p 70/74
Image:
http://travel.mongabay.com/malaysia/images/malaysia0465.html
www.mongabay.com

p 72
Image:
http://www.npr.org/templates/story/story.

p 72
Image:
by Harry Opstrup.
http://www.kb.dk/images/billed/2010/okt/billeder/object87976/en/

p 74
Image:
http://www.ridacritter.com/pest/carpants.php

p 74
Image:
http://www.featurepics.com/online/Wood-Structure-1508304.aspx

p 76
Image:
http://www.sharecg.com/v/918/gallery/6/Texture/Fabric

p 81
Image:
Amazonas
http://de.mongabay.com/travel/suriname/p24599p.html

p 81
Image:
Mountain landscape
http:// www.youtube. com/watch?v= dZU4WgHgiY

p 86
Grafic:
Medicinale en rituele planten van Suriname, Tinde van Andel, Sofie Ruysschaert

p 123
Image:
http://alzheimers.about.com/library/blbrain.htm

p 105
Image:
people walking.
http://pakmed.net/ college/forum/?attachment_id=3 6076

p 105
Image:
Suriname market.
http://www.flickr. com/photos/41995916@N00/6435112

p 105
Image: People Gardening.
http://www.voagbr.org/Services/Elderly-Services

p 105
Image:indigenous dance
http://newshopper.sulekha.com/suriname-world-indigenous-day_photo_1459485.htm

p 124
Image:
Alzheimer`s brain waves.
http://kt-clinic.jp/letters/07_eeg.html

p.139
Image:
http://brain .oxfordjournals.org/content/132/1/213/F4.large.jpg

p 163
Image:
http://www. flickr.com/ photos/21319986@N00/136350849/sizes/m/in/photostream/

p 165
Image:
Sensorystudies
-http://www.sensorystudies.orgwordpress/wp-contentup

p 165
Image:
hinese_meridians
- http://en.wikipedia.org/wiki/File: hinese_meridians. PG

p 166
Image:
Sensational smell
-http://paulbarsch.files.wordpress.com/2010/04/sense-of-smell.jpg

p 170
Image:
Elderly toys
-http://www.best-alzheimers-products.com/image-files/bernice-tangle.jpg

p 173
Image:
an be fixed for stretch fabric
-http://www.mayaprzybylski.com/php?storyId=89188490

Insight Series #2

A Haptic Future

Insight Series #2
A Haptic Future

Henri Snel
Head of Master Interior Architecture and Tutor
June 2012

During his stay in Paramaribo, Suriname, Henri Snel became acquainted with the Wiesje foundation. This came about through research he undertook in Paramaribo together with students from the Nola Hatterman Institute during the months of November and December 2011. The study was about ‘haptic perception in relation to the elderly’. Henri Snel is an architect who is researching the subject of ‘Alzheimer and Architecture’ and he is Head of the Interior Architecture Master’s program at the Sandberg Institute in Amsterdam. The conversations that took place during a visit to the foundation’s day-care facilities for elderly with dementia in Paramaribo, following the investigation into haptic observations and

the subsequent interviews with members of the board of the foundation, became the reason for further collaboration.

The following outline describes the background, process and preliminary results, which have been achieved in collaboration with the interior architecture department of the Sandberg Institute. This collaboration has led to a special investigation into 24/7 care for people with dementia in Paramaribo, Suriname, with the objective to become a case study project within the world of dementia care.

Living with dementia

The affliction of people with dementia in the last phase of their lives is a world that becomes progressively smaller. The physical and mental environment seems to slowly fade away, until only the primary senses remain that connect with the world around them. A silent world of listening, watching, feeling, tasting and touching. The process of physical deterioration is natural and requires an environment that is not pri-

marily focused on extending life itself, but on improving its quality. Spaces that lighten and relieve suffering, past the burning sense of alienation.

Authentic experience

The insertion of the new design proposal will – in keeping with the Wiesje foundation philosophy - depend on that which the residents are still able to do. We do not want to create artificial substitutes, but create spaces where authentic experiences are possible, experiences, which address all the senses. The stimulation of the remaining senses (tactile senses) of the residents is a central question within the design research at the interior architecture Master's program at the Sandberg Institute.

Design for all senses

Spatial designers create visual environments; this means that it's important to take into account user-friendliness, multisensory perception and functionality.

Sensory perception

"The senses are peripheral equipment", says neurologist Professor Edward de Haan. "Often a single sense dominates – the chef's tongue, the 'toucher's' skin and the perfumer's nose."[1] But which sense is the most developed in a spatial designer? According to popular belief it's the eyes; creation for 'the lust of the eye', that singular moment which evokes an experience of volatility, while a haptic (sensory) experience is reminiscent of the experience of a temporary linkage. And that's exactly what this research is about: what is the meaning beyond that volatility, which may contribute to a different experience of 'space' than our fleeting contemporary perception. Especially when it concerns people with one or more (mental) limitations, like people with dementia.
Ashely Montagu's says the following about it (1971): "The skin is the oldest and the most sensitive of our organs, our first medium of communication and our most efficient protector […]. Touching is the mother of our senses".

1. Supplement senses interview: hearing seeing, smelling, tasting, touching (NRC summer 2010)

For people with dementia touching is the sense that remains an important, if not the most of important sense to communicate, in the final phase of their life.

The international character and the cultural differences of the students at the Sandberg Institute (7 Students, 7 different countries, 4 different continents) in combination with the intercultural society in Suriname, means that the subject of ‘sensory perception’ can develop a new dimension.

Spatial designer

The spatial designer translates their ideas into form, space, material, light and shadow. All these aspects have a direct link to the senses: seeing, hearing, smelling, tasting, touching, balance. But without this tactility and consideration for the human body and the senses spaces are unreal.

Orientation of the in-between space

The emphasis in the design brief for the ‘Wiesje’ project was not so much on the design of the interior in relation to the patient/resident, but much more on research

and design of the transition areas, or the in-between spaces and the sensory experience thereof. The space that is created between inside and outside, between bedroom and living room, between kitchen and dining room, between living room and garden, specific and non-specific spaces, whereby there was a constant searching for a solution from the available theory, practical examples and the inter-cultural similarities and differences of the future residents of the care institution and the location specific context.

Various studies show that exercise is a very good way to keep people with dementia in a good mental and physical condition[2]. Intensive research was done in order to find a way to stimulate movement in the given location and current architectural intent of KDV Architects. A distinction was made between movement within their own group and movement ‘outside’ their own group.

Research was done into ‘materialized’ transitions that give people with

2. Erik Scherder, dementia and movement

dementia a certain freedom, without being instantly disoriented or putting their safety at risk. A respectful and dignified way to deal with the physical and mental limitations of the future residents was researched. The emphasis was on the use of natural and context related materials for specific areas and transitional spaces. A strong link was made with nature, searching for active walking trails where particular activities can take place. This ‘highway’ connects with each residential group separately. A unique atmosphere is created within each residential group that is linked to a theme garden. The resident has the freedom to wander through the various theme gardens that lead onto the ‘highway’. It stimulates movement, interaction with the other residents and the memory of nature, which is a very important aspect in Suriname. It creates a world that is aptly expressed by architect Aldo van Eyck, architect and advocate for a humane architecture (1981): “Make a small town out of every house, and a big house out of every town”.

This is the ambition we want to achieve in our design proposal for the Wiesje foundation: the creation of a safe sensorial living environment for people with dementia, which enriches the daily life in the last phase of their existence.

Henri Snel, Head of Master Interior Architecture and tutor, June 2012

Contents

Alzheimer’s Centre Suriname

Alzheimer’s

Introduction on Alzheimer’s

The future prospects for Alzheimer’s disease looks bleak. In Western European countries, there is much research into the origin to the disease, but there is very little progress. At the same time the number of cases dramatically increase. The cause of aging is therewith.

There is proportionally much less research on the present and future living conditions than the onset of Alzheimer’s disease. In addition, the current health and socioeconomics are under strong pressure. What does the life of an Alzheimer’s patient admitted to a nursing home about 20 years from now? With this research we would like to contribute to the discussion of the disease in general and generate a possible solution for improving the living situation and residence of Alzheimer patients in the future.

General facts of Alzheimer's disease

Alzheimer's disease (AD), also called, senile dementia of the Alzheimer type, or simply Alzheimer's, is the most common form of dementia. This incurable, degenerative, and terminal disease was first described by German psychiatrist and neuropathologist Alois Alzheimer in 1906 and was named after him. Most often, it is diagnosed in people over 65 years of age, although the less-prevalent early-onset Alzheimer's can occur much earlier. In 2006, there were 26.6 million sufferers worldwide. Alzheimer's is predicted to affect 1 in 85 people globally by 2050.

Although the course of Alzheimer's disease is unique for every individual, there are many common symptoms. The earliest observable symptoms are often mistakenly thought to be 'age-related' concerns, or manifestations of stress. In the early stages,

the most commonly recognized symptom is inability to acquire new memories, such as difficulty in recalling recently observed facts. When AD is suspected, the diagnosis is usually confirmed with behavioral assessments and cognitive tests, often followed by a brain scan if available.

As the disease advances, symptoms include confusion, irritability and aggression, mood swings, language breakdown, long-term memory loss, and the general withdrawal of the sufferer as their senses decline. Gradually, bodily functions are lost, ultimately leading to death. Individual prognosis is difficult to assess, as the duration of the disease varies. AD develops for an indeterminate period of time before becoming fully apparent, and it can progress undiagnosed for years. The mean life expectancy following diagnosis is approximately seven years. Fewer than three percent of individuals live more than fourteen years after diagnosis.

The cause and progression of Alzheimer's disease are not well understood. Research indicates that the disease is associated with plaques and tangles in the brain. Currently used treatments offer a small symptomatic benefit; no treatments to delay or halt the progression of the disease are, as of yet, available. As of 2008, more than 500 clinical trials have been conducted for identification of a possible treatment for AD, but it is unknown if any of the tested intervention strategies will show promising results. A number of noninvasive, life-style habits have been suggested for the prevention of Alzheimer's disease, but there is a lack of adequate evidence for a link between these recommendations and reduced degeneration. Mental stimulation, exercise, and a balanced diet are suggested, as both a possible prevention and a sensible way of managing the disease. Because AD cannot be cured and is degenerative, management of patients is essential. The role of the main caregiver is often taken by the spouse or a

close relative. Alzheimer's disease is known for placing a great burden on caregivers; the pressures can be wide-ranging, involving social, psychological, physical, and economic elements of the caregiver's life. In developed countries, AD is one of the most costly diseases to society.

The aim of this design assignment for the health care sector is to provide insights into accommodation facilities for this specific health care sector: in our case a small-scale living, day care, facilities and knowledge dementia centre for Wiesje Foundation in Paramaribo, Suriname. Taking into account the various types of provisions, requirements, issues and legislation relating to health care, as well as the various building typologies and associated requirements, so that these insights can be translated into a design.

The themes covered relate to changing demographics, where the increasing numbers of elderly people also means an increase in the number of dementia.

The growing multicultural society also makes other demands on the design of health care institutions. The design concept is also influenced by changing perspectives on the way Alzheimer patients in need of care are dealt with, which frequently involves long-term hospitalization and residential until the final phase of their lives.

Prevailing attitudes frequently generate demand for other types of treatment, which has an immediate impact on the design of the interior and exterior of health care institutes. How do you translate the sometimes-conflicting interests of the care provider and the patient into a sustainable and wholesome design?

What became clear is the vulnerability of dementia patients. Alzheimer's affects so much more than just distortion of memory. It is the disintegration of all structures, patterns that make up our lives. A point where all components become entangled, diffusing the overall composition.

To develop an appropriate narrative on future living conditions of Alzheimer's patients is to take this vulnerability into account, while creating a safe environment that can still enrich every day experience.

The Wiesje Process

General Process

The study was developed from a broad perspective on the topic of dementia in relation to the architectural profession. The students studied different theories and case studies, and they experimented with various aspects of the senses (hearing, seeing, touching, tasting). Excursions and lectures were organized in order to gain a clear understanding of the task and the possibilities that lay ahead for a suitable design. The students received feedback on a regular basis from various experts within the Wiesje foundation and from outside the foundation.

Experiment

Within this project there has sometimes been unorthodox ways of researching into sensory perception, such as conducting blindfolded experiments. In relation to blindfolded observation, Zeisel (2001) comments that blind people are experts in the screen-

ing of multi-sensory qualities: “Who can better identify what the non-visual perceptible multi-sensory qualities and shortcomings are of a city, a building or a space, than a person who is blind?.” We experimented with this by doing research into different materials, taste, sound and smell, as well as combining or excluding these. It has led to some surprising answers and new insights that are included in the design outcomes.

Internship

This assignment includes a compulsory internship for the students. This internship is designed to gain more insights into the world of a patient with dementia. A complex world in which there is no single appropriate answer. A world where answers must be sought between design and 24/7 care, between design and the wishes of the patient, between patient and the caregiver, and between mental and physical space.

Zeisel (2003) proposes an investigative approach, based on observation and cooperation between designers and people

with dementia. He believes that “The more you know about how people experience their environment and what they know, the better you can understand their behavior, emotions and cognitive reactions.” Or as the architect and theorist Bernard Tschumi (1975) observes: “There is a gap between the spiritual world in which architects design and the physical world where the building is constructed and should function.” We think we can shrink that gap and that an internship provides the designer (student) new and different insights in order to come up with a better design.

In this context there is also referred to ‘Universal Design’, where the challenge lies in increasing user-friendly and elegant solutions, and attempts to improve the environment for as many people as possible. Humanizing of the architecture is indispensable for the realization of ‘Universal Design’.[3] Primarily attention must be paid to the human needs. These needs don’t have to just be functional; it’s important to take usability

3. Haptic Architecture becomes Architectural Hap. Herssens J. Heylighen A

into account, through the creation of a functional brief, checking and refining the design in consultation with users/experts. Working with ‘Universal Design’ consists of a number of cyclical processes that are repeatedly calculated during production. The design process does not stop at the commissioning of the building, but continues when the building is occupied. Feedback from users/experts of a new building can provide useful knowledge and information for future design processes.

Tradition and culture in Suriname

The role of tradition and culture in Alzheimer care in Suriname

Who takes care of the diseased and what do diseased people do when there's no one to take care for them?

Traditionally older persons from all ethnic backgrounds in Suriname live in a multigenerational setting with one or more children and grandchildren. For the native Indian population, caring for the seniors in the family is equal to taking care for one's nuclear family. The Javanese population has a system of reciprocal family and community help where e.g. the younger ones care for the seniors and the seniors babysit the grandchildren. The Asian population originating from India has the elder care imbedded in the marriage system – the daughter in law is fated to care for the parent in-law. Living with children also implies that the children and grandchildren take care of the older adult until he or she dies. When an older

person suffers from dementia, in most cases the family continues to take care for their elderly. Some families, who are more affluent, hire custodial or professional home help for their loved ones.

Older adults who lack the possibility to age in a multigenerational setting could move to a senior home or senior care facility. Living in a senior retirement community has become more accepted in Suriname but is mostly applicable for the Afro-Surinamese population living in and around the city. However the government and religious based senior homes have reached their full capacity and the costs of private facilities are too high for the average older person.

Suriname is a developing country with the typical characteristic of economic, social, cultural, political and demographic changes which lead to a social structure where mutual support and intergenerational support decrease. These changes also include, changing roles for women, and changing perceptions of children's responsi-

bilities and obligations towards their parents. The result is that there is a shift-taking place in the living arrangements of older adults, from living in a multigenerational setting to living alone, particularly in the urban area.

In some cases family friends or neighbors step in to help an older person who lives alone. When this older person has dementia, help becomes more difficult, since it takes patience and insight when caring for a person with dementia. The Ministry of Social Affairs and Housing is responsible for the social care of vulnerable populations that include the older persons. When an older person is poor or totally lacks any form of support, there is a workforce of nurses who provide home help. This workforce is small and is not able to address all the requests. Hence there are older people with dementia living alone and wandering around, having no one to take care for them.

How do people deal with aging and dying?

Traditionally older adults are a normal part of the extended family. They continue to have an important role in the household and sometimes even a very important role. There are also forms of reciprocity as the older women babysit the grandchildren and fulfil household task while the parents are at work. In return children give instrumental support to their older parents. Older men can become the patriarch of the family and when important decisions need to be taken they have the authority to make a final decision. Dying is considered as one of the important events in life, for which the family often has made the appropriate arrangements ahead of time. People in Suriname like to have their funeral arrangements to be in order. Most of them have their funeral insurance with a religious organization.
In Suriname people mourn for an extensive period that could range from 3 month to a year or more.

Are people in Suriname aware of the illness?

In the past older people with dementia were seen as an old person who has become childlike or grumpy and impatient due to the aging process. Nowadays people are more likely to say that the person has dementia. They are aware that the illness exists and sometimes it's still being joked about. The awareness of the general population is to the extent that people are able to mention some manifestations of the illness such as forgetfulness, depression and aggressiveness. Up till now there hasn't been a nationwide awareness campaign with regard to the illness.

Educational awareness

The Nursing school has incorporated gerontology and geriatric nursing in the curriculum. Dementia is also being addressed as one of the major geriatric diseases. The Faculty of Medical Sciences has a course on gerontology and geriatrics for the medical students and the physiotherapist.

The School for Teachers has a bachelor program in health education, which also includes a course in gerontology.

Finances

All residents of Suriname are required to have a health insurance. Retirees from the government are insured with the State health insurance. Non-government retirees are insured through there former work with the State health insurance or another insurance company. Non-retirees who have a very low income or no income receive a health card from the Ministry of Social affairs. If an older person needs to be admitted into a senior home they or their family have to pay the costs? There's only one government senior home where people who have no means are also admitted. The other senior homes are mostly religious based and there are only a few private facilities. The non-government senior homes receive a small amount of money per bed.

Village

1. Consciousness Stream, The Cell Tarsem Singh

1

A nightmare or a fact?

Although there has been researches about dementia and the knowledge is being developed it is still a mysterious disease. What makes is it that makes this illness a mysterious disease? As human being we communicate, we have a prospect of how others react. It is confusing if we can not forecast others behaviors. It is mysterious if we do not know what is going on in mind of out beloved ones. It is very mysterious for us that we forget a person with dementia is first a human being then a patient. We forget the quality of life.

Madness and culture

"What else can Hafiz do tonight, to celebrate the madness, the Joy of seeing God Everywhere!" Hafiz- a Persian lyric poet

2

Madness is a generic term that includes behaviors considered deviant. Deviance is always culturally defined, and varies markedly from society to society. In that sense, culture shapes the illness.

In the history of every country, among different nations wisdom and madness have different definitions. They have different reasons and different consequences. For example while in west the madness means to lose the senses in east it means to reach a higher level of wisdom which allows person to become spiritually unconscious.

The location and residence

This center for Alzheimer patients is located in Paramaribo.

Paramaribo is the capital and largest city of Suriname, with 250,000 citizens. The half of Suriname's population lives in Paramaribo. It is a multicultural society with citizens from various parts of the world including Creoles, Hindustani, East Indians, Maroons, Javanese, Portuguese, Native Americans, Levantine, Chinese, and other Europeans (primarily of Dutch and English descent). The city is located on the Suriname River and near the Atlantic Ocean.

It is also a city where people with different religions and beliefs live in harmony together. Christians, Hindus, Muslims, tribal.

