

Haiti Report

Building the Candice Dominguez Girls' Dorm

Feb. 15, 2017 through March 3, 2017

Wednesday, Feb. 15, 2017

On Feb., 15, 2017, I flew to Fort Lauderdale, FL, and met Helen Roenfeldt and Scott Conover.

Thursday, Feb 16, 2017

On Feb. 16, we flew to Port-au-Prince, and we were met by Lophane Laurent, Noel, and Benjamin. We stayed at Wall's International Guest House.

Later that day, Wally Bougast, from Canada, arrived. He is president of the mission society associated with the Lutheran Church of Canada. They ship two containers to Haiti each year. Wally was with us for two weeks. His mission was to assess what the Lutheran Church of Haiti was doing, account for funds that had been sent to the LCH, and to determine the needs of the LCH.

We picked up the air compressor from American Airlines Air Freight after several visits with them. Even though the contact person on the documents was Lophane Laurent, the air compressor was being shipped to Helen Roenfeldt with Mission: Haiti. When the air compressor had arrived, customs would not release it to Lophane because he was not Helen and/or he did not have Helen's passport. I remembered the saying, "The impossible takes a little longer."

Friday, Feb. 17, 2017

We went generator shopping and found a diesel generator that was a little bigger than we needed, but the salesman said it was the most dependable generator that they had. We also got a wheelbarrow and a dolly. At another store we got 50 feet of 3/8 inch air line.

We picked up other supplies that we were going to need for our two weeks in Gonaives.

On Friday afternoon Rev. Mark Smith arrived. He is with the Lutheran Church of Canada and has a multiple-site parish in Nova Scotia. He had spent some time in the Dominican Republic and came in by bus. He spent one week in Haiti and taught at the seminary in Gonaives.

Saturday, Feb. 18, 2017

On Saturday we traveled to Gonaives and stayed at the Creole Star Guest House (owned by the Lutheran Church of Haiti).

During the afternoon we visited the orphanage; and while the others visited with the orphans, Scott and I did an assessment of the building site and determined what needed to be done before we started erecting the Airform on

Monday. We left word that when the crew arrived on Monday, they should remove the vegetation that had grown up around the slab to leave a clean path around the slab that was about 2 meters wide.

Sunday, Feb. 19, 2017

We attended church at Faith Lutheran Church. Pastor Benoit told Wally that he would be at the Guest House at 2 pm to discuss what we would be doing for the next two weeks. He arrived at 2:30 pm, and Wally told me that I needed to sit in on the meeting. It concerned everything except items related to building. At 4:30 pm, I went to the back room with Evon, and we started hauling things out of storage which we would need at the orphanage.

Before Pastor Benoit left, we discussed our need for the two red generators, the concrete mixer, and the coils of basalt rebar which had been stored at Faith Lutheran Church. He stated that he would have them delivered to the Orphanage by 8:00 am on Monday. I told him we needed 7 experienced men for the crew.

Our plan for the trip:

Monday – attach the Airform and inflate it.

Tuesday – install the polar scaffold and apply the first coat of concrete.

Wednesday – wrap the Airform with basalt rope and apply the second coat of concrete.

Thursday – apply the third coat of concrete.

Friday – remove the Airform and install a 20-foot Airform at Jubilee and inflate it.

Saturday – install the polar scaffold and apply the first coat of concrete at Jubilee.

Sunday – Church and relax.

Monday – wrap the Airform with basalt rope and apply the second coat of concrete.

Tuesday – apply the third coat of concrete.

Wednesday – remove the Airform and store equipment.

Thursday – return to Port-au-Prince and make a side trip to Kenscoff.

Friday – fly home.

Monday, Feb. 20, 2017

When working in Gonaives, on the first day we normally eat breakfast and leave for the building site at 8:00 am. After that we leave for the building site at 7:00 am, and breakfast is delivered for us and the crew at 9:00 am. This schedule was developed after trying modifications to it. Getting to the building site shortly after 7:00 gives us another hour of working time when the day is still cool.

We arrived at the building site to find that nothing had been done about cleaning vegetation, so we got the crew started cleaning off the slab and clearing the vegetation from around the slab.

