THE EXPERIENCE OF CANCER
RESEARCH AND DESIGN FOR THE ONCOLOGICAL CENTER
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As students of Architecture, we are educated as designers for the built environment. This means that with every design that is built, we are responsible for the environment we create. But do we know for who we actually design, or even how our buildings are experienced and seen by the people we design it for? After 5 years of architectural education I had the feeling there were some parts which still could be added to my education. In my opinion, user-research is unaddressed in our field of practice. We don't learn what effects architecture can have on people, neither do we know to address their needs, their dreams, their emotions with our architectural designs. Instead we focus on the aesthetic appearance of the building itself from our personal vision, of course this is also an important aspect of our profession, but we should not forget the people living in our buildings. Too often there are mistakes or inconsistencies in realized buildings which are causing irritation and discomfort by a lack of attention to the level of detail which matters the most to the people.

It is arguable that the building as an environment has a certain distance to people in general and this feeds the assumption it is not necessary to think about what effects the building can have. Thinking about the user, and what matters to people makes us as designers shift in our thinking towards things that are important, this could be the façade, but also the way the power plug in the living room is placed. In my opinion, thinking about the users background and their needs and implementing this in the design can make the design more ‘durable’ over time.

This research report can be seen, as a first step in the process of addressing the users needs. Healthcare environments in particular, the comfort of the user or the patient has been not the focus in many building designs. The results of the research done in this report could contribute for the patient’s comfort during their treatment.
If we look at the conclusions, we can ask ourselves, is providing solutions for these aspects a role of the architect? I think the architect, has to at least take these ideas in consideration and try to perform as a integrator of binding all these considerations combined into a environment, which contributes to the comfort of the patient. Creating a ‘caring’ environment, instead of the anonymous hospital environment of today.
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INTRODUCTION

From 2007 till 2020 the amount of Cancer patients in the Netherlands will increase with 40 percent to a total amount of 123,000 patients each year.\(^1\) This causes problems for the Dutch Healthcare system because, it is not prepared to provide treatment for the growing amount of cancer patients. The demand exceeds the supply and creates pressure on the current hospitals and therefore we need a extension of capacity in cancer treatment.

At this moment we are faced with a legacy of Hospitals build after the second world war, central thought for hospital buildings from that period of that time was to provide efficient care as good as possible. These ‘Healing Machines’ were focused on getting the patient out of the hospital as fast as possible and foremost, to accommodate as much patients as possible. This led to big buildings with a institutional character in which the patient feels himself merely as a number in the treatment process. In the past 20 years, people started to criticise the anonymous institutional character of the building, stating that healing could be further improved by designing a better environment. In this way, the comfort of the patient is improved which leads to a faster recovery.

Increasing competition between healthcare institutions ask for more efficiency on a care-giving level, this means that institutions are combining their powers in creating specialized care centers. Specialized caring centers can provide better care for lower cost because these centers have more routine in dealing with a certain disease group. This means more routine, lesser room for errors and mistakes. With more competition between healthcare providers in general becomes more demand for healthcare providers to distinguish themselves, or in other words finding new ways to provide better care. Concluding we can say there is a trend of de-centralizing healthcare in smaller buildings, but care is gathered around a specific disease group.

As architecture assignment I propose to focus on these special care centers in specific a cancer care center in Leiden. The cancer center will be located in a triangle with the Leiden Universitair Medisch Centrum and the Diaconessenhuis. Also located in the
area round the cancer center are biomedical firms, a mental healthcare institution and a revalidation center is next door. With the focus on a specialized center as architecture assignment provides the possibility to focus on the patient. And ask the question if the environment can provide possibilities to improve healing as well?

“Architecture has the capacity to be inspiring, engaging and life enchanging. But why is it that architectural schemes which look good on the drawing board or the computer screen can be so disappointing ‘in the flesh’? “

Juhani Pallasmaa, back-cover of the book ‘the eyes of the skin’

As architects we are often unaware of the tools we have in our hands of what we can do to improve people’s life by designing a good environment. In my opinion we care to less about this fact, and this has lead to a gap in our education as well in our knowledge as an architect. As architects we should know what the experience of the ‘person’ is the one which will experience our buildings, in this way we can make much more sustainable designs in the way it will be more than just an aesthetic image because we take much more things in consideration. Especially in a healthcare environment attention to the experience of the patient and how to improve this can lead to much better environments to heal in, which could lead eventually to cheaper healthcare because patients have to stay for a much shorter time in the hospital.

A way of understanding the experience of the patient and staff is by doing user research, which is common at the field of Industrial Design. With tools like Interviews, Observation and context mapping I try to discover what are the emotions, needs, expectations and experiences of the ‘cancer’ patient while going through the medical process in the hospital. Eventually this research will lead to conclusions, which will be processed, into a conceptual scenario for the experience of the cancer patient in his treatment process, this will be a conceptual foundation for the new design of the cancer center in Leiden. Besides the user research, the overall research will also consist of a short overview of the evolution of the Hospital building as a type and why it has lead to this ‘Healing Machines’ and the notion of Healing Environments and Evidence Based design, terms you cannot avoid when dealing with healthcare design.

Eventually this will lead to a understanding of and recommendations for a environment that is about ‘healing’ and ‘caring’ instead of just the most efficient treatment of cancer. Because sick people deserve much better environments than the current environment they inhabit.
HOSPITALS AND HEALTHCARE
The current hospital environment is largely a heritage of the standards set out for the healthcare environments in build-up period after the Second World War. At that time, the goal was to provide as much healthcare for as low cost possible, making good healthcare available for everyone, this is considered a right for people in the Dutch Welfare state. These circumstances led to a architecture in which efficiency was the key factor. This led to an hospital architecture, we all recognize today of big anonimous institutions. But how did this came forward, and how did hospitals, which as a type existed much earlier evolve in these big 'Healing Machines'? Was it always like this, are there things we can learn from the past?


The Ancient
The buildings which were related to healing practices came to existence in the greek classical period. At that time, healing or the practice of healing was common in Greek, Middle Eastern and Egyptian Cultures. In this practice, nature and the afterlife played a big role and death, was seen as something inevitable at that time. This meant that also religion had its place, and in Greece the healing practices
concentrated around the so called Akleipion, or the temple dedicated to the God of Healing, Asclepius. It were the Romans which started to organize Healthcare into a system, for the battlefield it was necessary to heal the soldiers to put them back at the frontline as fast as possible. This meant that around the Border, hospitals were placed near Roman fortresses.

The Medieval
Eventually, the Roman empire fell apart and with it the role of the state as healthcare provider. It was the Catholic church that took over this role. Combined with Monasteries, facilities were people could be healed from their diseases were based on the edge of cities. This resulted in big complexes, which were a result of a steady grow over time in which buildings were added within the monasteries walls. A example of this is the Monastery of St. Gall, at that time well known for its healing practices. It consisted of a pharmacy, herbal garden, patient ward but also a church. Eventually with the start of the renaissance and the upcoming of medical sciences the role of religion in Healthcare started to decline. Healthcare became a issue of municipalities.
The Renaissance
During the renaissance, healthcare had two faces. In one were buildings placed on the outskirts of the cities to remove the people with the black plague from within the city. For most of these people these buildings was their last resting place. On the other hand there was a demand of the higher society in the city for a place where they could rest and heal. These hospitals were often combined with universities and medical faculties. This type of Hospital building had a strong symmetrical appearance with inner gardens and a big institutional character. It was no wonder at that time the Ecole des Beaux arts in Paris was a major place for Hospital Design.

[4] Floorplan of the Ospedale Maggiore
The Nightingale

Although the hospital developed as a building type there was still a lot unknown about hygiene and patient comfort within hospital buildings. It was due to the work of Florence Nightingale, that the first principles for the modern hospital were brought into practice in the 19th century. In her books Notes on Nursing (1858) Florence set out regulations for nursing. These principles were largely based on her experience as practicing nurse and concerned, for example, the maximum width and length for hospital wards and beds. But also the need for fresh air coming in from the windows instead of the other way around, the need for good heating and daylight and the overall ambiance of the patient ward. It took some time before these principles were put in practice but the first hospital building to be based on the regulations of Florence Nightingale was the St. Thomas Hospital in London which opened in 1871.

New technological innovations, like the light bulb and the elevator led to a diminishment of the principles of Florence Nightingale. It was the belief that could improve a lot and even replace current situations like for example daylight could be replaced by modern lighting, this led to a stacking of patient wards and more and more condensed hospital buildings.

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[5] Plan of the Nightingale ward, the closet is the toilet
[6] Interior of a ward inside St. Thomas hospital, from the beginning of the twentieth century

[7] Interior of a ward inside St. Thomas hospital, around 1966
The Minimalist Megahospital

In the 20th century a lot of innovations were done on a biomedical as well as technological level. All this progress made the belief that technology could and would solve everything, this meant for architecture that the modern style was seen as the most suitable for hospital buildings symbolising hospitals as ‘healing machines’. Architects were searching for ways to deal with the hospital building as a type and how to re-invent this, they foresaw the hospital as a flexible abstract structure with a lot of high-tech ventilation and a efficient organization. With the increase of technology and knowledge, also the complexity within the hospital organization grew. New departments, like diagnostics, treatment, surgery and radiotherapy were grouped together and grew in size. Creating a highly complex and dense floorplan. Innovations on structural level, installations and heating and ventilation created the possibility to enlarge the hospital floor area, causing for further diminishment of daylight within the inner hospital areas. The hospitals were seen as a optimal organizational complex with as goal get the patient good and as efficient as possible healthcare. Further improvements on the technological and biomedical aspect of healthcare led to a tremendous growth of costs for hospitals to maintain their level of healthcare. In order to keep providing people the best healthcare they needed to cut costs, one way of doing this is scaling up. Scaling up caused different hospitals to merge into large complexes. These type of buildings, so called fusion hospitals reached its peak point around the early nineties. An example of such a building is the Leiden Universitair Medisch Centrum (LUMC) with a amount of 194,000 square meters of surface area, making it one of the biggest hospitals in the Netherlands.
Characteristics of these buildings were, because they were so big, a tremendous amount of internal organizational complexity.

The Virtual Healthscape
According to Vederber and Fine, in the nineties we have reached a point where we move away from the big institutional buildings towards a more patient centered way of creating hospitals. Creating ensembles of different buildings grouped together instead of one efficient big building block. At this point the writers stay quite vague, this could also because the book is published in 2000 and the notions of digital way of dealing with healthcare and patient information were not so clear.

In the current situation we are faced with the legacy of the post world war hospital architecture. Most of these hospitals were for that time designed as organizational efficient ‘Healing Machines’ but medical science and technology progressed further, these for that time efficient buildings are now outdated and have a highly complex character. Because these buildings have been built with a condense character, the halls are dark and sterile, both in material and lighting.

We can now see a shift in thinking how hospitals are designed, while earlier, high efficient care providing was seen as a key point, the focus is shifting towards a more patient-centered care. This also has effects for the design of new hospital buildings were the patients role in its hospital environment is taken into consideration.

Along side this development we can see a shift towards more specialized centers for certain fields of disease, in combining specialists in certain areas, more routine and expertise can result in better care for lower costs. This creates the need for new and smaller hospital buildings, providing for us as architect the possibility to ask the question: how the environment can contribute to the well-being of patients. With focusing on how we can improve the patients experience of the building as well as its direct interior environment we can improve the patients comfort within the hospital, improving also the recovery time of the patient. In the 21st century, hospitals should not be only about the treatment of the patient but also about the well-being of the patient.
In the past ten years we see a shift towards a more patient centered approach in the design of healthcare environments. The growing attention towards research about healing environments and evidence-based design suggests this trend as well. In the design of the new Intensive Care Unit center in the UMC hospital in Utrecht, the patient stood central in the design process. Besides the functional requirements, the goal was to provide the best environment possible for the recovery of the patient. This made the patient the key stakeholder in the design process for the new ICU. This resulted for example that every patient room, which is a single room, has large windows to the outside. There is attention for the family in the environment by providing individual meeting places with privacy and family rooms in which the family of the patient can sleep if there is a need for it.

In the patient room, which is separated by the hallway through a glass façade, privacy can be arranged by using privacy glass which can become diffuse when putting a electrical field on the glass panel. Big windows with views outside also provide the entering of a lot of daylight contributing to the cardiac rhythm of the patient. Furthermore lighting in the ceiling is situated not directly above the patient but to the side, in order to avoid blindness. A whiteboard tells the patient what the day is today and who is the responsible nurse. Ventilation shafts are out of direct sight of the patient, a clock is directly visible fromout of bed and a lamp is placed on a cabinet for a more homely feeling.
For the interior of the Intensive Care, the interior architect (ONB architects) wanted to create an environment inspired on the ‘Healing Environments’ and ‘Plane Tree’ concepts. In their description of the project the architects explain the different decisions the architects made according their concept of combining ratio(function) and emotion (experience) for their healthcare designs. They fitted the patient rooms with identifiable furniture like a cabinet which looked like a cupboard with walnut panels. Soft colors and the hiding of technology like the ventilation shaft from the patients view create a clear room and so removing a part of the hospital feeling. The architects mention as well to provide the patient with as much autonomy as possible, this through the providing of information through the whiteboard with information. As well as providing possibilities for family visit.

In the hallways, instead of a general corridor with damage protection, trespa panels are installed, which are easy to clean and solve the problems of damaging with the walls. The flooring is wood fineer, which is sealed in a kind of linoleum setting, creating a hygienic floor while preserving a natural feeling.
Philips Healthcare and Healing environments consultancy group

Philips as a brand has a big name in the healthcare industry, not really something you would expect as a worldwide brand mostly known for its shaving devices and televisions. In healthcare Philips provides the devices for making diagnostic images. These devices: MRI scanners, PET/CT scanners and Rontgen scanners are complex high technical devices which deliver high resolution images of the inside of the body.

The key motto of Philips is ‘Sense and Simplicity’ in their work for appliances for healthcare they try to also focus on this aspect of their devices to design them in a more ‘sensible’ way. In searching for ways to improve the results of their scanning devices, Philips found out the comfort and behaviour of the patient is of importance as well. The more relaxed a patient is during the scanning process, the better the results are of the scan. To enhance the experience of being scanned in the MRI scanner and make it a less fearful experience, Philips provides the possibility to extend the scanning environment with a ambient environment. Key points in the design of this ambient environment concept are: Personalization, Comfort, Promoting Human contact between Patient and Caregiver and thus creating a more efficient workflow.

[13] Choosing the theme for the preparation room for the PET/CT Scanner

[14] Patient lying inside the preparation room for the PET/CT Scanner
The first inspiration of using sound and light as tools in the environment for supporting the patients comfort came from the Brussels World Expo pavilion of Iannis Xenakis and Le Corbusier designed in 1958. In this pavilion Philips used its technology of that time with the work of Le Corbusier and Xenakis to create an immersive environment, a whole experience of sound and light. This rediscovery of the ambient experience was inspiration to apply the environment as a comforting factor around the Philips scanning devices.

The ambient environment of Philips works on different levels, first is to introduce the patient with the process of scanning, for children this is done through the use of a ‘kitten scanner’ a miniature version of a MRI or CT scan device, this to explain to the child what is going to happen. Second the possibility is given to the patient to choose the theme of the environment in which they want to undergo the scanning. This gives the patient a sense of control over their own environment. Third the room is made with round corners and many cabinets are behind doors in this way to remove clutter in the room and give the room a more spacious feeling. In this way providing a more ‘clean’ environment for the scanning process.

[15] Patient lying inside the panoramic MRI scanner with a ambient environment
Another interesting development of Philips is the ‘Adaptive Healing Rooms Project’ originally meant for stroke patients, this room tries to improve the healing of the patient by influencing the environmental factors. One of these factors is restoring the cardiac rhythm through lighting of the room, the patients room has a so called ceiling light which at 14.00 hrs. when the normal sun is at its high point gives a boost of around 1000 lux towards the patient. Research shows by doing this the sleeping rhythm of the patient is improved, and so improving the healing process of the patient as well.

The solutions put forward by Philips contain very interesting ideas for use in hospitals using sound and light can contribute in creating a more relax and distracting and healing environment. However, the solutions are still contained to separate rooms, with separate identities, making it not applicable for a general hospital environment. Still the way Philips approaches the problems and its relation to the patient is a interesting way to deal with the problematique of the experience of the patient inside a hospital. For example, before they design the product, they develop their research and ideas into a Patient Experience Flow, this timeline or scenario as you could call it, explains the main needs and emotions for the patient at certain spaces, or places in time during the treatment process of the patient. This provides a good insight, on how you could interact on a environmental level in this process. I think the steps Philips is making in improving for example the patient room, it is surely a interesting prospect for the future of Healthcare Environments
[16] Patient lying inside the patient room, during waking up.

[17] Patient lying inside the patient room, while having doctors visit, the doctor and nurse name are visible on the screen.
1.2.2 HEALING ENVIRONMENTS AND EVIDENCE BASED DESIGN

A short overview

When dealing with the design of a healthcare facility, it is almost impossible to miss the concepts of Healing Environments and evidence based design. In the past 10 years, both concepts have got tremendous attention and are widely adapted by many hospital architects and healthcare designers.

Evidence-Based Design

Evidence-Based Design is a method mostly used during the design process of a healthcare facility, it is based on the fact that you use outcomes of fundamental research as a basis for design decisions. Unlike the common practice of architects to use their intuition and experience, in the case of evidence-based design, the architect tries to base its decisions on the latest available scientific knowledge. Like evidence-based medicine, the goal is to argue design decisions on the best available scientific knowledge. Many architects fear that basing the design on scientific knowledge will limit their creativity and will create uninteresting buildings. We see in recent years that the use of Evidence-Based Design is growing, and that they are many creative solutions to the knowledge available.

Healing Environments

Different studies show that the physical environment appears to be a important determent of how people think, feel and act. The use of the environment to influence people originated in the retail industry, according to Dijkstra (2009): Kotler (1973) “was the first to focus attention on the potential impact of the physical environment and used the term ‘atmospherics’, defined as “the effort to design buying environments to produce specific emotional effects in the buyer that enhance his purchase probability” ¹ In the retail industry further research was done on the influence of different environmental factors, like for example color which induced approach behavior under customers. The use of music in shops was researched as well and showed that the use of German or French music would boost the wine selling of that specific country in a wine store. According to Bittner (1992) ², the impact of the environment to create a image is especially relevant for services like banks, travel agencies and hospitals. Because the
customer lack the skills to clearly evaluate the service provided they tend to look to other things as well. Normally the patient or customer evaluate the service provided on three types of clues (Berry, Wall & Carbone, 2006) “They use functional clues that concern the technical quality of the service, humanic clues, which relate to the behavior and appearance of the service providers, and mechanic clues, which refer to aspects of the physical environment.”

Because of the lack of skills to evaluate the technical quality, the mechanic clues (physical environment) become more important. For the hospital the environment can contribute in a healing way as well, making the use of it even more important. According to the environmental docility hypothesis mentioned by Dijkstra (2009) “suggests that the less competent the individual is, the greater the impact of environmental factors on that individual (Lawton & Simon, 1968). When ill, people tend to be uncertain, anxious, concerned, and in pain. This also implies that their adaptive resources are already drawn upon. Under such circumstances, people will be imbalanced more easily by distressing environmental stimuli. This suggests that they could also benefit more from calming, relaxing, and positive environments. […] The impact of the physical environment could, thus, be of greater importance in healthcare settings than in other settings.”

In the past decades lot of research has been done in the way the hospital environment can support healing of patients. Because of this vast body of research, it is complicated to get a good overview of what environmental factors actually help and what not. Fortunately people like Roger Ulrich and Fiona de Vos have made vast studies of the evidence that is available of environmental factors, which can contribute to the healing process. From these studies it is possible to make a set of guidelines, which can help with designing a environment that supports healing and emotive state of patients in Hospitals. This can vary from using single-person rooms or the entry of natural daylight, to the use of music.

In her PhD dissertation Fiona de Vos proposes a model a new holistic model for healing environments in children’s hospitals. The goal of this new model was “to maintain to the maximal degree possible the qualities of everyday life for children and their families. This is based on the principle of reducing stress while in the hospital and easing transitions into and out of the hospital.”

5 F. de Vos “Building a model of Holistic Healing Environments for Childrens hospitals, With implications for the design and management of Childrens hospitals.” (PhD. Diss., The City University of New York, 2006)., IV
Based on the literature available at that moment she built a conceptual model on the current knowledge and modified this according to studies and interviews with patients, parents and staff in hospitals. Eventually this led to a holistic model of Healing environments with 9 dimensions in which a healing environment can provide.

These nine dimensions are:

* Basic Physiological Needs
* Feeling Safe & Secure
* Agency and Control
* Social Support
* Everyday behavior
* Provide Distractions
* Normalized Environment
* Supportive and Effective Parents
* Supportive and Effective Staff

Although this study is based on children's hospitals and children's behavior in particular, most of the concepts proposed in this study can be applied to a general hospital as well. The revised model posed by Fiona de Vos gives a good impression on the relations, which contribute to the patients well-being in the hospital. Of course for a children's hospital the well being of the parents is more important as well.

[18] Relational scheme of the nine dimensions set out by Fiona de Vos
In ‘The Role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-Lifetime Opportunity’ Roger Ulrich amongst others, provides an overview of 600 studies which are done of the effects of healthcare design on the well being of patients. Results of this study were defined in four areas: Reduce staff stress and fatigue and increase effectiveness in delivering care, Improve patient safety, Reduce stress and improve outcomes, improve overall healthcare quality.

