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## **Gardens For Well-Being In Workplace Environments**

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### *Abstract*

*We propose that design for healing gardens would benefit from typological study of workplace, religious and health care gardens from cross-disciplinary and international perspectives, theory, and practice (Ward-Thompson, Aspinall, & Bell, 2010). Using place and affordance theories, and the perspectives of occupational therapy, environmental psychology, and the history and theory of design, we compare four gardens for different user needs to argue that universal and interdisciplinary approaches to landscape design drive innovation. These are the Rab Psychiatric Hospital gardens, Rab Croatia, the Walter Reed National Naval Military Center, Bethesda, Maryland, USA, gardens for the newly built Cistercian monastery of Our Lady of Novy Dvur, Czech Republic, the roof gardens of the Nomura Bank in London.*

Keywords: Healing Gardens, universal design, interdisciplinary practice, workplace garden design

## Introduction

The physical, emotional and spiritual benefits of gardens is well documented (Irvine *et al*, 2013; Natural England, 2013; Poulson *et al*, 2014), and landscape architects and horticulturalists may draw on a wide range of theoretical and practical advice on designing for medical and care purposes, including children's and psychiatric facilities, hospices and care homes (Landscape Institute, 2013; Cooper Marcus & Sachs, 2013; Bengtsson, 2014; Marshall & Gilliard, 2014). However, little cross-disciplinary research combining the theory and practice of therapeutic landscape design in health care facilities and corporate spaces exists. Four practitioners from different professional disciplines present case studies that support universal and collaborative approaches to landscape design to promote health and wellbeing.

## Growing Health/Transforming Illness

Mental health concerns are growing in Croatia and the European Union. In 2004, one out of every four days of hospital care was used to treat mental health problems (Mossialos *et al*, 2006). Typical mental healthcare environments are pragmatic and bland. Lacking sensory stimulation, they diminish the quality of life for patients. Gardening, physical exercise and social interaction are known to reduce depression and anxiety and enhance physical and mental wellbeing (Patterson and Chang, 1999). The design community is responding to the urgent need to create more humane environments for mental patients.

At the State Psychiatric Hospital in Rab, Croatia, a former WWII concentration camp, 450 patients receive stabilizing treatments for forensic psychiatry, dementia, addiction, psycho emotional and social disorders or PTSD. Director Vesna Šendula Jengić created an environment of compassionate care that is becoming a model for mental hospitals throughout Eastern Europe. The University of Washington is a lead partner in the interdisciplinary collaboration between the Universities of Zagreb and Rijeka, and the medical staff and patients to develop a master plan and convert underused open spaces into a therapeutic campus.

Patients, staff and administrators guided the design as they participated in focus groups, photo preference exercises, design reviews and construction of the gardens. The designers used attention restoration and affordance theories as a basis for restorative place making. A phased plan ensures a long-term commitment. Four phases, Discovery Garden (celebration/performance) offering physical and symbolic affordances, Solitude Outcrop (meditation) metaphorical affordances, Forest Walk (wandering, socializing and contemplation) physical and spiritual affordances, and the Learning Garden (cognitive/physical rehabilitation) physical affordances, have been implemented. An aromatic garden for occupational therapy will be completed in 2015.



Figure 1 View through the "spiral" plaza towards the "stage" shade structure in the Discovery Garden

The universally accessible gardens are now a venue for programmatic therapies, social interactions, and solitary retreats for both therapists and patients. Working and recovering while interacting with nature relieves stress and increases skill building and coping mechanisms. Designers, doctors, and students visit the hospital to learn about therapeutic environmental design and incorporate it into their hospitals. Attention to the project in national media has increased awareness of stigmas patients face and prejudice they endure. The positive outcomes of the gardens have broadened and strengthened the constituencies for therapeutic environments and transformed public thinking about places of healing, care and rehabilitation (Detwiler *et al*, 2012; Grahn *et al*, 2010). Patient testimonies include:

"Working on the garden not only made me free, but was therapy. I slept better and thought about my problems less."

"I worked because I want be useful to myself and the society. The gardens gave me pleasure and relaxation, it will be a huge benefit for the future generations that will be treated here."

"When I started working I felt great relief because I was among people who had positive energy in them. I smoked less and drank less coffee. The gardens relax me, I feel less anxious."

