

Once the site of an abandoned sewage plant, Jambalaya Park in Gonzalez, La., stands as testimony to just how ambitious a renovation project can be – and of how tangled the path to success sometimes becomes. As watershaper and watergarden specialist Les Ewen reports, the first attempt at installing the park’s fountain and Koi pond ended in a shambles, at which point he and his staff stepped in to put the city’s plans for the park back on track.

BY LES EWEN



JAMBALAYA

Truly a large-scale project full of unique technical challenges in an unusual and important civic setting, the renovation of the watershapes at Jambalaya Park in Gonzalez, La., is easily the most unusual project our firm has ever tackled.

The park covers seven beautifully wooded acres in an older section of town that’s mostly residential but sits directly behind City Hall and several other smaller civic buildings. It takes its name from the fact that the city is known as the world’s “Jambalaya Capital” and annually hosts a week-long festival celebrating the Cajun stew that has become a star in the firmament of Louisiana cuisine.

Through the rest of the year, Jambalaya Park is a well-used space – especially since the city undertook extensive rehabilitation of an area whose history was anything but appetizing or inviting: For decades, the site was home to a sewage-treatment plant that had been abandoned

several years previously when the city built a much larger facility on the outskirts of town to accommodate its growing population.

This left behind a bunch of large concrete basins that had been used to filter and treat wastewater. Years after the space had been reclaimed as a park, civic leaders finally decided to take the major step of expressing the site’s potential by transforming the basins and associated structures into a variety of watershapes and other amenities, including an Olympic-size swimming pool, a playground and a splash area. They also converted two of the most centrally located basins into a fountain and a Koi pond, respectively – at least, that’s what they *intended* to do.

FROM WASTEWATER TO WONDER

Unfortunately, within months of commissioning the new watershapes (and for

a variety of reasons discussed below), both the pond and the fountain failed and became as broken and fetid a mess as I’ve ever seen. Early in 2003, we at Ascension Pools of Darrow, La., were asked to bid on “renovating the renovation” and began a long process that would be surprising, challenging and, ultimately, quite gratifying.

The two systems were contained in identical poured-in-place concrete basins measuring 57 feet long, 30 feet wide and 18 feet deep, both divided down the center lengthwise by a 24-inch-thick wall. Situated end to end and 20 feet apart, they were wonderfully positioned in the park and were particularly valued for the fact that they stood 24 inches above grade, providing lots of seating area.

The first renovation, which took place in 2001 and included these central watershapes, was the work of an engineering firm and a local pool contractor. In





concept, the plan of transforming these rough, utilitarian structures into highly visible points of pride was quite fine and spoke volumes about the small city's spirit, but the execution proved a problem.

As originally designed, the fountain was a beautiful thing possessed of great civic significance. At its center was a large "Jambalaya cauldron" that housed dramatic vertical jets. (Such cauldrons in cast iron are the traditional choice for cooking jambalaya and a distinctive local icon.) Surrounding the fountain's cauldron (which is actually fiberglass) were rings of lower jets and other water effects.

The original Koi pond was a bit less ambitious in design, but was nonetheless a wonderful re-appropriation of the other central basin, with the addition of dozens of colorful fish making for interesting up-close observation by anyone sitting at the water's edge or strolling over the bridge that had been built at one end.

During the initial transformation from sewage basins to watershapes, both vessels had been filled with a mix of broken concrete and dirt topped by a thin concrete "floor" that contained no structural steel or wire mesh. Not surprisingly, this inadequate construction played a significant role in the fountain's failure.

In an adjacent equipment room, two 25-horsepower pumps that had functioned for the original treatment plant had been overhauled and sent back into service in powering the fountain effects, the business end of which had been designed and manufactured with blameless expertise by Hall Fountains of Fort Lauderdale, Fla.

DAMAGE ASSESSMENT

By the time we began our involvement, neither system was functioning. The Koi pond had reverted to sewage containment, full of murky water and utterly devoid of fish. The fountain, too, was inoperative: Its structure had been broken into pieces by a disastrous leak.

We began by working with city officials and engineers to identify exactly what had gone wrong. Both situations had proved destructive, but, as it turned out, the problems with the two vessels were quite different.

