



Outdoor and Indoor Healthcare Environments

Report on an International Research Seminar

MALIN AVENIUS

A REPORT FROM CHALMERS CENTRE FOR HEALTHCARE ARCHITECTURE

Outdoor and Indoor Healthcare Environments

Report on an International Research Seminar

MALIN AVENIUS

Architecture and Civil Engineering

CHALMERS UNIVERSITY OF TECHNOLOGY

Gothenburg, Sweden 2025

Outdoor and Indoor Healthcare Environments
Report on an International Research Seminar

MALIN AVENIUS

ISBN 978-91-984300-9-7

© Centre for Healthcare Architecture

A report from Chalmers Centre for Healthcare Architecture
Publication 2025:2

Illustration på framsida (AI-genererad): Madeleine Liljegren

Architecture and Civil Engineering
Chalmers University of Technology
412 96 Gothenburg
Telephone +46 (0)31-772 1000

This report is part of the Centre for Healthcare Architecture's report series. The Centre for Healthcare Architecture, CVA, is Sweden's leading centre for creation, translation, exchange and dissemination of knowledge about healthcare environments and building design. The centre is a national platform for knowledge exchange and bridges between academia and practice. Focus is to contribute to a person-centered, efficient and safe care. CVA engages in research, contributes to education and runs continuing education. Active collaboration with Sahlgrenska Academy and organizations within and related to the healthcare sector is central to ensuring relevance and the practical application of research. For further information on CVA's reports and activities, please visit our website:

<https://www.chalmers.se/en/centres/cva/>

Foreword

CVA is committed to gathering and sharing knowledge related to the intersection between health and design. We do this through reports and a range of activities including workshops, themed days, webinars and seminars. On April 11th 2025, CVA co-hosted a research seminar; "Outdoor and Indoor Healthcare Environments: An International Research Seminar", which brought together 15 researchers from Sweden, Canada and the United States. The event featured two keynote speakers and eight other researchers presenting their work, followed by a discussion on how we can advance research in this area and ensure that knowledge is translated and disseminated into practice. This brief report provides an overview of the speaker input and presentations from the seminar.

The seminar was made possible with support from Region Västra Götaland, whose contribution supports the collective advancement of knowledge about healthcare environments. We also thank the Institute for Health and Care Sciences, Sahlgrenska Academy at University of Gothenburg, for collaboration in doing this seminar.

Göran Lindahl
Professor, Chalmers
Director of the Centre for Healthcare Architecture

Table of contents

Cultivating Wellbeing inside out.....	1
The Roots of Healing in Nature	1
An Evolutionary Response.....	1
The Biology of Trauma	2
Natural Settings as Part of Treatment	3
Shaping Spaces for Healing	3
Evidence from Practice	4
Research into Staff Well-being	4
The Economic Argument	5
Why the Woods? Exploring the Forest's Impact on Human Well-being	6
A Rare Opportunity: Researching the ICU Environment during Relocation.....	7
Furniture Beyond Ergonomics	7
Greenery as Gateway to Heat Escape	8
Locked In: Denied Access Overshadows Design	9
Towards a National Policy for Outdoor Environments.....	10

Cultivating Wellbeing inside out

What is so attractive about being under a canopy of trees in the heart of a forest? How do the green spaces of a garden and the subtle shade of urban parks influence human behaviour? And what is the comforting significance of homely furnish in residential care facilities? A growing body of research is exploring the deep connections between people and their environments, and how these interactions aim to stimulate the senses, reduce stress and improve wellbeing, ultimately leading to improved quality of life and health outcomes in care settings. For those facing stressful situations such as illness, changes associated with ageing, hospital stays, isolation, heat waves and demanding work tasks, these environmental considerations can make a profound difference.

While the links between wellbeing, health and the environment have been observed throughout history, systematic research in this area has flourished in recent decades. A key challenge for researchers today is to ensure that research findings are translated into practical applications, for example, through increasing knowledge and to develop new guidelines and policies for the design and use of both indoor and outdoor environments within healthcare settings.

The Roots of Healing in Nature

Stress reduction provides a scientifically strong starting point for understanding how nature and gardens can improve emotional and physical symptoms, according to environmental psychologist Roger Ulrich, one of the world's most cited and influential researchers in evidence-based healthcare design. "Within two or three minutes of being in or even just viewing nature, you see meaningful reductions in stress, he says. "Some effects, like changes in the brain and heart, happen within seconds."