What all these people have in common in their beliefs is belief in god, spiritual beliefs, good deeds and bad deeds, belief in god, family, living after death.

1.
Creole people in Suriname

2.
Maroons in Suriname

3.
Paramaribo big market

1

2

3

Human and Nature

Human emotions have their richest development in a social environment, and many emotions are known only there, such as jealousy or embarrassment. But emotions have a fundamental, “native” expression before the natural world, as with the shudder when staring into the starry night, or the quickened pulse on a balmy spring day. Some environmental philosophers argue that human identity is first and foremost wild and natural because it is a product of an logically independent nature.

The environmental philosophers. After all, the Cartesian subject is a highly dubious character. It is a “mind in a vat” unconnected to the world around her.

1. Humangarden.com/nz/bikolo

Design key words: dementia stages

- Threatened self -> guidance level
- Lost self -> care level
- Hidden self -> care level/nursing level
- Sunken self -> nursing level

Categorized by the amount of needed care

- ZEN-demented -> turned inwards
- Wanderers -> hunting for impulses
- Balance seekers -> impulse-makers)

Categorized by the type of patients

1

1.
Anaula
nature resort

2.
Paramaribo

2

Housing in Suriname

There is a variety of housing styles in Suriname. Housing ranges from rural to towns to the capital city of Paramaribo. Houses are built of wood or other materials. In the forested interior where only 5 percent of the population live, there are thatch huts. Also the Maroon descendants of escaped slaves live in highly decorated wooden houses. In rural areas houses sometimes are built on stilts. In Paramaribo and in Suriname's towns there are still houses in the Dutch colonial style.

Half of Suriname's population live in the capital city of Paramaribo. The other half of the population live in the smaller towns along the coast. The houses in the far south generally have metal roofs, running water, and electricity.

Design key words: Garden

Studies have found that nature experiences can be of particular benefit to dementia patients. Exposure to gardens can improve quality of life and function of dementia patients by reducing negative behaviors. Those patients who have access to gardens that are designed to positively stimulate the senses and promote positive memories and emotions are less likely to express negative reactions and fits of anger. Plants, gardens, green roofs, and other features can be incorporated into building design to address mental health and cognitive function. For example, the soft rhythmic movements of a tree or grass in a light breeze or the light and shade created by cumulus clouds, called Heraclitean motion, are movement patterns that are associated with safety and tranquility, aiding the development of a calm, stable mental state; lighting or space design that mimics Heraclitean motion could be incorporated into building design to create calm peaceful areas.

2. Beckwith M,e and Gilster S,D, 1997, the paradise garden: a model garden design for those with alzheimer disease

Design key words: Movement

Certain environments can provide prosthetic support for dementia patients to compensate for their reduced cognitive capabilities For example, spaces that have dead ends or are crowded can increase frustration and anxiety in Alzheimer's-diagnosed residents.

Supportive outdoor spaces include these design features: looped pathways; tree groves or sites to act as landmarks for orientation; on-toxic plants; even, well-lit paths with handrails; seating areas with the suggestion of privacy; and use of low-key fragrances and colors to soothe, rather than negatively stimulate, the patient.

Moving keeps the patient motivated. It keeps the brain to function and it gives the patient the joy of exploring and experiencing.

1.
Central
Suriname
nature

1

Suriname climate

Suriname, situated on the north coast of South-America comprises an area of circa, 80% of which is made up of different types of forests . From the plain coastal areas, the land rises gradually through gently undulating plateau to the more rugged, low mountain ranges of the interior uplands.

Paramaribo climate is tropical. From September till November is the driest period of the year. But the city has no true dry season, all 12 months of the year there is an average more than 60 mm of precipitation but the city does experience noticeably wetter and drier periods during the year. Common to many cities with this climate, temperatures are relatively consistent throughout the course of the year, with average high temperatures of 31 degrees Celsius and average low temperatures of 22 degrees Celsius. Paramaribo on average sees roughly 2200 mm of rain each year. Hours of sunshine in Paramaribo range between 5.4 hours per day in May and 9.3 hours per day in September.

Architectural concept

With a close look in Suriname indigenous housing a pattern of a village can be found where everybody builds his own house. It looks like there is no pattern but the pattern is the life style, living in the community and families. The dementia center is a village in this concept. A village that welcomes people with different needs and backgrounds and the order of them being located to fulfill their needs and to live according to their life style. Every dementia patient is a residence of this village. This village had its own pattern. Suriname is a country with a climate that allows people are spend most of their time outside their houses. Their life is shaped with nature.

In this concept the living place for a dementia patient is a landscape with different layers which each layer define a particular aspect of a patient's life.

In this concept to give the better attention to the patient and to give her a higher quality in life does not need long corridors and white walls.

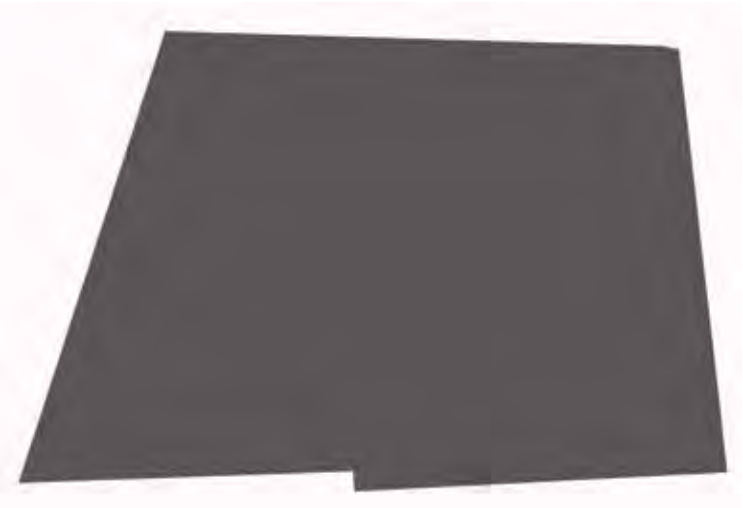
The quality of life will increase. The patient will still live in an institute but without any typical factors instead the local and cultural elements will be used.

Architectural concept: Different zones

The site is divided in five different zones. The residence of two zones belong to special group of dementia patients and the residence of two other zones belong to two groups. In the center there is day care centre.

In total all four zones can fit 64 patients. In this case for every patient with different needs there would be a proper place with different characteristics.

1.
The site in Suriname



1

2.
The division of space in architecture proposal

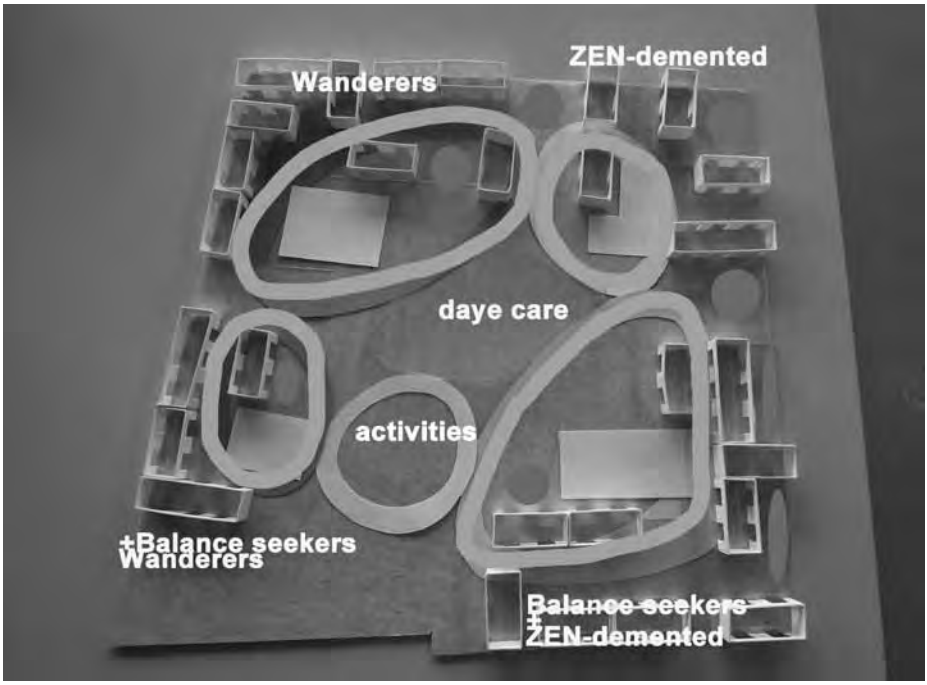
2

Architectural concept: Paths and gardens

Spaces that have dead-ends or are crowded can increase frustration and anxiety in Alzheimer's-diagnosed residents while moving keeps the patient motivated and it gives the patient the joy of travelling, exploring and experiencing.

In this concept every zone has a path. Every unit has the access to the path. The path defines the destination and it define where the patient is. It helps patient to find the way and all different places to each other. The place where each patient can live is defined by the access to the path and the different types of gardens.

1.
Paths and
gardens



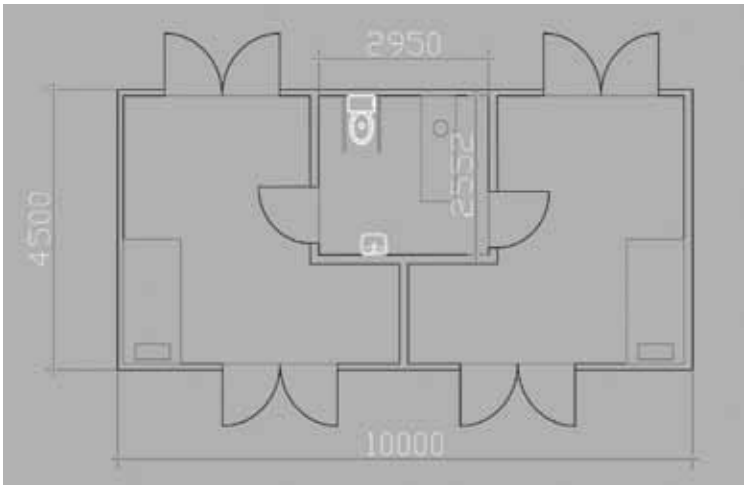
1

Architectural concept: Units

There are two typologies 45 square meter which can be divided in 1 or 2 rooms and 67 square meter which can be divided in 3 or 2 rooms. Each unit has 3 bathrooms with the proper area and each has 2 doors to outside and one big window. Opening the unit will help the air to float and eventually to a good ventilation.

The units are prefabricated walls and roofs with wood and the extension of the roof is with steel sheets. One side of the units is closed with small private gardens and the barrier and the other door is opened to the path.

1.
Typology 1



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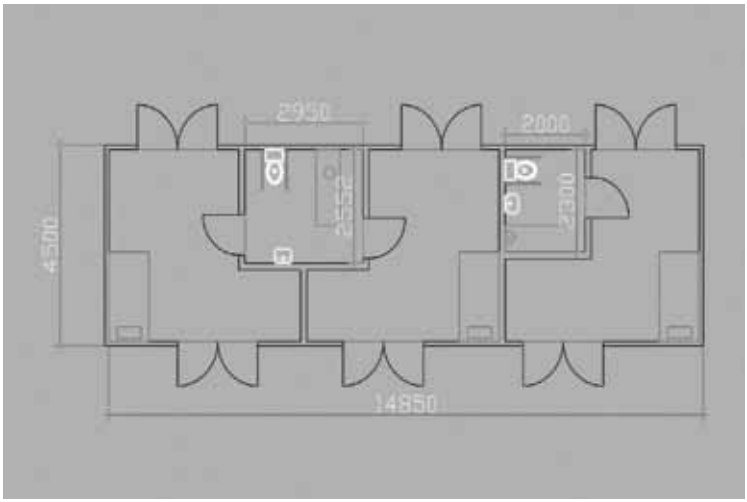
2.
Typology 2



2

Architectural concept: Units

The front doors of the units face towards the road and the back doors open to a closed garden. The patient faces the road every time he opens the door to the outside.

1

1.
Two houses in Suriname

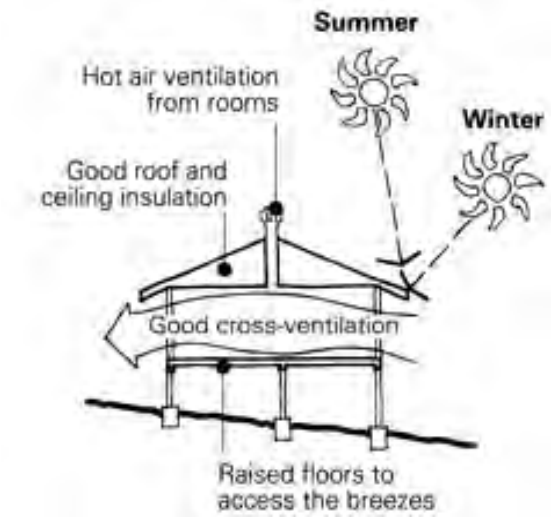
2. / 3.
The units in architecture proposal

2

3

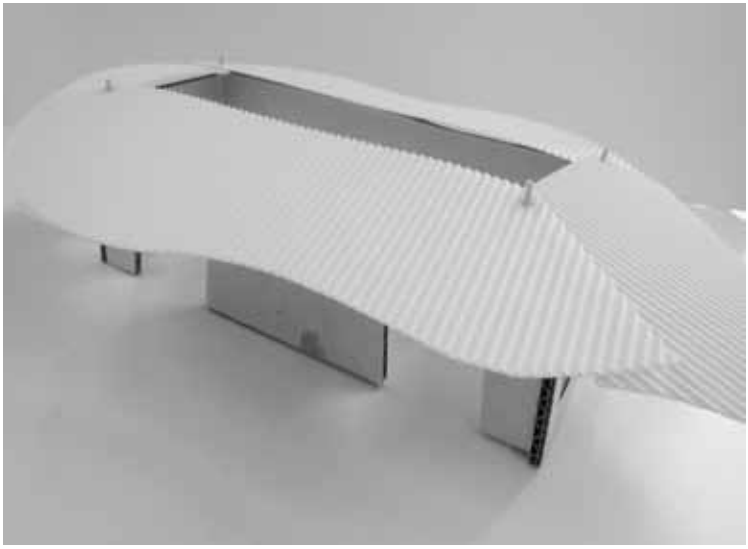
Architectural concept: Roofs

Due to the climate in Suriname a good ventilation in the houses helps the air to float and keeps the house cold. In new design of the units the old system is kept with small changes. The material and the shape of the roofs is changed in order to help the ventilation and help to create different inside and outside areas.



1.
Typical ventilation in Suriname

2. / 3.
The units in architecture proposal



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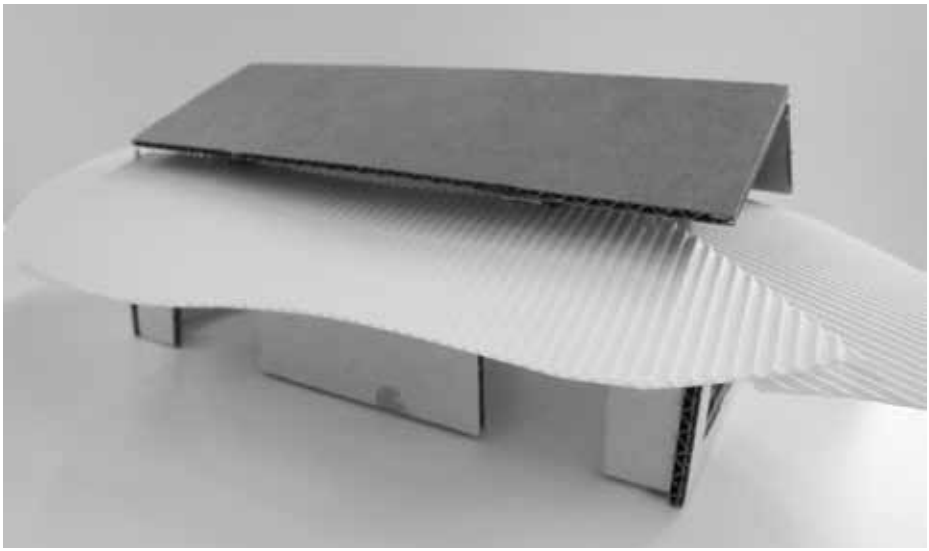


3

1

1.
The final model of the site

The position of the units creates different living atmospheres in relation with outside, garden and path. It creates different living areas for different patients. The place of the units and the design of different areas is inspired by Suriname indigenous housing.

2.
Indigenous housing in the south of Suriname

2

What defines the location of each unit is the relationship between residence and community in small scale (family) and big scale (village residence).

1

1./ 2.
Painting in
Suriname

3./ 4.
The architec-
ture proposal

2

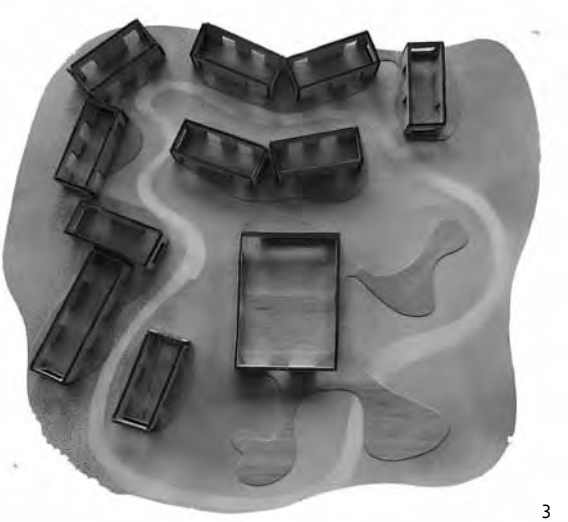
3

4

1

2

1./ 2.
3./ 4.
Different layers in the architectural concept



3

4

Feel my home

Research, healing gardens

The first healing gardens were called ´blind's gardens´ and were originally for people that had lost their eye sight under World War II. The main idea behind the design of the gardens was to give blind people a sensory experience, with the smell for example of herbs, roses and honeysuckle.

Today, you can find these gardens in many countries large cities, medical healing environments and institutes. The medical world has become aware of the importance of good healing environment for the patients health and well-being. The design of the garden should apply to all the senses – sight, smell, touch, hear and taste, and contrasting experiences, as light/ shadow, hard/ soft, sweet/ sour, smooth and rough.
Furthermore, valid factors to consider are peoples' accessibility while using the garden, the play between natural materials and

the fact that the gardens should be interesting in all seasons.