Rather than having seven experienced crew members, we had 11 men. One had worked on two homes and was competent. One had worked on two homes and was competent with close supervision. The crew chief was a real nice man, but not a leader. The rest were not experienced.



These were people which Pastor Benoit selected to work for us. They had supported him and the presidential candidate he had supported during the election process. They needed money and were loyal to him. They had no interest in following instructions or in building anything so that it would last. Pastor Benoit often looks at things differently than we do. He is an insulin dependent diabetic. When a parishioner needs insulin and does not have it, he shares from his supply of insulin and often leaves himself without the insulin he needs to survive and function.

After the slab was cleaned off, we spread the Airform out and quickly realized we had picked up the 20-foot Airform rather than the 30-foot Airform. Switching them cost us about a 30-minute delay.



Before starting to attach the Airform, Scott Conover taught each member of the crew how to drill a hole in the concrete to attach the Tapcon anchors. On previous trips we had numerous bits broken because the bit was not drilled in straight and pulled out straight, because the bit was not pulled from the hole several times to clear the accumulated chips and dust, and because water was not added to the hole

to keep the tip of the bit cool. He did an excellent job because we lost very few bits in drilling the holes.

The process of attaching the Airform started. Scott supervised for a while and then backed off. He had hurt his back while moving the generator.

Placement of the Airform is critical. When the slab was poured, a scoring line was placed in the fresh concrete to place hooks to secure basalt reinforcing

rope, then a second scoring line was placed to mark the outside edge of the Airform. A third scoring line was placed to mark the inside of the Airform. The inner line is critical. If the Airform is placed towards the center of the slab from the inner line, there is Airform left over which cannot be attached. If the Airform is placed outside the inner line, there is not enough Airform to form a circle and we end up with a flat side on the dome. Since the scoring line was not clear in all areas, I had a man mark the inner line with a pencil so it would be clear when attaching the Airform.

When the first few meters of the Airform are attached, the Airform is laid over on the ground next to the slab. As the process continues, the Airform is pulled over the slab and the men have to work under it. It is hot under the Airform, and the blower is attached to keep air moving through.

After some instructions, I assigned several men to assemble the ladder section of the polar scaffold while I installed the tripod. See a separate report concerning the polar scaffold.

The new generator quit and would not start, so we sent a search party to find the two red generators which were not delivered at 8:00 am that morning. They found them at Faith Lutheran Church and brought them to the orphanage. One was missing the air filter, and dirt and gunk was caked in the air passageway. The oil was filthy, so it was changed. The other one had the air filter still attached, and the oil was filthy, but not as filthy as the other generator. The oil was changed, and we fired that generator up. It ran, and the crew got back to work installing the Airform. The other red generator started, and it tended to give off black exhaust.

Since the new generator just quit working and would not restart. Helen and Lophane went into Gonaives to see if they could rent or if not rent, buy a replacement generator. They found one and bought it. Then a decision was made for Helen and Lophane to take the new generator to Port-au-Prince on Tuesday to where we had bought it and try to get it replaced, or repaired, or to get our money back.

By the time I got the tripod installed, they were having problems with assembling the sections of the ladders. Rather than line the sections up, they tried to beat them into place. By the time I intervened, one ladder rung was seriously bent, and one of the connecting pieces was bent out of shape and had to be straightened. Scott Peters, who is an American who lives in Gonaives, arrived and offered to supervise the assembly of the ladder sections. After they straightened the bent parts, when the parts were aligned, they slipped into place.

About 5:00 pm it became evident that there was not going to be enough Airform to form the planned circle. Checking on the placement of the Airform and the clamp angles which held it down, it became evident that the score line and the pencil marks had not been followed after Scott Conover had stepped back. Rather, the Airform had been pushed back against the hooks. As a result, the electrical, sewer, and water stub-outs were going to be outside the Airform. These stub-outs are installed in the event that utility services are available at

some point in the future. A secondary reason for them is to hook a manometer up to measure air pressure inside the Airform and a bypass valve to bleed off any excess air pressure.