Roger Ulrich

More than four decades ago, Roger Ulrich, Professor Emeritus at Texas A&M University, demonstrated that patients recovering from surgery had better outcomes when their hospital rooms featured views of trees rather than a brick wall. The study, 'View through a window may influence recovery from surgery', was published in *Science* in 1984, and remains widely cited today.

An Evolutionary Response

Drawing from his own 'stress reduction theory', Roger Ulrich proposes that humans have an innate, partly genetic tendency to recover from stress more quickly in natural settings. "For our early ancestors, rapid recovery from stress was very important for survival. That favoured acquiring a proneness for stress recovery responses to nature". What's striking, he says, is that these responses appear across diversely different cultures and geographies. "Whether it's in

Japan, Europe or the U.S., the data tell a consistent story”, Roger Ulrich points out. “Exposure to nature triggers a series of beneficial effects: lower blood pressure, reduced sympathetic nervous system activity, and almost immediate emotional uplift.”

Although officially retired from his most recent post as researcher at Chalmers University of Technology, Roger Ulrich found it difficult to stay on the sidelines when he was recently contacted by a network of therapists from across Europe and Ukraine, who are advocating for the creation of gardens specifically for patients suffering from post-traumatic stress disorder (PTSD). Seeking support to establish these healing spaces, they are working to develop a robust evidence-based case to present to local authorities and the European Union. “Although I was enjoying my retirement, spending time with my grandchildren and travelling with my wife, the importance of this cause persuaded me to contribute my expertise.”

PTSD is, in essence, a prolonged and severe stress reaction that develops after experiencing an extremely traumatic event such as war, natural disasters, sexual or physical assault, accidents, abuse and medical trauma. The number of people affected by PTSD in Europe – both adults and children – has risen in recent years, and spiked dramatically as millions have fled to Europe to escape wars in Ukraine, the Middle East and elsewhere. “Quite a high proportion of the refugees have been exposed to trauma, and so PTSD is a very prevalent and serious healthcare problem in Europe”, Roger Ulrich says.

The Biology of Trauma

PTSD symptoms fall into three main categories, Roger Ulrich explains. The first involves persistent negative emotions, such as anxiety, fear, depression and anger. The second category includes intrusive, unwanted thoughts – memories of the traumatic event and negative patterns of thinking. The third concerns physical and biochemical changes, mainly increased ‘fight-or-flight’ stress responses in the sympathetic nervous system, chronically elevated levels of adrenaline and noradrenaline, and, because of these heightened levels of stress hormones, a weakened immune system. But while ordinary day-to-day stress reactions are associated with elevated cortisol levels, PTSD presents a paradox: cortisol levels can drop dramatically. A phenomenon that Roger Ulrich, whose research has long been linked to stress, describes as a major surprise. “When I first learned about this, I couldn't believe it. It's completely counterintuitive. It runs against common sense.”

He explains this as potentially being due to a self-regulating mechanism: cortisol may initially surge, but then a biological ‘safety brake’ kicks in, causing levels to fall to near zero – a drop that can itself be harmful. Roger Ulrich sees this as a sign of just how extreme the PTSD stress response truly is.

Effective treatment for patients with PTSD typically involves a combination of different evidence-based approaches, such as medication, cognitive behavioural therapy and stress-reduction strategies. In terms of stress reduction, exposure to nature and gardens can serve as a valuable therapeutic tool.

Natural Settings as Part of Treatment

Although further research is needed, a substantial body of high-quality studies already makes a compelling case that gardens and natural spaces hold genuine potential to play a positive role in supporting individuals with PTSD, Roger Ulrich believes. He notes that studies – his own as well as those by other researchers – have shown health benefits that may be particularly relevant to treating PTSD patients. “Among the most well-documented beneficial effects of experiencing nature are positive changes in emotions. Findings across studies are consistent, and effect sizes are large”.

In a study from 1991, Roger Ulrich and his colleagues compared how viewing video clips of natural versus urban settings affected people under stress. The natural scenes had a markedly stronger positive effect on emotional state, while also reducing negative emotions – and the effects occurred rapidly. “Negative emotions, such as anxiety, sadness and anger, were reduced within two to three minutes, at least to some degree.” These psychological improvements coincided with physiological markers of lowered stress, including reduced blood pressure.

There is also a growing body of evidence suggesting that nature can reduce aggressive behaviour, Roger Ulrich explains. He cites a study in which visual art was displayed on a rotating basis in a small multipurpose lounge for psychiatric patients in a hospital in Alabama, USA. Results showed that the amount of medication dispensed for anxiety and agitation was significantly lower on days when realistic images of natural landscapes were shown, compared to days featuring abstract art or no artwork at all. Although little research has examined the effects on recurring negative thoughts of spending time in nature, one study found that walking in nature reduced rumination on distressing experiences.

