

## Chapter 3: Summary of Critical Factors

### *3.1 Overview*

Given that medical professionals have yet to find a cure for ADRD, the reoccurring goal for designers is to increase older adults' quality of life by improving their relationship with the environment. Over the past two decades, nonpharmacological approaches to ADRD treatments have gained increased recognition. Emotion-oriented approaches, including validation therapy, reminiscence therapy, and multi-sensory stimulation has been incorporated in several treatment plans for persons with ADRD at institutional facilities. The literature review recognizes these as key components for successful therapeutic environments, and raises issues that need to be addressed in the future of health-care design.

The purpose of this study is to use research-based knowledge to inform the design of outdoor environments. The review of literature and theories from landscape architecture and gerontology supports the development of an interdisciplinary approach for designing therapeutic landscape settings. Objectives of the literature review were to outline the needs and limitations of older adults with ADRD, and to identify criteria that can assist landscape designers in creating successful therapeutic landscapes. Without a complete understanding of the individual's needs, the designer will not be able to accommodate them in the therapeutic environment.

### *3.2 Criteria Development*

The literature review outlines the main principles in creating ideal therapeutic environments for persons with ADRD. It is most important for designers to apply an understanding of the stages and symptoms of the disease to the development of the

design. Without an understanding of the disease, the creation of successful landscapes is unlikely. Designers must also be aware of critical relationships between person and environment, and which human needs drive this congruent relationship. Lawton and Nahemow's (1973) Theory of Environmental Press is a primary theory that designers should apply to the design of therapeutic landscapes for persons with ADRD. The demands of the environment must be balanced with the person's capabilities in order to develop improved physical and mental well-being. The literature review summarizes Stephen and Rachel Kaplan's (1978) design criteria for environmental form, which relates to the needs of individuals with ADRD. These include: access, manipulability, and exposure to a variety of stimulation and potential interactions. John Zeisel (1999) also proposes a model, which relates the design of therapeutic gardens to the various levels of need that must be met to represent a high quality of life. These needs are characterized as physiological, behavioral, and emotional; all are capable of being met in outdoor environments.

The therapeutic environment for persons with ADRD must safely accommodate the physical and mental disabilities of older adults with ADRD to compensate for their loss of sensory functions. Therefore, the landscape should respond to the person's abilities that are still intact (Lovering, 1990; Grefsroed, 2001). By including plants, horticulture, music or physical therapy; sub-spaces for varying group sizes and activities; resting spots and multiple stimulants, older adults with ADRD should benefit from their interactions in the environment. Physiological, behavioral, and emotional needs of persons with ADRD can be met if the activity is adapted to meet their competency levels.

Older adults with ADRD experience disorientation as a major symptom of the disease. With this in mind, designers must create environments that provide cues to aid in orientation. The literature review suggests that paths, edges, districts, nodes, landmarks, views, furnishings, and plantings are elements that will assist in directing the disoriented person. The integration of the five senses in a wander garden is essential. Since persons at each stage of the disease respond to stimuli differently, it is important to incorporate a variety of sensory stimulation.

Emotion-oriented approaches should be incorporated in the outdoor environment as a form of therapy for persons with ADRD. Validation therapy offers older adults opportunities to resolve conflicts of their past by verifying their feelings in a therapeutic manner. Reminiscence therapy is intended to evoke positive memories of a person's past. And multi-sensory stimulation is an approach used to access the sights, sounds, scents, tastes, and tactile sensations of the environment. Landscape designers must consider these forms of therapy when designing outdoor spaces to maximize memory and sensory functioning. Elements such as an old-fashioned bicycle, a car, a water pump, plants with seasonal interest, water, and sounds of nature, offer potential for providing appropriate amounts of reminiscence and stimulation.