The ways we experience our surrounding depend on our physical and mental stage. People with Alzheimer's go though different stages within the disease and their physical and mental power can be very different from person to person. Some will probably have the need to walk around and experience the surrounding, while others will have a more inverted focus and need to feel safe and cannot obtain a lot of impressions. A similar approach is described in the article ''What Makes a Garden a Healing Garden?'' By Stigsdotter and Grahn[1]. According to Grahn´s model introduced in the text, a person's experience of nature will depend on how much he is able to absorb from the environment and how strong his mental power is. In the model, the first step of the pyramid is ''directed inwards involvement'' (the bottom) where the mental power is weak. The individuals usually in this stage have a lot of memories and impressions from their past

1. What Makes a Garden a Healing Garden? By Ulrika A. Stigdotter and Patrick Grahn. Journal of therapeutic Horticulture (p 60-69)

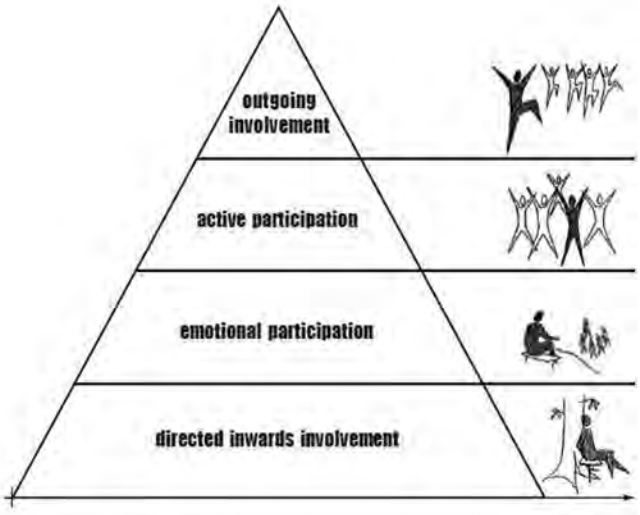
but they are not willing to get new ones. The second step of the pyramid is ‘’emotional participation’’, in this level mental power is a bit stronger, people like to watch others doing various activities but they do not have the emotional strength to join them in these activities. The third step is called active participation where people are part of a group doing activities together.

Alzheimer’s patients can only be in the first three steps of this pyramid model, given the fact that the patients can have different levels of mental activity, it is important that all three steps of the pyramid are included in the design of the sensory garden.

1.
Caretaker and caregiver in a garden

2.
Modification of Grahn´s model, 1991

1



2

Multi-sensorial environment

When we enter a building for the first time, we look around, hear the sounds of our own footsteps, notice the smell, the division of light and feel the temperature of the air. In other words we experience the building.

Architecture does not only apply to the sight, but to all our senses. While we, as architects, are in the process of designing, we should ask ourselves, what do we want our users to feel? How does the physical place feel like? Including the thought of multi-sensorial design should be a very important aspect of design.

For a person with Alzheimer's disease, who gradually looses the ability to remember, the sensorial experience is essential. As the disease evolves, the memories get lost until the persons forget who he or she is, and hardly respond to their surroundings. But even in this last stage of the disease, they are still able to sense.

1. Haptic architecture becomes architectural hap by Herssens J. and Heylighen A.

Human centered design process[1] is a design method that incorporates four human factors, the physical, social, cultural and cognitive factors. The method helps to not only focus on functionality, but incorporate human factors that are just as important for the design as functionality. When you understand the users and the importance of their physical, social and cultural needs, the product will become more successful in these aspects.

In the Surinamese culture, nature, storytelling, music and food is a big part of the traditions. Studies have showed that some of these activities can help stimulate people with Alzheimer's. For example music can stimulate cognitive functions in the brain." After a month-long program (30 minutes a day, five days a week), the team found that music therapy led to increased secretion levels of melatonin, a hormone associated with mood regulation, lower aggression, reduced depression and enhanced sleep. The higher melatonin levels persisted

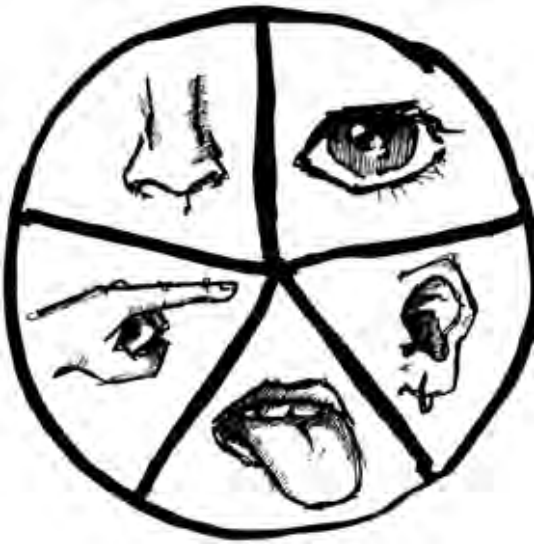
even six weeks after music therapy sessions had stopped[2]". Thus it can be a great tool for family members and caregivers to interactive communicate with their caretakers. "Caregivers have observed for decades that Alzheimer's patients can still remember and sing songs long after they've stopped recognizing names and faces. Many hospitals and nursing homes use music as recreation, since it brings patients pleasure. But beyond the entertainment value, there's growing evidence that listening to music can also help stimulate seemingly lost memories…[3]". While designing my concept ´feel my home´, I did focus on functionality, what kind of activities should be going on in each room and link it to a sensory experience. An example of that is the combination of materials with different texture and textile.

2. The Impact of Music Therapy on Language Functioning in Dementia , by M. Brotons and S.M. Kroger, Willamette University Psychology Department, USA 2000

3. A Key for Unlocking Memories- Music Therapy Opens a Path to the Past for Alzheimer's Patients; Creating a Personal Playlist. By Melinda Beck, The Wall Street Journal, 2009

1

1.
A scattershot from ´A key for Unlocked Memories´



2.
Illustration of; touch as many of their senses as you can, 2007

2

Feel my home

The assignment was to design an elderly home for Alzheimer's patients in Paramaribo, Suriname. The program should contain eight houses, each with eight inhabitants and one caregiver, a day care centre and a shared garden. My focus was the housing units. The aim was to create a home environment for the inhabitants by including the multi-sensorial design that stimulates and reaches the inhabitants, in the various stages of the disease they are in.

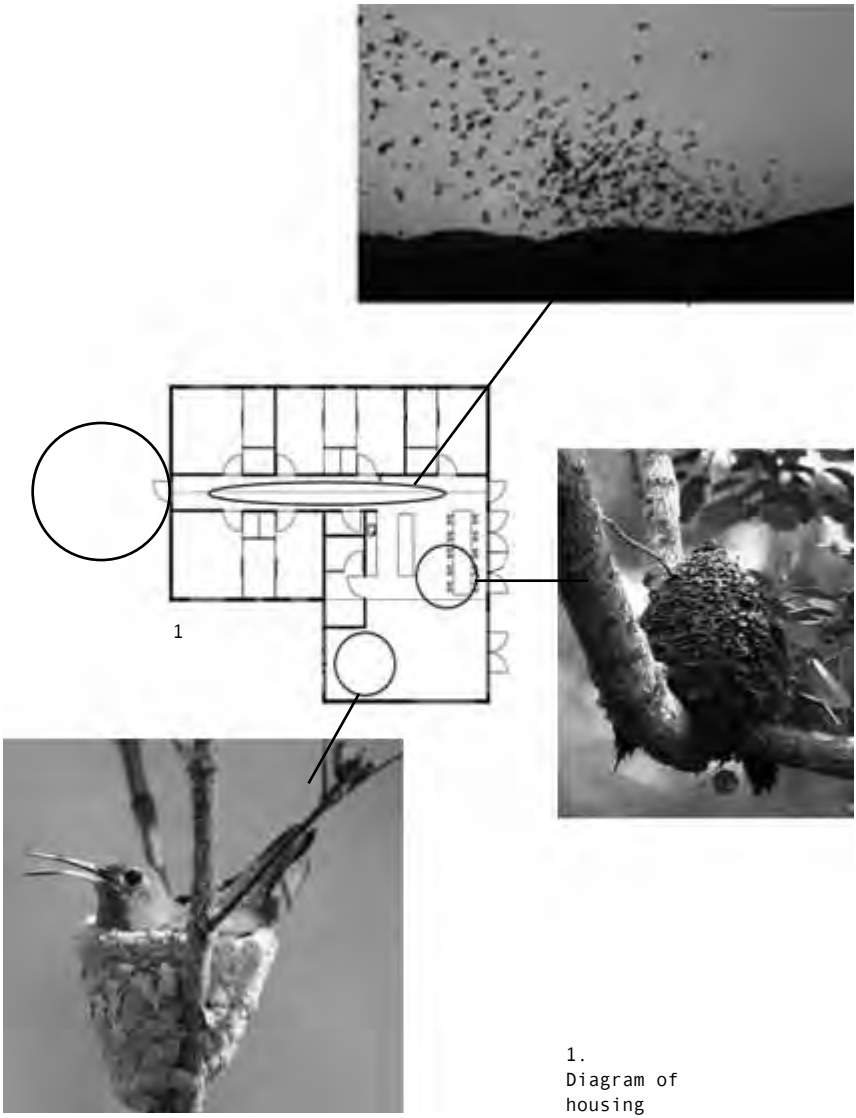
While using the ´human centered design process´, which incorporates the thought of physical, social, cultural and cognitive factors, I came across a lot of essential questions - ´what is Alzheimer's disease, how does it develop, what kind of impact does the disease has on a person and what kind of cognitive methods can stimulate people with Alzheimer's? ´How is the Suriname climate, nature, culture and how do Surinamese people relate to the disease?´

Motivated by the above questions I came down to my main research theme which was ´Design and description of a sensory experience/ feeling.

Concept - Feel my Home

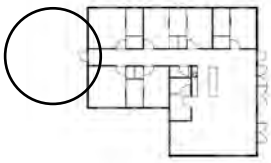
The Suriname population is surrounded by nature which is a big part of their culture especially for the elderly generations. I chose to make a link between senses and the nature. I looked on nature for inspiration and answer on how to design an area/ environment that a person with Alzheimer's can connect and feel familiar with.

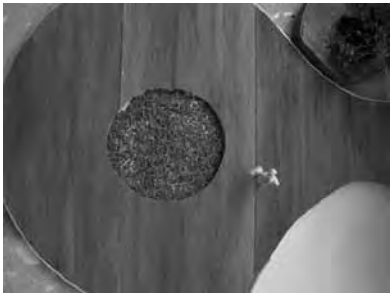
When we think of a natural phenomenon, we immediately associate it with an image, feeling, smell or touch. In my concept I connected each area of the housing unit with a natural phenomenon.

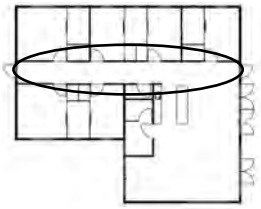


1.
Diagram of
housing

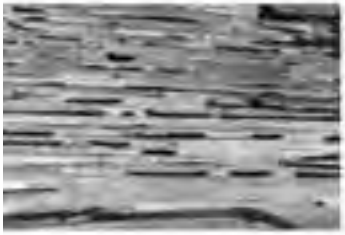
Terrace: waterfall – quiet area, hear the water, birds, nature and feel the humid air .



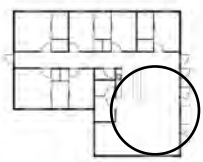




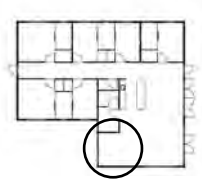
Hallway: Birds' migration – journey, compass, rhythm, feeling the wind and listening to new sounds.



Kitchen and dining room: Bee hive – Social, collaboration, helping and honey/ food centre, smell of food, hard materials, organic foams. Bees fly around but always return. This room is the centre meeting spot, the biggest and in the mid of the home.



Sofa area: Nest- safety, projected, hidden and intimate feeling, soft materials and acoustic, curvy texture and daylight.

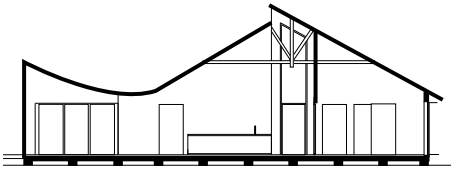


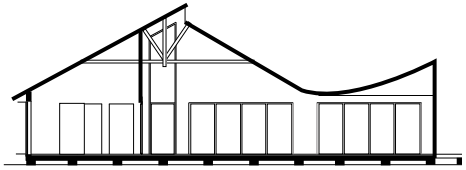
Sahar Rezazadeh

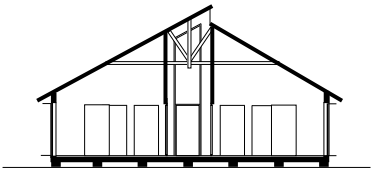

Sahar Rezazadeh

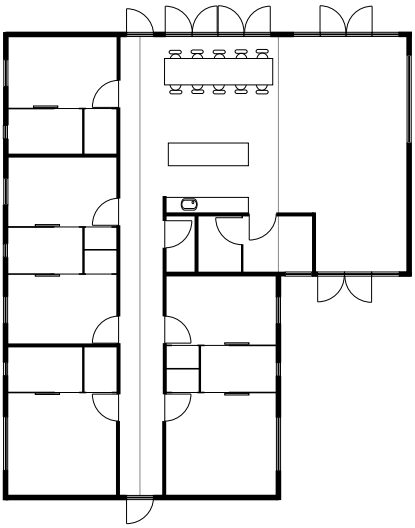
Nest

Feel my home

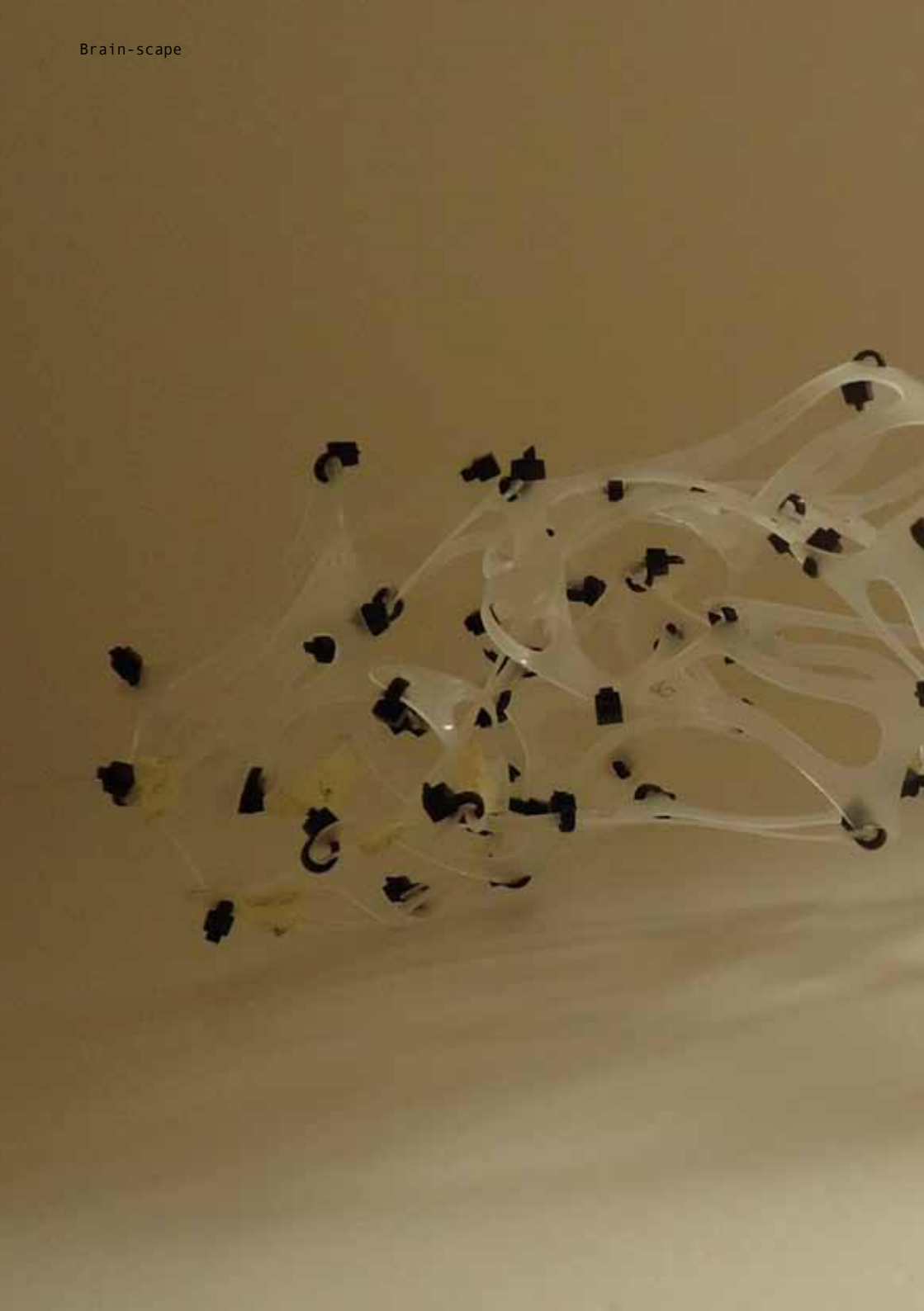








Julia Retz, Laura Holzberg



Haruka Uemura


Mu-Jie Chen

The Journey

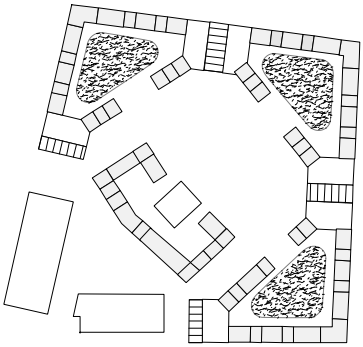
LAYOUT OF THE WIESJE PROJECT

- ALZHEIMER CENTER AS A CITY
- A UNIT AS A NEIGHBORHOOD
- AN INDIVIDUAL ROOM AS A HOUSE
- A PATH AS A PERSONAL JOURNEY
- A LIGHT AS STIMULI

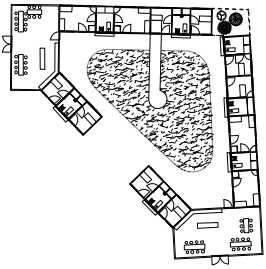
We aim to create a world for Alzheimer patients that includes the experience of a city, a neighborhood, a house and a path as a journey, a light as stimuli.

We mirror these elements in the Wiesje Alzheimer Center and create a comfortable, familiar environment that is in contact with the outside world and offers the patient different ways of living according to their previous lifestyle.

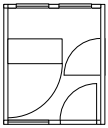
CITY



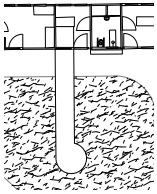
NEIGHBORHOOD



HOUSE



JOURNEY



Alzheimer's Centre - City

Urban Plan

Our concept for the urban plan is based on the healing force of gardens and works with the principles of contrast; public and private, activation and calmness, and the relation of exterior and interior. The environment of the Wiesje Centre is inspired by the geography of Suriname, which is made up of 80% vegetation with a high amount of Amazon rainforest. In our layout for the Wiesje Alzheimer Centre we create a direct translation of the geographical composition of Suriname, by creating an environment that consists mainly of nature in form of gardens with various qualities.