In this study, Ulrich notes that most of the studies considering the role of healthcare environments are focused on patients and not on staff. Reducing the amount of stress for staff contributes to the healing of patients as well because fewer errors are made in the medical process. This makes also attention for the staff in terms of creating a well-designed environment important.

The study of Ulrich further puts emphasis on some interesting points:

**Reduce Noise:**
It is important to reduce noise in future hospitals, because noise deprives sleep and there is evidence that noise increases stress in adult patients and will cause a heightening blood pressure and heart rate.

Improvements could be made by providing single bed rooms or installing high performing sound absorbing ceiling tiles or flooring systems. Also the amount of noise sources could be reduced.

**Reduce Spatial Disorientation:**
According to a study, the annual cost of the wayfinding system at a major regional 604 bed tertiary care hospital in America was calculated at around $220,000 a year. Much of these costs were hidden costs due to hours spend of giving directions by people who were not information staff. Improvements could be made on different aspects, the providing of information maps, Using external building cues as to know where to enter, the global structure of the building and the use of good signage in the way finding system.

**Reduce depression:**
The use of bright light can improve a lot of issues related with sleep, depression, agitation and circadian rest-activity rhythms. Ulrich further mentions ‘using light as an intervention to reduce depression in clinically depressed as well as non-depressed patients is a relatively inexpensive intervention that has been shown to yield consistently positive results.’ Light Daylight in patient rooms seem to be as well be very effective in reducing depression, reducing length of stay and reduce the intake of pain medication.

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Provide Nature and Positive distraction:
The use of nature as a distraction in patient rooms has several positive impacts on patients as well. View on nature reduces according to Ulrich, the amount of stay and he states: ‘Recently strong studies using experimental designs have produced additional convincing evidence that viewing nature reduces patient pain as well as stress’. Arranging space in Hospital design for gardens and nature will improve the overall patient feeling inside the hospital and different reports which Ulrich brings forward suggest that the escape towards these gardens reduce also stress for patients, family, but healthcare staff as well.

Provide Social Support
Although social support is seen as a huge stress-reducer, according to Ulrich there are only moderate studies available about whether hospital design can contribute to this in some ways. He suggests: ‘There is strong evidence that levels of social interaction can be increased – and presumably beneficial social support as well – by providing lounges, day rooms, and waiting rooms with comfortable movable furniture arranged in small flexible groupings’. Also single rooms are preferred above multi-bed rooms for arranging meetings with family and friends.

Conclusion
Although this is just a short overview of the literature on Healing Environments, lot of studies are done and the potential of the use of these conclusions can really help in creating a better environment for patients, staff and family. The items set above just cover a small range of all recommendations made in the research mentioned, for further reading on the subject I would like to suggest to read the PhD Thesis of Fiona de Vos and the report of Roger Ulrich. (A overview of all the guildelines adressd by Fiona de Vos is added in the appendixes.)

In the end it can be argued, that the research in the literature of healing environments is only done in a quantitative way, giving less freedom how the different decisions will act on the patients experience on personal level. From the level of Healing Environments, it is still unknown how a patient will feel himself when going trough a treatment. However there are offices which try to deal with the experience of the patient on a more psychological level. One of these offices is Kopvol architects, with their research they try to look in a deeper level on how cancer patients see and experience their environment and what role architecture could play in this. This office consisting of a Architect and a Psychologist is now involved in putting together the Program of Requirements for the new Childs oncological center in Utrecht.
8 Ibid. 23
Cancer is a deadly disease, although the curing of cancer is better nowadays than decades ago, it is still a disease with a devastating effect on a large part of the population.

In the year 2009 there were 91390 new cases of Cancer in the Netherlands, comparing this with 70308 new cases of cancer in 2000, we see a growing trend.¹ The amount of people diagnosed with cancer is growing due to the growing amount of older people in the Dutch society. With the improvements in medical science on the treatment of cancer, the survival rate of cancer is still increasing and the signs are hopeful for the future of curing this disease. However, when you are dealing as a patient with this disease it has tremendous impact on your life. Things, of which you thought of as being certain in your life, became suddenly uncertain, you lose control.

1.3.1 CANCER

Cancer is a combination of different diseases caused by uncontrolled multiplying of bodily cells. When this uncontrolled cells try to invade the bodily cells we speak of a malignant tumor. This type of cancer can spread through the whole body, sometimes by the use of the lymfatic system. Not all tumors are a cancer, for example when we speak of benign tumors, there is a growth but it is not uncontrolled and will not invade other bodily cells.

¹ For the differences between normal and cancer cells, see the figures 19 and 20.
Normally the cell division in cells are tightly controlled by different systems, but sometimes a malfunctioning of the appears genes inside the cell. By this process of cell division and disruption of the system the cell starts to be grow in a uncontrollable way. What is causing this faulty genes is difficult to say, making it impossible to determine exactly what the cause is for every person. What is known is, a big part is caused by environmental factors and for a small part (5-10%) to genetics. Environmental factors that contribute to cancer death can be found under tobacco (25-30%), diet and obesity (30-35%), infections (15-20%), radiation, stress, lack of physical activity and environmental pollutants. Sometimes a malicious cancer cell can get loose from the tumor and spread through the body, when this happens we talk about metastasis or secondary tumor. When for example a patient has lung cancer and cancer is found in the lymphatic system, we still talk about lung cancer since it is the same type cancer cells. So treatment for metastatic cancer stays the same as for the former single lung cancer in this case.

There are more than a hundred different types of cancer diseases, each with different characteristics, a few of the most known types are leukemia, lung cancer and brain tumors.

Detection

When having cancer it is not often directly visible what type of cancer the patient is dealing with. The symptoms caused by the cancer can have either a local character, which is defined by a swelling or haemorrhage. Metastatic symptoms are caused by the spreading of the cancer and include enlarging of the lymph nodes or neurological symptoms. Systemic symptoms can include for example weight loss, excessive sweating, or anemia.

1 Numbers are based on the data provided by the ‘Nederlandse Kankerregistratie’, you can find more on the website http://cijfersoverkanker.nl
The problem with symptoms like these is that when they are non-specific, they can also appear on persons who do not have cancer. Making it difficult to determine if the patient is dealing with cancer or with another disease. This means that for a suspected cancer further diagnosis is needed, in the medical process this is mostly done through blood tests, X-ray scans, CT or PET scans and endoscopy. In the end a biopsy of the suspected tissue has to be analyzed to determine and proof if the malicious cells are cancer.

**Treatment**
When the patient is determined with cancer, there are several ways to treat the disease, above this are also several stages in treatment. It depends on the type of cancer you are having, which disease treatment plan will be developed and which treatment is given to the patient.

*Chemotherapy*
The most common treatment for cancer is chemotherapy, chemotherapy is the use of cytostatic medicines to kill cells or delay the cell division of cancer cells. Chemotherapy does not only affect the cancer cells it can also affect other cells in the body which have a fast cell division ratio, this can lead to hairloss, nausea, vomiting, high risk on infections due to a decreased immune system and a decreased physical condition of the body. Chemotherapy can be administered to the patient, through infusion, injection or in tablet form. Some types of tumors react really well on chemotherapy, but for the most types of cancer, chemotherapy is used as a supporting treatment for operations and radiation treatment. When talking about using Chemotherapy for palliative treatment the chemotherapy is used in order to keep the cancer in control or to reduce pains caused by the tumor.

*Radiation therapy*
Another method, which is used for treatment of cancer is radiation therapy. Cancer cells are very responsive to the radiation and it damages all the genetic material (DNA) inside the cancer cells. The cancer cell will be unable to perform a cell division and dies eventually. Normal healthy cells can be affected by the radiation therapy as well, this has effect on the types of cells with a fast cell division ratio, like bone marrow cells, or cells in the mucous membrane. There are two types of radiation therapy, one is the external treatment, in which through a linear accelerator a photon radiation is transmitted towards a certain place in the body. In order to determine this position of the cancer correctly, a scan of the target area is made before by using a MRI or CT scan. With this digital map the
Radiation therapists can position the body correctly to hit the cancer tissue instead of the healthy cells. Another type of radiation therapy is internal treatment, in which some radioactive material is placed near the tumor. In this case certain safety measures are taken into account because the radioactive material is longer in the patient’s body. Radiation therapy is used as curing treatment, additional treatment or palliative treatment. In the case of palliative treatment it is used to reduce pains or obstructions caused by the cancer.

Surgery
Surgery is done when the cancer is operable, this means that it is possible to remove most of the cancer tissue without harming the patient. Sometimes a chemotherapy is prescribed beforehand to minimize the tumor in order to remove as much of the tissue as possible.

These types of treatment stated above are the most common, there are much more methods which are used, each for a different type of cancer like: hormonal therapy, Immunotherapy, Hyperthermia and Stem cell transplantation.
1.3.2 NETHERLANDS CANCER INSTITUTE ANTONI VAN LEEUWENHOEK HOSPITAL

The Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital (NKI-AVL) offered me the possibility to perform my field research within their hospital environment. For me as a designer as well as the hospital it was interesting to see what will come out of the field research, and what attention fields could play a role in the future renovation of the hospital.

Originally founded in 1913, the NKI-AVL has been from the beginning a hospital and research institute focused the cancer disease. This has led to the fact that the NKI-AVL is known in Europe and outside for their distinct knowledge and care of cancer disease.

As a center of excellence on cancer treatment the NKI had a total of 6,668 admissions in 2010, over a total capacity of 180 beds (of which 30 are daycare places). Furthermore the NKI-AVL has five operation rooms and ten radiation therapy machines.

The current hospital building was renovated in 2004 by de Jong Gorstemaker Algra Architects, originally the plan was to finish all building projects in 2008, but a constant demand for extension forces the NKI-AVL to think ahead and build extensions on the current hospital area. Construction plans for the future foresee the build of a new wing of operation rooms, a laboratory animal house and the renovation of the current patient wing on the fourth, fifth and sixth floor.
On the ground floor of the NKI- AVL, the policlinical area, the radiation therapy, patient restaurant, silence center, diagnostics and blood exchange are situated. On the second floor of the Antoni van Leeuwenhoek Hospital are the Intensive Care Unit and operation rooms. On the fourth, fifth and sixth floor are the internal care departments of the Antoni van Leeuwenhoek Hospital, eventually on the seventh floor a roof terrace for patients, to smoke and sit in the sun.

The research will focus on the internal care department on the fourth floor. At this floor most patients stay for multiple days while getting treatment, the patient rooms are divided in single or double rooms. The treatment patients receive at the internal care department could be chemotherapy, radiation therapy, surgery and recovery or palliative treatment for people in their last stage of cancer. The fourth floor of the NKI-AVL consists of three patient wings and a pantry. This pantry is meant to be used as a kind of meeting place for patients and family to force the patients to get out of their own patient room environment.
[28] Cabinet for the nurses

[29] Interior of the bathroom

[30] Interior of the Daytreatment room, the loss of daylight is solved by using backlit photo's in a window frame
Special about the NKI-AVL from other hospitals is because they have specialized in cancer care, it is a smaller hospital than common in the Netherlands, this has positive side-effects in the sense that the hospital gives the patient a more personal approach. For example, because patients often return for a new chemotherapy, they get to know the nurses because they return at the same patient wing. Another example of a personal approach are the volunteers inside the NKI-AVL, which sell candy, coffee or bring around books to read, it is this personal approach from this hospital which is widely appreciated by a lot of patients.
While the providing of healthcare in the early days was done by religious institutions, the state took over this role during the renaissance, since the renaissance due to advances in medical sciences healthcare itself became much better and more professionally organized. This also related to the fact that healthcare became available to much more people during the 19th century. It was from this point onwards that Florence Nightingale indicated that also the built environment plays a role as supporting factor in the healing process. With more daylight, and fresh air from outside instead of the other way around, the healing of patients was further improved.

Technological advancements turned it around and daylight was replaced by artificial light, because more people got healthcare, there was a need for more efficient buildings, this meant that the floors areas became bigger and the buildings were built in a more condensed way. Technological advancements in medical sciences further enlarged the hospitals, due to new equipment like MRI and Rontgen scans. Because belief in technological advancement, and technology would solve everything the buildings were organized in such a way to deal with a big amount of patients as fast as possible. The healthcare provider was the decisive factor in the design of healthcare environments not the patient.

Currently we see a shifting trend towards a more patient centered approach, with the introduction of literature about healing environments and evidence based design we see that the patients well being became visible again in the process of designing healthcare environments. Because as patients we become more demanding over time, this will only increase.

The literature about Healing environments provide a lot of helpful information for improving healthcare environments. For example having view on nature improves the healing of patients. However the literature on healing environments don’t tell us much about what the patient himself is going through when being in medical treatment. Especially for cancer patients this can be quite specific, because once a patient has cancer, his life has become uncertain.
In the NKI-AVL a hospital specialized in cancer, we see already because the hospital is smaller a more personal approach towards patients. By having volunteers and events for the distraction of cancer, to make stay in the hospital as comfortable as possible.

But what role is the environment playing, in the experience of cancer for the patient? Therefore we do a user research which will be elaborated in the next chapter: Patients and staff experience on a hospital environment.
PATIENTS AND STAFF PERSPECTIVE ON A HOSPITAL ENVIRONMENT

Field study within a Dutch Oncological Center
In order to get insight in the experience of the users or in this case patients and staff of the building we have to look deeper into the context and background of the people defined to this target group. Therefore, the aim of this research.

The Netherlands Cancer Institute/ Antoni van Leeuwenhoek hospital provided the opportunity to perform this research within the context of a cancer hospital. As a hospital specialized in cancer treatment, they want to improve the patient’s comfort, the NKI-AVL considers it as an important aspect of treating cancer to also address the patients well-being within the hospital. The research focuses on the Internal Care department on the fourth floor of the NKI-AVL, it is here where patients and staff members were recruited for the research.

This chapter is divided in three sections, each sections covering a different method of user research. The first method, context mapping, is a technique meant to extract the needs, emotions, ideas of cancer patients when going through the treatment process within the hospital. The second method, are interviews which I have done with nurses within the NKI-AVL to determine in what way the environment plays a role in the experience of the nurse as care provider.

The third, method is a observation, done by the researcher, to find out what it feels like to be a patient in a cancer hospital.
2.2 CONTEXT MAPPING

2.2.1 INTRODUCTION

For architects the use of context mapping as a way to do user research is quite unknown, in the field of Industrial Design, these techniques are better known and used for doing user-centered research. Human or user-centered design is a common practice for many designers and commercial firms, in order to position their products in the best way as possible in the market, the basic human needs need to be addressed. ‘Studying the context of product use helps designers to gain empathy with users, to avoid fixation on preset assumptions about the user or the product, and to create innovative concepts on how a product can be experienced.’

In order to design products which fit in the life of the user it is necessary to map the context of this user. Mapping the context of the user will also reveal which needs, dreams and aspirations the user will have. All these cultural factors influence the users experience of a product, or in this case the environment.

‘Conventional user study techniques, such as interviews, observations and focus groups [..], uncover explicit and observable knowledge about contexts. The main limitation of conventional techniques, as far as designers of future products are concerned is that they only offer a view on people’s current and past experiences, but provide little hold on the future. For learning about potential future experiences, we need to include people’s dreams and fears, their aspirations and ideas.’

[31]
The information gathered by the designer is used as a source of inspiration for the design process, not as a hard outcome, which should come out of the design, but as a map with different routes you could follow.

The goal for the context mapping research is to get insight in what patients feel when going to the hospital and staying in this hospital. For the patient the visit often consists of a few meetings with the responsible doctors, followed by a trajectory of diagnostics, treatments and the visit of other spaces. This trajectory of different spaces can pose different feelings for the patient. In order to generate knowledge about these emotions in the different kind of spaces I have to know the patients context, therefore the research goal for the context mapping is:

“What are the concerns, feelings and attitudes of cancer patients when going through the medical care process in relation to the built (hospital) environment. “

2.2.2 METHODS

Five patients who were staying in the intern nursing department at the NKI-AVL took part in this study. The group of patients ranged in age from twenty till eighty years old and had different types of cancers and relating treatments. Four of the patients had a week-long chemo-therapy treatment and there was one person who combined the chemo-therapy with radiation treatment. One of the patients had a life extending treatment while others were finalizing their treatment with good prospect on recovery.

The patients were recruited with help of the internal nursing department of the NKI-AVL and were told beforehand what the research was about and if they wanted to join or not. When the patients were recruited, the researcher made contact for the further arrangements of the planning for the sessions and sending of the sensitizing package.

For doing the context mapping research with the users, or in this case patients I use two methods. One of them is the use of sensitizing package with assignment booklet, which is used as a preparation for the second method the generative session.

2 Ibid. 122
Sensitizing Booklet
The first part of the context mapping research is done through the use of a sensitizing booklet. This sensitizing booklet contains 4 assignments and is used to sensitize the patients in order to make them think in a reflective way about their stay in the hospital. Accompanying the booklet were some colored markers, stickers and a analog camera. The booklet contained these 4 different assignments:

**This was my day..**
“They had my day vandaag…”
In this assignment the basic question was what the Patient had done during the day and which were the important and less important moments in this day. The patient had to fill in whether it concerned a week or a weekend day and fill in a timeline on which they could define different period and if it were nice or less nice periods. Also I addressed the question of which things they have had pleasure during that day and what they liked to do to relax. This gives me as designer a impression of what routine the patient walks through during the day in the hospital and foremost it makes the patient think in a reflective way about their day itself.

**When I look around, then I see?**
“Wanneer ik om mij heen kijk, dan zie ik?”
In this assignment the patient was asked to photograph objects in the room of which they thought it was either, Beautiful, Interesting, Fun, Annoying, Usefull, Fearsome or something else. Accompanying this questions was a floorplan of the room with the question of things they liked about the room, and things they didn’t like. Since my interest lies in a environmental field it is interesting to see whether some parts of the room make a difference.

**This were the most important moments after the first diagnosis…**
“Dit waren de belangrijkste momenten na de (eerste) diagnose…”
In this assignment I ask the patient which moments had a great impact on their life and especially for me important where these moments took place. With this assignment I want to check whether the hospital plays a role in the big moments during their illness. The assignment is filled with a timeline and collage materials.
Dit was mijn dag vandaag...

Wat heeft u vandaag allemaal gedaan? Wat waren belangrijke en minder belangrijke momenten vandaag?

U kunt de vormen (op de laatste bladzijden in dit boekje staan afbeeldingen die u kunt gebruiken om de activiteiten van vandaag weer te geven.) Staal u vrij om opmerkingen te schrijven of tekeningen te maken.

Vandaag heb ik genoten van.... (misschien anders?)

Doordeweeks/Weekend (streep door wat niet van toepassing is)

Wat heeft u vandaag allemaal gedaan? Wat waren belangrijke en minder belangrijke momenten vandaag?

U kunt de vormen (op de laatste bladzijden in dit boekje staan afbeeldingen die u kunt gebruiken om de activiteiten van vandaag weer te geven.) Staal u vrij om opmerkingen te schrijven of tekeningen te maken.

Om te ontspannen doe ik graag...

Wanneer ik om mij heen kijk, dan zie ik?

Maak foto’s met de camera, zet op de linkerpagina erbij om welk foto nummer het gaat en ook wat u er van vindt.

Zijn er plekken in de kamer die u prettig of minder prettig vindt?

Dit waren de belangrijkste momenten na de (eerste) diagnose...

Wat waren belangrijke momenten voor u? Welke momenten hebben veel indruk op u gemaakt? Waar vonden deze momenten plaats? Deze momenten magen ook niet ziekte-gerelateerd zijn. Onderstaande tijdlijn kunt u gebruiken om deze momenten aan te geven, vergeet u niet te vermelden op welke plek dit moment plaatsvond! U bent weer vrij om te schrijven, afbeeldingen te gebruiken van de collagematerialen en te tekenen.


[33] Assignment 2.

[34] Assignment 3.
Here I have been…

"Hier ben ik geweest"

In this assignment I asked the patient in which place they have been in the Antoni van Leeuwenhoek Hospital/Dutch Cancer Institute. This means globally the spaces where they could have been in treatment, like Radiologie, Nuclear Medicine, Radiotherapy, Day Treatment, Policlinic, OR etc.

Furthermore I asked the patients to associate the different spaces with one of the different images, which I put as collage materials in the booklet. In this way I hope to find emotional responses to difference spaces.

Generative Session

In the generative session, the participants elaborated on the topics of their booklets, I questioned certain interesting aspects they had filled in the assignments in the sensitizing booklet. Furthermore the participants made a collage in which they defined the emotions and associations they had with a space they mentioned earlier in their booklet, this could either be the waiting space of the policlinic area, or the radiation treatment area or any other space within the hospital. The goal of this session was to extract emotions, ideas and other notions of their experience of that specific space.
Hier ben ik geweest...

In welke ruimtes bent u geweest toen u in het ziekenhuis was, welke ruimtes kunt u zich goed herinneren?

Kunt u de betreffende ruimte aantrekken en met behulp van de collage afbeeldingen aangeven waar u deze ruimte mee associeert?

Waar? ....

Ik associeer het met de bovenstaande afbeelding want?

Waar? ....

Ik associeer het met de bovenstaande afbeelding want?

Waar? ....

Ik associeer het met de bovenstaande afbeelding want?

Waar? ....

Ik associeer het met de bovenstaande afbeelding want?

Assignment 4.