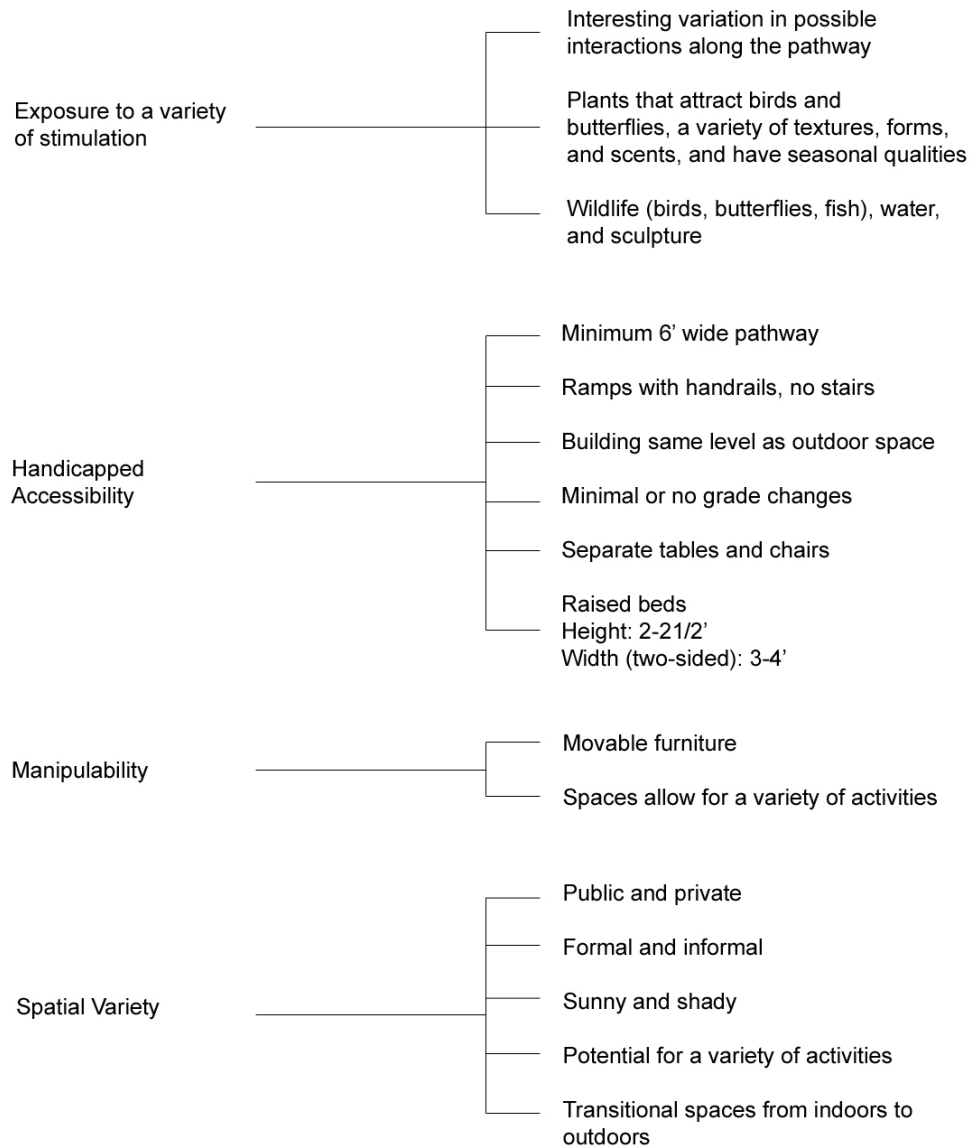
The purpose of creating design criteria is to have a template of guidelines that landscape designers can use as a reference for designing settings to meet the needs of older adults with ADRD. As well, the guidelines can be used to evaluate existing wander gardens.

*Preliminary Design Guidelines.* The literature review raises the issue of how designers can be better informed of criteria that must be followed to create successful

outdoor environments for the treatment of ADRD. In response to this problem, a set of preliminary design guidelines were formulated that are a synthesis of the literature and my own experiences in the landscape with persons with dementia. The guidelines are the general design features and the criteria are the specific design features. The eight design guidelines include: exposure to a variety of stimulation, handicapped accessibility, manipulability, spatial variety, exposure to a variety of interactions, ease of orientation, memory stimulation, and safe environment. These guidelines and criteria are design features that will be tested by interviewing professionals in the fields of landscape architecture and gerontology and by evaluating existing wander gardens to determine if they are, in fact, essential design features that must be incorporated in therapeutic environments for persons with dementia to improve their physical and mental well-being and overall quality of life. They should also serve as a resource for health-care landscape designers to aid in the successful design of therapeutic environments. The preliminary design guidelines are as follows.