1./ 2.
Images:
Amazon
rainforest,
Suriname

1

2

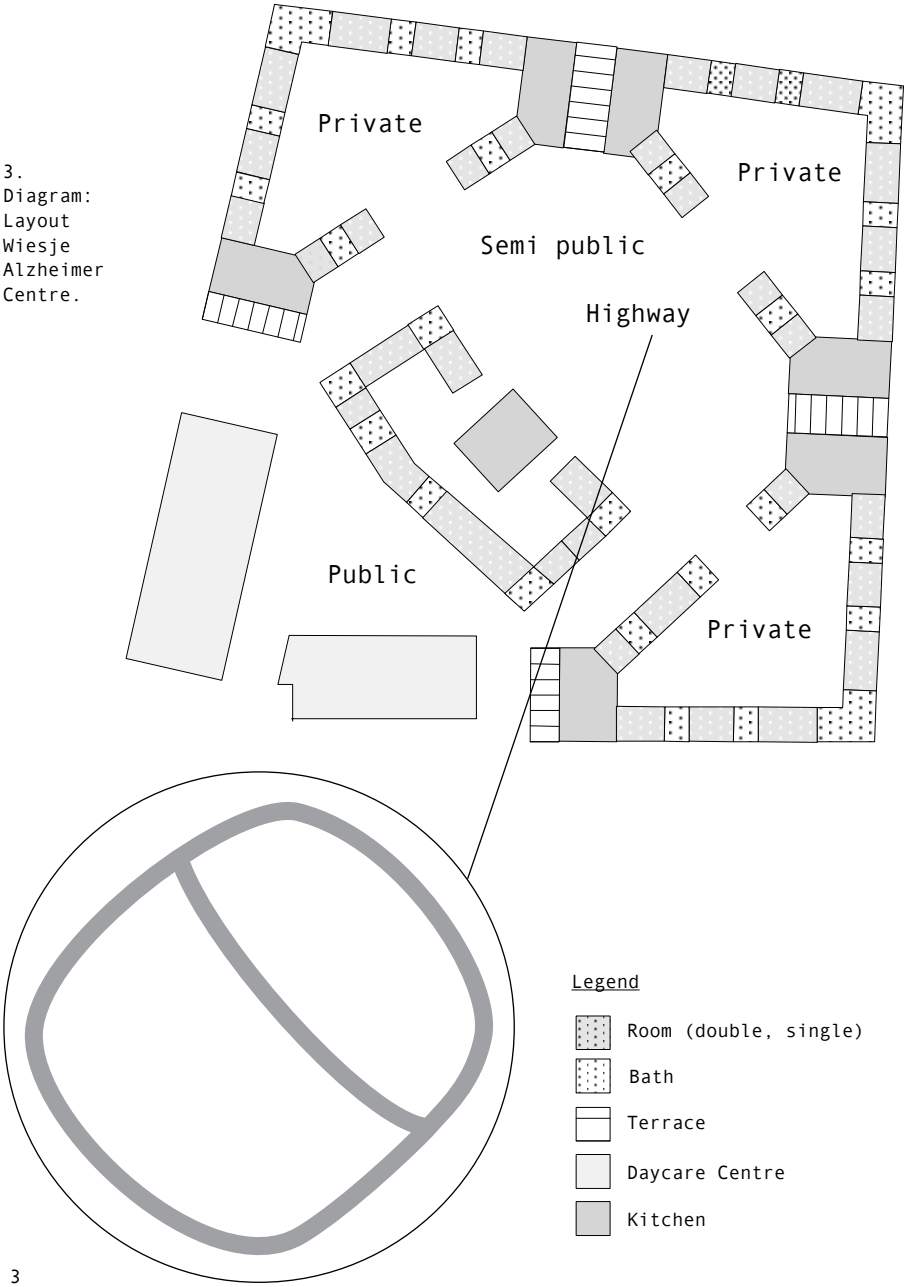
Highway (path)

Inspired by the dynamic flow of rivers, shaping the Surinamese landscape, we developed a main routing of two organic shaped paths that connect to one another all the activities happening in the Wiesje Alzheimer Centre.

We call these paths highways. A more public highway connects to the outside leading visitors and family members from the entrance to the day care centre and further to the living units. A more private highway connects the living units with each other and meets with the public highway. The round shape of the paths form a loop, this avoids dead ends and helps the patients to find back to their room.

The highway is a dynamic space of activity that stimulates movement and sensual experiences for the patient.

3.
Diagram:
Layout
Wiesje
Alzheimer
Centre.



3

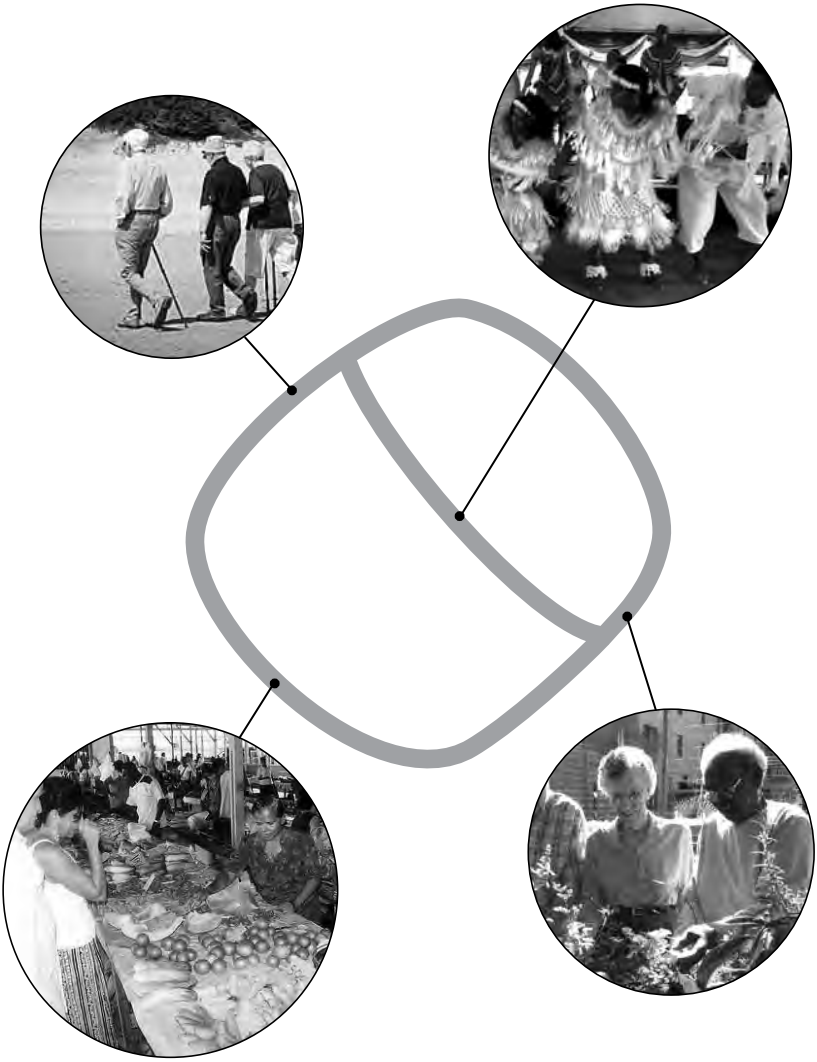
Cities (Activity Hubs)

We concluded that if patients are incapable of going outside of the Wiesje Alzheimer Centre, parts of the outside have to come into the Centre. To keep the life in the Center diversified we distributed “activity hubs” along the highway. These are temporary events and activities, such as a small market with fruit and vegetable stands that comes in once a week, supplies fresh food and give the patients the possibility of shopping “on a market”.

4. Diagram: “Activity hubs” distributed along the highway

Movement

Movement and exercise are proven to be one of the best treatments to decrease stress. Light exercises, such as walking can positively influence Alzheimer symptoms such as aggression, wandering and sleeping problems. Additional the shared activity of movement also improves the relationship between caretaker and patient.



4

Legend

Highway

Garden

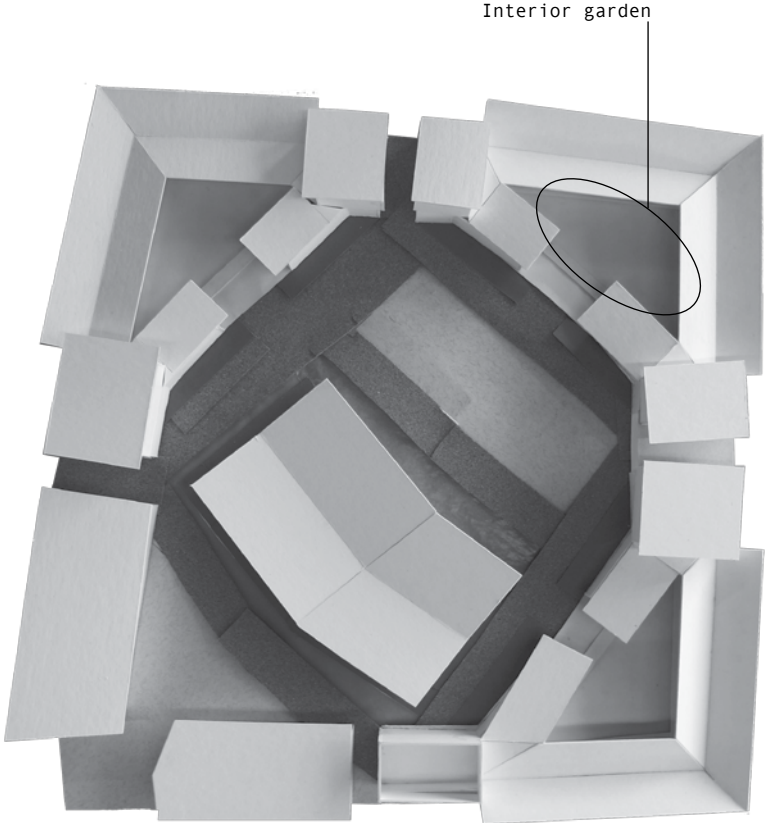
The landscape architect Saskia de Wit points out that gardens have a healing function on people. They can particularly release stress and create pleasure in Alzheimer patients. A garden activates various senses, sight, touch, taste, smell and sound and thus creates multi- sensorial experiences.[1]

Interior garden of the living units

A garden as a room can encourage health effects. For example an interior garden can communicate a feeling of security and calmness.[2] By arranging the units around a triangular shape we create interior gardens that give the patient the feeling of security and the possibility to move outside on his own. The independence of the patient within the garden will create a feeling of satisfaction for the patient and reduce work and stress of the caretaker.

1. / 2. What Makes a Garden a Healing Garden? By Ulrika A. Stigdotter and Patrick Grahn. Journal of therapeutic Horticulture (p 61, p 63)

5



6

5.
Grafic:
medical
plant:
Aristolo-
chiaceae

6.
Model:
Wiesje Cen-
tre layout

Unit - Neighbourhood

Living units

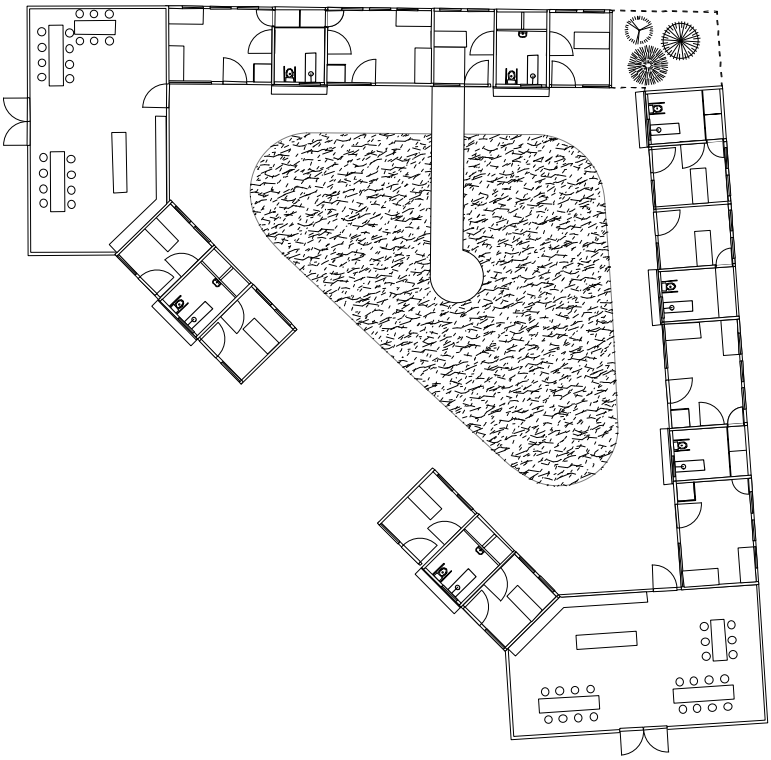
The living units are subdivided into single and double rooms and accommodate 16 people each. The arrangement of the units around a triangular shape creates a spatial interior garden. Every room has direct access to a roof covered patio that surrounds the interior garden. This patio is accessible for wheelchairs and beds to be moved outside. To avoid disorientation that causes stress, the patio forms a closed shape so that the patients who walk on the path always end up in front of their room. In addition, every room is highlighted by an individual colored curtain.

Kitchen

Anne-Rose Abandon, programme manager of “Interculturalisatie at Cordaan” emphasizes the importance of food and cooking rituals in Suriname. She reported that the taste and smell of Surinamese food is the most important element to create a feeling of home for Surinamese Alzheimer patients who live in the Netherlands.

Accordingly we integrated kitchens that spatially connect the units with each other. They create short cuts and function as the central living room for meeting and communal activities. Patients will be included in kitchen tasks and cooking and the smell of freshly brewed coffee and food will reach into the garden and create a pleasurable atmosphere.

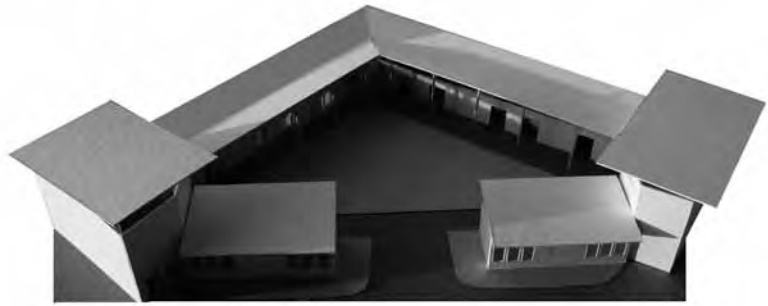
7.
Floorplan:
Unit



7

8./9./10./11
Model:
Unit and
interior
garden.

8



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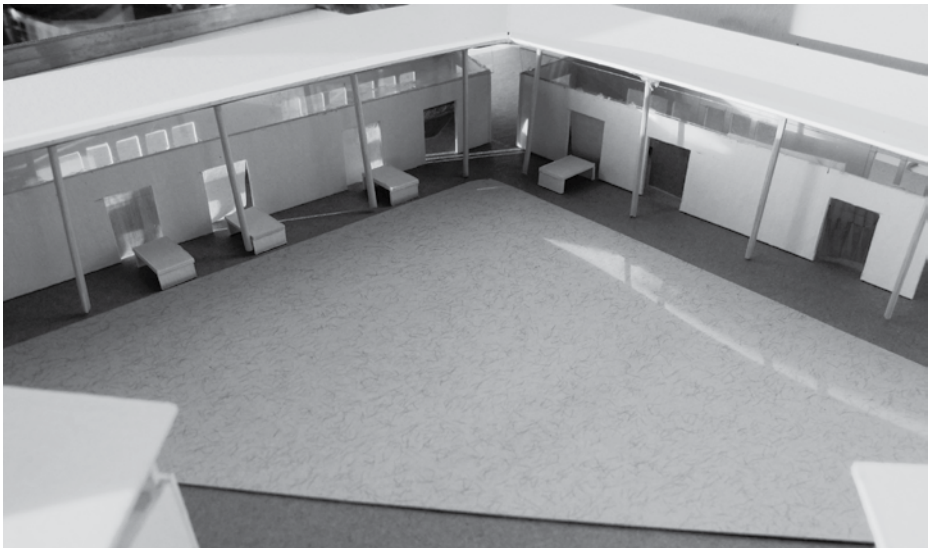

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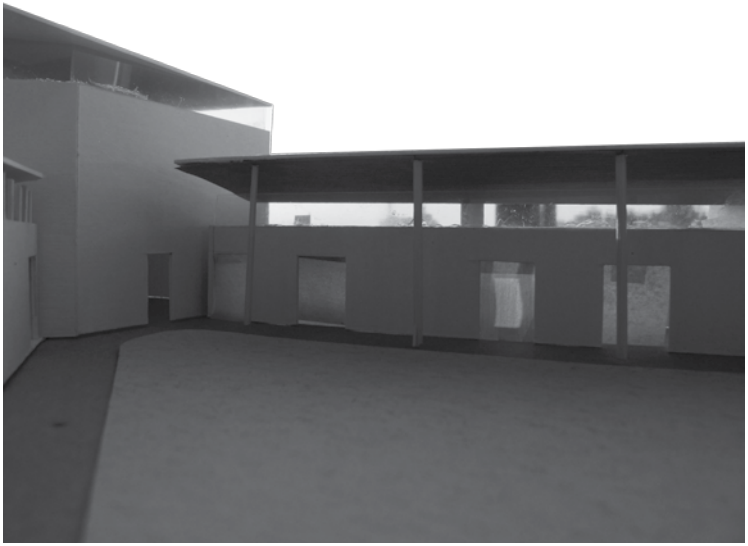


11

Individual room - House

The room

A room (house) is an interior space of shelter, defined by its exterior walls. It is the most private space in the Alzheimer Centre, a space of retreat and intimacy.

The rectangular rooms are divided in single and two patient rooms and are equipped with an integrated wall-cupboard and a movable bed. Each room connects to a small bathroom with toilet and shower. Next to the entrance there is a sliding glass door which leads the patient to the roofed patio and allows the room to be filled with light during the different periods of the day.

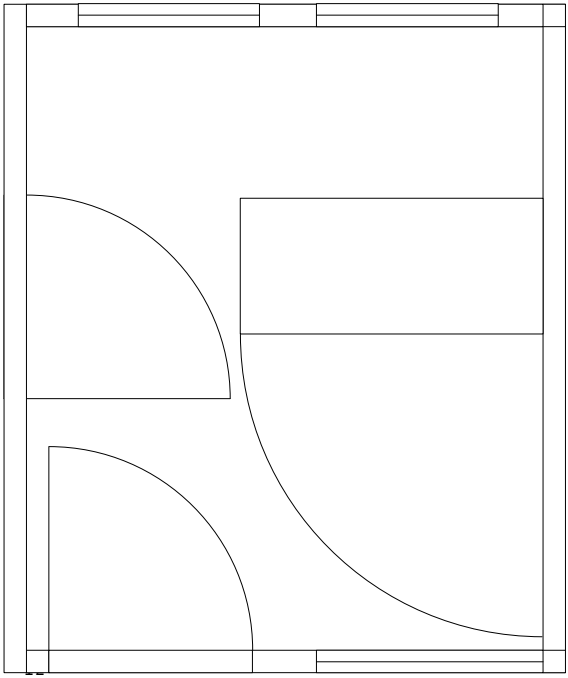
The bed

The bed is the most private space in the room, a small rectangular space within the rectangular room. The bed is the “individual space par excellence, the elementary space of the body (the bed-monad)(...)[3]”. Since “we are born in bed, and we die in bed[4]”, the bed is a special spatial element in our life circuit. Especially for Alzheimer pa-

3. Species of spaces and other pieces, George Perec, Penguin book 1997 (p 16)

4. Species of spaces and other pieces, Georges Perec, Penguin book 1997 (p 16)

tients the bed becomes an important space of comfort and safety in the last days of passing away.



