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# Dementia Day Care Design: Solutions from an Interprofessional Student Practicum: A Report of Research

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Keith Diaz Moore, Deborah Bowers-Thomas, Angela Feser, Lee Hall, Anne Hanenberg, Myah Houghten, Nao Kamayama, Ching-Chih Ma, Cory Nelson, Amy Palmer, and Kimberly Ward

# **Dementia Day Care Design:** *Solutions from an Interprofessional Student Practicum*

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*along with*

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## **Abstract**

Increasingly, Adult Day Care (ADC) is serving those elderly individuals experiencing dementia of the Alzheimer's Type, yet design guidance specifically developed for this place type remains lacking. This monograph presents discrete design interventions developed by architecture, interior design and landscape architecture students in an interprofessional practicum. Working with both design and care professionals and engaged related design research literature, students developed an understanding of the convoluted context of adult day care and the environmental issues typically confronted in adult day care settings. These issues may be understood in terms of social legibility; the socio-physical aspects of group size; and universal design. Each student developed a discrete design intervention that could be utilized to enhance the therapeutic milieu of large open spaces endemic to adult day care. These interventions are categorized as being of three types: spatial organization; partitions; and activity-oriented furniture. Each design solution is described graphically and verbally; is analyzed in terms of the design issues mentioned above; and finally evaluated in terms of its likely impact upon participant control; social affordance; and adaptability of the place.

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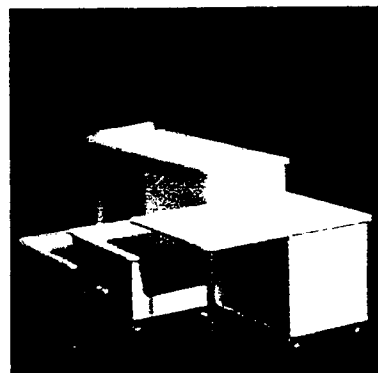
## Acknowledgements

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What became evident through this endeavor is that adult day care is a very different type of place in which to care for the cognitively-impaired and merits critical inquiry in its own right. It is a mistake to simply appropriate design suggestions developed for long-term care and applies them in an adult day care setting. The experiential quality and meaning of the two places is quite different. All of us involved in this project hope that this pilot study kindled interest in future students and design professionals to critically explore this place type and ask themselves "what kind of place should this be?"

**Chapter 1**  
**Executive Summary**

**Introduction**



This monograph presents an inquiry into several of the environmental design issues confronting adult day cares serving the cognitively impaired. As with any critical design exploration and intervention, the problem with which one is confronted needs to be clearly established. This problem exists within a given context whose multiple dimensions need to be understood both discretely as well as how they transact. Once the problem is contextually situated, a method may be established for furthering inquiry and developing and revising solutions to the stated problem in the given context. This approach to critical problem solving was followed in the practicum described herein and is evidenced in the final solutions.

The context of adult day care is quite fragmented. The regulatory context is ill defined, with most states only setting minimal standards for the purposes of certification. These standards often concentrate on issues of life safety and hygiene. The adult day care industry has developed guidelines and standards that are only recently beginning to be adopted and are still found on only a small percentage of operating adult day cares. The funding stream for adult day care is ill defined and highly precarious for organizations seeking to provide this kind of service to their communities. Funding may come from the government, although these funds are usually associated with the provision of highly discrete services, not adult day care in general. Dollars may also come from private foundations, veteran sources, and of course private pay. Many funding streams are associated with regulations that dictate the manner in which care is delivered.

This lack of regulation also impacts the physical setting of adult day care in that "once you have visited one adult day care, you have visited one adult day care." There is a great range in spatial organization, program, and building type in the physical settings of adult day care. Little inquiry has gone into what constitutes adult day care as a place-type. In general terms, issues associated with the physical setting have been limited to appearance, safety, wayfinding, thermal comfort, and sensory stimulation. In the most rigorous and thorough inquiry into the physical setting aspects of adult day care, Diaz Moore (2000) found that there are three primary facets of place quality in adult day care: participant control; social affordance; and adaptability. These three facets are associated with a set of relationships that structure adult day cares as places. The core pattern of this system of relationships is "The Church Basement" which is meant to convey "the concept of a large, undifferentiated space in which different activities take place and from which there is little, if any, variation in activity and degree of visual

exposure.” This character is associated with providing participants with a uniform stimulation level throughout the day, by keeping them within the same spatial confines. Props are usually few and far between and often access is controlled by staff. Such spaces coercively encourage larger group sizes and higher participant – to – staff ratios. Design issues associated with this “place personality” of adult day care include social legibility, socio-physical aspects of group size; and universal design.

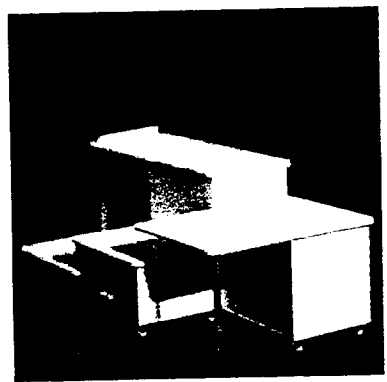
These three design issues are addressed by each of the final design solutions presented in Chapter 5. These solutions, developed by 10 students of the Interdisciplinary Design Institute of Washington State University – Spokane, each are crafted with the issues, the context and the problems confronting adult day care professionals in mind. The process for developing these solutions is outlined in Chapter 4. Many professionals were involved in the course of this practicum, interfacing with students to bring a real-life dimension to the problem with which students were confronted. These professionals included adult day care administrators, nursing professionals, social work professionals as well as architects and interior designers who specialize in the environmental needs of those with dementia.

The solutions are grouped into three types of interventions: spatial organization; partitions; and activity furniture. Each intervention is described both verbally and graphically. This is followed by a critical analysis of the intervention in terms of the three design issues central to adult day care for the cognitively impaired mentioned above. Lastly, there is a summative evaluation of how each intervention would impact the three facets of place quality core to adult day care as a place type.

The solutions must not be considered final by any means. As with any good critical inquiry, after initial evaluation, as provided here, additional critical questions are stimulated and further inquiry is necessary. The benefit of this monograph is not in its design suggestions per se, but the issues that they raise to the fore and the potential that exists within them to render adult day cares as places even more therapeutically beneficial.



**Chapter 2**  
**The Evolving Context of**  
**Dementia Day Care**



## **A Brief History of Long-term Care in the United States**

In 1776, when the United States asserted its independence, the average life expectancy was 35. Advanced aging was of little concern. During the course of the twentieth century, however, biomedical advances facilitated a much larger number of individuals to survive to ages where issues of chronic illness and frailty become more likely. From a medical perspective, aging has historically been associated with longevity and maintaining physical health.

The twentieth century also brought with it dramatic shifts in demographic and social trends, thereby decreasing the likelihood families could provide daily care (e.g. Treas, 1977). These shifts, related to industrialization and urbanization, resulted in a changing social structure; one where the role of the older person was and remains ill-defined and often stigmatized (Atchley, 1988). These issues have only been exacerbated with time, to the point where many of the needs of our aging population go drastically unmet. Throughout history, how we as a society have addressed the aging has fundamentally been impacted by how we have conceptualized the issues. Historically, issues of aging have been seen to have two aspects: one biological or medical; and the other psychosocial.

### *The Medicalization of Aging: A Stress on Care Provision*

Without question, the most influential perspective on shaping the care of the elderly to date in this country has been that focused on health care provision. This perspective -- what many controversially refer to as "the medical model" (e.g. Johnson & Grant, 1985; Weissert, 1990) -- holds the underlying premise that "the presenting problem is a disease condition that needs treatment, the subject is a patient with presenting symptoms, and the relevant background factors are health history and the etiology of the disease" (Johnson & Grant, 1985: 140). This position results in the care of the elderly being viewed in terms of treatments provided by care professionals to address a specified problematic condition. More specifically, problems are defined pathologically and interventions are conceptualized as isolated and singular events. Because of this, such a perspective has been called reductionist; eliminating or "controlling" the impact of all aspects of experience external to the "cause and effect" interaction. This perspective is thus interested in identifying and defining the elements of both pathology and treatment and

attempting to develop universal laws that govern such interactions.

This perspective is more at ease when specific services are rendered to achieve specific outcomes and are done within a controlled setting. Institutions for the elderly have thus emulated the hospital as its place-type exemplar. This was reified by the U.S. Government in 1954 when the Hill-Burton Act was expanded, resulting in nursing home regulation being heavily influenced by hospital regulation (Vladeck, 1980). This is why many nursing homes share common characteristics with healthcare settings such as shiny floors, double-loaded corridors, cinder block construction and so forth. In the spirit of control, the 1960's saw a movement toward establishing a continuum of care, one in which specific needs are served within different facility types.

Additional alternatives to SNFs and ICFs emerged in the 1970s, driven by the spirit of developing a care continuum. These alternatives included residential care facilities (sometimes referred to as "board and care"), congregate housing, retirement communities and senior centers, each responding to specific community-based needs. These alternatives were also conceptualized as filling out the continuum of options. The continuum of care conceptualization often results in a "boxcar" approach to long-term care where older persons move progressively from home in increments up to skilled nursing care. The level of service provided was invariably coupled, through regulation, with a given environment type, reflective of the remaining cultural baggage of institutionalizing care for the elderly.

While this makes logical sense from the point of view of service provision, there are very few elderly persons that experience this progression. Most, quite simply, do everything in their power to remain in their homes as long as possible.

### *An Alternative Approach: The Socialization of Aging*

During the 1960s, many gerontological researchers began to find that nursing homes, based upon on acute care model, were simply inappropriate for serving people with chronic conditions. In many cases, such environments in fact exacerbated the difficulties associated with life with a chronic condition (e.g. Goffman, 1961; Lawton & Simon, 1968). These researchers illuminated the significant shortcomings associated with the reductionist medical perspective. There was more at work in the life of the elderly than simply pathology and planned treatment; there is a complex dynamic

*Aging as a societal issue has only emerged within the last century, and because of historical circumstance, has been in many ways "medicalized."*

at work in environments for older persons.

