

Concrete & Building in Haiti

General Report

Report Concerning the March 2016 Trip

As of May 14, 2016
By: Herb Nordmeyer

Introduction

The team consisted of Helen Roenfeldt, Executive Director of Mission:Haiti, Scott Conover, David Vangsness, and Herb Nordmeyer.

We collected in Ft. Lauderdale on the evening of March 10, 2016, and flew to Port-au-Prince on the morning of March 11.

Prior to the trip, Herb had built a polar scaffold and shipped it along with 6 bags of hydrated lime. That crate did not arrive in San Marc, Haiti, until after we departed. It was over two weeks before we received word that the crate was in Gonaives.

Our agenda included:

- Inspect a building in Peytion-ville to determine if it was safe for use as an orphanage.
- Determine whether the village of Ben Aime would be a good location for a demonstration village.
- Visit an orphanage and school for disabled children.
- Determine whether the village of Colminy would be a good location for a demonstration village.
- Erect a dome on the second slab in Jubilee (See separate report).
- Inspect the ceiling of the boys' dorm at Faith Lutheran Orphanage to determine whether the ceiling plaster peeling was a cosmetic problem or a more serious problem.
- Pour a slab for the girls' dorm at the Faith Lutheran Orphanage. (See separate report concerning Faith Lutheran Orphanage)

Keeping to a Schedule

In Haiti, we often do not realize reality when we set our plans. Breakfast at the Guest House is usually scheduled for 8:00 am and as a result, with delays, periodically we do not get to work until 10:00 am. During our September, 2015, trip we tried leaving the Guest House before 7:00 am and having breakfast delivered to us about 9:00 am. That worked, and we were able to accomplish much more in a day. Also, we could work during the cool of the day, rather than only during the heat of the day. For our March trip when we were in Gonaives, we adopted the same schedule, and it worked well.

Protests were scheduled along Route 1 for Maundy Thursday and Good Friday. They were peaceful protests, but they would block Route 1 so we could not get through. Rain had eliminated the possibility of taking an alternate route. Our security informed us if we wanted to make it back to the US before Easter, we needed to leave Gonaives by not later than 8:00 am on Thursday. We were on our way by 7:15 am. Probably the first time we were ever early for doing anything.

Peytion-ville Orphanage – March 11

On a previous trip, Helen had met Jasper Washington Cineus, who is the President of the JWC Foundation. He runs an orphanage in an old hospital building. On that same property are several other buildings which are used by a school. Jasper asked Helen to have Herb inspect the buildings and make recommendations. We visited the facility on March 11, 2016.

GPS Location N 18° 31.533 W 72° 16.264

Herb completed a report and furnished it to Helen and Jasper on April 25, 2016. Following is a brief summary of the findings.

The roofs of the school buildings are metal on wood trusses. Even though the wood trusses were well designed and built, the deterioration of the metal roof and lack of maintenance has allowed water to get to the wood trusses. Portions of many of the wood trusses have deteriorated. This deterioration will allow metal roofing to be torn from some of the trusses in a windstorm and will allow the metal roofing and the trusses to be torn from the building in other areas. If the buildings are to continue to be used, the metal roofing and trusses should be removed, the damaged trusses should be repaired or replaced before being mounted on the buildings and a new metal roof installed.

A small room which is connecting two of the school buildings is causing a structural deterioration of both of those buildings. A recommendation was made that the small room be removed.

With cold joints in the walls of the school building and with a deterioration of the foundations, the buildings would probably not hold up during an earthquake.

The old hospital building houses a boys' orphanage and a nursing school with 60 students. The old hospital was built in 1954 and was well built. For an extended period of time, water has been entering the southeast quadrant of the building and has resulted in the degradation of the rebar in the concrete beams, columns, and walls. The water is continuing to enter the building. With the expansion of the rebar due to corrosion, the concrete has cracked and spalled. Herb was able to reach into overhead concrete beams and break half-inch rebar.

The worst deterioration is in the basement and in the beams and columns in the basement which support the ground level floor. The orphans are housed directly above the worst deterioration. The nursing school is also in that area of the building.

Bien Aime – March 12

GPS location N 18° 44.738 W 072° 11.611
Elevation 2323

On Saturday, March 12, 2016, we visited Bien Aime. According to GPS, it is located

about 14 miles as the crow flies from Port-au-Prince. It took us about 2 hours to get there. We had to go up to about 2,600 feet and then drop down to about 2,400 feet. The road was rough and required a high-clearance, 4-wheel-drive vehicle to get there.