We could either pull the Tapcon anchors out, adjust the placement of the clamp angles and the Airform, and then reattach the Airform, or we could have a flat side on the dorm. We elected to have a flat side on the dorm. Since I needed to figure out how to attach the manometer and the bypass valve, we did not complete the attachment of the Airform. Both of those are necessary before we can seal the Airform and bring it up to pressure without rupturing something.

We shut down about 6:00 pm.

NOTE: We need a fail-safe way to get the crew to position the Airform. One method that would probably help would be to place a ring of one inch PVC pipe just inside the hooks. This would keep the Airform from being pushed against the hooks and would allow just over 1.25 inches of space between the Airform and the hooks. We also need a method to prevent the hooks from getting buried in the concrete. One method would be to slip pieces of PVC pipe over each hook before the first coat is installed. If the hooks were protected before the Airform is attached, that would give another 0.125 inches of space between the hooks and the Airform.

Tuesday, Feb. 21, 2017

NOTE: My computer died. After returning to Texas, Spears Computers, San Antonio, TX, determined that the mother board was fried. They were able to save all data that was on the hard drive. Since I had planned on keeping all my notes on my computer and since I did not have enough paper for all of my notes, keeping notes became an interesting endeavor.

We finished attaching the Airform and got the center tripod in place. While doing this, Scott Conover and Benjamin got parts to attach the bypass valve to the line from the blower to the Airform. We attached the bypass valve and the manometer. Shortly, the air pressure was up to 5.5 inches of water.



A man applied Monoform Primer to the lower eight feet of the Airform with a paint roller.

One load of river sand was delivered. It was good quality but had some gravel particles in it which needed to be screened out.

We then erected the polar scaffold. It involved me climbing up onto the Airform. So I would not damage the Airform, I took my boots off. I should have taken my socks off as well. Using an eight-foot ladder leaning against the dome, I got up as far as I could, but could not get the traction I needed to continue. One man came up the ladder and gave me a boost until I got to the point where I could get traction to continue my climb. He was on the top step or next to the top step of the ladder when I got traction.



I explained to Edgar, the crew chief, that we wanted to place vents around the perimeter of the Airform, about one meter apart and about 80 centimeters above the slab. Each was to be about 3 inches long, and one end would be cut at 90 degrees and the other at 45 degrees. We had a roll of screen wire and some tie wire so screen wire caps could be placed on each vent so mosquitoes could not enter the dome. He assigned someone to work on it.

The concrete mixer was finally delivered in Pastor Benoit's truck. It was in the bed of the truck because one tire had been destroyed by towing it when the tire was flat. Oil was filthy and was changed. Apparently the mixer had been used after we serviced it when we stored it the last time.

While the mixer was being serviced, I explained to the man who would be running the mixer and his helper the formula we would be using and why it needed to be mixed in a certain order. Gabriel, who had operated the mixer during the pour of the Girls' Dormitory Slab pour and had done an excellent job, was not on the team.

Gasoline was added to the tank, but the motor would not start. Based on the odor, gasoline had been left in the tank and had turned to varnish. The carburetor was plugged. Rather than causing a delay while trying to clean the carburetor, we rented a mixer so we could get started.



When the mixer arrived, I explained to the owner (he operated the mixer) how we needed the concrete mixed and assigned the man I had just trained to help him.

When mixing started, it became apparent that the mixer had a loose belt. With the help of the translator, Smith, I could not get the owner of the mixer to tighten the belt. When the mixer tub was placed in a position for the most effective mixing, the belt slipped, and the mixer tub came to a halt. This slowed down the mixing and resulted in the fiber bundles not being completely broken up and disbursed.

Before we started spraying, I explained how the Mortar Sprayer worked and how it would produce a concrete coating that was better consolidated than a coating applied with a trowel. Further, I explained that we needed to apply the first coat approximately 1.25 cm thick. As a result, we needed the concrete mixed as thick as possible and still spray it. Everyone stated that they understood.



As soon as one of the men took over the Mortar Sprayer, several others got out their trowels and started spreading the sprayed stucco out so that it was less than 1/4 inch thick.