Lyman (1989: 604) argued that underlying this new perspective was the recognition "that all human experience involves intentional social action and interaction, in socially structured environments, in the context of taken-for-granted socially constructed knowledge about aging, development and disease." Immediately, Lyman's take is starkly different than that of the medical perspective in that here, people are viewed as purposive and thoughtful as opposed to simply responding to external stimuli. Within this perspective, issues of meaning and intention come to the fore. Critical discussion surrounding such issues as self-identity and the meaning of home ensued and the importance of continuity emerged as essential to the elderly's quality of life.

*An emerging perspective over the past 25 years emphasizes the social aspects of aging.*

### **Adult Day Care and the Social Perspective**

In reaction to the "over-institutionalization" of the elderly and also in response to the desire for the elderly to stay in their home communities, adult day care emerged as a chronic care alternative in the 1970s. While some long-term care organizations have envisioned adult day care as an entry point, or first "boxcar" of their continua, as early as 1982, Clark conceptualized adult day care as offering a broad array of services spanning the entire continuum of care. Rather than being thought of as one of the boxcars in the continuum of institutions, adult day care came to be modeled as a complimentary alternative, paralleling the continuum of care.

Adult day care has traditionally been truly community-based, responding to the needs of the community and specifically the needs of participants. Thus many adult day cares have found their service provision to be fluid; changing and adapting to the needs of constituents. This has resulted in a tremendous diversity in the adult day care industry. While this diversity reflects adult day cares' attempt to respond and adapt to the needs of participants more than any other aspect of the continuum of care, it has had the less desirable result of causing confusion among regulatory and funding bodies as well as among the public at large. It has also placed adult day care in a competitive climate with a variety of the institutionalized approaches to elder care. For instance, many adult day cares provide services to clients with needs even beyond that found in most assisted living settings. While an important part of the long-term care equation, the confusion about what adult day care is among the public; the competitive situation with more established and well-known forms of long-term care; and the precarious regulatory and financial

*As a community-based alternative to the long term care continuum, adult day care stresses responsiveness to the needs of its constituents, and this fluidity is partially responsible for the ill-defined nature of adult day care as it currently exists.*

situation all have made adult day care a difficult proposition.

### *Adult Day Care As An Alternative To Institutionalization*

Yet, adult day care continues to grow exponentially, from over 1200 adult day cares in 1986 (OnLok Senior Health Services, 1987), to 4000 by 1997 (National Institute on Aging, 1997) and an expected need for 10,000 adult day care programs by the year 2000. This growth in such an alternative to traditional long-term care reflects adult day care's ability and desire to respond more quickly and appropriately to the needs of the communities they serve. Such growth has thought to be stunted by society's general unawareness of this alternative, and the uncertainty and complexity of funding streams faced by adult day cares. The first point has served as the rationale for the marketing focus found in the Robert Wood Johnson Foundation's Partners-in-Caregiving project (c.f. Cox, Reifler & Yates, 1998). The second point has led to most adult day care operators, out of necessity, taking a "lasagna approach" to funding; layering a variety of public sources together with philanthropic sources and client out-of-pocket payments.

***Adult day care continues to explode, doubling in number roughly every ten years.***

Bradsher and colleagues (1995: 20) state that, "this places ADCs in a position of economic uncertainty, focused on survival and maintaining the flow of funding, and on maintaining organizational viability (Scott, 1987)," and that because of this precarious situation, "ADCs are in a constant state of adaptation in regard to their funding and regulatory environment. In turn, the environment shapes the delivery of ADC services." The environment to which Bradsher and colleagues refer is the context of adult day care, which has regulatory, financial, competitive and historical dimensions. From this discussion, it is evident that adult day care plays at the precarious edge between the driving momentum of community need and the inertia of institutionalizing the aged.

Adult day care is difficult to define as it is a service program and place-type still to be defined by society. Defining adult day care has and remains a source of debate within the adult day care community to the point that Webb (1989: 15) warned, "if we redefined its definition, we would diminish its potential!" In many ways adult day care organizations have come to accept operating in an uncertain world. However, aware of the need for some agreed to definition, the National Adult Day Services Association (1997: 1) wrote that,

*"Adult day services are community-based group programs designed to meet the needs of adults with impairments through individual plans of care. These structured, comprehensive, nonresidential programs provide a variety of health, social,*

*and related support services in a protective setting. By supporting families and other caregivers, adult day services enable participants to live in the community."*

This last sentence is the *raison d'être* for adult day care, which immediately thrusts its efforts in sharp contrast to traditional long-term care. The other two sentences attempt to describe adult day services in a fashion that implicitly juxtaposes it with the commonly held understanding of institutional living. The first sentence stresses that adult day services are community-based as opposed to institutional, thereby maintaining the person from the community. The same sentence also stresses that people receiving adult day services are receiving individualized care, however, the nature of that care is not expressed until expounded upon in sentence two. The second sentence emphasizes the multidimensional and holistic approach to care found in adult day care. The uncertainty, the concern for the unique over the general, and the multidimensional approach reveal that adult day care conceptually operates within the social perspective toward aging. So here is a place-type fundamentally acting according to a social perspective but operating within constraints imposed by a contradictory paradigm – that of the medical perspective.

### **Alzheimer's Disease and the Social Perspective**

While still the reigning paradigm, the medical perspective has been found to be grossly incongruent with the psychological and sociological needs of most elderly (e.g. Johnson & Grant, 1985; Kane & Kane, 1978). Important in the recognition of the inadequacies of the medical perspective was its incessant failing to address effectively the needs of the elderly with cognitive impairment. Many expert researchers in dementia care began to point out that behavioral symptoms in persons with cognitive impairments were being exacerbated by common aspects of nursing home life, such as noise, glare, lack of exercise, and use of restraints (e.g. Hall & Buckwalter, 1987; Reifler & Larson, 1989).

In the 1980s, there was also growing social awareness of Alzheimer's Disease, its devastating impact on the socio-behavioral abilities of individuals and its impact on their families (socially, emotionally and financially), which found currency in political debate. Not only was society aging, but also with people living longer and chances of cognitive impairment growing as age increases, there was concern for the "coming epidemic of dementia" (Jorm, 1987: 10).

Such conclusions raised increasing criticism toward nursing homes as places for the care of those with dementia. Those elderly experiencing dementia revealed the "chinks in the armor" of the institutionalized long-term care system which assumes, and often imposes, order and regularity. The manifestations of dementia and how the syndrome progresses have a wide variance. Also, researchers began illuminating that the behavioral manifestations associated with dementia of the Alzheimer's type was not solely the effect of pathology, but rather had psychological, social and environmental aspects to them. This is problematic as once labeled as "demented," behaviors of individuals are often interpreted within that frame of reference. There is a social stigma attached to Alzheimer's; one that has significant impact on care. Gubrium (1978: 28) succinctly identifies the core issue regarding dementia care when he observes, "I have found that who or what behavior is spoken of or recorded as senile depends on place....By place, I mean geographic locations...that are taken for granted to have certain meanings on particular occasions when specific people are gathered there."

*Adult day care is currently being heavily advocated for use by the Alzheimer's Association which sees ADC as a significant vehicle to meeting the needs of those with dementia in a manner that allows those individuals to remain in the community.*

### **The Context of Dementia Day Care**

In this brief overview, it becomes clear that adult day care exists in a muddled context; one in which the medical orientation of funding streams and of regulation are in stark conflict with the aspirations of adult day care. Such conflict has precluded efforts to define what adult day care is, leaving society at-large uncertain about the services and potentials associated with this place/service type. Unfortunately, adult day care providers have embraced this lack of definition, believing it creates opportunities for innovation. However, this is in response to prescriptive regulation that often stems from societal definition – this is why nursing homes look like hospitals. However, another manner in which a place could be defined is in terms of performance characteristics. What qualities does this sort of place engender?

*Adult day care exists in a muddled context; one in which the medical orientation of funding streams and of regulation is in stark conflict with the aspirations of adult day care.*

In a comparative case study of three adult day cares serving the cognitively-impaired, Diaz Moore (2000) found that in regard to five salient therapeutic goals established in the dementia care literature (c.f. Cohen & Weisman, 1991), these adult day cares were only slightly positive in terms of adaptability, and negative in terms of control, sociality, orientation and stimulation. Considering how critical place is for those with dementia, for whom "a small improvement in environmental quality could make all the difference in the world (Lawton, 1986: 14)," this quality assessment suggests that as currently embodied, adult day care as a place type is

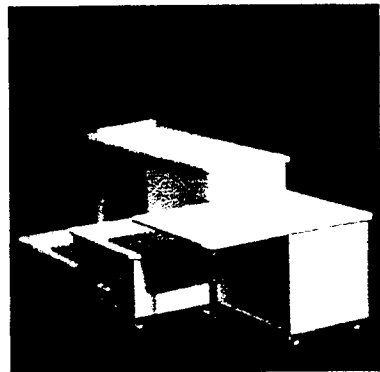
*Due to its ill-defined nature, adult day cares are generally not as therapeutically beneficial for people with cognitive impairment as they should strive to be.*

## DEMENTIA DAY CARE DESIGN PRACTICUM

woefully lacking in facilitating the therapeutic benefits sought for those with dementia. Diaz Moore concludes by suggesting that adult day care could be so much more than it is in its current languishing state and asks, “what kind of place do we want it to be?”



