The Garden of Cosmic Speculation

By Katie Yurkewicz

"What is a garden if not a miniaturization, and celebration, of the place we are in, the universe?"

Charles Jencks

It all started with a swimming hole. In 1988, Maggie Keswick, the wife of noted architect and designer Charles Jencks, had a swamp dug up on her family's Scottish estate to create a place for their children to swim. To Jencks, the excavated earth provided an opportunity not just to shape the estate's landscape, but to invent a new grammar of landscape design.

During the next 20 years, the project became a focal point for Jencks' exploration of nature's fundamentals, the process of scientific discovery, and modern scientific achievements. The resulting Garden of Cosmic Speculation challenges society's ideas of how one experiences nature and what a garden looks like.

"Gravity is a law of nature. Electromagnetism, the four forces—those sort of things are nature and they underpin all of growing nature," Jencks says. "And so a garden is a really interesting place to speculate on the ultimate forces of nature and laws of nature and constants, and that's what I do with scientists and artists and friends and philosophers."

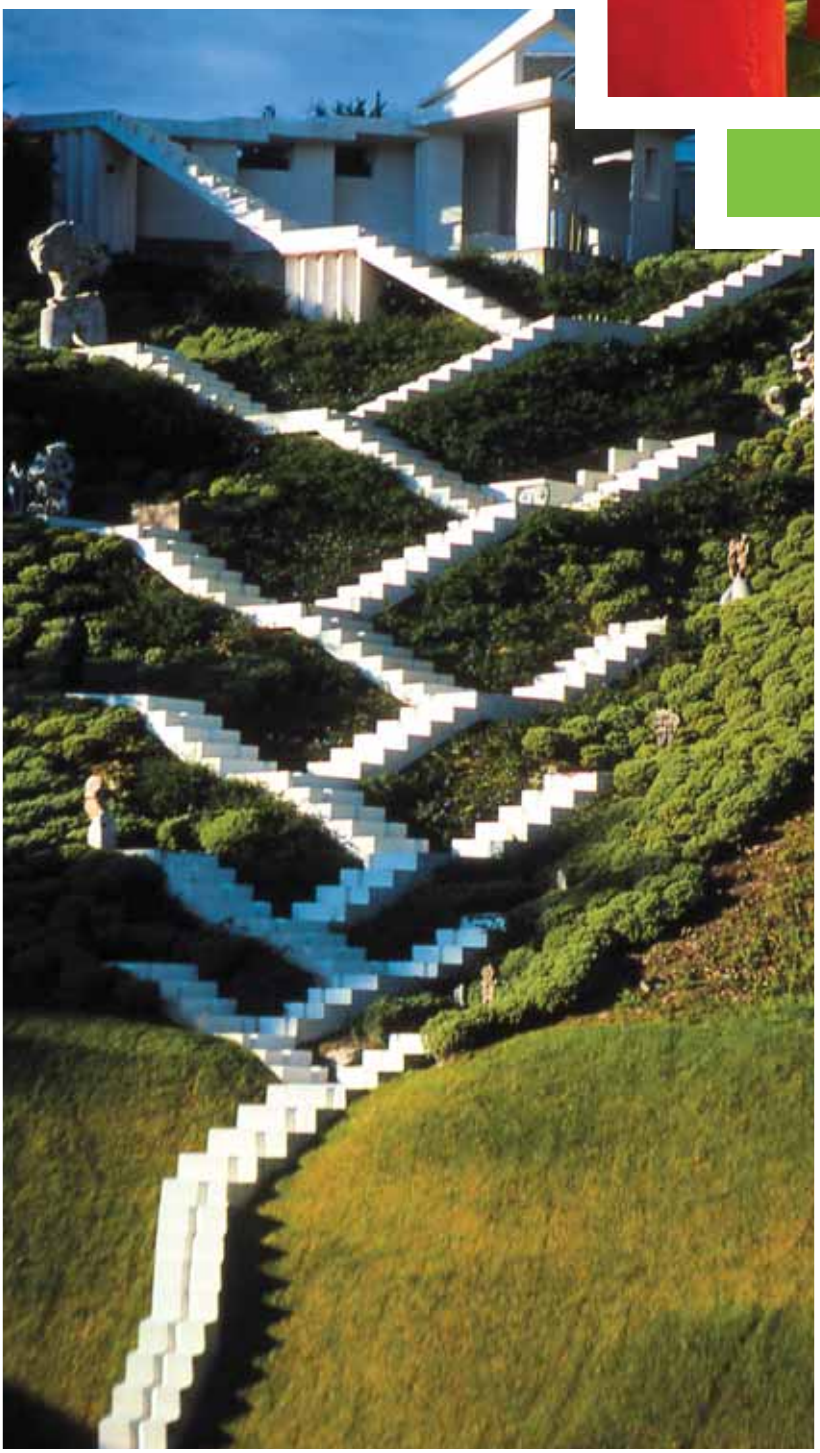
Woven throughout the garden are themes from biology, cosmology, mathematics, and philosophy. But physics provides the underlying metaphor: waves.

