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VINYL DESTINATIONS



A Natural First

BY JESSE DUTRA

Natural swimming pools – those that use biological processes to treat water instead of standard sanitization – have been growing in popularity for more than two decades in Europe and elsewhere around the world. Now, these unusual pools have finally landed on U.S. soil. In this special project profile, Massachusetts landscape designer and pool builder Jesse Dutra describes the first natural swimming pool installed in the U.S. using a proprietary system developed by Munich, Germany's BioNova.

IN AN AGE where it seems that everything's been done before, it's not often you have the opportunity to be the first at something. Nonetheless, that was exactly the case for the project featured here.

It's what's known as a Natural Swimming Pool (NSP), a concept developed and popularized in Europe by the visionary firm BioNova, which has been successfully designing and promoting these pools for 25 years throughout much of Europe. The firm now has operations the world over, including a North American division based in New Jersey.

Like many landscape designers and pool builders, I've be-

come interested in working with "sustainable environments," and a few years back decided to become a BioNova partner. That effort recently paid off with this beautiful project on Nantucket Island, Mass., the first pool built in the U.S. using the BioNova system.

A FRESH APPROACH

An NSP utilizes biological processes that exist in natural bodies of water to maintain water quality. Basically, you set up a constructed wetlands area, which BioNova calls a "Regeneration Zone." This zone consists of plant material



combined with layers of gravel and sand, fitted with an under-drain system. Here, beneficial microorganisms form that in turn process nitrogen- and phosphate-based compounds to prevent algae blooms and also prevent the development of colonies of harmful pathogens. In essence, the regeneration zone acts as a large biological filtering system, which returns treated water to the pool. (BioNova precisely specifies the system design using different configurations based on the physical proximity of the Regeneration Zone to the swimming area and other parameters. It's extremely important to follow

their specs to the letter in order to assure safe and appealing water.)

To biologists, as well as builders of natural ponds, the science of biological water treatment is well established, but in the U.S. it's remained obscure to swimming pool builders. BioNova has garnered a considerable level of press coverage at home and abroad, including past coverage in AQUA, and it's fair to say this first pool in the U.S. has been greeted with a high-level of anticipation. For our part going into the project, we certainly knew it was crucial we make this installation



Although a completely separate system, the circular stone-clad spa is visually linked to the pool and regeneration zone via a small stream.

Photos courtesy of Jesse Dura



The dark interior color of the pool provides a beautifully reflective surface accentuating the surrounding views.

something special as a showcase and in a sense, an ambassador for this type of treatment concept in this country.

Backing up a bit, it's worth noting this approach first took hold in Germany, a nation famous for the most stringent water-quality standards found anywhere on the planet both for pools and public water utilities. In that rigorous regulatory setting, there are now literally thousands of these systems in Germany and other European countries, including a number of massive, high-use commercial and public facilities. To the best of my knowledge, these systems are virtually algae-free and have a perfect record in terms of bather health. Approx-

mately 20 percent of all new pool installations in Germany are NSPs.

To be clear, the first NSPs installed in North America are located in Canada, and there are now a handful of others either in planning or under construction in the U.S., including another our firm is just completing and another we are currently designing. The first-ever U.S. commercial NSP is currently being planned for a facility in Minneapolis by BioNova's North American and Global Head Offices and will no doubt be the subject of great public attention when it's completed this fall.

ENTRENCHED SKEPTICS

It's true this concept has been slow in gaining a foothold in the U.S. market despite its success elsewhere and growing consumer desires in this country for chlorine-free swimming and bathing, as well as for ecologically-sustainable environments.

The water does have a very slight green tint to it, and if you hold it in a glass up to a light, you can see small particulate in the water. That aesthetic concern and fears of waterborne diseases have made the concept a tough sell to Americans who, despite their reservations about chlorine and other manufactured chemical compounds, are accustomed to the "scorched earth" mentality when it comes to treating water.