**Chapter 3**  
**The Physical Environment and**  
**Dementia Day Care**



## Introduction

The role of the physical environment in adult day care has rarely been explored. In general terms, issues associated with the physical setting are limited to appearance, safety, wayfinding, thermal comfort, and sensory stimulation (Lindeman, et.al., 1991). While these issues have been raised, little design guidance or research has been conducted in specific regard to adult day care. Of great concern to care providers is the compliance of the physical setting with building codes and regulations. The difficulty with this is that many codes do not even address adult day care, resulting in the misapplication of other codes to this very unique place type. As one example, one adult day care operates under a perpetually suspended certificate of occupancy, as they do not comply with *child* day care standards!

Because of this lack of definition of adult day care, the National Adult Day Services Association has recently crafted a set of standards and guidelines (NADSA, 1997). Issues of the physical setting raised by these guidelines include: provision of program space per client; distance to and quantity of toilets; and many others which are really reiterations of most life safety code issues. Thus even in terms of standards there is little guidance in regard to the physical design of adult day cares.

*Currently, the standards and guidelines for adult day care tend to remain focused on life safety and hygienic concerns, rather than a more critical consideration of therapeutic goals.*

## Three Primary Facets of Quality in Adult Day Care

The most complete inquiry into the physical design of adult day cares was a study by Diaz Moore (2000) in which three adult day cares are examined in a comprehensive, comparative case study. Through a bottom-up analysis rooted in the daily life experience of each place, three facets of place quality emerged as the primary qualities shaping the character of adult day care as a place:

- Participant control;
- Social Affordance; and
- Adaptability.

*The three primary facets of adult day care quality are:*

- *Participant Control;*
- *Social Affordance; and*
- *Adaptability.*

### *Participant Control*

An omnipresent dichotomy between organizational and participant control exists in all chronic care settings, including adult day care. Control has four aspects: control over resources; control over choice; control over access; and conformity to expectations (c.f. Altman, 1975;

*Participant control is the degree to which a participant*

## DEMENTIA DAY CARE DESIGN PRACTICUM

Kahana, 1982; Moos & Lemke, 1996). In general terms, it is staff who provides participants with the resources necessary for any given therapeutic activity. This empowers staff and compromises the exhibition of self-initiation of clients. Often adult day cares attempt to keep large groups of participants together either not providing options or restricting their use. Finally there is a powerful sense of social obligation in adult day cares as all interactions occur in a public arena. Yet often, the cueing of expected behavior is so poor or conflicted that it is difficult to determine what is appropriate. Together with the heightened sense of social obligation, this likely precipitates a safe harbor course of action – withdrawal.

*is enabled to exercise personal choice and is facilitated to do so in a socially acceptable manner.*

### *Social Affordance*

Four types of social interactions may occur in a place: public interactions, which tend to be impersonal; socio-consultive, which are congenial in nature; personal interactions, where attachment begins to develop; and intimate interactions (Hall, 1966). Most of the interactions in adult day care would be classified as public. Such interactions involve the least commitment and allow the person to remain on the periphery of the action. Because of the lack of commitment and their superficiality, they are typical the least meaningful interactions. There are several issues related to the social affordance found in adult day care:

*Social Affordance is the degree to which the place enables social interaction.*

1. The aggregation of large groups – larger than that required for any particular activity to occur (i.e. 18-24 people in a discussion when 8-12 would do);
2. The spatial distance that results from aggregating such a number of individuals together which cue public behavior;
3. The poor social legibility often found in adult day cares that operate within multi-purpose rooms; and
4. The high degree of visual exposure which heightens the sense of social obligation, which together with the previous point, is a source of great conflict.

### *Adaptability*

Often the focus of adaptability is limited to how accessible the environment is to the needs of the wheelchair-assisted. Here, adaptability is seen as having three aspects: customization of the physical environment; policy variance / programmatic variety; and staff improvisation. Often the physical settings of adult day cares are designed with a great sense of flexibility. However, often once a program is found to work to a modicum of success, such programs cease to vary and seize the flexibility inherent in the physical design. Such flexibility is often afforded by the provision of wide-open

space, however such configurations of space also render a high degree of visual exposure. While this assists staff in their surveillance of participant activity, it also coercively restricts staff improvisation by being subjected to the scrutiny of peers. Such a situation tends to reinforce doing things “by the book,” even if the organization seeks more improvisational acts from its staff.

*Adaptability is more than adapting to the needs of the differently abled; policies and programs may adapt to changing needs and staff need to adapt in everyday situations.*

### **The Resulting Character of Adult Day Care: The Church Basement**

The core pattern of adult day care as interpreted by Diaz Moore (2000; 282), is “The Church Basement” which is meant to convey “the concept of a large, undifferentiated space in which different activities take place and from which there is little, if any, variation in activity and degree of visual exposure.” This character is associated with providing participants with a uniform stimulation level throughout the day, by keeping them within the same spatial confines. Props are usually few and far between and often access is controlled by staff. Such spaces coercively encourage larger group sizes and higher participant – to – staff ratios. Due to overpopulating theory, such groups may discourage participant involvement and the lack of cues may strip vital environmental information from individuals who need all the assistance they can get in deciphering what is appropriate behavior. Add to this the shortened attention span of the cognitively impaired, and there is a recipe for thwarting therapeutic benefit. All in all, Diaz Moore (2000) assesses this core characteristic of adult day care as being associated with:

- Minimizing participant privacy;
- Enhancing organizational control;
- Providing unfettered visual access;
- Supporting adaptability;
- Reducing social affordance; and
- Maximizing safety.

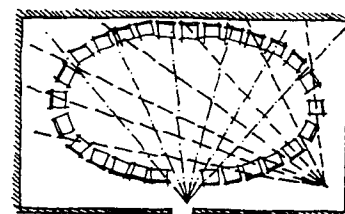


Figure 3.1: Diagram of the “Church Basement” (from Diaz Moore, 2000).

*Many Adult Day Cares implicitly recreate conditions of the Church Basement in their facilities. The church Basement is meant to convey “the concept of a large, undifferentiated space in which different activities take place and from which there is little, if any, variation in activity and degree of visual exposure.”*

### **Emerging Design Issues for Improvement**

#### *Social Legibility*

One aspect of the social legibility of physical settings is how

different spaces are spatially organized in relation to one another. These spatial relationships, Hillier (1996:24) argues, tend to “generate and constrain some socially-sanctioned — and therefore normative — pattern of encounter and avoidance.” In so doing, they help define the nature of the place. For instance, a solid wall between two adjacent spaces suggests that those two spaces have no functional relationship basis for their adjacency. Once a door is punctured through the wall, that relationship is completely changed. In examining these types of spatial relationships in a set of adult day cares, Diaz Moore (2000) found their spatial definitions to have a tremendous range of variance. This suggests that how places of adult day care are to function remains quite ill defined. The development of these relationships and how they facilitate specific activities and thereby forward particular goals would be an area of inquiry well worth investigation.

Within each setting, the cueing of socially-expected activity is quite weak. Little is easily understood by participants about what is to occur there, the process of interaction that will take place and one’s role in facilitating that activity. The social illegibility of the situation is likely to create a sense of disorientation. Together with the social obligation of public interactions established by the typical openness of the setting, these are likely to create tremendous burden and perhaps an overload of environmental press for individuals at these competence levels. What one is supposed to do, how they are to relate to others and how such actions are to take place is central in shaping one’s behavior, their assessment of the place and therefore impacts their affective response to the situation. If these socially shared understandings are not comprehensible; people’s behaviors, affective states and overall experiences of the place are compromised. If, as Calkins (1996:38) points out, “people with dementia find it more difficult to meaningfully encode unfamiliar information and experience greater difficulties recalling new or unfamiliar information,” the importance of familiarity and redundant, consistent cueing is essential in easing the “demand” of interpreting the purpose of the place.

### *Socio-Physical Aspects of Group Size*

In order for an activity to have maximum benefit, the number of people engaged in the activity needs to be approximately equal to the number required for the interaction to be perpetuated. Usually the activity to participant ratio in adult day care greatly exceeds the number of participants necessary to enact the activity. Barker’s (1968) “undermanning” (sic) theory suggests that a surplus of participants in an activity

actually excludes people from participating. This can partially explain the degree of low social engagement found in these places (c.f. Diaz Moore, 2000). Creating congruence between activity and group size would influence both activity and architectural programming of adult day care and have a significant impact upon the negotiation of this place-type in the larger society.

Another impact of large activity groups is the physical reality that people take up space; therefore the larger the group, the greater the distances involved. Hall (1966) suggests that distances of greater than twelve feet imply that interactions are public in nature. Such public interactions have several characteristics. First, they are the least therapeutically beneficial (Unruh, 1983). Second, they are the types of interactions to which people feel the greatest need to act appropriately (Archea, 1977). DeLong (1970) notes that due to sensory acuity losses, such as hearing and vision impairment, the personal distance schemas of the elderly are likely to be shorter in distance, suggesting that a distance shorter than twelve feet is likely to be where “publicness” is perceived. Because most activities in adult day cares occur in groups of twelve or more, distances between participants are likely to extend close to or beyond twelve feet. This physical reality itself compromises the therapeutic potential of such activities.

### *Universal Design*

Stemming from both the issues of participant control and adaptability stems the important concept of universal design. In an effort to maximize participant independence and yet be responsive to changing needs, the concept of universal design can be defined as “the design of products and environments to be usable to the greatest extent possible by people of all ages and abilities” (Story & Mace, 1999: 2). It is almost impossible to fathom an environment that could ever be used by all people under all conditions achieving the same degree of success. For this reason universal design is best considered an approach to design rather than an outcome.

The Center for Universal Design has established seven principles to guide the design process aspiring to achieve the goals of universal design. These seven principles are:

- *Equitable Use*  
The design is useful and marketable to people with diverse abilities.
- *Flexibility in Use*  
The design accommodates a wide range of individual preferences and abilities.
- *Simple and Intuitive Use*

## DEMENTIA DAY CARE DESIGN PRACTICUM

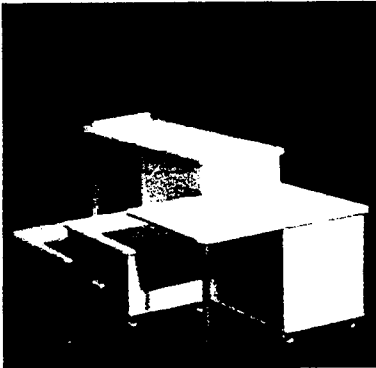
Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.