In the fountain, for its part, a plumbing fitting on the main line feeding the water effects had separated below grade. When the line broke, the fill material was saturated with water and expanded, placing tremendous upward pressure on the thin concrete floor.

The treatment plant's original floor and walls were monolithic, heavily reinforced concrete, so the water moved along the path of least resistance and literally erupted through the over-matched floor – at one point creating a geyser that cruelly mocked the beautifully designed water effects.

The fountain was indeed a pitiful sight when we arrived: The cauldron and jets and manifolds for all of the equipment had been removed and set at one end of the basin. The place where it had stood was now a pit of dirty water, muck and chunks of broken concrete.

The Koi pond had suffered a different but equally nasty fate.



We softened the hard edges of the pond by introducing plants of various heights at spots along the perimeter. We also used lilies and arrangements of stones to add visual interest to the open sections of water and increase the drama – especially in views from the wooden bridge.



We reintroduced a large number of Koi to get the pond up and running again. They seemed to appreciate the rock formations we'd added – perhaps seeing them as camouflage in hiding from birds and other creatures who targeted the fish as 'snack food.'

Among a variety of plumbing problems was a critical mistake with a check valve on the suction plumbing that had been installed to prevent backwash effluent from flowing back into the pond when the biological filter was being cleaned.

The valve, it turns out, had been installed horizontally rather than in the proper vertical configuration and never worked: Whenever the filter was pulled off-line for a cleaning, all of the muck was dumped right back into the water, choking it with nutrients, promoting algae growth and forcing a toxic environment on the fish.



A FIX FOR THE FISH

Our work began with the Koi pond. Although it had not suffered a structural failure as had the fountain, the water was so bad that it basically qualified as a health hazard. The fish were long gone: A few were rescued, but most had died. Moreover, the original renovation had done little to lend visual interest to the pond: It looked like a shallow swimming pool with a black bottom, leaving the hapless fish to serve as the only "decorative" elements.

As we dug in, we found another problem with basic hydraulics. The biological filter should have been all that was needed to clean the water, but in addition to the improperly installed check valve, the pipes were too small and didn't allow proper flow through a 25-foot "bead" filter designed with a capacity of about 250 gallons per





minute. In our testing, we found that the actual flow rate of the initial installation was less than 50 gpm!

Another big problem was that the original contractor had “improvised” with the aeration system, using nothing more than landscaping soaker hoses running down the sides of the basin’s center wall (which had been topped with brick coping and had been intended for service as a walkway). That didn’t work at all, so we pulled the soakers out and installed two-inch pipes to feed 20 aerating bubbler stones – in other words and for a change, products that were actually designed to function as aeration devices.

To correct the flow to the pump, we ended up using a three-inch plumbing run that had initially been installed to drive the system’s air lines. This took some fairly clever reworking of the plumbing between the main circulation pump (located just outside of the basin in a small, sub-grade vault) and the system’s filter (located about 100 feet away).

Where the two-inch plumbing that had been running to the filter was undersized, the aeration system’s three-inch line was just right, so we took the pair of two-inch lines that had formerly been the suction and return lines, linked them as a single suction source between the pump and the filter, then returned the water via the three-inch line.

The wooden bridge at the end of the basin gave us all the cover we needed to re-purpose all of these lines, which involved a good bit of core drilling and

Reinstalling the fountain was straightforward, but given the history we were certain to pressure-test the lines on a continuous basis. A key system addition: pressure-release lines set in the corners to keep the concrete from buckling and alert staff to the recurrence of the kinds of problems that destroyed the original installation.



reworking of connections. Before we were through, we'd managed to increase the system's flow rate from less than 50 gpm to just under 200 gpm – and it all works beautifully now.

PLANTS, ROCKS AND FISH

Just as important to the Koi pond's rehabilitation was the addition of a variety of aesthetic elements to the space, all aimed at creating a more formal watergarden appearance through the use of rocks, water plants and the reintroduced Koi.

To help with this part of the work, we brought in Peter Nelson, a friend of mine and a landscape architecture student from Louisiana State University. He provided us and the city with a highly detailed set of drawings showing the revamped garden with rocks and plants in place – a great presentation that enabled city personnel to visualize how striking the pond might be.

