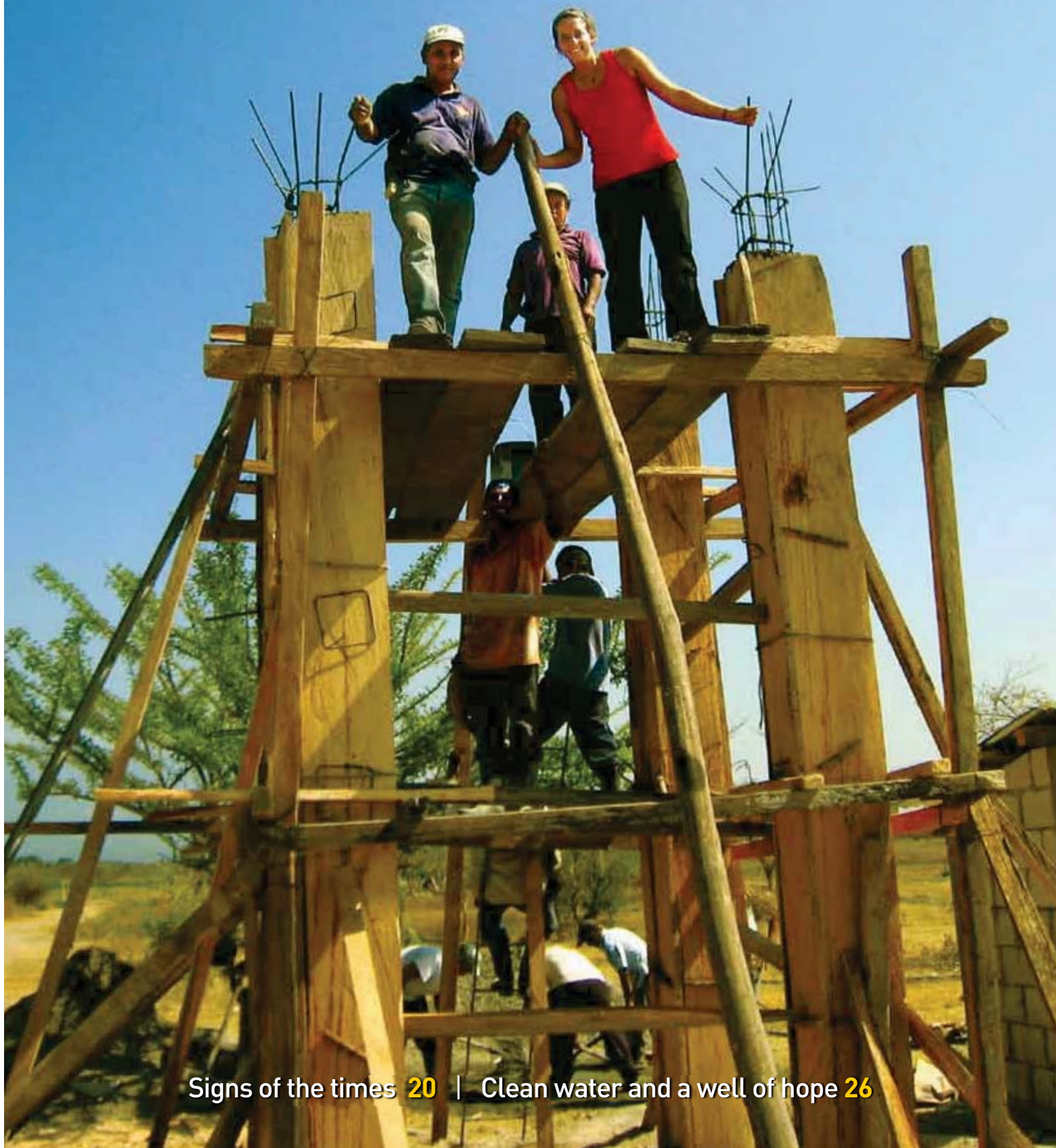


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A wide-angle photograph of a rural settlement in Guatemala. The foreground shows a dirt path and some sparse vegetation. In the middle ground, there are several small huts with thatched roofs. A line of laundry is hanging across the lower part of the image. The background is a flat, open landscape under a blue sky with scattered clouds.