Shaping Spaces for Healing

Since his international breakthrough in the 1980s, Roger Ulrich’s research has had a profound influence on the evidence-based design movement and hospital planning. His work has helped shape healthcare design standards, where, among other things, natural features are no longer seen as merely aesthetic additions but rather as fundamental components in environments that support patient recovery.

Another highly influential figure in the field, Teresia Hazen, has drawn on research throughout her long career to plan and manage a dozen therapeutic gardens.

Only a few years after Roger Ulrich’s landmark study, ‘View through a window...’ was published, Teresia Hazen left her job as a teacher to study horticulture and landscape architecture. During her coursework, she discovered Ulrich’s paper, which went on to shape her professional direction for the next three decades. “Roger’s paper was the first and most powerful piece I’ve read on the subject. It really inspired me”, she says.



Teresia Hazen

Today, Teresia Hazen is internationally recognised as an expert on therapeutic gardens – outdoor spaces designed to support the physical and mental well-being of patients, their families, and caregivers.

In 1991, she joined Legacy Health, a not-for-profit healthcare network operating six hospitals in Oregon, USA. From the outset, Teresia Hazen was responsible for pioneering the organisation’s horticultural therapy programmes and therapeutic gardens. Until 2020, she led the development of the initiative and coordinated twelve therapeutic garden projects.

Evidence from Practice

Today, she continues to work with Legacy Health in a consulting capacity and lectures internationally, sharing her experiences of successful nature-based interventions regarding a wide range of patients, their families, other visitors and the healthcare staff. These vary from tending indoor potted plants to outdoor physiotherapy, art and music sessions, play, and animal-assisted therapy in hospital gardens.

“Everybody has a camel in their hospital garden, don't they?” says Teresia Hazen with a laugh, showing photos of animals in the gardens: miniature horses, goats, dogs and, indeed, a camel wearing a polka-dot blanket walking along a path. But it is the human faces that deserve the most attention in the pictures, she explains.

“Look at the smiles! See how happy these nurses look. This is important, because happy caregivers give better care”, she says, pointing to images of hospital staff cuddling dogs and holding baby goats. “These people are surgeons”, she says of another photo. “They've been down in the basement for four hours in surgery and enjoy coming up to sit in the sun.”

Promoting social activities and encouraging staff to use hospital gardens during their breaks has been a central part of Legacy Health’s initiative to reduce stress and support staff well-being, Teresia Hazen explains, before showing images of a smooth, paved garden path where a physiotherapist is working with a patient who has a spinal cord injury. Beneath a chaste tree, a nurse and a person who has had an amputation, sitting in a wheelchair, have paused to admire the purple flowers.

To successfully design gardens that, like the one in the picture, can fulfil many purposes and serve people with diverse mental and physical conditions, requires broad interdisciplinary collaboration, Teresia Hazen says.

“Our design teams consist of landscape architects, occupational therapists, recreational therapists, nurses, physicians, social workers, managers, volunteers, patients, their family, researchers... all sharing their expertise.”

Research into Staff Well-being

Despite not considering herself a researcher, Teresia Hazen has written several articles sharing her knowledge of horticultural therapy and how to design and organise therapeutic gardens.

Furthermore, she has collaborated on different research projects, including some with Roger Ulrich.

In 2018, they both participated in an intervention study led by Makayla Cordoza, which assessed the potential benefits of hospital gardens for healthcare workers at Legacy Emanuel Medical Center in Portland, Oregon.

During two consecutive summers, nurses were instructed to spend one of their daily 25–30-minute breaks in the hospital's second-floor terrace garden for six weeks. Each day, they completed a self-assessment measuring several standardised indicators used to evaluate burnout in healthcare professionals.

These results were compared with data from six weeks during which the breaks were taken indoors. The study found a statistically significant improvement during the garden period, particularly in measures of emotional exhaustion and depersonalisation. The researchers concluded that taking daily work breaks in an outdoor garden may well help to reduce burnout among hospital nurses.

The Economic Argument

Hazen's photos illustrate staff members talking, meditating, walking, or simply resting during their breaks on the terrace garden. One image shows a person in blue scrubs lying stretched out on a bench, with shoes and an empty coffee cup on the ground.

