

aD² now

The studio projects of the Carleton University Masters of Architecture students investigate the issues facing Long Term Care facilities in Ontario. With the support of Carleton University Masters of Social Work students they have coordinated their efforts in (aD²)vocating for the residents of these facilities. The work is expressed through the identification elements of mind-body architecture and applied to a test project in Toronto, Ontario.

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The well-constructed thoughts and details presented here seek to contribute to a broader discussion about how architecture can affect our emotional state and particularly the well being of patients in health care facilities, where dementia spectrum illnesses are treated. The medical field has acknowledged in recent years the importance of a patient's emotional well-being and the effects of stress on healing processes, linking this with the surrounding environment. This field has been defined by medical scientist as mind-body medicine.¹

Abducting this medical concept into the field of architecture, the student's design work uncovers the possibility for a notion of mind-body architecture. Their interest lays in discovering how can architectural materials and elements, details and space define our sense of place, providing comfort and care for the residents.

These design proposals are speculative in nature, yet have a potential for actual realization through experimental implementation in various facilities, from remodeling, substituting one detail for another, to new construction. The aim is to challenge current standards and the implementation of ordinary details into unique places with specific needs, suggesting the possibility and the need for well-constructed details that flexibly respond to multiple design issues in an elegant and sustainable way.

The master students of the Azrieli School of Architecture and Urbanism have sought and engaged into an active dialogue with the scientific community and the specialists working at Cummer Lodge in Toronto. The generous support of the medical staff and the students' thoughtful considerations about the medical conditions of the residents have made this work possible.

- Federica Goffi
Professor of architecture

¹ Sternberg, Esther. Healing Spaces. The Science of place and Well-being. Belknap, Harvard: 2009.

aD² | mind-body architecture

Carleton University, Azrieli School of Architecture and Urbanism
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Inherent in the agency of architecture itself there are numerous opportunities and strategies for architect to actively support the goals of social change.

-LISA FINDLEY,
author of BUILDING
CHANGE: ARCHITECTURE,
POLITICS, AND
CULTURAL AGENCY

mind-body architecture

mind-body architecture

The medical field acknowledges the connection between a patient's emotional well-being and the effects of stress on the healing process and links it to the surrounding environment. There is a growing understanding of ways in which the built environment can be used as an instrument to speed healing or reduce stress. Architecture can serve as an agent in supporting the goals of long-term care facilities to maintain and promote a quality of life. Through the design process architects can identify opportunities and propose strategies for change.

Architectural design can influence both physical and mental well-being. "Mind-body architecture" is defined as an architecture, which impacts both physical and mental well-being through their reciprocal influences. This terminology was adopted from Esther Sternberg "mind-body medicine" defined in her book *The Balance Within*. Mind-body medicine is a field of medical research connecting emotions to physical health. Sternberg writes, "A wealth of evidence exists to prove in the most stringent scientific terms that the functions of the mind do influence the health of the body and that sickness in the body can affect our moods and emotions through molecules and nerve pathways."¹ Likewise mind-body architecture aims to stimulate positive emotional responses through well-designed architectural details, which can in turn be conducive to better health.

Mind-body architecture is especially applicable to the design of long-term care facilities. Long-term care in Ontario serves the various needs of people requiring 24-hour care. With varying degrees of success, these institutions become home

to the residents. This transition is difficult for both the resident and their families and often this happens without sufficient time for careful planning. Guidelines exist that help to standardize the facilities and the quality of care provided but unfortunately the standardization of long-term care cannot always address the broad spectrum of patients needs.

Existing facilities often default to generic design that does not contribute to the well-being of the residents and staff. Detail design can provide specific solutions to support the needs of certain groups of patients. Government guidelines help to define and guarantee the minimum requirements for the healthcare and well being of residents. However, it is essential to look beyond these guidelines, moving towards higher levels of care, which are desirable from the viewpoint of both caregivers and those they care for. These higher standards might be achieved with attentive and careful design, of appropriate and significant architectural elements of mind-body architecture, such as light, air, sound, experience, pathway, and planning.

The elements of mind body architecture address areas of concern that translate into components such as doors and handrails, which are essential details contributing to defining the overall qualities of a space. This book proposes design solutions for a test project Cumber Lodge, a long term care facility in Toronto that could be installed individually in small-scale test applications to serve as a cost-effective experiment to gauge the reactions of the residents before implementing

any designs on a larger scale. The collected projects are examples of how these elements could be used in practice and investigate how creative architectural interventions can be brought to a long-term dementia care facility in order to create positive change in the residents' overall well-being, meanwhile also contributing to a positive overall effect on the staff and the families of the residents. That which can be viewed as a small changes in Cumber Lodge, or other similar facilities, can have significant impact on the life of the residents and staff. The goal of this book is to serve as an inspiration of what could be done being an agent of change not only in this facility, but in other facilities as well.



figure 1 | cumber lodge special care unit floor plan

¹Sternberg, Esther. *The Balance Within: The Science Connecting Health and Emotions*. New York: W. H. Freeman and Company, 2009. p. xv

the current situation

Currently, there are a number of long-term care facilities in Ontario that were built decades ago under different guidelines and a different understanding of illnesses and treatments related to long-term care. These facilities are now out of date with the current health care standards. Dementia is presently defined as a group of symptoms involving the loss of intellectual functions that accompany certain diseases. These symptoms tend to be degenerative and interfere with a person's ability to function independently. A person with dementia will become disoriented, have problems with memory, thinking, and speaking. Our understanding of the diseases related to dementia is continuing to evolve with advances of medical science. Currently, there is no cure for most causes of dementia, meaning that as the symptoms progressively worsen, the patient often is placed into a long-term care facility. However, there is increasing awareness to a better understanding of the relationship of the built environment to the well being of residents.



considerations

It is important to understand that long-term care facilities are situated within political, institutional and environmental contexts, which influence the style and quality of care that residents receive. Available funding, government regulations, staff training and the design of the facility itself are all crucial factors that shape care giving practices in any given long-term care facility. A brief introduction to the structure surrounding the long-term care system in Ontario will provide some understanding of the challenges facilities face in an attempt to create a better life for residents, their families and staff.



financial structure | figure 2

long-term care facility placement | figure 3

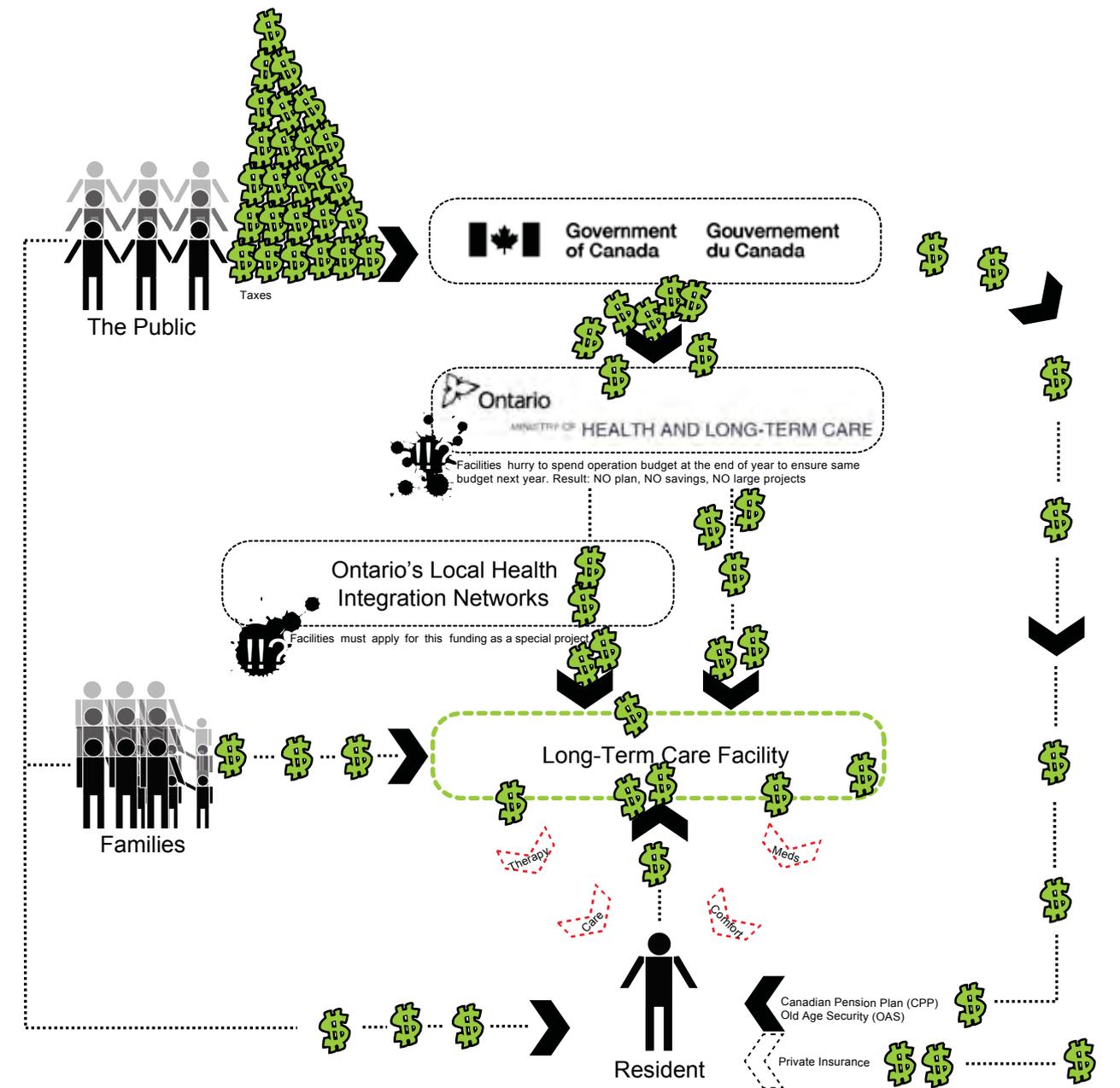


figure 2 | financial structure

The physical environment and quality of care in long-term care facilities depend on available funding. In order for the Ontario Ministry of Health and Long-term Care to maintain its yearly operation budget, any money left at the end of each year must be urgently spent instead of being accumulated for meaningful projects.

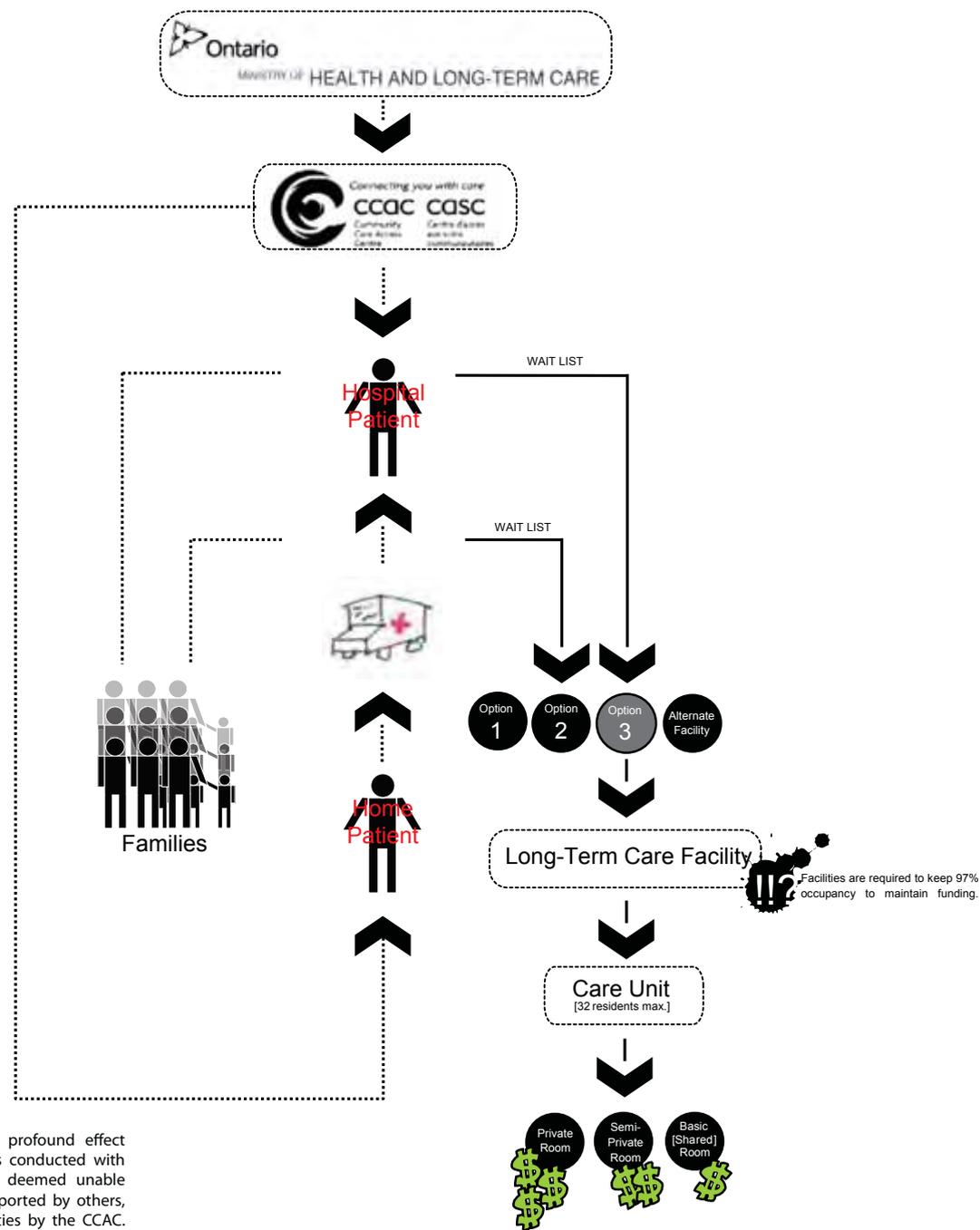


figure 3 | long-term care facility placement

Transitioning into a long-term care facility has a profound effect on one's life, however the placement is not always conducted with the patient's interests in mind. Once a person is deemed unable to support themselves at home and cannot be supported by others, he or she is given a choice of long-term care facilities by the CCAC. If preferred choices are not available, a person must either wait or accept any available bed within 24 hours of its offer. It is important to note, that there are four types of long-term care facilities—A, B, C and D, with D being the oldest and least private, but often having availability.

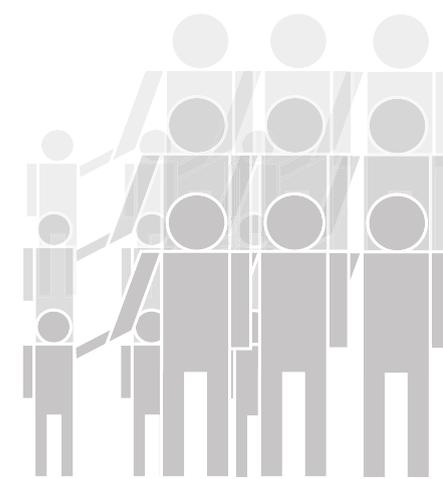
design & construction guidelines

In the new construction and renovation of buildings, architects must follow various guidelines identified by different levels of government. In designing for long-term care in Ontario, two main Provincial Government documents must be followed; the Ministry of Health and Long-Term Care (MHLTC) Design Manual and the Ontario Building Code (OBC). These guidelines exist to maintain consistency in Ministry facilities and provide a minimum of health and safety standards. As long-term care covers a broad range of residents and needs, the guidelines don't always address the specific needs of a particular residence. As architects we look for opportunities for creative solutions that align with the design objectives and requirements of the Ontario Government.

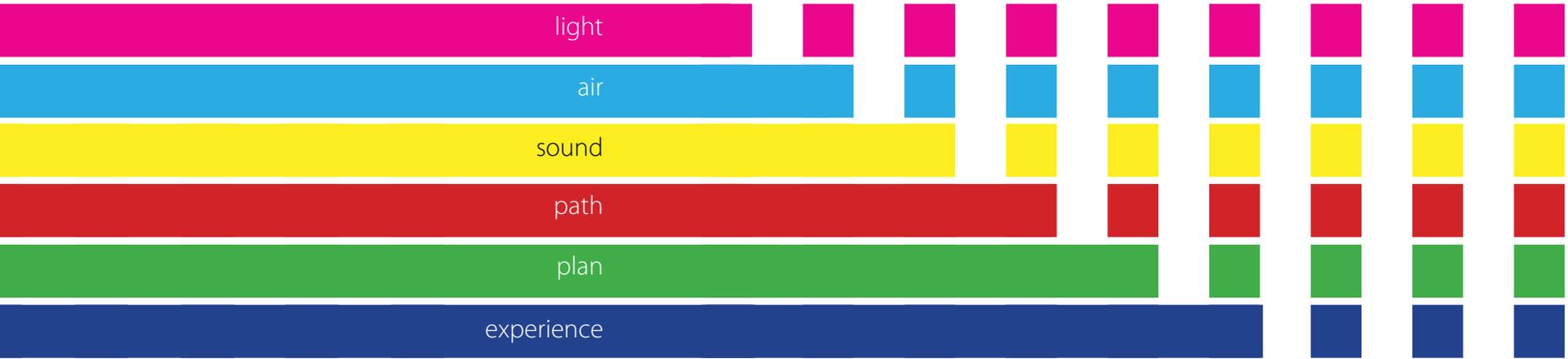
person-centered care

Person-centered dementia care strives to meet both the therapeutic (physiological) and psycho-social needs of the person with dementia. In the context of a long-term care facility, this means recognizing that the social needs of residents (e.g. respect, compassion, meaningful relationships and recreation) are as important as their physical needs. Thus, staff seeks to engage and value residents with dementia as whole persons, contributing to a supportive atmosphere that facilitates meaningful daily living, despite the debilitating effects of progressive cognitive impairment. Person-centered care is particularly compatible with the approach of mind-body architecture, given that both attend to the psychological and social well-being of residents, in addition to their physical needs. Person-centered care acts as a corrective to more traditional task-oriented care giving practices which often objectify and depersonalize residents. As Edvardsson, Windblad and Sandman suggest, the psychosocial understanding of personhood "challenges the assumption that the depersonalization seen in Alzheimer's disease is only the result of neurodegeneration."² Indeed, they argue that key social processes, including care giving practices, are experienced as depersonalizing when the individual with dementia is deemed to be "an empty shell or the living dead" rather than a full person.

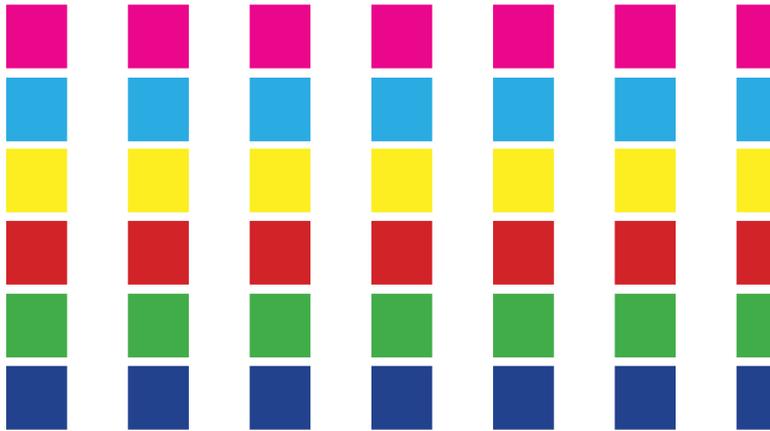
²Edvardsson, D., Windblad, B., and Sandman, P. O. (2008). Person-centred care of people with severe Alzheimer's disease: current status and ways forward. *The Lancet Neurology*, 7(4), 362-7.



elements of mind-body architecture



A series of 6 elements of Mind-Body Architecture have been developed to create healthy spaces, these are; light, air, sound, experience, pathway, and planning. Many of the elements of mind-body architecture are transferable to any architectural space; however some elements presented address specific issues in dealing with dementia residents. These elements can be implemented for improving existing facilities or used as ideas for new designs in future projects. The goal is to re-evaluate the use of architecture to heal the mind and body.



Light is a fundamental environmental factor for everyone but can have a significant effect on people with dementia. Many studies are being done to establish the effects of daylight and artificial lighting on the mood, behavioural changes and overall well-being of people.

Daylight is essential for an increase of cognitive functions and regulation of circadian rhythms. The circadian rhythm, commonly referred to as a body clock, operates on a 24 hour cycle that is internally generated though it can be affected by environmental cues such as daylight and temperature. Its benefits should be maximized when considering building design by providing plenty of high quality light. There are many new materials available that enable advanced controls of light passing through building openings.

In humans, the circadian rhythm is regulated by a tiny group of specialized cells in the brain. Studies from the Netherlands Institute for Brain Research found a marked decrease in the mass of these cells in people between 80 to 100 years, and an even more pronounced reduction in people with Dementia. This shrinkage could account for the sleep disorders that many people experience as they age such as waking in the night or too early in the morning, and daytime napping. As well, it may be related to the 'sundown syndrome', an effect of the setting sun that creates anxiety and disruptive behaviour in people with dementia.

In the vast area of artificial lighting, full-spectrum light is best suited to everyone. An increasing amount of evidence shows that bright, full spectrum light, on the magnitude of 5000 LUX to 10,000 LUX, can reset our circadian rhythm. Daily exposure to this type of light helps people with sleep disorders sleep longer and spend more time in deep sleep. Studies have shown that as an added benefit of regular exposure to bright light, the symptoms of depression are decreased and cognitive deterioration is slowed.

As well, an exposure to blue light consolidates rest-activity periods and sleep relative to the exposure to red light or typical ambient lighting. Blue light might be a clinical, effective treatment for consolidating rest/activity rhythms of people with dementia, which can also benefit caregivers in institutions and at home.

A founding activist for hospital reform, Florence Nightingale (1820-1910) advocated the need for fresh air and cross ventilation in hospitals in the 1850s. This issue continues to be of significance today, since many health care facilities rely primarily on mechanical ventilation systems, which deprive patients of clean fresh air.

The Ministry of Health design standard acknowledges the need for air temperatures to be comfortable throughout the year. Ventilation design is not just about providing a mechanical system but rather designing a system that provides the best air quality. Cleaner air has been linked to improved concentration and health.

In addition to the reliance of mechanical systems, natural air is limited to 4-6" window openings by Ministry standards. However, it is possible to work within these design standards and approach ventilation design as an opportunity to provide more than just air flow. There is ample room for designing passive ventilation systems that could flush stale air out and bring fresh air in.

Room sizes and material choices for walls, floors and ceilings impact the sound qualities of a space. Some materials are better at noise absorption than others. Although the Ministry design objectives strive to create a home-like environment, the standards don't help to facilitate that. Group facilities tend to create a far louder environment than desired. Proper planning of spaces can help divide up "louder activities" from resident rooms.

Studies have shown that one of the biggest stressor in a hospital is environmental noise, which generally exceeds the recommended level of 35 decibels, which is typical of a quiet office. Instead most hospitals fall in the range of 45-68 decibels, which is comparable to the sound of loud music through headphones.³

Ceiling height can also change the sound quality of a room. A larger room with a high ceiling is more likely to generate longer reverberation times, with sound lingering in the room unpleasantly.

³ Steinberg, Page 218

An essential resource on circulation and way-finding specific to dementia units is John Zeisel author of *I'm Still Here*. He introduces the idea of walking rather than wandering, which is in contradiction with the design of contemporary facilities' wandering paths in the shape of a circle or figure eight. Zeisel talks about creating paths with clear destination points that infuse a walk with reason, which may prove far more dignified than aimless wandering. Seeing an activity in the distance can interest a person, prompting them to linger and participate. It is also true that patients walk with much more decision and direction when the destination is visible, which reinforces the concept of sequence design.

The notion of a visible walking destination and the concept of sequence design are meant to assist people like dementia patients that live with compromised complex sequence memory. Clear views of objects that are used in the task at hand (like seeing toothpaste, a toothbrush and a towel) allow patients to focus on what action is next in sequence. If visibility is not possible, clear signage can be incorporated to direct residents. *Healing Spaces* by Esther Sternberg talks about tension and anxiety in people when they are faced with dead-ends and labyrinthine turns. Zeisel and Sternberg both point out the importance of aiding cognitive mapping of spaces by means of natural multisensory cues or landmarks placed in areas where decisions must be made, reducing a chance for disorientation. Since people with dementia retain sensory hardwired memories, such as music, smell of food, materials or hearth, these can serve as excellent landmarks. It is also possible to infer that using artworks for mapping may be beneficial, since people with dementia have a positive response to some types of paintings. Having distinct 'feeling' and physical appearance of different spaces within facilities is critical for way finding as most dementia residents tend to have their memory of emotional reactions intact. Sternberg uses architect Frank Gehry's example of the use of handrails as a notable way-finding element and mentions natural light as important element in circulation design.



In dementia care there are many program areas involved. Careful consideration should be made about the arrangement of these program elements within the plan of the long-term care facility. There should be some separation of quiet bedroom spaces from loud communal living spaces. Additionally, public spaces should be able to function for specific activities, but maintain a level of flexibility so that other activities could share the same space. For example, the dining room could be repurposed between meals as a puzzle room. Staff also requires different spaces for different purposes specifically administration space where medicines and resident charts must be secure.

The recommended size of long term care residences for dementia is seven to ten residents. However such small units can lead to staff stress and patient agitation due to lack of stimuli. The optimal size recommended by Zeisel is twenty-five residents.

A necessary, and sometimes overlooked, building program element for dementia patients is its surrounding exterior environment and nature. Good environmental design creates a sense of control, social support and provides a positive distraction. The advantages of physical activity, coupled with remaining long-term memory, can actually be a resource to enable a form of connectedness with the familiarity of the outdoor environment, resulting in a sense of comfort and thereby offering a feeling of 'being in control'. The ASLA/National Alzheimer's Association Garden Project studies the effects that gardens can have on individuals with dementia. These gardens are a part of a research project to determine the benefits outdoor spaces can have on such things as maintaining circadian rhythms, reducing agitation, improving appetite, normalizing sleep patterns, and related behaviors.