Clean water and a well

by Sal Emma and Jack Gillespie '63, M'69

The San Antonio settlement is home to Guatemalans displaced by a hurricane. Caitlin Terry led the project to bring clean water to the community.



of hope

“It took my breath away. I’m not exactly the most confident person. And the idea of going to a foreign country to engineer a water project was overwhelming.”

Considering what Caitlin Terry ’05 accomplished in the remote settlement of San Antonio, Guatemala, on her first water project trip, it’s clear she was born to do this backbreaking, skill-challenging, life-affirming work. But when she learned that she had been selected to manage a water and sanitation project in a small Guatemalan village, she had some reasonable doubts.

“Although I had visited the area briefly,” she explained, “I had not surveyed it from an engineer’s perspective. I had few connections in Guatemala, no hard data and no experience. And I couldn’t speak Spanish. So I felt insecure about getting the job done.”

But she also had some pluses. From her Rowan education and day job, she had a solid background in site planning, surveying and knowledge of how water moves. So in 2009, six months after her first trip, she was heading back to Guatemala to build a water system.

A perpetual adventurer, Terry thrives on challenging herself. Her list of limits pushed already includes skydiving, rock climbing, flying trapeze and competitive equine vaulting (gymnastics performed on the back of a cantering horse).

She also is a dedicated volunteer whose commitments include an adaptive sports program for people with disabilities who learn to row, rock climb and play rugby. And she is a faithful participant in efforts to raise money to fight breast cancer.

For the engineering major from Vineland, the water project excursion would be her second trip to Guatemala. She had already spent two weeks there in 2008 helping to deliver medical and school supplies to missionary Carol Gleeson ’66, M’90, who serves in isolated mountain villages and dusty flatland towns. Based on the poverty and need that Terry saw during that trip, she vowed she would return.

“I was really struck by the lack of basic amenities and the water situation,” she said. “I made up my mind to get back there as soon as I could. I wasn’t exactly sure how or to do what. But I knew I wanted to serve the people’s needs as an engineer.”

Terry chose to major in engineering because she enjoyed math and science and it seemed like a profession that might let her help people directly. She chalks up her passion to serve to her upbringing.

She and her siblings were home-schooled. Her parents, Craig and Joan, tried to live their Christian faith and were always ready to help another in need.

“We never knew who we’d be living with, because my mom might bring somebody home she’d just met who needed a good meal or a place to live. It didn’t matter why you were in trouble. If you were in trouble and God put us in your path, we were going to try to help.”

Tragically, breast cancer took her mother when Caitlin was 18. In retrospect, she understands that was a step toward her calling. “The hurt was indescribable. But her death kept me home to be close to my 13-year-old sister. Originally, I was planning to study meteorology and dreamt of chasing tornadoes out west. Instead, I stayed in South Jersey and studied engineering at Rowan. God had a different plan for me,” she said.

The plan started with earning a civil engineering degree that prepared Terry for employment

involved in a water project. Terry asked when the project started. Gleeson’s reply: “Whenever you get here, because you’re running it.”

While she was willing to make the attempt Terry wasn’t sure where to start. So, she immersed herself in Third World water research. She borrowed equipment. She interviewed more experienced engineers. But all the research in the world is no substitute for experience, and she had none.

On the flight, she ended up next to a man who was also going to Chiquimulilla, Terry’s destination. “I asked him what he would be doing. He was going to check on a water project that he had started a year ago,” she said. It was an opportunity to spend hours picking the brain of someone with Guatemala water experience just few kilometers from her site. Encouraged by their talk,

were all old fatherly types who made sure to remind me that I could not travel alone to get there. Sometimes, they would hear of extra dangers on the road, so at the end of the work day they would send a couple more men from the village out on a motorcycle to escort our truck. I always felt safe with them.”