Generative Session 1
Analysis

All the video tapes made during the session, collages made with the patients and the booklets were analysed. From this quotes were gathered and first mapped in themes, this gave insight in what exactly were the main thematics per person when thinking about their spatial and hospital experience. From these maps (For full maps see appendixes) again a combination was made and the quotes were mapped again, this time in a more in-depth version. This second set of mapped quotes were put in the following thematics:

Confrontation [14], Treatment [12], Having to [11], Distraction [10], Being in Control [9], Dependence [8], Uncertainty [8], Privacy [5], Human Aspect [8], Comfort [7], Retreat [5], Excitement [4], Room Furniture [4], Freedom [3], Boredom [3], Room Layout [2], Future perspective [2], Interaction with other patients [2], Positive Mindset [1], Complaints [1].

The numbers between brackets are the amount of times something in this thematic was mentioned. I have set the order of quotes following the amount of times they appeared in the data. From the quotes, a forcefield, seen below, was set out to define common grounds for the different quotes and where they belong. Some thematics define their own ground, other thematics combined are grouped into a common entity. These common grounds or groupings are the main focal points of the concept mapping research.
2.2.3 RESULTS

Out of the analysis came different results combined in groups, I have ordered these groups in order of importance for the patients experience when being in treatment inside the NKI-AVL.

**Dependability**

When having cancer patients have the feeling they don’t have control over their life anymore, they are dependent on the hospital for getting better, although sometimes they don’t feel sick.

“Before I didn’t feel sick, and here I am made sick, that is very weird” or “These long intakes feel like a prison, because it takes a long time and you are really ‘lived’, it is just like a regime” With being lived this patient meant, the constant routine during the day of being weighed, having infusion attached, etcetera. But because of the painful treatment most patients have to go through they feel that they have to do this, this is a central theme in all the conversations. Dealing with cancer is, having to go through chemotherapy, which is essentially a kind of poison killing the cancer cells. “You have to follow the chemotherapy if you want to come to a result, then you do the scans and you are waiting if your effort paid off.” In essence one patient says: “You don’t have a choice, if you don’t do it, you die.” This also means that when the results are available this moment is very important for the patient. The anticipation on the result, did I do well or not, can be one of the most dramatic events in the life of the patient during treatment.
Confrontation

Confrontation with the cancer disease is frequently mentioned by all the patients, that is also because of the character of the NKI-AVL as being a cancer hospital in itself. All activities within this hospital deal with the disease of cancer. Some patients describe this in situations as being difficult.

“At the day treatment you are often with 2 till 4 people on a room, this is quite special because you are also sitting there with terminally ill people. I don’t dislike to be around those people but I find it very confronting. You have people which have a quite positive feeling about it and say, but well you are going to get better. But other ones are just sad.”

This confrontation with having cancer themselves and with other patients happens in different rooms around the building also when staying at the internal care department, patients can be confronted with terminally ill patients, or patients with the same disease, asking themselves is this my future prospect; of how I am going to be in a few months or years?

Creating your own situation

I am mentioning this part as creating your own situation or having control over the place where you are or the lack of it. When a patient with cancer comes to the hospital his life is full of uncertainty. The patient feels dependent because he has to follow the treatment in order to get better. In parts where the patient can or could have control would increase a lot of comfort for these patients. For example the patient mentions: “A advantage is that we can plan the most within the days we are here, like radiation therapy and scans, that is very pleasing.”

Having control does not only concern planning visits, control over the room would be nice as well. One patient mentions it was already nice for her to have the ability to control the temperature: “I do have sometimes a cold feeling here in the room, but I have the ability to set the thermostat in a higher setting, that is nice.”

But also the lack of control is mentioned as being uncomfortable but also evoking anxiousness about what is going to happen “On the one hand you are looking around all day, when do they arrive and on the other hand it is nice to know they are around.”

Having the ability to choose where you sit during waiting for a polyclinical visit, in a relaxing chair instead of a standard bench improves comfort. “You are feeling more relaxt by using those special chairs, you can really lie down there.”

The wall for personal items is nice but not within reach from out of the hospital bed.
Independence

Independence in this sense means having freedom and avoiding confrontation with your disease. Having cancer can be really intense in this sense, because when you as a patient are having a meeting with your doctor, it can mean to receive the message of life/or death. “When you have heard the bad message, you want to go home, go into your bed and just put the blankets over you. “

Often patients have the need to be on theirself when having received the message about their cancer being it good or bad. “A good thing was that I didn’t had to face all the other people waiting in the Policlinic because I could get out through another corridor.” or “If I had received the ‘bad’ message here, I would not want to like to share this with the whole waiting room, I would like to retreat in a separate space to think a little before I step in the care and drive in the pond. It has impact for sure.”

Giving people the possibility to avoid the waiting space of the policlinic would create much rest for the people waiting as well as people leaving the hospital.

Treatment

The treatment has several impacts on the different patients, in the way the chemotherapy works and the effects on the body and mind of the patient. Chemotherapy itself is a heavy medicine with heavy impact on the patient’s body depending on the type of treatment the patient is receiving. “You surely feel the Chemotherapy, for example when it streams into your body with 500 millilitres per hour flows in your arm, you feel your arm getting colder. “ it has also effects on the taste of the patient or as a patient mentions: “My taste changed dramatically since the chemotherapy, I don’t like coffee anymore and heavy tastes like spicy cheese leave a very weird taste in the mouth. “ Also the concentration for doing things has disappeared: “I don’t have the urge to read something, but that has more to do with the chemotherapy. I don’t have the ability to concentrate anymore. “

Also the radiation therapy has effects on the body, not directly, so people don’t really fear the machines, but especially after the treatment the patients are having severe pains. “I rather don’t do radiation therapy, but that’s more because of the after effects.”
(Forced) interaction

In a two persons patient room, there are besides a curtain not much possibilities to have privacy. In this way, contact and interaction between patients is unavoidable. Most patients don’t seem to have problems with interacting with their roommate, while some others prefer to be alone. “If you have pain, you prefer to be alone and not with a second person on your room.” So it also depends on the situation in which you are as a patient, but also on your roommate which could also be a terminally ill patient. “I have also been put by people which didn't feel like living anymore, who'd prefer to die, you will not be happy if you are watching that. At home you notice how much this does with you. They almost don't talk with you, then you also think, rather die or something like that. It gives me a cynical mood, because this is not the way I approach this disease, I want to live.” The contact with your roommate, and maybe more with cancer patients in particular has a huge impact on the way your own behaviour and the way you think. The tools you have as a patient to control your privacy are limited. “Privacy curtain does not really work, I mean although you don't see anything, you still hear everything despite the curtain.”

(Pleasant) Distraction

Because patients are staying on the internal care department for multiple days without any change of rhythm, events for distraction taking place within the NKI-AVL are appreciated. For example a patient mentions: “The performances in the Glass Hall are really nice, they had a Harp concert, a nice distraction.” Also having a view outside is seen as, although not much, really pleasant to have a change of scenery. The NKI-AVL also offers creative therapy for patients, one patient mentions as well that it is difficult to do this due to chemotherapy which is on him from 11.00 till 16.00. “They have here a glass hall, where creative therapy takes place, this is great of course, but when I have chemotherapy I cannot leave this floor.”

What also is mentioned is that the rooms all look the same, because many cancer patients have repetitive visits, difference is appreciated. “The rooms all look very sterile, same curtains, same colors, it would be nice if there was something hanging which could create a difference.” Another patient mentions the rooms as being very dull, especially the colors within the rooms: “I think the colors are very dull, this does not contribute to your recovery. A one persons room for sure is very dark because of the small windows.”
Intensified emotions

Because cancer is a life threatening disease this has a lot of effect on the emotional state of the patient. Although it depends on the stage of cancer, and whether is good treatable or not, everyone is aware of the lethal character of cancer. So if the patient is waiting for its message, whether if the treatment worked out or not this can be a really intense period or as a patient puts it: “For me, the Policlinic creates the real waiting. At the Day treatment you get ill, at the Policlinic it is the waiting if it worked out or not, that makes the real waiting. Even if it is just for 3 minutes, it is already 3 minutes too much. You just want to speak with your Doctor and know what’s going on. The Policlinic is then also the place where the most intense emotions take place.”

At this moment, when being treated with cancer, the patients are mostly busy with surviving the cancer. Most of the time they are not thinking about the future, because they first want to deal with their illness. “I didn’t start with the processing of this all, I am now more busy with getting through the cancer and after that I will start processing.” or when being terminally ill knowing that you are going to die of the disease also certain emotional difficulties arise. “Me, Myself I am less frightened to die, then for the people I will leave behind. I leave 2 little daughters and my wife, this is still very hard for me.”

Personal Approach,

Despite all the difficulties and emotions that Cancer hospital brings. People like the personal attention they are getting at the NKI-AVL. Especially the work of the volunteers and nurses are highly appreciated within this hospital. “What I liked, for so far you can speak of liking are the ladies who come around with coffee and tea, it is just something little, but I really think it is a sweet gesture. It makes the hospital a more pleasant place.” Because the NKI- AVL is a small hospital there is a small amount of staff, making it able for patients to get to know nurses and vice versa. “Here, are always the same nurses and that gives to possibility to get to know them, I like that.” Also the Hospital has a wide timeframe for visiting hours, from 14.30 till 19.30, making it able for family to come by any time. “There is not a strict visiting schedule, there are visitors here at 10 o’clock if you walk around and if you walk around another time at 4 o’clock then there are still people sitting. This provides a very relaxed atmosphere.”
Physical Environment
The quotes concerning the physical environment are mostly concerned with the basic layout or furniture of the room. Although not directly related to the next design it can form basic attention fields what to look for when designing a patients ward.

Bathroom: It is mentioned frequently that the bathroom within the NKI-AVL is too tiny, it seems to be rather impossible for people to enter the bathroom with their infusion line and it is a huge challenge for the nurses as well to help people when they are showering.

Pinboard: Although the possibility of offering this to patients is really interesting and is appreciated, the reach from out of bed is impossible.

Total room layout: By some the room is seen as a mess of different stuff put together, or as one patient mentions: “I am getting the feeling with this room that the designers first thought: Well we have a room, what are we going to put in?”

Television and Multimedia: The television in the patients room is from the pre-flatscreen period, this means that there is a heavy black box hanging over the bed, which is sometimes seen as scary. The internet facilities in the hospital are a welcome addition to the daily life, as digital devices are seen as inseparable from us.

Chair or Bed during daytreatment (Chemotherapy): A chair is preferred over a bed for having chemo therapy because of the association that the patient doesn’t have to be too long within the hospital.

2.2.4 CONCLUSIONS
In finding directions for a building design through the use of context mapping we can see that some spaces are more important in dealing with then other spaces. From the patients perspective, the most time he will be spending inside the hospital is in his Patients room. The Policlinic area however is the place where the most dramatic events for the patient takes place because this is the place where he will receive the message if things are going in the good way or not. Taking these notions into account I have set up considerations for the design of the patients room as well as the policlindrical area. This are design considerations which could be taken into account when dealing with the hospital design.
Policlinic Area
Next to the patient’s room, the waiting room of the policlinic area is one of the most important spaces within the Antoni van Leeuwenhoek hospital/ Netherlands Cancer Institute. In the experience of the patient it is not the room where the meeting with the doctor takes place which plays a important role but the space before this meeting. The Policlinical area, and its waiting room is the space where the anxiety of the patient for the end result, or diagnosis is increasing to high levels. It is also at this moment the space where patients are confronted with people with the same disease, just had a good message or bad message and with the fact they are waiting on the message, which they rather have as soon as possible. Interesting fact about the waiting room of the Policlinical area inside the NKI-AVL is that it some patients mentioned to sit rather at the waiting space of the day treatment department then waiting inside the policlinic. The questions why this is this way can raise a interesting view on the direction a waiting room can be developed.

Waiting room of the day treatment department
So what are the qualities of the day treatment department, why is this space preferred by patients waiting for their meeting with the doctor. In one way the waiting space of the day treatment offers more comfort in the setting of the furniture. In the other way and on a more basic architectural level we can see that patients can have a outlook on the hallway, they are set above people coming in and have a kind of ‘secure’ position. In a way they are set on their own island, feeling protected.

Directions for design
Talking about the policlínica area, confrontation is mentioned frequently as association with this area. With confrontation is meant, the confrontation with people which have the disease as well in various stages. The confrontation which the patient has to go through once he has received a bad message, or when waiting, being confronted with someone which just had this bad message. The patients often mention often they look in magazines when waiting for their conversation, but you can see the act of reading in two ways, as distraction but also as avoiding confrontation.

Taking the daycare treatment as example we can say there could be some general viewpoints which could help in designing a better space for the waiting room. One point is giving people the possibility to create and identify their own private area, without being confronted with the patients which are walking around. Second point is too separate the ways of people waiting for their meeting and people which just had their meeting. Another direction could be, which is a quality of the waiting area of the day treatment is freedom of view, people can look around and be distracted by the in this case internal street life of the building.
Patient room  *Loss of control – regaining control.*
The patient experience when being inside the NKI is being dependent on the hospital for everything they need. Although not directly mentioned by the patient themselves, it is general attitude of being ‘delivered’ into the way the hospital works. This leads to certain acceptance in the patients behavior towards the hospital environment, but also a discomfort in the way that they are anxious and nervous about what is going to happen in their hospital environment.

Regaining control in the patients room could lead to a certain increase of comfort, how do we see this basic notion in ways which could apply to design?

Controlling the room environment, within easy reach of the patient
Certain elements of which patients could really benefit is controlling from bed the lighting in the room, this will improve the patients comfort in the room because they will gain the feeling of ‘being in control’. This could also count for controlling the blinds or curtains in the room, the door of the room and any privacy measures. Controlling the environment will also creating a certain sense of attachment with the space they are inhabiting.

Providing possibilities for storing items which remind of home in direct reach of the patient.
Although the current room provide possibilities to hang photo’s and cards of their relatives, storage for items which have a certain emotional value to patients is still limited. A closet or cabinet in which items can be stored reminding them of home or otherwise could make their place more like ‘home’ and less a hospital. It is still questionable whether this option would also work in a two-persons bedroom due to the lack of privacy because of the ‘roommate’.

Easy access to connections, to both sides of the room
The Internet and the patient’s mobile devices are a important way to connect to their friends and family while staying on the internal nursing department. Depending on the patient, they spend a lot of time connected on the Internet, using for example Facebook and twitter. For them it gives them the feeling of being less closed-off. It is important to provide space and possibilities to have the devices as well as their need of a power supply on both sides of the bed within arms reach.

Overall design language,
Although just mentioned by one patient, I think it is a important aspect of dealing in a integral way with the patients room is to keep a overall design language. This means that every aspect, from dustbins to cabinets and patients beds have to be harmony with eacother. In this way, visual clutter is reduced, and the outlook of the patients
room in total will give a professional impression.

Seeing when what is expected,

I am calling this, seeing when what is expected, but what is mentioned by patients concerning their comfort in the room, is their anxiousness of not knowing when what will happen. For a cancer patient being treated with chemo therapy inside the internal nursing department there is a busy schedule of administering chemo treatment, being weighed, eating, temperature check etc. Because although for the nursing department this routine is quite standard and clear when is what happening during the day, for the patient this clarity exists in a much lesser amount. A planning system which would be visible for the patient, showing for example: “Nurse A will arrive in 15 minutes for weighing” could reduce the nervousness of the patient, and also plan his own time according to this schedule. Regaining for the patient a sense of control and having information about his own treatment.
2.3 STAFF INTERVIEWS

2.3.1 AIM
In the Antoni van Leeuwenhoek hospital also the staff play a big role in caring for the patients. This means that their experience of the environment counts as an important factor as well. With this in mind the researcher interviewed three nurses from the internal care department on the fourth floor of the NKI – AVL. Aim of the staff interviews is to discover if the environment plays a big role in the experience of the staff, and if so what is the role of the environment (practical, emotional or something else)?

2.3.2 METHODS
Three nurses were interviewed, these nurses, all women have all received a special oncology education before working here in this hospital. The nurses work in three shifts, you have the morning shift, which starts at a quarter to eight, the afternoon/evening shift starting at half past three and the evening shift starting at eleven in the evening.
The interview sessions took a half an hour and were done inside the hospital. Goal of the interview was whether to find out if and how the environment plays a role in the daily routine as a nurse. In the questions the nurses were asked after a specific situation and whether, the environment had a impact in such a way. A lot of background information was gathered by asking the nurses about their daily routine and if the workplace fulfilled their needs.
The interviews brought a lot of information together, both on the work routine of the nurses, but of their needs and experience of their environment. 2 out of the three nurses worked at the NKI-AVL for around three years, the other nurse worked in the NKI-AVL for already 11 years in a row.

2.3.3 RESULTS & CONCLUSIONS
What you notice directly after having talked with the nurses is that, because the hospital is smaller there is a closer connection between patient and staff. Combined with the disease of cancer, and the fact that a lot of people die within the hospital, leads to special situations which could not have happen in a general hospital.
Emotional Attachment

“Last week we had a marriage of a patient, I was there and it was really special. It was a fast marriage, the woman was terminal and would die very soon. She really wanted to marry, so she did last Tuesday, Wednesday she visited her birth village and 24 hours after she died”

Often experiences with terminal patients lead to emotional and difficult but also very special situations. The nurses mentioned that this aspect, although it was sometimes difficult, also made their work in this hospital very special. A important thing the nurse mentioned in consideration with the situation of the marriage, is that she wanted to make the room feel less hospital like for the photographs, so I asked her what makes for her feel the room like a hospital?

What creates a hospital feeling

“No it is not the room in particular, it is more the equipment that is hanging around the patient, the infusion pole, the equipment behind the bed, the wires, I removed the most to let it be as less hospital as possible”

What also is mentioned is the need for a space to retreat, often-emotional heavy situations can happen, and mostly after this there is a evaluation or talk with the team members. This is necessary, it is mentioned by the nurses as a kind of security, to prevent from taking these events home. Although these rooms are really necessary, it is mentioned that the amount of rooms is too little. Making it difficult to be able to use them at every moment.

Practical needs

“In itself, the space fulfills the needs, there are maybe too less of those spaces, because often they are occupied. On the A and C wing there is a identical space like this one, but they don’t have a window. Also there is one computer in this room, so when people are not assigned on the ‘floor’ they sit here, so the room is often occupied, that is a shame. However, when you ask them, can I use this room for half an hour, I am sure it is ok and they will sit somewhere else, but it still is a bit annoying. “

What also is mentioned frequently, but this is more of a practical matter is the size of the bathroom, this is in general seen as too small and a big mistake in the renovation of the building 10 years ago, also the room size itself is on the small side, complicating the manoeuvring of the hospital beds through the doors. What further is mentioned about the organization of the floor, is the inability to have visual contact with the rooms from within the control post, the need for additional storage within the rooms, the noise of the ventilation in the rooms and the lack of privacy when discussing patients statuses inside the control room.

The examples mentioned above were the items which came forward during the interviews, there is still a lot more usable data for the research to be found in the interviews. This data will be used next to the data from the rest of the user research for developing the conceptual scenarios.
2.4 OBSERVATION - BEING A PATIENT FOR A DAY

2.4.1 AIM
As a part of the field research a observation within the NKI-AVL hospital has been done. The aim for this part of the research was to stay one night at the hospital and to experience the hospital from a patient’s perspective. This led to a few interesting insights which I did not encounter earlier.

2.4.2 METHOD
For the observation in the hospital I used a dairy, when thoughts about the environment or what I experienced within the hospital came to my mind I immediately put those thoughts on paper, combined with photographs this came to a kind of personal journal which I reworked towards the results and conclusions you can read below.

2.4.3 RESULTS & CONCLUSIONS
Being Closed off from society
When being inside the hospital, you are removed from your own social life. And instead of when being at a certain place and you can decide if you want to leave or not, in the hospital you have to stay to follow the treatment. This creates a certain feeling of being isolated from the life you had before and increases the need for communicating with family and friends and staying up to date. With modern day communication tools like facebook and mobile phones this feeling has diminished a

[46] Connections are un-reachable when you are in bed, only in lying position you can reach the power plugs, the yellow needlebox is unavoidable, the little cupboards look a bit messy.
bit. It has become easier to communicate but still, the only people you normally would just meet have now to make a special visit to see you.

**Time and information**

When sitting in your room, there is not a direct visual connection with a clock, there is a small clock on the television, but it would be easier if there was a bigger one hanging in the room. Also you hear a lot of noise coming from the hallway’s but you never know if they are coming for you or not. This could be resolved with a digital information display with information when or what is going to happen.

**Practical Issues**

During the night there is a constant noise from the ventilation system, which is not improving the sleep of the patient. This could be as well because the researcher was placed in so called air-lock room, where patients are placed in case of quarantine.

What immediately falls in eye-sight is a yellow box where seringes are disposed after use. This is a really unpleasant sight, and you are directly confronted with this, when entering the room and staying in your bed. Looking further at the wall facing you when you are in your bed, you can see a cabinet, which is unused, and also looks like there is not well thought of.

When the bed is in upright position, as a patient you are unable to reach, the controls of the lighting, which is also simplified to just one type of lighting, a TL bar behind the bed.
**Lighting**

Overall, the lighting during the day is sufficient, but still more daylight could be appreciated, mostly in the hallways but as well in the patient rooms themselves. The lighting stays constantly the same during the whole day, it could help for the rest of the patients, to make a night program in the lighting for the hallway, to give also the hospital a feeling of rest. In the patient rooms, there could be more diversity and options for lighting, making it also possible for the patient to give it a more homely feeling and the ability to personalize it. The lighting of the pantry in the evening is too sterile for a place which is meant to be cozy, this could be more designed in the way of a restaurant with soft warm spots instead of cold light, especially because at this point you are staring to a glass wall, which is not inviting at all.