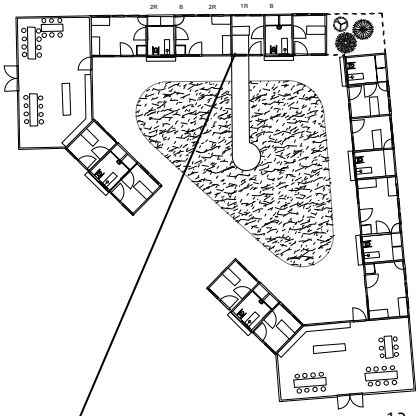
12.
Floorplan:
Individu-
al room

“Our gaze travels through space and gives us the illusion of relief and distance. That is how we construct space, with an up and down, a left and a right, an in front, and a behind, a near and a far.”[5]

5. Species of spaces and other pieces, George Perec, Penguin book 1997 (p 81)

Path – Journey
Inside > Outside

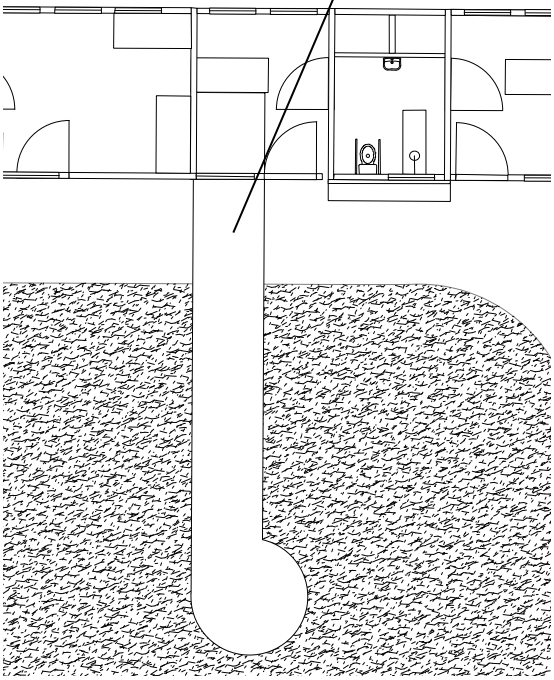
The patient, who is capable to move around on the site, can experience the atmospheres of the city, the neighborhood and the house. However, the world of a patient who can no longer experience different spaces on its own is reduced to the bed and the area around it. For many Alzheimer patients this is the case in the last two weeks of their life and this special condition became our field of interest. Aiming to enlarge the patient`s field of perception we create a path which will turn into a journey through moving the patient in his bed, bringing him from inside his room into the outside garden.



13

13.
Diagram:
Path from inside the room to the interior garden.
1:800

14.
Diagram:
Detail room and path
1:200



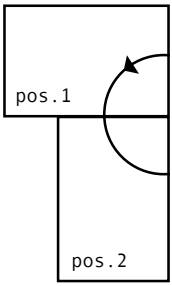
15

15.
Model:
Path from the room to the interior garden

16.
Diagram:
Movement of the bed, 180°

17.
Model:
Turning movement of the bed

18.
Model:
Bed moving on the path



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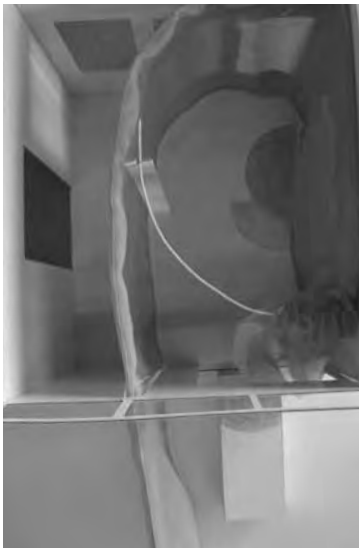

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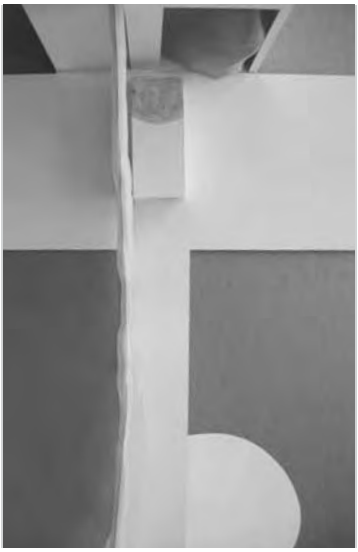


18

Apart from being a physical journey of moving through different spaces, it is also a symbolic journey of passing away. As Suriname is a melting pot of cultures, there is not one common funeral ceremony, but many shared rituals that are believed to facilitate a smooth transition from earthly to the afterlife[6]. Consequently, we do not aim at depicting a funeral ceremony, but want to offer a dream like journey for the patient and the family members. We enable this personal journey by placing a curtain that gently surrounds the bed and moves along a path into the centre of the garden. This enables the patients to move within their world (bed) to different atmospheres and turns their path into a collection of moments that do not require images from their memory.

This space, instead of fighting the disorientation that accompanies the onset of Alzheimer's patients, is an environment, a landscape, that Alzheimer patients can enjoy by moving through and letting go almost entirely of rational structures.

6. http://www.surinameinsider.com/dancing-and-death/ (May 2012)

Phenomenological qualities

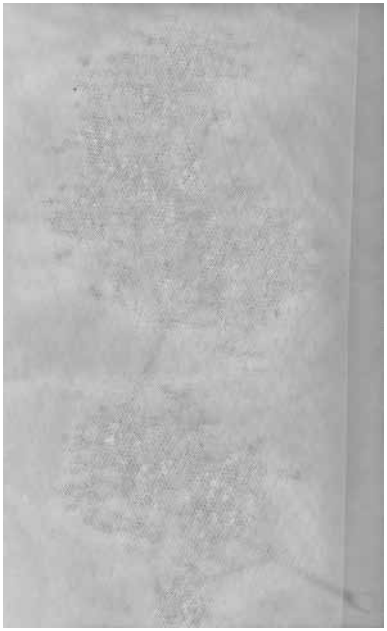
The curtain

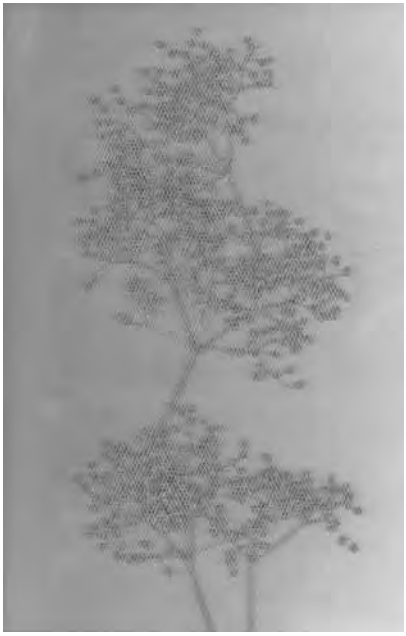
The curtain is made of a muslin cloth and resembles a mosquito net, a common material used for different purposes in Suriname. From the way it reflects the light to the way it moves with the lightest flow of air, the material is an easily moldable structure and adapts to any surface it enters in contact with.

Transition with nature

The path is a continuous journey. The further the patient is brought along this path, the more transparent the textile of the curtain becomes until it eventually completely reveals the surrounding nature.

By bringing these two elements together we propose a new contact between the patient and the environment, that is constantly influenced by the change of natural properties.





Herbs and plants

Tinde van Alde, post doc researcher on medicinal plants explained the importance of plants for Alzheimer patients in Suriname, a country with a high biodiversity, where the contact with nature and the use of fresh herbs and food is very important .

The beauty of nature, the touch of the structure of plants and the smell of herbs stimulate and give Alzheimer patients pleasure.

18

18. screenshots experiment: textile enveloping plants

Touch

We want to make use of skills that Alzheimer patient have not forgotten. ″For the memory-impaired person, benevolent touch becomes tremendously important as a means of communication”. We adress touch as an important component for creating the experience fort he patient through the path.

In the ride through the path, touch will be the means they use to understand the environment around them. Using their hands they are able to measure the depth and distance of the space surrounding them. For that reason we choose the muslin cloth, a material which, when in contact with the environment, in this case the nature, it envelopes the plants creating a volume of reliefs. By touching one feels the structure of the plants and the gaps in between the veins of the plants, which the muslin cloth now creates a surface.

7. http://www.silveradosenior.com/positive_touch (May 2012)

This journey offers the patients a new physical experience by activating the sense that stays with them the longest throughout the decline of the disease.

Field research

Alzheimer Centre Vondelstede

On the 30th of May we went for a visit and a field research to the Vondelstede Alzheimer centre. We arrived there around mid-day and the sunny weather invited the patients to have lunch outside.

For us this was an interesting moment since our research deals with creating an experience, which takes place in the transition from an interior to an exterior environment. We wanted to observe how the patients would interact with the muslin cloth which we placed surrounding plants and the ivy walls along the path.

Would the combination of materials arise any curiosity any feeling when experienced by the patient? Would they feel any interest in touching it, if so what sensation would that contact provoke?

We sighted that some patients were fascinated by the structures and colors of the textile, triggered memories and conversations, for some it resembeled a wedding others talked about how the rough-

19. photograph: Sensual experience, Alzheimer Centre Vondelstede

ness of the material felt in their hands. While some enjoyed the moment of playing others seemed a little irritated by our presence and the experiments with the material. Overall it was a day which aroused different reactions allowing the patients to have new contact between each other.

19

Light – Stimuli
Outside > Inside

Apart from creating an environment that the patient engages with through thouch, we are also interested in how elements that we are not so aware of can influence our feeling and moods, particularly, the way light does by surrounding us with its constant presence.

For decades it has been know that light affects how people feel. Especially when it comes to Alzheimer patients, light can have immense effects. Since patients are slowly losing contact and awareness of the surrounding, they can not easily distinguish and differentiate the periods of the day and often turn night into day.[8]

Thus we want to emphasize the tonalities of light, to help the organism situate itself through a day cycle. It has been shown that periods of blue light, like daylight, can help regulate the sleep-wake rhythm, which is a behavioral pattern linked to the 24- hour biochemical circadian cycle of the hormone

8. Dementia services Development Centre. University of Stirling. 10 helpful hints for dementia design at home. http://dementia.stir.ac.uk/newsletter (May 2012)

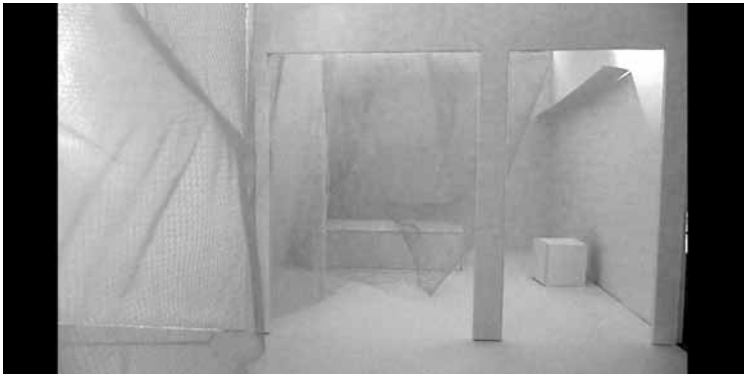
9. Alzheimer's Weekly, edited by Peter Berger, Medical Accuracy Review by Dr, b. Ancelovic, MD geriatrician

20

20.
photograph:
experiment:
Light stimuli

melatonin. Depending on the level of the hormone, people are awake or sleepy".[9]

We introduce a blue light that enters the room at noon, when the sun shines through a bluish colored window in the roof. The light slowly moves along the walls, changing its shape and intensity of color, until the sun sets. The color blue activates and the movement creates different moments that symbolize a day rhythm, giving the patients a feeling of time passing and change.



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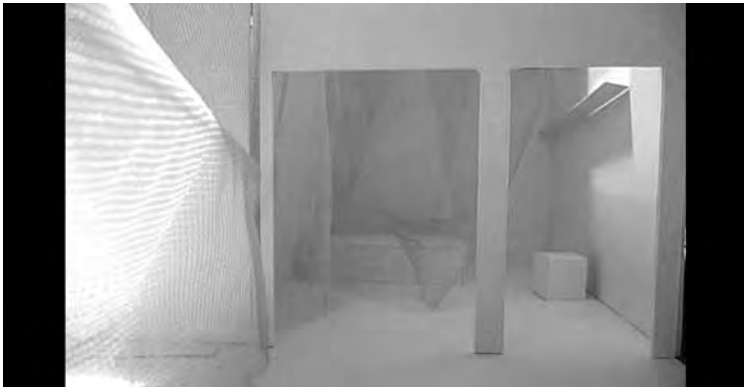

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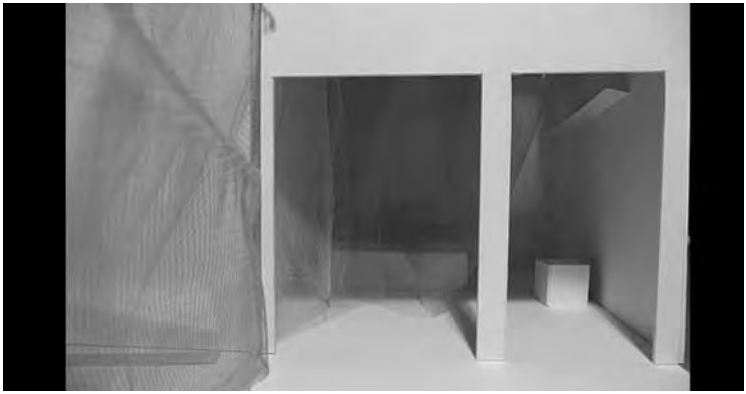


23

21./22./23. screenshots: movie experiment: light entering the room

"When nothing arrests our gaze, it carries a very long way. But if it meets with nothing, it sees nothing. It sees only what it meets. Space is what arrests our gaze, what our sight stumbles over: the obstacle, brick an angle, a vanishing point."[10]

10. Species of spaces and other pieces, George Perec, Penguin book 1997 (p 81)

"They may also come out of it if there is an unusual sound, movement, a flash of light or the light turned off. I found that my mother, would at times, not respond if I talked to her. But if I snapped my fingers she would come out of it. As if she was somewhere else or was sleeping with her eyes open." (caretaker)

“Enjoyment does not require memory”

Conclusion

Throughout the project we experienced that as diverse as people are, Alzheimer patients have different needs, desires and dreams. Many feel lost in themselves and due to memory loss communicating in the usual way becomes an increasingly more difficult task.

We want to give pleasure to the patient without putting pressure of solving a task on them. By creating a journey of sensual experiences, which gives the patient “a thousand different moments” we hope to stimulate the patient within it’s own world, being in contact with the outside world. At the same time family members and friends can, through the “journey”, share moments.

Brainscape

General Research

This Alzheimer health care centre is located Paramaribo that is the capital and largest city of Republic of Suriname. The country is a multiracial nation composed of various races with Javanese, Chinese, Africans, Jews, Europeans and East Indians being the largest practiced nation. Also such an ethnic variety it is called ‘melting pot’.

The weather in Suriname has a tropical and humid climate with the dry and wet seasons. The average of the daytime temperatures range from 28° to 32° C and the night the temperature drops as low as 21° C because of the moderating influence of the northeast trade winds, which blow in from the sea through the year. And May to August is the main rainy season, with a lesser rainy season from November to February. This weather not only make a large number of tropical plants grow like a coconut tree, papaya, and guava but also many various

herbs which used for a religious rituals or medical use. That explain how they have always been deeply connected with the nature in their daily life and what the nature brings them.

Alzheimer's Research

The visitors for this health care center are relates on the Alzheimer disease that is most common type of the dementia among the old people from 65 in general.

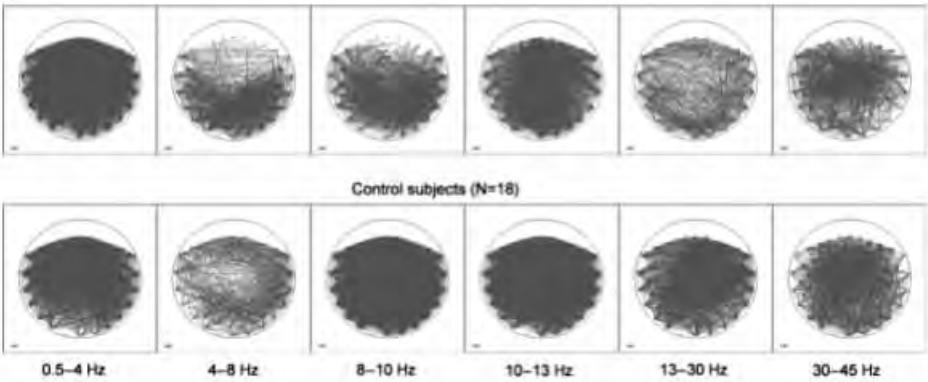
It is able to divide the seven stages for the condition of a patient that frame-work developed by Barry Reisberg, M.D who is the clinical director of the New York University School of Medicine's Silberstein Aging and Dementia Research Center

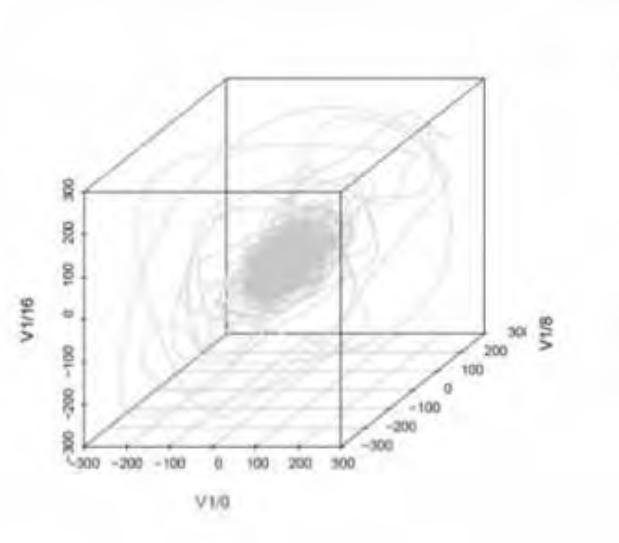
Stage 1: No impairment
Stage 2: Very mild cognitive decline
Stage 3: Mild cognitive decline
Stage 4: Moderate cognitive decline
Stage 5: Moderately severe cognitive decline
Stage 6: Severe cognitive decline
Stage 7: Very severe cognitive decline

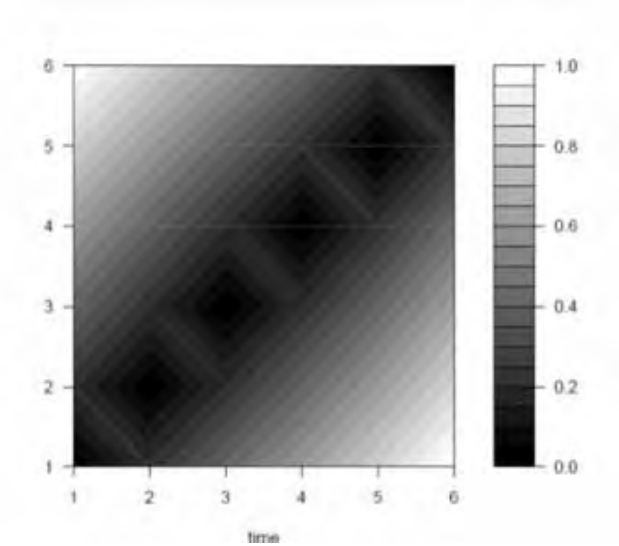
To understand this stage, which gives the idea of the routing for the building and placed all the facilities and improve their life style. In general the cause of the Alzheimer is senile plaque that make brain cell degenerate, changing the characterization or the properties of matter consequent bring up the Alzheimer disease.

