

A photograph of a city street at sunset or sunrise. The sky is a warm, golden yellow, and the sun is low on the horizon, creating a strong glow. In the foreground, a crosswalk with white stripes is visible on a dark asphalt road. A bicycle is parked on the right side of the frame. The overall atmosphere is calm and serene.

# ENVIRONMENTS BY DESIGN

HEALTH, WELLBEING AND PLACE

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## AMPS PROCEEDINGS SERIES 26.1

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# Environments by Design: Health, Wellbeing and Place

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# INTRODUCTION

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## Environments by Design: Health, Wellbeing and Place

This proceedings publication is the outcome of the conference *Environments by Design – Health, Wellbeing and Place*, held in December 2021 as a virtual conference. It was coordinated by the research group AMPS, Syracuse University, Northumbria University, The Italian Society for Sociology of Health and Chalmers University of Technology / Center for Healthcare Architecture. The context for the event was the outbreak of COVID-19 and the subsequent lock-down that highlighted the important relationship between health and the spaces we inhabit. The impact it had on spatial activities as simple as commuting or meeting socially in public space are examples of this.

While the multitude of spatial effects evidenced by the pandemic make it tempting to see the concern about health and the spaces we inhabit as new, research and studies focusing health, wellbeing and spatial conditions have a long history pre-dating COVID-19. Seen in this light, the *Environments by Design* conference placed recent experience and responses against a backdrop of previous research into health, wellbeing and environments. Consequently, the conference brought together a diverse set of theorists and practitioners who examined a wide range of interrelated questions and issues from a range of disciplinary perspectives.

Examples of this diversity included analyses of the impact of the built environment on urban health, health related critiques of housing, and the spatial analysis of health facilities. It also included socio-spatial critiques related to ageing, spatial inequalities across communities, and the funding and planning of welfare institutions. Other scholars addressed the importance of socio-cultural factors and design as issues that impact the health and wellbeing of people in various ways. This diversity of approaches was also visible, and embedded, in the thematically-focused sessions that structured the conference such as: Ageing and the Built Environment; Covid 19; Cultures, People, Place; Health and environments; Health facilities; Health, Wellbeing and Buildings; Healthy Cities; History, Colonialism and Health; Health and Housing; Interiors-Exteriors and Health; Mental Health and Designed Environments; Society and Health; Socio-political Built Environments; Technology, Cities, Health, and more.

The papers collected in this publication then, reflect the variegated nature of the conference themes and provide an in-depth exploration of current research related to built environments, health, wellbeing and place. The theoretical, historical and design approaches in each chapter (whether separately or in combination) provide the basis for the presentation of diverse ideas that move current scholarship forward. As evidenced by the politicization of the pandemic, this is more necessary today than ever, now that research competes in a world characterized by a flora of contested facts. It is a world in which we could argue that while there may be no truth, there surely are true facts.

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# DESIGN STRATEGIES FOR NATURAL CARE ENVIRONMENTS FOR PEOPLE WITH DEMENTIA: THE CASE STUDY OF CASCINA GRACE

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## INTRODUCTION

The COVID-19 pandemic is a huge threat to global health, and the lockdown measures have proved effective in stopping the spread of the COVID-19 virus. The COVID-19 pandemic lockdown, on the other hand, has a lot of detrimental repercussions, particularly for mental health.<sup>1</sup> Older people, particularly those with dementia, are more vulnerable to the impacts of the epidemic and its attendant lockdown due to a lack of stimulation, social contact, and higher levels of worry and sadness.<sup>2,3</sup>

Contact with nature can help people cope with the psychological effects of the COVID-19 pandemic, especially PWD in care facilities. Nature has been demonstrated to have restorative and healing properties.<sup>4,5</sup> Human-nature interactions can elicit beneficial physiological, psychological, and emotional responses.<sup>6</sup> Previous research has demonstrated that exposure to a green environment can assist PWD in coping with stress,<sup>7</sup> overcoming behavior barriers,<sup>8,9</sup> and generally improving their well-being,<sup>10,11</sup> activity,<sup>12</sup> and identity.<sup>13,14,15</sup> In addition to that, the outdoor space is one of the physical factors that contribute to the sense of home for PWD in care facilities.<sup>16</sup>