Eventually she found the water project the man on the plane had helped build. She inspected it to learn from its design. She noted the cinderblock houses and relative prosperity of this village as compared with the San Antonio settlement’s shelters constructed of corrugated sheet metal, bamboo, palm leaves and even tarps.

“It is a wonder to me how they don’t completely fall down with the slightest bit of wind,” she said. “But although they’re structurally weak, they are strong in their declaration



A few horses provide transportation for the settlers and until the water project, drank from the same source as the people. Terry and a young helper relied on the animals to help drag fresh-cut timber from the farm’s perimeter to the construction site. Left: Concrete had to be mixed manually and handed in buckets along a human chain to pour into makeshift forms for each part of the project.

with a major international engineering firm. Her employer supports her water work with a liberal unpaid leave policy. Her Rowan professors have offered advice, encouragement and some financial support.

Soon after her first trip to Guatemala, an opportunity arose for a two-month return trip for a water filtration internship, working under an established engineer. But the project dates changed and put Terry out of the running.

Then an e-mail arrived from Gleeson, the missionary she went to Guatemala to resupply. She asked if Terry might be interested in getting



Terry saw this as a confirmation that she was on the right track.

After getting settled where she and Gleeson were staying, they went to find the model project. That wasn’t easy because the roads are bad and criminal threats lurk, waiting for an easy mark to come by.

“In fact, when I started the work in San Antonio,” she said, “I picked up Harnan and Janny, my escorts, every morning because I couldn’t travel without them. It is just not safe for a young woman.

“I didn’t have to be concerned about my safety while working in San Antonio. In the village they

of hope. These houses are the beginnings for most families that wouldn’t stand a chance of having a place to call their own. The houses represent hard work, pride and love. The flowers potted in old cans and the ‘clean’ dirt floors demonstrate a pride in what they own.”

The San Antonio settlement came to be after a hurricane devastated Guatemala. Villages were destroyed and the government offered some of the victims resettlement on a vast, abandoned farm about 10 miles from the Pacific coast. About 50 families ended up at San Antonio, literally scraping by on subsistence



farming and day labor for those fortunate enough to find it in towns northward. After a couple of years, the government sent a teacher to run a one-room school in an old tractor shed for San Antonio's 40 children. San Antonio has no electricity, no plumbing, no grocery, no paved roads and no medical services.

But when Terry visited with Gleeson to deliver school supplies and food in 2008, she found joyful, playful kids, parents who care about them deeply and a self-governing community determined to survive. In dire conditions that might have been an abyss of despair, Terry found hopefulness that moved her.

To help with water access and sanitation, Terry's original project involved building solar composting latrines and installing drainage pipes to relieve flood areas. She also planned to build changing rooms to give the women privacy for bathing. Finally, the work would include building new *pilas*, the typical concrete workbench sinks women use to wash clothes and dishes.

But Terry realized there was a fundamental problem. San Antonio was blessed with a deep well. But the pipe from the abandoned farm's

irrigation system that carried water to the *tanqui*, a large, concrete water basin, was broken in several places—it had never been buried. So by the time it got to the basin, the water was already dirty. She wanted to expand the project to repair the pipe. That's when she learned her material funds had fallen through—but she was undaunted.

"I contacted anybody and everybody I could think of back home. And we secured new funding," she said.

The bulk of the work involved digging 1,200 feet of trenches—the length of four football fields—for the fresh water pipe and the new drainage system.

"In the U.S., you could do that in half a day with a backhoe. But there

in and get dirty inspired the villagers to improve their community. With only a few words of Spanish in her vocabulary, she could not speak with them for the most part, but her actions did the talking. They did not quite know what to make of her, but her enthusiasm was contagious. They worked hard and with pride.