- *Perceptible Information*  
The design communicates necessary information effectively to the user, regardless of ambient conditions of the user's sensory abilities.
- *Tolerance for Error*  
The design minimizes hazards and the adverse consequences of accidental or unintended actions.
- *Low Physical Effort*  
The design can be used efficiently and comfortably and with a minimum of fatigue.
- *Size and Space for Approach and Use*  
Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture and mobility.

### Summary

The emerging design issues of Social Legibility, Socio-physical Aspects of Group Size, and Universal Design are directly derived from the three facets of place quality that are central to adult day care; namely, Participant control; Social Affordance; and Adaptability. These issues structured the inquiry as outlined in Chapter 4 and presented in Chapter 5. Chapter 4 will discuss the process (or method) by which these issues were explored and Chapter 5 will present the innovative solutions designed in response to these issues.

**Chapter 4**  
**The Practicum**





## Synopsis

The previous chapter established the role that the physical setting plays in any therapeutic milieu serving the cognitively impaired and the key issues such settings should address specifically in regard to adult day care. These issues were addressed in a form of applied research focusing on training.

In the best spirit of applied research/ action research, training is a critical component of such endeavors. Often care professionals are thought of as being nurses, resident assistants, social workers and the like. However, architects and environmental designers are critical players in the development of therapeutic milieux that are all too often overlooked in regard to the need for training. This project conducted a practicum for professional degree architectural design students in the design of adult day care centers for those with dementia. This practicum (called a studio) presented a real-life adult day care as the problem to be addressed and involved:

- education in regard to issues of aging and the environment;
- active participation/collaboration from care providers and administrators in soliciting their input regarding issues of the physical setting;
- development of discrete design interventions that address core issues of dementia day care yet can be utilized in a variety of settings.

## Methodology

The design of this research was community empowering action research. Action research addresses directly the issue of application being understood as "disciplined inquiry which seeks focused efforts to improve the quality of people's organizational, community and family lives" (Calhoun, 1993: 62). Community-based action research is a more democratic and empowering approach to inquiry. Such inquiry commences with an interest in the problems of a given community. In this case at issue is the desire to develop more therapeutically beneficial physical environments within the financial, regulatory and operational realities found in dementia day care.

In addressing this issue, action research assumes that all stakeholders should be engaged in the investigation. In this

case that would include adult day care operators, day care staff and (future) architects. "Collaborative exploration helps practitioners, agency workers, client groups, and other stakeholding parties to develop increasingly sophisticated understandings of the problems and issues that confront them...and formulate more constructive analyses of their situation" (Stringer, 1996:10).

This research project addressed a specific real-life problem, namely, the design of a local adult day care center. This problem was defined through a cooperative, dialogical process involving all the stakeholders identified above. This involved the gathering of information through the use of interviews, presented case studies, participant observation and guided group inquiry. Creating interpretations was the second phase wherein stakeholders, through a process of dialogue constructed mutually acceptable accounts of the situation and underlying "theories" of how/why things are as they are. Stakeholders then identified goals and objectives and the tasks necessary to achieve those goals. With the action being taken focusing on physical environment interventions, the architectural students worked through their design processes with all stakeholders evaluating their endeavors at specific intervals. Comments are incorporated at that time and the process moves forward iteratively. The principal investigator acted primarily as a facilitator for the process.

### **Hypotheses/Goals/Objectives**

This project stems from the observation that most of us, particularly care providers, do not take an activist approach to adapting our environmental conditions. We often accept the physical setting as a given. However, in the Designing a Better Day daycare project (funded by the Helen Bader Foundation), the investigators have found "jewels" in almost every adult day care center where the care professionals or their architects dreamed up a wonderful, discrete design intervention that produces/enhances wonderful therapeutic benefit. It is our belief that these remain "jewels" and are not "best practices" because they are not known and therefore not critically considered. Nor is the process by which they were created understood.

The hypothesis underlying the practicum was that a two-fold educational process of exposure to both environmental issues

associated with dementia and best environmental design practices that address those issues (as we know them) and a dialogical exchange with care professionals will - result in

## DEMENTIA DAY CARE DESIGN PRACTICUM

creative discrete design solutions that can be developed/replicated in many other care settings (thereby enhancing the quality of life of dementia day care participants).

The goals of this project were three-fold:

*1) to enable future architectural practitioners to develop appropriate designs which respond to issues associated with aging, and dementia -- specifically in the adult day care context.*

*2) to create a dialogue between architectural students and professional adult day care providers in an effort to enhance the applicability of the design interventions developed by students and provide these day care operators with experience talking with architects, empowering them in their real life endeavors; and*

*3) to enhance the environmental competence of day care providers and thereby empower them to maximize the therapeutic benefit of their physical settings*

Objectives of the study were related to the above goals.

*Objective 1* : That the students in the practicum can identify the key issues related to aging and dementia relating to environmental design.

*Objective 2*: That students can link such issues in their rationale for their discrete design solutions

*Objective 3*: That professional care providers can understand the linkage between such environmental issues and the students' solutions

*Objective 4*: That such solutions shall be ascertained by care professionals as applicable in the "real world"

*Objective 5*: That such solutions will address real issues which adult day care professionals face.

## **The Practicum**

The practicum was offered in the fall semester of the 1999-2000 academic year at the Interdisciplinary Design Institute of Washington State University. The course has 21 students

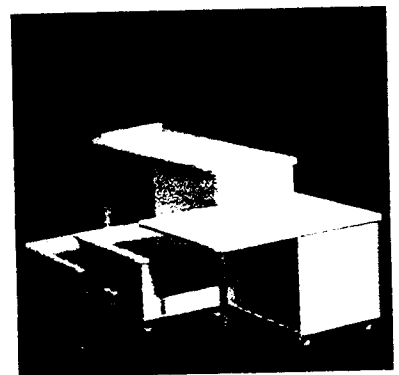
from a variety of design disciplines – architects, interior designers and landscape architects. This rendered a wide range of solutions to the problem at hand.

The site for the project was Southcrest Convalescent Center, a skilled nursing facility owned by Extencicare, Inc. This site offered numerous challenges to the addition of an adult day care center. First, the scale of the existing facility is quite large and is situated on a steep and narrow site. Second, the facility is designed in a very typical 1960's institutional style. Third, the site did not have much buildable land, causing students to explore the possibility of utilizing the existing but underutilized physical therapy room in the skilled nursing facility.

The practicum was temporally organized as follows. First, the research and design recommendation literature regarding universal design and the aging was reviewed and analyzed. This led to the development by each student of a set of five patterns for design which are holistic systems of relationships bundling together numerous hypotheses regarding how the physical setting can maximize autonomy of the elderly. Second, site visits to several adult day cares in the Spokane, Washington area occurred. These site visits lasted several hours and offered students the opportunities to interview staff and administration regarding adult day care and, more importantly, actually observe how they work in real life. Marie Raschko, CEO, of Holy Family Adult Day Centers was instrumental in this effort. Third, Mary Kuvo, Administrator, of Southcrest Convalescent Center provided as-built drawings for the studio to use and also conducted a walking tour through the existing Extencicare skilled nursing facility that was to serve as the site for the project. Fourth, students developed schematic drawings documenting how they would incorporate an adult day care into such a context. Several care professionals including Marie Raschko of Holy Family and Cala Kirkwood of Kirkwood/Rodell Architects were able to render their insight at specific points during this process.

The final step in this process resulted in the products that will be presented in the following chapter. This assignment, entitled "The devil is in the details – considering the micro-environment," challenged students to develop a specific micro-intervention (i.e. lighting, furniture, millwork) in drawings and model which addresses the four issues raised in the previous chapter: Social Legibility, Socio-physical Aspects of Group Size, and Universal Design.

**Chapter 5**  
**The Products**



## **Introduction**

This chapter presents the 10 products designed by students at the Interdisciplinary Design Institute in the Fall of 1999 that attempt to address real-life practical concerns of adult day care providers and the environmental challenges many of them face. Each project will be discussed in the following way:

- a brief description of the project
- an outline discussion of how the project addresses each of the following
  - social legibility
  - socio-physical aspects of group size
  - universal design
- and a summative evaluation of how the project fares in regard to
  - participant control
  - social affordance
  - adaptability

The products themselves have been placed into three categories of design responses:

- Spatial Organization
- Partitions
- Activity Furniture

## Spatial Organization Product:

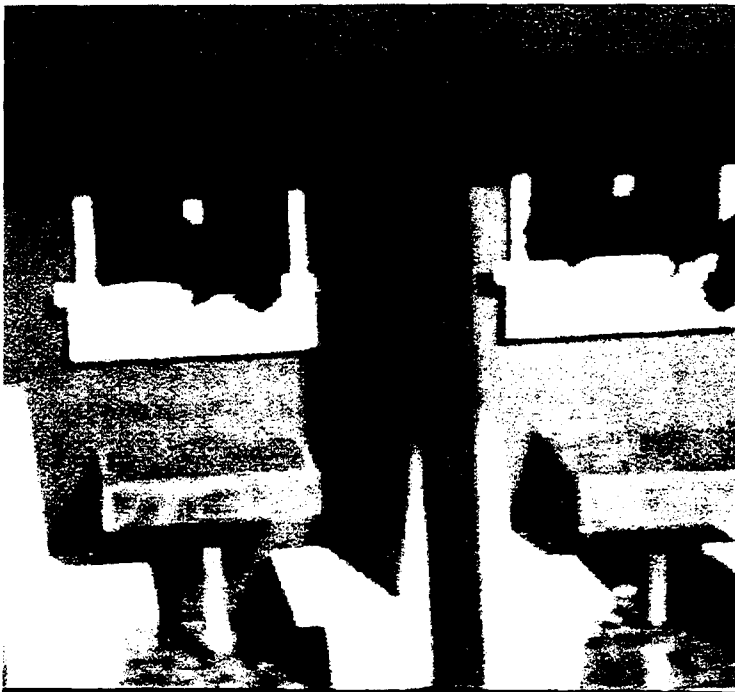
### Alcoves

*Student: Deborah Bowers - Thomas*

#### **Description:**

In recognition of the overwhelming public nature of many adult day cares, due to their use of large, open spaces, this student proposes that part of the perimeter of any large activity space be crafted into alcoves or booths. This creates a semi-private space that still allows for the desired visual surveillance for staff.