Most residents are prone to exit seeking behaviours. The importance of camouflaged exits without views out is stressed so that the patients are not prompted to leave. Thresholds leading to spaces where patients are encouraged to spend time and participate in supervised activities must have clear views.



There is more than one way to experience a space; when we use our eyes we only take in our surroundings visually. However, when we touch the surfaces around us we can feel textures and begin to have a better understanding of what is before us. Using our sense of smell will provide us with an additional layer of sensorial information allowing us a better understanding of where we are.

We have learned to rely heavily on our eyes, as our primary modal sense perception, and often fail to use -and design for- our other senses. This often results in "senseless" design, which fails to address abilities to touch, feel, smell and taste.

The opportunity exists to stimulate all the senses in the spaces we create. By careful selection of materials, we can invite the inhabitant of a space to touch, smell and interact with their surroundings, and in this way they will experience their surroundings more fully. Different materials can feel warm, smooth, or soft to the touch. They can affect noise control and play a role in the comfort level of a space. The volume and shape of a room will also affect how our eyes and ears perceive it.

Many people with dementia suffer from visual impairments in varying degrees. As a result, they rely on touch to aid their mobility; their sense of touch substitutes for their eyes. It has been found that tactile stimulation can be used for creating experiences and memories as therapy. Other studies have found that certain odours can relax a person, such as lavender oil. Odours can affect our mood since they are powerful at triggering memories. -Sternberg 88.

Attention should also be paid to how many sensory experiences are provided within a space since too much stimulation can be overwhelming. This is especially true of dementia care facilities as many dementia patients have a decreased ability to tolerate dealing with multiple stimuli. At the same time, a lack of stimuli will create a sense of isolation and a feeling of being confined to an institutionalized environment. The key is to provide a good balance of stimulation.



collected projects



Steph Bolduc WALL TO CEILING	✗		✗	✗		✗	28	page no
Reguina Chakirova INTER (SUR)FACE	✗		✗				34	
Shaun Coombes EXPLORATION IN POROSITY					✓	✗	40	
Angella Hercules Stevenson THERAPEUTIC BATHS	✗		✗			✗	46	
Narae Kim SANDBOX	✗		✗				52	
Anna Kourkounakis HOLISTIC HEALING	✗	✓				✗	56	
Maysan Mamoun POSITIVE PATH	✗	✓	✗				62	
Francisco D.S. Panzo NURSING STATION	✗	✓					70	
James Strachan ad[DRESSING] THE WALL	✗		✗				74	
Katya Tchouprikova WINDOW SPACE	✗		✗		✓	✗	78	
Emily Webster Mason NAVIGATING HOME	✗	✓	✗				82	
Natalia Woldarsky Meneses FEELING HOME	✗		✗			✗	88	

The ultimate meaning of any building is beyond the architecture, it directs our consciousness back to the world and towards our sense of self and being. Meaningful architecture makes us experience ourselves as complete embodied and spiritual beings.

- J. PALLASMA, from THE EYES OF THE SKIN

WALL TO CEILING

Steph Bolduc

Our physical environment has a tremendous effect on how we feel and live. The long term care sector is one of great concern, as the people inhabiting these facilities are at the most vulnerable stage of their lives. As the “Baby-Boomer” generation begins to age, the strain on long term care facilities will continue to grow, leaving many of them overcrowded. Overpopulation places an extra-neous burden on the older facilities. The health care system often underfunds these facilities, giving the units and the people that inhabit them very little chance of regaining a sense of dignity and renewal. To provide the residents with hope for the future, support must come from all parties; everyone from families, staff, social workers, architects, and government agencies. All must work together to find solutions to improve the state of our long term care centres. “WALL TO CEILING” focuses on areas of spatial adaptability, experience, sustainability, and economic viability leading to the revitalization of any facility in need of change. Emphasis is placed on re-imagining the use of public spaces in long term care facilities and their relationship to the Nursing Station. Public spaces are an integral part of any community based establishment, providing areas for experiential gathering with family, friends and staff. At the forefront of the public space is the nursing station, providing a sense of structure and care for all. The role nurses play is vital to the success of any long term care facility. Their ability to connect with and heal the residents is critical to to any centre’s success. Architecture can be a great tool to help facilitate the transition from one’s home into long term care. A well designed environment can provide the right atmosphere to create dynamic staff to patient relationships. Natural settings and spaces have strong healing power, and “WALL TO CEILING” works to recreate a natural environment by incorporating wood in various forms and functions. This in turn, will help create home-like spaces within the context of the institution, helping build a strong sense of community based living.



LOBBY



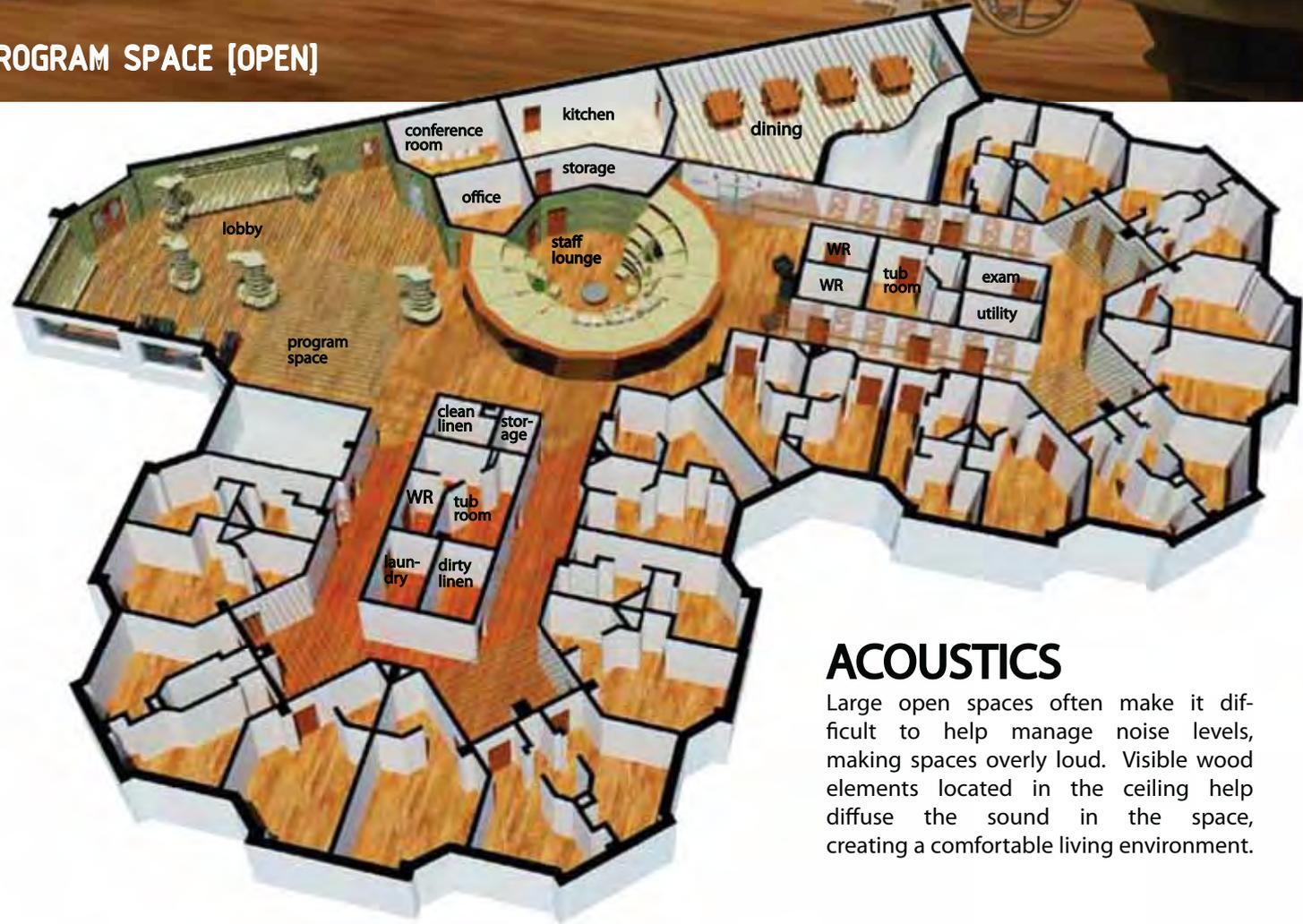
LOBBY SEATING



PROGRAM SPACE [OPEN]



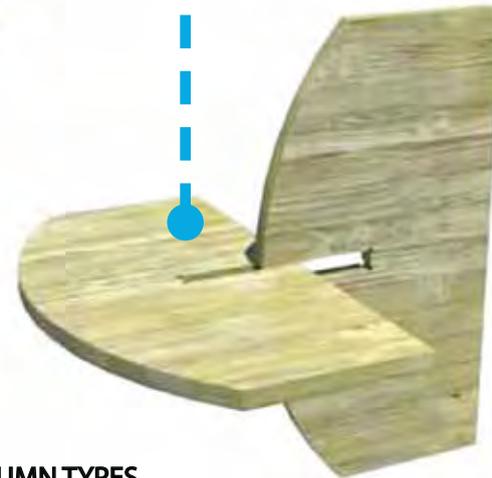
PROGRAM SPACE [CLOSED]



ACOUSTICS

Large open spaces often make it difficult to help manage noise levels, making spaces overly loud. Visible wood elements located in the ceiling help diffuse the sound in the space, creating a comfortable living environment.

COLUMN DETAIL



COLUMN TYPES

- table height column structure with hand slots
- seating height column structure

DIGITIZING WOOD

The turn of the 21st century has seen many important technological innovations, which include the invention of digital software and fabrication techniques. These technologies bring forth an entirely new way to think about building and how we utilise available materials. Merged with these great innovations, wood is becoming a material that is potentially reshaping our future in a sustainable way. With its numerous positive qualities, wood seems to be the perfect material to combine with these new manufacturing techniques. Advancements in areas such as 3D modeling, parametrics and CNC milling create diverse and interesting opportunities for future innovation. As research and development in areas relating to digital fabrication continues wood may very well be the material of choice leading us through the 21st century, into what we can only hope is a responsible and sustainable direction.



NURSING STATION



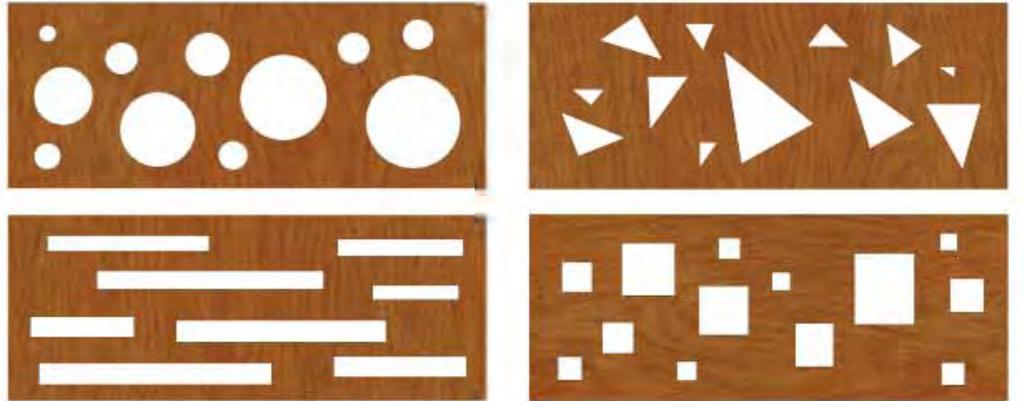
STAFF LOUNGE



STAFF TO PATIENT RELATIONSHIP

The transition from one's home, to a long term care facility can be difficult. Patients and families must re-adjust to a completely new environment of assisted living. The staff is a vital part of making this transition as comfortable as possible. "WALL TO CEILING" provides design elements which help improve the staff to patient relationship. The nursing station serves as a common area where staff is encouraged to step out from behind the counter and work along side patients. Providing areas where staff can work in close proximity to the residents blurs the boundaries of the institution, creating an environment which is more comfortable for everyone.

LIGHTING TYPES IDENTIFY HALLWAYS



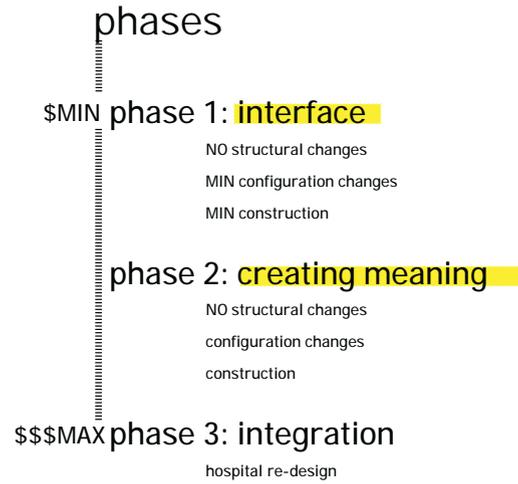
SENSORY NAVIGATION

Navigation is an important part of occupying any space. For patients residing in these types of facilities, this becomes much more important. Many of these people live with degenerative diseases which often cause dramatic sensory deprivation, often resulting in disorientation and difficulties analyzing their surroundings. "Wall to Ceiling" addresses the issue of navigation by providing both patients and staff with features that increase spatial awareness. Elements such as creative lighting, playful handrails and distinctive spaces help provide a sense of place. Sensory stimulation is an important part of experiencing space, and an essential tool to help rehabilitate the mind and body. Patients living within the dementia spectrum often feel lost within spaces and many tend to pace and wander the halls. Having building elements that they can interact with may help them feel like they are part of their surroundings in an engaging way. Each hallway is designed with matching lighting and handrail details which will be helpful for orienting patients and staff.



INTER | (SUR)FACE

Reguina Chakirova

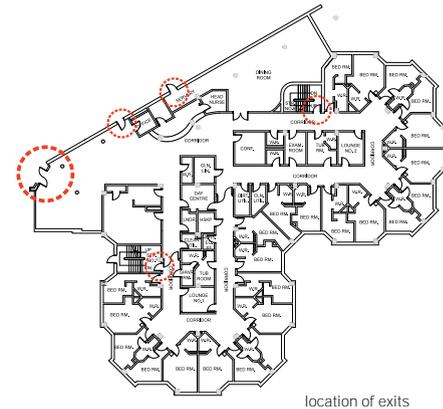
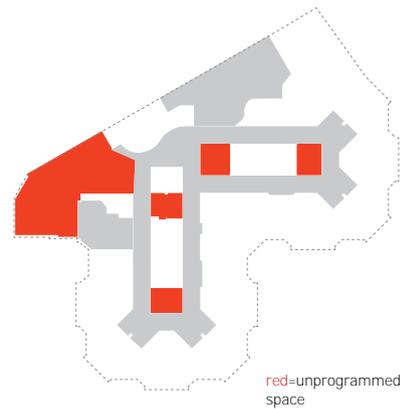
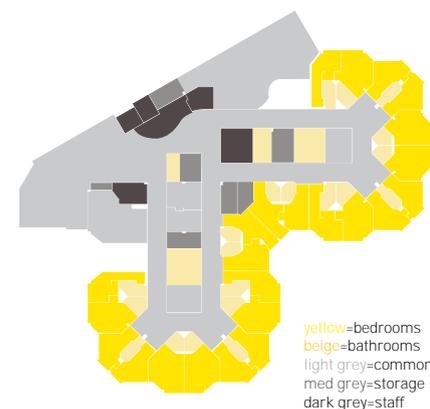


The phases 1 and 2 proposals for the unit are focused on environmental elements that are necessary not only to remove environmental behavior triggers of the patients, but also to produce meaning through interaction with the environment. Phase 1 is an economical, minimum intervention solution that aims to fulfill some positive results with the minimum of resources, while Phases 2 and 3 take into consideration a more ideal situation that offers a larger resources of funds, and consequently, these phases play an important

role in the overall project as they look at the broader picture of the patient-environment interaction and are thus able to offer the necessary theoretical investigation of the subject.

Phase 1 "Interface" is looking primarily to remove environmental triggers that cause symptomatic resident behavior and to replace them with meaningful activities and calm environments. After having visited the special care unit, the following triggers were identified: air quality, lighting, resident interference and other factors which were then grouped under the term 'institutionalization': large number of people (32, while the recommended number is 10), large institutional scale, centralized zoning, unprogrammed space and clearly defined exit and boundary conditions. There are also serious concerns regarding the comfort of the staff, since the only two places reserved for staff are the nurses' station, which is away from the main entrance and enclosed by the special care unit, and the lunch room, located inside one of the patient activity spaces.

Since it is impossible to reduce the number of people in the special care unit in order to remove the institutional triggers, it becomes necessary to divide it into two sub-units. This should reduce the immediate perception of the number of people to the possible minimum thereby creating two mini-communities within the unit. This division will be implemented spatially by means of introducing gradation of scale [home > public] and physical interfaces between gradients, such as drywall and polycarbonate movable partitions (on the latter type of partition patients can draw).



The introduction of small scale spaces should result in the reduction of the perceived scale of the overall unit and addition of the home-like distribution of programs. One can step out from a bedroom into a living room, then into community spaces, and only then into the common unit facilities. The scale gradient itself serves as an interface between the small private environment of a patient bedroom and the large institutional scale of the unit, which at times can be intimidating even to a relatively healthy individual. This division of space also offers compelling travelling routes for patients, who, according to literature recommendations, should be able to walk, rather than wonder. The route consists of travelling from private space to mini-community spaces, from one distinct community to another and from community to more public spaces, like spaces named 'restaurant' and 'music/garden'. It becomes necessary to distinguish spaces from each other through materials, colour, paintings and other non-intrusive visual cues in order to enhance the phenomenological stimulation of the environment and thus make activities in the space meaningful and memorable. A programmatic distinction should also be emphasized in the design of the mini-community 'districts': one can see a film in one community and look through a book or a magazine in another. A walk can now have various points of interest along the way, with various activities making the space dynamic. Introduction of programmed activity spaces, such as 'theatre', 'library' or 'music garden' should reduce resident interference and become points of interest along the way. In fact, activity is the most recommended tool for removing triggers in Alzheimer's patients, therefore addition of open craft spaces, an interactive wall and green spaces should prevent pur-

poseless wondering around the facilities. It becomes important then to allow free access to these new programmed spaces.

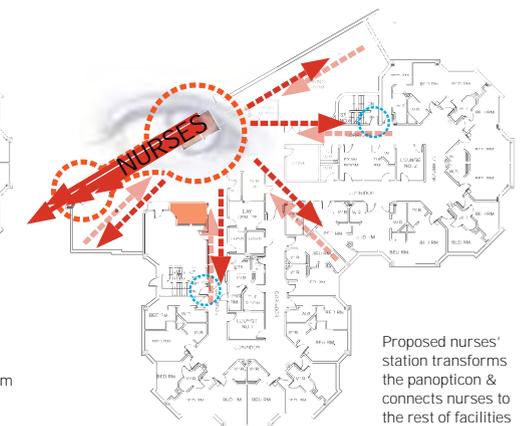
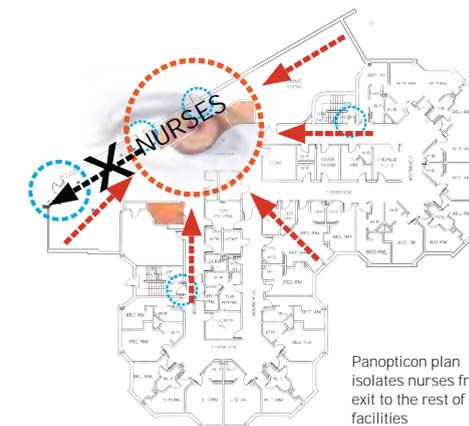
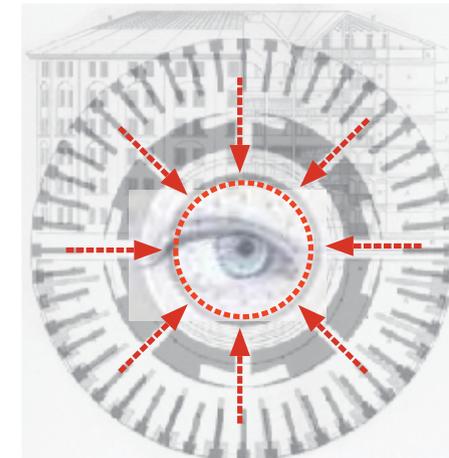
The subsequent phases must focus on the full implementation of the scale gradient scheme, since now not all patients have the so-called 'living room' spaces, while breaking down the facility onto smaller communities. The expansion of the outdoor garden must be proposed for Phase 3 in order to prevent direct visibility to the entrance of the facilities. Access to the outdoor garden must also be interfaced through the insertion of indoor green spaces around the outdoor threshold. Most importantly, the final phase should consider the overall meaning of special care units and their positioning within overall mental healthcare facilities.

POTENTIAL BEHAVIOR TRIGGERS:

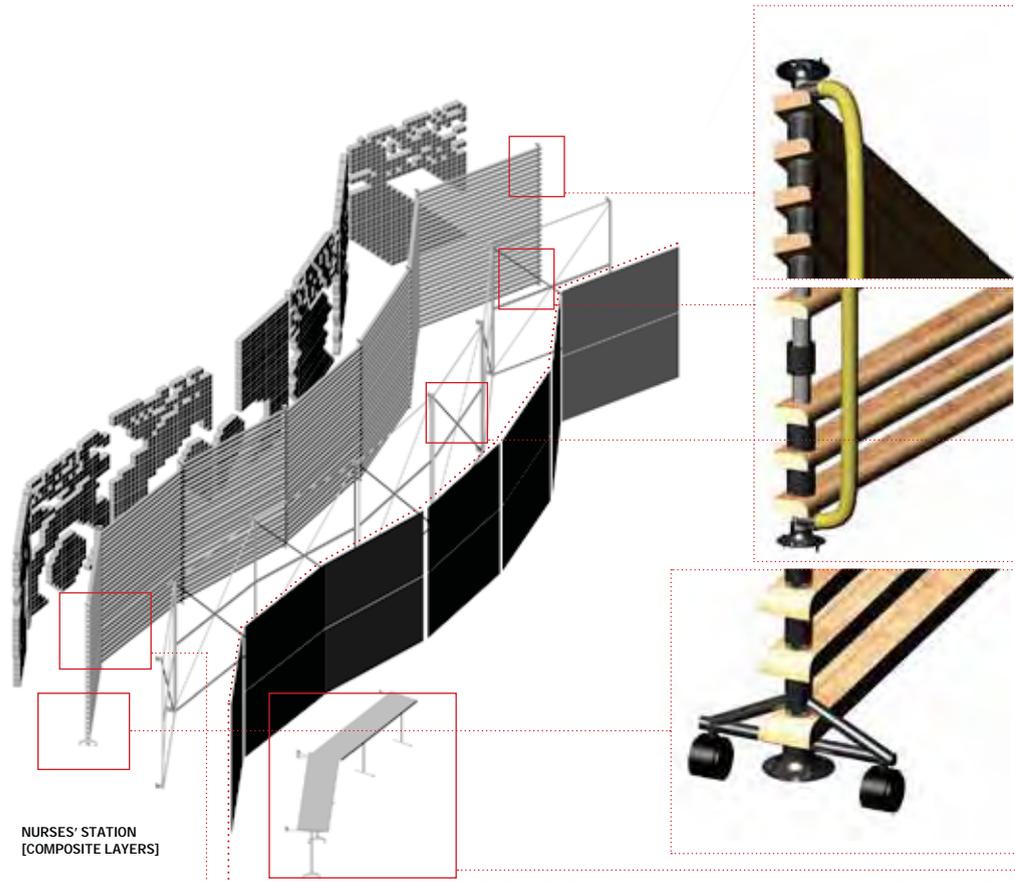
- air quality
- lighting
- resident interference
- institutionalization
 - large number of people=32 [recommended=10]
 - institutional scale
 - centralized zoning
 - unprogrammed space
 - clearly defined exit/boundary