"That's really important. When local people do the work, they take ownership of the project and will take care of it when you leave," she said.

But getting the work done also meant adapting to cultural differences.

Terry read a book on culture and learned a lot about "cold climate" and "warm climate." She discovered that "cold" is "task oriented" and "warm" is "relationship oriented."

On a good day, we had picks, shovels, 20 men and me, the *gringa*.

were no backhoes in San Antonio," she said "On a good day, we had picks, shovels, 20 men and me, the *gringa*. Just digging took a good three weeks, but we kept going on other parts of the project, too."

Terry said her willingness to get

"Central America is part of the "warm climate" where emphasis is not on the job at hand, but the people you are with.

"It was difficult getting used to the casual schedule of the Guatemalans I interacted with," she said, "I am a

Digging 1,200 feet of trenches demanded the most of the village volunteers. Gentle and soft-spoken, Terry spent weeks breaking up the earth with shovels and picks alongside the San Antonio men. They labored until sundown each day to finish the project. Top: Children haul water near the old tractor shed that serves as their one-room school. Bottom: An occasional break allowed Terry playtime with the kids. An avid athlete and all-around adventurer, she found challenge for body, mind and spirit in San Antonio.

minute-by-minute scheduler. I had a hard time getting used to the amount of time spent in a meeting on small talk. It seemed to take forever to actually talk about the project. With all of that said, I really think they have it right down here. Why should a task take priority over a person?"

been told, "It's coming" but the help never came. They kept saying "Tomorrow" but when tomorrow came they would say, "Oh no, we will send it tomorrow."

Soft-spoken and perpetually pleasant, the last word Terry would use to describe herself is assertive. Yet she sprung into action.

Terry's persistence with the mayor paid off. The materials were delivered. With the expansion of the project to include running water, the changing rooms became showers. They finished the drain line and the solar latrines. The women started using the *pilas* and even asked for small changes that helped make them better.

Throughout her stay and in spite of the language barrier, Terry became a part of the San Antonio community. She played soccer with the children, sang with the women and labored with the men. She learned about engineering, hard work, faith and hope.

The best moment came just days before the end. "We were coming down to the wire, just a few days away from when I was leaving. I wanted to test the water flow," she said. "So we staged it and carefully opened valves. Suddenly, there is water flowing into the water tank and to the showers and faucets. For the first time, the village of San Antonio had clean, running water. And everybody had big smiles, me included."

To learn more about the San Antonio project or Terry's other volunteer water work, visit www.howmanycows.com or e-mail Terry at locowatergirl@gmail.com

The people had always been told, "it's coming," but the help never came.

Still another problem she had to deal with was foot-dragging at what passed for the regional government and a typical "Catch 22" situation.

"Modesto, the committee president for San Antonio, was very persistent in visiting city hall to try to provide for his town's needs. On one day, he couldn't get to see the mayor but talked to a delegate who told him that the city was not going to build the water tower they had promised until San Antonio had a water tank on site," she said

"So Modesto walked next door to the health center which had a medium-sized plastic water tank set aside for San Antonio and asked if they could deliver it. They told him they would not bring the tank until a water tower was constructed."