The spatial definition of such alcoves involves the use of tables and benches (or chairs) which defines a sub space. Lowering the ceiling and adding partitions, which together create a sense of a carved out space, enhances the intimacy of the setting. Being placed on the perimeter wall allows daylight to penetrate through the windows and highlight these alcove spaces but also because these alcoves are open to the larger activity space, the daylight will also spill into the larger space.



*Figure 5.1:*

*Alcoves at the perimeter of large activity spaces help define semi-private spaces facilitating participant independence while allowing staff visual access to the needs of participants.*

## **Adult Day Care Design Issues:**

### *Social Legibility*

Spaces for small groups are often more easily understood by people with dementia as they are more familiar. Creating intimate spaces for 2 –4 people creates a very familiar social situation and is more likely to spawn interactions of attachment. As developed by this student, booths are familiar for eating as well as activities such as card playing. It defines the group that is to be active and persuades all group members (due to its affordance of only a small number of participants) to participate in the activity at hand. Such an environment tends to encourage verbal interactions.

### *Socio-Physical Aspects of Group Size*

Such a space and its associated furniture arrangement limit the spatial distance between participants to three feet or less. Such a spatial distance cues personal interactions where meaningful conversations are most likely to occur. Also, minimizing the distance between people and creating a space with an internal focus addresses issues of hearing acuity associated with many elderly. Similarly, the small group size afforded by the space allotted limits the distractions possible to interfere with hearing acuity. Such a small group size also coercively encourages active participation by all people present, increasingly the likelihood of therapeutic engagement.

### *Universal Design*

- *Equitable Use*  
Those that are wheelchair assisted may use the open end of the booth and feel a full member of the setting.
- *Flexibility in Use*  
The design accommodates both left and right-handed use.
- *Simple and Intuitive Use*  
A sitting surface and a waist-high surface are some of the most intuitive physical design elements to utilize as the first affords sitting and the latter affords a work surface.
- *Low Physical Effort*  
Could be problematic getting in and out of the booths. Perhaps a different furniture configuration in these alcoves would be more appropriate.
- *Size and Space for Approach and Use*



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Open end is useful for wheelchair-assisted participants, but the booth idea may not respond well to issues of muscular-skeletal rigidity of the aging.

### **Summative Evaluation of Product:**

Alcoves would enhance both a sense of participant control and social affordance by providing a semi-private space for participant use. Such a space would give a sense of privacy control and would cue more personal interactions among participants present. Being open to the large activity space would facilitate both vicarious participation in the large group activity as well as visual surveillance by staff.

## Partition Product:

### Interactive Wall Panel System

*Student: Kimberly Ward*

#### Description:

This product addresses the oft-missed opportunity to design partitions that are more than separators of space. Here, the student explores how such partitions could be designed as an interactive wall, with different materials and imagery symbolic of the locale in which the adult day care is situated. The wall is meant to be touched and engaged. It is thought that such engagement is likely to stimulate thinking and responsiveness and can help to recall fond memories as well.



*Figure 5.2:  
Partitions need not simply be drywall separators of space; rather to convey of a surface that could provide therapeutic stimulation and interaction should be explored.*

#### Adult Day Care Design Issues:

##### *Social Legibility*

The idea of this product is to reconnect cognitively impaired participants with their larger social context but to do so in a manner that stimulates sensory engagement. There is a question as to the intuitive nature of such a design; is it independently recognizable that one is to touch and engage such a wall?

### *Socio-Physical Aspects of Group Size*

Such a design is likely to facilitate one-on-one interactions between staff and participants. These types of interactions are advocated quite a bit in the dementia care literature. While time and resource intensive, such interactions triggered by this type of product would not prevent staff from being able to survey the larger group setting which this wall may enclose.

### *Universal Design*

- *Equitable Use*  
As it is a full height wall, a wide range of people could use it. Those that may not be able to touch may not be able to use. Would there be a way of introducing olfactory stimulation?
- *Simple and Intuitive Use*  
How intuitive the interactive aspect of the design is remains questionable, particularly for a cognitively impaired population.
- *Perceptible Information*  
Largely relies on sight and touch perhaps limiting its use to other populations.
- *Tolerance for Error*  
The tolerance for error in the design is high as little risk is afforded.
- *Low Physical Effort*  
The design requires little effort and the efficiency of the human action is inconsequential to the therapeutic benefit the design portends.
- *Size and Space for Approach and Use*  
Being a vertical element, it is more difficult for those in wheelchairs or those with irregular postures (i.e. osteoporosis) to engage the design intervention, as they may need to approach from the side rather than from the front.

### **Summative Evaluation of Product:**

Such an interactive wall promotes active engagement and sensory stimulation, two conditions associated with social affordance. However, the fact that its use is not particularly intuitive limits the degree of participant control it affords.

However, in defining space, it is likely to help cue an “active” space and should be utilized accordingly. Such a wall could be a moveable partition and this would enhance the intervention's' adaptability.

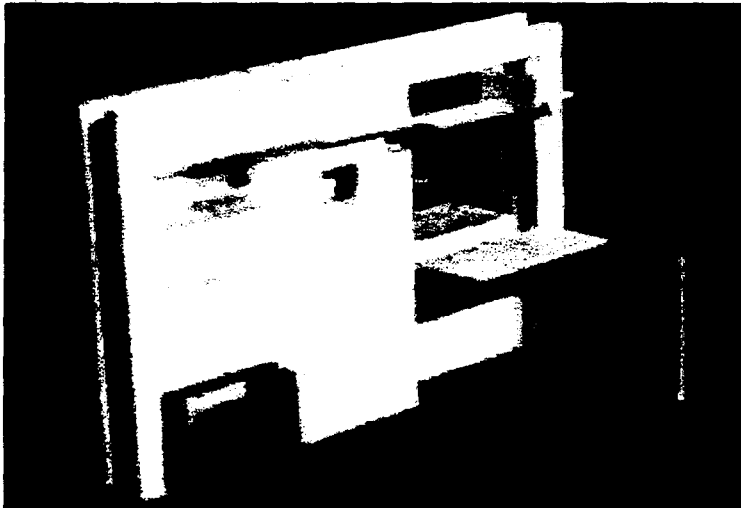
## Partition Product:

### Multivalent Partition

*Student: Lee Hall*

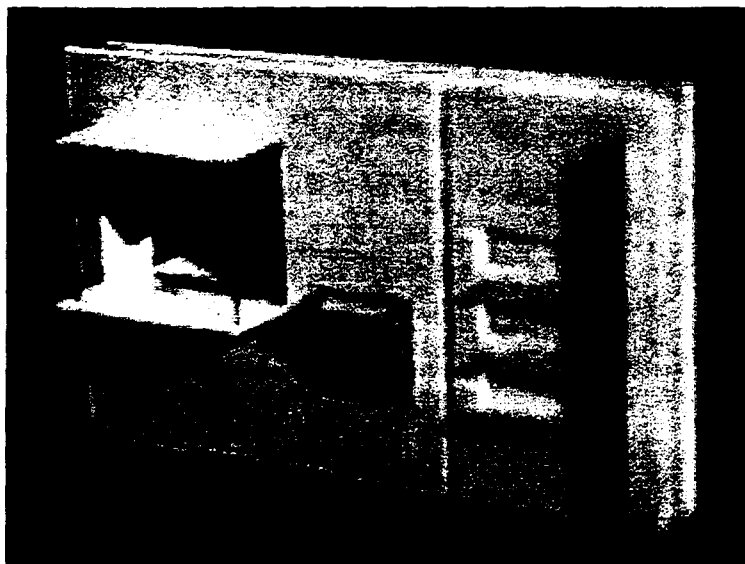
#### Description:

Recognizing the multi-functional aspect that is characteristic of adult day care, this student explores how a moveable partition could be crafted so as to afford multiple uses. Horizontal elements may be extruded and locked into place for a variety of purposes, including a work surface, book/supply storage, pass-through window and trash receptacle.



*Figure 5.3:*

*A partition can do more than separate space; it can be designed to facilitate a number of functions which if broadly defined, can be utilized for numerous activities often associated with adult day care.*



*Figure 5.4:*

*Don't forget that there are two sides to a partition that can cue different types of activity.*

## **Adult Day Care Design Issues:**

### *Social Legibility*

Horizontal surfaces are those which are most easily understood and cognized by humans as affording particular kinds of functions. It is clear that this design affords a work surface in addition to numerous storage surfaces. How exactly the various surfaces are extruded from the partition itself remain ill defined and are not intuitive.

### *Socio-Physical Aspects of Group Size*

Such a design is likely to facilitate one-on-one interactions between staff and participants. These types of interactions are advocated quite a bit in the dementia care literature. While time and resource intensive, such interactions triggered by this type of product would not prevent staff from being able to survey the larger group setting which this wall may enclose.

