

The Regeneration of Ramboland

Learning from one differently-abled man launched nationally acclaimed sustainability in Lancaster



Imagine living in a home that creates eight times the energy that it uses, treats its own water on site, and provides 50 percent of its inhabitant's food. It even shares electricity with the neighbors and powers the street lights on the block. This is what Project Rambo aims to do.

A grassy lot in southeast Lancaster will be the site of this unprecedented sustainability project and the future home of Ron Rambo, chief visionary and namesake of the

undertaking, a man who was born with cerebral palsy and has exclusively used a wheelchair since early adulthood. This means that Rambo's new home will not only be radically sustainable, but will also be designed to be universally accessible, meeting the needs of any person, no matter how differently abled.

Facing the Challenge

Throughout his life, Rambo, now 57, has faced many challenges in finding housing to meet his needs, especially given that he's a Section Eight renter. A landlord must be willing to modify a property to make it safe and accessible for Rambo, and some aren't willing to do so; landlords have even hung up the phone on him when they realized he's a person with special needs. Further, many city properties are not built for wheelchair maneuverability. For instance, Rambo's current apartment is inaccessible from the front because of steep concrete stairs. He cannot access the laundry room and has difficulty maneuvering in his hallway. Most frustrating, his bathroom is too small for him to effectively use the shower, even with the help of his aides.

In his search for an alternative to these less-than-ideal conditions, Ron learned that rather than rent, he could buy a home through a special state-run home-ownership program. He was even offered a piece of property by his mother, Joyce Killian, who owns a 10,000-square-foot lot behind her East End Avenue home. All he needed was an architect.

This was how Ron was introduced to Max Zahniser, a LEED fellow, sustainability consultant, educator, and green architect. From their partnership, Project Rambo, known affectionately as Ramboland, was born. (LEED stands for Leadership in Energy and Environmental Design; read more on p. 45).

Rambo's life-long affinity for nature and desire to care for the planet meshed perfectly with Zahniser's vision of sustainability. As Zahniser states, the two men, both Lancaster natives, "share a passion for demonstrating how things can be better."

Team Rambo

Zahniser used his skill for connecting people in the sustainability community to build a team to make Ramboland a reality. He brought together 40 pioneering professionals,

representing nearly a dozen local and national firms, to build Rambo his home and to, well, change the world while they were at it.

Accomplishing such a flagship mission requires collaboration, planning and commitment. The aptly named “Team Rambo” has taken on the project’s design and planning pro bono due to the groundbreaking nature of the project.

One of the builders involved is Jesse Pellman, a founder of Longview Structures and a LEED accredited professional. Jesse is excited about the possibilities of Ramboland: “This is unprecedented. It’s unique in what it’s aiming for.”

Pellman knows that the project, experimental as it is, can help to answer one of the “big questions” of sustainable architecture: what exactly does it take to make housing responsible? Zahniser shares Pellman’s enthusiasm for what he can learn from the project and how that knowledge could be applied to help strengthen and rejuvenate low-income neighborhoods in Philadelphia, the city he calls home, and beyond.

The Future of Responsible Housing

With this guiding philosophy, the team is in line to earn top certification in green building metrics. They are seeking LEED Platinum status, as well as the Living Building Challenge certification, which can be awarded only to a home that is “a regenerative, self-sufficient system.” As Heidi Kunka, the director of the US Green Building Council Central Pennsylvania, explains, “Seeking LEED Platinum status is a profound statement.”

There are not many LEED Platinum projects in the world. Ramboland would be the first of its kind in South Central Pennsylvania, says Kunka, as it is the only LEED for Homes Platinum project that is designated as “single-family.”

“We [as humans] fragment the world into pieces to understand it,” Zahniser explains.

As a living laboratory, Ramboland will be a place for people to begin to grasp the deep interconnectedness of all things, as well as to learn about the possibilities for the future of our built environment.

“There aren’t many folks looking at whole systems,” Zahniser says.