+ CONCERNS

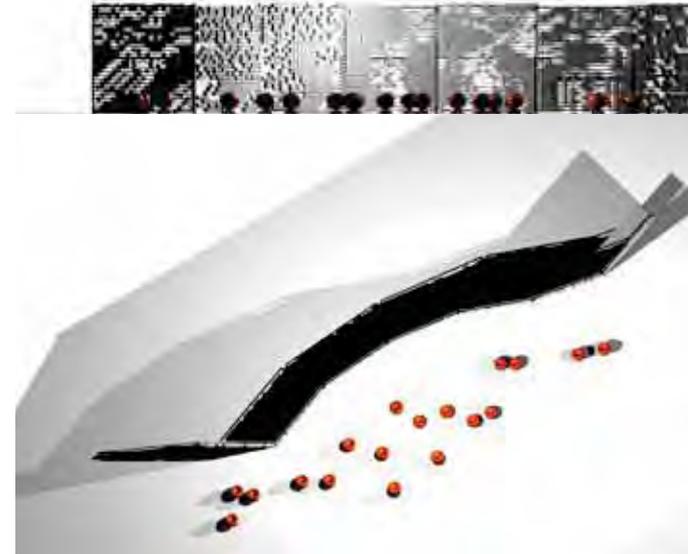
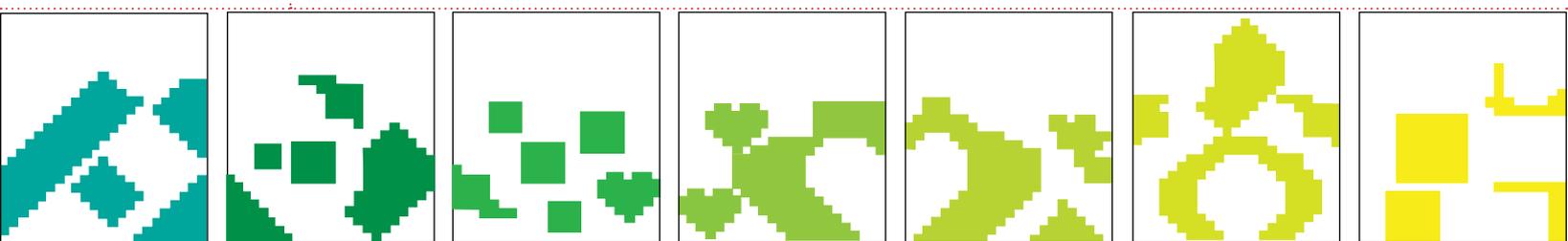
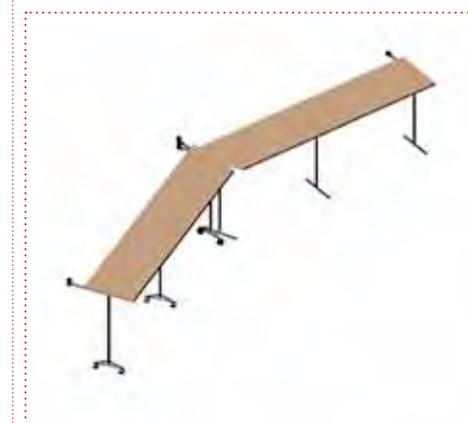
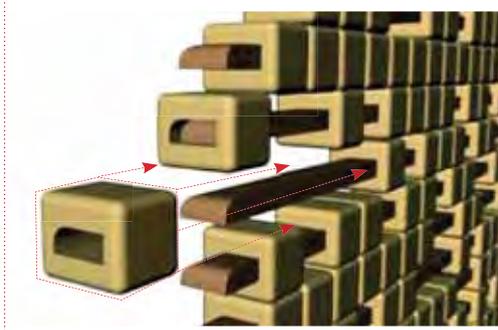
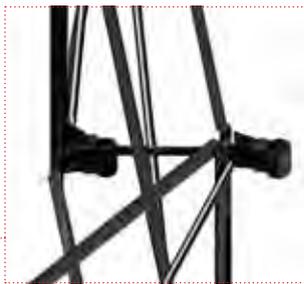
- staff comfort
- location of nurses' station



NURSES' STATION
[PLAN]



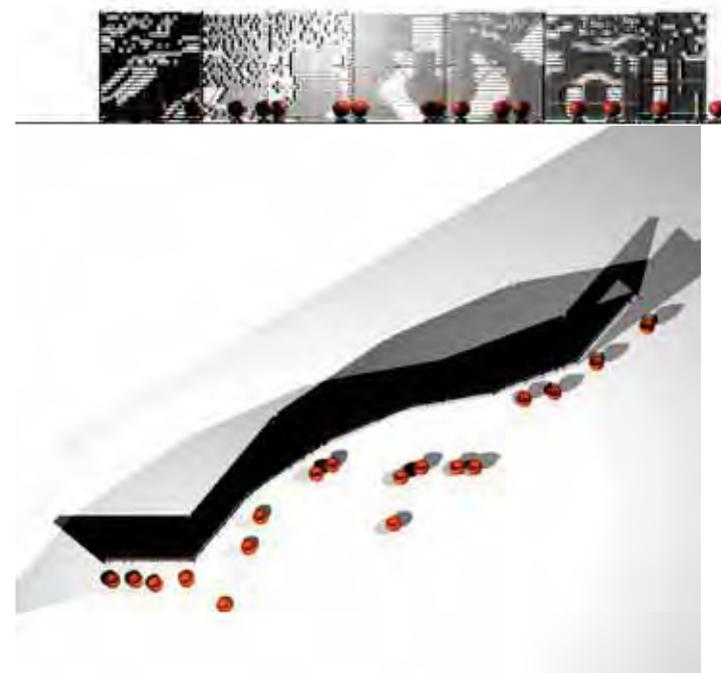
NURSES' STATION
[COMPOSITE LAYERS]



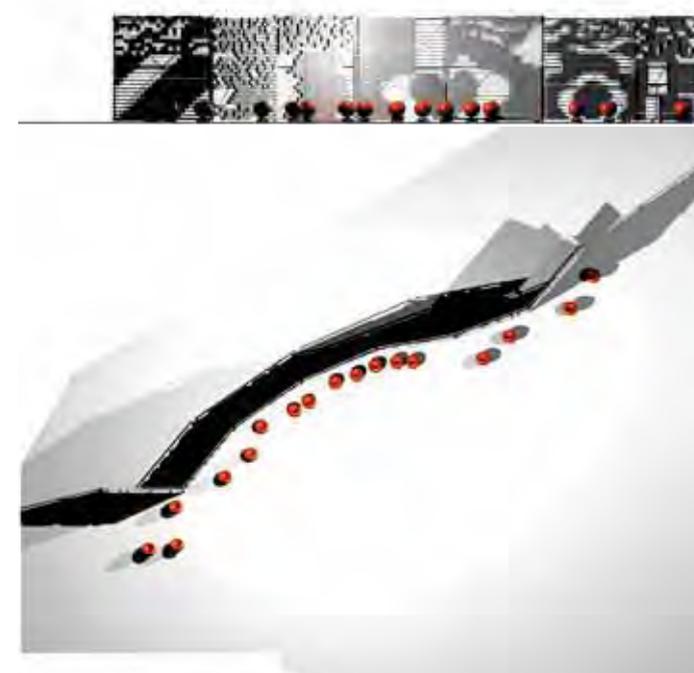
NURSES' STATION
[TRANSFORMATION 1]



NURSES' STATION
[TRANSFORMATION 2]



NURSES' STATION
[TRANSFORMATION 3]



NURSES' STATION
[TRANSFORMATION 4]

EXPLORATION IN POROSITY

Shaun Coombes



EXPLORATION IN POROSITY is an attempt to re-define a space through the use of the window which in some ways today has lost some of its most important and fundamental characteristics. These characteristics include providing light, air, scent, privacy, sound, safety and to create views to the outside world. These characteristics can all improve the standard of life and help promote a better wellbeing through stimulating the senses to promote healing. A successful window has good control of all of the above.

For this design proposal, taking into consideration the various issues that have been noted, two window options are proposed. The 1st window option is for a lower costing window that provides all the above mentioned characteristics for the resident. The 2nd window option takes these above mentioned characteristic requirements and expresses them even further to achieve a higher level of well-being. The final area of these proposed window details looks at the overall incorporation of these windows into a residence where they can be seen within their context. These window systems can be used in a variety of residential applications where comfort is paramount.

Window Option 1



OPTION 1 is an economical design which consists of a venetian blind sandwiched between doubling glazing within the left side of the window. This portion is easily operated by a pull cord. The right side carries a double sash window, double glazed and attached to this is a Light + Air vent system which is easily operated when the sash windows are moved. Please see image below for operation.

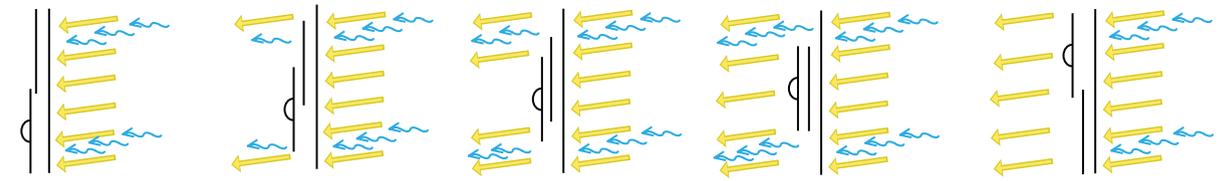
Window Option 2



OPTION 2 is a higher costing design and is considerably taller. This option consists of 2 horizontally rolling shades which lock by use of a magnet and retract but a spring coil system. The outer rolling shade is a sun filtering shade while the inner rolling blind is a "black out" shade. The right side of the window is the same system as in OPTION 1.

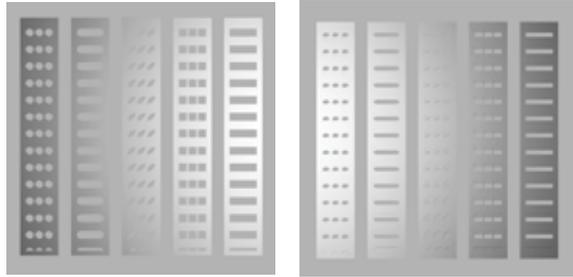


Operation Sequence



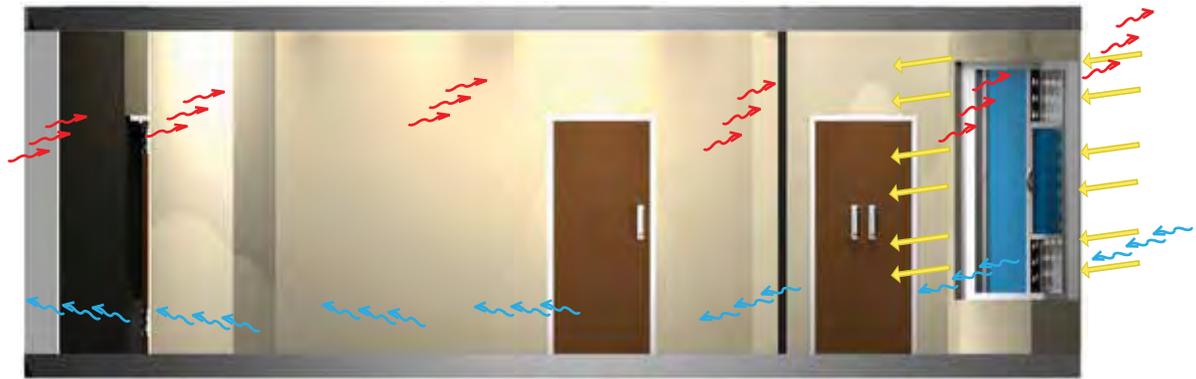
Air + Light Control Sequence

5 Options of Light + Air Sliders



open

partially open



Summer Day - Light + Air Flow



Winter Day - Light + Air Flow



Given that biomedical knowledge and practice are rooted in a staunchly individualist tradition, it is not surprising that the diagnosis and treatment of dementia is shaped by an abiding preoccupation with autonomy and independence. Specifically, the biomedical approach focuses on symptoms of memory loss and cognitive impairment – the two dominant loci of personhood and human value in contemporary Western societies. Thus, biomedicine’s individualist focus has influenced the construction of dementia as dreadful decline, catastrophic loss and ‘erosion of the self’ in medical discourse and in the popular imagination. In turn, this conception of waning personhood informs the treatment (medical and social) that persons with dementia receive, and the way that persons living with dementia experience their world.

Indeed, an important corollary of this view is that patients with dementia are often considered ‘too far removed from reality’ to be treated and engaged as full people. For this reason, certain biomedical approaches to assessing and caring for persons with dementia have been described as iatrogenic – that is, the interventions may cause dementing patients as much distress as they alleviate. It is as though the ‘loss of self’ experienced by the dementing individual is first constructed via biomedical discourse and then instantiated by professional interventions that segregate and devalue the person suffering from disease. As gerontologist William Randall notes, “it is more the social processes associated with dementia than biological ones that deprive the dementing person of selfhood.”¹

This is not to suggest that a biomedical approach to dementia care is without merit or has nothing of value to offer persons living with dementia and their caregivers. Contemporary biomedicine has made enormous contributions to our understanding of the disease process and how we might begin to untangle and address the complex biological factors that result in symptoms of dementia. At the same time, we must be willing to attend to the more problematic assumptions that have shaped contemporary biomedical theory and practice. Indeed, by exploring the social and cultural dimensions of dementia and reorienting some of the core concepts of the biomedical approach, we can deepen and localize our understanding of not only how dementia affects individuals, families and communities, but also how we recognize and value personhood in our culture.

Alternative views of personhood have been gaining increasing traction in dementia research and care-giving communities – views which are not predicated on autonomy or cognitive ability, but which regard ‘the self’ as being sustained through embodiment and meaningful relationship with others. These models of ‘sustainable personhood’ point in exciting new directions for dementia care, which take into account the whole person, including how they experience the physical and social environments in which they live.

- Colin Vincent
Masters of Social Work student

¹ Randall, William L. (2009). The anthropology of dementia: a narrative perspective. *International Journal of Geriatric Psychiatry*, 24, 322-324.

THERAPEUTIC BATHS

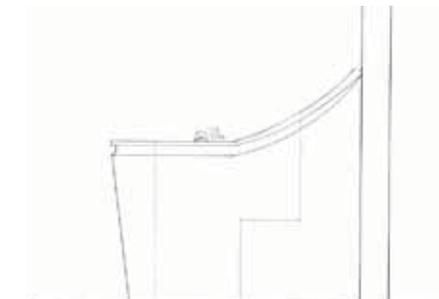
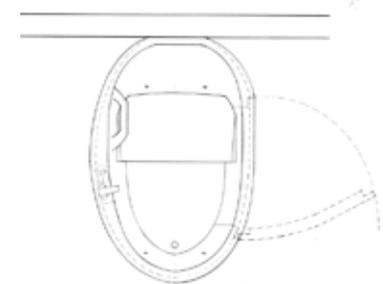
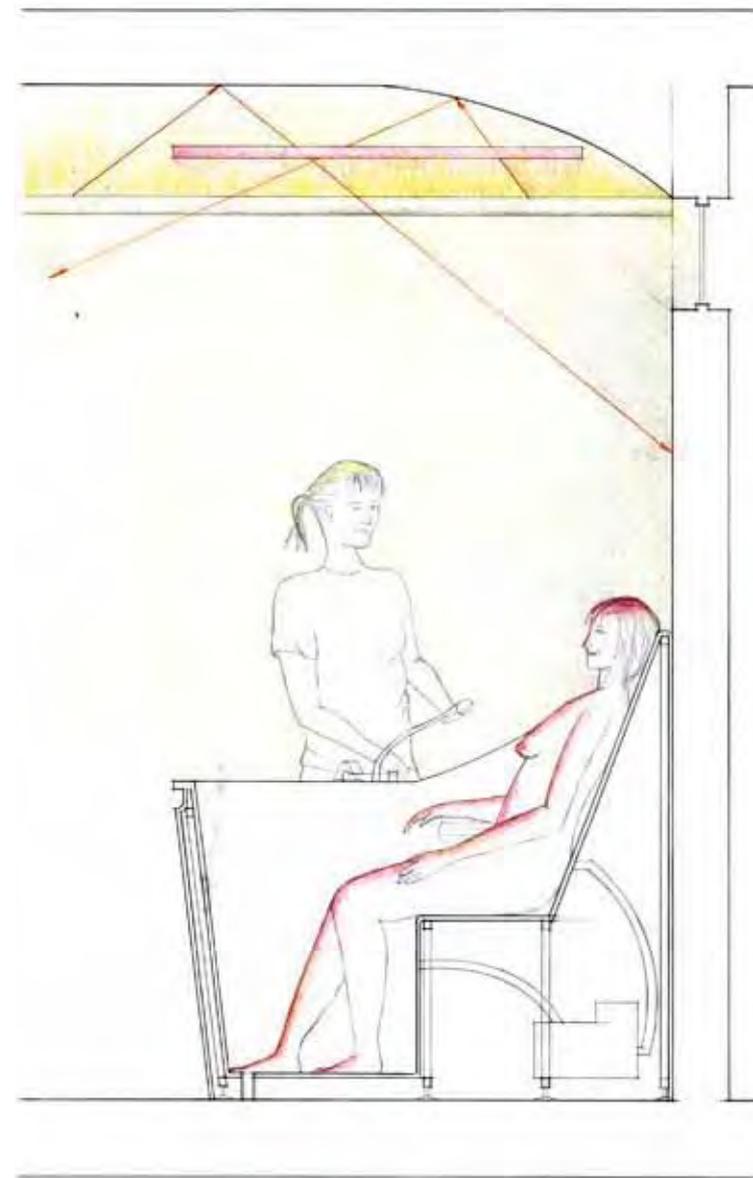
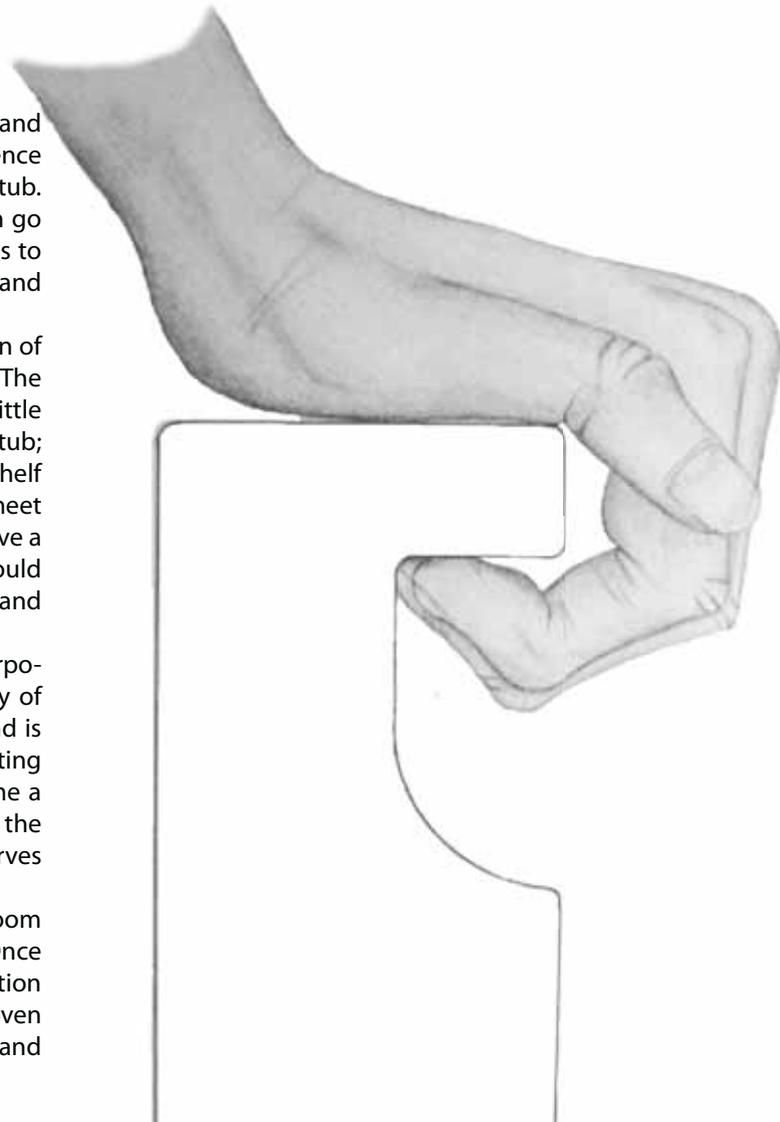
Angella Hercules Stevenson

The bathrooms at Cumber lodge currently feel sterile and institutional. The staff indicated that the current bathing experience involves a mechanical lift to lift and lower the residents into the tub. This process induces stress to the point that residents will often go for extended periods without bathing. The goal of this design is to transform the bathing experience into a comfortable, dignified, and therapeutic one.

A walk-in tub will be incorporated in the overall redesign of the bathrooms to reduce the stress of the bathing experience. The residents will be able to enter this tub on their own or with little assistance from the staff. There are two possibilities for the walk in tub; an off the shelf model or a custom design. There are a few off the shelf models designed for use in long term care facilities that would meet the requirements of Cumber Lodge. However, these models have a distinctly institutional look. The residents of Cumber Lodge could benefit from a custom designed model which is more homey and comforting.

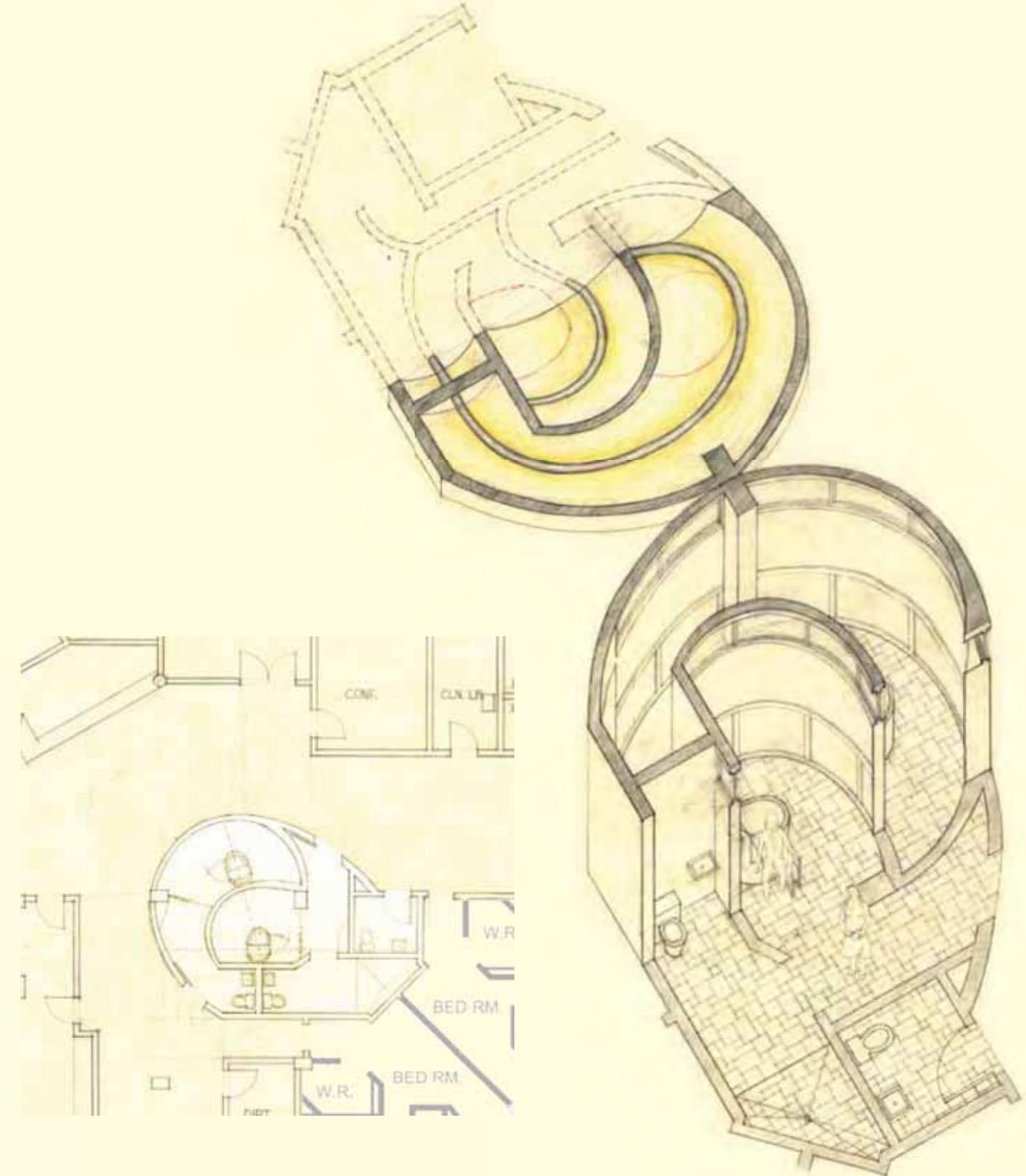
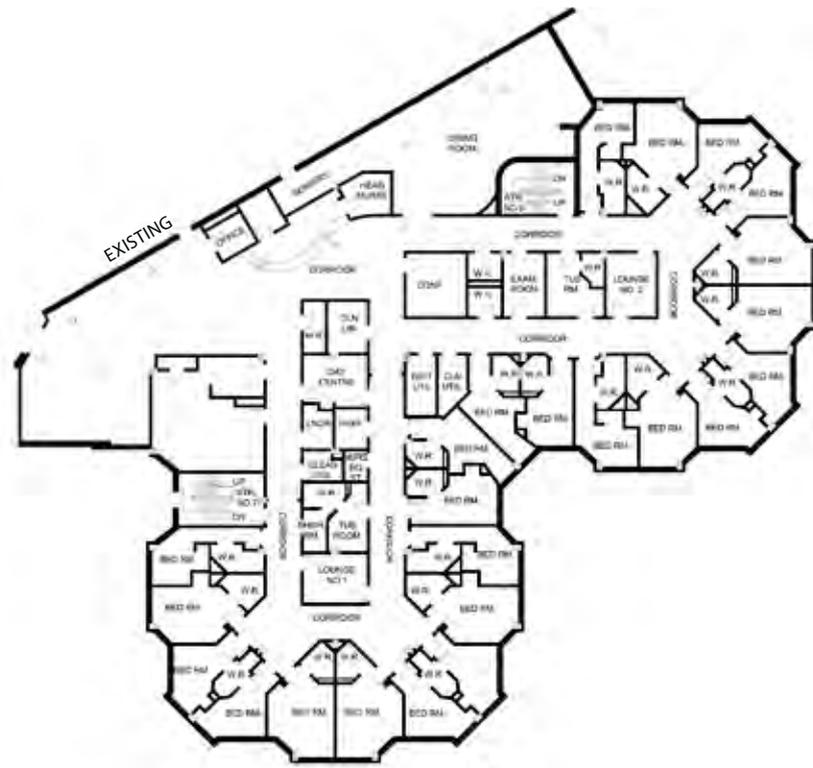
The design proposed here is sleek but it still incorporates many features that are important to the health and safety of the residents. The tub door is located on the side of the tub, and is wide enough to allow residents the choice of stepping in or sitting and turning in. The edges of the tub will be shaped to become a comfortable and secure handrail, enabling self sufficiency for the residents. Additionally, there is an armrest inside the tub that serves as a grab bar to assist the residents in standing to exit the tub.

