

The Swimming Pool Reinvented - Water Purification with Aquatic Plants Instead of Chemicals

Germany



James Robyn



Organization type:

for profit

Budget:

\$500,000 - \$1 million

Website:

<http://www.bionovanaturalpools.com>

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Project Summary

Elevator Pitch

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

Using technology that mimics nature, we can build "Natural Swimming Pools" (NSPs) as an alternative to the traditional sterilized pool. Developed extensively in Germany, NSPs require no chemicals to effectively maintain high water quality. The key is an area called the regeneration zone, in which aquatic plants are rooted hydroponically in gravel beds. In one multi-unit housing complex called Tanzi, in Mauritius, Africa, we proved the viability of creating a community pool and series of smaller pools all connected by a shared regeneration zone. A community swimming pool can be constructed inexpensively, using local labor and local aquatic plants. It then requires no chemicals and little energy consumption. The concept has been proven at many scales and in many climates worldwide.

About Project

Problem: What problem is this project trying to address?

Everyone can benefit from these kinds of projects, but in this case it is primarily people who dwell in apartment complexes. Natural swimming pools greatly increase quality of life as they afford the opportunity for more people to enjoy outdoor swimming and bathing at much lower operation and construction costs than a traditional pool. Additionally, they are more environmentally-conscious as they are chemical-free and have a very low carbon footprint. Because they require no chemicals and utilize much lower water flow rates, there is very little energy consumption. The inclusion of plants and proximity to nature also provides an excellent educational opportunity for children and adults alike.

Solution: What is the proposed solution? Please be specific!

Public swimming pools add to the quality of life in the community however in the past they were expensive to build and expensive to operate. The natural swimming pool uses a constructed wetland technology (aquatic plants growing hydroponically in a gravel substrate) to perform the clarification and purification of the pool water, hence no chemicals are needed and the energy consumption and carbon footprint is dramatically reduced. Both the swimming pool and the constructed wetland can be built using inexpensive materials and mostly unskilled labor. The natural swimming pool can be designed into an urban housing project and allow for families to enjoy both the swimming facility and the constructed wetland (water garden). A proof of concept has already been constructed in Mauritius, Africa at a multi-unit housing project. Chemical-free, environmentally friendly, supporting biodiversity, and sustainable, the natural swimming pool provides the urban dweller with an access to the healthful benefits of exercise and stress reduction that both the swimming pool and the water garden can provide.

Impact: How does it Work

Example: Walk us through a specific example(s) of how this solution makes a difference; include its primary activities.

Natural Swimming Pools got their start in Europe in the 1980's. In place of chemicals, plants that are rooted in gravel beds are used to clean and purify the water. These plants mimic Mother Nature's way of clarifying and purifying water in fresh-water wetlands. As technology has advanced, empirical evidence regarding water quality has consistently demonstrated that these ponds are healthful, safe and sustainable. During the last 10 years, NSPs have become quite popular throughout Europe in public parks and recreational venues. Germany alone now has more than 100 public NSP installations and these have all been very successful in terms of numbers of patrons and overall health, safety and water quality. The application of community swimming pools and regeneration ponds integrated in an apartment complex was also very successful. This has been measured by the system's functionality and by apartment dwellers' great enjoyment of the pools.

About You

Organization:

BioNova Natural Pools

About You

First Name

James

Last Name

Robyn

About Your Organization

Organization Name

BioNova Natural Pools

Organization Phone

507-246-6682

Organization Address

21 State Highway 46

Organization Country

, NJ, Morris County

Country where this project is creating social impact

, BY

How long has your organization been operating?

15 years

The information you provide here will be used to fill in any parts of your profile that have been left blank, such as interests, organization information, and website. No contact information will be made public. Please uncheck here if you do not want this to happen..

Innovation

What stage is your project in?

