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Outsiders

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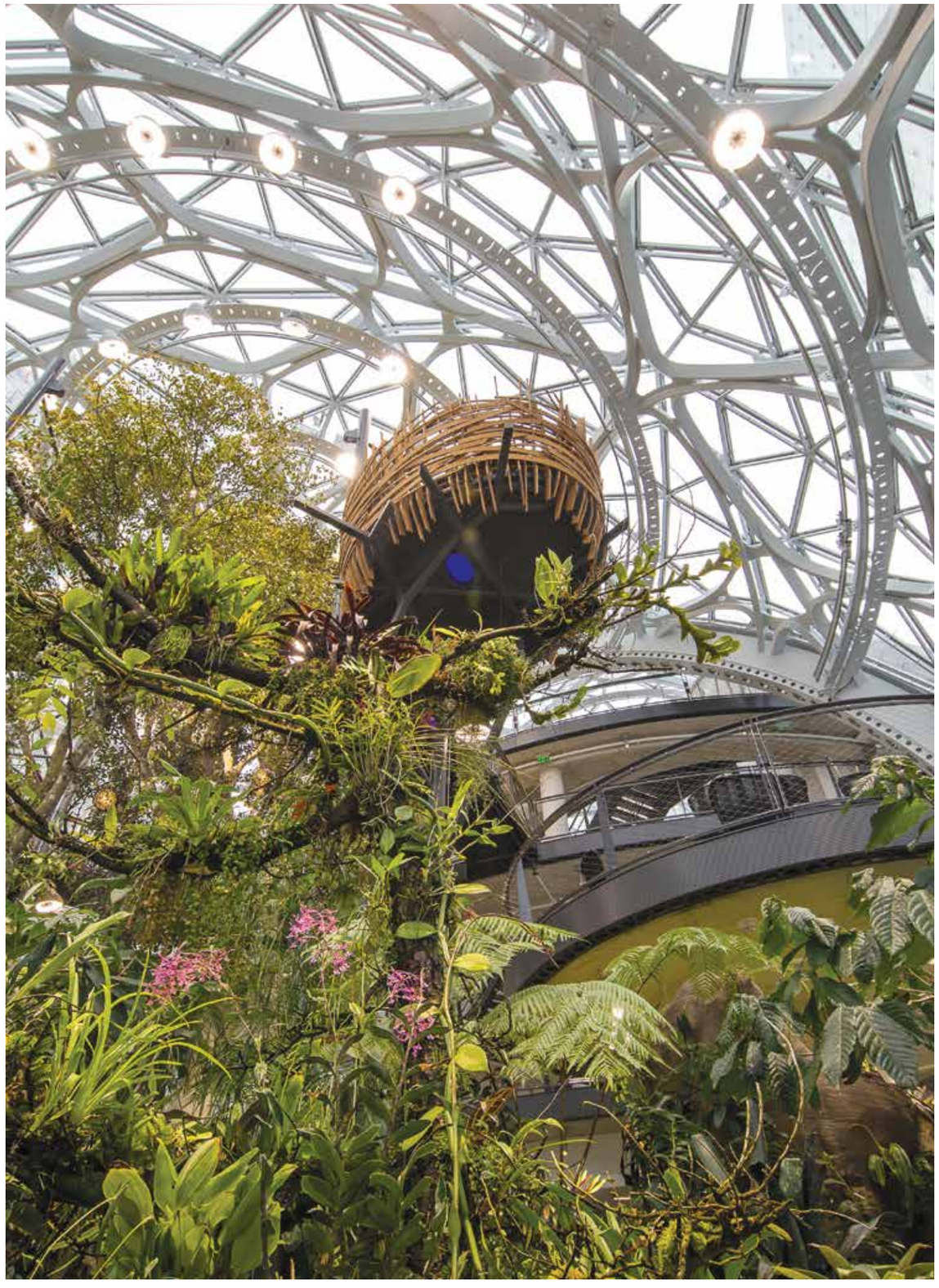
> "From earth goddess to Dame
> Nature to environmental ethics to . . .
> now what? . . .
> How about less introspection?
> How about more plants?"
> —Robert Riley, "Green Chaos"

Now what? Nearly six decades after the opening of the Climatron (and more than 20 years after Robert Riley's nostalgic reflection), the anthropocentric view of nature has been unsettled. No longer fecund, fragile, nurturing, vulnerable, or reasonable, it may be that, as philosopher Isabelle Stengers claims, nature is Gaia the intruder, Gaia the indifferent, Gaia who asks nothing of us. And even still, in Stengers's view, there is no foreseeable future in which Gaia will restore our entitlement to ignore her. Life in a calamitous future, though materially imminent, is also a matter of human perspective.