**Bathroom**

The bathroom floor has a very weird yellowish colour which could be replaced by a more neutral type of floor. The places where your store your items are cheap metal baskets, which give a unhomely feeling, like we don't really want you to be a guest here. Giving more care to the design of bathroom cabinets could help in creating a
more inviting bathroom. And foremost, the bathroom is too small, for sure when you are attached to a infusion pole, which most patients are.

**Roof terrace**
The only possibility for patients to get out of the hospital environment is by using the roof terrace of the hospital. This is a very important place for many people, staff as well as patients because here they can get a breath of ‘fresh’ air, something which they are unable to do within the hospital. A small note asking to keep the place clean stresses this importance.

When looking and experiencing the hospital environment within the NKI-AVL from a patients perspective you are immediately confronted with impractical matters. Like the size of the bathroom, the unlogical placement of cupboards, the lighting, the unreachable controls out of bed. It shows that when designing the hospital environment in which the patient is living for multiple days has not been designed looking from a patients perspective. Taking the patients perspective in account when designing a new patient room, with more technologies in mind, and making it a more ‘caring’ environment in the sense more attention is given to detailing and looks of the room on the longer term could all contribute to the well-being of the patient within its stay in the internal care department.

[48], [49] For staff as well as patients, you can see the importance of being able to get ‘out’ of the Hospital, hereby a request to keep it clean.
2.5 THE NEXT STEP

The field research within the Netherlands Cancer Institute/Antoni van Leeuwenhoek Hospital provides a lot of information about the patient and staff perspective on the building and the events happening inside the building.

The field research gives insights in the needs, emotions and expectations, patients and staff have when being inside the hospital environment. But all these quotes and other data are focusing on certain areas within the NKI AVL. Also the data is rather different from each other, it consists of quotes, images and photographs.

This creates the question: how to transfer this data to something which can provide insight for the researcher as well as other people? One way of doing this is by using a scenario, a time-line in which the trajectory of the patient when going through the treatment process is shown.

Using the scenario as a method, the hospital building can be as a dynamic sequence of spaces instead of a static building. More about this method is described in the next chapter.
CONCEPTUAL DESIGN

Building a patient experience scenario
3.1 SCENARIO DEVELOPMENT

3.1.1 METHOD

How can we transfer the conclusions from the field study towards a design? Or in other words, how can we address the context of the patients experience within a new design?

First we have to consider that a experience is not a static phenomenon but a dynamic phenomenon, with in every part of the building a different type of experience for the patient. There are places/spaces where a patient stays longer, there are as well places/spaces where the patient is for a really short time, but can have a tremendous impact.

In order to define the patients experience throughout a cancer hospital, we can use a scenario, this scenario, which you can see as a timeline of the patient going through the medical process. This will give insight, what happens around the patient and what the patient is going through at that moment on both practical as well as emotional level.

The layout of the scenario is based on the Patient Experience Flow developed by Philips Healthcare. At Philips Healthcare these type of scenarios are used to find out what is influencing the experience of the patient when going through the Hospital. The scenario provides a good oversight of what happens around the patient and what stakeholders are having an influence on this treatment process.

In this framework I insert my own data and conclusions from my research, producing a oversight and scenario of what a cancer patient would go through when being in his cancer treatment process.

Continuing on my own research I added a section (design strategies) in the bottom of the scenario, to suggest design strategies in order to influence the emotions, or conclusions mentioned. These strategies could be applied inside the building and play a role on different scale levels, this could either play in the organization of the spaces or little details within the patient room. In this way I develop a overall conceptual scenario for the building and the interior spaces within.
**3.1.2 DEVELOPMENT OF CHARACTERS**

In order to build a scenario for a patient we first have to create a fictional character which plays the central role. The first scenario is based around Willem, Willem is a financial consultant of 53, with a wife and 2 children and is diagnosed with bowel cancer.

The scenario is based on the assumption that Willem suddenly find something is wrong with him, and according to the standard Dutch Healthcare procedure will first visit his private doctor (huisarts) before being redirected towards the Cancer center. Eventually Willem is redirected to the cancer center for further diagnosis, inside the Cancer Center he will follow a trajectory of events which will happen around him, like a operation, chemotherapy and a PET/CT scan.

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[Image of Patient Experience Flow]

The patient experience flow, the upper part is the timeline with the activities of the different stakeholders, in the middle the conclusions found in the user research which coincide and in the bottom part design strategies which could be implemented. This patient experience flow is based on a layout used at Philips Healthcare to inventarise the experience of a patient undergoing certain actions in a healthcare environment.
3.2 PATIENT EXPERIENCE SCENARIO AND DESIGN STRATEGIES

First Signs of Cancer

- **Monday morning:**
  - Blood in excrement:
  - Something is wrong with the patient

- **Monday afternoon:**
  - Doctor performs tests and tries to set a diagnosis

- **Week later:**
  - What is done with the end result of the diagnosis

Patient experiences having uncertainty

From the first moment, something is wrong with the patient. But surely from the first point onwards a indication can be made towards the disease of cancer: this creates an uncertainty for the patient. It depends on the type of cancer whether this process of visible symptoms happens quickly or over a more longer period.

Diagnosis in the Cancer Center

- **Diagnosis period in the hospital takes around 6 hours:**
  - First Blood is taken from the patient, after this the patient goes to the diagnostic area for the Endoscopic research
  - Endoscopic Research is done and tissue is removed for further diagnosis
  - Patient is desaturated after hearing the message and wants to get out as fast as possible

First encounter with the Cancer Clinic

- **The first encounter with the Cancer Clinic is really important for the patient as well as for the appearance of the Hospital building itself.**
  - From this first impression the patient will judge if this hospital is professional, clean and would provide him with the right care.
  - Guidelines in this aspect are:
    - **Human Scale:**
      - In illustrating that the building will provide personal care, you should remove the 'institutional feeling', a way of doing this is keeping the human scale in mind and try to avoid big and monumental spaces.
    - **Clarity:**
      - For the patient it is important to know where to go in an instant moment, therefore the floorplan should be clear and readable from the beginning.
    - **Direct access to information:**
      - Cancer patients suffer from a big uncertainty, and feel lost, they want to have fast access to information to feel to be in control.

The result of the Diagnosis

- **Short session of 2-3 hours in the Cancer Center:**
  - Patient is waiting for the meeting with the doctor
  - The family is of big support but confronted with a totally new situation, giving a huge emotional impact
  - The day plan could resolve for the patient a sense of control and knowing when what will happen. For a
  - 23.00: Medical Nuclear Doctor
  - 02.00: Surgeon gives report
  - 04.00: Operation is starting
  - 08.00: Anesthetic agent is removed

The importance of the waiting room

- **One of the spaces were the patient is more in the environment in the search for distraction within the waiting room of the Policlinic:**
  - **Avoiding Confrontation:**
    - Because the Policlinic is also the place were takes place with other cancer patients in different disease, possibilities to retreat and create privacy taken into account.
  - **Providing distraction:**
    - Also the waiting room should provide some easy conversation starter. This could be a miniature exhibition of specific art objects.
    - What also is of importance, is the option to have a view to the park or the garden, or even the sea: a small but very important way to provide a natural relation with the environment.

- **After the meeting with the doctor, the patient is forwarded to the NKI-AVL in a totally new situation, being confronted with a totally new situation, giving a huge emotional impact:**
  - When the patient is transferred from his patient room to the anesthetia and the recovery room

- **One day before operation:**
  - Most hospitals have a clean white, factory like finish, in order to create an easy and professional outlook, this means a sufficient amount of takeaway for the patient and family.

- **Patient is confronted with Cancer:**
  - At the moment the patient is forwarded to the NKI-AVL, the personal approach with the introduction room, here the patient is welcomed.
**Patient Experience Flow**

Monday morning, towards the disease of cancer, this creates uncertainty for the doctor.

The first encounter with the cancer clinic provides possibilities for distraction on the patient floor. The patient is confronted with cancer and should remove the ‘institutional feeling’. A way of doing this is to make the patient feel like they are in a more natural environment. This includes having a sense of control over their own environment, lighting, sound, ventilation, curtains for the window, and personal storage and control and information systems for the room.

By increasing the depth of the wall between the hallway and the patient room, the border between public and private is softened. This intermediate area and its cabinets can be used for storage and control and information systems for the room.

Anxiety for the end result of the diagnosis is very real. Sometimes it takes days to fall asleep, especially when the patient has family around. Feeling really dependent, providing the patient with the necessary support is important. Providing the possibility to make decisions and steps towards the end result is necessary.

A routine sensibility is needed. It is important to keep to a routine, even if the patient has different needs. It is also important to provide the patient with a sense of control over some things, like for example the day to day care routines. This is especially difficult for patients with chemotherapy, as they often have difficulty concentrating. They may also feel really dependent. Providing the patient with the necessary support is important. Providing the possibility to make decisions and steps towards the end result is necessary.

**Dealing with Cancer**

When the doctor brings the message ‘You have cancer, it has tremendous impact on the patient. Often they want to get out of the hospital as soon as possible and don’t want to be confronted with the people waiting for their appointment as well. After this first emotion of retreat and denying cancer there is the question, so what next? What helps here, or at least in the N.V.K.V., is that there is a clear treatment plan. Although their life is turned upside down, there is a certain clarity of processes the patient has to go through to have a certain chance of survival.

This treatment plan is greeted with acceptance, and the patient is often willing to fight the cancer and go through the operations, chemotherapy and radiation treatment. At this point the patient feels that they have lost control, and they are dependent on the hospital for their curing of the disease.

**Operation and Aftercare**

**Operation**

With a operation the cancer tissue is surgically removed from the body. In the case of bowel cancer, this means that this will also mean a healthy part of the bowels is removed to ensure there is no cancer tissue around the spot which was originally found.

For the patient, the operation starts with the introduction room, here the patient is transferred from his patient bed to a operation bed and his bed to a operation bed and his bed to a operation bed and his. The day of the operation and the day after is really hard for the patient. They are in their treatment, they often fall asleep, and need a lot of rest. The next day they can leave the hospital.

**Aftercare**

When woken up after an operation, you often don’t know where you are, you are still a bit under anaesthetics so you cannot really react on the environment. If the operation was very critical the patients are transferred towards the intensive Care Unit area. Here the patient is further monitored and analysed before he can bring back towards the normal internal care department.
Internal Care - Chemo Therapy

06.00
- Surgeon performs the surgery and the most of the tumour tissue is removed from the body.

07.15
- Patient is woken up after the surgery, needing a change of bag.

08.00
- Surgeon gives report of the operation whether it was successful.

08.00 - 10.00
- Nurses make their check-up round and check every patient. If something is wrong or where they can help.

10.00
- Patient is getting himself ready for the day, taking a shower.

11.00
- The chemotherapy is attached to the infusions of the patient.

11.30
- Lunch is served to the patients.

13.00 - 17.00
- Doctors do their round to check-up on the patients and give progress reports at the bed, when they have time.

14.30
- Start of visiting hours.

15.30
- Shift change, from day to evening shift.

Chemotherapy

A important part of the treatment of cancer is chemotherapy. It is a good way of treating cancer, but it has its bad side. It creates strong side effects like nausea, hair-loss, loss of concentration, loss of taste and smell. Making the therapy depending person rather unpleasant.

Distraction

When being treated in the internal care department patients stay often for a long time on the same floor, in fast being attached to the chemotherapy the patient is not allowed to leave the floor. This means that they feel stuck in their room. Also the rooms in the internal care department themselves offer little possibilities to provide a nice distraction for the patient.

12.00
- 12.00: Doctor brings

Seeing when what is expected?

I am calling this seeing when what is expected, but what is mentioned by patients concerning their comfort in the room, is their annoyance of not knowing when what will happen. For a cancer patient being treated with chemotherapy inside the internal nursing department there is a busy schedule of administering chemotherapy, being weighed, eating, temperature check etc. Because although for the nursing department, this routine is quite standard and clear when is what happening during the day for the patient this clarity exists in a much lesser amount. A planning system which would be visible for the patient, showing for example:

- "Ik voel de chemo wel, zeker de eerste keer, blijvendheid als het met 100% per uur ter infusie is betaald en vijftien minuten na het eind van de infusie is je rug en armen koeler worden."
- "Je voelt de chemo wel, zeker de eerste keer, blijvendheid als het met 100% per uur ter infusie is betaald en vijftien minuten na het eind van de infusie is je rug en armen koeler worden."
- "Ik voel de chemo wel, zeker de eerste keer, blijvendheid als het met 100% per uur ter infusie is betaald en vijftien minuten na het eind van de infusie is je rug en armen koeler worden."
- "Ik voel de chemo wel, zeker de eerste keer, blijvendheid als het met 100% per uur ter infusie is betaald en vijftien minuten na het eind van de infusie is je rug en armen koeler worden."

Personal Approach

For a big part offered by the NKI-AVL, the personal approach with distractions offer the patients some time off, while they are being monitored, because it is a small chance to get to know their surroundings better. Distractions offer the patients to have them becouse everything happens in a different area.

Avoiding Boredom

When you are inside the hospital you are seduced from your own world, you cannot get out to meet friends or join in with society in general. The chemotherapy has an effect on your mind as well, since it is making you feel tired and its difficult for patients with chemotherapy to concentrate. They mention they are unable to read a book. This means, because they are staying for a large part of their stay on the internal care department floor, distraction must be sought in other activities.

- "Ik voel de chemo wel, zeker de eerste keer, blijvendheid als het met 100% per uur ter infusie is betaald en vijftien minuten na het eind van de infusie is je rug en armen koeler worden."
- "Ik voel de chemo wel, zeker de eerste keer, blijvendheid als het met 100% per uur ter infusie is betaald en vijftien minuten na het eind van de infusie is je rug en armen koeler worden."
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- "Ik voel de chemo wel, zeker de eerste keer, blijvendheid als het met 100% per uur ter infusie is betaald en vijftien minuten na het eind van de infusie is je rug en armen koeler worden."

Patient information terminal

Uncertainty about what is going to happen during the day is a cause for anxiety and stress, especially since when being intern for a chemotherapy a lot of activities happen around you. An information terminal with the day plan could resolve this. This terminal could also adress more things, like the options for the dinner or proposals for family visits.

Retreat

Sometimes a patient does not connect, or just wants to avoid the staff of the hospital, for places which they can go to. Siting places in the patient’s house are good places for patients which they can go to. Another way to retreat is the building, by providing inner gardens which can enjoy the sunshine and the safety of the hospital.
Patient Experience Flow

First week after admission

From the first moment, something is wrong with the patient.

Doctor performs diagnostic tests.

Nurse explains the results to the patient.

First encounter with the Cancer Clinic

Providing possibilities for distraction on patient floor.

Cancer patients suffer from a big uncertainty, and feel lost, they are unable to read a book. This means, that everybody you see walking which is not staff has been diagnosed with cancer. Because people are in their treatment they often feel dependent. Providing the patient with the feeling they have control over some things, like for example temperature, within their environment, increases the patients comfort.

Uncertainty about what is going to happen.

In either way, the outlook of the hospital should promote a clean environment.

When woken up after a operation, the patient

Surgeon performs the operation.

Intake for Operation

To remove the malignant cells.

A lot of problems, of sound, privacy and comfort can be solved by using single rooms for patients. Still, patients tell they like to be around people, a other strategy could be to provide this possibility by making family rooms, or combined gathering rooms which could be used for activities, or just watching tv, reading the paper, just like the things you could do at home.

Increasing the border between hallway and patient room

By increasing the depth of the wall between the hallway and the patient room, the border between public and private is softened. This intermediate area and its cabinets can be used for storage and control of informations for the room.

Privacy glass

Because the border between hallway and patient room is always a topic of discussion, with the use of privacy glass, the patient or nurse can choose when, and whether the privacy glass needs to be turned on or off for privacy.

Providing single person patient rooms

A environment you can control

When the patient has cancer, he loses in some sense the control over his life. This is also visible in the sense that when staying at the therapeutic floor for treatment, everybody can walk into your room. This gives the feeling of not being able to control your room environment, like you can do at home.

Providing direct control over their environment (Light, Sound, Curtains, Climate)

In providing control over the more little things in the direct environment of the patient, comfort can be improved. Giving control over lighting, sound, ventilation, curtains for the windows, could all improve the patients sense of control over their own environment, and with this improving the patients comfort.

Night situation

When the night has fallen in the hospital, the first thing mentioned by the patients is the light and the noise which keep them out of their sleep.

Reduce noise

It is important for the patients comfort to take measures to reduce the noise of the ventilation for example.

Special Night lights

By introducing special lighting which is activated after 21:30. Sleeping could further be improved. These lights, probably LED’s are directed towards the floor of the hallway. By doing this, the lights are as little as possible disturbing the patient rooms.

Privacy

Being confronted with other cancer patients is always a difficulty in Cancer Hospitals, especially within the room were the patients sleep. Although not mentioned frequently, some patients do have problems with sleeping with someone else in a room. But the general opinion is, that it really depends on the roommate you are having in the hospital. In general the patient prefers to be apart, especially when the patient has family around.

Dealing with privacy within the room is still difficult, most of the time curtains are used to shield of the patients, but that does not always work.

"Wat ik als prettig ervaren heb, dan een mooie afleiding. "

"Dat er een behandelplan is en dat je niet meer wakker kan blijven."

Control your own situation

When the patient is going through treatment within the hospital it they feel really dependent. Providing the patient with the feeling they have control over some things, like for example temperature, within their environment, increases the patients comfort.

When the patient has cancer, he loses in some sense the control over his life. This is also visible in the sense that when staying at the therapeutic floor for treatment, everybody can walk into your room. This gives the feeling of not being able to control your room environment, like you can do at home.

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Patient Experience Flow

First Signs of Cancer

Monday morning:

Kind of considerations which will be developed further in the longer period.

Out a diagnosis of cancer, what is done with the doctor.

First encounter with the Cancer Clinic

The importance of the waiting room

Patient information terminal

Avoiding boredom

Providing single person patient rooms

At the moment the patient is forwarded to the NKI/AVL in this the patient goes to the diagnostic area.

Zonder moeten, komen we nu stuurloos is, je bent geen aan het geheel en het maken van de afdeling.

“Dat is wel beroerd, als je weten dat je de chemotherapie af heeft, maar een nieuwe ronde van operaties, chemotherapie’s en radiatiebehandelingen.”

This treatment plan is greeted with acceptance, and the patient’s life is turned upside down, there is a certain clarity of whether they have to be here.

Contact with the outside world

And professional outlook, this means a sufficient amount of flooring, wall types in shared and more public spaces.

Although, every type of department has its own plan of operation, loss of taste and smell. Making dinner, for example:

“Ik heb soms last van de chemo wel, zeker als ik wat eten.”

“Je voelt de chemo wel, zeker als pittige kaas laten een hele nare nasmaak achter.”

“Ik heb het zo gemakkelijk.”

“Mijn lever gaat piepen om 2.19 en daar wordt ik wakker van. Ik ben niet dat ik niet weer slapen kan blijven.”

“Mijn lever gaat piepen om 2.19 en daar wordt ik wakker van. Ik ben niet dat ik niet weer slapen kan blijven.”

“Dat is wat gezelliger, maar het is wel wat.”

“Met z’n tweeën liggen is wel wat gezelliger, maar het is wel wat.”

“Als ik hier bleef bewusteloos, ik denk mijn leven uit.”

“Je voelt de chemo wel, zeker als pittige kaas laten een hele nare nasmaak achter.”

“Ik heb soms last van de chemo wel, zeker als ik wat eten.”

“Dat is wel beroerd, als je weten dat je de chemotherapie af heeft, maar een nieuwe ronde van operaties, chemotherapie’s en radiatiebehandelingen.”

This is the most important moment in the patient’s life.

When the patient is going through treatment within the hospital it they feel really dependent. Providing the patient with the feeling they have control over some things, like for example temperature, within their environment, increases the patients comfort.

The first night sleep in the hospital is often the most difficult one. You are in a unfamiliar bed. The light from the hallway is distracting, you hear all kinds of noises which are unknown. And often the noise of the infusion wakes you earlier than the breakfast people.

Anxiety for the end result of the diagnosis

Night situation

When the patient has cancer, he loses in some sense the control over his life. This is also visible in the sense that when staying at the internal care floor for treatment everybody can walk into your room. This gives a feeling of not being able to control your room environment, like you can do at home.

Providing direct control over their environment (Light, Sound, Curtains, Climate)

In providing control over the more little things in the direct environment of the patient, comfort can be improved. Giving control over lighting, sound, ventilation, curtains for the windows, could all improve the patients sense of control over their own environment, and with this improving the patients comfort.

When the night has fallen in the hospital, the first thing mentioned by the patients is the light and the noise which keep them out of their sleep.

Reduce noise

It is important for the patients comfort to take measures to reduce the noise of the ventilation for example.

Special Night lights

By introducing special lighting which is activated after 21:30. Sleeping could further be improved. These lights, probably LED’s, are directed towards the floor of the hallway. By doing this, the lights are as little as possible disturbing the patients.
When being diagnosed with cancer, it is always uncertain what the prospects will be when having gone through treatment. This always creates a type of tension when meeting the Doctor for the progress report. Because it can be good or it can be bad news.

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Thinking about the future is not in the mind of the patient when going through the treatment of their cancer; they are busy fighting their disease. So it is rarely happening the patient is already thinking about what next, this will happen when the patient is done with the treatment and is seen as clean (for now). With for now I mean, it will always be unsure whether the cancer will return or not.

