Designing gardens for people with dementia: conception and application of an evidence-based conceptual frame

Kevin Charras¹, Véronique Laulier², Jean-Bernard Mabire¹, Jean-Pierre Aquino¹
1. Fondation Médéric Alzheimer, Paris, France
2. Ecole Nationale Supérieure de Paysages, Versailles, France

Introduction

Conception and construction of nursing homes focus mostly on architectural design. Even though gardens are often, if not always, mentioned in initial plans and architectural programming, their cost and the amount of work they require are often underestimated. This results in inaccessible, unfit and poorly designed landscapes.

AIM

engage an evidence-based approach to garden design for people with dementia

Methods

- This review of the literature was led by the Living lab of the Fondation Médéric Alzheimer
- Search terms were ‘gardens’ and ‘dementia’ on Pubmed
- Selection on the basis of title and abstract

Results

- Out of 116 records, 22 articles were selected as being potentially relevant:
  - Seven of which described landscape design models.
  - Other records were experimental studies, surveys or case studies.
- Six consensus dimensions were identified for dementia-friendly landscape design:
  - three were related to use of spaces (attractiveness and control of outdoor spaces; social uses; curiosity);
  - three were related to technical aspects (accessibility and ergonomics; composition; vegetal management).

**Tips for designing dementia friendly gardens:**
- Provide indoor views onto outdoor spaces.
- Promote social and intergenerational uses.
- Stimulate curiosity with sensory, occupational and spiritual opportunities.
- Provide regular sitting, accessible areas, shelters and stabilized paths.
- Structure spaces to facilitate access and variety of uses.
- Design gardens in a familiar way (avoid exotic settings).
- Ensure native, sustainable and seasonal planting.
- Keep in mind the amount of maintenance outdoor spaces need.
- Ensure direct access to toilets.

**PRIMARY DIMENSIONS**

- **Attractiveness and control of outdoor spaces**: attract curiosity of users and secure the environment for them to invest it.
- **Social uses**: give the opportunity to users to invest spaces on a public to privacy continuum.
- **Curiosity**: way spaces invites curiosity of users.
- **Accessibility and Ergonomics**: functional and ergonomic characteristics of settings enabling to compensate for psychological and physical disabilities.
- **Composition**: facilitate orientation by identification and structuration of landscapes.
- **Vegetal management**: ensure maintenance of uses of gardens by integrating the evolution and growth of natural elements that compose them.

**SECONDARY DIMENSIONS**

- **Quality of use**: perception of use opportunities and investment of outdoor settings according to user’s preferences.
- **Secure environments**: layout features and furnishing enabling secure use of outdoor spaces.
- **Interaction and communication**: settings designed for groups of people and to encourage social relationships.
- **Intimacy**: design of outdoor settings enabling users to withdraw or to meet with small groups.
- **Sensory invitation**: give opportunities to users to use and exercise their senses.
- **Ocational invitation**: arrange attractive spaces for different kinds of occupation.
- **Spiritual and cultural invitation**: opportunities to invest spaces in the objective to relax and meditate.
- **Legibility and familiarity**: recall of familiar gardens with references to cultural background.
- **Wild life**: choice of plants to favour biodiversity and attract wild lifelines, insects and domestic life (cats, dogs, fish...)
- **Routine maintenance**: anticipate plants and materials according to needed maintenance and available resources (intervention of a gardener, participation of users...)
- **Climate conditions**: seasonal layouts and weather protections.

**LANDSCAPE DESIGN EXAMPLES**

- View on outdoor spaces, attractive feature, free access to activities, freedom of movement, events, seasonal changes.
- Path stabilisation, setting areas, fences, smooth ground, furnishing...
- Possibility of surveillance from indoor spaces, identification of boundaries.
- Discussion space, tables, activity spaces (vegetable garden, plantation, OT...)
- Vegetal alcove, landscaped clearing, views of the environment from the inside and the outside.
- Vegetation (foli, color, taste...) and layouts (interplay of light and shade, scented garden...) that solicit senses.
- Garden shelters, vegetable garden, animals...
- Isolated spaces, contemplation of a landscape, fountain, water...
- Path allowing passage of wheelchair, wheelchair height plantation bns, accessible trails, seating height views...
- Benches, chairs, available pads and raincoats, shade / partial shade, mixing...
- Easy opening of doors, access for people with disabilities, gentle slopes for wheelchairs...
- Nodes, edges, major axes, shortcuts, landmarks, opening, meeting areas, attractive areas, discovery of atmospheres, understoosh path, materials, colour and textures.
- Front yard, back yard, vegetable garden, terrace, orchard, horticultural vegetation...
- Sustainable, seasonal, non-toxic and endemic plantings, fruit trees, nesting boxes, domestic animals, ponds...
- Activities related to the garden, organization of maintenance...
- Shelters, terraces, shaded / sunny areas...

Discussion

Dimensions of this framework relate to one another according to the garden project. Each dimension was linked to evidence-based researches with various levels of scientific proof. According to studies selected for this literature review, landscape design can impact behavioural and psychological symptoms of dementia (agitation, anxiety, sleep disorders, etc.). Friendly outdoor spaces are not necessarily therapeutic, although they contribute to care and quality of life of frail and older institutionalized people.

The application of the conceptual frame led to a partnership that added a pedagogical and a practical dimension to the initial scientific approach we had implemented. People with dementia, families, care staff and town services actively took part in this project.