## Outdoor Spaces to Support Veterans' Healing

According to ongoing U.S. Veteran's Administration (VA) research, the rate of post-traumatic stress disorder (PTSD) among veterans returning from recent conflicts ranges from 10-18% (Rosenthal, Grosswald, Ross, & Rosenthal 2011), a number that may in fact be greatly higher, since some veterans with PTSD do not seek treatment for fear of reprisal or there is no nearby veterans facility available to them. More frequently than ever, veterans are returning from recent combat missions with multiple complex diagnoses (often referred to as poly-trauma) that may be in addition to PTSD, including traumatic limb amputation and traumatic brain injury (Dougherty *et al*, 2010; Rosenthal, Grosswald, Ross, & Rosenthal 2011).

Founded in 1909, Walter Reed National Military Medical Center (WRNNMC) (formally known as Naval Support Activity Bethesda) provides care to over a million service members and beneficiaries per year. Located on 243 bucolic acres of gently undulating terrain in suburban Washington, DC, the site includes a small lake, walking trails, and woods. With a rapid influx of wounded warriors with complex poly-trauma arriving on campus for intensive and long-term medical and rehabilitation services, a team of two landscape architects and an occupational therapist were contracted to develop design guidelines and recommendations to re-design the outdoor spaces adjacent to the Wounded Warrior barracks and therapy clinic at WRNNMC. Through survey research, interviews, and a series of participatory design workshops the team was able to determine what was important for the wounded warriors, their families, and the rehabilitation staff to be included in the design recommendations.

Ulrich's evidence-based design model for improved health outcomes integrates features that provide opportunities for exercise, control, social support, and access to nature and positive distraction (Ulrich, 1991; 1992). Our work factored in Ulrich's model as well as results of the survey research and design workshops to help us understand that for wounded warriors to continue their road to recovery, recommending outdoor design elements and characteristics that are purposeful and meaningful, manageable, friendly, and interesting were critical. Meaningful elements provide users with purpose, a characteristic in alignment with the mission driven military philosophy. Meaningful elements include for instance, outdoor exercise equipment, opportunities for athletic and Para-Olympic training, and elements to enable physical and psychological rehabilitation services and vocational training to be implemented outside. Manageable elements are accessible, safe, and easy to navigate; 7-8' wide paths that enable two people using wheel chairs to travel together or pass each other; community gardens that are universally designed to welcome all who care to grow together. They empower sense of control and opportunities for mastery. Friendly elements support social engagement, opportunities to barbeque and listen to music. Interesting elements break up the monotony of the day; information signs or kiosks posting daily schedules, benches to sit on and rest while watching others go by.

## Landscape Design for Spiritual Well-being

The ongoing landscape project at the newly built monastery of Our Lady of Novy Dvur in the Czech Republic alongside the work of architect John Pawson provides an opportunity to explore how landscape design can engage with the spiritual, religious well-being of a community.

The considerable brief combined elements of the sixth-century Rule of St Benedict with the more modern requirements of wine cellarage, under floor heating, and an orchard planting of 12 Mirabelle trees.

The Cloister Garth sits at the heart of the complex, the central hub around which the life of the monastery revolves. Six times a day the Brothers file in procession around the Cloister for services and prayer in the Church, and at other times it acts as the main circulation connecting the four wings of the building. The Brothers look at this space every day of their lives.

In the initial proposal, a circular maze pattern of concentric rings of flowers in summer, becoming a relief pattern in winter under snow, inspired by the Pavement Labyrinth in Chartres Cathedral was proposed. This was accepted by the Abbot, but was met with some scepticism by the Brothers, some of whom felt that such a motif was too “pagan.” After many design sketch exchanges by fax and email – the Brothers are Cistercian Trappist monks, so a silent Order, but are prodigious email writers – a compromise was reached, which incorporated a cruciform path into the circular pattern – thus tempering its pagan nature with a Cross.

Another drawing suggested a simple stone bench set between the cutting flower garden and the *jardin des simples*, looking south across the valley to the forest in the distance. This was met with a swift rebuke from the Abbot in an email which read, in translation, “You must be mad to put a bench there; a monk would never sit down. If he is not working he is praying. If you must have a bench, please place it outside the Infirmary.”