Others started smearing stucco on the Airform with their trowels. Since the concrete was stiffer than they preferred, they added water and told the man on the mixer to add water to get the consistency right. For the rest of the construction project, I fought to keep the water level as low as possible. I would stop the crew and explain again, using an interpreter so there was no chance of misunderstanding.



They would listen and go back to doing it the way they had been doing it. Within 15 minutes, there were signs of sagging. Within 30 minutes, cracks were showing up.

While most of the concrete they applied was 1/4 inch thick or less, at the bottom they insisted on burying the hooks. Repeatedly I explained that we needed to leave the hooks exposed and what they were for. The crew nodded and

proceeded to bury them again. The crew was completely out of control. When I explained to the Pastor-Benoit-appointed crew leader, Edgar, he would clean the concrete away from one or two hooks and then wander off.

Even though I gave instructions at about 4:30 that the mixing should stop at 5:30 pm, mixing continued until 6:00 pm. After all of the concrete was applied, Edgar and I spent until about 6:45 digging out the hooks. By the time we finished, all the rest of the crew had departed.

Helen and Lophane planned to take the new generator to Port-au-Prince on Wednesday to get it replaced or get it fixed.

Wednesday, Feb. 27, 2017

When we arrived, the crew was sitting and waiting, and the orphans were applying water to the concrete on the dome so it could hydrate.

Helen, Noel, and Lophane departed with the new generator to Port-au-Prince.

The concrete which had been applied with a trowel was in very poor condition. In some areas it had fallen off. Most of the rest of it was cracked.



I took the crew around and showed them the cracks, the sagging, and the places their stucco had fallen off the Airform. Then I showed them the areas that had been sprayed but not troweled. There was only one minor crack in that area. I explained that we wanted to build a structure that would hold up and last for decades, and if they wanted to build a structure that would not hold up when the Airform was removed, we might as well stop right now. I pulled a piece of concrete free, and a piece 4 feet long came off.

Edgar grabbed a piece, and it came off. I ranted that since the crew would not follow my instructions, I was going to tell Lophane that they should be paid \$2.00 per day. One said he would quit if their pay was cut. I said that he was welcome to do that, but that with the work they had done the previous day, they were not worth \$2.00 per day. All of this was done in a calm manner, because I did not want to raise my voice and offend them.

Note: When a white man raises his voice to a Haitian, it reminds the Haitian of the master/slave relationship that used to exist in Haiti, and many Haitians find it offensive.

Finally I got through to them. Then I told them to leave everything on that was worth saving and to pull the rest off. Besides a small amount of trowel work, the portion applied with the Mortar Sprayer and not touched by the trowel was all that was saved from the previous day's work.

When we started mixing and spraying, Benjamin and two crew members took the carburetor of our mixer apart and were able clean it and to fix it. We wanted to start using it. The owner of the rented mixer wanted to continue mixing since he rented by the day. I told him that he could discuss that with Lophane, but meanwhile we would help him move his mixer aside, and we would use ours. We did.

We mixed stucco, often with too much water in it, and spray-applied it.

In moving the polar scaffold, the two ladders had to be moved in conjunction with each other. This seldom happened, and they ended up being twisted. We had to take the ladders down and straighten them. To keep the same problem from happening again, we used self-tapping screws to affix the chain-link fence post to the EMT joints.



Note: The blower must run 24 hours per day until the concrete has cured enough for the dome to be self-supporting. Lophane selected three of the better workers to be night watchmen and keep the generator running. One could sleep, and the other two would remain awake. Every four hours they would change generators. When leaving for the evening, Benjamin would take any empty fuel containers and fill them on the way to the Guest House. Most of the gas stations closed at 8:00 pm. Then after supper and nominally at 8:00 pm, sometimes closer to 9:00 pm, Lophane and Noel would head back to the job site to check on everything and to deliver the fuel needed for the night.

Note: We lost electricity to the blower on 4 occasions. This resulted in the Airform deflating partially and cracking any concrete which had not cured sufficiently to endure that stress. As a result, we were running substantially behind schedule, and we ended up using over 50% more concrete than we should have.

Thursday, Feb. 23, 2017

AT&T reported my international calling Passport Plan was about to be canceled. After several days I got in touch with the agent, but we were not able to communicate because he insisted that it was normal that my 30-day plan should be canceled after 4 days because I was at the end of my billing cycle.

