

CASA



Construction Manual **(Codes and Safety for the Americas) Act**



Airline Ambassadors
INTERNATIONAL

U.S. Laws HR 1646 and S.1401



 PROJECT BACKGROUND

The United States government, through USAID invests hundreds of millions of dollars each year to help developing nations after they suffer devastating damage from natural disasters. Whether this aid goes to new buildings or to the reconstruction of damaged homes and structures, most of the building is done without adequate protection from future disasters.

For local architects or contractors in this countries, and for architects and builders from around the world engaged in reconstruction, accessible and easily understood plans and specifications are rarely provided or made readily available. The results are inefficient and unsafe. In future catastrophes, the new and repaired buildings will be as likely as those they replace to kill the people inside them.

In the US, by contrast, licensed construction professionals, working in a culture of building codes and inspections, utilize checklist to monitor step-by-step adherence to appropriate plans and specifications. Transferring similar, if simpler, practices, along with the knowledge on which they are based, to post-disaster builders and rebuilders will save many lives at little cost, and such a transfer would greatly reduce reconstruction costs un many future disasters.

Safe and accessible building plans and specifications are urgently needed in relation to a second urgent world-wide problem: the tremendous increase in squatter communities and squatter construction throughout the world today. "Estimates are that there are about one billion squatters in the world today- one of every six humans on the planet. And the density is on the rise. Every day, close to 200,000 people leave their ancestral homes in rural regions and moved to cities. Almost 1 million people a week, 70 million a year. Within 25 years the number of squatters is expected to double. The best guess is that by 2030, there will be 2 billion squatters, one in four people on the earth... these squatters make more concrete than any developer. They lay more brick than any government. They have created a huge hidden economy... Squatters are the largest builders of housing in the world they are creating the cities of tomorrow." Shadow Cities, Robert by Robert Neuwirth (Routledge, 2005). Squatter communities represent an enormous, largely unrecognized, wholly unguided sector of the world's building market.

We propose to develop a small number of code-compliant housing plans, along with specifications and checklists, to be distributed worldwide free of charge. These plans will make it possible in reconstruction to build safe and relatively inexpensive buildings to replace sub-par structures destroyed in natural disasters. They should also begin to address the huge world-wide need for safe homes in squatter communities.



PROJECT ABSTRACT AND GOAL

Inspired by the CASA Act bill of 2002 (Code and Safety for Americas, Public law 107-228), we intend a user-friendly and practical set of plans, specifications and compliance checklists based on 2006 United States building codes and standards, but tailored to particular regional conditions. These documents will be available for use by architects, engineers and even non-professional builders. We plan to begin by implementing this projects in several communities in El Salvador and in Ecuador.

Building a safe home is not a mystery; it need no cost more than building it improperly. Hi tech solutions are not needed: simple and straightforward building methods can be used for safe housing in every nation around the globe. It all comes down to respecting proven sequential and mathematical methods of construction and inspection.

Earthquakes and other natural disasters are unforgiving. They can affect us all, regardless of national borders. A system of building codes and practices of safe construction can be adapted and adopted by any city or country. Our manuals are a beginning step toward such systems. They can be used immediately. They will save lives and they will reduce the long term costs of housing.



WHO WILL USE THIS MANUAL AND WHO WILL BENEFIT?

1) PEOPLE

Anyone in need of simple, low-cost disaster reconstruction or of a simple, low-cost home.

2) CITIES AND TOWNS

Municipalities or other governments that want to establish benchmarks of quality, durability and safety in construction; a road map for a culture of building codes.

3) BANKS AND INSURANCE COMPANIES

Any lending agency needs to establish minimum benchmarks for quality in construction to protect their investment and assure its durability.

4) HUMANITARIAN ORGANIZATIONS

Non-governmental organizations, many of whom use volunteer builders, need a ready guide for building, inspecting, and certifying as safe the homes built for those in need.

BOOK LAYOUT

Understanding that language is often a limiting we shall endeavor wherever possible to make the documents visual in nature. Furthermore a simplified visual approach will aid in the translation and application to other languages and nations for subsequent versions.

It is important to notice that while the principal emphasis will be the visual data, technical data will be outlined and incorporated in the book. In order to make it easy-to-read, the codes will be adapted and expressed in a simplified language.





