

**Title:** The Lazarian World Homes Project

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**Abstract:**

### *Introduction*

According to a United Nations study, over 1.6 billion people lack adequate housing that is affordable. The Lazarian World Homes.com (LWH) project is a sustainable program of building eco-friendly ICF foam block affordable housing in developing countries that have limited natural and financial resources. Virtually all countries have abundant supplies of concrete and steel reinforcing bar. Most countries also have polystyrene products such as drinking cups. Concrete, steel and polystyrene are the basic building materials for the Lazarian World Home (LWH) structures. The LWH strategy is to introduce LWH to a country by constructing donated buildings, along with the necessary ICF block tooling, construction tools and equipment. The recipients of these gifts are in-country partner organizations that are credible and have a track record of honoring their commitments. Upon completion of the model buildings, LWH maintains an on-going relationship with this partner by providing continuous follow-up training and expertise. The idea being that the locals/nationals will then be able to develop their own leadership/construction/business skills and will ultimately have the experience, confidence, knowledge, tools and equipment to be able to expand the program, create jobs, and develop a new industry directed toward creating affordable housing for the needy.

### *Approach*

Lumber is a scarce resource in most parts of the world. Using wood to build homes is expensive, inefficient and difficult on the environment. Because, there is an abundance of inexpensive building materials such as concrete, steel reinforcing bar and polystyrene, the LWH project has incorporated these recyclable products into a construction system that is cost effective, energy efficient, and easy to build. A unique 4'L X 12"H X 8"W ICF polystyrene foam block design that stacks and interlocks like Legos is the basis for all the structural walls. Each 4' long block weighs only three pounds and is very easy to install compared to wood, concrete block, tilt up or poured in place construction. Because the ICF blocks have a modular design, efficient buildings have been designed that minimize material waste. The designs include 3 types of homes, school buildings, 2plexes, 4plexes, and church/community buildings. Since LWH is a non-profit ministry, the lazarianworldhomes.com website includes architectural drawings, CAD drawings for the ICF block tooling, parts and equipment lists, photo gallery and detailed "how to" construction steps to building. All drawings and data on the entire website may be downloaded and used as a construction manual at no charge.

### *ICF Foam Blocks as an Ideal Construction Method*

The core strength of the LWH buildings is the concrete and steel reinforcing bar poured into the Insulated Concrete Forms (ICF). When concrete and steel rebar is installed inside the ICF foam block, the walls become a structural building system called Reinforced Concrete Post and Beam Construction.

This is one of the strongest methods of construction known and is substantially stronger than a wood framed building. The polystyrene forms remain after the concrete is poured and the walls are subsequently spray plastered with a unique direct application material. The resulting wall system is esthetically pleasing, extremely strong and able to withstand earthquakes up to 8 in magnitude, floods, strong winds, and are energy efficient with an R-Value of 20.

In addition to the LWH homes being energy efficient, they are also environmentally friendly in that they are recyclable. The steel re-bar and concrete in the ICF foam block walls can be separated and recycled. The plastered polystyrene foam blocks can then be ground, mixed with adhesives and reconfigured into new building blocks that can be re-used for further construction. Virtually 100% of the structures may be re-cycled.

### *Conclusion*

In 2007, LWH built our first project in Armenia. Two Lazarian World Homes (2 bedrooms - 1 bath and a kitchen) were built in 14 working days. The labor for building this LWH project was primarily college students from Baylor University, Point Loma Nazarene University and USC. While this is a unique ministry opportunity for these students, it also teaches them skills in construction, leadership and stewardship while working in a meaningful project with visible results. In 2008, LWH built projects in Mexico and again in Armenia utilizing students from the same Universities. In addition, nationals from these countries were also trained and worked alongside our college students. Training and equipping nationals to build the LWH structures along with the students, served to validate and complement the objectives of the program. Needy organizations and individuals were blessed with the buildings while students and nationals worked together learning skills, developing relationships, and hopefully planting the seeds for the solution to the world's housing crisis. As the Lazarian World Home program grows, housing will be built by and for the needy, jobs will be created, economies will be energized, and students will enjoy a life changing experience.