When we arrived, the crew was sitting around, and the orphans were applying water to the concrete.

Scott Peters delivered and installed the window and door bucks. He added wood braces to hold them in place, and then we more firmly attached them with horizontal bands of basalt rope.

It appeared that the crew wanted to stucco and bury the hooks again. I wanted them to continue up the side of the Airform with the first coat of stucco, but they kept dropping down and trying to apply a second coat of stucco before all of the basalt reinforcement was in place. We constantly had to dig the stainless steel hooks out. Finally we attached basalt rope to bring them up to a height where we could attach the basalt rope which would go over the dome and at an angle over the dome.

During the late morning, Helen, Noel, and Lophane returned with the new generator which had been repaired.

NOTE: We purchased what we were led to assume was a top-of-the-line diesel generator. Apparently we made several mistakes. The oil level was slightly over-full. We used it to produce 110 volt electricity even though it had a 110 volt plug. We ran it when the temperature was 90 degrees F or higher. Apparently if one wants to use 110 volt electricity, one needs a converter to drop the current. It must be run sitting in the shade in cool temperatures. It is not designed to operate continuously.

After Lophane returned, we lifted the repaired ladder and attached it to the center support.

During the process of plastering the Airform, we had 4 generator failures. Three of them involved damage to the plaster when the Airform collapsed under the weight of the stucco. The other one was before we had plaster on the Airform. Lophane set up a system so a generator would be run for four hours and then a second generator would be started. With both running and the outlet for the electricity being within a few inches, the plug for the blower would be removed from one generator and immediately plugged into the other generator.

Lophane and Noel went to check the night crew and the generators. During what I assumed was the middle of the night, Helen came in and woke me up. She said that while they were there, someone broke into Lophane's pickup and stole his gun and \$300. One of the orphan girls recognized the man. He had been in the orphanage but was removed about three years ago because he was always stealing things. Police Inspector Noel went to work.

Helen borrowed \$500 to cover expenses on the excessive amounts of cement we had to buy, the rental on the mixer, and the purchase of our fourth generator.

Friday, Feb. 24, 2017

We learned that the thief had been apprehended, and Lophane got his gun back, along with \$100 of the stolen money.

With the generator failures, we were still working on the first coat of concrete rather than the final coat of concrete. We recognized that we would not have time to build a home in Jubilee.

About mid- to late-morning, building inspectors from the Mayor's office arrived. There was considerable yelling between the leader and Noel. Both showed their badges. Lophane got Scott Conover, Helen, and me into one of the vehicles with dark windows and explained that Pastor Benoit had not obtained a building permit. Since we were building without a permit, the inspectors could confiscate all of our equipment and hold it until we had obtained a building permit and paid any fines.

Lophane offered a compromise. Since the mayor loved what we had done in Jubilee and he liked the concept of disaster-resistant construction, could we continue working until Pastor Benoit got the building permit? With the exchange of some lunch money, an agreement was reached. Pastor Benoit was contacted and agreed to get the permit that afternoon.

As the building inspectors were leaving, I gave Lophane a copy of **Kay pou Jubilee** to give to the lead inspector. He sent back warm thanks.

By mid-afternoon we heard from Wally that Pastor Benoit had preached that morning and was taking a nap rather than getting a building permit. He said he could get it on Saturday.

Scott Conover had not recovered from his back injury, so Helen decided he needed to head back to Florida. Rev. Smith finished his teaching about noon and needed to head to Port-au-Prince to catch a bus to the Dominican Republic. Helen needed go to Jacmel with a pastor who was coming in and then to head back to Florida. So Lophane arranged for Valentine (with the National Police) to come up and stay with us as security until he got back. Then he loaded Rev. Smith, Scott Conover, Helen, and Noel up and took them to Port-au-Prince.

