

Haiti Report

Teaching at the American University of the Caribbean

Feb. 10, 2017

This report covers my two weeks in Les Cayes, Haiti, teaching disaster-resistant construction to the engineering students at the American University of the Caribbean. Les Cayes is about halfway out on the southern side of the southern peninsular of Haiti. It is right on the Caribbean Sea. During both the earthquake of 2010 and Hurricane Matthew of 2016, it suffered a lot of damage. The classes ran for 4 hours each day.

On **Saturday, January 7**, I departed from Texas, met elen Roenfeldt, Executive Director of Mission: Haiti, in Fort Lauderdale, and met Lophane Laurent, Mission: Haiti's director in Haiti, Noel Duffault, a national police inspector who heads up Mission: Haiti's security team, and Ronny Laurent, who would serve as my assistant this week at the Port-au-Prince Airport at about 8:00 am on Sunday. . We all, including Ronny, referred to him as my babysitter since I am in my second childhood.

On **Sunday, January 8**, we then headed to Les Cayes. Since it was Sunday morning, the traffic was light, and we made good time. During a weekday it often takes 3 hours just to get from Port-au-Prince to Leogane. It took us about 30 minutes to get from Port-au-Prince to Leogane. We arrived in Les Cayes shortly after 1:00 pm.

The Reverend Doctor Paul Touloute, Provost of the University, met us as we came onto the university grounds. Hereinafter he will be referred to as Paul.

Since there was a demonstration scheduled between Les Cayes and Port-au-Prince during the late afternoon which might shut the highway down for a day or two, and since Helen had to be back in Port-au-Prince on Monday to prepare for a team that was coming in, Lophane, Noel, and Helen left as soon as they had dropped Ronny and me off.



My classroom was on the third floor at the left rear of the building as shown in the photo. Ronny and I shared a room on the third floor. That room is near the extreme right of the photo. The kitchen and dining room where we ate was a few steps from our room. The steps leading up to the third floor were even, well-constructed, and had a solid banister, so I had no problems being assigned to the third floor.

We got moved in, and ate lunch which the Provost's wife prepared for us. Afterwards I took a nap and then prepared for Monday's class. The classes were to run from 9:00 am to 1:00 pm. I could call a break whenever I thought one was appropriate. On January 12 (Thursday) we would have a special event commemorating the 7th anniversary of the 2010 Haitian earthquake. Besides our regular students, many others were invited. Three professors and I were to speak.

Supper was again prepared by the Provost's wife. After more preparation I went to bed. During the week, I found Ronny's assistance helpful in a way that I had not expected. He could navigate the maze between our room and our classroom better than I could.

With Monday's class (January 9), we had 45 students. I tried my best, but I could not get them to respond and ask questions. None of them went to sleep and fell out of their chairs.



Here is a photo of me with a few of my students at the sign as one enters the campus.

Tuesday, January 10, the Provost joined us and would ask the class questions and suddenly we had a discussion going. Most of Monday and Tuesday were spent going over types of failures which we see in concrete and in construction.

I had wanted to take the students on a walking tour so we could point out problems and then discuss their causes and how to prevent similar problems in future construction. Noel reported that there were some serious demonstrations to the northwest of Les Cayes. Those demonstrations were the result of DEA agents removing a senator-elect from Haiti to stand trial in the US on drug smuggling charges. The Haitians did not like the US interfering in their election process. Most of the violence was directed against Americans.

Noel reported that on Tuesday evening there was a rock-throwing incident at an orphanage in Les Cayes involving Americans. (See why we have Noel on our team?) Helen did not want me to leave the university campus.



On Tuesday afternoon late, Ronny and I walked the campus and found lots of problems, so on **Wednesday** morning we started our tour on the third floor and worked our way down.

When it was necessary to get down on the floor to show a defect, I did so. When it was time to get up, I had lots of help. In this case, on a column supporting each floor and the roof, steel rebar had rusted. In the process it increased in size (I can talk for 3 days on this subject, but it bores people after about 5 minutes) and cracked the concrete. Since the building is about 34 years old, some of these kinds of problems are expected.

Another problem we found was that the roof slab over the 3rd floor had moved in relation to the beams and columns that were supporting it. My cane came in very handy as a pointer.