### *Universal Design*

- *Equitable Use*  
While a large range of individuals can utilize the overall design, certain elements may not be accessible to some individuals (i.e. high shelves to those in wheelchairs).
- *Flexibility in Use*  
The design is highly flexible being both moveable and adaptable. The window element best reflects this as it could be: 1) closed; 2) opened on one side and be a desk alcove; or 3) opened to both sides facilitating visual access and perhaps facilitating through wall interaction.
- *Simple and Intuitive Use*  
The use of the intervention is actually likely to be quite complex (i.e. unfolding elements, recognizing how to assemble the supports and lock them into place, etc.). It is also highly uncommon and therefore probably not particularly intuitive.
- *Perceptible Information*  
Once assembled, likely by staff, the surfaces are rather easily understood as to what they are likely to afford.
  
- *Tolerance for Error*  
Some of the extending elements are likely to create hazards for the sight impaired or those with balance

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difficulties.

- *Size and Space for Approach and Use*

The desk/window element is relatively easy to access but some of the shelves may need a side approach by some individuals.

### **Summative Evaluation of Product:**

This design is highly adaptable yet does not yield as much participant control as possible due to its non-intuitive nature. However, once set up it does afford independent access of shelves and use of the desk. Social affordance is really not addressed in this design, aside from the intrinsic manner in which partitions define space.

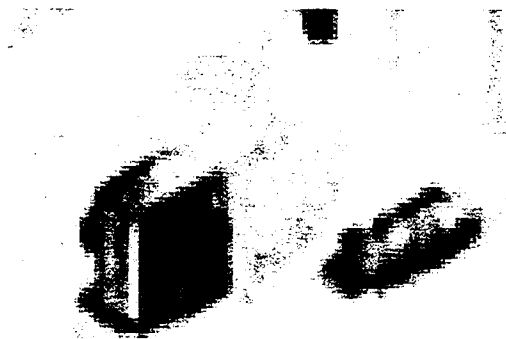
## Partition Product:

### Adjustable Shelves

*Student: Ching-Chih Ma*

### Description:

Here, the student explores how partitions could be conceived of as a storage element affording both spatial definition as well as storage ability. The product then goes further in considering universal use, being highly adaptable to the needs of various populations by having shelves mechanized to adjust into a reachable zone.



*Figure 5.5:  
Moveable partitions can be more than space dividers. Here, they are conceptualized as storage elements, always something in short supply in adult day cares.*

*Figure 5.6 (below):  
Shelves are mechanized to shift into a reachable height as outlined by ANSI standards for accessibility.*

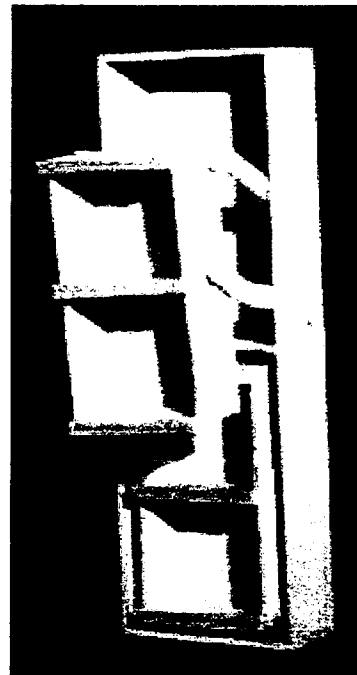
### Adult Day Care Design Issues:

#### *Social Legibility*

Open storage shelves go a long way in cueing the expected behavior in a setting. For instance, whether the storage element is displaying dinnerware or books or craft supplies help trigger what the appropriate behavior is in the setting. Utilizing bookcases as space dividers also will encourage the development of smaller spaces and therefore activities involving smaller groups.

#### *Socio-Physical Aspects of Group Size*

This design really does not address this issue beyond the intrinsic use of the shelving unit as a space divider. This is likely to encourage smaller groups of participants, thereby reducing spatial distance and minimizing the likelihood of overmanning an activity.



### *Universal Design*

- *Equitable Use*  
As it is a full height wall, a wide range of people could use it. The design thoughtfully responds not only to those who may find a shelf to high, but also to those for whom some shelves may be too low to access.
- *Simple and Intuitive Use*  
The mechanism to respond just to the added pressure of weight to move a shelf is interesting and quite reasonable.
- *Tolerance for Error*  
One of the problematic aspects of this design is the engineering need to consider the shift in the center of balance created by the moving shelves. While a challenge, it is certainly rectifiable.
- *Low Physical Effort*  
The design requires little effort and the efficiency of the human action is inconsequential to the therapeutic benefit the design portends. The user maintains their neutral body position and the element responds to their needs. Because of the weighting mechanism, minimal sustained effort is required to move the shelves.
- *Size and Space for Approach and Use*  
Being a vertical element, it is more difficult for those in wheelchairs or those with irregular postures (i.e. osteoporosis) to engage the design intervention, as they may need to approach from the side rather than from the front.

### **Summative Evaluation of Product:**

Because of the ease of use and relatively intuitive manner of use, this design intervention greatly enhances participant control and does so by a focus on enhanced adaptability. By suggesting the element could be moveable and assist in defining space, adaptability is further exemplified and social affordance is rendered. If the elements displayed in the storage unit are consistent with the anticipated behavior of a setting, social affordance will be even more greatly enhanced.



## Activity Furniture Product:

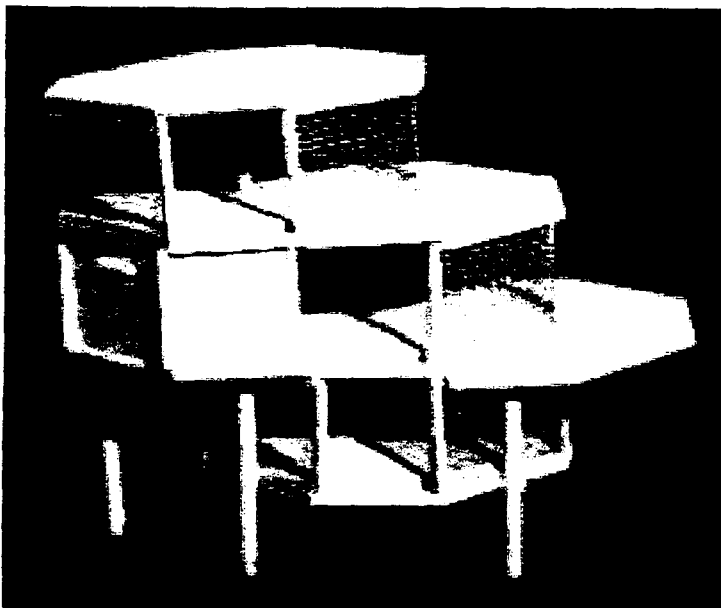
### Multi-Level Storage Carousel

*Student: Nao Kamayama*

#### Description:

This student's efforts centered on providing readily accessible resources to participants in an attempt to foster independence in activity. The entire unit is moveable; being on lockable casters which facilitates flexibility for staff but also considers safety issues. Once located as desired by staff, the unit offers three heights at which to store and display resources that can stimulate activity. These resources may include craft materials, books, games and the like. By being visible, these resources are much more likely to be independently utilized by participants.

Each level has a "lazy susan" mechanism by which to facilitate not only increased visual accessibility, but ease the burden of physical access to the items themselves (i.e. less reaching necessary). Once an item is selected and removed from the storage area, a small shelf is immediately adjacent, easing the task of resource removal. The bottom shelf is set at a height accessible for those in wheelchairs or otherwise seated; the intermediate shelf at a working height for someone standing. The top is approximately at eye level, allowing the unit to be used to provide a degree of privacy and spatial definition.



*Figure 5.7:*

*This solution highlights two primary issues identified by designers as problematic in adult day care design: the provision of adequate storage; and making available resources immediately and independently accessible to cognitively impaired participants.*

## **Adult Day Care Design Issues:**

### *Social Legibility*

By having resources visually accessible, the activities associated with those resources are implicitly cued. Thus displaying books and magazines in a quiet library area is more likely to afford appropriate behavior than is providing balls and beanbags. Props are some of the most salient cue-giving elements in the physical setting, and clear and redundant cueing afforded by props is essential for maximizing the saliency of the purpose of the place for people with cognitive impairment.

### *Socio-Physical Aspects of Group Size*

This design really does not address this issue beyond the intrinsic use of the shelving unit as a space divider. This is likely to encourage smaller groups of participants, thereby reducing spatial distance and minimizing the likelihood of overmanning an activity. However, the specific resources that are provided are likely to encourage particular ranges of group sizes. Books, for instance, encourage individual activity; bean bags, larger groups.

### *Universal Design*

- *Flexibility in Use*  
The design accommodates both left-handed and right-handed access. The visual access increases the accuracy of use by participants.
- *Simple and Intuitive Use*  
The design relies heavily on immediately accessible and unfettered visual perception by eliminating unnecessary functional complexity.
- *Perceptible Information*  
The design communicates necessary information quite effectively, but is heavily reliant on visual perception.
- *Tolerance for Error*  
The low, overhanging shelf could be a risk factor for the visually impaired.
- *Low Physical Effort*  
Users of various abilities are able to use this design while maintaining a neutral body position. As discussed above, there is minimal sustained physical effort needed to utilize this intervention.

### **Summative Evaluation of Product:**

This product does a nice job of addressing all three facets central to adult day care place quality. Focusing on adaptability, the product addresses the needs of a multiplicity of users to enhance their therapeutic functionality within adult day care settings. Because of its intuitive use, facilitated by its high degree of visual accessibility, the design promotes participant independence and assertion of personal control. By allowing visual access to resources to be utilized in a given setting, the product enhances the social affordance of the setting by providing cueing of the behavior expected to occur in the setting.