In the design of small-scale & homelike dementia care facilities, outdoor environments, such as sensory gardens, therapeutic gardens, or wandering gardens, have become an important feature.<sup>17,18</sup> These gardens were established to promote the therapeutic benefits of contact with nature for PWD.<sup>19</sup> There is evidence that outdoor spaces designed in the style of a garden in care institutions are underutilized.<sup>20</sup> The majority of PWD rarely initiate access to care facility gardens, preferring to remain in enclosed spaces. Even when activity interventions are conducted in the garden with the assistance of professional therapists, contact with nature is not spontaneous and continuous for them. This separation between nature contact and daily life may prevent PWD from truly integrating with nature. In general, gardens do not allow PWD to truly immerse themselves in nature, but rather serve as a supporting facility that increases their nature contact.

In addition to the garden, the green care farm (GCF) represents an innovative small-scale & homelike care facility design that allows PWD to actively live in the nature, and experience it though meaningful “active interactions”.

This paper presents a pilot study focused on the development of intergenerational nature-based habitual activities (INBHA) supported by a physical system of small living spaces, within the context of a GCF facility. This pilot study is aimed at engaging people with dementia into an intergenerational psycho-social environment, animated by activities in contact with nature resembling past habits,

supporting mobility, autonomy and well-being of PWD, enhancing the recreation of a sense of home towards the environment through performing habitual activities, especially after experiencing stressful experiences such as lockdown measures during COVID-19 pandemic.

### **GREEN CARE FARMS (GCFs)**

As dementia care has developed towards person-centered care, a growing number of small-scale, homelike care environments have been created worldwide.<sup>21</sup> The Green Care Farm is one of these. The term "green care farm" refers to a small group of residents (e.g., persons with learning disabilities, psychological issues, substance abuse issues, and people with dementia) who live together on farmland in a "residence",<sup>22</sup> and provide daycare for a variety of client groups with the goal of enhancing an individual's social, emotional, and educational well-being.<sup>23</sup>

In this new approach to health (care), health is not only seen as the absence of disease but rather emphasizes the "ability to adapt to the disease and to self-manage".<sup>24</sup> PWD who live in a GCF have the opportunity to participate in a variety of activities, including domestic activities (washing dishes, preparing dinner, setting the table) and work-related activities (feeding the animals, cleaning the yard or stables, gardening) to social activities (coffee breaks, dinners, conversations) and leisure/recreational activities.

### **NATURE-BASED HABITUAL ACTIVITIES AND SENSE OF HOME**

In GCFs, PWD are given a sense of home by carrying out habitual activities associated with their previous lives. In fact, for later life, the meaning of home often means the intimate relationship with the surroundings established by living in one place for a long time.<sup>25</sup> However, this intimate relationship is always broken for PWD, while facing relocation in the middle to late stages. After relocating, the elderly residents can regain a sense of home in a new environment through re-establishing the process of this people-space intimate relationship through bodily habitual activities. Many studies have shown that bodily habitual activities rooted in a specific environment over time and space, can transform that environment into a meaningful place with attachment for them.<sup>26,27</sup> As a result, when PWD participate in activities on the Green Care Farm, such as farming, planting flowers and plants, taking care of animals, and other activities (hereafter called "nature-based habitual activities") that they used to do, an intimate relationship with the place can be established. Thus, due to the GCF's unique physical characteristics, such as its more abundant outdoor spaces and indoor spaces with easier contact with outdoors, PWD are constantly encouraged to engage in nature-based habitual activities.