As we discussed the problems, the students, and you must remember these were engineering students who had been on this campus for several years commented that they had never seen these problems before. Once they saw a type of problem, their eyes were opened and they would go ahead of me to find more problems of the same type. Apparently the movement of the roof slab in relation to the support structure was the result of landing helicopters on the roof. I was informed that the practice was discontinued in 2004.

Another problem we saw repeatedly was around stairways. Angle iron was used to give sharp corners to some of the beams. Over the years, moisture got to the angle iron, and it rusted, expanded, and loosened the thin layer of concrete (plaster) covering the angle iron. My cane came in very handy for tapping the concrete so the students could hear the hollow sound.



I had allocated two hours for the tour. When we got through touring the campus, two and a half hours had elapsed so there was no need to step off campus to find problems. Actually the campus tour was more effective than a street tour because the students knew there were problems with construction in town, but they thought that the campus was well built. Now they are looking for problems wherever they go.

The last part of the tour took us to the cafeteria. As we wandered around outside looking up, the students inside eating in the cafeteria were looking at us, wondering what that crazy teacher was trying to show the students. Between my students and those inside, there was some conversation. The most important thing we found at the cafeteria was a snake, about 7 inches long near the front corner of the building. We did not photograph him, and we let him crawl off. This was the first snake that I have seen in Haiti.

Back in the classroom I opened my suitcase of teaching aids. David South had furnished me a square of the Airform materials which we use when we are building domes. He had cut a slit in the piece and told about how a man trying to tear a similar piece had dislocated his shoulder. Looking at it, several of the students knew that plastic could not be difficult to tear, so several of them tried. None of them were able to tear it, and no one dislocated a shoulder.



Also in that suitcase was 12 meters of basalt rebar. Normally it comes in a roll about 5 feet in diameter. My daughter, Dana, and I had coiled it so it would fit in a regular-sized checked suitcase. In unwrapping it, the students could see how spring-loaded it was and how it wanted to straighten out. They understood very quickly that one could not bend hooks



in the end for hooking it onto other pieces. We cut off pieces 3 or 4 centimeters long, and then opened them up to look at the fibers which made up the rebar. At the end of class I was getting ready to coil it back up (not as tight) when a student asked if he could have a piece. Yes. Then another asked. Yes. I ended up having to put away only 0.5 meters of the rebar.

This was a day with a tremendous amount of student interest.

Thursday, January 12, was the special event. I was to be the first speaker, and it was to start about 9:00 am. In the drive from the front gate to the main building posters were displayed showing different details for building. Behind the building, demonstrations had been set up so the students could explain why certain techniques were better than others.

The morning events were to take place in the large lecture hall on the third floor. It would hold about 200 people, but we estimated that by the time I started with my presentation, we had 250 people crammed into it.

At 9:00 am we were still waiting for the projector. After we got it and we set it up to show on a side wall, more people came in. Since they would not be able to see the slides projected on the side wall, a screen was mounted on the front wall.



It was after 10:00 am before I started with my presentation. Basically my presentation was my two-week course condensed into less than an hour and ending with “we are all in this together and we need to work together to improve the construction in Haiti.” I challenged them to go out and spread the word that there was a better way of building so hurricanes and earthquakes did not end as disasters.



Each of the other presenters talked about a different aspect of construction, but all came back to the same message. We are in this together and we need to spread the word that there is a better way.

The afternoon was spent with the demonstrations. I took a clear plastic one-liter measuring cup and put sand and water in it. After stirring it, the sand settled. The silt settled. The clay slowly settled, and the organic matter floated. The agronomy students understood the test because they used it in their work. The engineering students were not familiar with the test. I was



asked why I was concerned about the amount of clay in sand. That gave me the opening I wanted, so I explained. As more people came up, one of the people who had just learned would explain to the newcomers. By 3:30, I was exhausted and

went to my room for a nap. The event got along just fine for the last half hour without me.

Friday, January 13, was a little disappointing. Apparently many of my students thought the course was over with the end of the Thursday event, so I had a small class on Friday, but it was a class which had lots of questions.

Our agenda for the day included:

- Block making

- Safety

- Pesky details concerning concrete

 - Water-cement ratio

 - Air-cement ratio

 - Clay-cement ratio

 - Monitoring clay (referred to previous afternoon)

 - Chlorides

 - Reactive aggregate

 - Steel rebar, how to protect it, and basalt rebar

 - Anticipated life of a building

- Locations to avoid when building

- Subsoils and how they impact the size of the foundation

We were able to cover all of the agenda and that brought us up to being current with the class schedule.