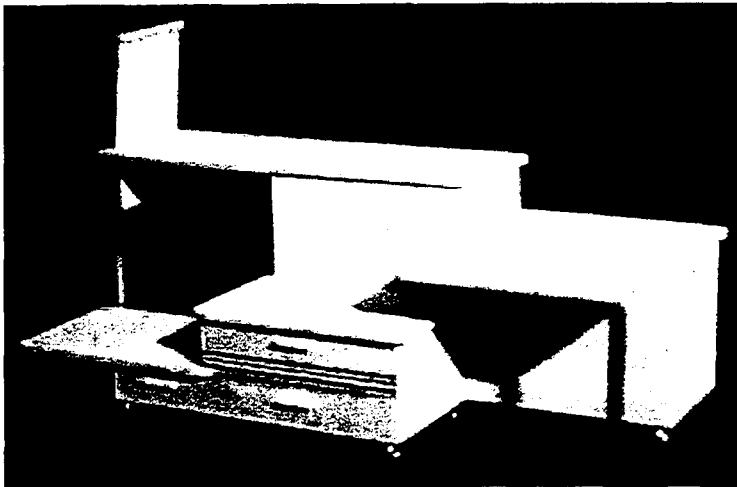
### **Activity Furniture Product:**

## Art Station

*Student: Amy Palmer*

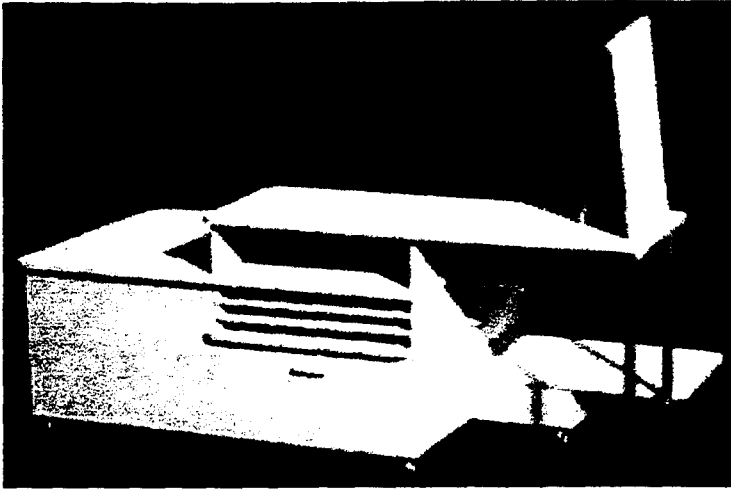
### Description:

Art and craft activities have been a programmatic staple of adult day care due to its therapeutic benefits, both physical as well as mental. This art station is an extremely flexible and easy to use design product with outstanding aesthetic appeal. The design affords numerous surfaces, both vertical and horizontal, on which to engage or display crafts. The student made the assumption that intergenerational care is a potential model for adult day care and thus addressed the needs of both the cognitively impaired elderly as well as the needs of youngsters. This is most clearly illustrated in the low shelf that is at an appropriate working height for a kneeling child. There is also consideration that any extending edge is better at a low height for the visually-impaired as their guide sticks are much more likely to sense such a protrusion rather than one at a higher height. The bullnose edges and rounded corners illustrated in this design reflect the depth of thinking found in this product.



*Figure 5.8:*

*Often the most troublesome problems render the most creative of solutions. This art station affords adult day care providers multiple opportunities for therapeutic engagement while being an impressive work of art in its own right. Furnishings of such functionality and aesthetic worth render a heightened sense of self-worth attached to a pride in place.*



*Figure 5.9:  
Shelves of different characteristics and dimensions clarify the purposes for each and what is likely to be found where. This actually increases the utility of the design over a uniform one as there is an intuitive rationality expressed in the design.*

## **Adult Day Care Design Issues:**

### *Social Legibility*

Props are some of the most salient cue-giving elements in the physical setting, and clear and redundant cueing afforded by props is essential for maximizing the saliency of the purpose of the place for people with cognitive impairment. Here, visual display of appropriate resources and surfaces appropriate for their use are integrated in an effort to effectively foster engagement.

### *Socio-Physical Aspects of Group Size*

This design element effectively works for only an intimate group of 3-4 people maximum and ideally for one or two. Because of its formal characteristics, the design defines sub-spaces of territory that belong to particular “artists” using various parts of the station.

### *Universal Design*

- *Equitable Use*  
The design is useful and marketable to people with diverse abilities including children.
- *Flexibility in Use*  
Multiple choices are provided in exactly how any one person could use this design product.
  
- *Simple and Intuitive Use*

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While the formal order of the design is complex, the functionality of the various surfaces is actually quite simple and intuitive.

- *Tolerance for Error*  
An interesting design decision is to place the overhanging shelf at a low height. Such shelves are dramatic design elements that are often troubling for the visually impaired, but here the designer has carefully considered the use of sight sticks and has responded accordingly.
- *Size and Space for Approach and Use*  
Can be used by standing or seated, left-handed or right-handed user. Adequate space is provided for use of assistive devices.

### **Summative Evaluation of Product:**

Here the focus is on adaptability in an effort to promote universal applicability. The resulting design is quite aesthetically compelling. Its use is highly intuitive, and by having supplies and work surfaces in such close proximity, the product maximizes participant control and engagement.

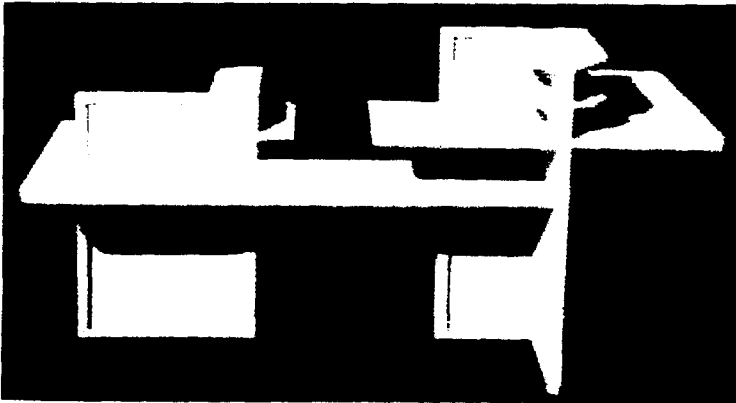
## Activity Furniture Product:

### Multi-Level Work Station

*Student: Cory Nelson*

#### Description:

This design focuses on the provision of several sorts of therapeutic activities: crafts, reading, and office work. Rather than occurring on a folding table that also serves dinner, this workstation recognizes that many of the above-mentioned activities are more individualistic in character and deserving of a physical element that bespeaks that character. The vertical elements are minimal in nature and serve both to structurally support the station as well as provide spatial identity to the different work areas of the station. The various horizontal elements each create a different work surface. Each work area also has immediately adjacent to it, an area for storage of appropriate supplies.



*Figure 5.10:  
Useful for multiple therapeutic activities, this furniture element is not only functional but also aesthetically pleasing.*

#### Adult Day Care Design Issues:

##### *Social Legibility*

As with an office workstation, this furniture element helps define a space of its own, thereby enhancing the user's sense of privacy and territoriality. The horizontal surfaces are at heights that are intuitive in eliciting appropriate use. Because resources appropriate to the activity are immediately adjacent to the work surface, appropriate behavior is encouraged.

### *Socio-Physical Aspects of Group Size*

This design really does not address this issue beyond the intrinsic individualistic use of the element. This is likely to encourage one-on-one engagement and a high probability of active engagement in the task at hand.

### *Universal Design*

- *Equitable Use*  
The surfaces at various heights do not allow identical but rather equivalent use and in their integration within one unit, works to avoid stigmatization of groups.
- *Flexibility in Use*  
The design accommodates both left and right-handed use and provides for continued use despite participant changes.
- *Simple and Intuitive Use*  
Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.
- *Tolerance for Error*  
Elements are not particularly well organized in terms of use to eliminate potential errors.
- *Size and Space for Approach and Use*  
There is clear line of sight to important elements for any seated or standing individual. Surfaces are within comfortable reach.

### **Summative Evaluation of Product:**

Again, this design focused on providing a furniture piece that is adaptable to a wide range of needs. Having the potential to serve a number of user groups in various capacities, the design also gives a heightened sense of personal control to participants as resources are immediately accessible and therefore easy to use. By making success in activity completion more likely, this design also furthers social affordance of the place as a whole as self-identity is enriched.



## Activity Furniture Product:

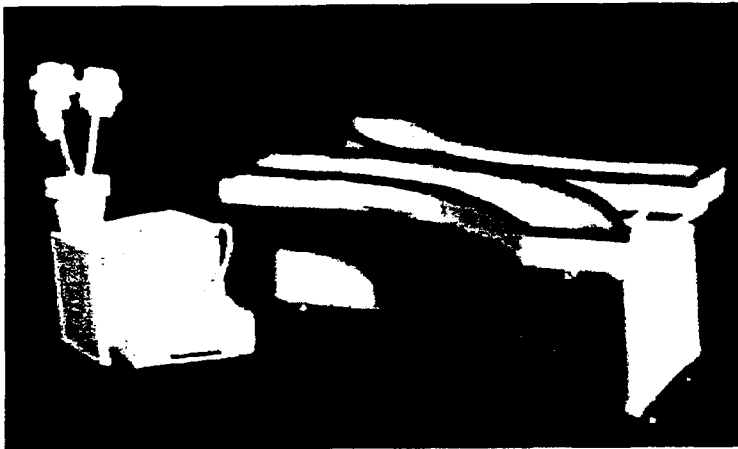
### Planting Beds

*Student: Angela Feser*

#### Description:

In many adult day care centers, provision for outside activities is often not made. This may be due to factors as different as budgetary restriction or simply not having access to a secured outdoor area. However, for many older adults, garden activities have been found to be quite therapeutic and this student explores what a planting bed may be like for indoor/outdoor use.

The intervention is symmetrical, having two curved yet mirrored elements. The curved potting bed is placed at a height appropriate for wheelchairs with a protective bullnose edging to prevent injury. Where the curves separate from one another, there is a storage space for gardening supplies. There is also a separate tabula that provides additional storage. Both elements are movable, with lockable casters.