As we got into the highlands, a method of construction we saw in some of the poorest sections of the lowlands became common. The method resembles confined masonry construction, but the framing is limbs, not concrete. Then masonry, often stone, is laid with mortar between the vertical poles. Rather than having a mid-point horizontal beam, this method uses a beam only at the roof line.

A work crew was digging out the area where the church is being built. They were lined up and using picks. A man was holding a sickle and tapping on it with a rock to give cadence to their digging. They were singing as they worked. It was so well choreographed that this could have been a Hollywood movie. After we arrived, they took a break and welcomed us.

Helen and the pastor discussed the needs of the village. Helen stressed that we did not want to come in and force our ideas on them. We wanted to learn what their needs and desires were and partner with them to help them achieve their goals.

They were interested in:

- Agriculture,
 - Obtaining more goats to raise,
 - In dry season there is not enough water for crops,
- Medical clinics,
- Education.

Helen said she would take their needs to donors, and a donor might make money available for a specific project. She said that a medical clinic was planned for April 2016 and after that there would be periodic medical clinics. She stressed that at the medical clinic all of the young children and their mothers needed to come for a special session, and all of the pregnant women needed to come for a special session.

A Wise Woman (something like a midwife in the US) was identified, and Helen asked her to come and spend some time with the doctor at the clinic.

They do not have water well locally. No one in the area has a well, so they have no idea how deep a well might have to be to hit water. Currently they walk to the river and bring back 5-gallon buckets of water on their heads. Distance for the round trip was estimated at 5 to 10 kilometers.

Several people collect water from their metal roofs. At one system we looked at, the base of the tank was low-grade concrete, and the tank leaked.

Bringing in water with a water truck is not feasible due to the poor road conditions.

They want to build a latrine near the church. They have picked out a site



between the church and the small cemetery.

Ghost Towns – March 12

Returning from Bien Aime we stopped at two government low-income housing projects, one built before the earthquake and one after. Each had about 10% occupancy. While the projects appeared to be fairly well built, the rent was too high for the people to afford, there was no employment within several miles, and there was no reliable bus service to carry people to where the jobs were located. As a result millions of dollars were spent without helping the people whom the money was designated to help.

Confined Masonry House – March 13

Vanessa Darbouze (an architect with the Haitian government and Lophane's niece) has designed a low-cost nominally 300 plus square foot confined masonry home with a metal roof. Roof framing is to be 2 x 6 lumber with each end imbedded into the concrete top beam. It is built so a second story cannot be added. Concept looks good. Execution with the mortar, plaster, CMU, and concrete beams and columns will determine the viability of the house. With minimal roof overhangs, it should be hurricane-resistant. If the beams at the tops of the walls are substantial, it should resist everything but a strong earthquake. With the metal roof, it will be much safer than the typical homes in Haiti with concrete roofs. She says it can be built for \$6,000. It has the advantage of being built without an Airform, but the disadvantage is that many builders in Haiti know how to take shortcuts and degrade the quality of construction.

Mercy and Sharing Mission – March 14

We went to the Mercy and Sharing Mission and toured the facility.

GPS location N 18° 51.019 W 072° 34.003

Elevation 527 feet

The facility is an orphanage for disabled children. They also have a school and a trade school.

The orphanage is quite extensive and has an infirmary, therapy room, playroom, cafeteria, and church. The school is for the orphans, but children from the local town can attend without having to pay tuition, and many of them do.

We then toured the garden, which included three screen houses. Inside, most of the plants were in pots, but some were in the soil. Water hoses were available for watering the plants. Plants they grow include, but are not limited to, eggplant, tomatoes, beans, beets, peppers, onions, corn, bananas, citrus, papaya, and others.

School is held in the morning, and the trade school is held in the afternoon. Trades taught include:

Agriculture,

Sewing,

Computer accounting, and

Therapy.

At the school one hot meal is provided each day.

Colminy – March 14

GPS location N 19° 10.871 W 072° 42.735

Elevation 60 feet

The church at Colminy is progressing. The walls and roof are complete. Vanessa Darbouze, Lophane's niece, designed the church. Costs were \$3,000 US for the floor and foundation, \$17,000 US for the building and roof. It is estimated that \$3,000 US will be needed to complete the building.

The several-acre garden is doing well. Plantings include, but are not limited to:

- Corn,
- Beans,
- Watermelon,
- Squash,
- Papaya,
- Onions,
- Bananas,
- Citrus, and
- A coffee additive.

A portion of the group hiked down to the river to look at the intake for the irrigation system and to take a GPS reading.