The tub features a reclined backrest and plenty of leg room which allow the resident to stretch out and rest comfortably. Once the resident is seated comfortably in the tub, they have the option of using the water jets that enable hydrotherapy, which has proven benefits for a number of physical ailments, such as muscle aches and high blood pressure.



The design for the therapeutic baths celebrates the bathrooms by placing them in the most central location of the Cummer Lodge ward. This bathroom redesign will enable a rebirth of the facility centered on the healing powers of water. The bathrooms are designed to be enclosed with curving walls which create a sense of journeying into privacy, and then embrace the bather. Additionally, the curved walls will be unique in the facility and they will hopefully aid in the formation of memories related to the successful navigation of the ward. The bathrooms are freed from being dark boxes through the incorporation of high windows which allow a relationship between the interior and the corridors while maintaining privacy for the bathers.

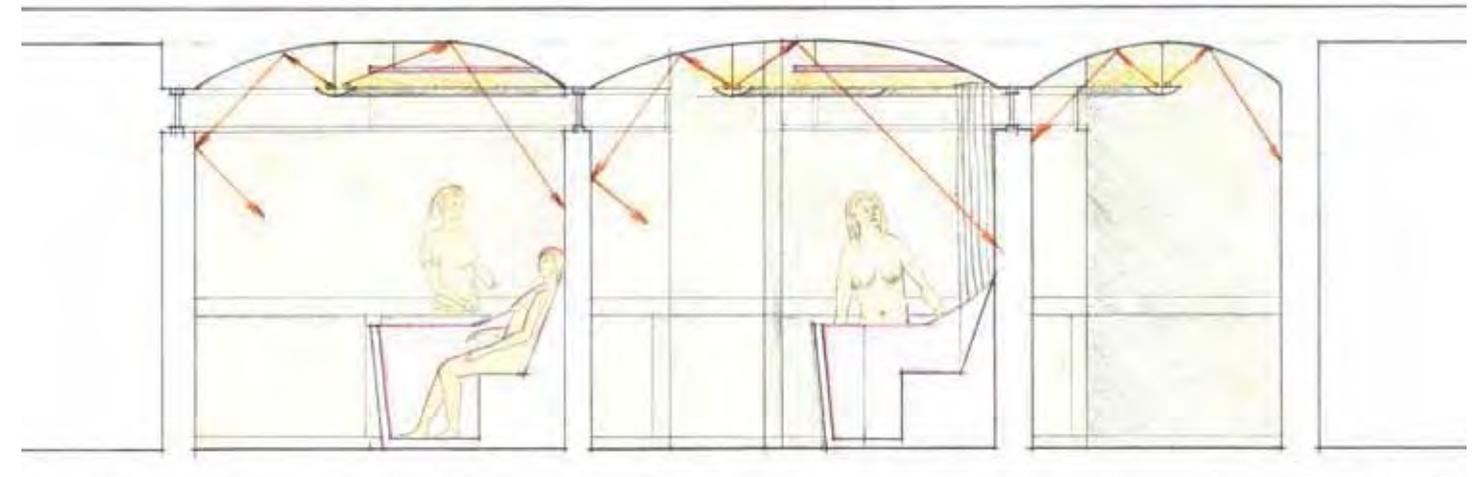
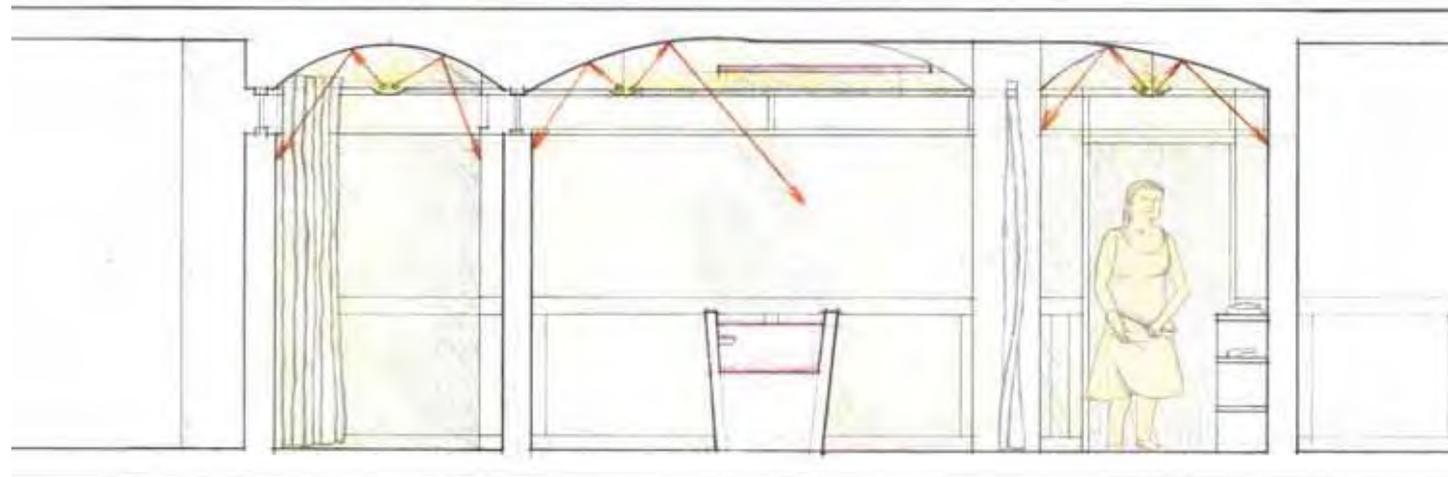
In order to accommodate the central location for the new bathrooms, there have been other changes to the overall floor plan. The majority of the services have been moved out from the center of the corridors and off to the side. This move simplifies way finding for the residents by reducing the total number of corridors. Each of the new corridors maintains a wandering pathway by placing a lounge at the end, with a corridor encircling it. The lounges encourage use by being open on three sides. A change in flooring material differentiates the lounge from the hallway. The fourth side has a privacy wall up to shoulder height, with a semi-transparent screen above.



Under the spell of the modern goddess Hygiene, bathroom design has lost its capacity to become the focus of relaxing psychic activity. ... The bathroom is no longer considered a dignifying place where a sacred spring or a mundus is located, but rather a space where water is present and should be swiftly removed with hydraulic efficiency.

-Marco Frascari, author of
Pneumatic Bathroom

This design works to re-enable the bathroom to be a place of relaxing psychic activity. Institutional bathrooms are often so bright that they are uncomfortable. An aspect of this bathroom design is the incorporation of light fixtures that bath a vaulted ceiling with light, providing soft, diffused lighting to the entire room. To further enhance the bathing experience, there are radiant heating panels that are suspended over each bath tub in order to ensure that the bathers are warm while the tub fills and drains.



SANDBOX

Narae Kim

This project focuses on Navigation Paths, with the integration of sensory "Tactile" stimulation, using Cumber Lodge as the case study.

The Story

When visiting Cumber Lodge, I distinctively, remember an elderly gentleman who was roaming the halls with both of his hands clenched onto the handrail, his eyes on the ground, walking just one step at a time. As he neared a doorway, he reached the end of the handrail and he stopped. He just stood there, with his eyes still on the ground, waiting for something.

This made me realize how important navigation was in this setting and how much of an impact handrails could have on these patients. Alzheimer's patients and those with other forms of dementia benefit greatly from tactile sensory stimulation, as their brains encounter difficulty understanding the world, patients are able to recognize tactile objects much longer than other memories. Physical contact helps improve Alzheimer's patients' concentration and alertness, and evokes a positive emotional response and helps them relax.

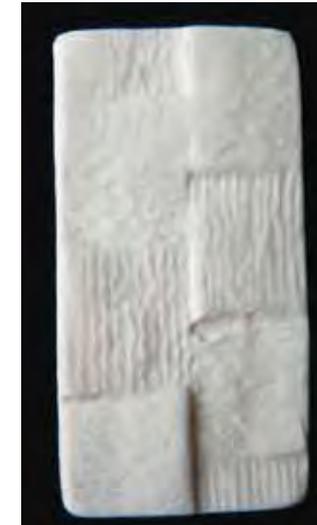
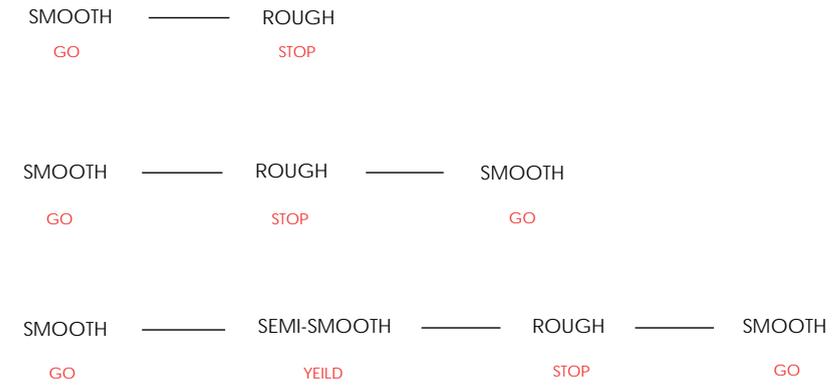
The design intent was to create a continuous handrail with a surface of varying texture and form, inviting the senses to be engaged.



Juhani Pallasmaa, The Thinking Hand

Handrail Tactile Stimulation

I thought that this would be a very interesting study, how the different textures would cue the patients to adjust the rhythm of their movements. For example, Smooth (would be, to go) and Rough (would be, to stop). It would translate to: Smooth, Rough, Smooth. But it could also be: Smooth, Semi-smooth, Rough, and back to Smooth. In translation it would be: go, slow down, stop, and go again.



Ceramic study models

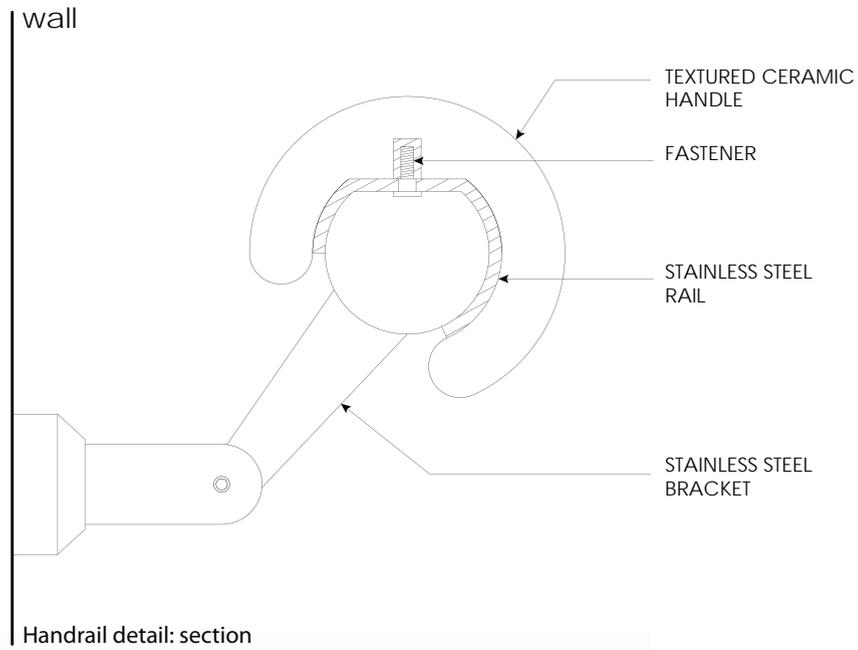
Study Model

I wanted to further this study, by using 3 different textures:

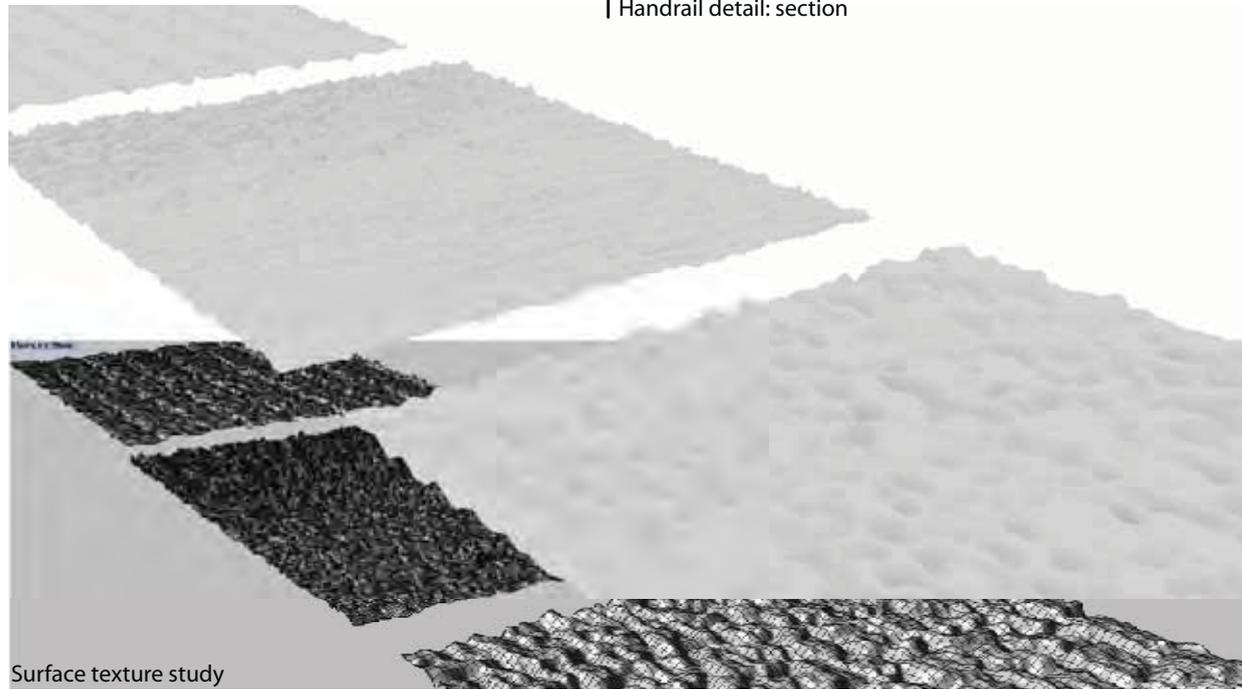
Glass would represent the smooth surface, which would be the action to go. Wood would represent the semi-smooth surface which would be the action to slow down, this would also act as a buffer. Finally, the stone would represent the rough surface which would be to stop.

Materiality: Ceramic

Although vision tends to dominate our perceptions, different textures can influence the sense of touch. Very rough textures lead to vision dominating, whereas a fine, smooth texture will allow touch to be the dominant sense. Ceramics used as the study material because of its ability to take shape of anything or any texture.



Handrail detail: section



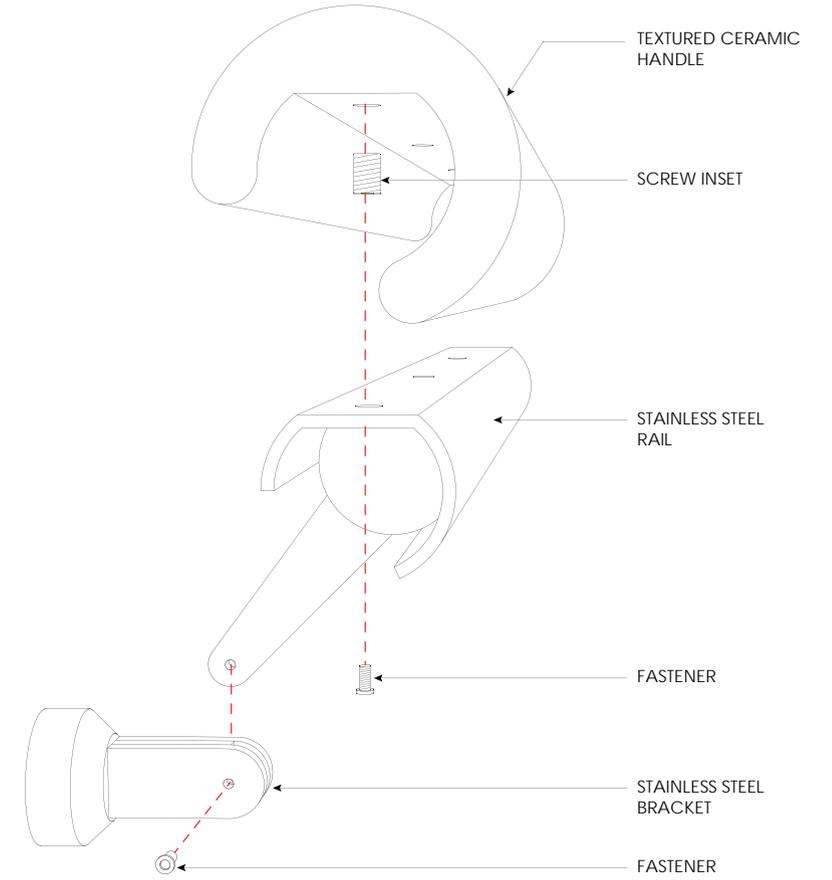
Surface texture study

Detail: Handrail

The handrail is composed of a casted ceramic handle, which is fastened to a stainless steel rail.

One of the most important parts to this is that the inner arch of the cast must remain the same (Which is supported by the stainless steel rail).

But the outer surface of the cast would be able to change, whatever the texture it may be.



Handrail detail: assembly diagram



Handrail detail: perspective

HOLISTIC HEALING

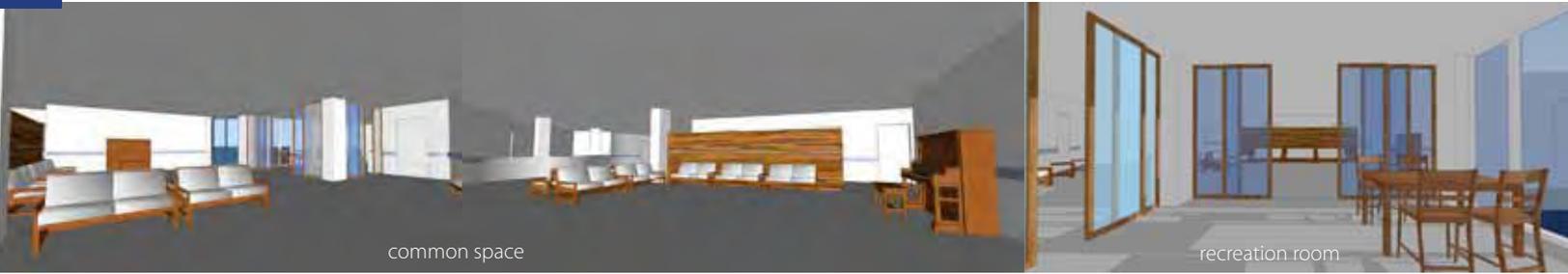
Anna Kourkounakis

The concept of home is not the object of a house but a sensory experience that, in turn, can improve mental health and well-being. In a long term care facility, it is important to enable maximum mobility and independence of the residents because it is the lack of stimulus, which turns into boredom, progresses to aggressive challenging behaviours. However, residents

differ one from the next and so do their behaviours. Some are travellers, some like to rest. Hence, a program must accommodate to the individual resident. Currently, a figure eight circulation path has been proven to be successful, but it does not give much choice for navigation direction. Harmonizing the program between the hallways, bedrooms, and common spaces can offer

landmarks for the wanderers and resting points for those who enjoy observing. Light and air are also important to the harmonious setting of the unit. 'Fos' is the Greek word for light. 'Fos' is invested here with special meaning. It is a light that can treat sleep disorders visually, and physically it can nourish the body. The current situation at Cummer Lodge is the lack of connection with nature. Providing a space for residents to experience the notion of being outside can improve their health by creating an internal balance within. Due to the lack of sunlight throughout the unit, the removal of two bedrooms and some storage is proposed for a new common space that will simulate the ability of 'being outdoors'. Natural light is one of the mind-body elements

that can be used in therapeutic healing for many illnesses. It is absorbed through the skin releasing hormones making one feel better. In addition, to enhance the healing process is the connection with nature (the outdoors). Being able to see outside can ground a person, internally and externally, giving them the awareness of time. The orientation of the plan allows for light to shine into the space around mid-afternoon to sundown. To bring in light during the rest of the day will be a lighting system mounted to the ceiling that mimics the movement of the sun directing the light from one end of the room to the other. The ceiling echoes the light sources throughout the space at the same pace as the sun.

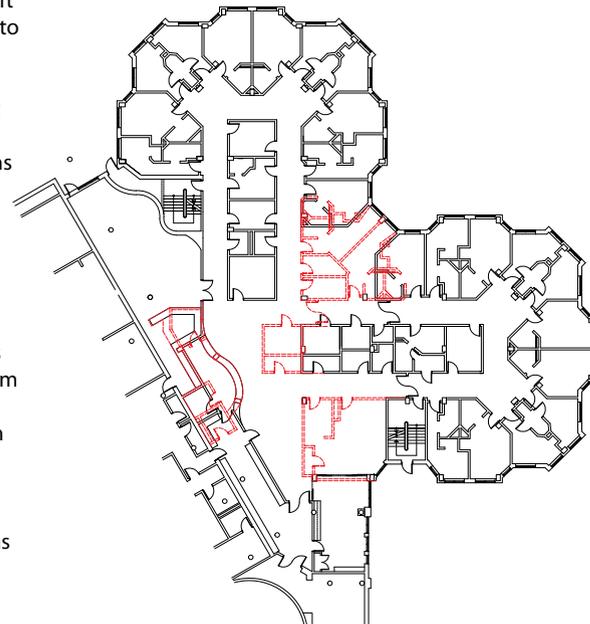


common space

recreation room

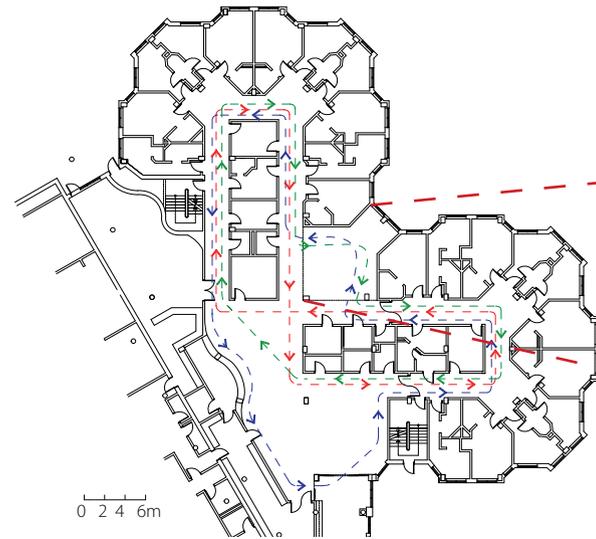
PROGRAM CHANGES | left

- 1 | shift recreation room to the north wall
- 2 | add a vestibule as a barrier between the unit and the facility
- 3 | remove existing rooms for simulated outdoor space
- 4 | enlarge bedrooms for removed bed
- 5 | remove day center and shift washroom and storage
- 6 | expanding the nurses station creates more room for the servery
- 7 | open up nurse station for storage and relief