“I love this picture. You must feel safe to relax like this. I’m convinced this is evidence, in its own way, that the garden is a stress-reducing environment,” says Teresia Hazen and smiles.

Nevertheless, even if these visual effects are easy to observe in postures and faces, she is convinced that robust research data is essential to convince decision-makers that building hospital gardens is a worthwhile investment. Beyond the obvious value of mitigating the harmful effects of stress on caregivers, Roger Ulrich points out that replacing critical care nurses who leave their jobs due to workplace dissatisfaction is extremely costly.

“Basically, a garden can pay for itself”, he says. “But it’s hard to argue for a garden when there’s a need for new diagnostic imaging equipment or a helicopter – especially if you can’t show convincing data. That’s why even more research is needed.”

Roger Ulrich’s examples of evidence-based garden design strategies:

- Views of abundant nature & flowers
- Choices of comfortable seating
- Access to privacy
- Access to shade
- Users feel safe

According to the American Horticultural Therapy Association (AHTA), a therapeutic garden is a purposefully designed, plant-rich setting used as a component of a treatment,

rehabilitation, or vocational program. These gardens are created to meet specific user goals and promote interaction with the beneficial elements of nature. Therapeutic gardens can take many forms, including healing gardens, enabling gardens, rehabilitation gardens, and restorative gardens. Common design elements may feature easily accessible entrances and paths with gentle slopes, raised planting beds or containers, and a selection of plants chosen for their sensory qualities, such as colour, texture, and fragrance. Learn more by reading AHTA's characteristics of therapeutic gardens, written by Teresia Hazen:

https://www.ahta.org/assets/docs/therapeuticgardencharacteristics_ahtareprintpermission.pdf

Why the Woods? Exploring the Forest's Impact on Human Well-being

Susanne Knutsson, Intensive Care Nurse, PhD, and Associate Professor in Caring Science at Linnaeus University, is currently investigating the health-promoting values and effects of the forest. “The goal is to explore and describe people’s experiences of the forest and how these experiences contribute to human health and well-being”, says Susanne Knutsson.



Susanne Knutsson

Her research focuses on various groups, including guests at forest hotels in southern Sweden, as she seeks to understand why people choose to stay at forest retreats. Through questionnaires, interviews and photos, she captures the significance of the forest in relation to their well-being and health, exploring the question: “What makes us want to spend time in the forest?”.

Susanne Knutsson’s work also involves forest owners, a group of older adults playing padel in the woods, and school children. This includes a longitudinal study on outdoor pedagogy in the forest to examine its impact on children and teenagers.

“We know that forests are important for us humans”, she says, emphasising the need for further research to understand the specific elements, reasons, and mechanisms behind this importance.

A Rare Opportunity: Researching the ICU Environment during Relocation

Sepideh Olausson, Associate Professor at Sahlgrenska University Hospital, is a researcher with a background as an intensive care nurse, focusing on how care is affected by spatial design. Currently, she is principal investigator for a large multidisciplinary project called SoLiDe, which investigates the impact of light and sound and design for staffs' health and wellbeing in the technologically advanced intensive care units. This research is taking place during the planned relocation of the hospital's Central ICU "We saw this as a unique opportunity to conduct controlled studies", says Sepideh Olausson.



Sepideh Olausson

Amongst other, one aspect of her research examines staff well-being and whether the environment impacts their decision to remain in their profession. "We would like to know if staff are more likely to stay in the profession if they are in an environment that supports them", she explains.

Sepideh Olausson and her team also plan to study how the ICU environment affects the provision of nursing care: "In healthcare, staff are often disturbed or interrupted by environmental factors, and I want to examine the consequences of this on the quality of care and so-called missed nursing care or incomplete care", she says.

Understanding the influence of environmental factors such as light, sound, and spatial design is essential for creating a healthy work environment and improving patient care. The project aims to contribute to standards for the design of future technology-intensive environments.

Furniture Beyond Ergonomics

Oskar Jonsson studies the interaction between people and their environment. He is an associate researcher at the research group Active and Healthy Ageing and affiliated to the Centre for Ageing and Supportive Environments (CASE) at Lund University. His previous work includes studies on the needs and experiences of **furniture** in residential care facilities for older adults.



Oskar Jonsson

"My perspective is that **furniture** is an important element in rooms and spaces", says Oskar Jonsson. "It takes up space, it influences how other objects are perceived, and it creates atmosphere. It can also be a symbol of the self and family, and it influences who we can be."