San Antonio had started five years ago. The people had always

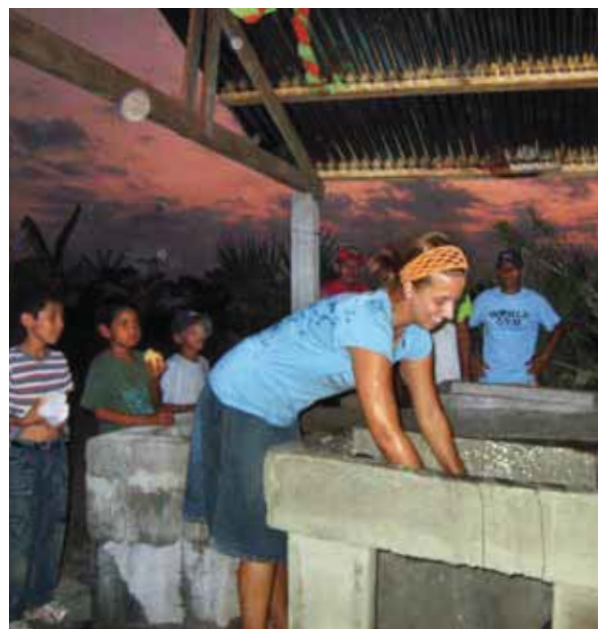
"Just being an American is enough to get a meeting with the mayor," she said. "I became a political liaison with the mayor's office and the health center. I showed photos of our progress.

"The strategy was to shame the mayor into acting. Villages often get more attention from the government after the government realizes they are getting attention from an American group. It's a cruddy system, but that's how it works."

On the plus side, the San Antonio project spurred others to help.

"My visits to the shop where I purchased all the construction material," she said, "led the manager to get involved. For example, he sent a local group out to bring food door-to-door and arranged to repair the school's roof after I presented the problem and asked for help."

Running water in San Antonio brought relief for women and children who traditionally carry it in buckets and vessels balanced on their heads. It also provided reliable irrigation for crops and a sanitary source for drinking, cooking and bathing. Left: Terry uses one of the newly built *pilas* filled with fresh water. Now, in the middle of hot Guatemalan flatland, a metal roof shelters women who gather to wash clothes and belongings in the six *pilas* Terry's team constructed.



Hallucinations and explaining “valve” with hand motions

After her Guatemala project, Terry knew she wanted to continue doing water work in underprivileged countries. She completed a three-week training course in North Carolina where she and other students lived in cabins in a kind of Third World boot camp. Terry and her classmates learned how to repair hand pumps, drill and case wells and build bio-sand filters.

In 2010, she set off for Tajikistan with Hydromissions, an organization that teaches locals to use low-tech equipment to drill wells, build pumps and improvise with materials easily found in the project area, no matter how remote or impoverished.

“You have to make sure all of the supplies can be found in the local market,” Terry said. “Pumps fail over time. Typically, parts need replacing every six months. If the pump is not constructed with parts that the people in the villages can find and afford, then in six months it will be useless and the well water will be unreachable.”

Terry and two Hydromissions leaders traveled to the country’s capital, Dushanbe, to train workers for drilling projects. She adapted to cultural norms and overcame challenges during the work. “I wasn’t allowed to make eye contact or really even talk to men so ‘shopping’ for parts in the bazaar was an awkward and confusing experience. Getting our supplies was at least a day-long activity and trying to explain ‘valve’ with hand motions and drawings is not easy,” she said.

Still, she passed muster and Hydromissions selected her to manage a project within the Dinka tribe in South Sudan.

She had to deal with isolation, hallucinations from malaria medicine, sleep deprivation and injuries. On top of that were missing parts and dishonest local officials.

With all the distractions and delays, they still finished the project in three weeks. Today, Ngapacot has a year-round water source for the first time.

Terry’s next projects are in Nepal in September and Haiti in November, with medical training in October. Her work in Nepal will serve a lowlands village and in Haiti, she will help provide an orphanage with clean water.



Top: Terry and Hydromissions’ Jen Lorch drill a 50-foot bore hole in Dushanbe with low-tech equipment. Bottom: Muddy at first, water begins to pour from the well Terry and the villagers dug in Ngapacot. Locally available materials make for a crude rope pump that can be maintained easily and provided clean water to the village for the first time.

An accomplished photographer, Terry helps fund her volunteer work with sales of photos she shoots on location. To view her gallery, visit: www.lucentphoto.net.

Left: Scouting locations for wells north of the Afghanistan border, Terry photographed villages comprised of small stone houses built into hillsides. Right: Sunrise on the African plain.