By quitting time, we had the first coat of stucco on and the dome half-wrapped. The wrapping process was difficult for me since the crew could not understand the wrapping process. When wrapping over the top, it was necessary to come down, hook on one of the hooks, move to the next hook and then go back over the top. Part of the crew would go back over the top without moving to the next hook. On the other side there was a tendency to skip hooks. This resulted in numerous areas that had too much basalt rope and other areas that did not have enough. I ended up having to walk around the dome with each piece of rope that was carried over the top.



After supper, of which I ate very little, I accompanied Benjamin on his evening check on the night crew and then went to bed.

Saturday, Feb. 25, 2017

We continued wrapping the dome with basalt rope. After the horizontal wraps were made and the over-the-top wraps were made and the angle wraps were made, there were areas of up to 2 feet by 3 feet that did not have any rope. Each square foot of dome needs to be surrounded by basalt rope and have at least one piece of rope going through at an angle bisecting the area. Since we needed only 4 bobbins of rope to wrap a 30-foot dome, we had brought only 4 bobbins to the site. I sent Benjamin and Smith, the translator, to the Guest House to pick up two more bobbins.

I then walked around and around the dome to ensure that the added basalt rope was placed so that the entire dome was adequately covered with basalt rope. While this was going on, the crew was spraying areas which were adequately reinforced. Shortly after lunch the mixer motor made a clanking noise and died.

Since the rented mixer was still there, we used it again. Lophane called Edgar and told him to get in touch with Pastor Lutz (who is in charge of several of Pastor Benoit/Faith Lutheran Church's operations, including the Quarry) and have Pastor Lutz get the mixer motor fixed. Shortly I heard that Pastor Lutz was on the way, but he never arrived.

After lunch we heard that Pastor Benoit had other things to do, so did not go to get the building permit.

Periodically we needed to move the ladders of the polar scaffold. Since they were connected at the top with one top knot, they had to move together. I called the crew together and explained how we needed to move the ladders together and that it would be better to move them 30 centimeters at a time. The crew stated they understood, and when the word was given, the crew on one side of the dome picked up the ladder and walked about 2 meters. The crew on the other side picked up the ladder and walked about a meter. This caused the ladders to twist. When trying to explain how we needed to keep the two ladders in alignment, each group repeated their movement and a severe twist was put in the ladder.

I determined that we needed to take the ladders down and straighten them out, but it was not going to happen that day.

By 6:00 pm we had 10% of the second coat applied.

I put Benjamin in charge of the evening inspections and checking on the night crew on Sunday morning. Then I told him I was going to bed and might sleep until Monday morning. He said he would take care of everything.

When we got to the Guest House, I showered, skipped supper, and went to bed.

Sunday, Feb. 26, 2017

Helen was back in Florida. Someone reported to her that I was not eating and was sleeping whenever I was not on the job site. She said if I was not recovered by Monday, she was sending me home.

Valentine was sick. Helen arranged for Benjamin to get medicine for him.

Wally went to church at Jubilee. He reported that the attendance was down and that the church was only about one-third full.

All I accomplished on Sunday was I ate a little lunch and ate a little supper.

Monday, Feb. 27, 2017

Valentine got up and was looking much better. He said that he was over his problem.

We still did not have a building permit, and we did not know if the building inspectors would be back or not.

The crew stated that applying the plaster with the Mortar Sprayer was too slow. They wanted to trowel-apply the second coat of concrete. I insisted that the Mortar Sprayer be kept in operation, but allowed those not operating the Mortar Sprayer or feeding it, to throw stucco on with trowels if they used considerable force and did very little troweling. I requested that the second coat be not less than 5/8-inch thick and preferably 3/4-inch thick.



While plaster was being mixed and applied, I started the process of taking the ladder down so it could be repaired. As we reassembled the ladder, we placed one self-tapping screw in each end of each EMT elbow that was used, so the elbow could not twist in the chain link fence post into which it was set.

Achitèk Vanessa Darbouze, Noel, and Lophane arrived about 10:00 am.

With the ladder ready to go back up, Smith and a helper were inside to ensure the center support stayed in place, and I was on top directing the placement of the top knot over the center support. Lophane directed the raising of the ladder. Shortly, it was placed and secured.