One of the big advantages of this type of water treatment, and one of the reasons I'm so enthusiastic about it, is the very fact that it *doesn't* kill all microorganisms. Medical science teaches us that our bodies contain and are covered with all sorts of beneficial microorganism that perform a variety of healthy functions. In sanitized water, all of those life forms are stripped from your skin and have to redevelop after you dry off.

It's been hypothesized that this is one possible reason some people become more susceptible to illness after swimming in sanitized water. In that sense, naturally-treated water is arguably healthier precisely because it doesn't kill everything it touches.

But the fact remains that, from a chemical treatment standpoint, these systems do represent an entirely different type of approach and many consumers and professionals alike, despite the benefits, have remained skeptical.

That's a mentality I'd love to change. Fortunately, these clients were willing to give it a try.

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A GREEN SCENE

I had been working for these clients for some time doing landscaping on their property and we have enjoyed a fruitful relationship for the past few years. For a long time, they had expressed interest in a swimming pool but hadn't decided to go forward.

The "better half" of the homeownership couple was chair of the board of sustainability on the island, and she wound up making a majority of the decisions on the pool. Even with their "green" mindset, the NSP concept was a tough sell, in this case simply because it's the first one in the U.S. They were interested in the concept and after a great deal of discussion and research, including calls to English speaking BioNova customers in Australia, France and Germany, they decided to move forward.

Ultimately, they liked the idea of no chlorine and the aesthetics of the pool combined with the pond-like setting of the regeneration zone.

The property is typical of many in the area, very open to adjoining views of the surrounding landscape, which includes protected wetlands found throughout the island. There's a lovely grove of Poplar trees that would eventually serve as a visual backdrop for the pool, as well as a stand of Tupelo trees that abut a nearby cranberry bog.

This pool is known as a BioNova Type 5, basically one where the Regeneration Zone is separate from the pool. There is a small section of Regeneration Zone that I located



The dramatic stonework is softened by the use of plantings that create a visual weave with the plantings in the regeneration zone, creating an inviting and tranquil setting.

inside the pool at one end where you can swim up to a seating area and touch the plants. My thought was that would've made it a Type 4, but the founder of the company, Rainer Grafinger, said that the area directly in contact with the pool section was so small that it didn't alter the Type 5 classification.

(For detailed information about NSPs and their differing configurations you can visit BioNova's website at www.bionovanaturalpools.com.)

Working with the clients was a perpetual process where the design kept moving and changing as we went along. We



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Photos courtesy of Jesse Dutra

Although very much a swimming pool, the design includes a number of organic elements that lend the work a naturalistic feeling.

came up with the footprint of the pool and the Regeneration Zone, but many of the hardscape features kept evolving. For example, we set several feet of stone coping to let them consider the look before we did the actual installation. Those kinds of discussions continued right up to the final stages of the project.

VERDANT LUXURY

The pool itself is freeform, 60 feet long and approximately 30 feet wide — 1,600 square feet with about 40 percent devoted to the Regeneration Zone. Aesthetically it has a naturalistic feel, but still looks very much like a pool rather than a pond.

The pool is set up on two levels to the pool from the Regeneration Zone. It has a modified arced vanishing edge where water flows from the pool and creates a waterfall effect as it flows into the Regeneration Zone, which in a sense functions as an oversized catch basin. The edge treatment on the dam wall is unusual in that it has stones set at intervals that function as a stepping path across the pool, while allowing water to flow between the stones.

The Regeneration Zone is not only central to the treatment concept, but it also plays a major aesthetic role. It's a gradu-

ated wetland with a number of beautiful plantings typically found at the water's edge in this region, including irises, cardinal flower, hostas, rose mallow, cattails, sedges and a host of different things you would find in the surrounding wetlands areas.

The Regeneration Zone has graduated depths and slopes to dry land in a beach-like effect where the plantings fuse into the surrounding landscape. A small wood deck extends into the zone, giving the clients a beautiful place to enjoy the plantings and water at close proximity.