Using the renderings as a rough guide, we brought in 20 pallets of rounded, eight-to-ten-inch Arkansas River rocks and distributed them in spots throughout the pond to create subtle rock formations along the perimeter, where they went a long way toward softening the appearance of the edges. We also brought in hundreds of water plants, including a wide variety of water lilies and grasses, and placed them throughout the vessel. (The plants came from Nelson Water Gardens & Nursery in Katy, Texas.)

Finally, it was time to reintroduce fish. The city purchased several hundred smaller specimens and a few dozen large specimens in a variety of spectacular colors and color combinations.

As we stepped off the pond and turned our attention to the fountain, we couldn't help noticing that the fish seemed to be disappearing. It wasn't until the later stages of the work on the fountain that we discovered, after the sun went down, that egrets and some enterprising raccoons were hunting up some supper.

By the time we figured out what was going on, a large number of the fish had been snatched. We removed the remaining fish and housed them temporarily in facilities offered by LSU's Department of Veterinary Clinical Sciences. Next, we installed four systems known as "scarecrows," which are essentially water-spray systems activated by motion detectors. Any time a bird or land animal comes near the water's surface, it gets hit with a stiff stream of water.

We were more than a little interested to see how that system worked and were happy to see egrets and other predators make quick exits after getting their sudden baths. With the Koi pond restored and beautified and its inhabitants secure, we turned our full attention to the fountain.

FOUNTAIN FOUNDATIONS

When first installed, the park's fountain had been quite the buzz around town. Although it only ran for a few short weeks before trouble began, its water effects really caught people's attention. The featured cauldron – six feet across and some four feet high – has an inside lip with 28 brass jets with 3/8-



We were determined not to revisit the inadequacies of the original fountain basin, so we compacted the substrate, added rebar and steel mesh and tied what little was left of the original structure into the new work.



The restored fountain, with the cauldron at the center and dramatic fan jets in the corners, is now doing what it always should have done in adding drama and spectacle to Jambalaya Park both day and night.



inch nozzles that shoot water up in a ring that converges about 20 feet in the air. The pot also has fixtures that illuminate the effect from inside the ring for spectacular nighttime displays.

Just outside the pot is another ring of three-inch nozzles that entrain air and send frothy jets 10 feet into the air, creating a second layer surrounding the cauldron. Beyond that ring are 16 cascade jets that send thick plumes of shaggy-looking water a couple of feet into the air. The four corners of the watershape have jets that send beautiful, wide fans of water back toward the center. Finally, there are 22 submersible halogen lights on the floor. All in all, it's a great display, day or night.

When we arrived, however, the fountain had been out of commission for nine months, and all that was left was a muddy hole choked by sludge and weeds. The concrete was broken, partly because of the initial ruptures caused by the leak but also because the original contractor broke out much of the floor hunting down the leak. What should have been a civic focal point was an utter ruin.

We started by cutting and removing all of the broken concrete and cleaning up the worst of the mess before we evaluated either the condition of the plumbing or of the fountain fixtures, which had been moved off to the side of the vessel. With the exception of the broken cou-

pling on the main line and several upright pipes that had been damaged in demolition, most of the system's plumbing proved to be in useable shape.

Much of what we did from that point on was about ensuring that the sort of disaster that had befallen the vessel could never recur. For starters, we installed a field drain on the outside of the basin in the form of a trench filled with gravel and perforated pipe, giving water someplace to go in the event of another plumbing failure.

We also put pressure-relief standpipes in the corners of the fountains, topping them with pop-off valves. This served the dual purpose of giving water below the floor someplace to go and of providing

staff with a visual indication that something needed attention.

We repaired all of the plumbing per Hall Fountains' original plans, replacing the majority of the risers connected to the various jets and jet rings. We then pressure-tested the whole system over and over again for a week straight, far exceeding limits the system would experience during normal operation. Then we went to work on the structure.

LESSONS LEARNED

In one of our original proposals, we had suggested removing all of the fill material from the fountain basin and starting from scratch. The city didn't want to go that far and settled on a plan that left most of the broken concrete and dirt in place while completely revamping the approach to the floor.