---

Cancer has a devastating effect on the life of a patient, but not only for him or her but also the family around them. What often happens, is that either people with cancer because they are faced with death in a way. Become much more or much less spiritual than before.

There is a need for a place of silence and reflection within a cancer hospital. In these silence centers, there can be prayed, thought about life or simply reflect. It can also be a place of remembrance for the people who lost their lives in the hospital, something which is still unavoidable in a cancer hospital.
4.1 INTRODUCTION

CANCER CARE CENTRE, LEIDEN

Both Hospitals in Leiden provide cancer care, with the future developments in mind, there could be a need for the development of a special care center, where the best care for cancer patients can be developed with the contribution of both hospitals.

The program of the building will consists of different types of functions:

short stay (day care treatment)
long stay (more intensive treatment like radiation treatment and surgery)
Operation Rooms and CT Units
Visiting rooms for family optional for longer stay.
Consulting rooms for Medical and Psychological care

Figure 49. In red is the proposed location of the planned cancer care center in Leiden. The oncological treatments given at the moment in both the Leiden Universitair Medisch Centrum (LUMC) and Diaconessen Ziekenhuis can be combined in the newly build Cancer Care Centre

Figure 50. In red are given the Locations of the two hospitals and the planned Cancer Care Centre in Leiden. The striped line with the red circle is Leiden Centraal Station. A Hub for public traffic in the region
LEIDEN

The City of Leiden has two Hospitals, LUMC (Leids Universitair Medisch Centrum) and Diaconessenhuis, near eachother. Both facilities have their own specializations and work together in cases in which one hospital would do work better than the other. The LUMC is an academic medical center, this means that not only medical is provided, but also research an education are done within this facility. This provides for patients the help of the latest technology in the field.

A Cancer Care Center, would help both facilities in sharing their specialists and facilities in one specific center, centralized for the benefit of the patient. Regionally, this center could compete with the newly build CCA (Cancer Center Amsterdam, part of the VUMC) and a planned Cancer Center for youth in Utrecht.

The location of the building will be in a triangle between the LUMC and Diaconessenhuis in a green area, for peace and rest. The area is reachable by train (walking distance 10 – 15 minutes) and Car (direct exit at A44) and Bus. If urgencies arise in the center and complications with other fields of medical care are needed the patient can be transferred to a near hospital in as short as 10 minutes.
The program of requirements is based on the information given by the College Bouw Zorginstellingen, the reports, each for a different part of the building numbers out the minimum amount of square meters for every room in the healthcare sector. The amount of square meters is a global indication. My observation and interviews within the Antoni van Leeuwenhoek hospital indicated that this room is for many people the centerpoint of the building. From this point onwards the process starts of being treated, diagnosed or tested again.

The square meters are indicated on the treatment region in which this center is going to function, I have taken a region roughly extending from Haarlem towards the Hague. My calculations show that within this region would be at this moment 2184 patients, however investigating the amount of Cancer Patients at the LUMC (Leiden Universitair Medisch Centrum) indicate of a amount of 3009 patients on a yearly basis. Taken in account as well a increase of patients of 40% in the Netherlands in the next decade I have set the global capacity of 5000 patients on a yearly basis for this Cancer Care Centre in Leiden. As we can see in the diagram based on the yearreports from 2001 till 2010 of the LUMC, we can see a shift from Internal care towards Day-care. While in 2001 there was still a division of 30% daycare treatments and 70% Internal care treatments. In 2010 this shifted the other way around in 70%
daycare treatments and 30% internal care treatments. The amount of treatments grew as well, in the past ten years we see a increase of 300% of the amount of treatments for the LUMC. If we base the amount of treatments on 5000 treatments a year and divide this on occupation for every day we come to a amount of:

25 beds Long Stay intern care
35 beds Daycare places

Diagnostic department
Operation Rooms
Knowledge library
Radiation Therapy
<table>
<thead>
<tr>
<th>Program of requirements CCL (netto)</th>
<th>Amount</th>
<th>Surface (m²)</th>
<th>Remarks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. General</strong></td>
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<tr>
<td>1.1.1 Entrance</td>
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<td>1.1.3 Janitor</td>
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<td><strong>2. Diagnostics</strong></td>
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<td>2.1 MRI Scan</td>
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<tr>
<td>2.1.1 Diagnostic area</td>
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<tr>
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<td>2.1.3 Control Space</td>
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<td>2.1.4 Preparation room</td>
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<td>2.1.5 Dressing room</td>
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<tr>
<td>2.2.4 Preparation room</td>
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<tr>
<td>2.2.5 Dressing room</td>
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<tr>
<td>2.3 X-ray scan/ bucky scan</td>
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<td>2.3.3 Dressing Rooms</td>
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<td><strong>2.4 Echography</strong></td>
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<td>2.4.2 Dressing Rooms</td>
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<td><strong>2.5 Supportive Facilities</strong></td>
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<td>2.5.1 Toilets</td>
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<tr>
<td>2.5.2 Preparation/ administering room</td>
<td>1</td>
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<td>2.5.3 Measure room with Gamma Camera</td>
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<td>2.5.4 (effort?) room</td>
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<td><strong>2.6 Additional supportive spaces</strong></td>
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<td>2.6.1 Waiting space for patients</td>
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<tr>
<td>2.6.2 Staff room - Coffee room - Dress room</td>
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<tr>
<td><strong>3. Care</strong></td>
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<tr>
<td>3.1 Long Stay</td>
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<td>3.1.4 Exercise, fitness room</td>
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<td><strong>3.2 Short Stay</strong></td>
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<td>min. 2.2 x 1.8m</td>
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<td>3.2.3 Intake Desk</td>
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<td>3.2.4 Backoffice room for nurses</td>
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<td>3.2.5 Waiting Room for daycare treatment</td>
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<td><strong>3.3 ICU Care</strong></td>
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<td>3.3.4 Storage</td>
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<td>3.3.5 Backoffice for Nurses</td>
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<td>3.3.6 Family Room</td>
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<td>3.3.7 Meeting room for Staff</td>
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<td><strong>4. Treatment</strong></td>
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<tr>
<td>4.1 Operations</td>
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<td>4.1.2 Patient lock (sluis) cq. Holding</td>
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<td>4.1.3 Introduction room</td>
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<td>4.1.4 Additional Spaces (Storage, sterile and clean)</td>
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<td>4.1.5 Services (Storage, dirty and not sterile)</td>
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<td>4.1.6 Civil spaces (reception, work, talk spaces)</td>
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<td>4.2.3 Mould Room</td>
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<tr>
<td>4.2.4 Dressing and fitting Room for Mould room</td>
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<tr>
<td><strong>4.3 Chemotherapy in combination with short stay</strong></td>
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<td>4.3.1 Chemotherapy will take place in short stay care (day treatment)</td>
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### Program of requirements

#### CCL (netto)

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#### 1. General

- **Entrance 1**
  - 50
  - 50

- **Reception 1**
  - 20
  - 20

- **Janitor 1**
  - 15
  - 15

#### 2. Diagnostics

- **MRI Scan**
  - **Diagnostic area 1**
    - 40
    - 40
  - **Technical space 1**
    - 15
    - 15
  - **Control Space 1**
    - 20
    - 20
  - **Preparation room 1**
    - 14
    - 14
  - **Dressing room 1**
    - 4
    - 4

- **CT Scan**
  - **Diagnostic area 1**
    - 40
    - 40
  - **Technical space 1**
    - 8
    - 8
  - **Control Space 1**
    - 12
    - 12
  - **Preparation room 1**
    - 14
    - 14
  - **Dressing room 1**
    - 4
    - 4

- **X-ray scan/bucky scan**
  - **Diagnostic area 2**
    - 35
    - 70
  - **Switch Room 1**
    - 4
    - 4
  - **Dressing Rooms 2**
    - 6
    - 12

#### 2.4 Echography

- **Diagnostic area 1**
  - 22
  - 22
- **Dressing Rooms 1**
  - 4
  - 4

#### 2.5 Supportive Facilities

- **Toilets 8**
  - 3
  - 24
  - of which one is a special Röntgen toilet (wheelchair friendly)
  - 1
  - 5
  - 5

- **Preparation/administering room 1**
  - 12
  - 12

- **Measure room with Gamma Camera 1**
  - 25
  - 25

- **(effort?) room 1**
  - 25
  - 25
  - (high care voorzieningen + sluis toevoegen)

- **Patientshower 1**
  - 4
  - 4

- **Patient Toilet (contaminated) 1**
  - 5
  - 5

- **Patient lock with decontamination shower 1**
  - 5
  - 5

- **Dressing Room 1**
  - 4
  - 4

#### 2.6 Additional supportive spaces

- **Waiting space for patients 1**
  - 75
  - 75

- **Staff room - Coffee room - Dress room 1**
  - 120
  - 120

#### 3. Care

- **Long Stay**
  - **Long stay 2**
    - 25
    - 20
    - 500
  - **Wet cell 2**
    - 6 min.
    - 2,2 x 1.8m
    - 100
  - **Relaxation, family meeting room 5**
    - 25
    - 125
  - **Exercise, fitness room 1**
    - 50
    - 50
    - 775

- **Short Stay**
  - **Short Stay (Daycare) 3**
    - 35
    - 15
    - 525
  - **Wet cell 4**
    - 6 min.
    - 2,2 x 1.8m
    - 24
  - **Intake Desk 1**
    - 30
    - 30
  - **Backoffice room for nurses 2**
    - 20
    - 40
  - **Waiting Room for daycare treatment 1**
    - 75
    - 75
    - 694

#### 3.3 ICU Care

- **ICU care rooms 6**
  - 18
  - 108
- **Monitoring center, nursing control post 1**
  - 20
  - 20
- **ICU Wet cell 6**
  - 4
  - 24
- **Storage 1**
  - 40
  - 40
- **Backoffice for Nurses 1**
  - 20
  - 20
- **Family Room 1**
  - 25
  - 25
- **Meeting room for Staff 1**
  - 25
  - 25
  - 262

#### 4. Treatment

- **Operations**
  - **Operation Rooms 3**
    - 42
    - 126
  - **Patient lock (sluis) cq. Holding 1**
    - 20
    - 20
  - **Introduction room 3**
    - 15
    - 45
  - **Additional Spaces (Storage, sterile and clean) 3**
    - 29
    - 87
  - **Services (Storage, dirty and not sterile) 3**
    - 23
    - 69
  - **Civil spaces (reception, work, talk spaces) 3**
    - 21.25
    - 63.75

#### 4.2 Radiation therapy

- **Radiation therapy Room 2**
  - 60
  - high radiation protection for other rooms is needed
  - 120
- **Control Room 2**
  - 15
  - idem
  - 30
- **Mould Room 1**
  - 15
  - 15
- **Dressing and fitting Room for Mould room 1**
  - 14
  - 14

#### 4.3 Chemo therapy in combination with short stay

- **Chemo therapy will take place in short stay care (day treatment)**
- **Chemo preparation room 1**
  - 25
  - 25
- **Pharmacy 1**
  - 50
  - 50

#### 5. Knowledge (talk, meeting library)

- **Meeting**
  - 5.1.1 Meeting Rooms
    - 10
    - 25
    - 250
  - 5.1.2 Coffee Bar/restaurant
    - 1
    - 120
    - 120
  - **Knowledge**
    - 5.2.1 Library
      - 1
      - 200
    - 5.2.2 Study places
      - 12
      - 2
      - 24
  - 5.3 Silence Center
    - 1
    - 40
    - 40

#### 6. Polyclinical Area

- **Meeting Rooms**
  - 6.1
    - 10
    - 14
    - 140
  - 6.2
    - 10
    - 10
    - 100
  - **Examination Rooms**
    - 6
    - 15
    - 90
  - **Room for multidisciplinary meetings**
    - 2
    - 15
    - 30
  - **Waiting Room Polyclinical area**
    - 1
    - 150
    - 150

#### 7. Research

- **Bloodbank 1**
  - 50
  - 50
- **Laboratorium 1**
  - 120
  - 120

#### 8. Morgue

- **Morgue 1**
  - 40
  - 100
- **Washing Space 1**
  - 20
  - 20

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4.3 URBAN ANALYSIS

A small historical Analysis of Leiden as a city

[54] Leiden around. 1250

[55] Leiden around. 1300

[56] Leiden around. 1350

[57] Leiden around. 1659
Leiden, a city which got its city rights in 1266, located between the Oude Rijn and the Rijn meet each other. This excellent location for trade has brought the city prosperity throughout the middle ages and the renaissance. It was the place where the first university of the Netherlands was founded by Willem van Oranje in 1574 as a reward for the resistance the population had brought against the Spanish occupiers. Already since the early days there was a lot of interest for Medicine in Leiden. In the 18th century teachers from the Faculty of Medicine gave lectures at the patients bed, this happened in the old Cecilia gasthuis, the red piece in figure 7. From the 19th century onwards the need for healthcare increased and there was a need for a new academic hospital, which was build on the outside of the city, this now the Museum for Volkenkunde. Eventually also this hospital was to small and a new location was found outside city, near the station. Actually the old Leids Universitair Medisch Centrum, finds itself on the opposite of the current building. A separate case is the Pesthuis, also marked red in figure 7. This was originaly intended as a place to keep plague patients outside of the city, and changed function overtime in a Military Hospital and eventually as a prison. Today it is the entrance building for Naturalis, a museum for Natural Sciences.
Different Photographs of the design location
Current plan of Leiden, with the hospitals marked in red
4.4 RESEARCH AND DESIGN

The connection between the patient experience scenario and the design.

INTRODUCTION

In this chapter the different strategies from the patient experience scenario (chapter 3.2) will be explained and their connection with the outcome of the design. In this way making visible how I propose the research will develop in the design. The following design strategies will be mentioned:

- First encounter with the cancer clinic
- The importance of the waiting room
- Appearance
- Providing distraction
- Retreat
- Providing single patient rooms
- Space for silence and reflection

FIRST ENCOUNTER WITH THE CANCER CLINIC

Although the amount of square meters (8000 m²) is important to avoid this bigness and institutional character it evokes when its built in a compact way. I spread out the building in the landscape in order to reduce the height and compactness of the building and create lower volumes to remove this institutional feeling. By avoiding dominance of the building you make it more personal for the patient which is approaching the building.
In this way the patient doesn't feel intimidated by the large scale of the building and feels himself more at ease because the scale is more related to himself. In materialization I chose a brick facade for this aspect as well, but treat it with a whitewash paint layer. In this way the material is abstract in appearance from a distance, but when you come closer you can distinguish the brickwork and see a scale in the facade which you as a person can relate to again.

By spreading out the volumes the different departments of the hospital will be divided in separate volumes. The volumes are connected by an intermediate volume in which more public functions are located. In this way the different departments are also visible as separate volumes and recognizable in this way. Making it clearer for the patient in its first visit where he has to go to and easy to remind himself where he has been when the patient is coming back.

[62] Floorplan with the division of departments inside the Cancer Center
To accentuate the difference between the departments and the intermediate volume and giving every department its own sense of environment, the entrance of these volumes differ in height. By doing so the patient transverses a series of different spaces giving the patient the feeling of not being again in a big building, but a series of smaller buildings. Reducing the feeling of being in a very big building of (8000 square meters) but in a smaller building block of just 600 square meters which is just three to four times a normal dutch row house. In this way the building will feel more personal towards the patients and he feels less anonymous as a patient.

I choose to let the materialization from the outside continue in the inside, in this way I try to connect the inside volume with the outside volume. And make the difference of the departments visible from the inside as well as the outside. Deliberately I chose not to use different materials, but to create a ensemble and that the whole still would be visible as one building in itself.

When a patient is inside the hospital and having cancer, he has lost control over his own life and wants to know what is going to happen to him, when and how. This uncertainty makes patients very eager to get information as fast as possible, therefore I created a knowledge center in which they can talk to psychologists and search in the library on the latest information on cancer, or just have talks with volunteers which can tell more about what is going to happen to them. I also gave them easy access to information by placing the information desks in such a way that it will be one of the first things they will see when they enter a department.
Section through the intermediate area and hallway towards the treatment department

Floorplan with information center and information desks (marked in red)
THE IMPORTANCE OF THE WAITING ROOM

What came forward out of my research is that the waiting room in the policlinic is very important as an environment factor to reduce stress and anxiousness for patients. At the moment the patient is waiting for his meeting with the doctor, which he rather sees as soon as possible. Since he has to wait for his meeting, the patient will be confronted with other patients in different stages of cancer. He doesn’t want to be confronted and often wants to have his own space while waiting for his meeting with the doctor. In order to provide this in the waiting room, I made cabinets which are of glass, making them walls and giving the feeling of walls, while keeping the open space because they are transparent. By filling these cabinets with interesting items they can also be used as a distraction. Out of the waiting room there is a panoramic view outside to the parklike environment in which the building is placed, also good for distraction. Furthermore I added a height difference, giving the people oversight over the waiting room and easy view at which place they would like to sit. After the meeting with the doctor the patients can immediately leave to the exit of the building.
The hospital is associated with dark hallways lit by artificial lighting and little view to the outside. These factors contribute to the disorientation of the patient because all the hallways look the same. With my design I want to change this and introduce openness in an otherwise closed environment. I do this by opening up the building with patios and introduce connections with the outside and the outside nature. Almost everywhere in the building there is a connection to the park outside of the building. In this ways the building in itself doesn’t feel like a closed environment. Contact with nature, as I have done with introducing patios I also do with the materialization of the inner environment of the building. By using wood, which is coated in a epoxy resin for the cabinets and Limix tiles which are naturally anti-septic, I use natural materials adjusted to the hospital environment with its specific hygiene requirements. Creating more warmth and removing the artificiality of todays hospital environment.
What also is associated with the hospital environment is the amount of technology which can be seen while you are laying in bed, some parts are unavoidable, like infusion poles and sockets for oxygen and co2 gas. As designers we should do our best to do our best to hide the hospital technology as much a possible, this means for example hiding the ventilation shafts from sight, creating lights which can be directed instead of a big TL beam in the back of the bed. And so reducing the hospital feeling.

PROVIDING DISTRACTION

When you are staying on the internal care department you are staying for multiple days, often you can not much more than reading a book, looking at Facebook and watching television. There is also need for distraction in another sense. One way to provide distraction on organisational level is to introduce rooms for activities like fitness, or game rooms where patients go outside their own rooms and play with other patients. In this way also promoting social interaction between the patients. When patients want, this social interaction can also take place at the restaurants in the patients wing or in the intermediate area. Furthermore distraction is provided inside the patient rooms by having a view to the outside with nice views to the park surrounding the area.
[71] Floorplan of the patient wing with social interaction places, the restaurants are marked in deep red, the hallway is lighter red, red is the intensity of social interaction.

[72] Floorplan of the patient wing with activity spaces, which also can be used to retreat from the patient wing.
When patients come into the hospital they lose control over their own environment but also the control over who they are going to see or don’t want to see. For example, the nurses will just walk into your room when they want, it is not up to the patient himself to say yes or no. This creates the need for patients to want to get out and retreat, to be on themselves and getting outside of this hospital environment. I tried to provide this by doing two things, the first is by introducing private sitting spaces within the patient wing [72]. These spaces with a view towards the inner patio are for when a patient wants to be on his own and just be out of the hospital routine, he can sit here and look outside, or read a book. The scale is small and meant to create a comfortable surrounding. Another area which can be used to retreat to either on the patient his own or with family is visiting the inner gardens, in this way they are outside but as well inside and in control of the nurses to provide care.
SINGLE PATIENT ROOMS

A lot of issues related with acoustics, privacy, control and hospital hygiene can be solved with using single patient rooms. It can be argued that by choosing single patient rooms, the social connection with other patients is less and this social connection will be missed by other patients. In my opinion this weighs less than the patients comfort to relax and have control over their own environment, in my hospital design the patient can have social connection, but only when they want to. Because I chose to orientate the patient rooms with as much view to the outside as possible they also have a large wall facing the hallway, out of my research came that patients want to have a view to the hallway to know they are being watched, giving a feeling of security. In order to improve privacy for the patient I have added a intermediate area of 60 cm with cabinets. Creating a border between hallway and patients room. By introducing privacy glass to the sliding doors of the patient rooms as well, the patient or nurse can choose to have complete privacy or not.

[74] Cabinets in as a extionion of the semi-private area, creating more privacy for the patients room from the hallway.
SPACE FOR SILENCE AND REFLECTION

The patients told me, when being inside this cancer hospital they are busy in their mind with fighting the cancer. The treatments, the scans, the talks they all feel they have to get through this in order to survive, this means that when they are diagnosed and being treated they are busy with now and not with the past and future. Because it is a life changing event, sometimes patients suddenly become more spiritual or the other way around and lose their belief in god. In either way, there is need for a space where people can be on their own and think back about what happened, maybe they just want to write down their thoughts in a visitors book, or just breathe for a few moments before stepping back in the car and driving home again. For all these events I have made a silence center. This silence center is not inside the complex but outside, in this sense a freestanding element. I did this because I think reflection is something which should happen outside the cancer hospital. Inside you are trying to get better, outside you think back on what has happened to you, in the past days, months or years. By letting the building open to the elements, again a connection to nature exists. Let us think back, that also the disease of cancer, is a part of nature as well.
FURTHER DESIGN STRATEGIES

Not all design strategies which are conclusions from the research are visible in the proposed architectural design. This is because some are more related to the field of industrial design than to architecture and therefore played a lesser role in the development of the architectural design. This does not mean they are not important, all strategies combined improve the environmental experience of the patient on many levels.

For example the night program, is providing a different kind of lighting during the night, this could either be more like blue LED’s directed towards the ground, making the hallways visible but improving the sleep of the patient by decreasing the amount of light.