The pool itself is in many respects typical of large, free-form custom vessels we see all the time. The pool, spa and stream are all made in shotcrete and use typical pool pumps, heating, lights and control equipment. It is in every real sense a swimming pool, not a pond made for swimming. It has a graduated depth ranging from three and a half to six feet. It has a number of benches and a set of wedding-cake style steps the fan out into the shallow end.

The pool is finished in Pebble Fina finish from Pebble Technology. We chose the dark color to essentially mask the color of the water, which as mentioned above does have a subtle green tint to it. Although the water clarity is outstanding, with

A STONY SPA

THE PROJECT INCLUDES an oval-shaped nine-by-eight foot spa that appears attached to the pool hydraulically via a stream course we ran from the base of the spa to the Regeneration Zone. In fact, the two systems are completely separate. We managed the visual transition creating an overflow from the spa into a small catch basin that spills into the stream, or so it seems.

In truth, there's a separation wall that

isolates the spa water from the stream, which is fed by a separate pump drawing water from the Regeneration Zone.

We concealed the separation wall with a small rock slab bridge that appears to cross the stream. Visually, you're left with the impression that it's all part of the same system, but there's no mixing of spa and pool water.

As mentioned in the adjoining text, we used New England Field Stone throughout the project. For the spa we finished the edge with rounded, extremely smooth boulders that not

only jibe with the overall setting, but also created an extremely comfortable neck rest.

In working with the material, which is all extremely dense, we found that the smoother and rounder the boulders, the more dense they were, courtesy of the fact that these pieces survived an epoch of grinding and pressure from the glaciers that deposited them in the northeastern region of the U.S.

Cutting these particular pieces to fit on the bond beam was no small undertaking, but when it was done, it looked beautiful.



a light-colored finish you might notice it. As it is, you cannot visually discern the water from what you'd find in a typical swimming pool. Besides, the dark finish only made sense given the pool was intended to be somewhat natural in appearance.

(We've noticed some slight variations in water clarity, which is expected with this type of treatment. As a BioNova partner, I've traveled to Europe and seen pools with white bottoms and to my eyes, the water in these systems always looks inviting, so it's all in how you perceive it. That's why it's crucial to establish realistic client expectations early on so they know what to expect.)

The pool includes an in-floor cleaning system to help prevent the build-up of biofilm, which can form with these systems and make surfaces slippery. It has a bottom drain, which is not necessary on these pools, but in this case we needed it to work with the in-floor cleaning system. And when the clients heat the pool, they can reverse the flow and circulate warm water from the bottom up.

The circulation system also includes a special BioNova tank filter that contains a proprietary geo-mesh or "fleece" that filters particulate down to a size that supports water clarity but also allows microorganisms to flow through the entire system.

The stone we used throughout the project is native to the area, typically called New England Field Stone, both flat and in boulder form. It was originally deposited by glacial activity during the Ice Age, and it is very, very dense. The decks, coping and the vanishing edge, which includes a massive sunning stone, are all finished using this wonderfully durable material, which has beautifully subtle earth tones.

In all, the project includes upwards of 200 tons of the material.

THE AFTERGLOW

When combined with the surrounding landscaping and the bucolic setting of Nantucket Island, the pool looks perfectly at home. Best of all, the clients love it and are now beaming with pride that they have the first of these pools ever built in the U.S.

In late August last year, BioNova conducted its first-ever construction-training program in North America. For five days, partners from across the U.S., Canada and Europe gathered in Boston

for the program, which featured a trip to Nantucket to visit this pool.

We had a wonderful day examining and basically celebrating the project, no small point of pride for me personally, my crews and especially the clients, who were awarded a plaque commemorating the fact that theirs was the first of its kind in the U.S. All new BioNova pools are issued a Certificate of Authenticity – and theirs was serial

number USA00001.

As it stands, these pools will likely never replace traditional pools, but with more and more people looking for healthy and sustainable alternatives, my hope is that in this great country of ours, they're here to stay. ~

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