Saturday, January 14, 2017 was a free day. The big event that was the lockset on our room failed, and we had to call maintenance to break into our room and replace the lockset. He did it so fast I wondered why we bothered to lock our doors.

Other than that, I prepared for the next week, met with Paul, and did paperwork.

On **Sunday, January 15, 2017** Ronny and I attended two church services with Paul and his family. The first one was in Charlotte, Haiti, and the second was in Les Cayes, Haiti.

In Charlotte, which is about 10 km out of Les Cayes, they have been building a church for 9 years. A concrete roof has been installed over part of it. When the sun started shining in on us, two men hung a plastic tarp to shade us.

When we arrived, about 7:15 am, there were 8 people present, and the service had started. Over the next 30 minutes, the participants grew to about 50 people. Everyone was enthusiastic in their worship. Paul introduced me and talked about how I had come from Texas to teach disaster-resistant construction at the Engineering School and listed a number of accomplishments (I had

furnished my resume to him before I came to Haiti and apparently he had memorized it). He talked about how important I was. He asked me to say a few words, so I talked about how to improve Haiti we had to work together and that no one was more important than anyone else. I pointed out how the choir, 7 members, helped each of us worship. How the enthusiastic worship of the young lady sitting in front of me helped me in my worship. When I spoke about her, I laid my hand on her shoulder.

After the service she and other young ladies gathered, and a photo was taken of us. She is the lady who is standing on my left in the photo.

Paul delivered the message. We probably had 10 hymns. A few had hymnals, but most of the members had the hymns memorized and did not need the hymnals.

After everyone had greeted me after the service, Paul asked me to do an analysis of the structure of the building. I found that it was being built very well.

We then left and drove back to Les Cayes and attended a second service,

This was a larger church. The service had started by the time we arrived. About half of the metal roof had been destroyed by Hurricane Matthew.

Again there was a lot of singing. There was a group visiting from a church in Buffalo, New York. They come every year in January, and a team had been there when the earthquake struck in 2010.

Paul called me to the front and introduced me. He went on for a long time about how great I was and how much I had done and was continuing to do for Haiti. Finally I got to respond. I said, "I wish my wife could have been here to hear how great I am. She makes me carry out the garbage." There was laughter, and a number of men turned to their wives and said something. Apparently I connected with all of the married people. I then said that even though my name was Herb, many people called me Granpapá. I got smiles from a lot of the children and connected with them. I then talked about how we were all important and we all had to help each other.

The pastor from Buffalo delivered the sermon, and Paul translated.

After the service was over, the boys crowded around me to fist bump.

The men, with big grins on their faces, told me how their wives had them do things that were "beneath" them. The wives hugged me and told me that by keeping a man in his place, he becomes a better man.



In between the girls gave me hugs. Some grabbed me around the waist, others made a flying leap into my arms as seen in the photo, and still others asked me to pick them up. It was a good thing that I was backed up against the end of a pew, or I would have ended up on the floor. The young lady pictured came through the hug line several times.

The greetings seemed to take almost as long as the service. Everyone called me Granpapá

Paul then asked me to look at the building structure to determine whether there was any structural damage to it. I found a few minor items and explained to him how they could be corrected.

With both churches there were plenty of millennials present. In Haiti they do not leave the church like they do in the US. Maybe we could learn from Haiti.

After the trip back to the University and lunch, I had the rest of the afternoon free.

Monday, January 16, the class had more people in it than we had had on Friday, but it was still a disappointing turnout. Apparently some of the students had learned that Thursday was not the last day of class. Some of the others figured that they were so far behind and could not catch up. The ones who were present were eager to learn.

Helen texted during the morning that we needed to end the class on Thursday and leave Les Cayes not later than 10:00 am on Friday. She did not say why, but I later learned that there was some anti-American activity that resulted from the US interfering in the Haitian elections, and there were plans to shut the highway down in several places between Les Cayes and Port-au-Prince. The key place was Miragoane where the road from Jeremie meets the highway leading from Les Cayes to Port-au-Prince. By shutting the highway down there, there are no detours which can be taken which would allow a person to get to Port-au-Prince. One would have to wait until the protest was over, possibly several days, or until a UN detail came along and cleared the road temporarily.