Design strategies like the Patient information terminal is something which could play a really big role in improving the patients comfort in the hospital, but is lesser related to architectural design. Controlling your own environment as a design strategy is also visible on many levels visible in the proposals for other design strategies but should be kept in mind when designing the whole hospital.

In the end, designing the hospital environment should be a combined effort of as well the architect, the interior designer and the industrial designer. I think when these parties come together and think of a combined language for the interior of the hospital, there can be made already huge improvements in the hospital environment without very revolutionary ideas.
DISCUSSION AND CONCLUSION
EXPLORELAB OFFERS THE CHANCE TO FOLLOW YOUR OWN INTERESTS AND IDEAS AND DEVELOP INTO A BUILDING DESIGN. YOU ARE ON YOUR OWN IN A GROUP OF FELLOW STUDENTS, THIS MEANS EVERY INITIATIVE AND PLANNING AND PRODUCT THAT COMES OUT OF RESEARCH AND DESIGN IS YOUR OWN RESPONSIBILITY. BECAUSE EVERYBODY IS FOLLOWING HIS OR HER OWN SUBJECT, ON DIFFERENT LOCATIONS WITH DIFFERENT PROGRAMS, IT MAKES IT DIFFICULT TO COMPARE PROJECTS WITH EACH OTHER, ESPECIALLY IN THE RESEARCH PHASE, BUT THIS IS ALSO THE INTERESTING ASPECT, BECAUSE EVERY PROJECT WILL BE DIFFERENT.

WITH MY GRADUATION PROJECT I ENTERED AN UNKNOWN FIELD, AT FIRST I WANTED TO KNOW IN WHAT WAYS WE COULD IMPROVE THE EXPERIENCE OF PEOPLE OF THEIR BUILT ENVIRONMENT IN GENERAL AND THE HEALTHCARE ENVIRONMENT IN PARTICULAR. BECAUSE I WAS WORKING WITH THE SUBJECT OF EXPERIENCE FOR SOME TIME I KNEW ON RESEARCH BASE, EXPERTISE COULD BE FOUND IN THE FACULTY OF INDUSTRIAL DESIGN.

RESEARCH METHOD – INDUSTRIAL DESIGN

IN INDUSTRIAL DESIGN THERE IS A BROAD KNOWLEDGE OF DOING USER-RESEARCH IN RELATION TO THE EXPERIENCE OF OBJECT DESIGN. TALKING ABOUT EXPERIENCE AND RESEARCH ON THIS IN ARCHITECTURE STAYS MAINLY ON A PHILOSOPHICAL LEVEL. WITH MY RESEARCH I WANTED TO GET MORE PRACTICAL. COMBINING THE RESEARCH METHODS OF INDUSTRIAL DESIGN WHICH ARE MORE PRACTICALLY ORIENTATED. AND APPLYING THIS TOWARDS A ARCHITECTURAL DESIGN COULD IN MY VIEW PROVIDE NEW AND INTERESTING INSIGHTS. THE QUESTION IS, COULD THE RESEARCH METHODS FOR EXPERIENCE WHICH ARE LARGELY BASED ON OBJECTS, WORK FOR ENVIRONMENTS AS WELL?

DOING FIELD RESEARCH WITH THE METHODS OF INTERVIEW, CONTEXT MAPPING AND OBSERVATION PUTS THE DESIGNER IN DIRECT CONTACT WITH ITS FOCUS GROUP, OR IN OTHER WORDS THE PEOPLE HE IS DESIGNING FOR. ALTHOUGH THE IMPORTANCE OF THE USER IS FREQUENTLY MENTIONED WITHIN INDUSTRIAL DESIGN, IN ARCHITECTURE THIS IS OFTEN NEGLECTED. BY CHOOSING THESE RESEARCH METHODS, THE USER IS BROUGHT BACK AS A IMPORTANT FACTOR IN THE BUILDING DESIGN.
I started out with searching for patients who wanted to join my research, first I tried doing this through internet forums and online patient groups, so far I got only one result out of this. Luckily I got in touch with the Netherlands Cancer Institute/ Antoni van Leeuwenhoek hospital, they wanted to help me and helped in a great deal with contacts of patients and nurses for my research. The help of the NKI/AvL is in this sense something really important, because without them, this research would have the depth and the practicality it has at this stage.

By interviewing and talking to patients and nurses, the subject you have on paper becomes visible, and you are as a researcher and designer confronted with a difficult disease. You are confronted with people who are struggling for their lives and are receiving painful treatments in order to overcome this. In my opinion this confrontation with the patients and nurses is essential. You need to know what is happening in their minds and in their lives, to be really embedded with your subject. Doing this reveals also a lot of aspects that are not covered in the general literature on the subject, for example in healing environments documentation. Without talking to patients I would not have found for example the importance of the waiting room in the policlinical area, which is more important for the patient than the meeting room with the doctor, because at this stage there is high anticipation and nervousness for the meeting, and here the design of the environment can really help.

**RESEARCH RESULTS**

Out of this research came a lot of data, data on different aspects, some are just notions on emotions, thoughts or things in the environment that are not practical. Since I started out with a experience the question is: How do we translate this to a experience? And how can we translate this experience towards a building? There is not such a thing as a single experience. This experience could be better seen as a Timelapse which a patient goes through, in which he is in different stages of its treatment and places within the hospital. A way of translating the data from the research towards a experience is by the use of a scenario. I knew this from the start of my research that I would like to use this method to connect research and design.

But how to connect the research and the design? At this stage I used a template I have seen at Philips. When I visited the healthcare department of Philips to see how they use their concept of ambient healing environments, I was searching for their methods to approach this problem of designing a experience. What they used as a inspiration for the design is what they call a patient experience flow. This scenario gives great insight in what happens around the patient. Because the scenario I saw was for other people I decided to base my scenario on their layout and use my own data to fill this. In this way I had my scenario for the patient, and what he is going through at certain stages of the disease.
CONNECTION WITH THE DESIGN

At this stage I formulated the central thoughts happening around the patient and added a third frame, design strategies. Design strategies are a combination of using the conclusions for my research and use this in design and re-applying this as design strategies in the scenario. In this way the scenario provides the framework, which could be universally applied to cancer centers in general.

WIDER SOCIAL CONTEXT

Is the research and design applicable for a wider social context, will society profit from my research? I think my research and design could improve the general hospital experience and all problems surrounding this. It means that as an architect you are not only dealing with the basic exterior of the building but also other layers as organization and interior of the hospital. The responsibility of the architect does not only lie on the outside. What I noticed in the hospital, that it was really welcomed I as a student from a Technical University doing research within the hospital environment. For the hospital it is a way of seeing the different problems patients and staff are dealing with from a different perspective than their professional practice. I feel there is a certain need for research and appliance of these methods in the practice of healthcare design, because still a lot of the design decisions of the architect are decided on a programmatic level and at this point they are not looking yet at the patient. While these decisions have tremendous consequences for the well-being of the patient.

WEAK AND STRONG POINTS

Strong points of my design are, the combination of research and design, I have the feeling both the research and design provide interesting views and strategies on where and how to improve the hospital environment.

Weak points of my design are, the realisticness of the design, since it is a hospital it has to do with different organisational and technical requirements, but in order to fulfil this within my design this would add probably another year to my study. I also feel the design is a bit underdeveloped in contrary to the research. Another critical point is that I have found so much information, the amount of pages with data and conclusions could be doubled in order to really present a thorough research and the same amount of data could count for the design as well.
Looking back, I think the research and design in the time set for the project are sufficiently developed. Although I think still a lot could be added and further elaborated, a bit more on design level than research level. This has to do with the complexity of the assignment I have set for my self. Would I do things differently next time?
I guess, I would like to have more time to really think in a different way about the design assignment, I have to feeling I stayed with my design a bit on the ‘safe’ route and didn’t investigate new ways of thinking.

**FURTHER RECOMMENDATIONS**

One thing I didn’t mention in all this research, is the role of the family in the experience of the patient. This is really important, and especially when the patient is terminally ill. I think when dealing with these situations, a different kind of patient wing could be developed. One where there is also space for family to stay, and maybe a more apartment like setting where the family can cook, while the patient is getting the best care. Making the last moments, really like home instead of a hospital.
6.1 RESEARCH BIBLIOGRAPHY

BOOKS


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**WEBSITES**


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Kopvol architects

ONB (op ten noort blijdenstein) Make Sense, Visie op zorg

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Image 2:
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Image 6, 7:
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Image 10:
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Philips News Center, PET/CT room, http://www.newscener.philips.com/pwc_nc/main/standard/resources/research/20111018_Adaptive_Healing_Room/PET_CT_Uptake_1.jpg (30 - 03 - 2012)

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Image 17:
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Image 18:

Image 19:

Image 20:

Image 21:
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Image 22:

Image 23:

Image 31:

Cover Image: Elsa Mickelsen © 2011

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APPENDIXES
SENSING ARCHITECTURE
A discourse in Architectural Theory
1.1 INTRODUCTION

We encounter the world with our body, we use our body to perceive and experience the world around us. We do this through direct perception and proprioception. Both of these ways are multi-sensorial, it means that we use all of our senses to perceive the world around us. However, it are not the senses itself that make us perceive the world. For example it is not the eye that sees, like we tend to think it does as a camera. The eye combines and transfers the signals caused by light projected on the retina, towards the brain. It is inside the brain where the impulses are combined and projected on different kinds of maps, these maps are a combination of memories of impressions we have seen before, by re-iterating it creates the profile, what we see. The same sort of processing counts for the other sense as well, making us speak of different sensorial modalities when perceiving our environment.

The experience of environments or architecture itself can be defined in three key concepts according to Kamiel van Kreij, these concepts are: Kinesthesia, Hapticity and Syneasthesia. It shows that perception isn’t just the processing of a sensorial input in a passive state but a process in the brain using different inputs from different sensorial modalities. Kinesthesia or kinesthesis for example uses the haptic system (Touch) but also mechano-receptors in the muscles as well as the vestibular organ to make us experience the feeling of going up the stairs or causing vertigo.

The way we perceive did change over time, we experience our environment today different than we did 3000 years ago and different than we will in the future. With the entrance of new technologies our mind has adjusted itself to new situations. Our culture addresses more importance to the visual sense since the enlightenment, this happened in the way we communicate as well in our built environment. In the industrial age the pace of the urban life in the city changed dramatically, this was the reason for the mind to adapt itself to the new situation. In order to do this, the mind dulled most of the senses to reduce the total overload of impulses reaching the mind. Because the eye was capable of giving fast objective information, the importance of the eye became greater in order to cope with the urban environment. The digital age, addresses the visual sense even more, but this time we seem unable to cope with new visual impulses entering our brain, we feel displaced.
The visual sense plays an important role in architecture, our plans, renders and diagrams look nice but often when realized contemporary architecture creates a disappointing experience, this is because the experience which is designed is mostly visual, therefore creating a dis-embodied experience between the human and its environment. What is causing the feeling that old buildings address our body and emotional spectrum better than contemporary architecture? These special places which have the feeling of that special atmosphere, constitute of actual phenomena, addressing all our senses. In order to make architecture, which creates a embodied experience, we should focus in the design on more sense than just the visual alone. Industrial design addresses high importance to multi-sensorial experience of objects, this is not without reason. A object providing a multi-sensorial experience creates attachment from the user to the object, a kind of embodied understanding. Also, research shows when in a virtual environment stimulating a multi-sensorial spectrum, the memory of this virtual environment is better and is described in a more vivid way. In other words, addressing the multi-sensorial spectrum will embody our experience and will make our attachment closer with works of architecture.

1.2.1 EMBODIED EXPERIENCE
When we walk through a place like the San Marco square in Venice we can say that our experience of the square is specific for that place, it holds a certain “atmosphere”. When we want to consider what makes this place so specific, we have to look at its characteristics, what makes this place different from other places, what creates/defines its atmosphere? The elements that provide the experience of San Marco square are numerous. It consists of the structure of the pavement, the smells that surround us at just that corner of the square, it is the moisture of the air, the acoustics of the place, the temperature of the air. All of these different types of experiences we feel with our body, all of these experiences together create this ‘atmosphere of the place. It is through our body that we feel the temperature, the hardness of the surfaces, smell the distinct smell of the tourist shop at the corner. Without using our total body we would not experience this world as we do at the moment. Or as Maurice Merleau-Ponty puts it: “Our own body is in the world as the heart is in the organism: it keeps the visible spectacle constantly alive, it breathes life into it and sustains it inwardly, and with it forms a system. When I walk round my flat, the various aspects in which it presents itself to me could not possibly appear as views of one and the same thing if I did not know that each of them represents the flat seen from one spot or another, and if I were unaware of my own movements.”

Normally people tend to think that we perceive and experience in a passive way, like we sit down and we catch experiences like a spider catches a fly. Actually the body/mind is all the time adapting itself to its situation, the process of experiencing is active. With active I mean, we interact in a constant loop with our environment. When you look with your eye you can think that the act of seeing is passive because the eye only receives impulses through the falling light, or as Alva Noë states: “You open your eyes and you are given, at once, a sharply focused impression of the present world in all its detail.” As Noë further argues actually the opposite is the case. The eye and the head will constantly change it position in order to change its focal point and gain information by doing this. By changing its position we define the point on we want to focus, on which point our interest lies. We perceive through changing our position, not by static gathering information from our environment. This active exploration of our surroundings we do with the help of our body, we use all of our senses. The way we explore our experience our environment we do in two ways: through perception and proprioception.

While perception relates to obtaining stimulation from the environment. Proprioception obtains stimulation of the body itself, when you are moving up the stairs, you are looking towards the end. The focus on the end of the stairs with your eyes is perceiving, the feeling of the effort your muscles are taking and the feeling of going up from your equilibrium is proprioception. Both of these ways of perceiving make our experience of our environment possible, but would not possible without our body. Therefore we can say our experience and perception of our environment is a embodied experience.

2 MerleauPonty, M. Phenomenology of Perception. (London: Routledge, 1958), 235
3 Noë, A. Action in Perception. (Massachusetts: MIT Press, 2004), 2
4 Gibson, J.J. The senses considered as perceptual systems (London: George Allen & Unwin ltd., 1968),44
1.2.2 SENSES IN PERCEPTION

It is not the eye that sees, it is the brain.

We tend to classify our experience to our five senses, we see with our eye, we smell with our nose, we hear with our ear, we feel with our skin and we taste with our tongue. Although the combination of these senses defines a quite complete image of the total perception we have, it is not just these five senses alone. Gibson defines the pick-up of information in different distinct perceptual systems: the basic orienting system, the auditory system, the haptic system, the taste-smell system and the visual system.\(^5\)

In this chapter I will bring forward the different sensory modalities/systems that are used in the perception of our daily environment, also I will explain that the processing of the sensations gathered in our senses will not take place directly at the sense, but are for the biggest part processed in the brain.

**THE SEEING EYE OR THE VISUAL SYSTEM.**

We give high importance to our visual sense, we use it for most of our global communication and to see the world. It is a sense which has seen since the early Greek philosophers as the most noble of senses.\(^6\) Despite this, much people tend to think that we see using the eye as a kind of camera, but actually the processing of the visual impulses into the brain is far more complex.

The basic structure of the eye is a sphere of 20-25 mm in diameter, the first point where the light enters the eye is the cornea. This can be called the window of the eye, it is the transparent area where the light can enter. After the light has passed the Cornea it passes the iris, the iris is important because it controls the amount of light entering the eye. Secondly the iris has a emotional function, when entering a event of high interest, the eye tries to gather more light, causing the Iris to relax and the pupil to open up. When the light passes the iris, it enters the second lens, this crystalline lens as it is called, can change its focus by accommodating. This process of sharpening the image is caused by changing the shape of the lense, when your eye wants to focus on nearby objects the lense gets rounder, when it wants to see objects more far away it flattens.

Eventually a bundle of light will fall on the retina in the back of the eye, this is the receptive field of the eye. We humans have dark pigment which absorbs all the light which falls on the retina, Nocturnal animals on the contrary have a reflective surface, causing the light to reflect when fallen onto the retina and bounce back falling again on the retina, doubling the intensity of the received light, making them able to see much more detail in the dark.

The retina is the receptive field of the eye and contains three layers of neural tissue measuring as thin as a paper sheet. The outer layer of the retina contains the photoreceptors which translate the projected light into impulses. In this layer there are two kinds of photoreceptors, the rod-type photoreceptor and the cone-type receptor. Both of these receptors types contain a pigment which absorb light and start the visual process as a result of this absorption. The rod type receptor is a somewhat more slender long

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\(^5\) Gibson, J.J. The senses considered as perceptual systems (London: George Allen & Unwin ltd., 1968), 53
cylindrical cell and is sensitive to dim light situations. The cone-type is a more shorter tapered version which is sensitive to bright light and transmits color information. Although the retina forms the full background of the eye, there is a part of the retina which is the most in absorbing the light projected. If you form a axis directly through the pupil onto the retina, the part where this line will touch the retina is the “yellow spot” inside this yellow spot is a small decline in the retina, this is called the fovea centralis. When you are directly looking at something in focus, the projection of that object is on your fovea. The layer for which the light has to pass is thinner in this region, making it easier for the light to reach the photoreceptors. In the area of the fovea, there are only cones, outside the fovea, the amount of cones decreases and the amount of rods increases in high intensity. Studies show that individuals who’s eyes didn’t contain rods would have normal daylight vision. Only under dim-light conditions when the intensity of light passed a certain point these people would loose their sight. This phenomenon is called night blindness and is due to the absence of rods or scotopic vision. The other way around is also possible, people which not have much functioning cones, experience daylight as being quite painful, cannot see color and have difficulty to see objects sharp.

The light which falls on the receptors is translated into impulses, which will be transferred to the brain. From the cones and rods, pulses are gathered in ganglion cells. From the ganglion cells the pulses are transferred to the brain through the use of axons, these are a kind of cable connecting the photoreceptors to the part of the brain which processes these impulses. The axons of these ganglion cells are combined

Cell structure of the Retina (Coren, Ward, Enns,1999)
into the optic nerve, this bundle of axons exits the eye at a certain point through the retina. This point is known as the blind spot because it does not contain any photoreceptors. Although the optic nerve contains 1 million axons, the eye has 120 million rods and 5 million cones. This means that not every photoreceptor has an axon entering the brain and therefore a part of the processing of the impulses is done in the retina of the eye itself.

The combination of the axons of the photoreceptors is made in the Parvo and Mango Ganglion cells, because of this, every ganglion cell covers a part of the receptive field of the retina. Although the ganglion cells each cover a certain field, the different types of cells have different functions. The Parvo ganglion cell respond to the falling light onto the receptive field and are suited for detailed view, whereas the Mango ganglion cell respond to movement.

In the visual cortex the impulses form the eye are processed, this processing could be seen as a kind of mapping between different parts in the visual cortex. The word mapping is used because the processing can be seen as a kind of projecting it on a plan. On this plan different parts are projecting their layer, making in the end a complete image which we take for granted when seeing. The connections of the Magno and Parvo nuclear cells respond to these different parts of the visual cortex, which are described in the scheme below. The different parts of the Visual cortex identify different receptivities, like form, color, motion and recognition.

THE PERCEPTION OF TOUCH AND THE HAPTIC SYSTEM

Touching can be seen as the most intimate sense we have. It is also the largest sense, in the way that we feel with our whole body. If you touch any part of your body it will evoke the sensation of touch. Actually the skin of our body gives us a lot of information through the different kind of receptors it has. The skin transmits sensations like, pain, warmth or cold. In order to get a good understanding of the system of touch we need to address the systems underlying.

We have two different types of skin, the hairy skin and the glabrous skin. The glabrous skin is the skin you can find under the palm of your hands, feet, fingers and toes. The hairy skin is the type of skin that covers most of the body. In figure 4, you can see that the skin consists of two layers, the epidermis and dermis layer. Near the epidermis layer you can find nerve endings related to touch, temperature and pain. These nerve endings, receptors or nerve fibers as how they are called transfer different types of information to the brain. Also these fibers differ in the type of stimulus on which they react, the way they respond (either fast or slow) and the receptive field. This receptive field can either be strongly defined, or be a rather global area. Figure 5 illustrates this different field sizes, it shows that a lot of touch receptors concentrate around the fingertips and the lips and less on our back. The place on our body where the stimulation takes place on the skin will determine to which area in the brain it is sent.

[6] Penfield and Rasmussen's topographic map of projections of “touch” nerve fibers on the somatosensory cortex. The length of the line next to the drawing of each body part is proportional to the area of the somatosensory cortex subserving that body part (From The Cerebral Cortex of Man by W. Penfield and T. Rasmussen. Copyright 1950 by Macmillan publishing Co., renewed 1978 by Theodore Rasmussen) (Coren, Ward, Enns, 1999)
At this point we have only discussed in the way direct touching of the skin is translated to impulses, which are processed directly in the brain. This is just a rather abstract notion of sensing of touch. We perceive touch not only by the use of skin alone, it is a total system of resistance in muscles, joints of the skeleton and much more senses throughout the body. This system of senses related to touch is defined by Gibson as the Haptic system: “The Haptic system, then, is an apparatus by which the individual gets information about both the environment and his body. He feels an object relative to the body and the body relative to an object. It is the perceptual system by which animals and men are literally in touch with the environment.”

Because the sense of touching is our whole body, it cannot be defined towards a organ, it is defined in different kind of systems we use when we are perceiving our environment through touch. The receptors we use in the haptic system are spread out through our body, most of them respond to mechanic energy.