The Infirmary lies at the east side of the Garth, and 12 trees are planted outside it, recalling the description of the garden at St Bernard’s monastery at Clairvaux in the twelfth century:

‘Within this enclosure, many and various trees, prolific with every sort of fruit, make a veritable grove, which lying next to the cells of those who are ill, lightens with no little solace the infirmities of the brethren, while it offers to those who are strolling about a spacious walk, and to those overcome by the heat, a sweet place for repose’ (Comito, 1979)

Beyond the walls sits a productive farm, vegetable and herb gardens, orchards, a cutting garden of flowers to venerate the Virgin, a graveyard, ancillary buildings, and a forest, all laid out with the same care and attention to detail as the Cloister Garth.

In the church courtyard stands an apple tree, its Edenic associations obvious to most, but the horticulturally erudite might recognize the variety: *Malus domestica* 'Red Devil.'



Figure 2 Planting the cloister garth. Photo by Pere Abbe Fr Samuel

## Design for Corporate Greenspace

Stress in the workplace costs employers 1.25 billion per year, but with more investment in staff wellbeing, companies could significantly improve the quality of working life of nearly a quarter of their staff (Stress Management Society, 2015). Recent reports in the media and professional journals from business, facilities management, architecture and landscape architecture find that access to outdoor green space in the workplace reduces stress, therefore office gardens or parks could improve staff wellbeing and profitability (Adharanand, 2010; Beck, 2014). While studies in the landscape architecture, health, and horticulture disciplines have produced evidence that gardens in the workplace and even indoor plants and views of green space can help to reduce stress, (Nieuwenhuis, 2014; Stigsdotter, 2004) there are no theoretical or evidence-based studies of garden design for offices using data from employees' needs and preferences for outside space.

A visual analysis and discussion with employees at the European headquarters of the global investment Nomura Bank roof garden in the City of London formed part of a pilot study on design for office gardens. The 20,000 square foot roof terrace, claiming to be the largest in London, is on the 5<sup>th</sup> floor of No. 1 Angel Lane, a prestigious development designed by architects Fletcher Priest and completed in 2010. From the terrace employees enjoy expansive views east along the River Thames and across the south bank to a spectacular view of the Shard, London's latest signature skyscraper. Below on the 4<sup>th</sup> floor is a smaller roof terrace, open to senior management only.

New developments now commonly include rooftop terraces in the interests of sustainability and to attract a workforce with high expectations of premium working environments. The Nomura Bank green roof and terrace contributes to the building's insulation, produces energy from solar panels, and recycles rainwater. Rooftop beehives and pollinating plants on the terrace improve biodiversity. The building achieved a 'very good' rating in the Building Research Establishment Environmental methodology.

The formal garden design pays homage to Renaissance and 18<sup>th</sup> century gardens with clipped box hedges, which mark the miniature canals or rills, while cuboid retaining walls, hard landscaping and structured lawn borrow from modernism. A variety of seating allows for al-fresco dining, socializing or more solitary relaxation in warm weather. The large 12-bed kitchen garden, managed by the switchboard team of three women, produces 25 varieties of vegetables, which supply the client dining room, or are offered to employees for charitable donations. The terrace offers affordances to improve physical and mental wellbeing, sensory stimulation and social interaction, and the view, historical references and the kitchen garden offer symbolic and metaphorical connections and sense of place. However, the terrace does not afford control or mastery of the space since the smaller terrace, only accessible to senior management, exposes company hierarchies and power structures. The kitchen garden, while an innovative addition to corporate space, is the preserve of only a few and a sense of privacy is difficult to achieve on a terrace exposed to view from the surrounding office windows. The space feels formal, not friendly. These conclusions are speculative, but through focus groups and photo preference exercises, the multiple needs and preferences of employees could be usefully determined and interpreted (Richter, 2014).



Figure 3 View across to the Shard from the  
Nomura Bank rooftop kitchen garden

## Conclusion

Through studies of the designs of green space in healthcare and spiritual environments we have shown that effective and innovative landscape design supported by theoretical and evidence-based research can significantly improve health, wellbeing, and quality of life in different contexts and cultures. We suggest that by using the same research methods to determine office employees' needs and preferences for outdoor space and by applying environmental affordances to office garden design based on this research, an interdisciplinary approach to design can create more productive and varied green spaces for office employees to enhance their potential to improve health and well-being in the workplace.

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