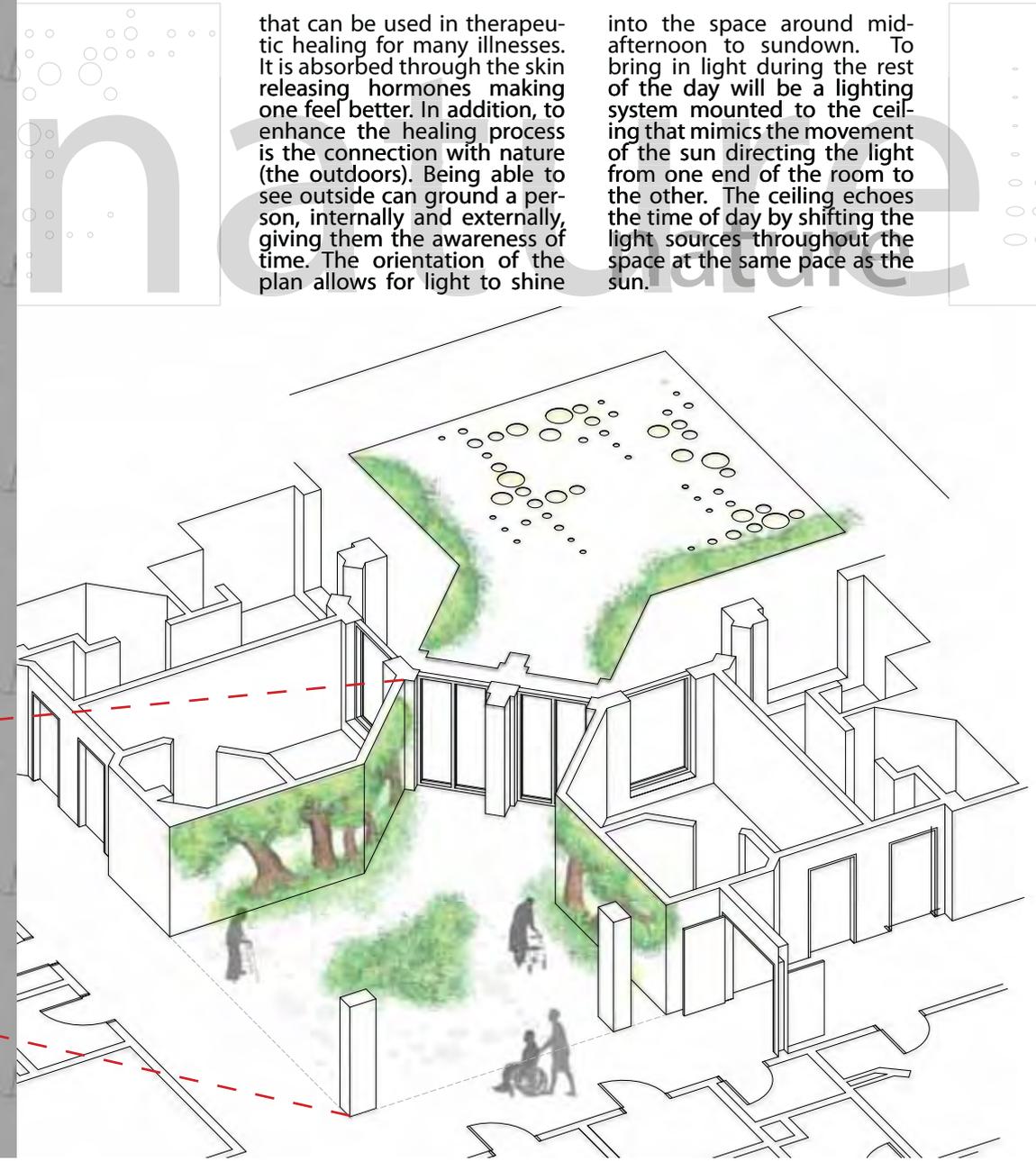
CIRCULATION | right

resident navigation paths based on landmarks of the common spaces



0 2 4 6m

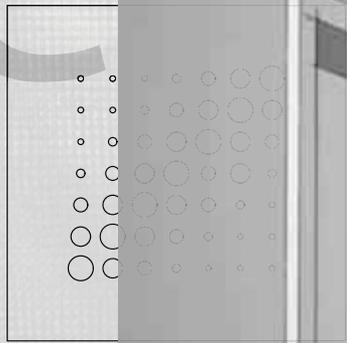
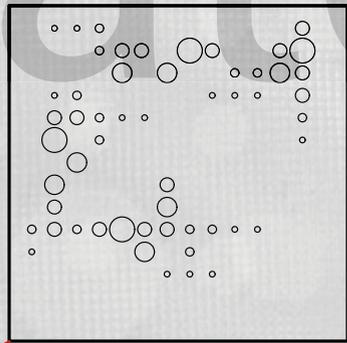
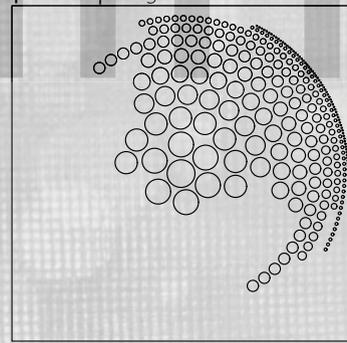
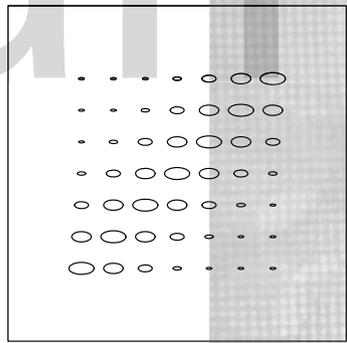
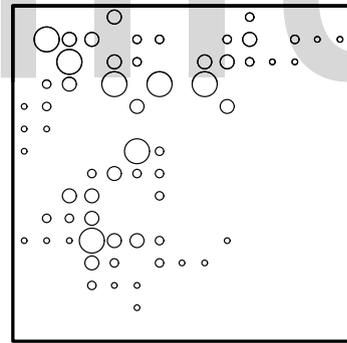
plan | cummer lodge special care unit



axonometric | new common space

illuminate

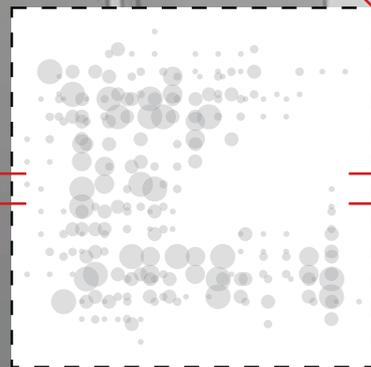
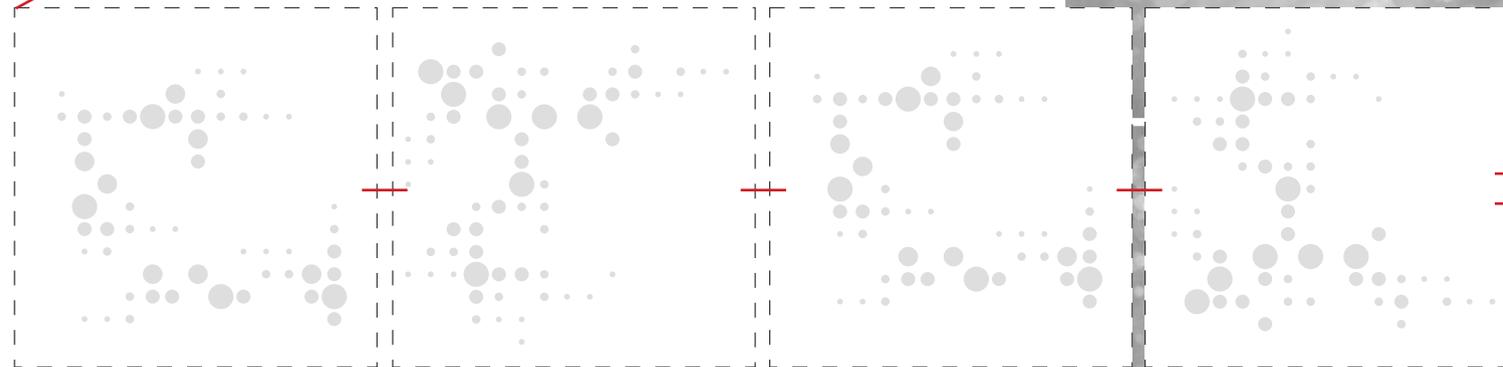
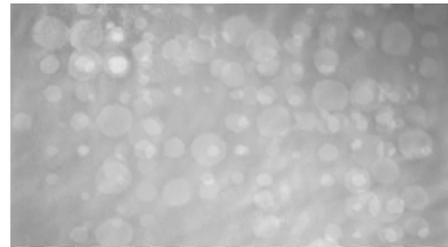
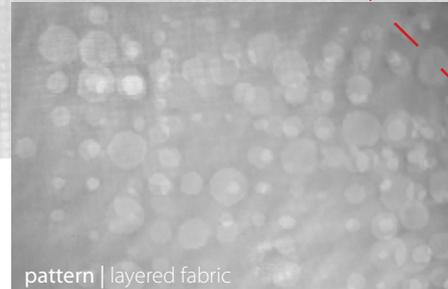
patterns | foliage



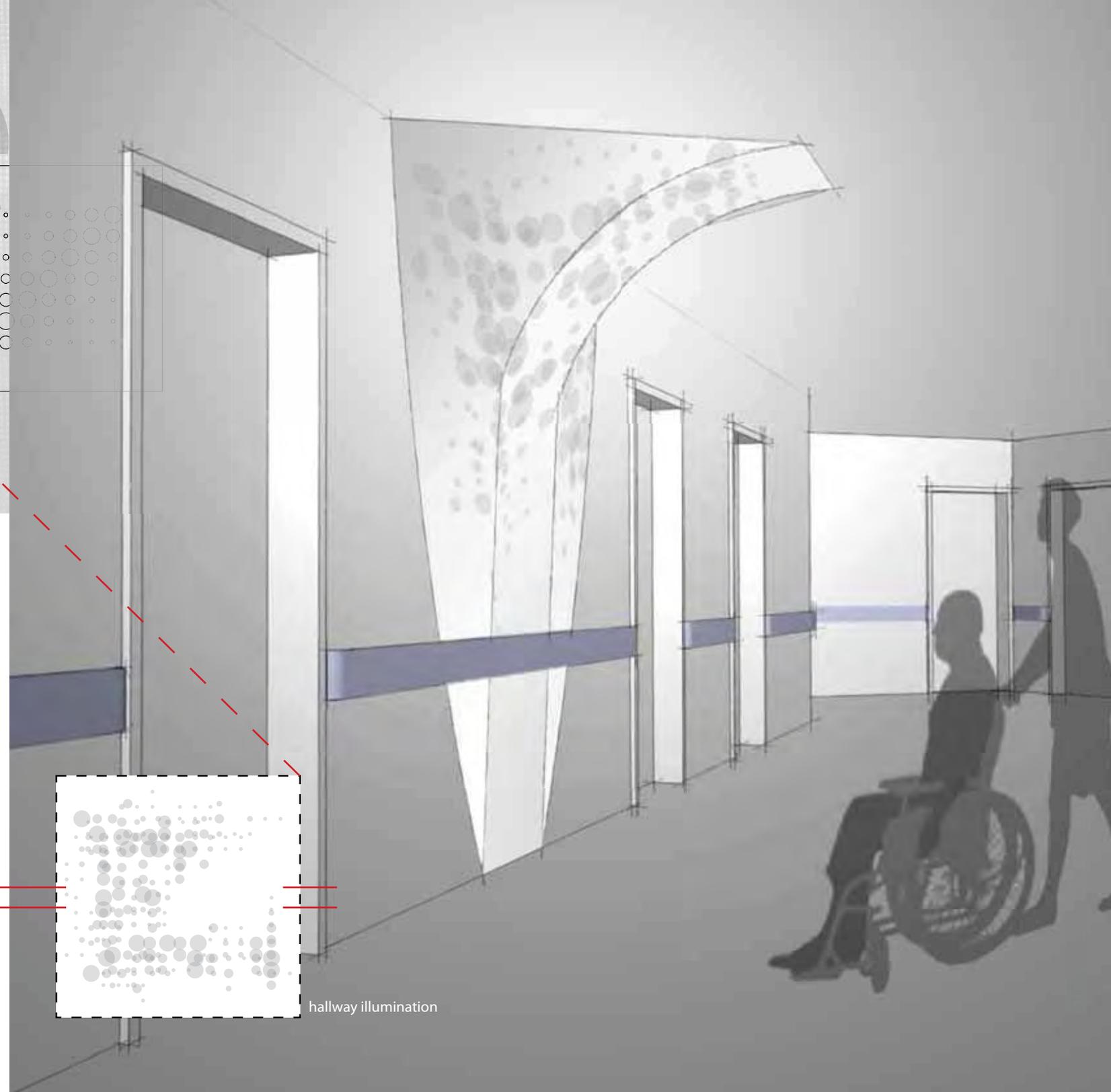
LED, full spectrum and florescent lights have the closest light spectrum to natural sunlight. Florescent lights are the most commonly used in commercial projects because it is inexpensive and LED lighting is used mostly for display because it does not radiate heat or damage colours. However, full spectrum lights are the only light that provides the same amount of wellness as the sun. To integrate the interior 'outdoor' space a series of experimental investigation with patterns, fabric and light will be placed throughout the unit. Using a variety of patterns that resemble foliage are layered on top of each other to see which combination best illustrates nature. In addition, layering the fabric generates a visual depth within the fabric. The fabric is a co-polymer, which is fire retardant, sound insulating, and lightweight - it is the same

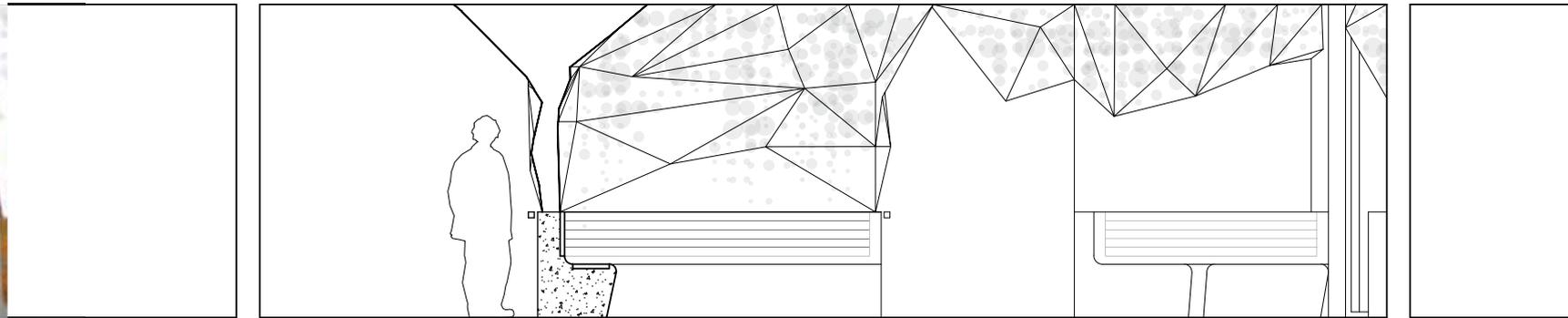
fabric used in stretched ceiling application. The frame holding the fabric is composed of a series of tracks and rails that form the shape and the fabric slides or stretches into place. The silhouette of the tracks and rails mimic the branches of a tree and the fabric embodies the leaves. Integrating the illusion of daylight, the full spectrum light installed behind the fabric will illuminate and dim following the sun solstice. The intention of these experiments is to stimulate the visual and physical senses and ground the internal body clock. Some residents have visual deficiencies so the pattern will not be fully visible but the sense of touch continues to be. Along with the physical sense of two physical items touching is the radiant heat off the light. As the individual walks by they will feel the warmth emitting just like it would if they walked next to a window.

pattern | layered fabric



hallway illumination

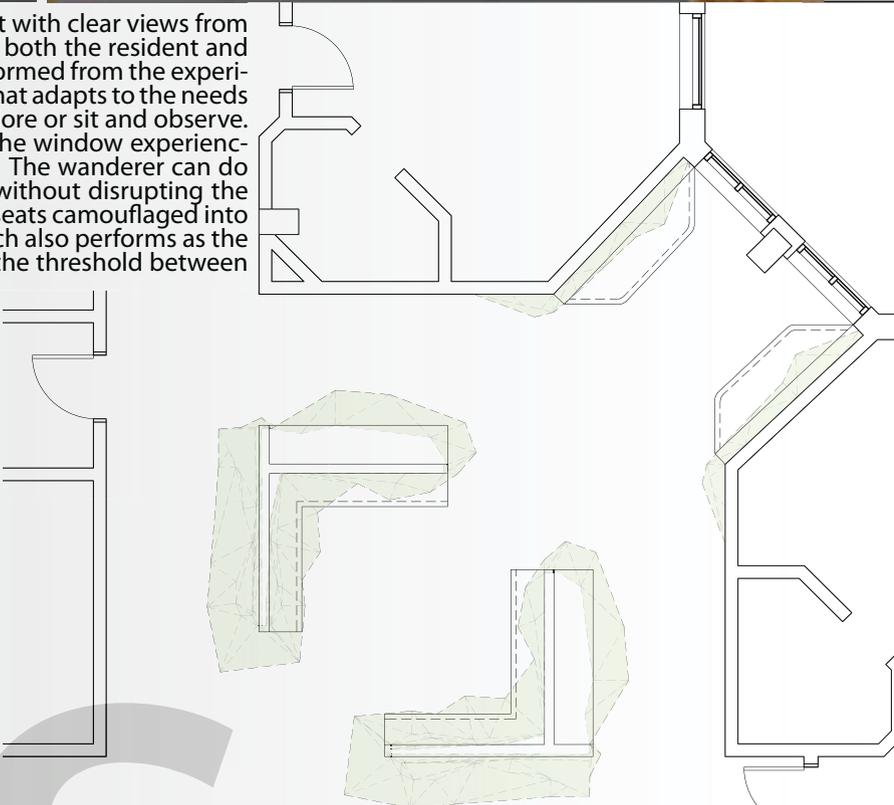




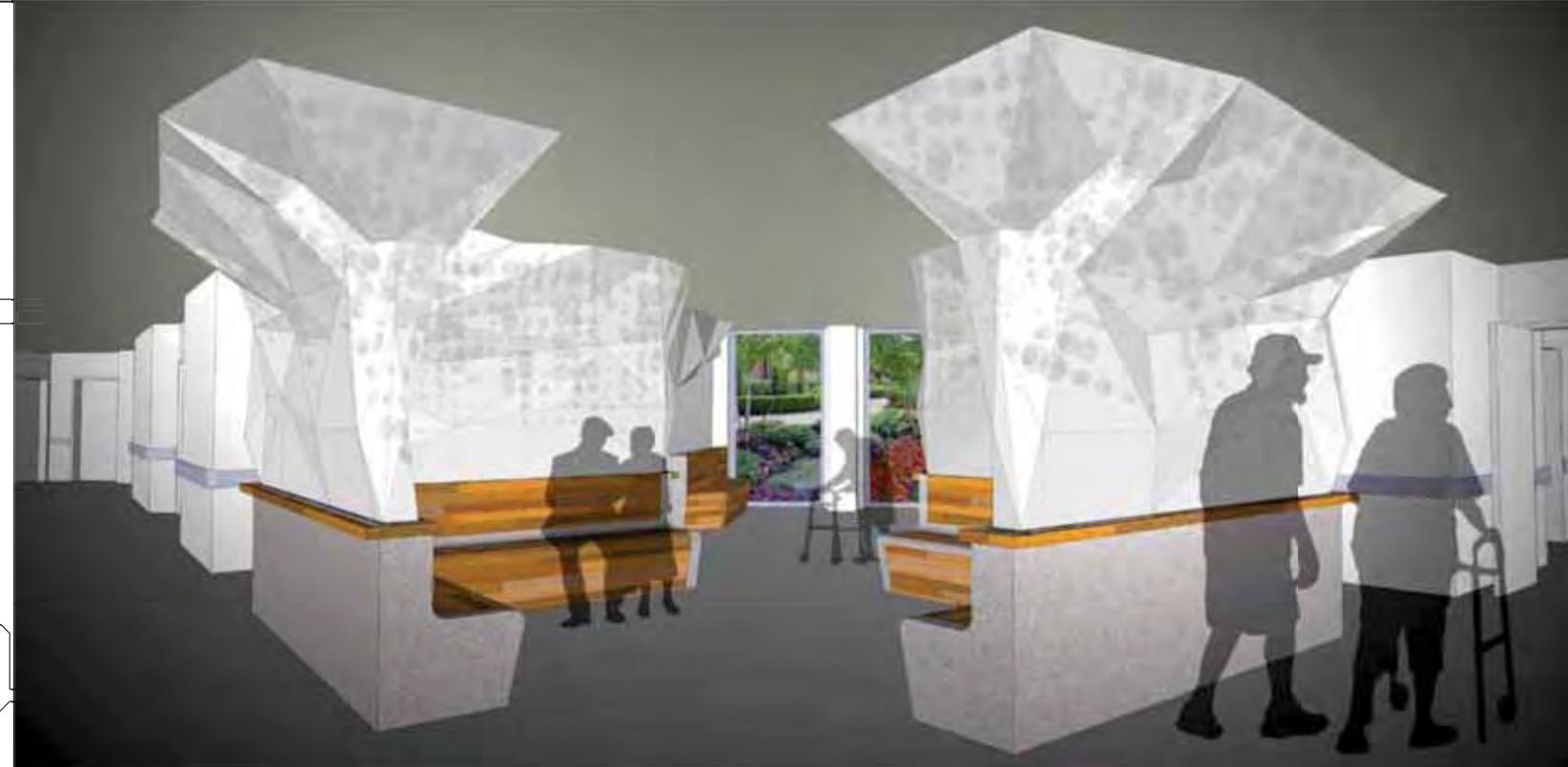
section | new common space

The new 'outdoor' space is centralized within the unit with clear views from the hallways and nurses station that is beneficial for both the resident and staff. Defining the space is a fixed installation piece formed from the experimental investigations growing out of a seating area that adapts to the needs of each individual resident, whether they like to explore or sit and observe. The observer has the choice to sit in the hub or by the window experiencing the radiating light and enjoy the exterior views. The wanderer can do the same by walking around or through the space without disrupting the observer. New storage closet are placed behind the seats camouflaged into the environment and secured with the handrail, which also performs as the handles to open the doors. The new space signifies the threshold between

the unit and the outdoors balancing the private and public spaces. It re-orientates the resident allowing them to become aware of where they are. The fabric bleeds out into the hallways acting as a visual landmark to guide residents to their final destination, wherever that may be. The hallways remain symmetrical continuing the figure eight circulation but now it provide the ability for new configurations to arise, making the navigation path unique to each individual. With the additional light the new threshold brings life back into the unit as well as giving the unit a sense of openness, which balances the private and the public spaces. Hence, for the residents that like to be social can be and those who like to be alone can also be. Introducing nature and light into the unit as a way to heal, repair, and delay the diseases of dementia. To be surrounded by the light and the fabric, mimicking nature, has this notion of a place for healing where the body is enriched with vitamins and energy. One could say it can act like an 'energizing station'. For the residents who don't get to go outside often or not at all, this space allows them to freely go 'in and out' as they please.



partial plan | new common space



POSITIVE PATH

Maysan Mamoun

The concept of this proposal is to provide positive access for Dementia patient's private spaces, semi private spaces and public spaces through smooth circulation, and space transition. Certain designs and materials are proposed for stimulating patient's senses and providing more refreshing environments.

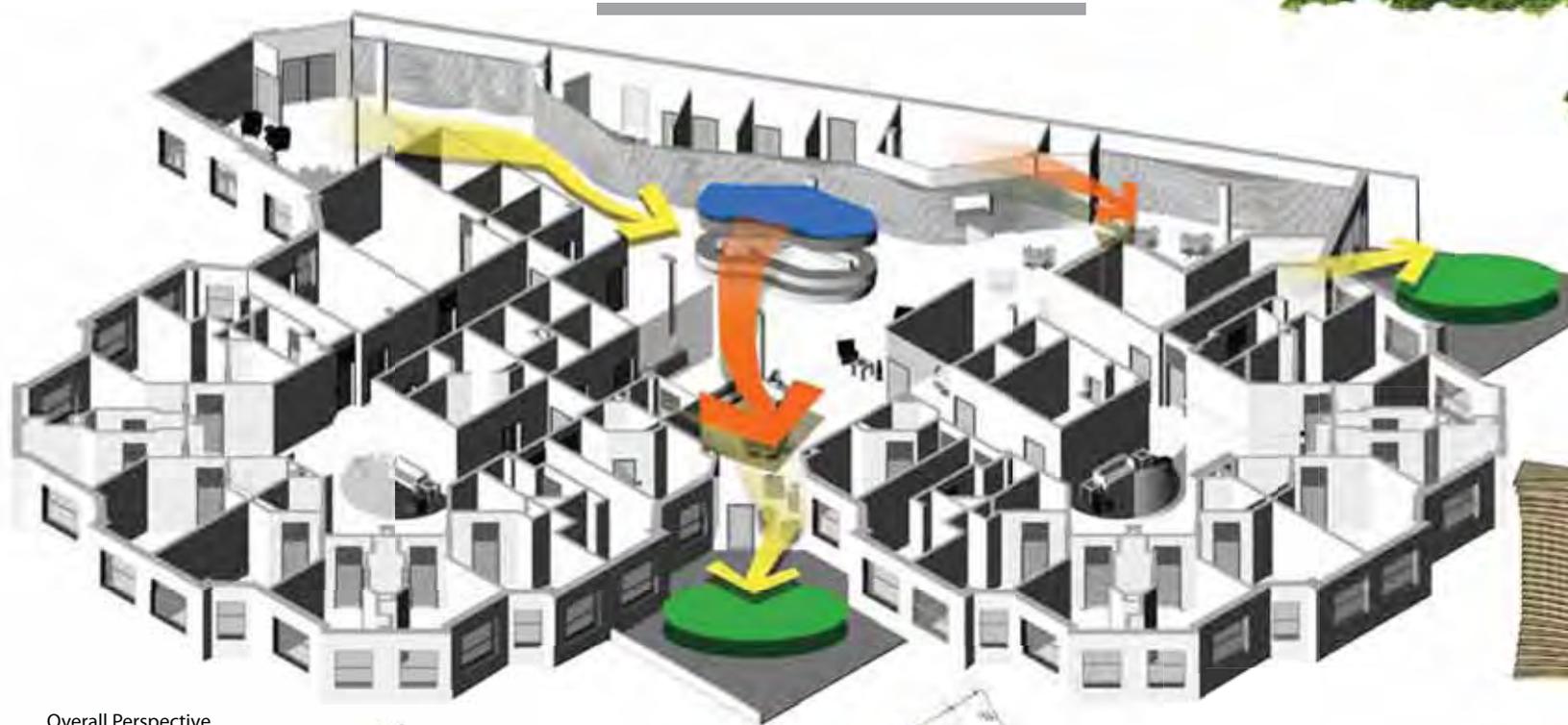
THE PROPOSAL PRESENTS THREE PARTS:
 - General recommendation on the current design [long term, medium term and short term]
 - Public shared spaces
 - Detailed element: door

THIS PROPOSAL AIMS:
 -To provide efficient design that acts a therapeutic role maximizing functional independence of residents with particular respect to activities of daily living.
 - To assist in focusing on crucial issues of the environments for people with dementia.
 -To enhance the aesthetics and maximize the use of space

GENERAL RECOMMENDATION ON THE CURRENT DESIGN:
 SHORT TERM
 •Door modification
 •Clean and dirty closets addition
 •Private Lounge modification

MEDIUM TERM
 •Customized green wall
 •Public space modification Dining Room, Day Living Room, Multi Purpose Room, Reception Lounge
 •Nursing Station and staff zone relocation
 •Outdoor Addition
 •Relocation of two bedrooms

LONG TERM
 •Skylight addition to dining room/ multipurpose room



Overall Perspective



PUBLIC SHARED SPACES

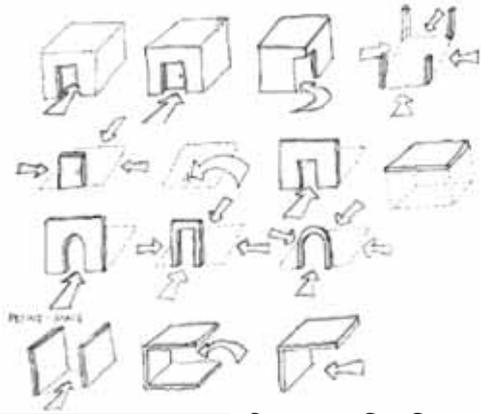
The public shared spaces consist of Dining Room, Day Living Room, Multipurpose Room, and Reception Lounge. In addition to semi public lounges that are located between patients rooms end of each corridors. The main intention from the design is to provide an open space area: by expanding the Dining Room and Multipurpose Room; locating Reception Lounge and Day Living Room beside the Nursing Station. The public shared spaces form a focal point in the center of Special Care Unit where they are fully supervised under nurse's surveillance.