*Figure 5.11:  
These planting beds offer great  
therapeutic benefit.*

#### Adult Day Care Design Issues:

##### *Social Legibility*

The curved shaped begins to define an individual territory that can be claimed by a participant engaged in gardening. However, without a vertical separation, it does not allow segregation or stigmatization between participants. The actual use of the element would not be clear until filled with dirt and

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plants. Not all supplies would be readily accessible either (i.e. water – see the next design).

### *Socio-Physical Aspects of Group Size*

This design really does not address this issue beyond the intrinsic individualistic use of the element. This is likely to encourage one-on-one engagement and a high probability of active engagement in the task at hand.

### *Universal Design*

- *Equitable Use*  
One singular height is difficult for accommodating wheelchair assisted, seated and standing individuals equally.
- *Flexibility in Use*  
The design accommodates both left and right-handed use, although right-handed use does seem preferred as each curve is in that direction.
- *Perceptible Information*  
The storage areas between the curves are not clearly understandable or present and the association of the tableau with the planting bed is not intuitive.
- *Tolerance for Error*  
The design minimizes hazards and the adverse consequences of accidental or unintended actions.
- *Low Physical Effort*  
User maintains neutral body position, as opposed to typical gardening, facilitating the task at hand. The swooping curve makes more surfaces within reaching distance.
- *Size and Space for Approach and Use*  
While easily approachable and useable by the wheelchair-assisted, the uniformity of the design suggests that others may have a more difficult time utilizing this design. Are other similar designs then provided for these other populations?

### **Summative Evaluation of Product:**

This design focuses on creating a place for independent gardening by the wheelchair-assisted. Yet even in this narrowly defined way, it is weak in several respects. While some participant control is granted as discussed above, the lack of all the resources being provided in this specific intervention renders the possibility of remaining reliance upon

staff in activities that could very well be independent. The adaptability of the design again is reasonable, but could be enhanced as identified above. Finally, the social affordance of the design is good, in that it affords a definable territory for users and promotes communication between users, but it does not enhance the control of visual access.

## Activity Furniture Product:

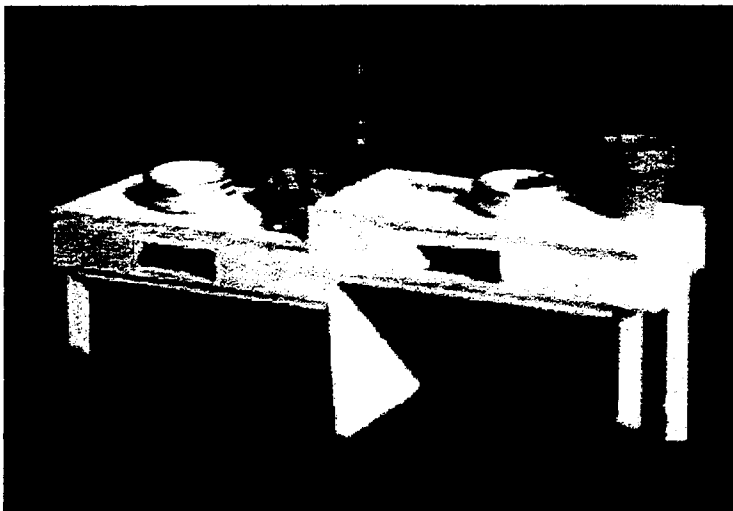
### Potting Station

*Student: Anne Hanenberg*

#### Description:

This design follows the lead of the previous design in an attempt to bring the outdoors inside. However, this design does not limit itself to consideration of the wheelchair assisted, but recognizes the diversity of needs often found in an adult day care. This is evident in the affordance of two different heights, one appropriate for seated individuals and the other for those in wheelchairs. There is also evidenced an awareness that people favor different hands and thus the potting station is open to each side, affording access from the direction one prefers.

This design attempts to provide as many resources as possible to users, limiting the dependence on staff. For instance, there are closed and open shelves, facilitating appropriate storage of items. There is also water immediately provided at the point of use. Different surface types are available: flat, ridged, and grated. All in all a strong design product for adult day care providers' consideration.



*Figure 5.12:*

*Comparing this potting station with that in Figure 5.11 illustrates the difference in design philosophies in which here is exhibited a desire to provide equitable use in a manner which recognizes differences. This design is thus more inclusive than the previous design.*

### *Social Legibility*

As enough supplies are easily visible and accessible, it is possible that this station may be more easily understood than the previous design. The design defines two adjacent spaces, promoting territoriality, but also promotes communication due to the lack of a vertical element that would separate the halves.

### *Socio-Physical Aspects of Group Size*

This design really does not address this issue beyond the intrinsic individualistic use of the element. This is likely to encourage one-on-one engagement and a high probability of active engagement in the task at hand.

### *Universal Design*

- *Equitable Use*  
Recognizes the differences between those in wheelchairs and those without.
- *Flexibility in Use*  
The design smartly accommodates both left and right-handed use.
- *Perceptible Information*  
There is excellent provision of visual information, from the uncluttered top to the open storage shelves for tools.
- *Tolerance for Error*  
The student went to such detail as to discuss how the water temperature is abated.
- *Low Physical Effort*  
User maintains neutral body position, as opposed to typical gardening, facilitating the task at hand.
- *Size and Space for Approach and Use*  
The product is easily accessible and could easily be used from a front or side approach. Its compact design makes everything in close reach and differences between participants could be easily addressed as verbal and physical communication is afforded by the design.

### **Summative Evaluation of Product:**

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This design addresses the three central qualities of adult day care place quality quite adeptly. First, the element is so legible that it renders a high level of participant control and independence. It smartly addresses the diversity of needs found in adult day care rendering the design high marks for adaptability. Third, because it is so clearly understood and easily useable, the likelihood of successful experiences occurring there are high and therefore social affordance is enhanced.

## Activity Furniture Product:

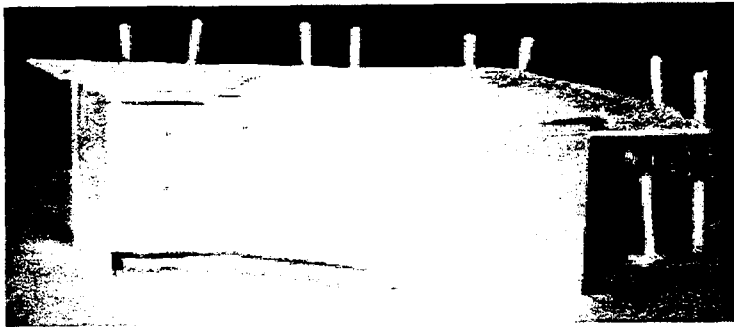
### Barbecue

*Student: Myah Houghten*

#### Description:

This product attempts to provide a therapeutic activity center in a situation often overlooked in adult day cares – that of the great outdoors. This student decided to take a look at the celebratory outdoor activity of an afternoon barbecue. Recognizing not only the issues of an outdoor environment but also the safety concerns associated with a cooking environment for those with cognitive impairments, this design provides a smartly designed product that could be utilized either as an outdoor barbecue or stimulate conceptualization of a better indoor therapeutic kitchen set-up.

The grill itself is centralized in the intervention with a downdraft vent built-in, clearing the area of any obstructions. The controls for the grill are in the front, reducing the risk of burn. Worksurfaces are available to either side of the grill, for easy use by right or left handers. Drawers are on roller-type slides and provide storage for immediately necessary supplies. The lower drawers afford vertical storage, rather than hiding horizontally stacked material.



*Figure 5.13:*

*The barbecue has many therapeutic and safety concepts as that of a therapeutic kitchen. If one can do it inside, why not outside?*



*Figure 5.14:*

*The work surface of the grill is at a more appropriate higher height than the serving surface, which is appropriate for wheelchair users and specially adjusted seats.*

#### Adult Day Care Design Issues:

### *Social Legibility*

The kitchen is perhaps one of the most archetypal spaces known to humanity. It is easily understood by most people and therefore triggers many appropriate social behaviors.

### *Socio-Physical Aspects of Group Size*

This design defines itself as appropriate for only a small number of participants (2 – 6 participants). Some participants could be cutting vegetables or washing utensils on the backside of the grill while one or two participants with a staff member could be using the grill or the adjacent work surfaces.

### *Universal Design*

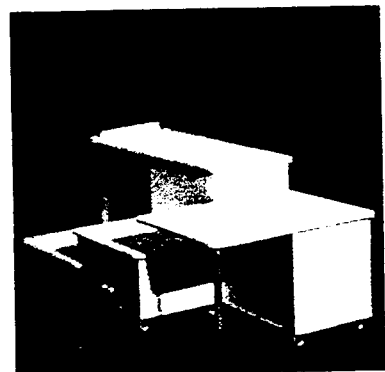
- *Equitable Use*  
Some wheelchair users may find use of the grill difficult as it is positioned on a concave curve without any recess provided for wheelchair entry.
- *Flexibility in Use*  
The design accommodates both left and right-handed use.
- *Simple and Intuitive Use*  
The design is relatively intuitive, although with any control devices, cognitive impairment may encumber the ability to link a control to a particular function.
- *Tolerance for Error*  
Controls are provided with a remote switch allowing staff to control when the grill is used.
- *Size and Space for Approach and Use*  
As mentioned, the concave design makes the grill more difficult for wheelchair users to use as they are forced by the design to approach it from the side as there is no set back to accept a front entry.

### **Summative Evaluation of Product:**

The greatest aspect of this intervention is in its social affordance. It is easy to imagine how such a product would encourage active participation in cooking activity and in simultaneous conversation. Its adaptability is adequate, although at points, concern for one group of people or another seems compromised. The least effective aspect of the design is in how it fosters participant control.



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