

A GARDEN THAT GATHERS EVIDENCE



ABOVE
At the center of the garden is a large meadow. Adjacent greenhouses offer an alternative space for therapy during harsh weather conditions.

BELOW
Natural materials characterize the garden's built elements.



OUTSIDE COPENHAGEN, A THERAPY GARDEN IS DESIGNED FOR FEEDBACK LOOPS.

BY JOANN PLOCKOVA

Since 2012, the Hoersholm Arboretum near Copenhagen, Denmark, has welcomed war veterans with PTSD, patients with binge eating disorder, and individuals suffering from stress-related illnesses. Included in Cooper Hewitt's 2019 Design Triennial, the two-acre section of Hoersholm in question is known as Nacadia, a research-based therapy garden where the design supports the therapy and the therapy supports the design.

"I don't know of any other outdoor therapeutic spaces where there is a formalized therapeutic program led by professionals with the aim of using the natural setting as an aid in healing," says Clare Cooper Marcus, Honorary ASLA, who, along with coau-

thor Naomi A. Sachs, ASLA, included Nacadia in her book, *Therapeutic Landscapes: An Evidence-based Approach to Designing Healing Gardens and Restorative Outdoor Spaces*. "The only therapeutic spaces comparable to Nacadia might be forest-bathing settings in Japan where research has been conducted on mood or stress level changes before and after spending time in the forest. None of these, to my knowledge, is conducting research on PTSD."

Nacadia, which is owned by the University of Copenhagen, was designed by the landscape architect Ulrika K. Stigsdotter in collaboration with a multidisciplinary team including researchers and medical clinicians with backgrounds in architecture and nature-based therapy (NBT) respectively. "When I started the project it was very hard to find high-quality research," says Stigsdotter, a professor at the University of Copenhagen. "People couldn't really describe to me why they had

NACADIA SITE PLAN



ABOVE
Nacadia's plan highlights its five "rooms" in green.

TOP RIGHT
The "Dark Forest Room" is one of the more enclosed spaces within the garden.

designed [their therapy garden] the way they did or how they used it."

Stigsdotter developed a process model called Evidence-based Health Design in Landscape Architecture (EBHDLA). She worked closely with the associate professor and psychologist Sus Sola Corazon. Grounded in four main points, the model relies on credible evidence to guide the design. "The garden must also match the patient's treatment process by both supporting and challenging them," Stigsdotter says.

Five spaces or "rooms," designed with varying levels of seclusion and openness to allow patients to move from therapeutic talks to alone time to nature-based activities at a pace and level of intensity that matches their individual needs, have been incorporated into Nacadia at large, which, made from mainly plants, gives the therapy garden

its untouched appearance. "It's like a wild forest garden within a forest," says Corazon. "A connection to untouched nature is important."

Starting with a PTSD pilot program in 2012, Nacadia's numerous research projects have included the 2013–2017 Nacadia Effect Study (NEST), which tested the efficacy of Nacadia's NBT. The project included a diagnostic postoccupancy evaluation, which measured the effects of the design on patients' health outcomes in order to identify the design's shortcomings. "One important aspect of [the EBHDLA] model is that the process does not stop when the design has been implemented," Stigsdotter says. "The space must be continuously evaluated so that newly documented experiences and research results can be incorporated into its design."

Along with showing significant improvement in the participants' general health, the NEST evaluation also identified a design drawback: an uncomfortable amount of exposure to others using the arboretum. Stigsdotter and her team resolved the issue by adding larger and denser trees and woodpiles along a fence. "It is important that you balance the role as landscape architect and researcher," Stigsdotter says. "You must never forget to be a designer and who you are designing for." ●