Oskar Jonsson's dissertation involved research in three residential care facilities in northern Stockholm, where he interviewed residents and care staff. The residents, who were explicitly interviewed as experts, had thoughts and opinions that differed from existing recommendations about furniture for older adults. "There has been a lot of focus on factors related to ergonomics when it comes to furniture for later life, but this is not enough for the residents", says Oskar Jonsson. "The interviews showed that the furniture has a meaning for the residents that goes beyond instrumental use."

The research also revealed that the residents and the care staff had different relationships with furniture in private rooms and common spaces. The residents did not experience the furniture in the common areas as their own and expressed no desire to be able to do so, while this distinction was less clear for the care staff, for whom the entire facility was perceived as a working environment.

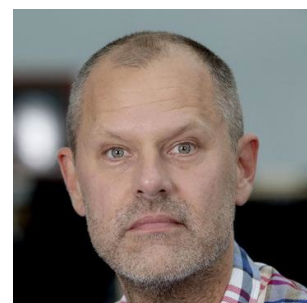
Jonsson identified four main categories regarding how furniture creates meaning in residential care facilities: how it fits the usage (instrumental use, durability, maintenance etc.), how it fits the human body, how it suits the individual user, and how it fits the physical environment. Care staff were generally more focused on usage, regardless of location. In contrast, the older people had a different view of furniture in their private room, where it primarily created meaning by suiting the individual user and preferably generating a sense of home.

Since Oskar Jonsson's thesis was completed in 2013, it has gained attention from, among others, furniture companies. Five of the seven manufacturers that were involved have launched new products that related to the project.

"There is a need for more informed and timely furniture, and it's important to include the residents' perspectives in the design process. Stable, but not too bulky outdoor furniture that it includes the use by older adults, was an example of a product type where there were unmet needs. According to the accounts, outdoor environments brought enjoyment and contributed to a different form of social interaction. There is also a need for more research into long-term effects and the relationship between furniture and people with dementia", says Oskar Jonsson.

Greenery as Gateway to Heat Escape

"In Nordic cities, we are generally not that well adapted to climate change and heat waves, especially not when it comes to protecting older adults." While older age itself isn't a risk factor, it can coincide with health problems and isolation, factors that can be worsened by heat, explains Fredrik Lindberg, professor of geography at the Department of Earth Sciences at the University of Gothenburg.



Fredrik Lindberg

Fredrik Lindberg's research focuses on processes that influence the local climate in cities, and the links between climate and human health and well-being, with a particular focus on children and older adults. He is involved in a large interdisciplinary project called HEAT, a collaboration between the University of Gothenburg,

Umeå University, Jönköping University and Lund University, involving experts from various fields, including epidemiology, psychology, architecture, and occupational therapy. One study within the project, led by Jessika Lönn, examines behaviour during heat waves in relation to the living environment. She combined survey data from older adults living in southwest Sweden with tree canopy data from geographical information systems (GIS). The study revealed that older adults residing in areas with more tree canopy coverage are less likely to avoid outdoor activity during heatwaves than people living in areas with less greenery. This is detrimental to health in several ways, as indoor environments in areas with less vegetation tend to be the ones that heat up the most. The features most sought after in urban environments during hot weather were shade, greenery and water.

This is detrimental to health in several ways, as indoor environments with less vegetation tend to be the ones that heat up the most.

To further investigate how behaviour during heat waves differs within the urban population, Fredrik Lindberg and his colleagues are now analysing new national data, collected in collaboration with the SOM Institute. “As temperatures rise, it is important that we learn more about how older adults react to heat in terms of activities, opinions and behaviour”, he says.

Locked In: Denied Access Overshadows Design

When a licensed landscape architect and health services researcher at the University of Toronto studied the use of natural environments in Canadian long-term care homes, she found that residents living with dementia rarely had physical access to the outdoors.



Peggy Chi

Peggy Chi’s research at the Institute of Health Policy, Management, and Evaluation, focuses on the influence of the natural environment on the mental health and well-being of older adults and their paid caregivers in long-term care homes. She developed a conceptual framework of the natural environments in healthcare facilities, comprising interdependent themes: their planning process, how these environments are utilized, their impacts, opinions about them, and how they are defined. “All themes are interconnected and shaped by the physical and programmatic designs of the natural environment. For example, if someone defines the natural environment in a certain way, it will influence the planning process, design, usage, and ultimately how it impacts and is perceived by occupants.”