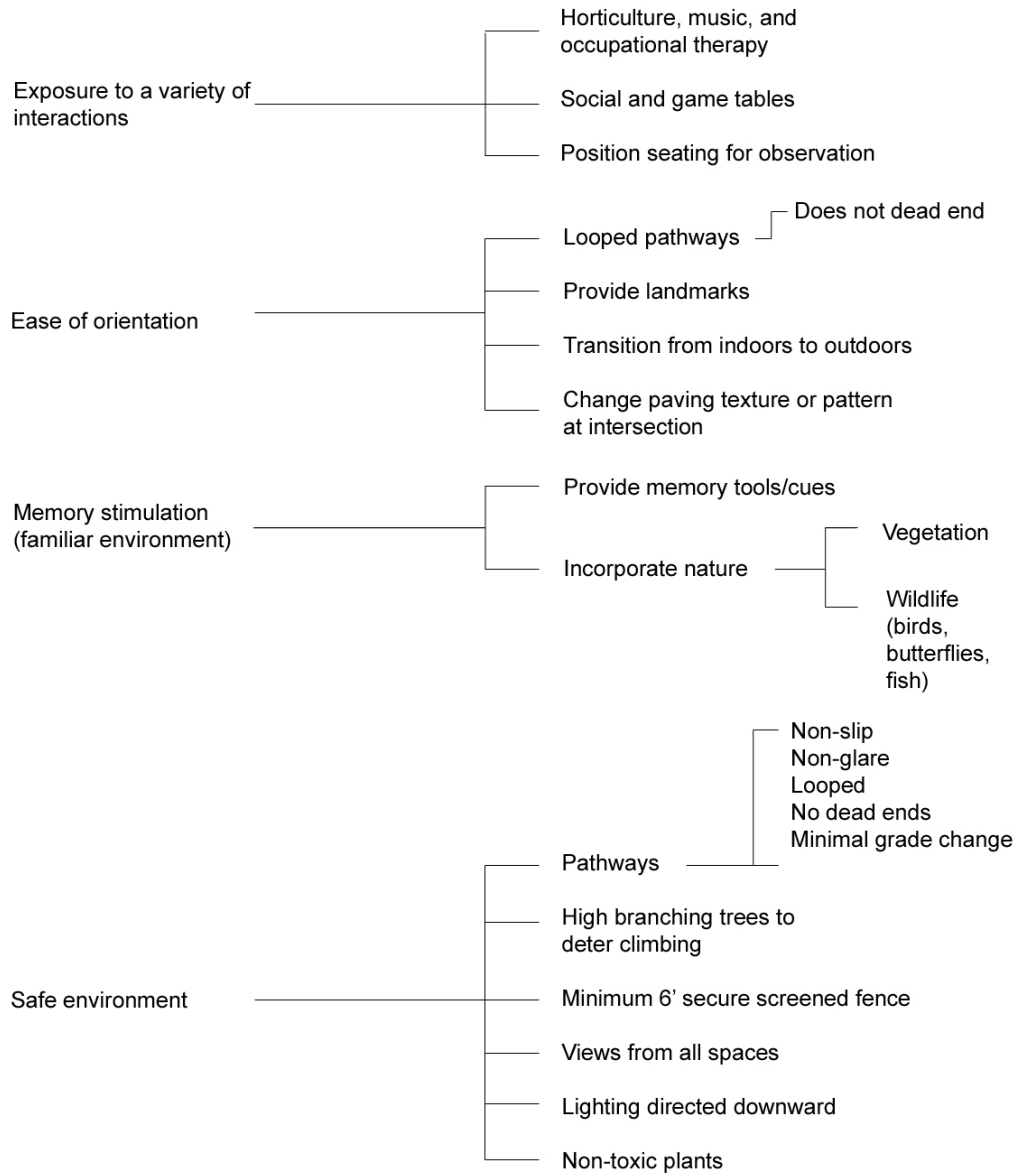
## GUIDELINES

## CRITERIA



GUIDELINES

CRITERIA



### *3.3 Synthesis of Therapies for Persons with Dementia as Applied to Landscape Settings*

Critical components of the gerontological literature are emotion-oriented approaches to ADRD therapy, which are supported by theory. These theories are valuable to designers and should guide therapeutic landscape for persons with ADRD. Without a strong understanding of the theory behind ADRD therapies, designers do not have a solid foundation for their designs. Emotion-oriented approaches, based on gerontological theory, include validation therapy, reminiscence therapy, and multi-sensory stimulation. Emotion-oriented approaches have been deemed successful in eliciting positive effects on the physical and emotional well-being of care-recipients. Examples of the effects that emotion-oriented approaches have on persons with ADRD are increases in self-esteem, cooperation, social interaction, coping strategies, improved fine and gross motor skills, and a reduction in anxiety and stress. Nevertheless, several studies report flaws regarding small sample sizes, uncontrolled methods or other limitations. This confirms that additional research on emotion-oriented approaches is necessary. The literature review also reveals that emotion-oriented approaches have been primarily utilized in indoor environments. Qualitative and quantitative research in outdoors environment is necessary to confirm the benefits of emotion-oriented approaches for persons with ADRD in therapeutic landscapes.

The model developed following the research is a synthesis of the therapies for persons with dementia as a result of gerontological literature as applied to landscape settings (see Figure 9).