Because of its unique status in the green building world, several local institutions of learning, including the University of Pennsylvania, Steven’s College of Technology, Franklin & Marshall College, Millersville University, and Penn State—are interested in integrating Ramboland into their curricula. Zahniser’s not-for-profit organization, The Sustainability Nexus, will officially own the home so that it can remain a place of learning well into the future, even after Rambo passes.

Ramboland is a deeply holistic undertaking, marrying sustainability and accessibility to create a home that’s inclusive of all people, without exception. It honors the immutable connection between humans and nature, by not only causing less harm to, but by actually regenerating it the natural world.

This is the fullest vision that Zahniser knows of. “It’s a precedent for the work we want to do everywhere else.” The team plans to start the Ramboland project this summer.

Small House, Big Impact

Ron Rambo’s home has been carefully designed to use simplicity to its benefit. This is a core tenet of green building, as it saves resources, energy, and cost. The team spent a great deal of time working and reworking the geometry of the home to ensure that it would be as efficient as possible. For example, they considered eight different roof profiles, as they factored in airflow, maximal solar exposure (for solar panels), and even outdoor beauty. Ron’s home will also be built on a smaller scale than most conventional dwellings; at no more than 1,500 square feet, it will require fewer materials and less energy to heat and cool once completed.

Amazingly, the small house will produce eight times the energy that it uses. It will share excess electricity with neighbors through the installation of energy retrofits in their homes. Eventually, power stations for community-shared electric cars and neighborhood street lights can be worked into the system, as well.

One of the most impressive features of Ramboland is the on-site, wetland-style water treatment system. It will cleanse all of the home’s used water and process sewage through

bioremediation filter beds that utilize the natural purifying abilities of microbes and plants' root systems. As Max notes, this water will actually be cleaner than water from the local treatment plant, as it will be free from trace amounts of pharmaceuticals and disinfection chemicals. There will also be a 5,000-gallon cistern for rainwater collection on site. The water and sewage treatment processes and the collection of rainwater will allow for full independence from the city water lines and sewer system. This has never before been attempted in Lancaster City, but it was met with full approval from city leaders, including former mayor Rick Gray. "They've been really supportive of this whole endeavor," says Zahniser.

Ramboland will also produce 50 percent of Rambo's diet by growing a "food forest" consisting strictly of native species, including a paw-paw tree, on the property. Permaculture-style herbs and vegetables will be grown in wheelchair accessible planter beds. Any extra food that the garden produces will be sold to two of Rambo's favorite organic produce stands in Lancaster's Central Market, helping to generate some extra income.

Inside the home, reclaimed wood will be used to fashion adjustable countertops and furniture, as using reclaimed materials eliminates the environmental impact of manufacturing and sourcing these items. Reclaimed materials are also better for inhabitants' health, as many of the volatile organic compounds found in brand new materials have already off-gassed years previously. Further reducing any exposure to VOCs, the team has decided to use polished concrete for the flooring, which totally eliminates any chemicals inherent to carpeting or other types of flooring. It also happens to be a great surface for wheelchair maneuverability—a truly synergistic example of the merging of sustainability and accessibility.

LEED Certification

LEED stands for Leadership in Energy and Environmental Design. Devised by the US Green Building Council, it is the most widely recognized green building rating system in the world. It offers a framework to create healthy, highly energy-efficient buildings, with the prevailing goal to ensure a sustainable built environment for all people, regardless of socioeconomic status, in one generation. LEED buildings cost less to operate. They save

water, energy, and resources, while generating less waste than their conventional counterparts. Heidi Kunka, director of USGBC Central Pennsylvania, explains that LEED takes a holistic approach: “It’s not only important the way a home is designed and built, but also how it’s operated and even maintained.” LEED certification is divided into four categories: Certified, Silver, Gold, or Platinum. To receive certification, a building must earn a certain number of points over several areas, including energy efficiency, indoor air quality, building materials, and the use of native plant life in the landscape design.

Get Involved

Donate to the cause at ramboland.com. All donations are tax deductible, as they’re made to the not-for-profit organization in charge of the project, The Sustainability Nexus. You can also get in touch with Ron himself via Facebook; he would love to hear from you!

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