 2004 by Elizabeth Hausler, a brick mason and Ph.D. earthquake engineer from University of California, Berkeley

→Mission: Greatly reduce deaths, injuries and economic losses caused by housing collapses due to earthquakes in emerging nations

- →Build Earthquake-Resistant Houses
- →Change Construction Practice Permanently

→Programs in Indonesia, China, and expanding to Haiti


More than 24,000 people living in houses
that are unlikely to collapse in the next earthquake

More than **4,000** builders, homeowners, students, engineers, government officials trained

For Earthquake-Resistant Construction to Become Common

→MONEY

→TECHNOLOGY

→PEOPLE

TECHNOLOGY: Within Reach?

Build Earthquake Resistant Houses
Change Construction Practice Permanently

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TECHNOLOGY: Yes, Within Reach

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TECHNOLOGY: Local Materials, Local Jobs

REBUILD YOUR HOME SAFELY AND KEEP YOUR FAMILY SAFE FROM EARTHQUAKES AND HURRICANES!

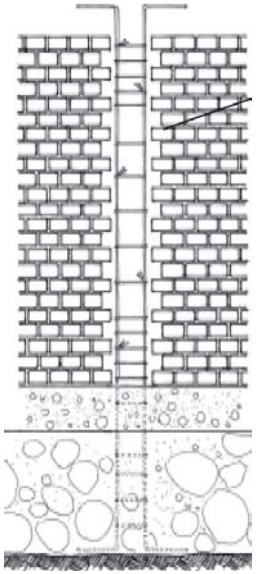
QUALITY CONCRETE BLOCK CONFINED MASONRY

IN A CONFINED MASONRY HOUSE THE MASONRY WALLS ARE BUILT BEFORE THE REINFORCED CONCRETE COLUMNS AND RING BEAMS ARE POURED.

THE MASONRY WALLS CARRY LOAD AND ARE A CRITICAL PART OF THE STRUCTURE. *THEY MUST BE MADE WITH GOOD WORKMANSHIP FROM HIGH QUALITY CONCRETE BLOCKS!*

A WELL-MADE WALL: GOOD QUALITY BLOCKS, STAGGERED BOND, EVEN AND COMPLETELY FILLED JOINTS, HOLLOW SIDE DOWN

BUILD THE WALL BEFORE POURING THE CONCRETE



COVER YOUR WALL WITH PLASTER ON BOTH SIDES FOR ADDITIONAL STRENGTH!

MIX RATIOS:

CONCRETE BLOCK
1 PART PORTLAND CEMENT TO 6 PARTS
LIMESTONE SAND (AGGREGATE < 3/8")

MORTAR
1 PART PORTLAND CEMENT TO 4 PARTS SAND

DON'T USE TOO MUCH WATER!

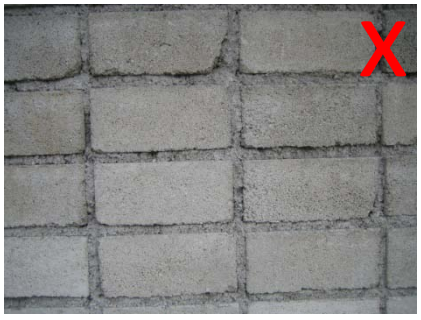
MAX WALL HEIGHT:

FOR 8" BLOCKS (RECOMMENDED), MAX WALL HEIGHT IS 12FT

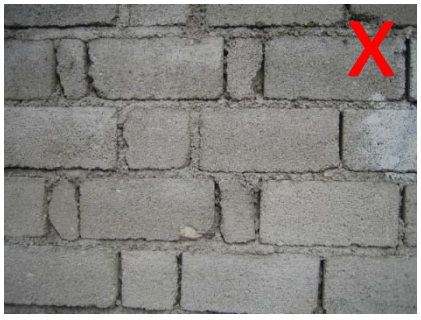
FOR 6" BLOCKS (ONLY FOR SINGLE STORY BUILDING), MAX WALL HEIGHT IS 9FT

TOOTH THE MASONRY WALL OR USE BED JOINT REINFORCEMENT EVERY 3 LAYERS TO TIE THE MASONRY WALL TO THE COLUMN SO THEY CANNOT SEPARATE.