In order to provide healthy atmosphere, the public shared spaces are exposed to natural lights and outdoor gardens. The design features meet certain guidelines which are: division zones for families, patients and staff, clear circulation, easy access to public spaces, and controlled access to outdoor gardens. The public spaces are equipped with services such as small kitchen, washing room, library, and other recreational services.

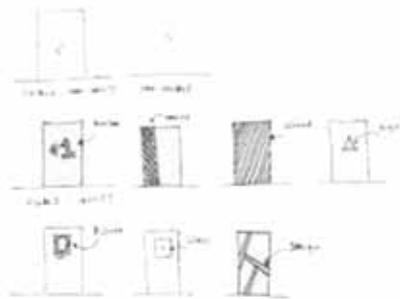
Customized Green Wall is a new addition to the space of Special Care Unit that acts as a screen between staff zone and the Unit, as well as, It acts as an artistic wall, where small boxes of artificial plants assemble horizontally between the voids of the wall creating different composition of green elevation. The advantage of this wall is to provide refreshing look to the space where people can feel a difference. As the green boxes can be changed regularly and assemble at any way. It is a metaphor for 4 seasons in way of changing the color and the atmosphere.



DISCOVERING DEMENTIA DOOR



BRAINSTORMING DOOR DESIGNS

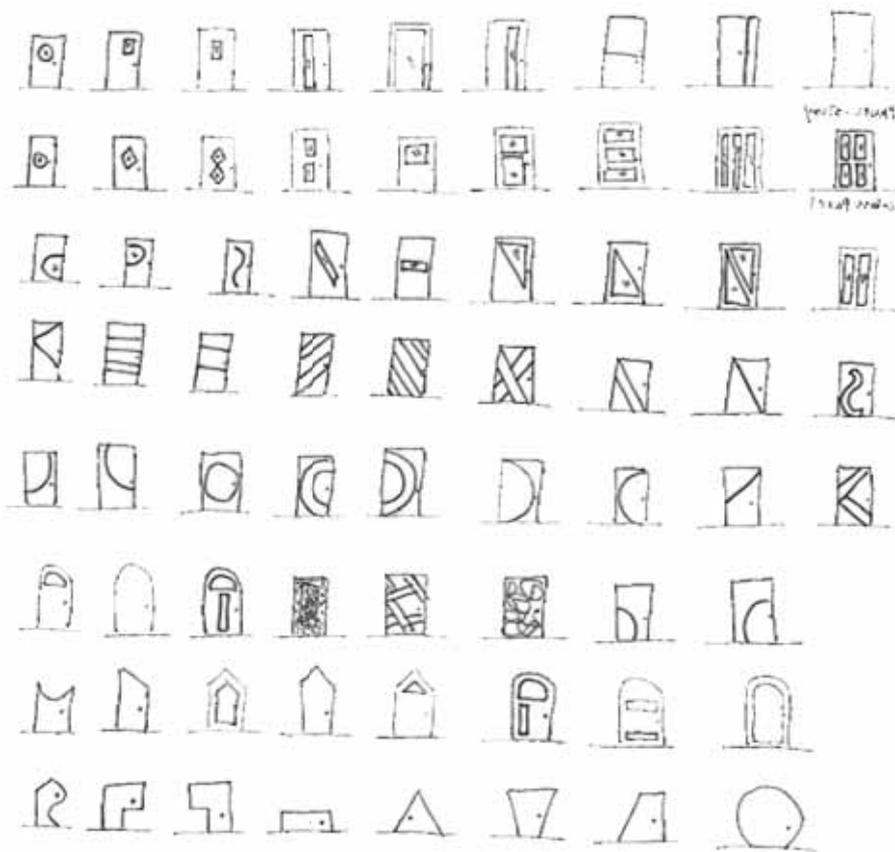


DETAILED ELEMENT: DOOR

The door is the main focus in this proposal. It is considered as the essential factor in the space and acts as adjoining element between public and private spaces. It is the interface to invite or reject the space. The main philosophy is to provide a positive path experience that opens onto intimate, welcoming world, where every room tells a story. For creating a warm homey atmosphere, the door material is light Oak wood. As a way to identify and personalize each patient's door, the door has code of surface color adding to the value of rich texture of natural wood.

The following mechanism design is to provide a practical transition from space to another with less 50% effort and meeting the needs of patients with wheelchair and walking difficulties. The design concept is a combined work of my design/ mechanism and an Italian Company called Celegon. For more info: <http://www.celegon.it/>

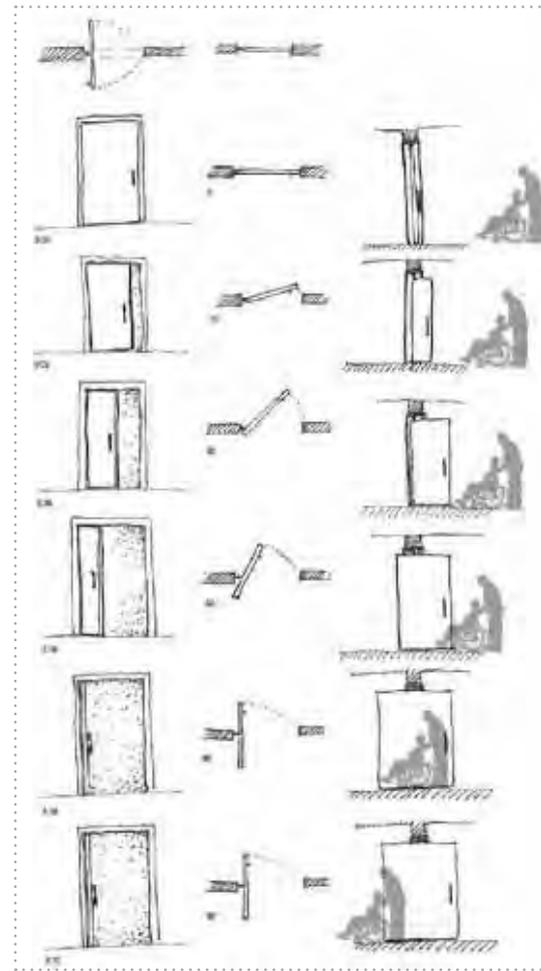
BRAINSTORMING DOOR DESIGNS



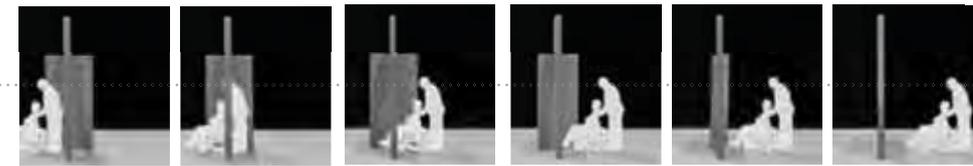
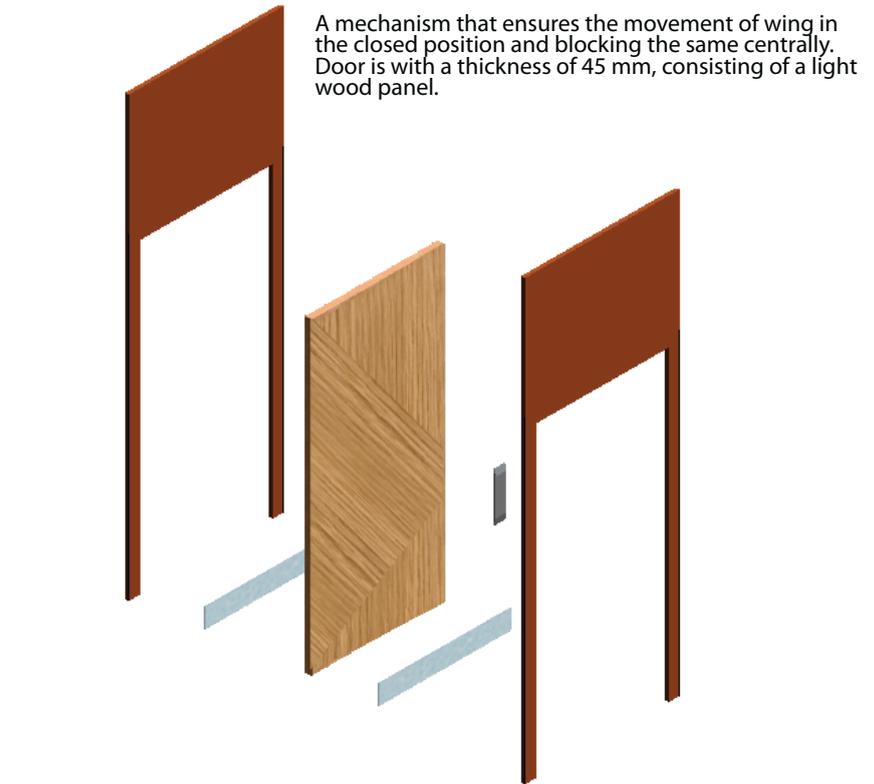
WHY THIS DESIGN?

- Practical mechanism and space saving: the movement of wing rotation and translation, during the opening and / or closure, reduced overall dimensions so as to make small rooms accessible. The operation is as easy as pushing one of any door swing.
- Opening on both sides allows easy access of enter and exit of the same room by simply pushing the door and then close it with ease. Very practical in case of emergency.
- No sharp edges make the door more suitable for environments where the sanitation requirements involving fast and frequent washings as Special Care Unit spaces.
- Meet the need of confined person in a wheelchair or with walking difficulties that may enter / exit the same space by simply pushing the door and then close it with ease.

DOOR TRANSITION



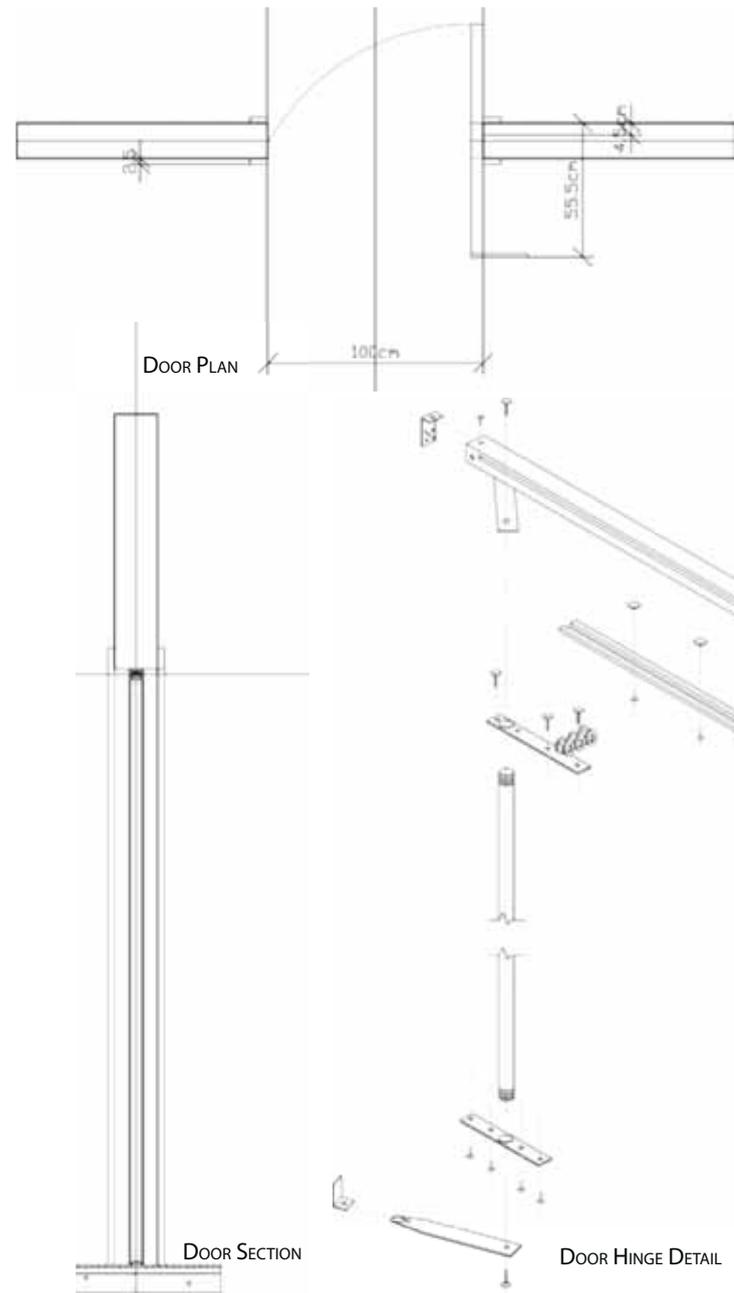
DETAILED COMPONENTS



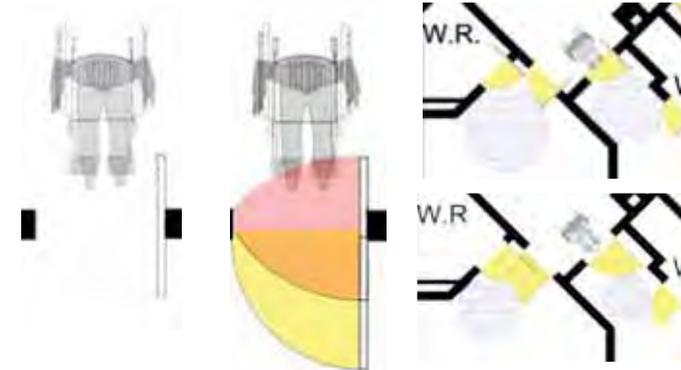
DOOR ELEVATIONS



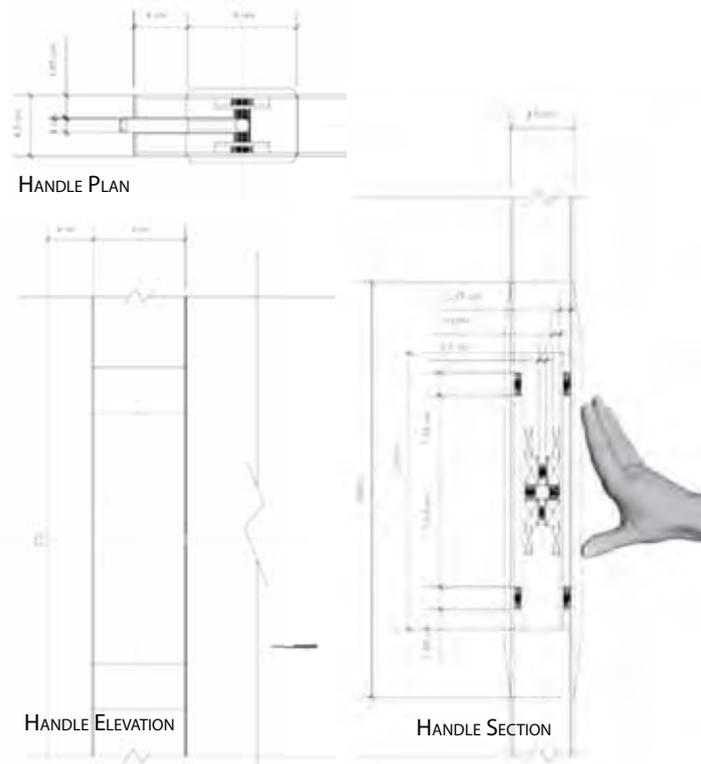
DETAILS DRAWING



DIFFERENCE BETWEEN REGULAR DOOR AND PROPOSED DOOR



The Doorknob is designed to meet easiness of door mechanism. It only needs pushing from both sides. No need for a secondary operation such as grabbing or turning. The doorknob covered with silicon to minimize any accidental causes as well as it is added with a luminous material that glows at night to be sighted easily.



Dinning room perspective



Nursing station perspective



The world is reflected in the body and the body is projected onto the world. We remember through our bodies as much as we remember through our nervous system and brain.

-EDWARD S. CASEY

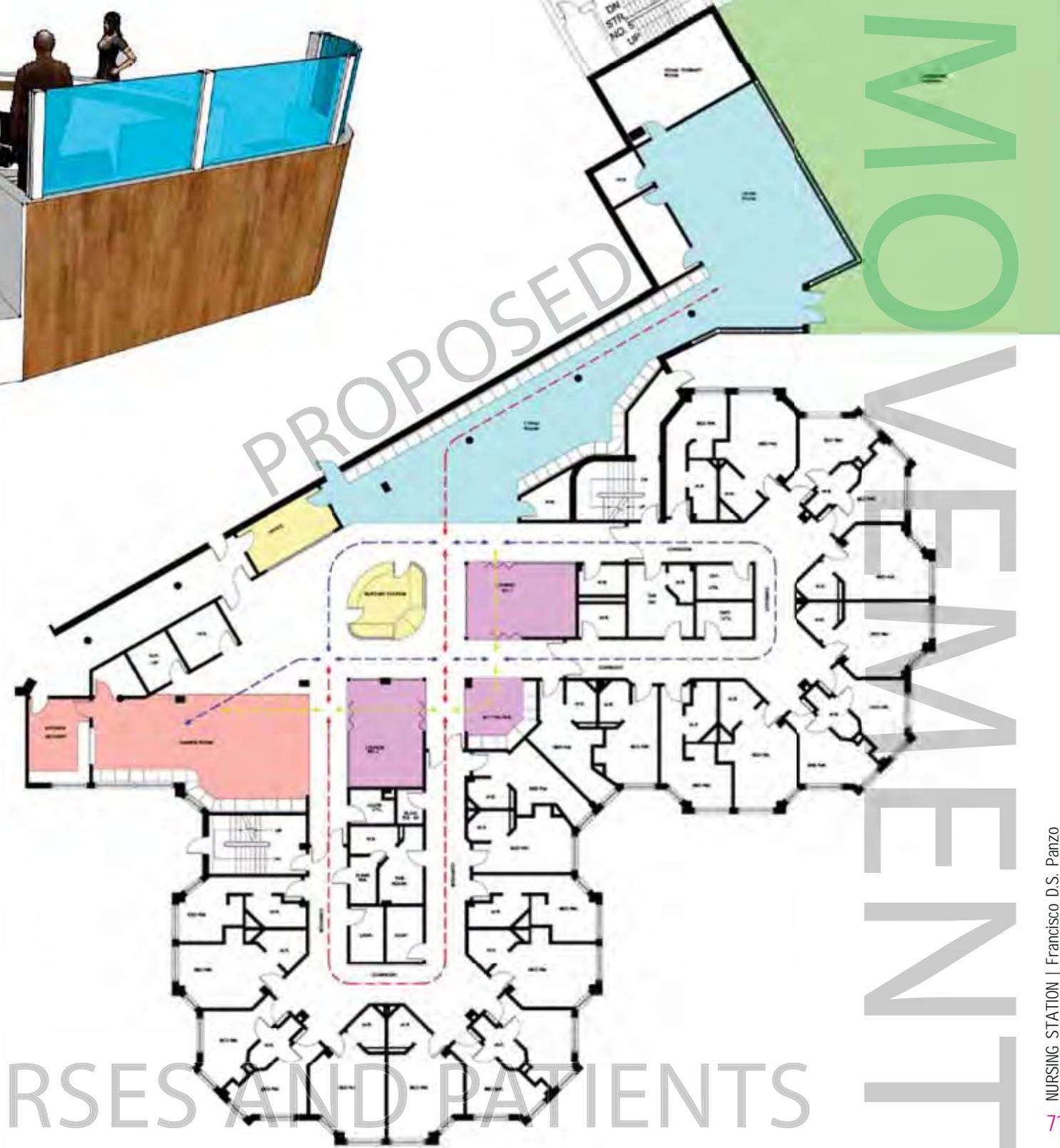
NURSING STATION

Francisco D.S. Panzo



DESCRIPTION

The NURSING STATION project focuses on both the residents and the staff of a nursing home facility. The purpose of the NURSING STATION design is to establish interaction between the nurses and the patients, by attempting to eliminate any barrier between them, that might contribute to the creation of the "Us against Them" scenario. Patients in a nursing home tend to get attached to the people that take care of them, therefore resulting in them gathering around the nursing station with the sole purpose of interacting with the nurses that are working. On this design proposal, the NURSING STATION is placed in the middle, as if it was an island, because it allows the patients to move around it freely. The placement of the NURSING STATION in a high traffic area of the facility allows for the ease of movement for the patients as they perform their daily walking routine. For the Nurses, this placement allows them to have a clear 360 degrees view of all the public spaces within the facility such as the proposed LOUNGE areas, DINNING ROOMS, and LIVING ROOMS. The proposed nursing station also has a seat for the patients to rest and while resting have a conversation with the working nurses.



INTERACTION BETWEEN NURSES AND PATIENTS



Stage 1
Design of an independent NURSING STATION with a square corner. Created a rigid transition for the patients moving from one hallway to the other.



Stage 3
The creation of a bench within the NURSING STATION curved corner allowed for the patients to sit and rest when tired and also allowed for the interaction of the nurses with the patients.



Stage 2
Curving the corner of the NURSING STATION allows for a smooth transition from the patients while turning from one hallway to the other.



Stage 4
The glass protection of the NURSING STATION was instilled with the intention of protection for the nurses from the patients in the event of an aggression episode.

NURSING STATION

ad[DRESSING] THE WALL

James Strachan

[ADDRESSING] DEMENTIA

[ADDRESSING] - making a statement directed to a particular group

ad[DRESSING] - to embellish or disguise

[ADDRESS]ing - creating a sense of place and where a person is located

addressing - to direct to attention, deal with and discuss

Addressing the current state of out-of-date, long-term dementia care facilities in Ontario, it becomes apparent that one of the most pressing issues is **[ADDRESS]ing** the often ambiguous and repetitive nature of facility design. Currently, patients at Cumber Lodge long-term care facility in Toronto are confined within 289m of ambiguous linear- wall and public space that prove to be disorienting to patients who attempt to navigate themselves through the facility space. To **address** this problem, my design proposal is to transform the large facility "space" into distinct "places" by **ad[DRESSING]** the wall to create multisensory cues, neighbourhood blocks and landmarks for way finding.

Since long-term care facilities operate within government institutional settings and have limited funding, it becomes obvious that one of the biggest design obstacles to overcome is the budget itself. To **address** potential budget constraints that might slow down or limit the project design, the first phase of the project will be to purchase the necessary building materials, predominantly wood, and build with dimensional lumber a number of pavilions around the city of Toronto. This phase serves two purposes. The first purpose is to generate public awareness for dementia care and generate extra revenue for the project through donations. The pavilions can be fitted to serve multiple uses on site, while simultaneously demonstrating and informing donors, through materials and architectural drawings, the current needs of Cumber Lodge and how their donations will be used to improve the quality of life for patients inside the facility. Secondly, this phase allows the lumber to naturally weather and age, giving the wood character through variations of tone and texture that will be advantageous in creating distinct places within the facility. While waiting for funding for later phases, the pavilions can be moved and reconstructed in multiple different sites before finding a permanent home in the facility. In this way, the architecture becomes analogous to the patients themselves.

The second phase of the project is the **ad[DRESSING]** of the interior walls of the facility. This phase of construction attempts to engage the patients' remaining cognitive abilities by establishing distinct spatial cues or landmarks in the facility and, through materials, develop a visual and physical tactile narrative to engage the remaining patients' sensory memory.



The bedrooms are clad in varying types of wood to create distinct neighbourhood blocks that visually read as semi-detached housing with distinct regional vernaculars. Simplifying the ambiguous facility space to neighbourhoods of semi-detached housing gives the patients a sense of home, while reducing the chance of disorientation, since finding one's own home is simplified to a problem-solving task of choosing between left or right door. Doors and thresholds are coded throughout the facility with specific colors and shapes that act as visual cues for cognitive mapping to reduce the chance of disorientation.