## **METHODS**

### **Cascina grace: a pilot case study**

CASCINA GRACE is the first GCF for dementia in the city of Milan. It is located inside Casa Chiaravalle, a property confiscated from organized crime in Lombardy and entrusted to a consortium of 4 social enterprises active in the care of PWD and children. Casa Chiaravalle is a farmhouse encompassing about 2 hectares of woodland and 6 hectares of farmland; the land on which it stands is partly garden, and farmland. At the beginning of August 2021, it has been turned into a social care facility for a community of frail individuals encompassing PWD, orphans, families with low incomes and people with disabilities, under the management of the above-mentioned consortium of social enterprises. In particular, one of the two main villas in Casa Chiaravalle, welcomes a small community of elderly with medium/severe dementia due to Alzheimer's Disease (AD). This facility is called CASCINA GRACE. Therapists and caregivers organize care activities related to gardening and

in strict contact with the surrounding nature. Moreover, the presence of children allows the activation of intergenerational activities, which not only have a therapeutic and occupational purpose for the elderly, but they also represent an occasion for meeting, collaboration and construction of relations among all the inhabitants of Casa Chiaravalle.

**Research framework & new elements**

A recent paper by De Bruin et al. introduced a framework describing valuable characteristics of GCFs, in which they distinguish themselves from other long-term care facilities, on different levels of the health system based on existing literature.<sup>28</sup> In particular, the “micro” level refers to the psychosocial environment including the interactions between staff and the person with dementia, the alignment of social activities with culture, habits and preferences of the residents, freedom of choice regarding everyday activities and the degree of stimulation proposed to PWD. Accordingly, the “meso” level refers to the organizational context including care delivery approach, activities typologies and schedule, but also to the direct care environment such as the physical environment, its ambiance and services. As represented in Figure 1, based on the framework proposed by De Bruin et al., the development of CASCINA GRACE introduced new valuable characteristics related to “micro” level and “meso” level (highlighted in violet in Figure 1).

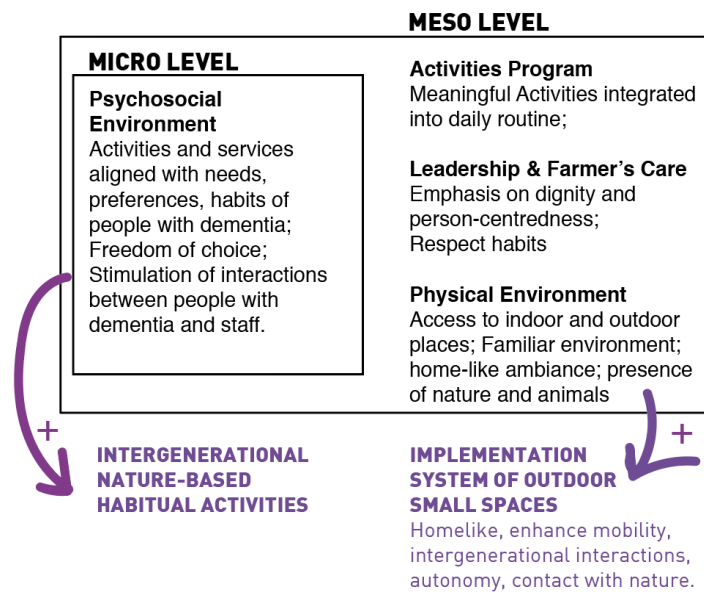


Figure 1. New elements introduced in the framework based on De Bruin et al. (2017)

In particular, regarding the “micro” level, in CASCINA GRACE we focused on the introduction of intergenerational nature-based habitual activities (INBHA). Those activities include: planting small potted plants and flowers, small farming, caring for farm animals, feeding and caring for horses and contemplative storytelling in the forest, all performed involving PWD and children.

Accordingly, in the pilot study presented, the new framework elements in the “meso” level are focused on the development of a system of small movable spaces to support INBHA. This system encompass wooden paths equipped with handrails, planting stations for small groups equipped with fabric coverage, benches, planting table, small wooden structures resembling a house archetype equipped with movable fabric coverage, settings, integrated handrails.

INBHA are supported by a physical system of small spaces which aims at enhancing autonomy, mobility, and recognition of the relationship space-function. Moreover, their homelike appearance and the performing of nature-based activities resembling past habitual ones should support the creation of a sense of intimacy and recognition towards the care environment.