It is clear that the Alzheimer patient's brain shape has the retrenchment entirely and has a large number of spaces inside the brain more than the healthy people's brain. I take an interest in the patient's brain shape and made a routing for the building from the trace of their brain shape.

Brain Form


Control subjects (N=18)
0.5–4 Hz
4–8 Hz
8–10 Hz
10–13 Hz
13–30 Hz
30–45 Hz


V1/16
V1/8
V1/0
300
200
100
0
-100
-200
-300


time
1
2
3
4
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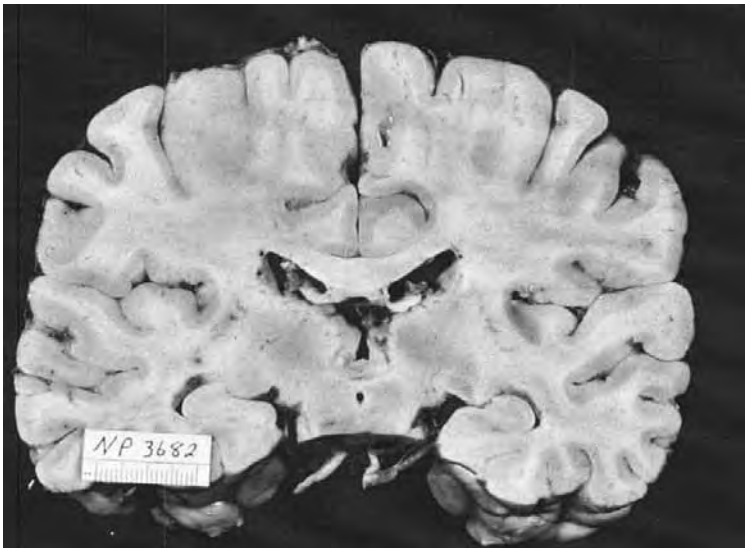
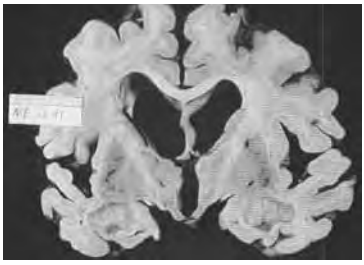
6
1.0
0.8
0.6
0.4
0.2
0.0

Patient’s Brain





Design Concept

The main design of this building is two elements. The first is the routing of the building, which is inspired by the Patient's brain shape and combined with the plants and landscape. Second is the building roof that developed by pattern of brain cells structure, which has the organically structure and shape and it is support for the plants to grow that will give them a natural shade inside the building and gardens and brings a various types of animals and birds and insects. This health care centre continues the liner of the environment of the nature in to the building.

This is very much clear on the floors ground level where the centre of the plan is occupied by the service core and facilities are arranged as an promenade which follows the around the building. Within this centre have different activities such as a day care centre, a promenade, garden, recreation centre, library, clinic, patient's room and information service on the ground floor.

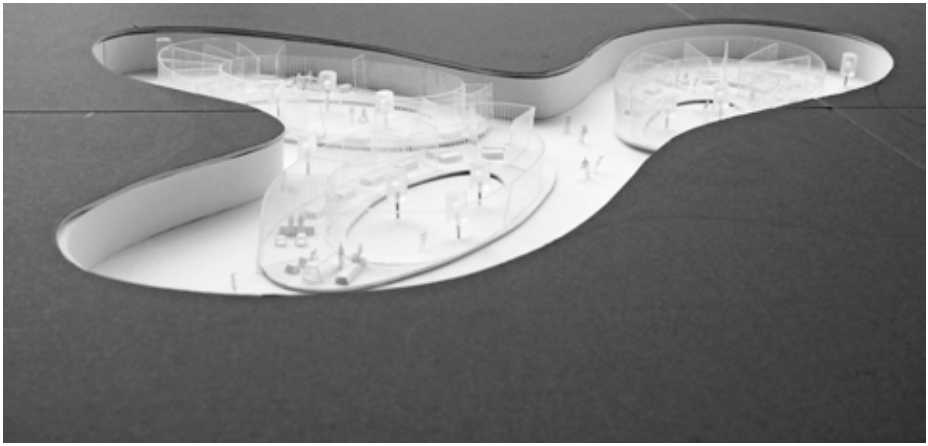
Basement floor has a promenade, courtyard, patient's room, caretaker's room and room where the patient's family is able to stay in short period. All the facility and space is built around the courtyard and patient is able to go out side easily and walk around in this plot between the basement and ground floor is connecting by the gentle slope and it has a role for the rehabilitation. This building is mainly consists of 3 buildings and they are divided by the function. At the Alzheimer health care centre, the form and material and color of the building the geometry of key space and the organization of the interior are direct response to their Alzheimer patient. The aim of this building is a give patients more possibilities to enjoying their life and it will be grow as a parts of the society.

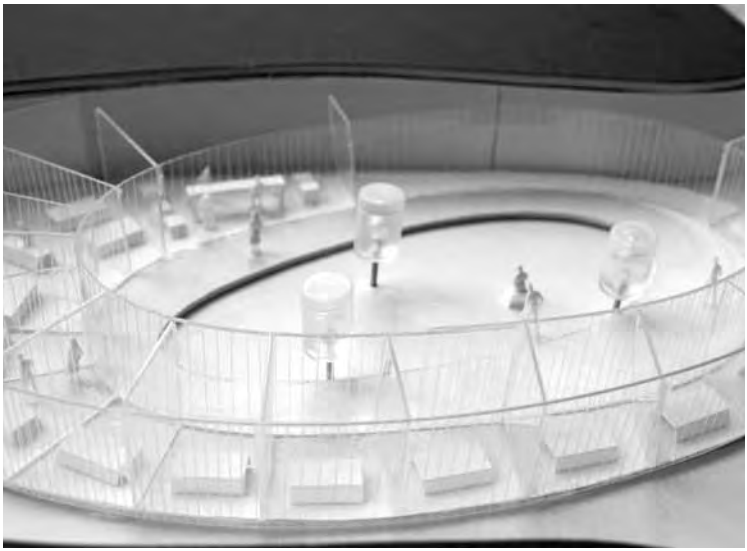
Path Studies 01

Path Studies 02

Landscape Study 01

Landscape Study 03





Landscape Study 04

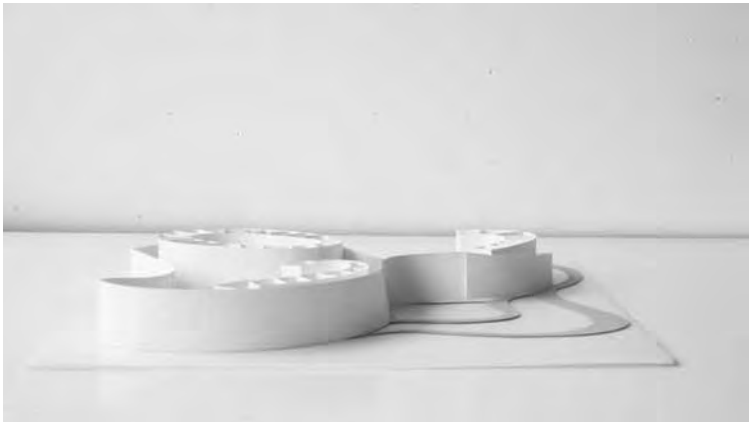
Form Study 01

Form Study 02

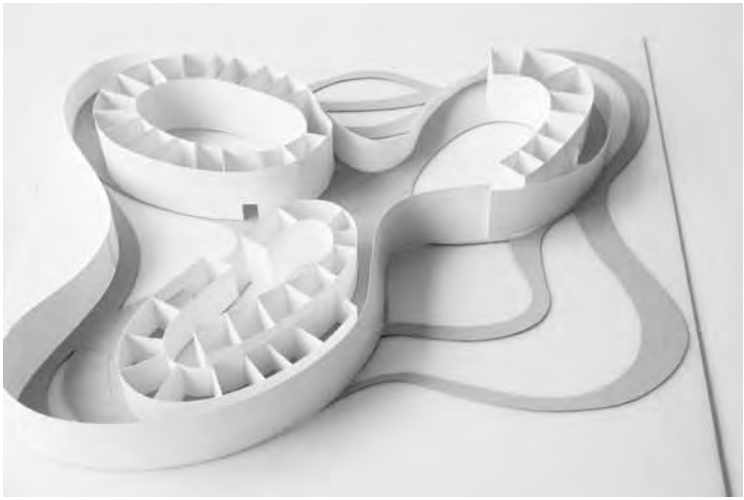
Form Study 03

Form Study 04

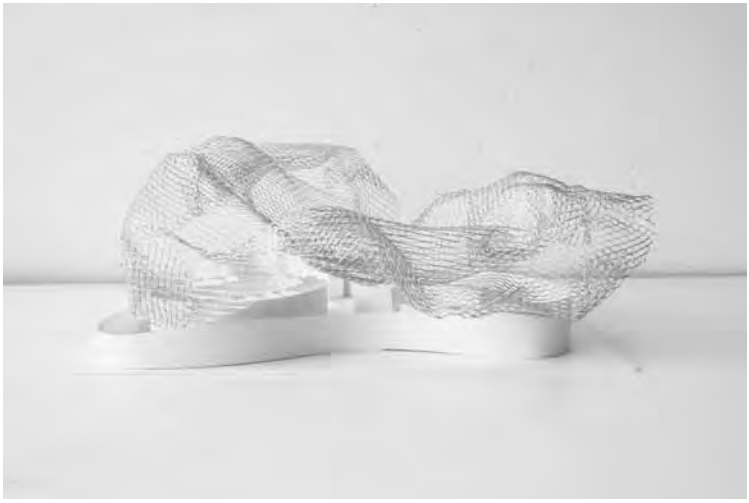
Form Study 05

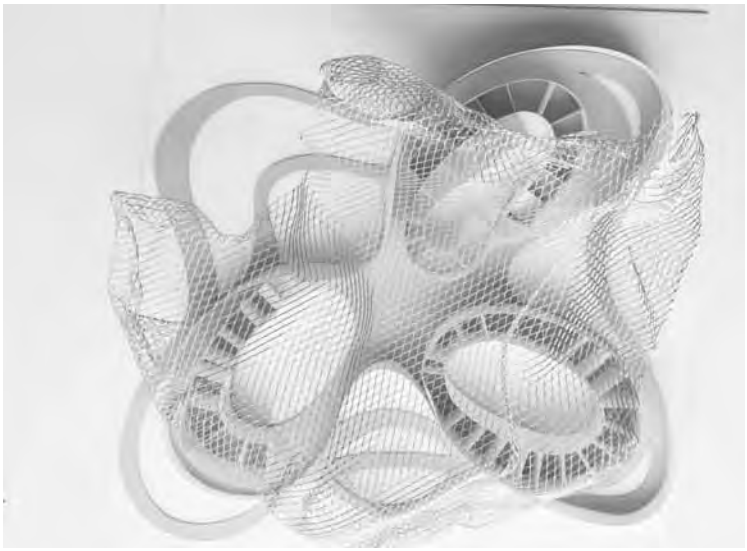


Form Study 06

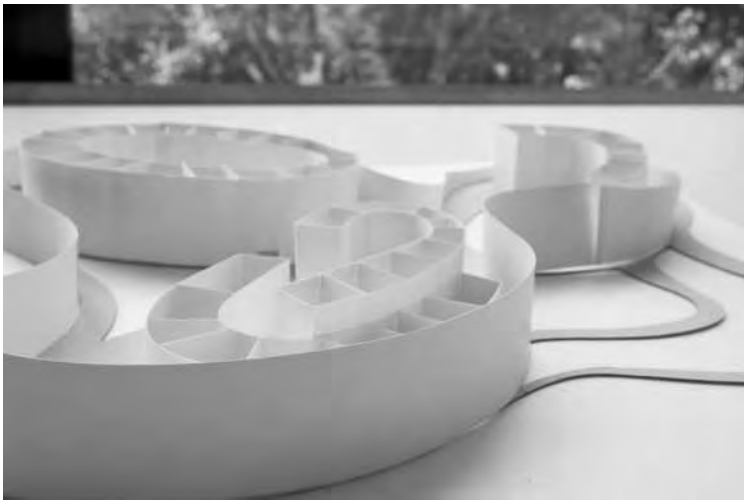


Form Study 07

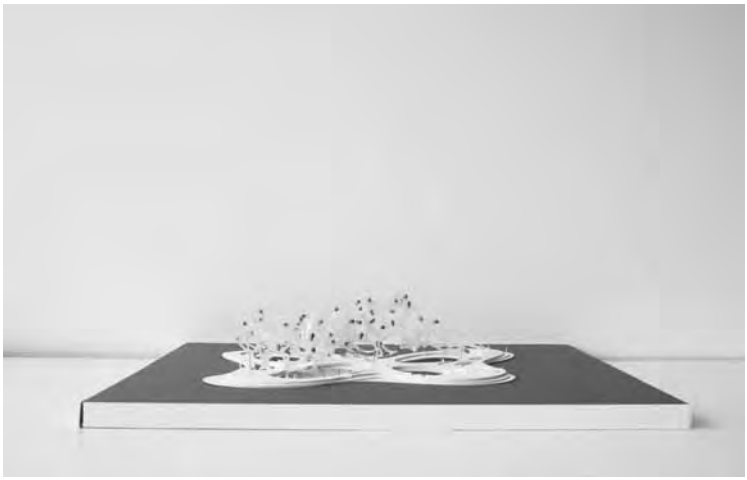


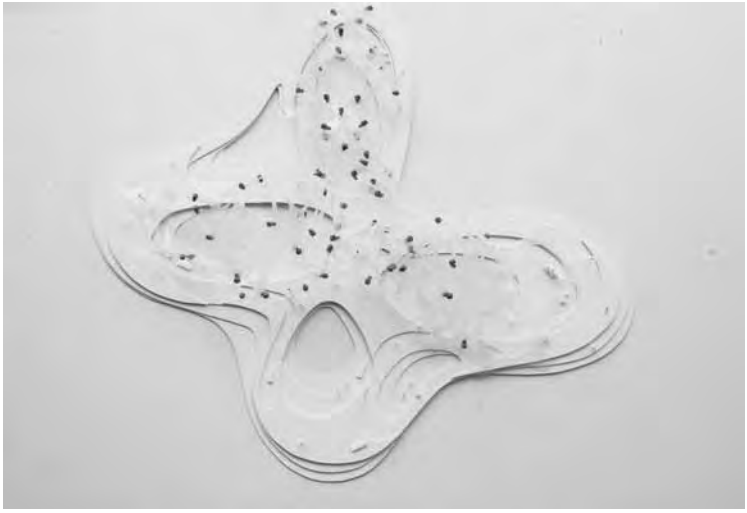


Form Study 08



Final Design





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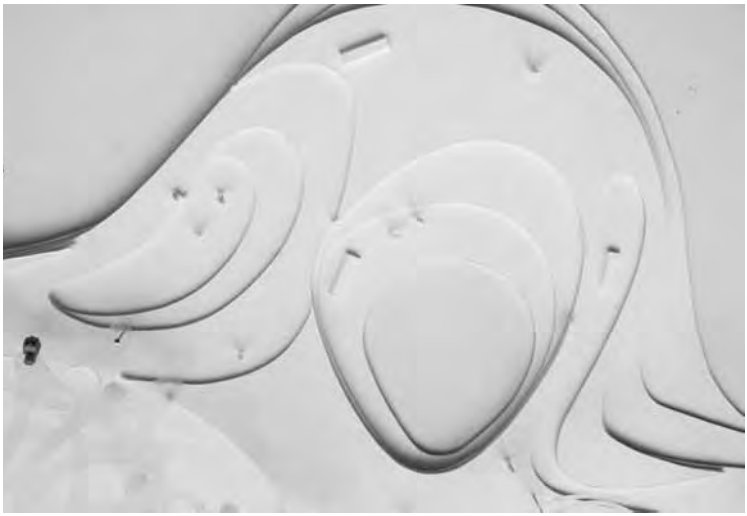

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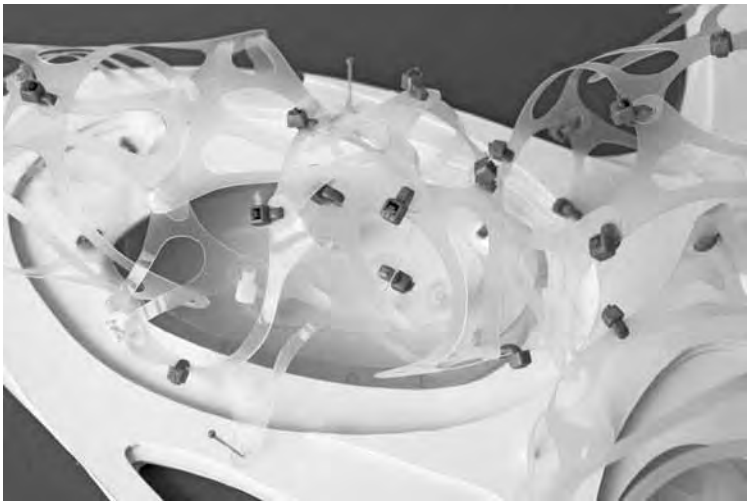
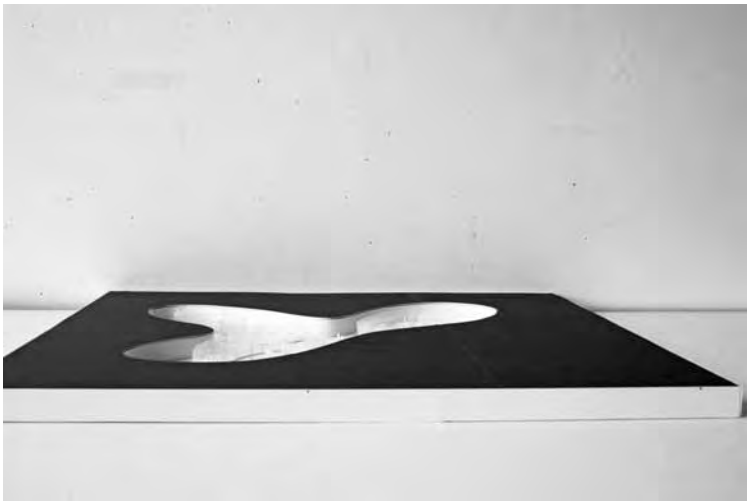


Final Design



Final Design

Tactile Interface

Considering an Alzheimer interactive experience is a challenge faced by designers and caretakers as well. People with Alzheimer and dementia often have trouble in making sense of the world around them. The environment (social and physical) and design features of a care facility should support the functions of people with Alzheimer's, accommodate behavioral changes, maximize abilities, promote safety and encourage independence. This space describes key issues to consider in designing a care facility for people with Alzheimer's disease.

Awareness and orientation

For the Alzheimer's patient, whose thinking processes are already slowed and impaired, design features such as some touch-based therapies and sensory experience facilities help maintain control and functional ability in everyday tasks and ac-

1.
Tree house

1

tivities. Such support has significant consequences on patient's confidence and independence.[1]

Hence program and design not only include haptic experience but should reduce patient confusion and disorientation regarding place and surrounding. Wandering problems should be handled in design by helping Alzheimer's patients to identify dedicated colors for residents rooms and personalized display cases by room entrances to improve orientations.[2]

Haptic stimulation

As humans, we get by with five senses: touch, taste, sight, smell, and hearing. They work well for us, and other animals have developed many other strange and wonderful ways to find their way around. We know that animals have often been used to symbolize the senses in Western iconography. In addition, the human body meridian is a path through which the life-energy known as flows in traditional Chinese medicine. There are about 600 acupuncture points and 20 meridians connecting most of the sensory points in our body.