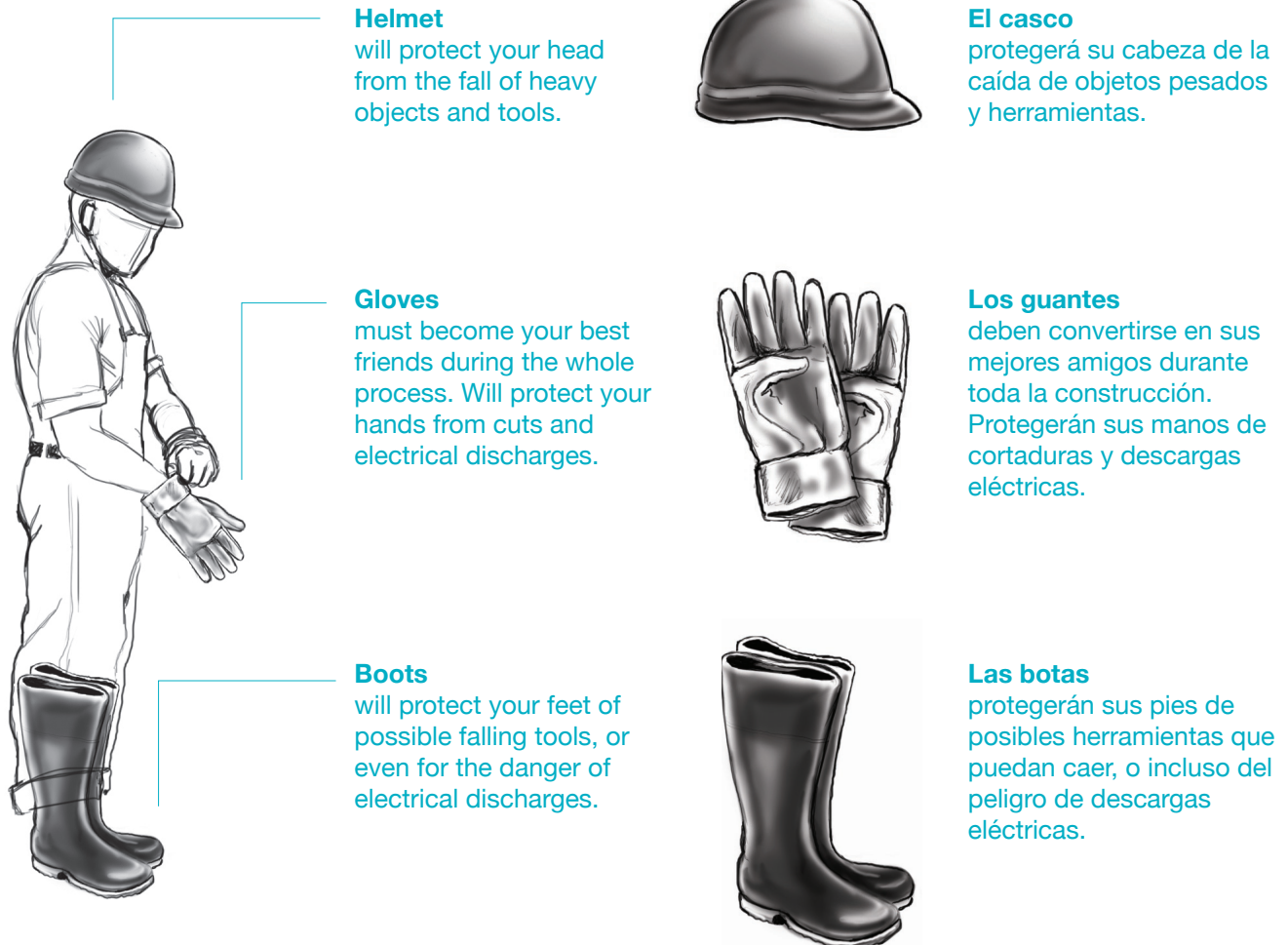
EASY READING, SIMPLE TO USE

Drawings and writing are intended to be didactic so users can easily understand each part of the process. Below there's a sample of how the contents will be organized and showed.

SAFEGUARD/ SEGURIDAD

Safety during construction is one of the most important considerations that you have to keep on mind. A complete equipment will prevent accidents during the construction. Here's a simple alternative to be safe during the process.

Una de las consideraciones más importantes que debe tener en cuenta es su seguridad durante la construcción. Un equipo completo prevendrá accidentes durante la construcción. A continuación mostramos lo sencillo que puede ser asegurarse durante el proceso.





EASY READING, SIMPLE TO USE

(How contents us organized and showed.)

MASONRY/ MAMPOSTERIA

MIXTURE PROPORTION/ PROPORCION DE LA MEZCLA



+



+

5 GALLONS
OF WATER/
5 GALONES
DE AGUA

cement/
cemento

sand/
arena

1

En una batea de madera, limpia, colocar 1 saco de cemento que actua como aglomerante.



Place 1 cement bag in a clean tub. It acts like a binder.

2

Incorporar 2 fundas de arena corriente, que actua como agregado, previamente colada o cernida., y mezclar homogéneamente con el cemento.



Add 2 clean sand bags previously strained., then mix it up with the cement to get an homogenously mixture. Sand works like an aggregate.

3

Colocar 5 galones o 1 caneca de agua a la mezcla hecha anteriormente. El agua actua como ligante.



Place 5 gallons or 1 big bucket of water to the mixture. Water will join the hole mixture.

4

Mezclar en partes iguales todos los elementos, hasta obtener la mezcla homogénea.



Mix it up until obtainin an homogenous mixture.



ABOUT THE INTERNATIONAL BUILDING CODE USED ON THIS MANUAL

"This code is founded on principles intended to establish provisions consistent with the scope of a building code that adequately protects public health, safety and welfare, provisions that do not unnecessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction; and provisions that do not give preferential treatment to particular types or classes of materials, products or methods of construction."

Extract from International Building Code 2003.

'In January 2005, Airline Ambassadors organized a team of licensed building professionals from the United States to travel to El Salvador, Central America in order to inspect buildings for their preparedness to natural disasters such as earthquakes, fire, floods...'

"The underlying question which was posted to each professional was the following. If this building were built in your jurisdiction would it be permitted?..."

"While each building showed varied levels of compliance all professionals agreed that not one building would be passed as code compliant in their region of work or jurisdiction. Quite emphatically, all professionals qualified this statement with a cautionary note that not one of the building designers or contractors had had the benefit of this resource (UBC 1997) when these buildings were constructed..." (1)

"LA CRUZADILLA DE SAN JUAN, El Salvador- Four years ago, a pair of powerful earthquakes crumbled whole villages of small brick homes in this lush river valley. Millions of dollars in U.S. - government aid poured in to handle the initial crisis, followed by many more millions to help rebuild.

The result is more than 25,000 homes, 53 schools and dozens of clinics and other facilities. But in some cases, the design and construction of the buildings are flawed, making them potentially dangerous in the event of another disaster in this earthquake-prone region..."(2)

1. Forneris, Stephen; El Salvador Mission: January 2005"; Report 2005.

2. Frangos, Alex; El Salvador Is a Lesson in How Not to Rebuild" (From the Wall Street Journal). January 19, 2005.