## **OBSERVATION AND DATA COLLECTION**

The study conducted can be defined as an in-depth study that comprises observation of PWD during and after the performing of INBHA. Therapists organised morning sessions of activities in the system of small spaces specifically designed, while in the afternoon all the residents were free to spontaneously interact with the physical system.

15 residents with dementia took part into the activities, involving mainly PWD with Mild and Moderate dementia, and only a few with Severe Dementia. Participants ranged in age from 69 to 82 years, involving both women and men. Previously, all the elderly involved undertook a mini-mental state exam (MMSE). The MMSE was used to provide an overall picture of cognitive status and dementia severity and produced a range from 12 to 25 where lower scores correspond to greater dementia severity.<sup>29</sup> Moreover, 5 young kids, aged between 7 and 12, participated in the above-mentioned activities.

Participants were divided into small intergenerational groups of 6-8 persons, according to personal preferences and freedom of choice regarding the specific INBHA organised by therapists. The small groups were accompanied through the garden to the designated point where the INBHA was carried on. Design researchers participated in INBHA as observers. Moreover, observations were undertaken during the rest of the day, in order to collect data regarding spontaneous activities taking place in the physical system, involving PWD and kids. During INBHA, comments made by participants, in the form of non-verbal gestures and verbal communications, were collected and lately analyzed to understand the overall reactions. In particular, the INBHA were audio-recorded, to be further analysed by design researchers. In particular, the observations were focused on 1 session of planting small potted flowers (session 1), 1 session of caring for courtyard animals (session 2) and 1 contemplative storytelling in the woods session (session 3).

During Session 1, the participants were introduced by therapists to the use of small pots to plant flowers. All participants were seated in the small wooden space specifically designed for the activity. Children were paired with PWD, so that each “couple” could focus on planting together one flower in a pot. Initially, therapists showed simple gestures necessary to plant the flowers. Consequently, each couple repeated the gestures. Many of the elderly started to reminisce, spontaneously telling old stories, giving advice to the children on how to use the soil, etc. Most of the children were interested in following advice and stories. Comments like “I feel good”, “I like to be here, I like the smell”, “this place is nice”, “I remember being here” “I like this child” were expressed by PWD.

Session 2 encompass feeding chickens and hens and cleaning their barnyard. PWD were mostly involved in feeding activities, while children more actively helped in feeding and cleaning. A light system of red fabric tensed coverage delineated the area where these activities were taking place, acting as a spatial point of reference for PWD. PWD spontaneously started to show children how to take care of hens, supported by therapists. Children repeated those gestures asking for old stories. The elderly expressed comments like “I used to do that”, “I like it”, “I’m so happy”, “I feel like home”. Therapists noticed that a couple of elderly with difficulties in expressing verbal comments, while performing these activities were smiling a lot, moving arms as a sign of approval and happiness.

During session 3 a group of 5 PWD and 3 children reached one of the small wooden structures resembling a house archetype equipped with movable fabric coverage, settings, and integrated



handrails placed in the wood. All the group walked on one of the wooden paths and seated under the wooden construction. Therapists engaged PWD and children in contemplating and relaxing activities in contact with the surrounding nature. Aim of this activity was to enhance relaxation. Initially, PWD and children, assisted by therapists, took a walk around the wooden structure equipped with handrails, in order to explore and contemplate nature. Then, all the group took a seat and therapists introduced a contemplative activity focused on describing personal sensations, feelings, etc. PWD expressed comments like “It’s so quiet here”, “I like being here”, “It is beautiful”, “I feel very good” “I don’t want to go away”. Moreover, 3 of them started to reminisce about the past. 2 PWD fell asleep, and therapists highlighted this event as positive. Children were asked to imagine stories related to the surrounding nature, and elderly participated asking few questions.