In this global context, the Climatron at the Missouri Botanical Garden, built in 1960, could be dismissed as a miniature, as a microcosm of engineered nature borne out of an atomic-age faith in technology. As detailed by historian David P. D. Munns, this era of the "tron" was marked by equal parts hubris, confidence, and thrill. From the scientific frontier, the new experimental environments of physics' synchrotron, astronomy's magnetron, and biology's phytotron were direct inspirations for the campy popular novelties of the Gravitron, the Robotron, the Orgasmatron, the Jumbotron, etc. When it was conceived, the Climatron reached across the realms of science and leisure.



NBBJ, Amazon Spheres, Seattle, Washington, 2018.

Technologically, it is a direct descendent of the original Phytotron at the California Institute of Technology in Pasadena, a facility designed by plant physiologist Frits Went in the late 1940s to precisely identify the parameters of growth for economic crops, as well as methodologies for isolating experimental variables through building systems. The California Phytotron established foundational research on plant life cycles; in other words, the *interior* environment produced knowledge applicable to dynamic exterior landscapes, narrowly focused through the lens of human prosperity. Munns, in his 2017 book *Engineering the Environment: Phytotrons and the Quest for Climate Control in the Cold War*, wryly notes the relevance of the Phytotron researchers' work to present-day concerns on climate change: "In 1950, even a lowly graduate student could have readily told [climate activist Naomi] Klein that a 4°C change in temperature will cause gherkin flowers to change sex, while a 6°C increase will yield no flowers at all."

When Went left Pasadena to become the director of the Missouri Botanical Garden in St. Louis, he conceived of the Climatron as the symbol of a bright, new future. Its construction plowed through the site's 19th-century glass palm house, leaving only a fragment of its loggia within the Plexiglas-clad geodesic dome—a trophy for the triumph of modernism. In contrast to the particular environment of a traditional greenhouse, the Climatron, 175 feet in diameter and uninterrupted by interior columns, housed several distinct geographies (Hawaii, India, Amazonia), which contained smaller, specific landscapes (rice terrace, mist forest, plantation, jungle bog). As described in a 1961 *Popular Mechanics* article, an "unattended" Honeywell DataCenter the size of a concert piano regulated the temperature and humidity across a dozen climates with such precision that "visitors can tell when they leave one climate zone and move into another, even though there is almost no perceptible movement in the air around them." Through this intense botanical display, a shrinking world could be made to feel even smaller—a family could traverse several continents, from mountain to sea, in an afternoon. Based on Riley's account, one might also assume that the didactic program was utterly lost on many early visitors who were similarly captivated by the feeling of "sensual engulfment" by the plants. The city of St. Louis was, at the time, haunted by its recent past. The effects of violent and discriminatory slum clearance, white flight into the suburbs, and an urban population in decline since 1950 were the prevailing anxieties of the day. For civic boosters, there was great idealism in projects such as the Climatron and Eero Saarinen's Gateway Arch, completed in 1965, but the average garden visitor did not live in a physical world that seemed poised for technological salvation.

When Riley proclaims "Nature has won," he is, of course, describing a symbolic victory. Inside the Climatron, humans are not at the mercy of nature, but rather obliged to see to its well-being.

In exchange, we may find delight in green chaos or perhaps learn something from botany designed for display. As public awareness of environmental crisis grew in the late 20th century, the Climatron was succeeded by many interior landscapes with even more ambitious ecological and technological agendas. The early 21st century has seen a new class of planted interior environments, most notably Amazon's Spheres (2018) in Seattle. Rising from street level and occupying half of a city block, the Spheres' interlocked glass domes house more than 40,000 plants from five continents, served by sophisticated climate-control systems. For Amazon corporate workers, this environment is intended to spark innovation, productivity, and creativity through biophilic design. Though the complex is already a city landmark, the general public can only visit a lower-level (and largely plant-free) exhibit, oddly named *Understory*, that describes the inaccessible verdant landscapes above. The Spheres, in their explicit distinction between insiders and outsiders—and clarity in who is intended to benefit from that distinction—is as potent a display of high-modernist technological optimism, at many scales, as any of the retro "trons" of the previous century.