Operating for more than 5 years

Share the story of the founder and what inspired the founder to start this project

The founder in North America, an experienced builder of swimming pools, visited public natural swimming pools in Europe and admired the application of the constructed wetland technology to the filtration, clarification and purification of the pool water. Recently, an implementation of a natural swimming pool at a multi-unit housing complex in Mauritius, Africa, inspired the founder to put this idea into the sustainable urban housing environment.

Social Impact

How many people have been impacted by your project?

More than 10,000

How many people could be impacted by your project in the next three years?

More than 10,000

What barriers might hinder the success of your project and how do you plan to overcome them?

Because natural pools have been proven so successful and have gone through many phases of exploration and readjustment, there are very few technical issues that might pose a problem. The new development in this case would be building natural pools in poorer areas of the world. They have mostly been associated with wealthier clients. However, we are now seeing more people who are interested in building natural swimming pools for their own community using volunteer labor. Construction needn't be very expensive given local labor for excavation, backfilling with gravel and constructing simple stone walls. Additionally, natural pools don't require gunnite, such as traditional pool construction methods. A simple pond liner is all that is necessary.

How will your project evolve over the next three years?

Natural swimming pools have been evolving for the past 25 years. The next phase and logical step seems to be moving towards community projects such as the Tanzi apartment complex. While hundreds of public natural swimming pools have been built, replacing the typical neighborhood (chemical) pool, it is a great idea to integrate them with the construction of new apartment complexes. Apartment complexes with existing community pools can also be outfitted with new natural pool technology for less than the cost of renovation. We would like to see natural swimming pools become more accessible to every budget and provide a unique opportunity for developing countries. There is no reason they cannot be constructed using cheaper (yet still equally effective) materials and methods.

Sustainability

For each selection, please explain the financial and non-financial support from each

Natural swimming pools are typically financed by those who wish build them, be it a private or public endeavor. Non-financial support generally comes in the form of enthusiasm garnered upon new projects by intrigued community members. The more interest generated, the more successful a natural swimming pool project can become due to input of ideas and support, financial or otherwise.

How do you plan to grow and/or diversify your base of support in the next three years?

We actively seek to advertise the possibilities that natural swimming pool technology presents and to educate people as to how these pools are a healthier, more sustainable and cost-effective alternative to traditional pools. By making presentations at academic institutions and trade shows we are able to inform building contractors, design professionals and other key people about natural pools. We also seek to inform the general public, including homeowners and those with a stake in local planning and development. Already, we are seeing interest in natural swimming pools grow every day. We find that our website and also word-of-mouth are very important in gaining support. While we have generated the most interest for design professionals involved in residential construction, we plan to diversify our base of support by promoting natural swimming pools as a valid construction technique for neighborhood pools and group housing communities.

Collaboration

Please select your areas of intervention in the home improvement market

Design, Technology, Technical assistance, Water, Environment.

Is your innovation addressing barriers in the home improvement/progressive housing market? If so, please describe in detail your mechanisms of intervention

We are providing a more environmentally and economically sustainable option for swimming pool construction, especially in group housing situations. By using shared spaces for "regeneration zones" that function to purify water and also serve as aesthetically-pleasing water gardens, we can create a type of residential dwelling that is denser yet more livable than it might be otherwise, especially in hotter climates.

Are you currently collaborating with private companies, or have you partnered with private companies in the past? With which companies?

We license existing building contractors to be able to build certified BioNova Natural Pools, held to a high level of precise craftsmanship and quality. They are then qualified to be the licensed builder for any projects that arise in their geographic area, while still under the supervision and ongoing guidance of our expertise.

Please describe in detail the nature of the partnership(s)

BioNova Dealer Partners, as they are called, go through extensive training so that they understand all of the design concepts and technical aspects of natural swimming pool construction. They pay a yearly fee to maintain their license to build and we provide them with ongoing support in technical know-how, marketing and construction practices. They are encouraged to attend yearly training events at the German BioNova headquarters and our North American headquarters.

Select the unit(s) with which the partnership was formed