Guided by this framework, Peggy Chi examined the design and availability of natural environments, and the residents’ and caregivers’ exposure to and use of them. The study included small to large care homes, ranging in size from 64 to 400 residents. The number of planned weekly activities ranged from eight to 31. Among these, activities held outdoors ranged from zero to nine, with four outdoor activities being the most common.

A key finding was that in secure units for residents with moderate to advanced dementia, physical access to the natural environments was restricted, with doors usually locked. While

visual access is important, it appears to be insufficient in providing health-promoting benefits to this population. In contrast, unrestricted access to outdoor spaces was associated with less responsive behaviour among residents living in secure units. Paid caregivers who reported greater physical access to the natural environment during breaks were associated with less emotional exhaustion, turnover intention and stress at work, and a higher sense of personal accomplishment.

“As a landscape architect, I was particularly interested in the design elements,” says Peggy Chi, “but when the doors to the outside environments are locked, that really overshadows design. Therefore, physical access to a dedicated outdoor natural environment for use by residents and caregivers is the most important feature.”

Towards a National Policy for Outdoor Environments

The message from the older adults at residential care facilities was clear: they want to spend time outdoors every day. Something the researchers behind the OUT-FIT project wish to enable through the development of a national policy based on their findings.



Madeleine Liljegren

The collaborative project, which is now nearing completion, aims to increase knowledge at a national level concerning the needs and wishes of older adults and care workers regarding outdoor environments and the access to them. Two of the project’s five sub-studies involved interviews with older adults and care workers in three Swedish residential care facilities. The researchers learned that older adults see the outdoor environments as integral to their daily lives, linking their current residence with their past experiences. They want to use these spaces for socialising, privacy, exercise and rest. “And they want to spend time outdoors regardless of weather and season,” says Madeleine Liljegren, a physiotherapist and doctoral student at the University of Gothenburg and Chalmers University of Technology.

The interviews also provided insights into the practicalities of accessing outdoor environments, highlighting both supportive and hindering aspects of the physical environments and the need for personal support. Care workers, while recognising the potential of outdoor environments as an arena for person-centred care and rehabilitation, also highlighted significant challenges, with staffing levels and lack of time being the main barriers.

The research is based on a theoretical model that considers four zones of contact with the outdoor environment in relation to body position, starting with views and light through windows (zone 1) to balconies and patios (zone 2), gardens on the property (zone 3), and the surroundings (zone 4). “All of these zones should be accessible to everyone, and you should also be able to move between the zones,” says another member of the research team, Anna Bengtsson, a landscape architect and researcher at the Swedish University of Agricultural Sciences.

In one sub-study, research assistant Kateryna Fursa at the University of Gothenburg studied the drawings of nearly 2,000 residential care facilities across Sweden, to map access to outdoor

environments. Using a detailed matrix and various tools such as Google Maps and GIS, the study analysed 26 variables across the four zones. The mapping revealed that access to surrounding public open spaces with vegetation was high (zone 4), while the provision of gardens was less satisfactory, with half of the residential care facilities having no private gardens on their premises (zone 3). The access to patios and balconies was also low (zone 2), while access to windows was high (zone 1).

In order to develop a proposal for a national strategy on access to outdoor environments, outdoor stays, and person-centred care and rehabilitation in residential care facilities, the project has been working through a workshop process, inviting stakeholders at different levels, from authorities to the municipal and organisational level and even the users themselves. The proposal was published in spring 2025.

The OUT-FIT project, which runs from 2021, is a collaboration between the University of Gothenburg, Chalmers University of Technology, the Swedish University of Agricultural Sciences (SLU), and the University of Gävle. Five sub-studies have been completed as part of a PhD project and a postdoctoral project. The research will continue for at least two more years, as an additional PhD project is currently underway, and a new postdoctoral project will begin after the summer. The focus of these projects is to explore the importance of outdoor walks for older adults living with dementia and to develop an evidence-based working method to support the design, planning, and evaluation of residential care facilities in connection with new construction or renovation.

This report is part of the Centre for Healthcare Architecture's report series. The Centre for Healthcare Architecture, CVA, is Sweden's leading centre for creation, translation, exchange and dissemination of knowledge about healthcare environments and building design. The centre is a national platform for knowledge exchange and bridges between academia and practice. Focus is to contribute to a person-centered, efficient and safe care. CVA engages in research, contributes to education and runs continuing education. Active collaboration with Sahlgrenska Academy and organizations within and related to the healthcare sector is central to ensuring relevance and the practical application of research. For further information on CVA's reports and activities, please visit our website:

<https://www.chalmers.se/en/centres/cva/>



CHALMERS