Today, the still-beloved Climatron shows its age. Fans roar above as families take selfies in front of banana plants and fake-rock waterfalls. The exterior shell, in comparison to contemporary buildings, no longer seems like a gossamer miracle. Though the massive control center is gone from public view, hoses, pumps, vents, and gaskets show managed nature on full display. Though it would be easy to look back on the Climatron as a relic of past attempts at environmental control, there is hope in its innocence and interiority. The "inside," when truly public, is not a place to hide from ecological crisis, but a place that can engender astonishment in the messy enterprise of attempting to orchestrate nature and the built environment, of having to make better choices about whose needs are met and how. In the face of an indifferent and volatile Gaia, these few places where fear and delight are somehow both still under human influence can offer curiosity, solidarity, and joy in the rehearsal for life "out there," together.

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GREEN CHAOS: THE CLIMATRON AND THE ENCLOSURE OF NATURE

Robert Riley

Climatron, Missouri Botanical Garden, St. Louis, 1960.

From earth goddess to Dame Nature to environmental ethics to . . . now what? PBS's *Wonders of the African World* for the earnest amateur and debate over the "role of nature in postmodern society" for the design academic? How about less introspection? How about more plants? How about the Climatron (1960) at the Missouri Botanical Garden when the weather's nasty?

I first went to the Climatron—designed by the St. Louis firm Murphy and Mackey—in the mid-1960s, but it has taken me 30 years, and this reminiscence, to distill the essence of the experience—that it is an experience, not just a design. That experience is immersion, sensory abandon, submission to an almost primeval overload of plants, smells, and humidity. It is a northern European fantasy of what nature might once have been, a sensual engulfment—one can almost see the Green Man. And high above this dense botanical mélange, high above what John Fowles termed "green chaos," is the supraration-al, ultrareductionist, high-tech spider-web glass roof. We get a half-cerebral, half-affective interplay of the natural and the artifactual, an inversion of Ryōan-ji (1450) or Luis Barragán, with the human-made appearing beyond the vegetal.

The Climatron seems also a closing statement in the two-century design exploration of enclosing greenery for affective delight and intellectual pride. From the orangeries to the great Victorian conservatories, the themes were similar, but, as was so often the case, the Victorians celebrated them with excess—extravagant expressions of nature-romancing, classification, iron and glass, and heating technology, imperialist explora-tion and collection, and, above all, confidence. At the Crystal Palace (1851) and the Chatsworth House (1549), nature and architec-ture were in balance, both clam-oring for one's admiration. In this sense, the Climatron is an ending; the artifactual/architec-tural technology is so potent that its formal/spatial expression is gossamer-like, modest, minimal. Nature has won.

The Climatron is one of the last statements in another tradi-tion, too—public and communal participation with nature. This is the tradition of design for public parks, not corporate parks, and the ritualistic mass celebra-tions of spring flower shows and autumn chrysanthemum displays Contemporary debates over "who the public for this design is" show us what we have lost.

Maybe, like the Seagram Building (1958) or the Farnsworth House (1951), the Climatron leaves little more to say. In the last 30 years, we have seen the delicate plantings of the Ford Foundation atrium (1967), the triumph of the Hyatt Regency view of nature, the ficus-ing of interior commercial America, and "winter gardens" with about a dozen plants (Battery Park [1890]) or none at all (Chicago Public Library [1991]).

The Climatron is a climactic expression of a design approach and a tradition. It is also a lesson in the eternal power and affective impact of our design foundation: plants. We can use more such immersion in green chaos—particularly when so ele-gantly housed.

Robert Riley is professor emeri-tus of landscape architecture at the University of Illinois at Urbana-Champaign and author of *The Camaro in the Pasture: Speculations on the Cultural Landscape of America* (2015).