

## Gardens that take care of us

After a long period of absence, hospital and care-facility gardens are making a comeback. But these new gardens are not just ornamental. They aim to improve wellbeing. Some are even designed to change the outcome of disease—including neurological disease. Adrian Burton investigates.



The writer Rumer Godden (1907–98) is credited with saying "A garden isn't meant to be useful. It's for joy." Landscape architects designing gardens for modern hospitals and care facilities are, however, unlikely to agree with her. With input from health professionals, they aim to create spaces that provide measurable benefits in patients with specific medical conditions. As part of regimens for the care and even treatment of people with dementia, who have had a stroke, or who require rehabilitation after traumatic brain injury, these gardens are most definitely meant to be useful.

The idea that gardens can have calming, restorative, and even healing effects is certainly not new to western medicine. In Victorian Britain, gardens were an important feature of many psychiatric hospitals. In the modern design of hospital and care-facility gardens, however, landscape architects are looking to understand and maximise these effects for different types of patient.

"In the case of Alzheimer's disease and other forms of dementia, we now know enough about the implications of changes in spatial cognition to create gardens that are accessible, supportive, and prosthetic", explains Clare Cooper Marcus (University of California, Berkeley, CA, USA). "For example, the Living Garden at the Family Life Center (designed by Martha Tyson) in Grand Rapids, Michigan (USA), is [first] designed to be safe for patients. It is visible from a frequently used indoor space since residents may forget it is there. Entry from a single door to a level garden path, which is a simple figure-of-eight loop with recognisable landmarks along the way, enables people to

navigate with no confusing right or left turns or dead ends that could give rise to agitation or anger. The return of the path to that single door prevents any confusion as to how to re-enter the building, and all parts of the garden are visible to the staff."

Many of the plants in this garden are varieties that were popular when users were young, which helps in reminiscence therapy. "Elements that help people retain long-term memories and activities from the past are frequently incorporated into gardens for people with dementias", explains Marcus. "At the Chemainus Health Care Centre (BC, Canada), landscape architect Edward Stillinger discovered that most of the residents in the Alzheimer's disease facility had grown up on the prairies. To support early memories in a courtyard garden, he incorporated prairie grass, a traditional garden shed, raised beds for gardening, bird feeders, and a large outdoor thermometer. [Similarly], the Werruna facility run by the Hesse Rural Health Service in Winchelsea (VIC, Australia) includes a farm shed with a tractor and workbench, and farm animals that residents can visit, talk to, and feed. And a number of facilities in North America and the UK include bolted-down antique cars that residents wash and polish as part of a programmed activity."

Although gardens for people with dementia can provide a familiar, supportive environment and encourage exercise and reminiscence, they cannot alter the final outcome of the disease. For patients with other neurological conditions, however, gardens are being designed with the aim of doing exactly that. "A [so-called] healing garden, for example, is designed to provide

relief from the psychological distress of a disease, but not to alter its outcome", explains Stephen Mitrione, a landscape architect and physician with AllinaHealth (St Paul, MN, USA). "In contrast, a therapeutic garden is designed to have a specific and measurable outcome on the course of a disease. By working in close collaboration with health professionals, the garden is designed to help patients attain the therapeutic goals identified."

"Since 1997, the Rehabilitation Institute of Oregon therapists have used their garden (designed by Ron Mah and Brian Bainson) for patient treatments in the stroke recovery programme", explains Teresia Hazen (Therapeutic Garden Program, Legacy Health, Portland, OR, USA). "Physical therapists use stairs, ramps, gravel paths, a variety of height-raised beds, and a mailbox for patient treatment goals related to mobility, balance, and problem solving. Occupational therapists use watering cans and hoses for skill building and hand strength, in task

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For more on the history of hospital gardens see <http://conferences.ncl.ac.uk/unescolandscapes/files/HICKMANClare.pdf>



Legacy Good Samaritan Medical Center Stenzel Healing Garden

Legacy Health

For more on **Gardening Leave** see <http://www.gardeningleave.org/>

For more on **High Ground** see <http://highground-uk.org/>

For more on the **benefits of gardens for elderly people** see *Psychiatry Investig* 2012; 9: 100-10

For more on the **idea of gardens and competition for resources** see <http://www.asla.org/pnn/Article.aspx?id=25294>

For more on **health responses to gardens** see <http://www.mnnesotamedicine.com/PastIssues/PastIssues2008/March2008/ClinicalMitrioneMarch2008/tabid/2488/Default.aspx>

For more on **gardens and landscapes that promote health** see <http://www.healinglandscapes.org>

activities, and in adaptive strategies. A collection of birdhouses is often the first stop for patients and their speech therapist; attention, sequencing, and communication goal work takes place in this functional setting. And recreational and horticultural therapists conduct treatment sessions in the garden year-round, in addition to indoor sessions."

