



Habitat for Humanity Global Village: Means & Methods of Construction in Trinidad & Tobago

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Abstract

Habitat for Humanity Global Village is a sector of Habitat for Humanity that focuses on aiding in the construction of homes for those in need around the world. Habitat for Humanity Trinidad and Tobago has been part of Habitat for Humanity Global Village for many years and aids people in need on the Island of Trinidad in the Southern Caribbean. This paper will discuss the construction of a small home for a woman whose family was disowned by her father due to her reluctance to uphold traditional Indian values. Subsequently the family was living in poverty and currently residing in a small car. With the help of a local contractor and local labor, a team of volunteers broke ground on a simple concrete and concrete masonry unit structure to house the family in need. This project will include a complete composition of the building practices and materials used throughout the construction process in Trinidad as well as a schedule and analysis of the project. The personal experiences, including means and methods of construction and firsthand building experience, encountered throughout the build will also be discussed.



Lessons Learned

- Effect of Weather on a Project
 - Impact to Schedule
- Proper Communication
 - Delays Due to Poor Communication
 - Subcontractors and Suppliers
 - Issues communicating with local labor
- Use of Technology
 - Dewatering
 - Excavation
 - Concrete Mixer
 - Local Labor Equipment Training



Building Process and Materials

Proposed Building: 20' x 40' CMU Block Home on Concrete Slab

Process:

- 2' Deep Footings, 3' at Corners
- 2 Courses of CMU Block Foundation Wall
- 20' x 40' Slab on top of Hand Compacted Soil

Materials:

- Concrete, Roughly 50/50 Cement to Sand Aggregate
- #4 Rebar
- Typical 16" CMU Blocks
- Mortar, Roughly 1/5 Cement to Sand Aggregate Ratio
- Waterproofing Membrane
- Steel Corrugated Roof

Appendix B Actual Construction Schedule				
Day 1 (October 22 th , 2018)	Day 2 (October 23 th , 2018)	Day 3 (October 24 th , 2018)	Day 4 (October 25 th , 2018)	Day 5 (October 26 th , 2018)
Excavation <ul style="list-style-type: none">- Partially Excavated Upon Arrival- Digging by Hand- Dewatering by Hand	Excavation <ul style="list-style-type: none">- Dug Additional 1' Excavation in Trenches- Dug Additional 2' at Corners			
Rebar Cage Buildout <ul style="list-style-type: none">- All Rebar Arrived on Site in 20' Sticks- Built 7 20'x 1' x1' Cages	Rebar Cage Buildout <ul style="list-style-type: none">- Built 3'x 3'x 3' corner cages- Tied Dowels into Cages to Support CMU Blocks			
		Placing Rebar <ul style="list-style-type: none">- Lowered Rebar Cages into Excavation- Leveled Rebar in Trenches for Pour		
		Pouring Foundation <ul style="list-style-type: none">- Hand Mixed Concrete- Poured Concrete with Buckets- Completed half of Foundation Pour	Pouring Foundation <ul style="list-style-type: none">- Mixed Concrete with Small Mixer- Poured Concrete with Buckets- Finished second half of Foundation Pour	
			CMU Foundation <ul style="list-style-type: none">- Mixed Mortar in Small Concrete Mixer- Laid 2 Courses of CMU Blocks Around Perimeter and Midspan	
				Compaction <ul style="list-style-type: none">- Excavated Excess Dirt from Slab Area- Compacted Dirt to Level with 2 Courses of CMU Blocks
				Slab Preparation <ul style="list-style-type: none">- Laid Waterproofing Membrane- Constructed Slab Reinforcing Bars- Set Formwork around Perimeter