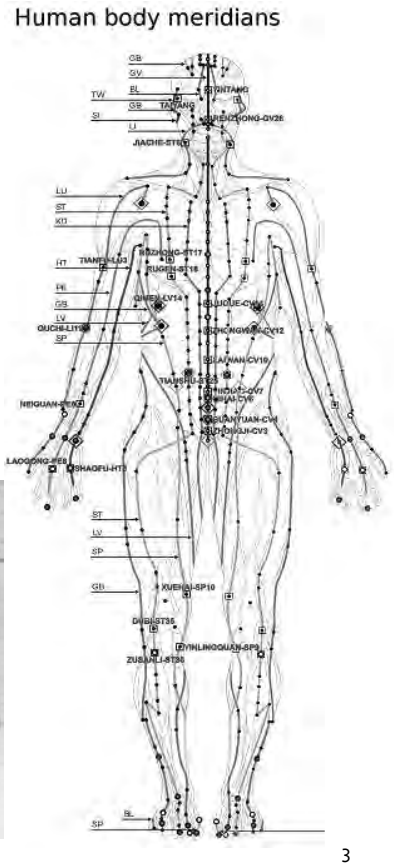
In the book [The Poetics Of Space][1], Gaston Bachelard said: For the sense of taste or smell, the problem might be even more interesting than for the sense of vision, since sight curtails the dramas it witnesses. But a whiff of perfume, or even the slightest odor can create an entire environment in the world of the imagination. The elderly right now idea that design for promoting haptic therapy. I challenge a sensitive ambience

1. Gaston Bachelard <The Poetics Of Space> (p 174)

2.
Sensory
studies

3.
Chinese
meridians

2



3

which is a self-structure, like a overlapping meshing systems, inhabiting Alzheimer's space and challenging its perception. Furthermore the sectional articulation connecting therapeutic device during the inter activity therapy process.

4

5

6

4.
Sense of
hearing

5.
Sense of
touch

6.
Sense of
smell

Thus, my idea of the interactive and therapeutic input which connects the structure comes in several varieties, each with a distinct characteristic and function, stimulating one or more of the four senses — touch, smell, hearing, then will combine sight as well.

From a microwavable plush/ soft toy to warm up the user's hand to a toy infused with a triggering smell, the toys are designed with a carefully balanced combination of material, weight and size in a way that induces a strong sense of physical contact, stimulating emotional response.

Haptic perception in the built environment

In addition to triggering Alzheimer's memory, as Alzheimer's disease progresses, the patient goes through very similar stages as a growing child, but in reverse. Cognitive as well as social abilities are slowly lost as the tangles spread through the brain.

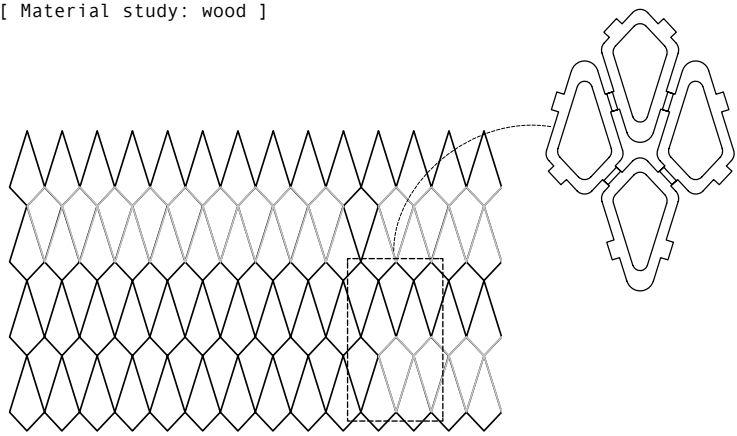
Because they know they maybe need to go to work but they can't understand anymore and have impairment in the capacity to work things out, so giving them a large specific space for learning or training their memory will give them a lot of anxiety. So these haptic spaces which are small over large into work can transform to various forms and adapt to changing need place where Alzheimer's patient can wonder to these spaces for themselves.

Tactile interaction Concept

The ideas that I propose give people with Alzheimer not too much impulsive that don't make them try to use without ability to do it. This's a sensitive ambience that has a self-structure and can be assembled / constructed (depend on size or different spaces) for different space then people with Alzheimer stop moving between their rooms and healing rooms because they feel like they have choices.

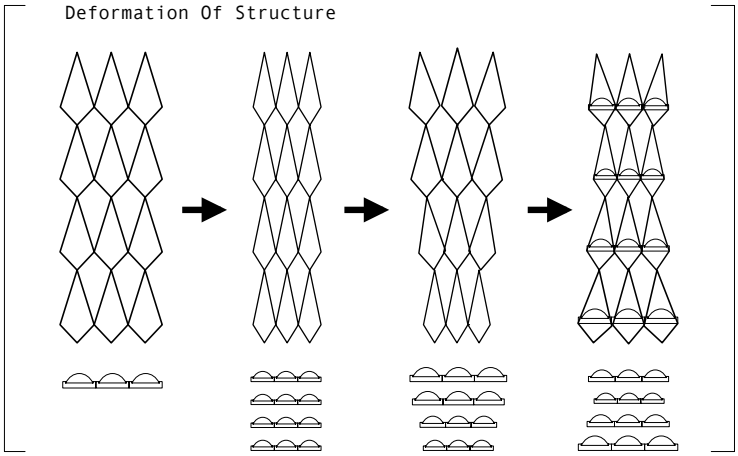
STRUCTURE TYPE 1

[Material study: wood]

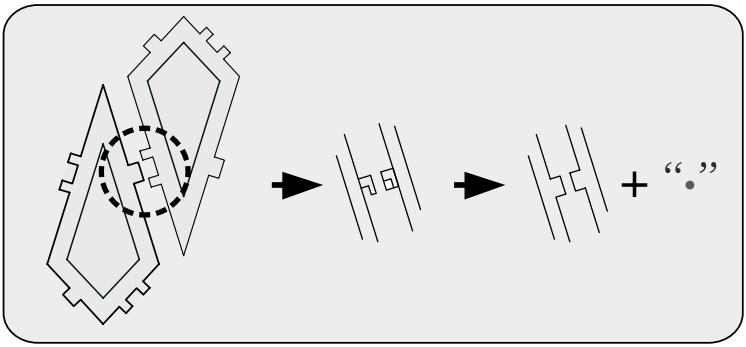


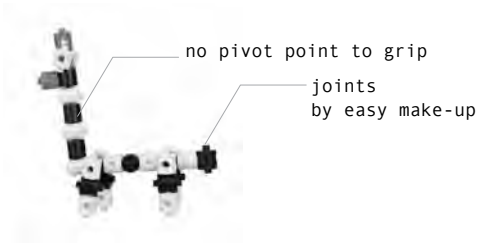
Furthermore, this input that Alzheimer's patients could touch it and handles it to get haptic experience. For instance, people can touch the bottom on one of the inputs then they can get good experience (they know from their past) at that time. On the other hand some can trigger them more during looking for something with unknowing touch it. It's a new thing for them. Although it orientate people, but unknowing sensory brings good response like cooking, smells of food/ coffee can trigger their memory.

[Material study: plastic / rubber]



Easy joint design





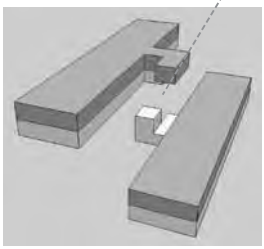
7.
Elderly’s toy

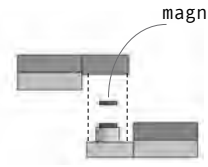
7

Engaging and taking pleasure in visits with failing, forgetful, or weak senior citizens is possible with a little effort and creativity. Improved time spent together is uplifting to all involved and can create nice memories.

Elderly seniors indicates a loss of hand function. Because of weak physical function, it’s difficult for them to scratch and grip, even hand tremors.

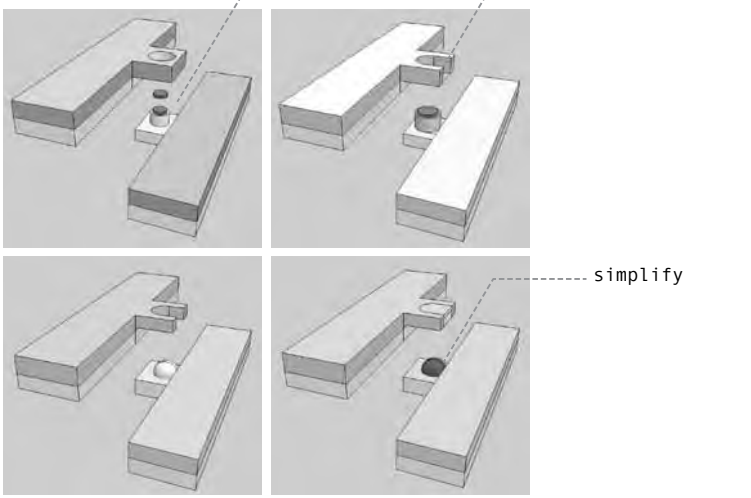
Joint Study





use magnet with low grip strength

section B



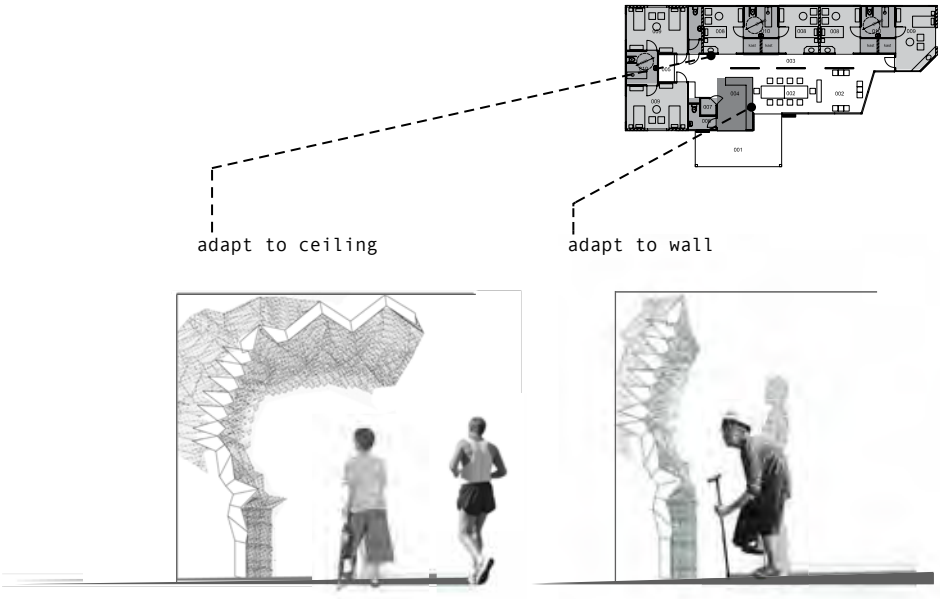
Adapting to changing needs

This interactive installation would adapt to specific place and the structure would be appropriated for different function of space like it could stand by itself or hang/ engage on the structure of ceiling or wall.

Design strategies

The joint of its self-structure just like puzzles and would be used like orientating to as well. Large scale can be built by caretakers, and smaller scale can be oriented by patient they like, and then they can stay and play with it comfortably. The sensory toys that are inside including touch therapy involve warm, cold, friction and hurt interaction.

The above design considerations can involve modifying an existing structure, softening corner and making it easier to walk or wander. It’s not only to heal and trigger patient`s perception, but also influence an existing space.



1.
Image:
stretched
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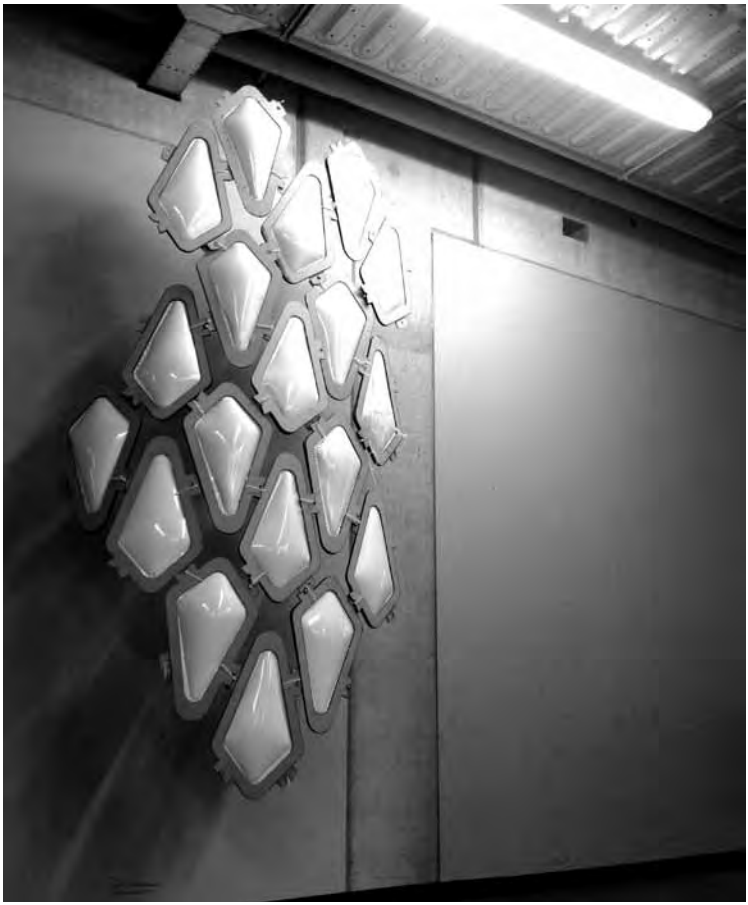
1



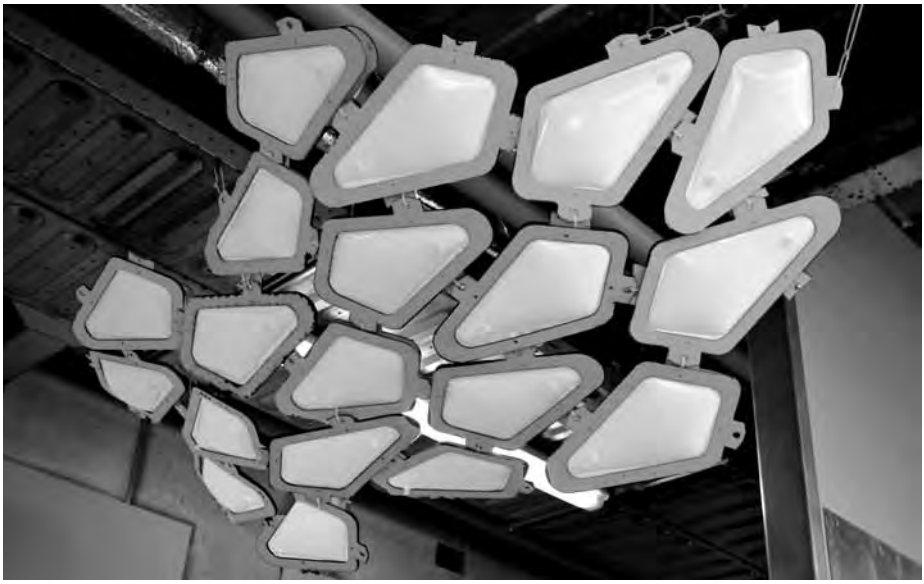
1. / 2. / 3. model pictures:

1.
Adapt to ceiling

2.
Adapting to the wall

3.
Detail

1



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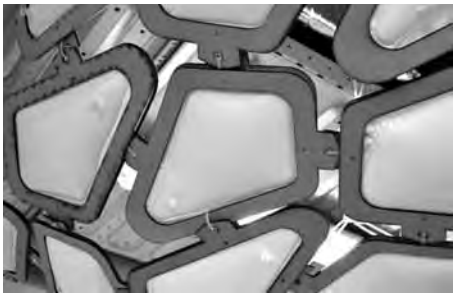

3

Lectures and feedback sessions

Sensory perception was investigated from different perspectives through presentations and feedback sessions from industry professionals, theory and literature research as well as excursions, in order to gain specific insights, these included:

- Dr. Janneke van Leeuwen, neuropsychologist and artist presentation on ‘art and dementia’.
- Dr. Sietske Sikkens, researcher at the VU Alzheimer Centrum, presentation on the current state of Alzheimer’s disease in relation to the medical world.
- Drs. Anne-Rose Abendanon, program manager of Inter-cultur alisation of Cordaan, presentation on intercultural society in Suriname in relation to the elderly.
- Sjaak Langenberg and Rose de Beer, artist duo, presentation on projects with ‘elderly and dementia’.
- Henri Snel, architect, head of Interior Architecture Master’s program at the Sandberg Institute and researcher into the subject ‘Alzheimer’s and Architecture’, presentation on haptic architecture.
- Dr. Tinde van Andel, researcher at NCB Naturalis, presentation on ‘Medicinal plants in Suriname’.
- Ir. Saskia de Wit, landscape architect and assistant professor at the TU Delft, presentation on ‘Gardens in relation to care’.
- Drs. Ana McGinley, expert on elderly with dementia, feedback session on the fit-out of residential care institutions.
- Dr. Wouter Bergmann Tiest, researcher at the University of Utrecht, researcher into haptic experiences within the European project “The Hand Embodied”, presentation on ‘haptic perception”.

Excursion:

- VU Alzheimer centre, Amsterdam
- Vivium group de Bolder, nursing home for elderly with dementia, Huizen
- Odensehuis, voluntary day-care for people with dementia, Amsterdam
- Materia, materials laboratory, Amsterdam
- Zonnestraal, former sanatorium, Loosdrecht

General theory and literature on sensory perception

- Alain de Botton: The Architecture of Happiness
- Marleau Ponty: Phenomenology of Perception
- Juhani Pallasma: The eyes of the skin, reading together
- Gaston Bachelard: The poetics of space
- Steen Eiler Rasmussen: Experiencing architecture
- Edward T. Hall: The hidden dimension
- Richard Sensett: Flesh and stone, the craftsman
- Loise van Swaaij & Jean Klare: The atlas of experience
- Guy Debord: The Society of the Spectacle
- Jean Baudrillard: The consumer society

On health care and theory

- Hedy d'Ancona prize: for outstanding care architecture
- Beatriz Colomina, Privacy and Publicity: Modern Architecture as Mass Media, 1994
- A.E. van den Berg, Health Impacts of Healing Environment: A view of evidence for benefits of nature, daylight, fresh air, and quiet in health care settings, 2005
- Lieven De Cauter, The Capsular Civilization: The City in the Age of Fear, 2004
- Cor Wagenaar: The architecture of hospitals, 2006
- Van der Voordt: Getting lost in the nursing home, 1993
- Abram de Swaan: The architecture of hospitals, Nai Uitgevers/ Publishers, 2006

Appendix
Appendix A

Functional brief

Small-scale living, day care facilities and knowledge dementia centre of Wiesje Foundation in Paramaribo, Suriname.