GPS Location N 19° 11.082 W 072° 42.736

Elevation 46 feet

We walked past the house that had been built without permission. In April, 2015, when we were there, a woman came past and told people that she was going to bring a crew in and build houses for them. When she learned that we were involved in teaching people to build their own homes, she was appalled. She maintained that Haitians were not capable of building their own homes.

At some point her crew showed up and proceeded to build a house. They were told "no," but the crew did not listen since it was church property, not their individual property, and it was not costing them anything. Hard feelings developed. The crew then moved down the road and built a number of houses. The village has a sign in front identifying it as the Guernsey Family Village. The sign included that the village was built in memory of someone. We were past before Herb got the name written down.

The Best Laid Plans of Mice and Men

Tues., March 15	Arrive in Gonavies about noon Assemble equipment and supplies
Wed., March 16	Attach Airform to foundation
Thurs., March 17	Apply 1 st coat of stucco
Fri., March 18	Apply Basalt rope Apply 2 nd coat of stucco Herb to teach block production

Sat., March 19	Apply 3 rd coat of stucco Herb to teach block production
Sun., March 20	Church Remove Airform during afternoon Herb to do forensic analysis of Boys' Dorm
Mon., March 21	Start next dome – This would be done with minimal supervision of the team if a determination was made that the Haitian crew was ready to build on their own. Herb to teach block production Lay out and install form board for Girls' Dorm Backfill for Girls' Dorm slab
Tues., March 22	Compact backfill Install vapor barrier Install rebar Prepare to pour concrete
Wed., March 23	Pour concrete for Girls' Dorm
Thurs., March 24	Store equipment
Friday., March 25	Head for Port-au-Prince
Sat., March 26	Fly to US

The schedule envisioned 8 to 10 hours of work each day.

Items highlighted in **Yellow** were not accomplished.

Everything between **Tues., March 15 Arrive in Gonaives about noon**, and **March 22** was delayed one or more days. We accomplished what was accomplished by working 12 to 14 hours each day.

Herb was so exhausted that after one leg of his flight back to San Antonio, a flight attendant had to wake him up after the other passengers had deplaned. She arranged for a wheelchair.

Stored Equipment – March 15-17

Before we could start work in Jubilee or at the Orphanage, we needed to locate and inventory all of our equipment. Most of the equipment had been stored in the back room of the Guest House. It had been moved to the building behind the Guest House and intermixed with other stored items.

We had been informed that the crate that had arrived in September and the concrete mixer from the quarry had been moved to the Guest House, but that was not the case. We found that the two generators were missing. We were told that they were at the church in Jubilee. They were not. They were finally found at Faith Lutheran Church. Several days were wasted hunting for equipment which had been borrowed and had not been returned. The following items were stored but were never found:

- 1/3 roll of Polyethylene plastic (original 1,000 sq ft),
- Two flat-nosed shovels,
- Two 12-gauge extension cords (16-gauge extension cord which did not work replaced one of the missing extension cords),

- One multi-outlet adapter,
- One gas can,
- Form Boards.

Most of the September, 2015, shipment was found. The following items which were in that shipment were never found:

- One pipe die handle,
- Two pounds of Kelcrete powder.

An inventory sheet has been developed. As long as others have keys to the storage areas, and as one person is not responsible for the stored equipment and supplies, we will continue to have problems keeping our equipment and supplies secure.

Teaching Quality Concrete Block Production

Herb was scheduled to teach a three-day class concerning producing quality concrete block.

The concept was that Scott could oversee the already-trained crew for installing the Airform and plastering it while Herb taught the class.

Prior to the class, Herb needed to inspect the block machine to ensure that it was in working order. He was never able to arrange transportation to inspect the machine, so the class was not held.

Inventory – March 23

After returning to the Guest House and unloading, Herb started listing the supplies and equipment which were stored in the room in the building behind the Guest House.

Then he came to the front porch and started on those items. As he identified and counted, Scott wrote. As we inventoried, others carted the items to a room in the back building.

In time, we had everything inventoried. The only major thing left was to unroll the 20-foot Airform, clean it, and roll it for storage. Scott took care of that.

Crate Shipped – Feb. 26

In February, Herb shipped a polar scaffold which he and a machinist friend had fabricated. Also in the crate were 300 pounds of hydrated lime. As is normal, we did not receive notification that the crate was arriving in Haiti on March 23, when we were leaving. The polar scaffold will allow easier access to the top of the dome for plastering it and is designed to work with either a 20-foot dome or a 30-foot dome. Pastor Benoit reports that the crate arrived and has been stored.