After the sessions, design researchers observatory different spontaneous interactions with the system of mobile small places installed in the nature surrounding CASCINA GRACE. 4 elderly asked to take a walk on the paths. 2 elderly spent one hour seated under the wooden small house archetype in the wood. As well, 5 children played games in it, before dinner time. In general, design researchers and therapists noticed that elderly were more active, and spent more time in the wooden movable structures, rather than spending free time inside the facility. Children spontaneously, decorated some of the structures with small handmade objects.

The majority of the participants involved showed interest and curiosity for the activities proposed, willing to participate and contribute. PWD clearly understood how to use the wooden structures, and felt generally comfortable while seating or walking in the wooden system of spaces. Only 2 elderly felt uncomfortable while seating under one of the covered space, and were accompanied inside the facility by therapists. While walking on the wooden paths only 1 elderly felt confused and disoriented. During observations elderly with dementia actively interacted with each other, the therapists and the kids involved in the INBHA. Moreover, sometimes the residents involved became emotionally affected by some objects that were able to trigger past pleasant memories. Many elderly started to reminisce past memories and stories, and in the majority of times kids carefully listened to their stories.

## **RESULTS & DISCUSSION**

The pilot study was conducted with a small sample of participants due to the limited number of PWD attending the daycare center involved in this research. Taking into account this limitation, the results are promising, and a sample size of 15 represents statistical significance in this pilot study. Accordingly, future studies with larger sample sizes have the potential to show results even more significant.

Key findings of this pilot study are that INBHA, supported by a system of small mobile spaces, positively affect the majority of the participants. Pleasure and positive mood were clearly identified among the majority of the participants. The observations undertaken during and after the activities represented an initial attempt to evaluate qualitatively the mood among participants. All the elderly involved were showing past experiences connected to nature-based activities. Many of them were showing lack of willing to participate into outdoor physical activities, if related only to physical movement. Moreover, the majority of them were experiencing apathy and lack of consistent social interactions with the staff or other residents. Their spontaneous interactions during the INBHA, and in some cases, their interactions with young kid even telling them old memories and stories, may represent that INBHA could be recognised as a promising tools for GCFs therapies for dementia.

Also, the physical system designed to support INBHA may be a promising tool. People with dementia asking therapists to take a walk “on the paths” represent an increase in positive mood and active life,

and moreover a successful attempt to increase mobility due to an enhancement of confidence and autonomy. The small wooden structures for contemplative storytelling were positively experienced by elderly with dementia, as well as young kids. During the day many of them spent time inside those wooden structures even if there were no specific activities taking place in them. This phenomenon could represent a positive response towards the enhancement of well-being in the residents.

This pilot study, gives support to the hypothesis that INBHA may enhance social engagement, positive mood, and active life in PWD, recreating a sense of home in PWD relocated from a previous care context. Moreover, the system of outdoor small spaces may support independence, orientation and mobility in PWD, while caring on INBHA.

## **CONCLUSION**

The pilot case study described in this paper presents and discuss additional elements to the “micro” and “meso” levels proposed in De Bruin framework (2017) aimed at identifying key characteristics of GCFs. Thus, CASCINA GRACE GCF provides a broader spectrum of “active interactions” with nature, in the form of INBHA, than traditional GCFs environments. They are supported by a system of reconfigurable small movable spaces specifically design to enhance mobility, autonomy and the recognition of the aforementioned activities. CASCINA GRACE GCF takes the remaining capacities of PWD as a starting point rather than their limitations. Moreover, the unique psychosocial context provides the occasion for INBHA, which represents a key element to engage people with dementia, to stimulate a sense of intimacy towards the environment, and to create a stimulating psycho-social environment, animated by activities in contact with nature that remind them of past habits.

In conclusion, residents of CASCINA GRACE displayed a more active daily life, were more socially active, and well prepared to be involved in activities with children. The system of physical small spaces designed to support INBHA successfully contributed to enhancing mobility, confidence and intimacy towards the environment. INBHA represented a mutual occasion for learning, exchange of knowledge between elderly and younger generations, and the occasion to involve people with dementia in meaningful activities, fostering their autonomy, dignity, self-awareness and supporting their well-being, and the recreation of a sense of home towards the care environment.

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