Later, when we needed to move the ladder, with Lophane directing, the teams on each side could not coordinate and by one moving one end of the ladder over two meters and the other team moving the other end of the ladder about half a meter, it nearly caused the ladder to come off the center support. The segments

did not twist as they had before. Lophane had a few things to say, and then the positioning of the ends of the ladder were adjusted.

We completed the second coat.

There was a depression near the top of the dome. It was about 6 feet wide and about 10 feet long. Most of the depression about 2 inches deep, but there were areas where it was up to about 6 inches deep. No one admitted stepping on the dome, but it looked like someone had stepped on the dome when the pressure was low and cracked the concrete; and when the Airform was reinflated, the weight of the concrete kept it from reaching full size.

I ended up getting up about 3:30 am and working out a fix for the depression. In developing the fix, I had to assume that there was no structural integrity in the area.

Tuesday, Feb. 28, 2017

With two helpers on top and two helpers below, I started working on the patch. First, I had a piece of basalt rebar cut and joined so it would encircle the depressed area. Then more pieces were cut to size so each of their diameters would be about 6 inches less than the previous. Then pieces were cut to cross hatch the circular pieces. All were joined with small zip ties. Then pieces of basalt rope were cut that were 3 meters long and tied to the structural patch, and the free end of the rope was extended down the dome. Those plastering the dome used the third coat of stucco to plaster the basalt rope to the second coat.

Since the base for the wind turbine was depressed into the concrete, I temporarily detached the ladder from the center support and added the leveling section of the turbine, and then reattached the ladder.

As the third coat was applied, I checked to see that they were applying the concrete $\frac{3}{4}$ inch thick. Usually they were. As the crew worked their way up to the patch area, they covered the basalt rebar with $\frac{3}{4}$ inch of concrete.

By 6 pm the third coat was in place. The finish was the type of finish I wanted, a relatively smooth surface, not a slick surface. I left instructions that the blower could be turned off at 7:00 am.

Wednesday, March 1, 2017

When we arrived, the blower was off as instructed, and the Airform was deflated. It had not stuck to the inner surface of the dome as is usually the case, so we had to reinflate the Airform to get inside and remove the Tapcon anchors and the clamp angles.



To get into the Airform, one must crawl through an 8-foot tube and lose one's

dignity. The crew referred to the tube as the birth canal.

Removing the Tapcon anchors presented some problems. When they were installed, the drill could deflect the Airform out of the way. When it was time to remove the Tapcon anchors, the concrete of the dome would not move to allow the nut driver attached to the reversible drill to fully fit over the nut head. As a result, the nut drivers were worn out and heads of the Tapcon anchors were rounded.

Note: We need to add a swivel above the socket so we can eliminate this problem.

We got appropriate-sized sockets and attached ratchets to them. This removed more, but a portion of the Tapcon anchor heads had to be cut off with a chisel. Rather than use 1.25 or 1.75 inch Tapcon anchors, since much concrete in Haiti is not as strong as it should be and not consolidated as it should be, we had used 2.25 inch Tapcon anchors.

We invited the young ladies who would be living in the Girls' Dorm to come inside as we were working. They loved it, especially holding bottle caps in front of the air inlet and letting the air blow the bottle caps across the slab. Before we deflated the Airform, we sent the girls out.



With the blower still running, we staged everything that was to leave the Airform near the door away from the blower. We lifted the edge of the Airform and everyone exited as the Airform gently came down.

After lunch, plaster was mixed in a wheelbarrow and applied to rough areas on the outside of the dome and to the inside of the dome.

Some of the PVC air vents had been added, none had the screen wire attached. After the concrete was removed from them, screen wire was added to them.

The ladder for the polar scaffold was laid down and separated. The crew was able to easily separate the sections without a problem.

I taught two of the crew to mix whitewash and to apply



it. Before we left, the bottom 8 feet of the outside of the Airform had the initial coating of whitewash. The plaster on the inside was too fresh for the application of the whitewash.

Photos were taken inside and outside the dome with the orphans, with the crew, and with both orphans and crew.

At about 7:00 pm our work on the Candice Dominguez Girls' Dorm was complete. Scott Peters will install windows and doors. The two crew members will whitewash the inside and outside of the dome. This will take approximately 12 coats over 3 or 4 days.