According to Gibson, the tools we use with haptic system can be divided in the following way:

- **Cutaneous appendages as receptive units**
  
  The notion of cutaneous appendages is the ability to feel things at a certain distance. Gibson uses the example of a person handling a stick, he is able to feel the surface he touches with the end of this stick, but not the direct sensation of his hand. The sensation is not happening directly at the mechano receptors but at a certain distance.

- **Body members**
  
  The skeleton we have acts as a framework for the perception of touch, the relations between the body members give us information about what we are touching. When we touch a ball, we do not only feel the ball (the object) we also feel our fingers touching the ball (the act).

- **Haptic system of arthropods**
  
  This part is only concerned for animals which have a skeleton on the outside of their body instead of the inside, like insects or crabs. Although the skeleton itself doesn't contain any receptors, insects are able to perceive touch. It seems that the joints in their body contain receptors which transmit this information.

- **The use of extremities for touching**
  
  The higher mammals like humans and apes have not only the ability to be in contact with their environment but also to make contact with their environment. Apes and us humans are able to distinguish shapes by the use of their hands, although this exploratory behavior is often accompanied by vision, we are able to distinguish our environment through the haptic system alone.

All of these systems work together in the haptic exploration of our environment, the sense of touch is the only sense which can alter the environment as well as exploring the environment. This is because the equipment for feeling is the same as for doing.

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7 Gibson, J.J. The senses considered as perceptual systems (London: George Allen & Unwin ltd., 1968), 97
HEARING OR THE AUDITORY SYSTEM

“The function of the auditory system, then, is not merely to permit hearing, if by that is meant the arousal of auditory sensations. Its exteroceptive function is to pick up the direction of an event, permitting orientation to it, and the nature of an event, permitting identification of it."

Perceiving sound concerns listening, like the eye, you have to focus in order to perceive the sound well. In doing this the head moves towards the source of the sound in order to locate it and focus on it. This is also the main reason why we have two ears instead of one, by the use of two independent ears we can locate the source of the sound. But also by detecting changes in intensity we can detect if the source of the sound is moving or not.

![The anatomy of the human ear (Coren, Ward, Enns, 1999)](image)

The ear itself is a organ which catches up vibrations in the air and by transforming them into electric pulses transforms it into patterns which are recognized as certain sounds. The eardrum transforms the sound waves into pulses with a single amplitude and transfers the waves further inside the ear. You can see the eardrum as a kind of amplifier, eventually the waves reach the tubes in the cochlea, by the moving of hairs inside the tubes in the cochlea, we perceive different frequencies. The moving of the hairs inside the tubes of the cochlea create impulses which are then processed in the brain. By memorizing patterns and check whether the impulses correspond to certain patterns we are able to recognize language and sounds. Hearing has even a proprioceptive function in the way that we hear ourselves speaking and can correct ourselves if we make a mistake. Speaking would be impossible without hearing.
The basic orienting system we use when exploring our environment cannot be isolated to a single sense. Although one of the main parts of the orienting system is the vestibular organ it is the combination of different sensorial inputs together which make us detect the movement and orientation of the body in space.

Like the ear, the vestibular organ can be found in the same area as where the sound is processed towards the brain. Although they are combined in one organ, the functioning of these two different kinds of systems is separated. The vestibular apparatus can be seen as 3 tubes divided along different axes, like the x-y-z axis, the anterior, posterior and horizontal tubes are oriented in three different directions. In these tubes a fluid flows and when movement arises this fluid causes movement in hairs which are on the inside of these tubes. These hairs trigger a reaction which is then further translated into impulses which are processed within the brain. With the Vestibular organ we can orient ourselves along the main gravitational axes in the world, detect acceleration and de-acceleration of the body, the duration of this process and also detect the rotary acceleration of the body itself. In fact it is partly due to the vestibular organ that our eyes are automatically stabilized to compensate for the movement of our head. Our basic bodily orientation is a combination of different sensorial inputs due to direct reflexes which exist between the vestibular organ and muscle receptors in the eyes and in the head. Because we use also other sensorial inputs like touch and resistance we feel in our muscles when exploring our environment, we can say that orientation resembles much with the act of proprioception, or perception of the environment through active exploration with the body.

8 Gibson, J.J. The senses considered as perceptual systems (London: George Allen & Unwin ltd., 1968), 75
[9] The Vestibular Organ

TASTE-SMELL SYSTEM  Although taste and smell are not directly associated with architecture, they form a part of the perception of the environment as well. Especially smell can evoke certain effects, which can influence your experience of a certain place. It is known that smell also is a trigger for memorizing specific experiences, which have occurred in the past.

Smell or Olfactory system

The way we smell is caused by stimulation of receptors in the olfactory epithelium by airborne molecules. Odors can help detect danger in the environment, like fire or spoiled food. But odors play also an important role for social communication and the pleasure of food. The pickup of information through smelling is done through active (Sniffing) or passive (normal breathing). When doing so, the air passes the receptors in the olfactory epithelium, this is ‘a small patch of receptor tissue located in the upper nasal cavity’. Sniffing is a more active and effective way to stimulate smell, because the air is processed in a more direct curve towards the epithelium.

Chewing food creates an experience of smelling as well, this is because when chewing on food, parts of the odors from the food enter the nasal chamber in the opposite direction. This is also a reason why odors play a big role in perceiving flavor. In fact it is even possible to use a fragrant of a taste like strawberry, to create the illusion of tasting strawberry.

When being exposed to the odor of a product or space for a longer time, our ability to detect it is decreased, reduces its perceived intensity and increases our reaction time to it.

Learning and context of a person play a important role when having the experience a odor is seen as preferable or rejectable. Studies show that odor preferences depend on cultural differences. ‘consider a study sponsored by the US military that sought a universally offensive odor for non-lethal crowd control […] No Single odor in the study was considered equally unpleasant across all ethnic groups. Another line of evidence comes from studies of odors paired with either positive or negative emotional experiences […] The results suggest that, through associative learning, the experience of an odor takes on the emotional tone of the context in which the odor was originally experienced. As suggested elsewhere in this chapter, beliefs and expectations play a critical role.’ When considering this relating to the built environment we can imagine that it could be very difficult to create more pleasant odor experiences when being confronted with a building, like for example a hospital, which would have created negative associations in the past. Memory and context play a important role in perceiving smells and flavors.

10 Ibid., 98
11 Ibid, 104
12 Ibid., 106
Taste
Taste is a sense, which we can consider of lesser importance for the experience of architecture or the direct environment we dwell in. But when covering the field of experience it is important to address this sense as well, in order to provide a overview of the full sensorial spectrum we as humans have.
The experience of taste is made possible by taste receptors which are spread out through the oral cavity, it is not only made possible by the use of the tongue. The tongue has different Taste can defined five distinct categories: bitter, sour, sweet, salty and umami. These different categories help us define whether we like this food or not. We associate for example the experience of 'bitterness' with unripe food or potential toxicity of food. ‘Sweetness’ on the otherhand is associated with food with a rich amount of calories needed for survival.

Conclusion
In this chapter I tried to provide an overview of the way we use the senses in our body to perceive and experience the world around us. It is clear that the act of perceiving is not the same as having sensations. Often when we perceive, we use a combination of different sensorial inputs. Like tasting cannot exist without the use of smell/or the olfactory system and when touching is not only a combination of the sense of pressure, but also the mechanical resistance inside the muscles. The combination and processing of these different sensorial inputs takes place within the brain, the act of perceiving and experience is active, and can only take place by combination and communication between several sensorial inputs. Like the positioning of the eye, is a combination of muscle reflexes which can only exist by impulses from the vestibular organ.
This is the biological background of perception and experience, it is necessary to mention that much of the way we experience and perceive is culturally based as well. For example, we recognize and we see because we have learned to see and recognize, without this cultural factor we wouldn’t be able to experience the richness of the world as we experience it today.
For more information about Umami taste I refer to http://chemse.oxfordjournals.org/content/27/9/843.full
In experiencing architecture we talk about an experience, which acts on the different senses of our body. In the earlier chapter I discussed how all these senses combined make us perceive and experience the world around us. However, when having a architectural experience it acts on certain modalities, you could imagine for example that taste, itself is of lesser importance when experiencing architecture. When we are going through a architectural experience we can define three primary concepts of how we can experience and perceive the built environment, I have derived these aspects from the Masters Thesis of Kamiel van Kreij. He mentions the following concepts: Kinesthesia, Hapticity and Syneasthesia.

**KINEASTHESIA** Kinesthesia or Kinesthesis is the exploration of our environment through movement; this can be movement with the eyes, or with our body. Kinesthesia is not a direct interpretation of our surroundings by the senses, which makes it somewhat difficult to explain. Even though everybody understands it as something of which they are born with. By active exploration of the environment, a direct relation with touch and movement exists and therefore a relation with hapticity or touch. Gibson says about Kinesthesis: “Kinesthesis cuts across the functional perceptual systems. The discrimination of body movement from non-movement is too important for the organism for it to have been wholly entrusted to any single group of receptors. There are many kinds of movement that need to be registered. There is articular kinesthesis for the body framework, vestibular kinesthesis for the movements of the skull, cutaneous kinesthesis for movement of the skin relative to what it touches, and visual kinesthesis for perspective transformations of the field of view.” This makes it very important for architecture, because moving through space with the body, or just moving with the eyes makes us experience architecture in a less static way.

**HAPTICITY** Haptic experience refers to experience through touch, but whereas touch has often a two-dimensional character, haptic experience becomes three-dimensional. Or as Gibson refines it “[...] the haptic system can yield information about solid objects in three dimensions, whereas touch, in the narrow sense of cutaneous impressions, has been supposed to be capable of yielding information only about patterns...”
Often the haptic experience is created through active exploration of the environment using your body. Because of this active exploration with the use of movement, a connection exists with kinesthesia/Kinesthesis.

Gibson describes haptic experience as a very complex matter: “The sense of touch in the everyday meaning of the terms turns out to be an extremely elaborate and powerful perceptual system but not a sense in either the physiological or the introspective meaning of the term. Nor is it a clearly definable group of senses with just so many nerves and corresponding qualities of sensation”.  

Because of the haptic system covers the whole body, haptic experience is not explainable in a simple way: you always have to define the hapticity further when discussing haptic experience in design. According to Hegel, touch is the only sense, which can give us a feeling of depth, “touch senses weight, resistance, and three-dimensional shape of material bodies and thus makes us aware that things extend away from us in all directions”.

You can say that by touching, using our haptic system, our body confirms our impression of what we see, because we explore and confirm what we see with touching. This brings in a relation with Syneasthesia.

**SYNEASTHESIA**  
Syneasthesia implies a phenomenon that transfers sensory information from one sense to the other. According to Harrison and Baron Cohen synesthesia occurs “when stimulation of one sensory modality automatically triggers a perception in a second modality, in the absence of any direct stimulation to this second modality. The most common form of synesthesia is “colored hearing” where certain sounds or spoken words trigger visual experiences of colour”.

An other good example of this concept is: how we refer to the color blue as being cold. Charles E. Osgood defines syneasthesia as the following: “the use of descriptions from one sense modality for sensations from a different one”. Aristotle saw synesthesia as the device connecting all the senses together, to create a coherent representation.
This device was later known as the ‘sensus communis’.\textsuperscript{21} According to Wolfflin, this association within the mind in relation to sense and sensation, can be seen as for example, how you experience lines in woodwork as warm lines and steel engraving as cold lines.\textsuperscript{22} Because of earlier experiences with the sensory properties of the material, your memory relates to those properties again by seeing, without touching the object.

These three concepts together explain in what way we can perceive and experience architecture. Kineasthesia, Hapticity and Syneasthesia can provide basic attention fields when designing a environment, by making designs attractive when moving through it, using materials which people associate with pleasurable memories could all help in creating a better architectural experience. Most important what we should consider when talking about these concepts is that architecture is not a static form but a dynamic form of experiencing, addressing all the senses when going through the building.
21 Aristotle, De Anima II, 1-2
22 Heinrich Wölfflin, Prolegomena to a psychology of architecture (1886) in: Harry F. Mallgrave, Eleftherios Ikonomo, empathy, form and space: problems in German Aesthetics 1873 - 1893 (Santa Monica: Getty Center, 1994), 158
ENLIGHTENMENT AND THE HEGEMONY OF THE VISUAL

The visual plays an important role in our daily life. We read the newspaper, we see television, we communicate visually through email and Facebook. We even at this moment text and Whatsapp more than we call people we have in our phone. The majority of all the information we gather at this moment in our daily life is processed from the input from our eyes.

Throughout history the eye has always considered to be an important sense, in Greek thought, the eye was seen as the most noble of senses. It was Plato who stretched high importance to the eye according to Martin Jay: "The importance of sight is evident throughout Plato's writings. In the Timaeus, for example, he distinguished between the creation of the sense of sight, which he grouped with the creation of human intelligence and the soul, and that of the other senses, which he placed with man's material being." Although, Plato praised the visual sense he also was quite reserved about the capabilities: "Plato often expressed severe reservations about the reliability of the two eye of normal perception. We see through the eyes, he insisted, not with them." Although Greek philosophy was concerned about the illusions the visual sense could create, they kept believing it was the only true sense. Creating distance between the object and observer, the eye was seen as the only sense which could be truly objective.

In medieval times, the visual sense seemed to have lost some of its importance, the French thinkers Fevre and Mandrou stated that Hearing was the most important sense in the middle-ages, Roland Bartough even stated that the visual came after hearing and touch in the third place. Jay concludes that there was not such a big contrast between the domination of the eye in Greek times and the preference for hearing for Medieval times. Although hearing was used primarily in communicating and transmitting messages, the visual was still important for the church in order to transmit their broadcasts to the bigger masses. "In a society still overwhelmingly unable to read, the veneration of images was a useful tool in educating the faithful, as Gregory the great recognized when he called statues "the books of the illiterate.” The widespread use of stained glass, bas-reliefs, frescoes, altarpieces, wooden carvings, and so on, to tell biblical stories and to illuminate — often literally — the lives of saints and martyrs shows how popular it was. " At that time the biblical story of Jesus was brought primarily with visual means, overpowering them with the spectacle the
images and light brought in gothic churches. Although the message for the illiterate was purely visual, the experience of the story and the sublime character was multi-sensorial. You could counter argue that the experience within the gothic church and its sublime character was not only visual but also auditory, and had a kinesthetic character as well. This already happened when you were walking up the stairs of the church, the feeling of being lifted, and raised above the normal man before you enter the church, this event is a experience in a kinesthetic way.

It was during the reformation, a movement stood up against this visual spectacle of the Catholic Church and the, in their eyes, deceiving of the true word of god. This Protestant movement of the reformation was against this visual spectacle of statues and images and counter reacted in a re-appraisal of the spoken word for transmitting the biblical story. We should not forget that the reformation and the popularity of the movement was also due to the availability of the printing press, reducing the need for images in churches to tell the true word of god, because the bible became available for the masses. Furthermore the printing press disseminated the broadcast from its messenger, meaning that direct contact between the broadcaster and the receiver was dissolved but gave way for reaching a bigger audience.

The renaissance period brought new technologies which extended the way we use the visual sense, the microscope, the camera obscura and silver backed looking glass. Technologies like the printing press, renewed the importance of the visual sense. As Martin Jay puts it: First, the medieval metaphysics of light, in large measure a religious adaption of Platonic residues, kept alive the assumption that vision was indeed the noblest of the senses, despite its potential for deception and the arousal of lascivious thoughts. Second, the lengthy dispute over the idolatrous implications of that metaphysics and the Church visual practices led to a new awareness of the difference between representation and fetishism [...] This in turn helped prepare the way for what might be called the secular autonomization of the visual realm unto itself: [...] It also made possible the liberation of art from the sacred task to which it has previously been bound. [...] But, and this is the third general conclusion, if vision was relieved of its sacred function and allowed to pursue its own developmental path, the lessons that had been learned about its persuasive capabilities were never lost. The technological developments caused that the visual as tool got disconnected from its role as messenger for religion.

23 Whatsapp, is a popular application on the spartphone in which you can send messages through the roaming network instead of the classic sms (short messaging service)
25 Ibid., 27
26 Ibid., 34-35
27 Ibid., 41
29 Ibid., 45
With the development of the printing press, also the representation of architecture changed in time. In the beginning the creation of architecture was coinciding with the plan and the realized building. When architects discovered the means of printing, they utilized the book as a medium for publishing their drawing. This gave architect greater audience for their work, and more importantly put attention to the representational aspect of the building. The representation or how the building looked in the book, was from the gaze of the observer, it had a distance. This had implications for the design itself, because attention in the design shifted from the experiencer towards the observer. Shifting the attention towards architecture as a visual experience.
1.3.2 THE INDUSTRIAL AGE


In the enlightenment the domination of vision came affected mostly the communication and thinking of the intellectual part of society, it didn’t affect the public life. In the industrial age, however things started to change dramatically, for society in general. With the industrialization, the entrance of new technologies like the car, the airplane, the train and telecommunication the city changed the pace of urban life. Like image 3 and 4 illustrate, while in the mid 19th century only carriages where travelling passed the Flatiron building, during the beginning of the 20th century they were all replaced by cars. With the change of pace there was a increase of impulses people had to cope with. Elie During used a quote of Siegfried Kracauer to illustrate this: *If you head towards the train station through the Friedrichstrasse you can see the powerful locomotive of an express train that is overhanging above… Is it a hit among the crowd? No, no one notices it. Coffee shops, shop windows, women, self-serve buffets, newspaper headlines, neon signs, policemen, omnibuses, music-hall pictures, beggars- all these impressions at human eye’s level – are too strong stimuli for the passers-by to apprehend properly this form popping up in the distance*  

People adjusted to the high amount of impulses they received from the street, they lowers their receptivity to these impulses in order to continue their daily life. In fact, in order to cope with the overstimulation of the brain, the brain dulled the sensual perception. This caused people to only be receptive to things of interest, ignoring the rest of the stimuli in their environment. This ‘Distraction is no longer basic inattention; it is the absent, scattered, or disseminated attention of a mind unable to concentrate. It is the diffused or floating attention of a mind that actually refuses to focus.’  Such mindstate allowed people to continue their daily routine in the city. With the change of perception, the mind relied even more on the visual sense. This was because the eye is capable of changing its focus really quickly from one item to the other, and the impulses are transferred into information in a fast and reliable way. It caused not only that besides in our attaining of knowledge and culture, also our daily life became visually dominated.

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1.3.3 THE DIGITAL AGE
We could say the 21st century is the age of the digital, at this point in time we can not imagine ourselves without our digital communication devices like the Ipad, Iphone and other smartphones. Throughout our daily live, we communicate through these devices. Email and internet have taken a big part in our communication with family and friends. These devices work most of the time in the visual way, increasing the importance of the visual sense. According to Schifferstein ‘the often referred to dominance of vision is likely to reflect people’s overall tendency to find visual input relatively important when its role is evaluated for the ensemble of activities performed. As a consequence, the role of the senses is likely to depend on the specific products used, the frequency with which they are used, and the importance attached to the activities performed.’ (Schifferstein, 2006, p.60) Furthermore Schifferstein suggest that the importance of vision in Western societies may have increased over time due to the range of products that have been created. For example, many products that facilitate human communication (such as television, newspapers, the Internet) require major visual input. In interacting with your Iphone you use hand gestures and visual stimuli, the device communicates with you the most through visual information. Although you are sitting in a real environment when using this device, you are only in direct communication through the interaction with your mind and the device, in a new ‘virtual’ dimension. In 1996 Paul Virilio already mentions this duplication of realities: ‘We face a duplication of reality. The virtual reality and the ‘real’ reality double the relationship to the real. We now have a possibility of seeing at a distance, of hearing at a distance, and of acting at a distance and this results in a process of de-localization, of unrooting of the being. ‘To be’ used to mean to be somewhere, to be situated, in the here and now, but the ‘situation’ of the essence of being undermined by the instantaneity, the immediacy, and the ubiquity which are characteristic of our epoch. . From now on, humankind will have to act in two worlds at once. This opens up extraordinary possibilities, but at the same time we face the test of a tearing-up of the being, with awkward consequences. We can rejoice in these new opportunities if and only if we are conscious of their dangers.’

Through this duplication of realities, we are interacting in two worlds at the same time. Because more of our communication and social life is taking place on the internet, we are getting more impulses from our virtual environment, causing a overstimulation in the mind.

This is a new phenomenon, while in the 20th century we were able to dull our senses to cope with this overstimulation, we are unable to do this with digital devices. This is because the digital devices act mostly on our visual sense, we are unable to dull this sense because we use it all the time, it has become the most important sense. Through a duplication of realities in a digital and a real world, we become overstimulated in our daily life and cannot cope with the strong load of information that is entering our brain. Already people are complaining about being unable to concentrate on certain subjects, because of a constant distraction caused by impulses from the digital world.

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It is not only the constant distraction which is a new phenomenon, the digital world has further consequences for our social life as well. Instead of communicating directly with persons in a multi-sensory way. The communication through text, whatsapp or facebook disseminates the broadcast from the messenger like the printing press did with the transfer of knowledge, making friendship and social behavior a dis-embodied experience only available through our visual sense. We have more friends and make even more contact than before, but we feel less close to these friends, due to the dis-embodiment of our social life.

**IMPLICATIONS FOR ARCHITECTURE**  
Ever since the Renaissance architecture has been considering its representational aspect of the work. Because of the visual domination, the representational aspect of architecture, how it looks, became even more important. Invention of new technological possibilities thrived architects to create buildings which are mere machines, it was less about the detail and material of the building and more about the visual aesthetic appreciation and logic of the building.