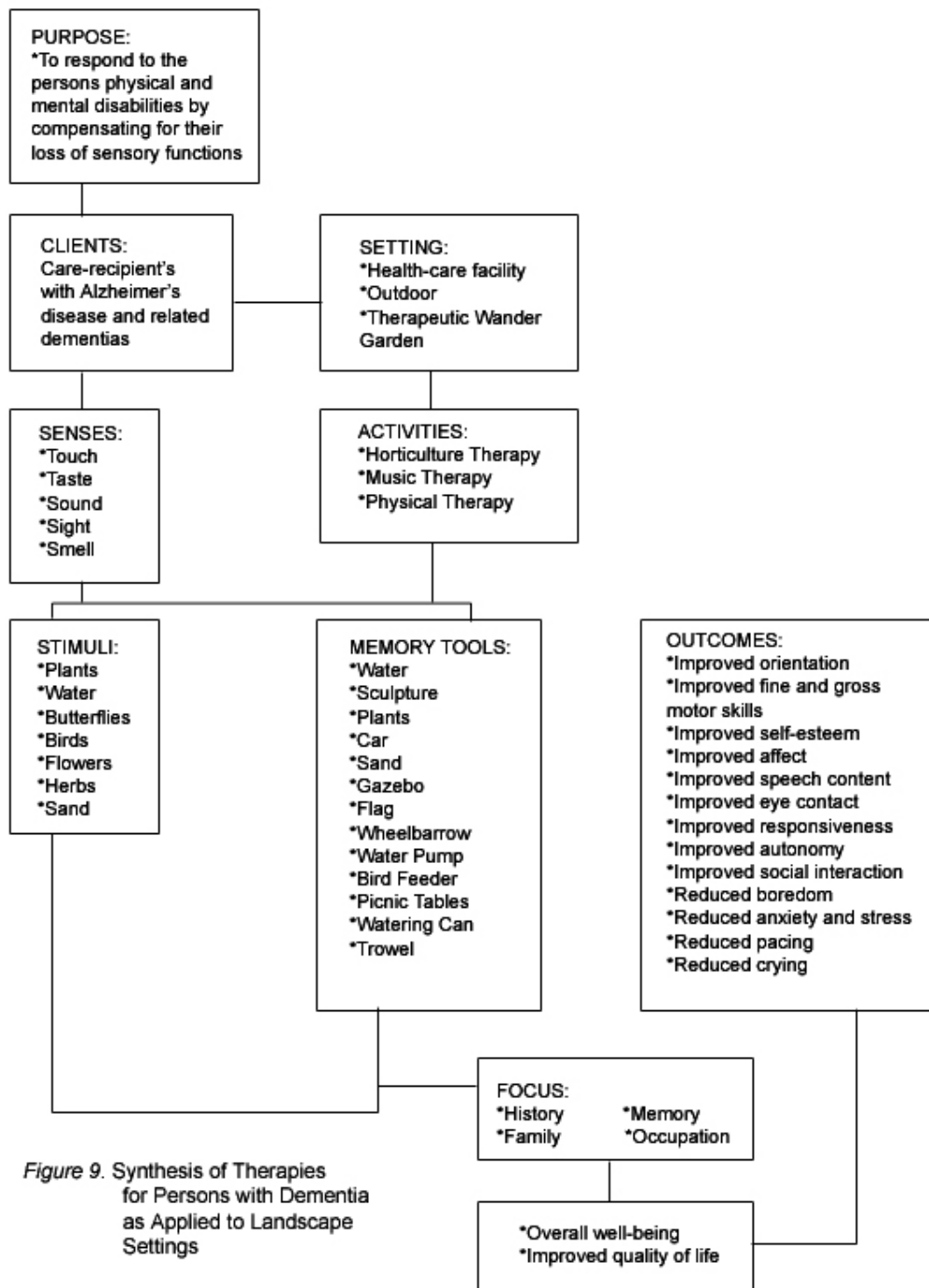


Figure 9. Synthesis of Therapies for Persons with Dementia as Applied to Landscape Settings



### *3.4 Design Related Issues*

The therapeutic elements that structure outdoor environments for persons with ADRD have not been studied nearly as extensively as they should be, and there is an overwhelming need for additional quantitative research to evaluate the effects of validation therapy, reminiscence therapy, and sensory stimulation on persons with ADRD. The results of Cohen-Mansfield and Werner's (1999) study suggest that fundamental design problems, such as not including walkways and benches, are significant issues. These problems must be re-evaluated by designers.

Joanne Westphal (1999), a landscape architect and physician, adds an interesting element to the literature review by critiquing the ability of landscape designers to create successful outdoor environments. Westphal agrees that there is a need for more quantitative research on the benefits of therapeutic outdoor spaces for persons with dementia; this method of data collection will provide greater credibility in design by expanding on design guidelines and theories regarding persons with dementia in outdoor environments. The literature review supports the concept that without proper research, evaluation, and understanding of the disease, designers will not have the ability to design a space that will "work" properly.

Roger Ulrich, a landscape architecture and architecture professor, also questions the current standards for design (Thompson, 2000). He raises the issue that there are not structured criteria for quality of design for designing therapeutic outdoor environments for persons with dementia. Ulrich speculates whether the wander garden has beneficial influences on the care-recipient's health outcomes and whether maladaptive behaviors occur less in gardens designed for persons with ADRD. Martha Tyson, a landscape

architect, suggests approaches that may assist designers in creating successful designs. Examples include: reading literature, visiting existing therapeutic gardens, talking with other health-care designers, and attending conferences (Thompson, 2000). These may be approaches that are worthwhile for designers to undertake.

The literature review raises an important question regarding the type of landscape architectural literature that is currently available. While gathering the perspectives of practicing landscape architects is important to research, solid empirical evidence is necessary. This study confirms that empirical research in landscape architecture is rare, and more peer-reviewed articles need to be written to obtain a research-based knowledge regarding environmental factors that affect persons with dementia in outdoor environments.

### *3.5 Summary*

Researchers recommend that stimulation of the senses should be a focus of every design. Solomon, 1967, and Loew and Silverstein, 1971 suggest that a lack of stimulation has detrimental effects on a healthy individual, and if brain functioning is to remain normal, sensory stimulation is needed for all people no matter what their health condition. If the designer researches ADRD, experiences institutional life, reviews case studies, and focuses on finding an appropriate balance between the landscape settings and its users, a successful design may result. In addition to raising further questions, the literature review offers answers to a number of questions formulated at the outset of the study. The literature review served as a basis for the formulation of preliminary design guidelines.