Therapists at the Magee Rehabilitation Hospital (Philadelphia, PA, USA) use a sixth-floor rooftop greenhouse garden for a range of rehabilitation services. For patients who have had a stroke, the garden offers opportunities to exercise the mind and improve multistep task performance through the creation of small gardens in dishes or by performing stem propagation. Simply moving plant material around and doing different gardening activities helps with recovery of a range of motions, strength, and coordination.

"Similarly, the horticultural therapists at the New York University Langone Medical Center offer gardening and nature activities that help patients diagnosed with a cerebrovascular accident to reach rehabilitation goals", says Hazen. "And in an aphasia programme, the garden offers special horticulture activities, in collaboration with the centre's speech and language therapy department, to teach planting in an atmosphere that offers the chance of socialisation and fun, reducing the isolation these patients feel while developing their language and interpersonal skills."

Gardens are also being designed to help soldiers with post-traumatic stress disorder, traumatic brain injuries, and psychological and emotional problems. "Several gardens have been designed for outdoor physical, occupational, and other therapeutic modalities", says Naomi Sachs (Texas A&M University College of Architecture, College Station, TX, USA). "A successful example is the Warrior and Family Support Center Therapeutic Garden at Returning Heroes Home in

San Antonio (TX, USA). The garden consists of two primary areas: one for rest, relaxation, and family time; and the other for physical therapy and exercise. Horticultural therapy programmes at Salem Veterans Administration Medical Center (Salem, VA, USA) and the East Orange campus of the Department of Veterans Affairs (New Jersey Health Care System) in the USA, and Gardening Leave in Scotland and High Ground in England are all excellent examples of programmes that have put active, as well as passive, nature connection into practice."

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Evidence that environments have an effect on recovery from illness continues to accumulate, but "the key task at hand is to harness this knowledge and implement it", says Mitrione. "The process of implementation has been greatly aided by the field of evidence-based design, which is modelled directly from the same concepts [as] evidence-based care in medicine. Designers can now apply these same principles to the design of health-care spaces, using research to create places that improve care and speed recovery in measurable ways. This is most applicable to the field of neurology....Utilizing them as a treatment modality, in conjunction with other standard modalities for neurological rehabilitation, would [probably] be most efficacious. In the future, outcome-based research utilising these newly designed facilities should be an important part of their evaluation, and [will] aid the development of the field of therapeutic garden design."

The likelihood of such assessment being favourable hinges on a participatory design process. "It is vital that clinicians are involved from the outset to identify suitable types

of patients and specify therapeutic goals or outcomes that can be supported and plausibly improved by a well designed garden", explains Roger Ulrich (Center for Healthcare Architecture, Chalmers University of Technology, Gothenburg, Sweden). "Through their involvement in the process, medical professionals know the garden design will be grounded in clinical knowledge. [Of course], attributes of the designer also influence whether or not there is effective collaboration. Prospects for a successful project will be markedly better if the landscape architect has experience working on health-care gardens, and in-depth knowledge about evidence-based design approaches and best practices. Good design skills are essential—but not enough. The designer also needs to be a good listener and communicator, and committed to learning about care models and the characteristics of patients who will experience the garden. A participatory process helps ensure the designer is well informed and can tailor the garden design to effectively support the care model and the needs of both patients and health-care team."

But gardens themselves have a need: money to make and maintain them. The potential for hospital and care-facility gardens to become more common could therefore rest on whether they can reduce health-care costs. If understood only as amenities, gardens are unlikely to spread deeply into health systems. But if they can be shown to shorten hospital stays, reduce the need for pain medication or other drugs, hasten (and therefore reduce the cost of) the rehabilitation process, or reduce staff stress and burnout (as initial research suggests), financing bodies might look on them favourably. Should the evidence show these effects to be real, the day may yet come when prescribing time in the garden might be nothing unusual at all.

Adrian Burton

### Further reading

Cooper Marcus C, Barnes M, eds. *Healing gardens: therapeutic benefits and design guidelines*. New York, NY: John Wiley and Sons, 1999: 27-86

Marcus C, Sachs N. *Therapeutic landscapes: an evidence-based approach to designing healing gardens and restorative outdoor spaces*. New York, NY: John Wiley and Sons, 2013