Ultimately, we *did* dig out about two feet of the original fill material in areas beneath the plumbing runs for the jet manifolds, replacing it with layers of crushed limestone in six-inch lifts to provide a stable substrate for the new construction. Atop the compacted material at strategic points beneath the manifold plumbing, we poured concrete support blocks: Basically, anywhere the pipes turned, we supported the intersection with 18-inch concrete cubes. We also built new pedestals for the cauldron using sonotubes.

After drilling holes into the original basin walls and inserting structural steel dowels, we tied the steel into 12-inch concrete footers we poured around the perimeter. In addition, we poured 12-by-12-inch sub-grade footings at intervals of ten feet along the length of the basin. We also exposed the top of the basin's center wall (which had previously been chopped just below grade during the first renovation). Atop that wall, we built an additional footer and tied it into the new floor.

The new floor is reinforced by a grid of #4 rebar on twelve-inch centers, and the whole system is further reinforced by steel mesh. In truth, we overbuilt the whole thing, but between the hydrostatic relief pipes and drains and the structural floor, there is little worry that the fountain will suffer a repeat performance of its initial demise. Suffice it to say, it's been built to last.

Once the floor was poured, we used

"cold temperature" rubber – a liquid product applied with an airless sprayer – in three coats to create a 45-mil barrier. We had to do this work after sunset because the hot summer sun "boiled" the material – but we had to work quickly, because as the evening air cooled, dew would settle on the material and cause problems of another sort. (It was during this after-hours phase of the work that we spotted the hungry egrets and raccoons in the adjacent pond.)

We also reworked the vessel's basic circulation system, installing a 2-hp Challenger pump and 36-inch sand filter from Sta-Rite Industries (Delavan, Wis.). The filtration system runs through a stream-and-trough assembly that runs the length of the basin and is fed by a series of brass overflow fittings.

RESTORED TO GLORY

Now we were ready to reinstall the jets and jet rings and bring the fountain back into operation.

We conferred with the support staff at Hall Fountains on a couple of occasions to be absolutely certain of how to proceed with reassembly, but for the most part we worked from their original plans, which were quite comprehensive and worthy of far better initial results. All of the manifold plumbing and the nozzles were there, but we ended up having to replace many brass couplings that had been lost at various stages of breaking and removing the original floor.

The fountain system was so well designed that the process of reinstalling it was not at all difficult. Just beyond the basin was a vault full of gate valves that routed all the water, enabling us to adjust flows to the various jets and fine-tune the overall performance of the reinstalled water effects.

Minor tweaks aside, turning the system back on was a magnificent experience. Even more important, we were aware that we had restored an object of civic pride to its rightful glory.

The author thanks the city inspector of Gonzalez, Alvin Broussard, for his unyielding support and effort throughout the renovation process described in the accompanying story.

CLASSIC CAULDRON JAMBALAYA

- 2 tbsp vegetable oil
- 1/2 lb andouille or hot, smoked sausage
cut into 1/2-inch slices
- 1/2 cup chopped celery
- 1 small chopped onion
- 1 small chopped green or red pepper
- 1 clove minced garlic
- 1-1/4 cups chicken broth
- 12 ounce can of whole peeled
tomatoes, undrained and
coarsely chopped
- 1 bay leaf
- 1 cup rice
- 1/4 tsp Tabasco sauce
- 1/4 tsp dried oregano leaves
- 1/4 tsp dried thyme leaves
- 1/8 tsp ground allspice
- 3/4 lbs shrimp, peeled, de-veined and
cut in half lengthwise (Note:
other meat or poultry may be
used)
- Celery leaves for garnish

In a large, heavy saucepot or Dutch oven, heat the oil over medium heat. Add the sausage, celery, onion, green pepper and garlic. Cook for five minutes until the vegetables are tender, stirring frequently. Stir in the broth, tomatoes, bay leaf, Tabasco, oregano, thyme and allspice. Bring to a boil.

Reduce heat and simmer uncovered for 10 minutes. Stir in the rice. Cover and simmer for 15 minutes. Add the shrimp, cover and simmer for five more minutes – or until the rice is tender and the shrimp has turned pink.

Let stand for 10 minutes. Remove the bay leaves and garnish with celery leaves.

Serves four.

–L.E.