DO NOT USE WEATHERED OR CRUMBLING BLOCKS! DO NOT REUSE OLD BLOCKS!



DO NOT ALIGN HEAD JOINTS! USE STAGGERED BOND.



DO NOT USE BROKEN, OLD OR MISSHAPEN CONCRETE BLOCKS!

DO NOT LEAVE JOINTS UNFILLED! FILL THEM *ENTIRELY* WITH MORTAR.

DO NOT MAKE MORTAR JOINTS TOO BIG! AVERAGE THICKNESS IS ½"

TECHNOLOGY: Building Codes and Guides

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TECHNOLOGY: Local Testing Capacity

TECHNOLOGY: Building Materials

Opportunities for US Businesses?
Should be locally sustainable (USAID T-Shelter)

(1)Lightweight roofing structural elements (timber, lightweight steel)

(2)Wall reinforcement, connectors

(3)Reforestation

For Earthquake-Resistant Construction to Become Common

→MONEY

→TECHNOLOGY

→PEOPLE

PEOPLE: Build Local Capacity

1. Builders and Technicians
2. Building Materials Producers
3. Engineers and Architects, **Gov't**
4. Relief Agency Staff

PEOPLE: Construction Professionals

PEOPLE: Construction Professionals

Build Change Indonesia

PEOPLE: Builders and Tradespeople

→Builder Training

→Vocational Training

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PEOPLE: Government Officials

→China: Providing Inspection Services for Government

→Indonesia: Government Now Uses Build Change Model

PEOPLE: Homeowners and Builders

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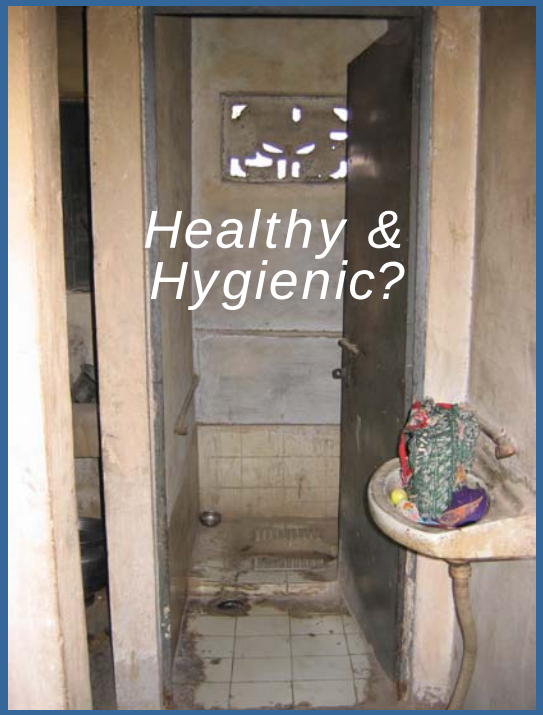
PEOPLE: Relief Agencies

- →CARE International Indonesia
- →Catholic Relief Services
- →CHF International
- →International Federation of the Red Cross and Red Crescent Societies
- →International Org for Migration
- →Mercy Corps
- →Oxfam International GB
- →Save the Children




MONEY → Inefficient Use

When Donors Make the Decisions...



MONEY → Efficient Use

Xing Dayan (China)

MONEY → Efficient Use

Recommendations – Invest in

1. Research on locally appropriate, earthquake-resistant building technologies
2. Laboratories, trade and engineering schools
3. Training courses and hands-on technical assistance
4. Incentive bonuses for safe construction

Thank You - Contact Us

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