By this time we were about one day behind the schedule, plus we were ending the class a day early. I determined the points which were the most important and concentrated on them.

Tuesday, January 17

By this time we were into the dome-building portion of the class. A question which was asked several times was, "Is there any support in the middle of the dome?" We discussed sizing the foundation and appropriate concrete formulae for the different parts of the structure, as well as the advantages of basalt.



During the afternoon, the electricity went off and the inverter went down. As a result I did not get much work done during the afternoon and evening. We did not have electricity until about 8:00 am on Wednesday.

On **Wednesday, January 18**, Helen and her team headed back to Florida.

Nick Troutt wanted to show me a Build-On site and the low quality of work, if I would go to visit it. Ronny and I discussed it and agreed to go. The man from Build-On would pick us up at 2:00 pm

We started the class by discussing how we would hold the final exam. It would be a series of photos. A person would be called up and shown a projected photo. He would explain what the photo showed and what was wrong in the photo. He would then explain how he would prevent that problem in the future. The class could then comment on what he got wrong and what he had left out. I showed a couple of sample photos.



We then spent time discussing how to build an EcoShell-type dome. After that, we got on the Monolithic website and looked at large domes. Again and again I was asked, "Where is the center support?" We discussed why there was no need for a center support.



Lophane called and said that due to a scheduled protest in the Miragoane area, we needed to leave not later than 1:00 pm on Thursday. If we did not leave by then, we might be caught in the protest and end up not getting to the Airport in time to catch my plane on Sunday.

About 2:15, Nick talked to the man from Build On. Trip was canceled because the man was taking a girl to the hospital. I have no idea what happened.



On **Thursday, January 19**, we worked through the day's lessons and took a break at 11:00 am. The cook had informed Ronny that since we were not going to be there at 1:00 pm to eat, they had fixed our lunch early. We ate and then started the final exam about 11:30. To ease the tension, I included a couple of "extra" slides. One was of an orphan who had his first piece of birthday cake and had no idea what to do with it. Another was of an orphan who was wearing my hat and would not give it back.

We finished the exam by 12:45 and sent the list to Dr. Bury. Dr. Bury said that we needed to delay a little bit. We were ushered into the dining room, and the students were all there. There were bottles of wine on the table, and the staff was bringing in cake. After several speeches, I was given two presents and we all had a glass of wine. As Ronny and I headed down to meet Lophane (two of the students came to haul bags), the others dug into the cake. Apparently they knew what to do with cake.

Valentine (our security – He is with the National Police Force) was with Lophane. We loaded up and headed out at 1:30 rather than 1:00 pm. The trip was interesting. Lophane assured me that if we did not get past the potential road blocks in time, I might miss my flight on Sunday. He drove as if he were serious about that statement and wanted to get me out of Haiti.

We passed UN convoys whose job was to remove roadblocks and keep the highway open. We saw many signs of roadblocks which had been removed. In Miragoane, we diverted off the main road and followed some unimproved roads. Whether we were avoiding a roadblock or the road was impassable for other reasons, I do not know. Before we got out of town, we were back on the main road. Between towns in this area, there is only the main road. One cannot detour around an impediment.

We arrived at Walls International Guest House shortly after 5:00 pm.

On **Friday, January 20**, Lophane arrived about 8:30 am. We went shopping for a gasoline-powered air compressor that was big enough to operate a Mortar Sprayer. We wanted to use a Mortar Sprayer for applying stucco to the Candice Dominguez Girls' Dorm since it will produce a more consolidated stucco.

We shopped at the two most likely stores in Port-au-Prince for what we needed. We found nothing compatible with our needs, so we decided to purchase an air compressor in the States and ship it to Haiti.

Saturday, January 21 was a lazy day, with writing, reading, and eating.

I packed as much as I could. With my checked bag, I included the presents (one was a wooden globe), so they would not break with rough handling. It was too large to go in my carry-on bag with the other things I had to carry in it.

On **Sunday, January 22**, Lophane arrived about 9:00 am. We went to church and departed before it was over so we could get to the airport on time for my flight to Miami. After a layover I caught a flight to San Antonio. Judy picked me up. We headed home, getting there just after midnight.