North = purple, circle

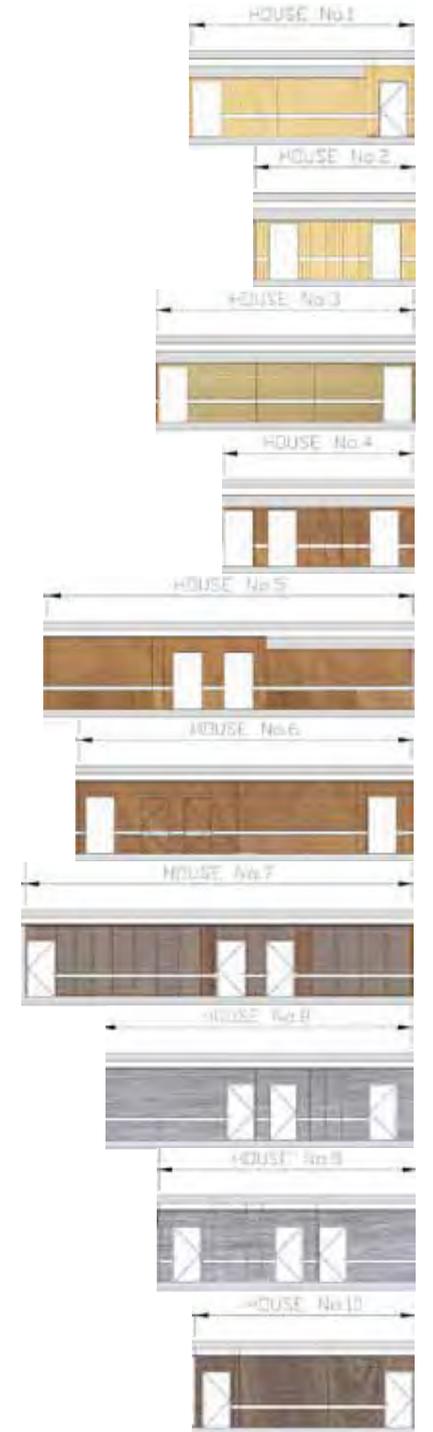
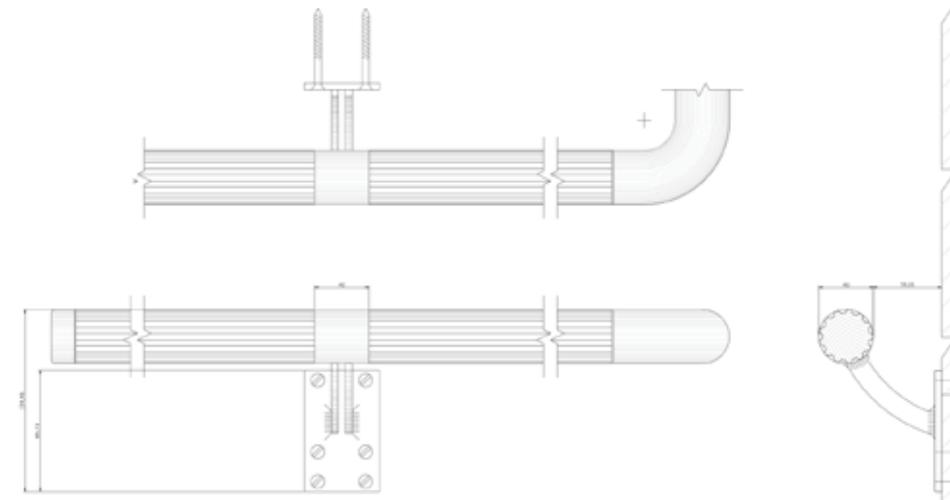
East = orange, 1/4 circle + 1/4 square

South = yellow, square

West = green, 1/2 circle + 1/2 square

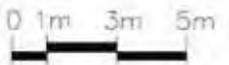
Further distinction is given to the "wood blocks" with a progressive transition of finishes that range from smooth-to-rough, light-to-dark and varying profiles that give each "house" a unique look and feel. Staff doors and storage are disguised behind the wall system. Washrooms are given the most distinction since they would be the most distressing for a patient if they could not be found when urgently needed. Washrooms are prominently placed and uniquely constructed from the off cuts of all the other walls and given a lightly torched finish for visual distinction.

Sitting areas have been added in the corridors for patients seeking rest or seclusion and handrails, like the thresholds and walls, are specially detailed and shaped to be visually prominent and stimulate sensory memory through tactile cuing of thumbs and fingers with textured patterns. These shapes and textures can be easily achieved using typical processes common in architectural moulding, baluster and picture frame pressing industries.



CORRIDOR AXONOMETRIC

- 1] Walnut Batten Wall
- 2] Storage
- 3] Distinct Scented Public Rooms (Vanilla, Melon, Mango Etc.)
- 4] North Magenta Door
- 5] North Circle Shaped Threshold
- 6] Walnut Block Wall
- 7] Wall Light
- 8] Light Blue Washroom Door
- 9] Hidden Storage
- 10] Cushioned Resting Wall
- 11] Translucent Suspended Glass Ceiling
- 12] Irregular Shiplap Wood Washroom Wall With Torched Finish
- 13] Douglas Fir Screen Wall
- 14] Colored Led "Sky" Lighting System
- 15] Resting Area
- 16] Square Profile, Textured Handrail
- 17] Circle Profile, Textured Handrail
- 18] South Yellow Door With Operable Vents
- 19] Wall Light Fixture
- 20] Hidden Staff Door
- 21] Operable Ventilated Window
- 22] Cork Floor
- 23] Rustic Vee Douglas Fir Block Wall
- 24] Tongue And Groove Douglas Fir Block Wall
- 25] Vista
- 26] Rustic Vee Douglas Fir Block Ceiling
- 27] East Orange Door



WINDOW SPACE

Katya Tchouprikova



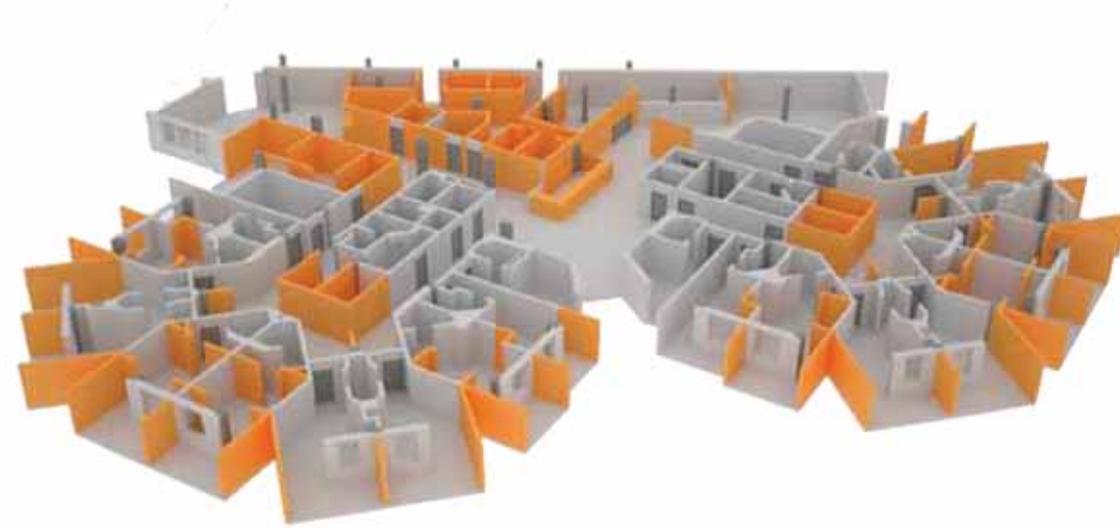
Cummer Lodge Special Care Units (SCU) are used for a long term living, usually lasting several years.

For the patients, it is a place where they need to feel at home. I have decided to primarily focus on the bedroom space, although there are major plan modifications as well.



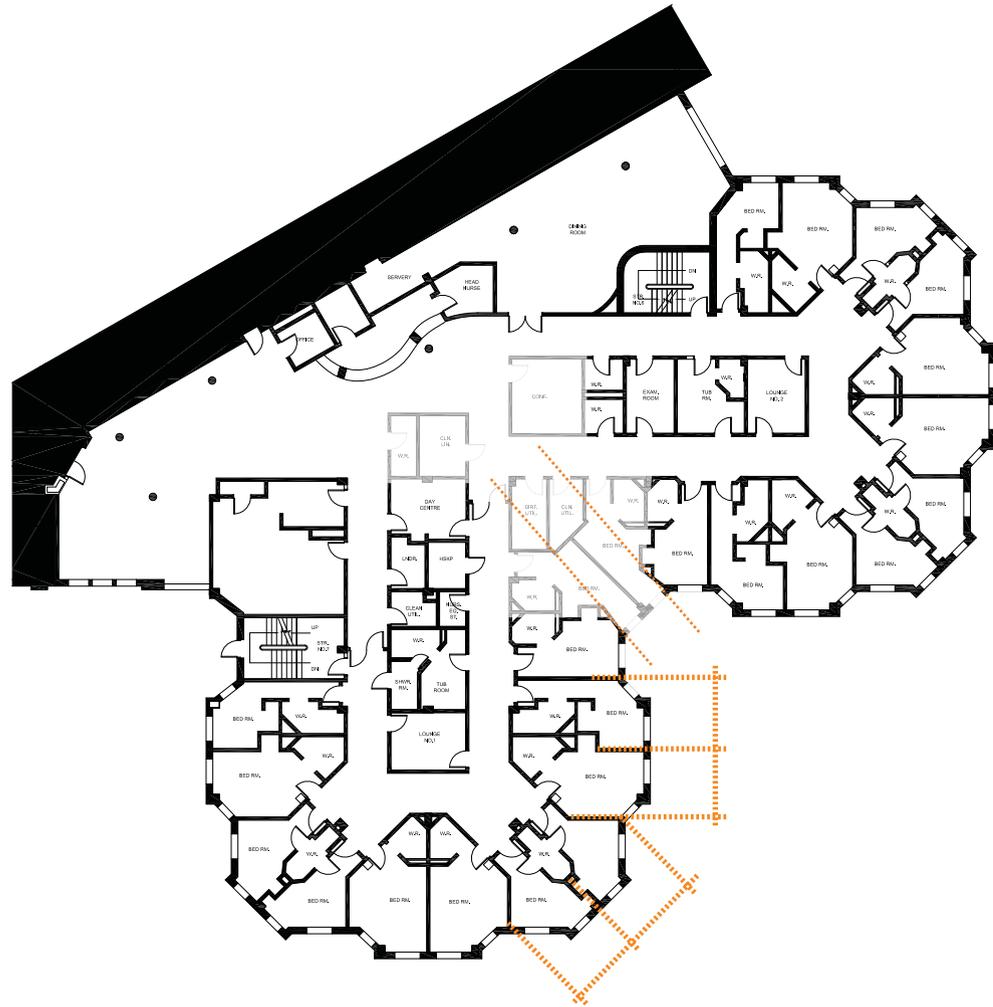
Some existing units are extremely narrow and by their shape, are unfit for a long-term living care. I propose to replace these by units in another location and modify the large central area (as well as dining room) and make commonspace more 'contained' and efficient.

Currently, many units are irregularly shaped and their general triangular spatial base creates an uncomfortable feeling. I have decided to extend them to the beautiful exterior natural environment.



My general approach is to have an Alzheimer's concept for the actual building, which gets partially stripped down and re-shaped to open for new experiences for the dwellers.

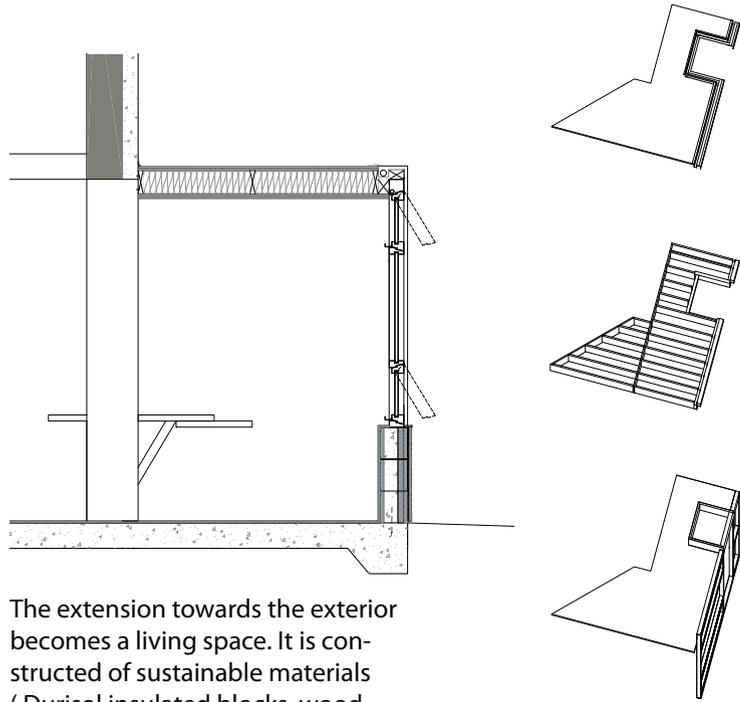
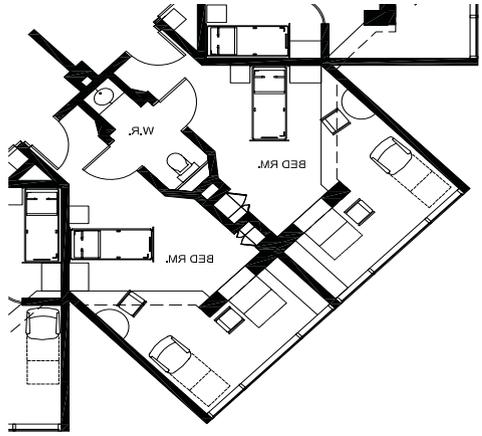
This way, the building becomes a harmonious extension of the patients' sense, and enables them to be creatively focused on a present moment.



The major features of the plan are the dining room skylight area, two fireplaces in common seating areas and a water fountain installation next to the view corridor.

All of these areas are for socializing and common events.

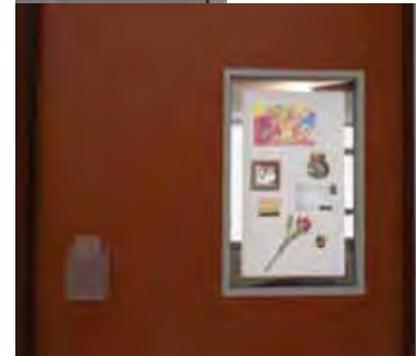
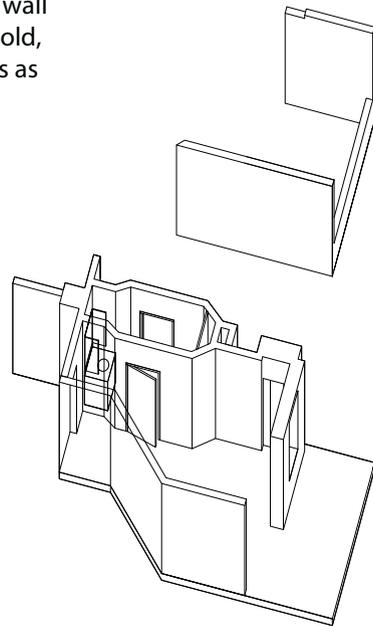




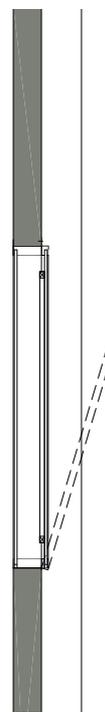
Paradoxically, the specific program of Cumber Lodge is a combination of a hospital and a home, which entails a double-layered message through the design.

I approach its architecture in a way that does not infringe on the practical necessities of the existing program, yet releases some of the mental pressure associated with hospital-home environment.

The extension towards the exterior becomes a living space. It is constructed of sustainable materials (Durisol insulated blocks, wood framing as well as wood siding on the inside). The existing exterior wall is partially kept as a spatial treshold, and the new window design acts as a new connection.



Often, patients forget the location of their room and enter someone else's territory. A special, very important feature is an identification box that allows for placing favourite objects. It has slightly frosted glass and the objects are placed on stretched canvas.



The bedroom's main concept is about containing and layering the interior space, as well as allowing a good fresh airflow. The unit features permanent adjustable furniture . As well, patients can bring their own furniture to make the living space feel like home. Furniture is composed to allow for a family member or a visitor to stay with the patient periodically. Emotional connection is critical for a well-being of someone with demetial.



NAVIGATING HOME

Emily Webster Mason

Cummer Lodge's Special Care Unit has adapted over the years to suit the ever changing needs of residents, healthcare and program advancements, as well as Ministry of Health and Long Term Care (MHLTC) standards. The unit has dedicated staff that work hard to create a wonderful environment for the residents and their families. The current condition of the unit is tired and inefficient. This project will address current issues identified by the Cummer Lodge staff and others observed after visiting the facility. The general intention is to provide a better functioning unit with an improved quality of life for residents, an inviting environment to encourage family visits, and a safe and happy work environment for staff.

PHASED IMPLEMENTATION

The impression given by Cummer Lodge Staff was that residents living in the Special Care Unit do not spend a lot of time in their rooms. With this understanding I approached this project with the idea of focusing the intervention of the shared spaces that impact all user groups, residents, families and staff. The first phase would address the resident rooms with minimal intervention. The second phase requires major intervention of the common areas and support spaces. The second phase would also include the exterior garden space.



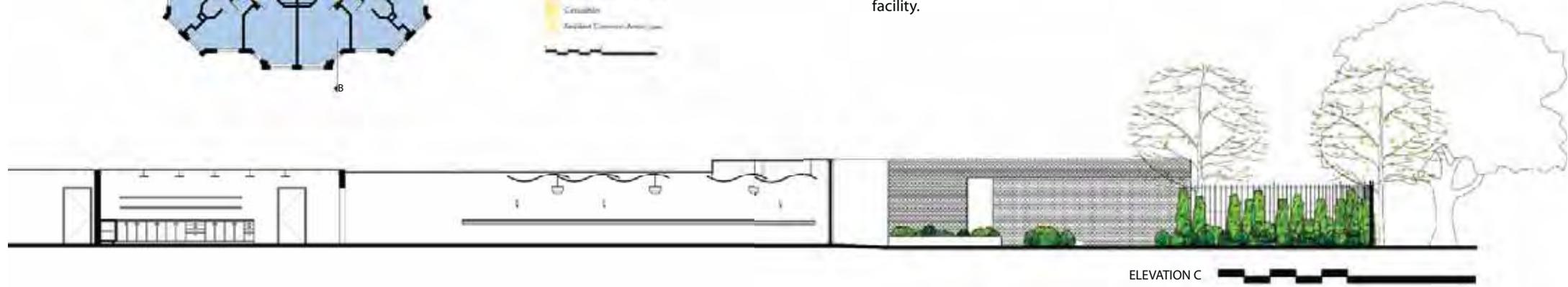
CIRCULATION + DOORS

The new layout strives to address exit seeking behavior and the desire of residents to wander. The entrance to the facility is hidden from long views with a curved partition. If a resident wanders to the end of this corridor they are guided by the curve around and reoriented the other direction. Doors that residents should not have access to will be addressed by painting out the door and frame the same colour as the wall which allows their eye to flow past the door and onto the next. Doors to shared spaces will be highlighted with a contrasting door & frame. In most cases a transom window (hopper opening) has been included in the public and resident room doors. The transom allows additional light and air to filter through the facility without impacting privacy. In rooms like washrooms that have privacy concern the transom glass would be frosted.

FLEXIBILITY

Movable Walls : In a number of rooms movable walls have been provided to separate large areas into smaller spaces. For example the dining room can be separated in two areas. In one part of the room residents could be free to roam while in the other area an activity could be going on.

Resident Room Doors : I am proposing the facility introduce a 'Dutch' style door that can be opened in two parts. The 'Dutch' door could allow the bottom portion to be closed. This allows residents to choose their level of privacy. When the top part of the door is open air circulation throughout the facility.



PHASE 1

Patient Rooms: Minimal Intervention

The first phase of the proposed project would be to improve the residents rooms with minimal intervention through finishes and simple upgrades. Protocol dictates that resident's personal items are locked up to prevent stealing or paranoid behavior. The current layouts are angular to provide each room with some natural light. These characteristics both limit the ability of one to personalize the space and only reinforce this project's approach of focusing on the shared spaces.

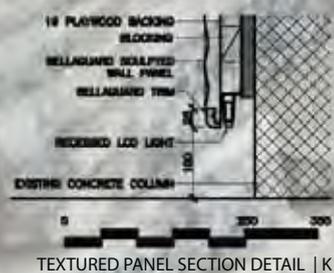
Each resident room has access to a washroom which does not appear to meet current accessibility standards required by the MHLTC. As part of phase 1, patient washrooms would be refinished and improved in any way to increase accessibility, durability and aesthetics.

PHASE 2

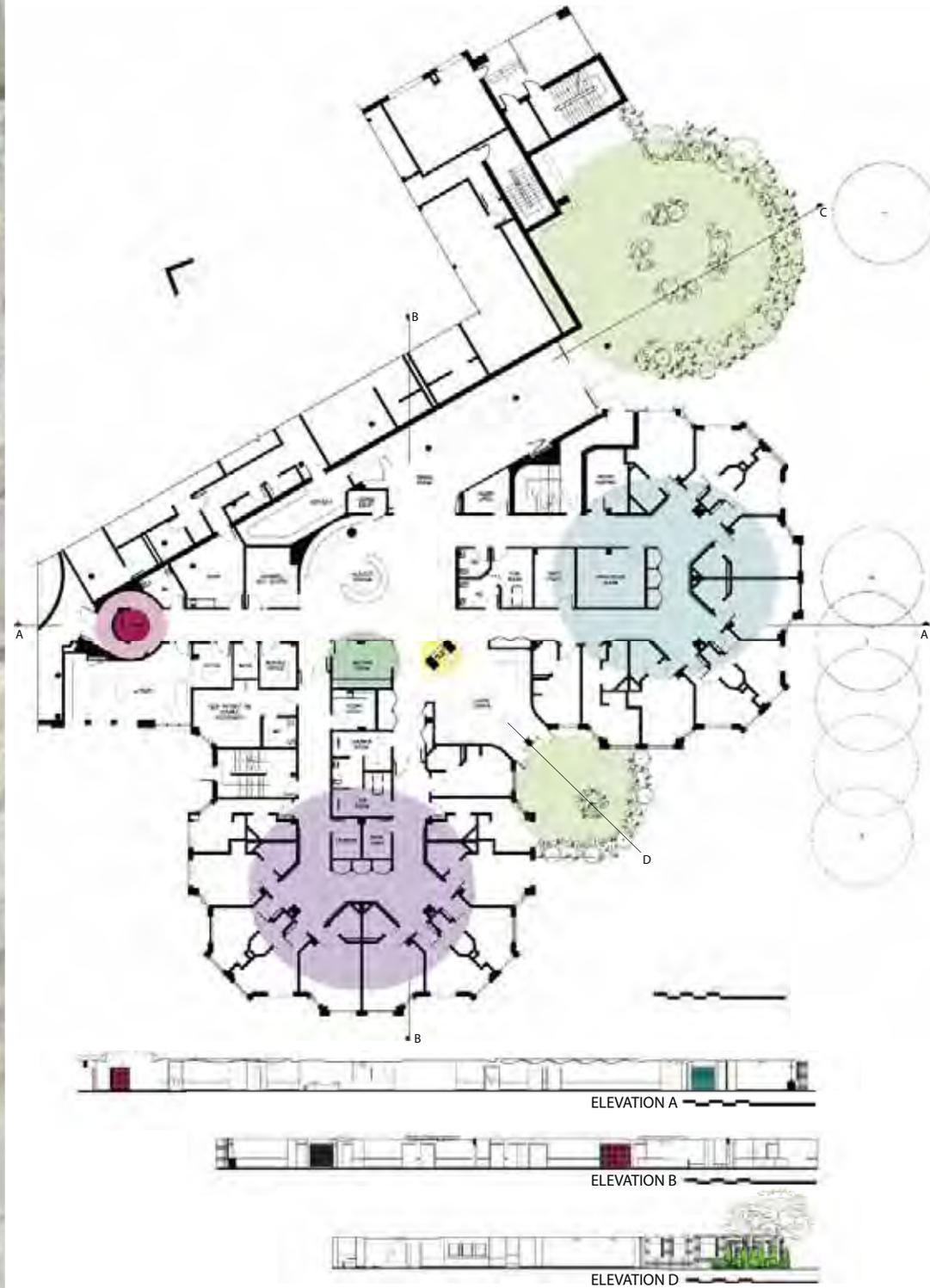
Common Areas and Support Space: Major Intervention

The Special Care Unit is a locked unit where residents have no unsupervised access outside their unit. Shared spaces therefore become very important as it is where the patients really live. These spaces are where they interact with other residents, staff and sometimes family members; they participate in organized activities, share meals and ideally get better in some capacity. The proposed redesign provides better use of the space with flexibility built in. All existing rooms with the exception of the doctor's office have been maintained in the new design. Three single bedrooms were removed from the plan and a new shared room was provided adjacent to the West exit stair. This leaves the facility short 1 bed. The two rooms adjacent to the new living room lounge have been increased in size and if necessary could accommodate a second bed each. In most cases room areas increased slightly. One of the resident lounges has been converted into a 'snoezelen' room. Additional spaces for storage and a staff were also provided.

Background Concept Images
 Wire | <http://www.flickrriver.com/photos/tags/infinitysymbol/interesting/>
 Slinky | http://www.flickr.com/photos/shellys-blogger/galleries/72157622410918292#photo_3412673793



TEXTURED PANEL SECTION DETAIL | K



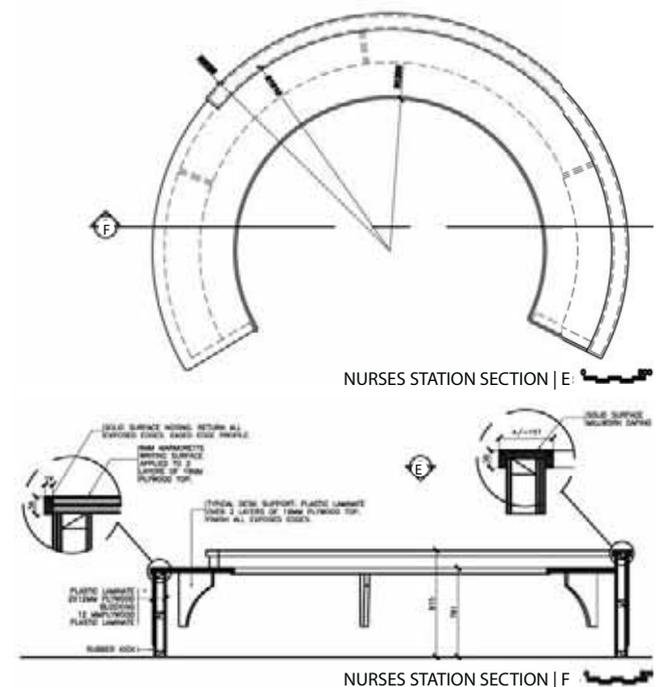
NURSES STATION

The nurses' station is designed to be completely open to address the "us vs them" issue created with the existing large desk and glass enclosure. The circular desk area can be used by residents or staff at any time. This proposed design has a significant impact on the operations side of the nurses' position. Technology can either be securely integrated into the desk or mobile computers or tablets could be used. Files and office supplies can be stored securely in adjacent corridor cabinets for easy access. If a nurse requires private space to do their work, they are able to use the meeting or staff room. The surrounding area is open and inviting with soft seating, a built in banquet and café tables all within view of the central fireplace.