Both vehicles were loaded to near capacity with equipment and supplies.

We had planned on leaving Gonaives for Port-au-Prince about 8:00 am so we could avoid the closing of Route 1 by protesters in the San Marc area. During supper, Lophane announced that we would need to leave at 6:00 am instead. After supper we all packed.

Pastor Benoit had been putting off meeting with Wally, and this was the last evening they could meet. Pastor Benoit arrived, and he, Wally, and Weisner (sp) went into our room to have privacy while talking. Since it was past my bedtime, I found a bed in another room and laid down. I was sound asleep when Lophane woke me and told me that I could go to bed.

Pastor Benoit has a heart of gold. He is an insulin-dependant diabetic. When a member of his congregation needs insulin, he shares his personal supply and ends up not having enough for himself. His kind heart leads to most of the problems that we have with him. I recognize that Pastor Benoit wants to help everyone who needs help, but in taking these short-term diversions (example - temporary jobs for unqualified people who need money), it has basically destroyed the long-term goal of constructing a number of homes in Jubilee.

Thursday, March 2, 2017

We departed the Guest House at 6:10 am. Lophane, Vanessa, Noel, and I shared one vehicle and discussed the training to be held in early April (as of March 29, we are still working on a date for this training). We decided it would be for 3 days and that it would cover 4 subject areas:

Why concrete fails,

Producing good concrete from less-than-ideal materials,

Confined masonry built to be disaster-resistant, and



Building disaster-resistant EcoShell domes.

A few miles south of San Marc, the second vehicle, driven by Benjamin, pulled off the road. There had been clatter under the hood and banging around, with the temperature of the engine rising. An investigation showed that several blades of the fan blade had come off and were flying around in the engine compartment.

Since it was a leased vehicle, Lophane called the owner and arranged for a second pickup to take our material to Port-au-Prince. The owner came up to tow the disabled pickup back to Port-au-Prince. After arrangements were made, Lophane took Wally, Vanessa, and me to Port-au-Prince and then unloaded the equipment and supplies into secure storage at his Guest House.

Lophane arrived with our bags after supper that night and had quite a story to tell. When the replacement vehicle arrived at the disabled vehicle, our equipment and supplies were transferred to a replacement pickup.

The owner did not have an appropriate towing hitch - not common in Haiti - so Benjamin steered the disabled vehicle with the ignition on to unlock the steering wheel, but no power steering and not much in the line of brakes.

The pair of vehicles was making excellent time when an animal, with suicidal tendencies, stepped in front of the lead vehicle. The driver hit his brakes to save the animal. Benjamin could not stop, so he swerved. The lead driver realized he was about to be hit from behind and stomped on the accelerator.

The towed vehicle, with Benjamin inside, became a mowing machine and mowed down a concrete utility pole. In the process, the right front wheel and supporting structure became debris beside the road. The vehicle did not have functioning seat belts.

Benjamin was kept in his vehicle via his strong grip on the steering wheel. (The next day Lophane took Benjamin to the doctor with a determination that the injuries were bruises and that no bones were broken.)

Meanwhile, the replacement vehicle with the rest of the crew and the equipment and supplies headed to Port-au-Prince until the road was blocked by protestors.

Ronny called Lophane, and the protestors thought he was taking photos. The message was delivered, not politely, "NO PHOTOS." Lophane directed Ronny to use the speaker so the protestors could hear the phone to convince them it was being used as a phone rather than as a camera.

They were told to not try to move the vehicle or the windows would be smashed. They were told not to take photos or the windows would be smashed.

In time a team associated with the protest arrived and helped clear a path so the vehicle could proceed to Port-au-Prince.

Due to the excitement, we did not make it to Kescoff this trip to buy them out of the book, **God Is No Stranger**.

Friday, March 3, 2017

Lophane got Wally and me to the airport. I got my bag checked, and made it through security without a problem. Flight to Ft. Lauderdale was on time, and I made it home on schedule without incident.

Summary

Girls' Dorm is up and being whitewashed.

We did not get a house built in Jubilee.

Lesson learned

Do not go to Haiti during Karnaval if you want an uneventful trip.