Strange attractors—forms that chaotic systems evolve toward over time—inspired the twisting wave structure of the 350-foot-long Snake Mound. Soliton waves, which can travel through each other and still keep their identities, appear as terraces, fences, and gates designed to keep out hungry bunnies. The wave-like nature of electrons shows up as fuzzy mesh in a representation of the deuterium atom. The curving and stretching of space-time near a black hole becomes a dining terrace made of Astroturf and aluminum.

In the Quark Walk, eight red-painted tree trunks represent the pattern created by the mixing of three types of quark. An undulating fence runs through

Not just physics: The DNA Garden explores the building blocks of life and sight, sound, hearing, taste, touch, and intuition. Paths in a linear wave pattern emphasize the exchange of information between cells and DNA.

Below: The Universe Cascade. Starting at the top in the present day, visitors descend through 13 billion years of cosmic evolution. Twenty-five landings mark important shifts in cosmic history. At the bottom of the cascade, the steps disappear into murky water, reflecting the ultimate mystery of the origin of the universe.



Above: A proton in the Quark Walk. Below: One of the garden's many ambigrammi, a manifestation of symmetry in words.

Photos: Charles Jencks, James Gillies, and maverickphotoagency.com

them; its mesh fabric creates interference patterns, exposing the wave-like nature of light, while the ends of the fence sprout sprays of particle tracks.

Many of the garden's narratives come together in the Universe Cascade, a waterfall and staircase leading from the house to the garden. It represents the evolution of the universe as a series of steps, or symmetry breaks, from the beginning of time up through 25 levels to the present. On each level, displays containing local rocks and minerals represent the stages of evolution.

Jencks' work on this garden, and on subsequent projects in Scotland, Europe, and India, has been carried out in close collaboration with researchers.

"I'm very interested in translating with scientists the ultimate languages of nature at the very small" scale, he notes. And the very big; his landscape for a garden in Milan, Italy, combines the most recent understanding of the formation of spiral galaxies with prehistoric stone circles that mark and measure the changes of seasons.

Jencks is also developing a landscape project at CERN, the European laboratory for particle physics in Geneva, Switzerland, including a garden that may eventually be one of the first aspects of CERN that visitors see. The garden would give people a way to experience particle physics with their senses.

"That's the job of artists. It's the job of landscape," he says. "It's the job of us to give people sensuous equivalents."

Below: The Standard Model offers a seat—in this case to theoretical physicist Peter Higgs—on which to ponder the question: Are these 17 particles the smallest building blocks of nature? Right: Equations that govern the universe adorn a greenhouse.

Above: Model of the deuterium atom, held up by the Schrödinger equation and showing electron orbits as waves (mesh) and particles (curved metal).

Below and right: Views of the Black Hole Terrace. Charles Jencks is shown on the left, along with theoretical physicist Peter Higgs and CERN Director-General Rolf Heuer.

"The laws of nature may be omnipotent, but they can also be challenged. A garden is a perfect place to try out these speculations and celebrations because it is, of course, a bit of man-made nature, a fabricated and ideal cosmic landscape, and a critique of the way the universe is."

Charles Jencks

Left: Twisting waves, found throughout the garden, are represented in large scale in the Snake Mound.