VISUAL & TEXTURAL ORIENTATION

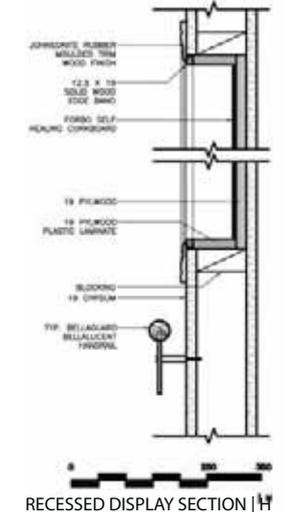
Wandering with purpose serves residents with dementia well. This project presents visual and textural cues to orient and give purpose to the wandering while also helping visitors to identify the sometimes confusing looping of corridors. The colours identified in the drawings serve to show a strong contrast between the areas for presentation purposes only. These colours would be replaced with soothing coloured finishes best suited for residents and the facility. The 'red' zone identifies the entrance corridor where the existing piano sits in the alcove outside the activity room. The 'turquoise' and 'purple' zones relate to the resident room corridors. At the end of each corridor *Bellaguard* textured panels provide tactile stimulation and orientation. The panels are floating off the walls with a recessed LED light running along the bottom to function as a night light or guide when light levels are lowered. At each end of the residential wings the 2 column have been extended to recess a light as a beacon at the end of the hall. Curving ceiling panels and designed bulkheads with various lighting creates interest and connection between the zones.

The fireplace is the centre of the facility allowing residents to look into the 3 zones described. The fireplace separates two of the three main living areas and is steps away from the open dining space. The fireplace would be finished in a natural stones which would also create some textural stimulation for residents.



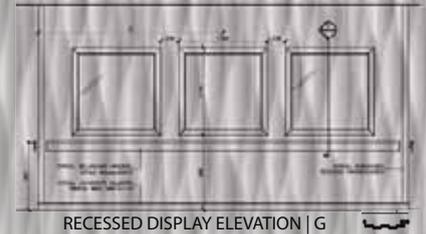
NURSES STATION SECTION | E

NURSES STATION SECTION | F

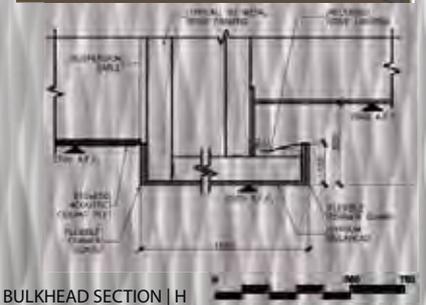


RECESSED DISPLAY SECTION | H

Background Concept Images :
 Stone | <http://www.salvo.co.uk/gloUCEstershire/stone/forsale.html>
 Texture | <http://www.bellagard.com/wall-panels/sculpted-panels/patterns-sculptedpatterns.asp>



RECESSED DISPLAY ELEVATION | G



BULKHEAD SECTION | I

A FEELING OF HOME

The current facility has attempted every effort to make this space wonderful for everyone. The proposed design provides strong durable finishes that resemble residential finishing. For example rubber base is specified in a moulded style with a warm wood finish. Walls are protected with *Scuffmaster* paint, handrails and recessed corner guards, abstract nature scenes used as glass walls and artwork. Information and signage can be framed behind laminated tempered glass frames and installed in recess pockets throughout. Lighting fixtures attempt to be more residential rather than commercial. Full spectrum bulbs with dimmers in some cases are recommended.

ACCESS TO EXTERIOR SPACES

Studies show that increased exposure to nature can have stress relieving and healing effect on the body. As residents are secured in the facility any opportunity for outdoor interaction could only benefit and expand their space. This proposed plan redesigns the current outdoor space off the dining room with a circular plan to facilitate wandering. A semi-private seating area in the centre of the courtyard is also provided. A secondary garden area has been introduced is off the main living room. Both spaces are lined with shrubs and trees to provide a natural barrier. A more traditional fence would maintain security but remain invisible be hidden in the landscaping. When the landscaping matures it would be the intention that patients could access these areas unsupervised.



Reflected Ceiling Plan

CONCLUSION

This intervention to Cumber Lodge is large and will require coordination with operations and staff in order to be successful. The space is expanded by maximizing the existing area and creating spaces that can be flexible. In the warmer months the living areas further expand into the two gardens off major shared spaces. The core of this project is the circulation that links all these spaces together. The circulation allows continual movement through the space with points of interested highlighted along the way in the use of textured panels, colour, and ceiling design. The proposed design offers patients a number of rooms to spend their time in all with flexible conditions and built in storage. The end result will provide the patients a place that feels like home, the staff a great place work, and visitors a warm and inviting place to interact with residents.

DESIGN IDEAS TO IMPLEMENTED WITH MINIMAL BUDGET

1. Replace existing Doors and Frames to increase light, air circulation and give residents flexible privacy levels.
2. Identify corridors by applying Zone Identification with textured wall panels.
3. Create large spaces that can be divided with moveable walls to create more program flexibility.
4. Build in laundry carts storage to keep corridors clear.
5. Upgrade finishes to warmer more durable solutions.

FEELING HOME

Natalia Woldarsky Meneses

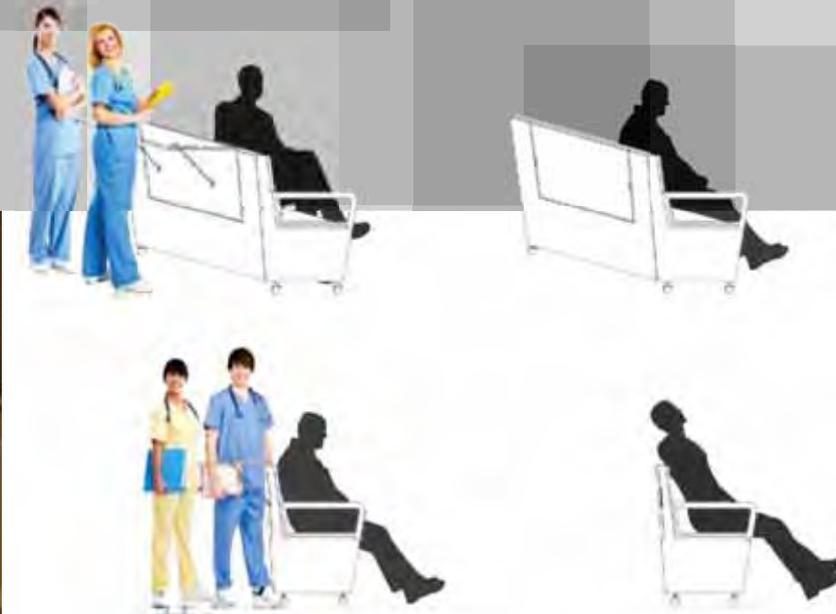


- 1 - Entry vestibule
- 2 - Common Areas: 2a - Major Common Room
2b - Piazza Common Space
2c - Minor Common Areas
- 3 - Staff lounge
- 4 - Nurses' Office
- 5 - Enclosed private room/activity room
- 6 - Existing circulation
- 7 - Existing room configuration
- 8 - Services and facilities
- 9 - Dining room
- 10 - Servery
- 11 - Garden space
- 12 - Resident vegetable garden
- 13 - Storage closet for mobile unit
- * Access to exterior

MOBILE SPACES

These units are for both residents and nurses in an attempt to bring the two together. The units allow for seating but also have a work top and storage drawer built in.

The table surfaces can be used as work spaces for nurses or as activity space for residents. A storage closet was designed to house the units when not in use.

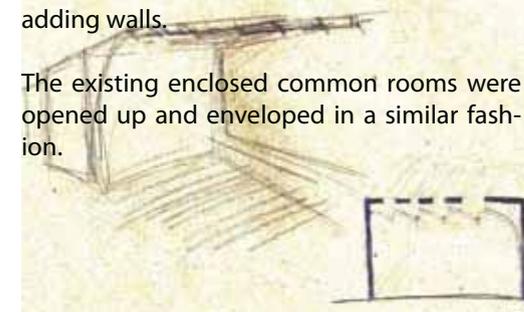


COMMON AREAS

The existing common area was undefined and lacked a sense of "room". Other common rooms were fully enclosed and were under utilized.

In designing these spaces, the intention was to create a sense of place by better defining the spaces. The wall, ceiling and floor are wrapped in one material in order to create a room without adding walls.

The existing enclosed common rooms were opened up and enveloped in a similar fashion.

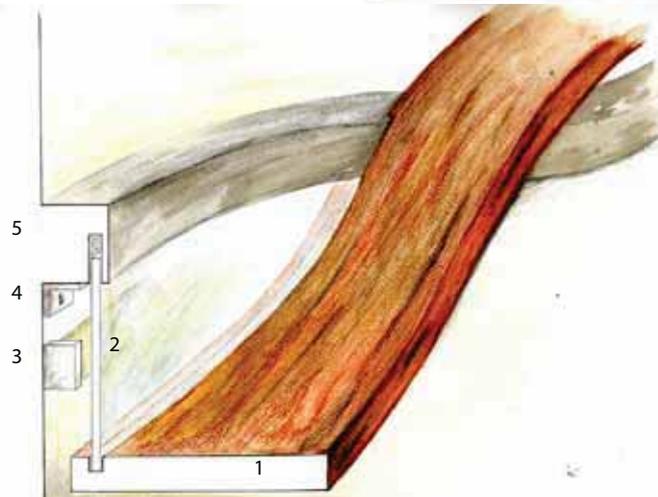
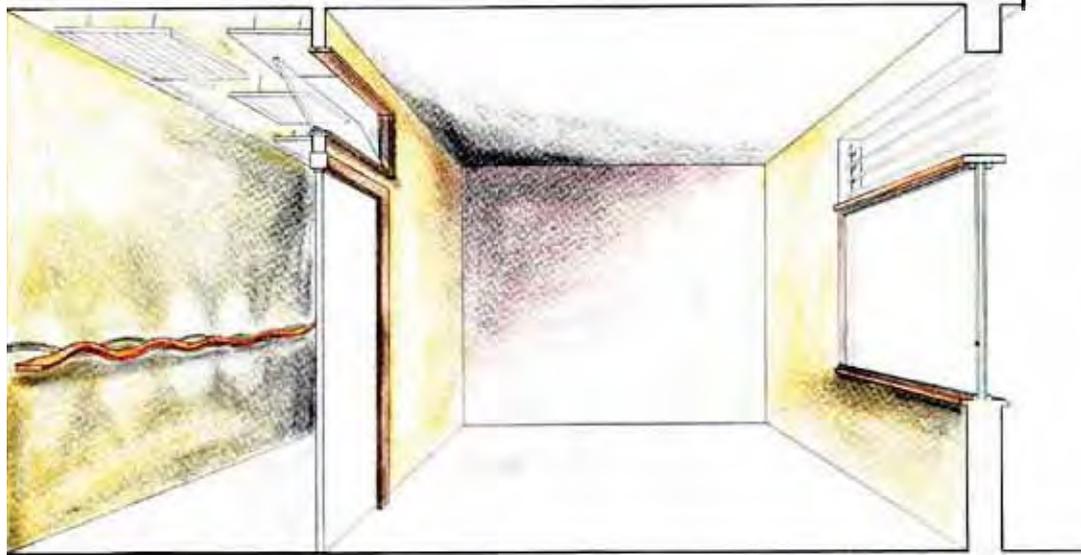


The handrail was chosen as a focus element for design because of its potential to create a heightened tactile experience.

The design concept for the handrail was to create a changing landscape. This early draft of the handrail embodied the concept of rhythm and movement. It also incorporated lighting within the design of the handrail.



Handrail | Detail



The first draft of the handrail had a consistent pattern that wrapped the facility. Made of wood and metal sections, each had an opposing rhythm to the other. At their crossing, a translucent panel concealed a light.

- 1 - Curved wood section
- 2 - Translucent panel
- 3 - Light fixture fasten to wall
- 4 - Metal bracket
- 5 - Metal extrusion; in opposing rhythm of wood, it holds translucent panel in place. Fastened to existing wall.

HANDRAIL SYSTEM= 1+1+1

One installation system; and 3 possible handrail profiles. A standard fastening system allows for gradual implementation, variation of configurations, and constant experimentation.

The tactile experience is in the touch. Each handrail section has a change in profile that cannot be seen, only experienced as one moves along side.

There is a SURPRISE tactile experience as a person travels. The unexpected change in rhythm facilitates movement.

SLOW - SOFT

A gradual change in curvature for a smooth and steady pace.



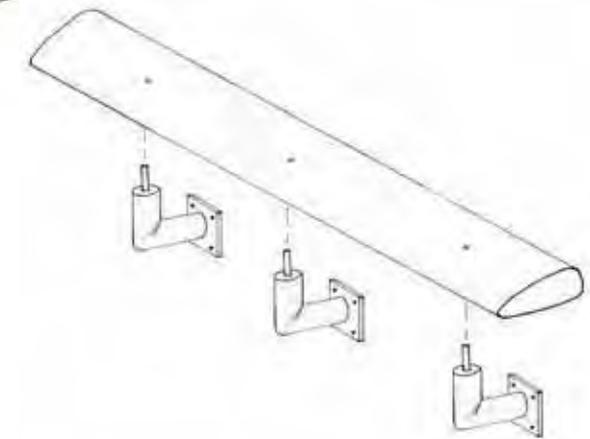
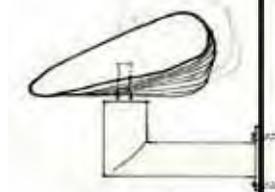
FAST - HARD

An irregular change in curve profile for the unpredictable.



THE MIDDLE WAY

A consistent curvature for a steady walk.

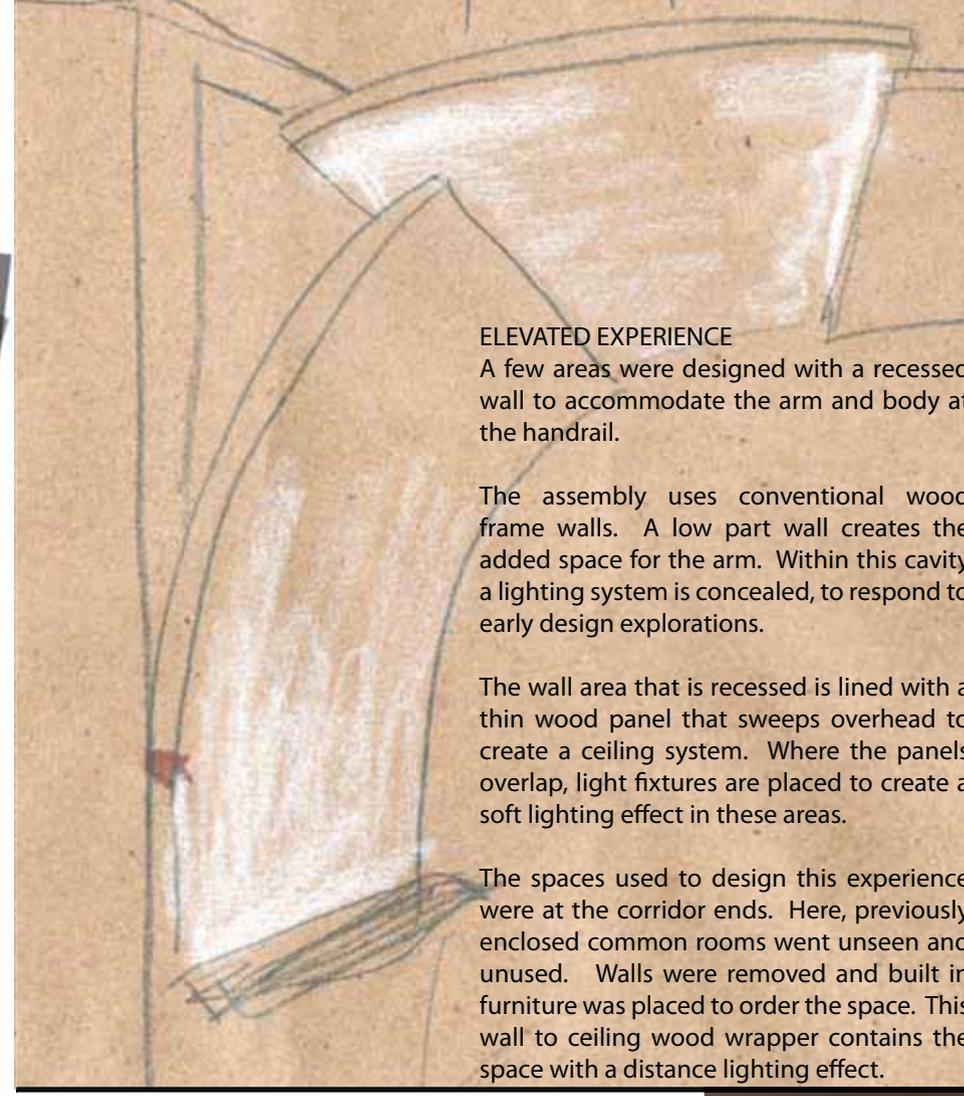




EXPERIMENTATION

Varying widths of the handrail profile were modelled and tested for comfort. In this process it was evident that as the hand moved to accommodate more material, the arm also adjusted itself.

The potential to push the design further was clear; how could the entire arm or body be accommodated as one travels on this moving pathway.



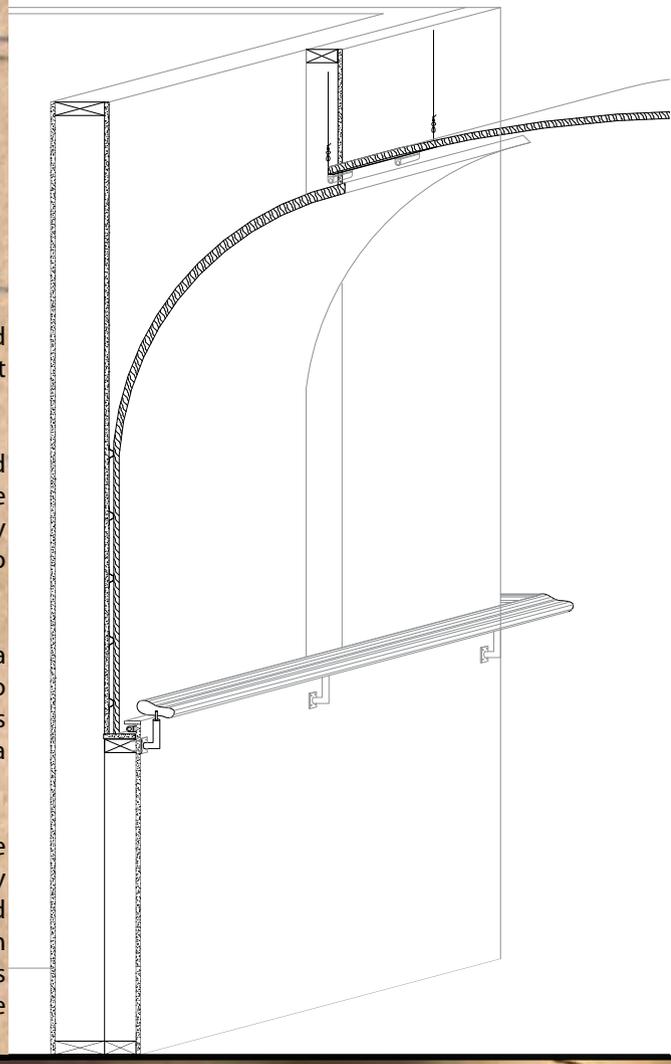
ELEVATED EXPERIENCE

A few areas were designed with a recessed wall to accommodate the arm and body at the handrail.

The assembly uses conventional wood frame walls. A low part wall creates the added space for the arm. Within this cavity a lighting system is concealed, to respond to early design explorations.

The wall area that is recessed is lined with a thin wood panel that sweeps overhead to create a ceiling system. Where the panels overlap, light fixtures are placed to create a soft lighting effect in these areas.

The spaces used to design this experience were at the corridor ends. Here, previously enclosed common rooms went unseen and unused. Walls were removed and built in furniture was placed to order the space. This wall to ceiling wood wrapper contains the space with a distance lighting effect.



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glossary

AGENCY The power to act on behalf of someone else, or on one's own behalf.

AGENT A person or business authorized to act on another's behalf.

AMYGDALA Regions of the brain responsible for memory of emotional reactions; it is the least compromised area of the brain damaged by Alzheimer's disease and therefore has the potential of being activated through architecture and other sensory stimuli.

CAMOUFLAGED EXIT Exits leading outside the secured facilities need to blend in with color and material with adjacent walls to reduce patients' exit seeking tendencies.

CCAC (COMMUNITY CARE ACCESS CENTER) A group of 14 organizations, across Ontario, funded by the LHIN through the Ministry of Health Ontario. Each CCAC is staffed by professionals who assess needs, determine requirements for care, answer questions and develop a customized care plan that meets individual needs. CCAC will arrange for quality health-care professionals to provide a range of care and supportive services to help support patients at home and help them enjoy the best possible quality of life. If it becomes too difficult for patients to live independently at home, CCAC will provide information about long-term care options.

CIRCADIAN RHYTHM A psychological, biological and physiological period that closely approximates a day.

CIRCULATION In architecture, the term alludes to the means and manner in which people move through space; examples of circulation elements are staircases, hallways and elevators.

COGNITIVE MAPPING A neuroscience term describing the process of acquiring, coding, storing, recalling and decoding information about daily spatial phenomena and orientation in space.

CUE A sensory memory trigger that can help Alzheimer's and Dementia patients orient themselves in space; cues can de-

signed to stimulate one or more senses: visual, haptic, tactile, auditory and olfactory.

DEMENTIA A group of symptoms involving the loss of intellectual functions that accompany certain diseases. These symptoms eventually interfere with a person's ability to function independently. A person with dementia will become disoriented, have problems with memory, thinking, and speaking.

EXIT SEEKING BEHAVIOUR Highly motivated, goal-oriented behavior that manifests in the strong desire to leave facilities; one of the reasons for this behavior can be a thought of responsibilities, home, loved ones and daily chores and tasks.

FLORENCE NIGHTINGALE An English nurse known for her involvement in aiding wounded soldiers during the Crimean War (1854-56). She proposed the need to regularly bath patients, to wash soiled linens with boiling water, allow for space between patients, let sunlight and fresh air into wards. She became an advocate for hospital reform and a supporter of British architect Henry Currey, who stressed the pavilion principle, which emphasized ventilation, airiness and sunlight. Nightingale laid the foundations for modern nursing. –Sternberg, 224.

LHIN Local Health Integrated Network. Created by the Ontario government in March 2006, we are 14 not-for-profit corporations who work with local health providers and community members to determine the health service priorities of our regions. As Local Health Integration Networks (LHINs), we plan, integrate and fund local health services, including: Hospitals, Community Care Access Centers, Community Support Services, Long-term Care, Mental Health and Addictions Services, and Community Health Centers.

LONG-TERM CARE FACILITY Institutional homes that are designed for people who require the availability of 24-hour nursing care and supervision within a secure setting.

LONG-TERM CARE HOME Long-term care homes are designed for people who require the availability of 24-hour nursing care

and supervision within a secure setting. In general, long-term care homes offer higher levels of personal care and support than those typically offered by either retirement homes or supportive housing.

LUX A unit of illuminance, which is the measurement of luminous flux which measures the intensity of illumination spread over an area.

MECHANICAL VENTILATION SYSTEM A system of regulating air quality in space through the use fans, vents or other mechanical equipment to force air in and out of spaces.

MHLTC Ontario's Ministry of Health & Long Term Care

MIND-BODY ARCHITECTURE Architecture designed with an understanding of the important relationship it can have with your mind which influences your physical well-being.

MINISTRY OF HEALTH AND LONG-TERM CARE (MHLTC) DESIGN MANUAL The MHLTC oversees procedures, funding and design of all long term care facilities in Ontario. They have developed design standards that outline facility requirements for new construction and retrofit designs. The current standard Long-Term Care Home Design Manual was revised in 2009 and is organized into the following ten sections;

- Resident Home Areas (RHA)
- Resident Personal Space in the RHA
- Spaces for Activities in the RHA
- Resident Lounge and Program/Activity Space
- Dining Area's and Dietary Service Space
- Resident Community Space
- Environmental Services
- Building Systems
- Other Features

ONTARIO BUILDING CODE (OBC) The OBC is a document that outlines minimum construction and design standards addressing life safety issues. All construction in Ontario must meet these minimum standards. Projects obtain a building permit from the

Ontario government and are then monitored through construction by an inspection process.

PASSIVE VENTILATION DESIGN Relies on the architecture of a space rather than on mechanical systems to move air in, out and through spaces. Specifically, creating a stack effect in a building will allow for hot stale air to rise and exit a building. This can be achieved by creating tall spaces, such as an atrium.

RHA Resident Home Area. An RHA is a unit within a larger facility. The MHLTC has a maximum 32 residents per RHA.

SEQUENCE DESIGN Design that accommodates Alzheimer's and Dementia compromised complex sequence memory involved in such tasks as brushing one's teeth, dressing or cooking; designing for a specific sequence-based task must visually expose all the objects necessary for it in order to trigger the next step necessary for activity.

WANDERING Walking without a seeming aim is a common occurrence in Alzheimer's and Dementia patients; some of the reasons for this is attributed to short-term memory loss where people forget the reason for setting off to walk in the first place, as well as spatial disorientation, agitation and a lack of a meaningful activity; Zeisel attributes wandering to a natural hard-wired human need to explore one's surroundings.

WAY-FINDING Ways in which people orient themselves in spaces; since the area of the brain most affected by Alzheimer's is hippocampus—the one responsible for spatial orientation among other things, it is extremely important to design spaces that rely on other areas of the brain for orientation, like amygdala, which is responsible for emotions.