Foreword

Late in 1999 I established the Wiesje Foundation together with other people. The purpose of our foundation is to improve the living conditions of people with dementia in Suriname through the transfer of knowledge, implementation and management of day care facilities and outpatients, and the building and management of a residential centre providing 24 hour care. The foundation is named after my mother, Wiesje Haverting Nooitmeer. She was affected by dementia in the final year of her life. During that period it became clear that there were no adequate facilities available for people with dementia in Suriname. Knowledge and

resources are lacking. This personal experience is backed up by a 1999 Alzheimer Nederland foundation study, published in Dementia from faraway close-up, an exploration of the care of people with dementia in Suriname.

Paramaribo has a population of 200,000 inhabitants, of which more than 10,000 are over the age of 60. There are 12 care facilities, with a capacity of 862 people (10.8% of the over 60). Most of these homes were built in the seventies. At that time a greying population was mostly a Western problem. The children would take care of the parents. The nursing home was required only for the financially weak, childless elderly. Due to the migration of large numbers of Surinamese and the fact that all adults in a family are required to work, the traditional care has been greatly reduced. The care of the elderly is increasingly left to third parties due to necessity. ‘Bed, bath and bread’, or rest, physical care and nutrition, are the number 1 priority in the Surinamese

retirement and nursing homes. The institutions are not geared to care for demented elderly. The homes have no money, no time, no knowledge and no policy to give special attention to this group. Therefore they pursue a restrictive policy on intake of people with dementia. Elderly people who develop dementia, verbal aggression or tendencies to run away after being admitted, are kept under control through the administration of sedatives due to of lack of opportunities and staff shortages. Doors are locked and restraints are used regularly.

Based on these findings, Alzheimer Nederland recommends a psychogeriatric centre be set up to provide hospital care for demented elderly which provides day care facilities, support for the elderly who live outside the nursing home, supplemented by an information and documentation centre and training for carers, doctors, management and family.

Since the established of the Wiesje Foundation much has happened. An Alzheimer café has been established and training has been provided to volunteer and professional carers. In September 2005 our first day care facility opened its doors to 15 participants in a building on the Kennedylaan. In 2006, the Wiesje Foundation organized a well-attended two-day conference. In 2007 Alzheimer Foundation Suriname was established. Due to all this it has become easier to discuss dementia and the knowledge about it has increased enormously. Today we face a new challenge: The construction and management of a residential centre & (second) day care facility & knowledge centre including a library and documentation centre. With this development we want to provide a protected residential setting for 24 people with dementia (3x8) who are no longer able to live at home. In time, the intent is to expand the home to accommodate 40 residents.

The functional brief for this facility now lies in front of you. It was prepared in consultation with Suriname. The home and the care closely align to the familiar lifestyle of the residents. We endeavour to maintain autonomy and independence, and customize care for physical and mental wellbeing. Our core values are safety and security.

Once the finances are finalized, the preparations for the construction can begin!

Gerda Havertong, Chairwoman Wiesje Foundation, January 2012

Appendix B

Aim of this functional brief

A functional brief includes the data on the housing needs of an organization and performance requirements of the

location, building, spaces and the facilities in the building and on the site. The brief includes requirements for:

- Functionality such as space requirements, accessibility, spatial layout, flexibility, amenities and durability.
- Building conditions such as temperature, air, water, light, view and noise requirements.
- Safety in construction methods, fire, safety, security and protection against harmful external influences.
- Requirements concerning the operational efficiency of the design with respect to the use, energy consumption, maintenance, cleaning and environmental aspects.

The functional brief is an important document in the communication between the client and future users on the one hand, and the architect and other consultants on the other.

The drafting of a functional brief happens in the briefing phase. During this phase the client, together with stakeholders, defines the needs and wishes in regard to the realization of the building and the required facilities.

This brief in its final form is binding to the architect. His or her design will need to be realized within the requirements set out in the brief. Because theory and practice don't always align, compromises in the design cannot be excluded. A clear brief however, will streamline the design and construction process and will avoid the necessity of having to implement costly changes during construction.

In the case that new information emerges during the design process that has consequences for the brief, the architecture or engineering design, the architect will formulate additional requirements in consultation with the users.

Appendix C

General

The residential centre provides permanent housing for 24 residents with dementia, divided into three cottages, each for eight residents, and extendable with two houses to bring the total to 40 residents. In addition, the residential centre includes daytime facilities for 15 visitors and a knowledge centre cum library / documentation centre for information, knowledge exchange and training. When sufficient funds are available, the project will be realized at once.

The required usable space has been determined by using the functional architectural principles as set out by the Building College in Utrecht (building measures, kitchen facilities, general and office spaces and technical service workshops) and current Dutch performance requirements for new healthcare buildings, adapted to the Surinamese.

Living / care vision

The fundamental wish of many elderly and dependents is to live at home for as long as possible. The Wiesje Residential Centre provides permanent accommodation in a homely environment for people suffering from dementia for which living at home is no longer possible. In addition, day care is provided to people with dementia who can still live at home (through this provision). Wherever possible there will be collaboration with home care.

Wiesje Residential Centre

The residential centre will have the function of small-scale living. Small-scale living is a way of organizing living, welfare and care so it aligns to the wishes and needs of people with dementia. In small-scale living the approach to living is as much as possible like a normal home situation. The care is provided in a comfortable, familiar and safe environment. The (group) home is the home of the residents in which the daily domestic chores are performed. There is a living

room, and after cooking the residents eat communally. In addition, the residents have a private room into which they can retreat, furnished with personal belongings and taste. The idea is that people can continue to live out their lives here.

The term small-scale refers to a concept, involving a permanent team of staff that is able to provide a homely atmosphere, where the decorations in the cottage belong to the residents themselves, the care organization is similar to a household, where the residents can cook themselves and the residents, family and team determine the daily affairs.

Day centre

The day centre provides people with dementia the opportunity to get together 2 to 5 times a week and participate in communal activities. This prevents people with dementia from becoming socially isolated. The day care facility contributes to a better quality of life and helps to retain remaining competencies longer. Thus the day care

centre contributes to the goal of enabling people to live at home for as long as possible. By participating in activities at the day centre, admittance to the residential centre may be prevented or delayed. Wherever possible there will be collaboration with home care.

Location

Preferably, the location should meet the following criteria:

- Convenient positioning to the centre of the city.
- Within short distance to the home of origin
- Easily accessible by public transport, on foot, by bicycle and by car.
- Sufficient parking.
- Suitable dimensions and adequate buildable site.
- Size of the site about 10,000sqm. Keeping in mind the rule that the maximum allowed hard surface area is 25%, with a possible exemption of up to 35%.
- Agreement on the desired function of the zoning (nursing home).

- Positive image of the environment (quiet, safe), lots of amenities nearby and free of environmental issues (soil or air pollution, odor, noise).
- Ability to monitor the site for security.
- Good underground infrastructure (cables and pipelines).

Building layout

The Wiesje Residential Centre will be a single storey building. It assumes a single organizational unit for 64 residents initially, divided into 8 group homes each with 8 residents. The residents each have their own room. The group homes are situated around a courtyard or enclosed garden, which is arranged in such a way that residents cannot leave independently. Furthermore, the building houses a day care facility for 15 residents, a small knowledge centre and some central facilities for staff and facilities support.

In order to emphasize the particular function of the building, a somewhat expressive form of the building will be appreciated.

The building must be a beacon in the surroundings. The design, use of materials and colors may be adjusted to this.

Other general requirements are:

- Preparation, construction and management will be done with local people and materials as much as possible.
- The group residences must radiate a homely ambience and resemble a residential environment in familiar surroundings.
- Group residences should be recognizable as an archetypal house.
- Attention to daylight, natural ventilation and safety.
- Disabled accessible. Space layouts to accommodate wheelchair use.

Design and implementation

The design and implementation must comply with applicable law in Suriname as well any regulations relating to safety, health, function, energy consumption, regulation of the relevant ministries, labour conditions, municipal and fire requirements, zoning, utilities, welfare and the like. Due to

wheelchair requirements the minimum clear passage width for doors will be 85cm (door width 93cm). For bed transport 1.10m clear passages will be allowed. For other dimensions please refer to the Dutch Manual for Accessibility, published by Elsevier. Constraints include the need for parking on public road and adequate loading and unloading space. Aside from the budgetary constraints and the above-mentioned requirements, the form of the building is unrestricted.

Residential centre

The residential centre consists of 3 cottages with 8 residents each, including a living room plus kitchen (with a terrace / porch attached to the central courtyard), 8 individual resident rooms, a bathroom for every two residents and a laundry room for personal items. The residential centre should be designed in a way that a subsequent extension for two cottages will be as easy as possible. The starting point is a communal household per dwelling, where the daily household activities form part of

the routine. The resident rooms are preferably adjacent to the corridor / porch. Each cottage has its own front door. Residents can move freely in the garden. The guarded main entrance is closed to the residents. The residents can walk to the general areas under cover. A central crisis lodging for emergency care will be provided, consisting of a sitting / bedroom and wheelchair accessible bathroom.

Day care facilities

The day care facilities consist of a large multi-purpose room for activities involving 15 participants. The space can (partly) consist of a covered terrace. The space must also be suitable for joint activities for residents and external visitors (family meals, choir, dancing, church groups, clubs) and associations of volunteers who organise activities together with the residents. It is therefore advisable to split the multi-purpose room into two spaces. There should be an opportunity for resting. The preference is for lounge chairs, because beds take up

too much space and project too much of an institutional look. The central kitchen (preferably close to the day care facilities) is meant to cater both to the day care facilities as well as common activities for the residents.

Knowledge centre

The knowledge centre consists of a space where information can be obtained, and leaflets, magazines and books can be consulted, plus a multi-purpose room where meetings, round table discussions, and training can be provided for up to 20 people. Larger groups will be diverted to areas outside the knowledge centre. The classroom is located near the central kitchen, so it can be used during training sessions.

Staff facilities

The staff facilities include an office for the site manager and an administration area. In principle, conversations with the doctor occur in the resident's room instead. There is no dedicated reception desk. Visitors report to the site manager or the administration, which also performs the function of a reception desk.

Facility services

The facility services include a central kitchen, warehouse and storage space, workshop space and facilities to accommodate security and transport. The central kitchen is close to the day care facility / central meeting space. The site manager must have a good overview of the entry and departure of people, goods, waste etc.

For security purposes, a fence encloses the area. Through an intercom at the main entrance visitors can register with the site manager or administration.

Total space requirements

The required functional usable area for the residential centre with day care and knowledge centre is estimated at nearly 1700 m² NLA, comprising:

- Three houses for a total of 24 people : 738m²
- Expendability for two additional cottages, each for 8 residents : 492m²
- Day care facilities and central spaces : 132m²
- Knowledge centre with library/documentation centre and class room : 100 m²
- Other provisions: 225m² Total net floor area : 1.687m²

Suriname Thanks Sandberg!

The Wiesje foundation

In the nineties I was strongly engaged with research into housing and care for the elderly (see the bibliography at the end of this text). One of the books I co-edited and co-authored – the Practical Manual to Building and Management of Assisted Living facilities (in Dutch) – was published by Bohn Stafleu Van Loghum in Houten. In 1999 the editor John Thämer called me and asked me to support Mrs Gerda Havertong, a well-known performer who was born in Suriname but lives and works in the Netherlands for decades. In the final year of her life, her mother Wiesje Havertong-Nooitmeer suffered from Alzheimer's disease. During that period it turned out that good care and facilities for people with dementia living in Suriname were lacking.

Apart from visiting her mother from time to time and sending goods, Gerda Havertong and her family could not do very much. After Wiesje Havertong-Nooitmeer passed away, Gerda Havertong decided to transform her grieve into a powerful initiative and started the Wiesje foundation (www.wiesje.nl) with the aim:
1) to raise awareness of what dementia is and to learn people how to cope with people suffering from dementia;
2) to establish a day care centre; and
3) to build a facility to accommodate 24-30 people with dementia, with warm and professional care 24 hours a day, 7 days a week.

Since 1999 the Wiesje foundation organizes education and training of nursing staff and family taking care of people with dementia and facilitates so-called Alzheimer cafés where people can meet and share experiences. In 2005 the Wiesje foundation opened its day care centre at the Verl. Gemenelandsweg. Everyday 15-20 elderly

people meet each other here, get care from professional staff, and enjoy activities in a pleasant and safe setting that supports their health and wellbeing. The realisation of the ultimate goal of building an assisted living facility is coming soon. In 2011 the Suriname government provided a piece of land. The government asked us to accommodate 64 people, due to the high demand for professional care in Paramaribo. We adapted our program of requirements according to this request. Philip Dikland from KDV Architects, Paramaribo, made a preliminary design for eight units with eight tenants each plus a day care centre. As soon as our financial means fit with the budget we need we will start to build!

The Henri Snel project

In 2012 Henri Snel, head of the Master education in Interior Design at the Sandberg Institute, decided to use our brief and the Dikland-design as input for a student project with 6 international students. From the start on the Wiesje Foundation

was strongly involved in this project. I really loved to join the meetings with the students, including a session where they presented their first ideas (with the presence of Ed Cools, board member and former director of the Innoforte care organisation), an excellent lecture of Tinde van Andel on the medicinal and ritual effects of tropical plants (with the presence of Joyce van den Boogaard, member of the Wiesje board in Suriname), and the final presentation of the students (again with Ed Cools). We were deeply impressed and touched by the enthusiasm and creativity of the students. Apart from impracticalities such as accommodating people below ground level or designing very complex forms that would make the project too costly and not affordable to the target group, we were greatly inspired by the proposal to improve the connections between the units and the day care centre, the scale-model of a provoking roof made of wood and plants allowing to naturally grow, curtains in different colours and materials to guide people

through the overall project, walking paths to support people to move without losing their way, innovative products that can be used to mark particular spots or to improve the identity of different units and apartments, and so on. We agree completely with Henri Snel who finished his speech by saying to be proud on the students. We would like to express our warm-hearted gratitude to all students, teachers, and other experts that helped the students to make such interesting and appealing designs. Be sure that we will use the lessons learned in our next steps. Hopefully none of you will ever suffer from dementia, but if so, we will open our doors to you efu wan dei I lasi pasi (if you ever get lost).

Theo van der Voordt, vice chair of the Wiesje foundation

Special Thanks to

• Drs. Janneke van Leeuwen, neuropsychologist and artist
• Dr. Sietske Sikkens, researcher at the VU Alzheimer Centrum
• Drs. Anne-Rose Abendanon, program manager of Inter-culturalisation of Cordaan
• Sjaak Langenberg and Rose de Beer, artist duo
• Dr. Tinde van Andel, researcher at NCB Naturalis
• Ir. Saskia de Wit, landscape architect and assistant professor at the TU Delft
• Drs. Ana McGinley, expert on elderly with dementia
• Dr. Wouter Bergmann Tiest, researcher at the University of Utrecht
• Ir. Theo van der Voordt, associate professor at the University of Delft and vice-chairman Wiesje foundation
• Ed Cools, board member Wiesje foundation
• Joyce van den Boogaard, secretary Wiesje foundation Suriname
• Nami Fogel, interior architect and translating parts of the book from Dutch to English
• Ed van den Boogaard, inter-mediator
• Aly Wolsink, secretary Wiesje foundation, Netherlands
• Gerda Havertong, chair-woman Wiesje foundation
• Ir. Rinske Wessels, project coordinator MIA, Sandberg Instituut
• Philip Dikland, architect Wiesje foundation, Suriname
• Dr. Lucy Cotter, tutor MIA, Sandberg Instituut

Alzheimer Centre Vondelstede in Amsterdam

Care center `Schalkweide`, foundation Sint Jacob in Haarlem

Colophon

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p 30
Image:
Consciousness
Stream - The
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Tarsem Singh
http://www.
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p 31
Image:
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p 33
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p 33
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Maroons in
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p 33
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Paramaribo
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p 36
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p 36
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p 40
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p 50
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blog/chiocci-
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suriname.html

p 52
Diagram:
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p 56
Image:
Painting in
Suriname.
http://www.
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taught.html

p 63
Image:
http://
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TheBarclay-
Difference.
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p 63
Model:
Modification
of Grahn´s
model, 1991.

p 67
Image:
Screenshort
from ´A key
for Unlocked
Memories´.

p 67
Image:
Illustration
of; touch as
many of their
senses as you
can. Derek
Sivers, 2007.
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p 70
Image:
http://blog.
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p 70/76
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polytmus-
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female-nest

p 70/74
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http://travel.mongabay.com/malaysia/images/malaysia0465.html
www.mongabay.com

p 72
Image:
http://www.npr.org/templates/story/story.

p 72
Image:
by Harry Opstrup.
http://www.kb.dk/images/billed/2010/okt/billeder/object87976/en/

p 74
Image:
http://www.ridacritter.com/pest/carpants.php

p 74
Image:
http://www.featurepics.com/online/Wood-Structure-1508304.aspx

p 76
Image:
http://www.sharecg.com/v/918/gallery/6/Texture/Fabric

p 81
Image:
Amazonas
http://de.mongabay.com/travel/suriname/p24599p.html

p 81
Image:
Mountain landscape
http:// www.youtube. com/watch?v= dZU4WgHgiY

p 86
Grafic:
Medicinale en rituele planten van Suriname, Tinde van Andel, Sofie Ruysschaert

p 123
Image:
http://alzheimers.about.com/library/blbrain.htm

p 105
Image:
people walking.
http://pak-med.net/ college/forum/?attachment_id=3 6076

p 105
Image:
Suriname market.
http://www.flickr. com/photos/41995916@N00/6435112

p 105
Image: People Gardening.
http://www.voagbr.org/Services/Elderly-Services

p 105
Image:indigenous dance
http://new-shopper.sulekha.com/suriname-world-indigenous-day_photo_1459485.htm

p 124
Image:
Alzheimer`s brain waves.
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p.139
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p 163
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p 165
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Sensorystudies
-http://www.sensorystudies.orgwordpress/wp-contentup

p 165
Image:
Chinese_meridians
- http://en.wikipedia.org/wiki/File:Chinese_meridians.JPG

p 166
Image:
Sensational smell
-http://paulbarsch.files.wordpress.com/2010/04/sense-of-smell.jpg

p 170
Image:
Elderly toys
-http://www.best-alzheimers-products.com/image-files/bernice-tangle.jpg

p 173
Image:
Can be fixed for stretch fabric
-http://www.mayaprzybylski.com/php?storyId=89188490

the subsequent interviews with members of the board of the foundation, became the reason for further collaboration.

The following outline describes the background, process and preliminary results, which have been achieved in collaboration with the interior architecture department of the Sandberg Institute. This collaboration has led to a special investigation into 24/7 care for people with dementia in Paramaribo, Suriname, with the objective to become a case study project within the world of dementia care.

Living with dementia

The affliction of people with dementia in the last phase of their lives is a world that becomes progressively smaller. The physical and mental environment seems to slowly fade away, until only the primary senses remain that connect with the world around them. A silent world of listening, watching, feeling, tasting and touching. The process of physical deterioration is natural and requires an environment that is not pri-

p 30
Image:
Consciousness Stream - The Cell
Tarsem Singh
http://www.kekkai.org/google/cs/the-cell.shtml

p 31
Image:
Hafez.
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p 33
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p 33
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p 33
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p 36
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p 36
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p 40
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p 50
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p 52
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p 56
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p 63
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p 63
Model:
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p 67
Image:
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p 67
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p 70
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p 70/76
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