Throughout time, we see that the way we communicate, see the world and attain knowledge of this world is done most of the time with the help of our visual sense. This creates a distant-gaze of our being in the world. We are in a way dis-embodied from the way we live. This affects us, as designers in the way that we give high importance to the appearance of things, rather than its material substance and the way it can affect people.

As architects, we should reconsider this. If we tend to focus more on the visual sense and the abstraction of architecture, we should know that we are actually, dis-embodying architecture from its material substance. If we keep the multi-sensorial aspect of architecture in mind during design and give importance to these aspects, we can re-embed architecture and be connected again with the building through our body. In Industrial design, designers seem to succeed addressing a multi-sensorial experience for the intended user. In order to reach this, they research deeply the context of the user. For Industrial design, experience has not only a biological context but also, maybe more important, a cultural context as well.
1.4.1 WHAT CAN ARCHITECTS LEARN FROM INDUSTRIAL DESIGN?
As architects we seem unable to grasp the phenomena of experience, we don’t learn much in the academic field about what kind of effects the building can have on a person and therefore we cannot really address it when we are designing buildings. This leaves a gap which I think is quite important to address. In the field of Industrial Design there seems to be much more research about the phenomena of experience, and above all a more practical approach towards this subject. Of course architecture is a different working field than Industrial Design but, it doesn’t mean we cannot learn a great deal from the methods designers use when designing products.

**STATIC VERSUS DYNAMIC**

One of the problems of architecture in relation to experience is that we often discuss architecture as being a static object. In the representation as well as in the design process of architecture, architecture itself is presented as a static visual experience. If we consider the opposite and take the experience of architecture as being a dynamic force in which traversing spaces and the sequence of spaces are the main points in the relation of the user with the building. We have to address user scenarios in the design process. User scenarios or interaction scenario are often used in Industrial design to determine if the way which is intended is the most successful. It can help address for different kind of spaces and which focus points you want to address in these spaces, and foremost what feelings could inspire the person when entering these spaces.

**QUESTION OF SCALE - OBJECT VERSUS ENVIRONMENT**

Another problem architects have to deal with is the problem of scale, a building has a different scale type than an industrial design object. This is already in the general name of the products which are a result of our design process, in industrial design we make objects, in architecture we make buildings which can also act as environments. One of the characteristics of a object is that it is possible to isolate it, making it possible to talk about solely the multi-sensorial experience of the object in itself. Prototyping this object makes it possible to re-iterate the product whether to see if the design intentions are successfully realized. The the scale of a building however makes it impossible to prototype it, to see whether the intentions of the design are too be experienced in the final product. This process of re-iteration is important for creating a ‘designed’ experience.

**THE CONTEXT OF THE USER**

In chapter 1.2 it came forward that although we humans have the same body and the same sensorial apparatus it doesn’t necessarily means that everybody experiences the world in the same way, actually the opposite is the case. The experience we have is defined by all the experiences we have had in the past, our expectations and our dreams. This means that in order to design a experience, we have to know, or at least to be aware of these emotions, dreams and expectations. In other words we have to discover the context of the user.

A way of doing this is through the use of ‘context mapping’, context mapping in itself is a combination of techniques, like observation and sensitizing. Using these techniques we try to gain the illicit and tacit knowledge of the user through creative mapping techniques, the results from these sessions can inspire designers and lead to new creative ideas. For more information about context mapping I would like to refer to the article of Froukje Sleeswijk Visser.

1.4.2 CONCLUSION
Architecture seems to be lost, in the academic world people are questioning the current role of architecture and the future role of architecture.
The domination of the visual in architecture, grew since the enlightenment with the publications of architects in big treatises. Architects started to care more about how the building represented itself in the city as well as in publications. With modernism, abstraction of architecture and its loss of materiality took a step further. This process of architecture becoming a visual experience seems to coincide with the development of the importance of the visual sense in our daily life itself. With the increase of the representation of architecture (how it looks) has lead to a dissemination of sensorial experience of architecture (how it feels).

If we would focus on experience in itself, we discover that experience is a active and dynamic process. We perform the act of experience with our body in many different ways, this can be by walking up the stairs and feeling the pressure in our muscles or just sniffing the odor of wood which is used on the walls. The way we experience is also influenced by the context of our live, does the environment meet up to our expectations, our dreams and our emotions?

If we would like to create architecture which is closer to ourselves, to our body we should focus on the fact that experience is embodied and multi-sensorial. We should focus on the fact that transversing through spaces is a dynamic phenomenon and we should focus on the fact that everybody has a different way of experiencing due to their background so we should also address the context of the user. By doing so we can create buildings which could address the needs and emotions of people much better than we would today.

It is my belief that if we approach the building in a more industrial design perspective, we can create more sensible and embodied environments. We have the power to create environments which can affect people, make them attached to the places they live in, embody them in their living environment. This is the task the architect should take.
2 CONTEXT MAPPING ANALYSIS

FILLED ASSIGNMENT BOOKLET
Dit waren de belangrijkste momenten na de eerste diagnose...


Hier ben ik geweest...

In welke ruimtes bent u geweest toen u in het ziekenhuis was, welke ruimtes kunt u zich goed herinneren?

Kunt u de betreffende ruimte aankruisen en met behulp van de collage afbeeldingen aangeven aangewezen waar u deze ruimte mee associeert?

Want? Psychologie

- Gewoon liep met de psycholoog, afspraak vooraf
- Het was bijzonder
- Er was iets zwart, zoiets
- Afgezien van psychologen, was er niemand anders

Want? Physio

- Gewoon liep met de fysiotherapeut, afspraak vooraf
- Er was iets zwart, zoiets
- Afgezien van fysiotherapeuten, was er niemand anders
Patient A

**Freedom and Space**

"Ve badkamers zijn hartstikke onhandig, veel te krap, het is een rommeltje, het ergste is dat als je met je infuuspaal wilt douchen, dit niet te doen is, dan moet eerst de douchedeur open blijven."

"Ik krijg het gevoel bij deze kamer, dat ze eerst dachten: Goh we hebben eerst een kamer gemaakt, wat gaan we er allemaal indoen?"

"Ik douche eigenlijk nooit in mijn kamer, ik gebruik de invalidendouche, want daar kan ik mijn tenminste vrijuit bewegen."

"Ik vind het leuk dat ik op verschillende niveaus naar buiten kan kijken, uitzicht ook al stelt het niet veel voor, is toch wel prettig."

**Dependence**

"Je zit daar te wachten en je bent afhankelijk van je behandelaar, die aan jou meldt of het in orde is, ja of nee."

"Als ik hier binnenkom geef ik toch mijn leven uit handen, ik leg mij erbij en jullie gieten me maar vol met gif en ik zie het thuis wel weer. Ik bedoel het natuurlijk niet zo, maar het idee is duidelijk."

"Ik heb hiervoor een cyclus gehad van 1 keer in de 14 dagen chemotherapie, dat is best heftig. Ben je na twee weken een beetje bijgekomen mag je je weer melden."

"Als ik hier die nare boodschap gehad zou hebben, zou ik dat niet willen delen met de hele wachtkamer. Dan zou ik me... slecht gaat meer impact heeft dan de ruimte waarin het plaatsvind. Als je daar zit ben je alleen met de boodschap bezig."

**Privacy & Controle**

"Ik vind het hier ondanks al de kanker niet naargeestig, dat komt ook zeker door de manier waarop de verpleging hier, mits je dat wilt, communiceert."

"Privacy gordijntje werkt eigenlijk ook niet, ik bedoel ook al zie je niks je hoort alsnog alles ondanks dat gordijntje."

**Meaning of space**

"Die behandelkamers, dat boeit allemaal niet zo, dat er een schermpje is dat je mee zou kunnen kijken, dat zou handig zijn. Maar met de kamer zelf ben je niet echt bezig."

"De wachtruimte doet me een beetje aan een busstation denken. De andere wachtruimtes zijn kleiner dus daar heb je dat gevoel minder."

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"Wat meer kleurgebruik zou wel leuk zijn, het is nu allemaal zo saai."

"Die pantry is eigenlijk ook een beetje lugt en kleurloos, de helft van de tijd is het buffet gesloten of zijn er geen mensen. Eigenlijk zou je er juist een soort huissfeer van moeten maken met een terras en dan aan het begin of centrum van de afdeling."

"Verlichting is heel veel, of heel weinig, dus als je wilt lezen dan heeft het je een beetje moeten veroveren. Er last van en dan moet je eerst vragen of hij er last van heeft voordat je je gang kan gaan."

"Lawaai van de gang is ook vervelend, maar dan zit ik nu nog aan het einde, maar als je in het midden van de afdeling zit is het toch vrij vervelend. Ik snap dat het voor de verpleging handig om steeds naar binnen te kunnen lopen, maar soms kan je gesprekken uit een andere kamer letterlijk verstaan."

**Boring / Colorless**

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"De wachtruimte doet me een beetje aan een busstation denken. De andere wachtruimtes zijn kleiner dus daar heb je dat gevoel minder."

"Ik heb ook wel bij mensen op een kamer gelegen die er helemaal geen zin meer in hadden, die liever dood wilden, daar wordt je ook niet blij van als je daar maar zit te kijken. Ik merk het pas hoeveel dat met je doet. Ze praten bijna niet meer met je, tja dan denk ik ook, ga maar dood afzo. Ik word daar heel cynisch van, want zo sta ik zelf er niet in, ik wil doorgaan met mijn leven."

"Mensen in de wachtruimte zie je al tijden bij een beetje somber voor zich uit kijken."

"Die emmer hoort bij die kronkel, want als je dan hoort, je bloedwaarden zijn niet in orde dan voelt dat als of je een emmer water in je gezicht krijgt."

**Confrontation**

"Als ik hier die nare boodschap gehad zou hebben, zou ik dat niet willen delen met de hele wachtkamer. Dan zou ik me... slecht gaat meer impact heeft dan de ruimte waarin het plaatsvind. Als je daar zit ben je alleen met de boodschap bezig."

"Ik denk dat de mededeling of het goed of slecht gaat meer impact heeft dan de ruimte waarin het plaatsvind. Als je daar zit ben je alleen met de boodschap bezig."

"Ik heb veel vrolijkheid gezien, wat meer kleur erin, maar niet persi in de patiëntencamers. Ik denk toch dat die wat neutraler moeten blijven."

"Lawaai van de gang is ook vervelend, maar dan zit ik nu nog aan het einde, maar als je in het midden van de afdeling zit is het toch vrij vervelend. Ik snap dat het voor de verpleging handig om steeds naar binnen te kunnen lopen, maar soms kan je gesprekken uit een andere kamer letterlijk verstaan."

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"Als je het slaapproces gehoord hebt, wil je je naar huis, je wilt een eigen plek, je wilt naar huis, je wilt in een gesloten doos leven.

"Je denkt bij de dagbehandeling naar binnen, je meld je aan en dan mag je wachten in een wachtruimte, die eigenlijk niet aanvoelt als een wachtruimte. Je kan in de kamer kijken, bij jou niet aan of als een gedeelte in ruimte, maar het voelt als een leegte.

"Ik voelde me nog niet ziek hiervoor en hier worden ik ziek gemaakt. Dat is heel dubbel op. Ik moet een jas aan trekken met een infuus aan mijn arm, dat is al vrij lastig. Tijdens de chemotherapie mag ik sowieso de afdeling niet af.

"Bij de dagbehandeling is het niet zo veel voor, dus als dat klaar is heb je het gevoel van mooi we zijn weer een stap verder.

"Ik vind het prettiger om de dagbehandeling via het toilet en je buurman storen, het is heel fijn, het scheelt dat ondanks dat je niet naar buiten kan, je toch nog het gevoel hebt dat je wacht er op en je daad wat kan doen.

"Ik kan het beste een boek lezen, of bijv. naar een film kijken, het is heel fijn om te weten dat je weer een stap verder bent."

"Het is toch iedere keer, of het nou bij de dagbehandeling is of bij de interne verpleging, moet ik hier weer zijn? Daar wordt je gek van en je bent er eigenlijk dan ook wel klaar mee, je kunt hier beter niet aan vasthechten.

"Ik heb totaal geen behoefte aan lezen, maar dat heeft meer met de chemotherapie te maken. Ik kan mij niet concentreren door de chemotherapie.

"Ik vind het prettiger om de mensen te kussen, bij de dagbehandeling is er toch meer medeleven, dan is het hier op de interne verpleging veel persoonlijker.

"Ik vind het prettiger om te weten wanneer de verpleging langs komt, dan kan ik dat en dat doen. Bijvoorbeeld als er staat over 2 uur: We komen je wegen: mooi is heel fijn, het scheelt dat ondanks dat je niet naar buiten kunt, je toch nog het gevoel hebt dat je er van iemand wordt geholpen.

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"Het is toch iedere keer, of het nou bij de dagbehandeling is of bij de interne verpleging, moet ik hier weer zijn? Daar wordt je gek van en je bent er eigenlijk dan alsook het maar moeilijk om te slaap te doen met dat luie. Eigenlijk wil je slaap nodig en je voelt het een heel langzaam verlopen.
Patient C

Dependence & Having to

"Elke twee weken kuren is wel een verbond, je zit er wel aan vast zeg maar."

"Dat is wel beroerd, als je normaal een richting kan geven aan het geheel en het nu stuurloos is, je bent overgeleverd aan de arts."

"Na het bestralen zeggen ze: het gaat een beetje irriteren, nou dat heb ik geweten. Dat deed ontzettend zeer, het bestralen zelf niet, maar het begon daarna uit te zetten."

"Als je dan roept, stoppen ze gelijk, je zou maar jeuk aan je neus hebben, wat altijd dan plaats lijkt te vinden."

Privacy & Controle

"Ik vind het wel gezellig om met meerdere mensen op een kamer te liggen, als je alleen zou liggen zou ik helemaal gek worden."

"Spanning voor het bestralen? Nee, ik had enorme pijn in mijn onderbroek, dat ze er iets aan gingen doen vond ik heel prettig."

Human Aspect

"Hier liepen altijd dezelfde verpleegkundige, dat was heerlijk, dan was het niet zo spannend."

"Wat ik als prettig ervaren heb, zover je van prettig kan spreken zijn de dames die langs komen met koffie en thee, het gaat helemaal weg over maar dat vond ik toch een lief gebaar, het maakt het ook een stuk gemakkelijker."

"Ik kan de dagen nu wel afwachten, maar als ik had dan ook alleen mijn onderbroek aan."

"Ik heb moeilijkheid met dat ik zo hoef te zeggen, hoe is het?"

Distraction

"Het voelt soms als de 'Bekende' achtbaan, goed nieuws, slecht nieuws, goed nieuws, slecht nieuws."

Treatment process

"Als je daar lang met bestralingszenuw aan zat, als je je afvroeg of het je zou redden, of het zou passeren."

Tja, het is zoals het is, het is even beroerd en het geneest niet meer, maar het kan nog wel wat, als het nog onder controle is, weet ik dat de arts de controle heeft.

"Kijk ik ben wel boos dat ik het heb, ik weet allemaal niet waar ik moet beginnen."

"Ik heb moeilijkheid met dat ik zo hoef te zeggen, hoe is het?"

"Als je daar lang met bestralingszenuw aan zat, als je je afvroeg of het je zou redden, of het zou passeren.

"Schouder is ook zien vaak begrijp ik eigenlijk pas schouder zijn na 6 jaar."
3 INTERVIEWS
INTERVIEW MET VERPLEEGKUNDIGE A

Verpleegkundige op de B Vleugel van de afdeling interne Verpleging van het AVL-NKI
Interview is afgenomen op 30 Januari 2012 in de Teamkamer van de B-Vleugel

V: Wat is één van de leukere ervaringen met patiënten die je hier hebt gehad?
A: Leuke ervaringen die zijn hier niet echt, wel mooie gebeurtenissen, of waar je heel veel betekenissen in kan hebben, maar leuke ervaringen?
Een mooie ervaring is als je iemand/ een patiënt in de laatste fase van het leven hebt zeg maar en dat je die nog alle zorg kan geven.

V: Zou je hier een specifiek voorbeeld van kunnen noemen van dit soort ervaring?
A: Een poos geleden was hier iemand, een mevrouw die zou gaan overlijden en die had een dochter van veertien en heel veel familie. Wat daar dan heel mooi bij was, was dat we die hele familie van 15 tot 20 mensen de tijd konden geven om afscheid te laten nemen. En dat we daarbij ook de ruimte daarvoor hadden, ook voor die dochter zodat die de hele tijd bij haar moeder kon zijn, Dag en Nacht. Dat was wel een van de mooiere dingen.

V: Dat vond plaats in de patiëntenkamer?
A: Nee voornamelijk in patiëntenkamer, ze lag op kamer 12, dus deze kamer waar we nu in zitten gebruikten we voor de familie en daarbij de kamer van de patiënt zelf. In de kamer van de patiënt stonden dan een aantal mensen en hier was het grootste deel van de familie verzameld.

V: En dit was in één dag?
A: Ja, in één dag, dat is heel snel gegaan.

V: In een dag kwam dan iedereen langs, en dat vond dus plaats hier en in de patiëntenkamer, en hoe ervaarde de familie dat? Vonden ze prettig?
A: Ja

V: Was je zelf ook de hele tijd aanwezig bij dit gebeuren?
A: Ja, eigenlijk wel, ook omdat het plaatsvond in Kamer 12, de eerste kamer naar rechts toe. Zelf zit je vooral in de Teampost en dan zie je ook alles gebeuren en je wordt er dan ook zelf snel naar toe geroepen als er wat is.

V: Had deze gebeurtenis ook ergens anders plaats kunnen vinden? Of was deze gebeurtenis erg specifiek voor deze plek?
A: Het is lastig om het ergens anders te laten plaatsvinden, omdat mensen dichtbij de patiënt willen zijn, de patiënt ligt toch op een van de vleugels. Deze gemeenschappelijke kamer was wel een beetje klein voor iedereen, maar normaal komen er ook niet zoveel mensen tegelijkertijd om afscheid te
nenen. Dus wat dat betreft was het wel een uitzonderlijke situatie. Ik denk niet dat het ergens anders had kunnen plaatsvinden. Want dan had je de mensen naar 6 moeten brengen, naar de familiekamer en dat is twee verdiepingen hoger, nou dat willen mensen echt niet, de familie. Die wil dichtbij zijn.

V: Was er op dat moment ook behoefte aan iets wat er op dat moment niet aanwezig was?
A: Nou ik denk, wat de familie graag had gewild, is met zijn allen tegelijkertijd op die kamer staan en die mogelijkheid was er niet, omdat de kamers gewoon te klein zijn, naast de rust voor de patiënt, maar het past gewoon niet. Bovendien had haar dochter daar ook geslapen dus stonden er twee bedden in een eenpersoonskamer dus dat wordt sowieso al krap. Maar ik denk dat de familie het liefst een grotere kamer had willen hebben zodat ze met z’n allen rustig afscheid hadden kunnen nemen.

V: Maar de eenpersoonskamer werd wel gezien als prettig?
A: Ja, zodra we inzien dat iemand mogelijk komt te overlijden dan verplaatsen we die onmiddellijk naar een eenpersoonskamer. Als iemand daar al ligt die minder ziek is, dan moet die naar een andere kamer.

V: Een andere vraag, wat is een van de meer zware/stressvolle ervaringen geweest binnen de afdeling?
A: Genoeg verschillende ervaringen, Voor mij is dat een meneer geweest die een longbloeding heeft gekregen. In dat geval geeft de patiënt alleen maar bloed over en dat is behoorlijk stressvol voor de patiënt want je stikt gewoon en voor ons is dat ook gewoon hartstikke heftig want je kan er niks tegen doen. Dan weet je gewoon, dan zit je gewoon te wachten tot de patiënt overlijdt. Terwijl die alleen maar bloed aan het overgeven is. Dus, ja dat was echt wel heftig.

V: Vond dit ook in een eenpersoonskamer plaats?
A: Ja, toevallig was hij net naar een eenpersoonskamer verhuist gelukkig, in dat aspect voldeed de ruimte eigenlijk heel goed. Het had ook op een twee-persoonskamer kunnen gebeuren want het was bij toeval dat die kamer vrij was.

V: Als je je in zo’n situatie bevindt, waar had je op dat moment behoefte aan?
A: In dat geval dat de materialen dichter in de buurt liggen, meestal hebben we van die kleine bekentjes op de kamer staan, maar met zo’n iemand of iemand die echt normaal aan het overgeven is, heb je daar gewoon niet genoeg aan, dan moet je die grote waskommen hebben. En die staan dan helemaal in het middenstuk van de afdeling, dus als je dan op kamer 12 en je moet naar het midden lopen en weer terug, dan ben je echt wel eventjes weg, en je wil het liefst die kamer niet achterlaten. Dan zou ik denken aan meer ruimte voor materialen, om dat op de kamers te kunnen plaatsen.
V: Dus meer decentraliseerde opslag, zou hier aan bij kunnen dragen?
A: Bijvoorbeeld

V: Zou in de kamers zelf daar nog mogelijkheden voor gecreëerd moeten worden?
A: Ik vind zelf de kamers eigenlijk vrij klein, helemaal de eenpersoonskamers en de opslagruimten in
de kamers is helemaal klein. We hebben eigenlijk alleen het kastje onder de gootsteen en daarboven,
daar kan je een waskom sowieso al niet in kwijt.

V: Had je ook emotioneel nog ergens behoefte aan, als je zo’n situatie meemaakt?
A: Om even weer tot rust te komen en op adem te komen, voordat je weer je normale dagelijkse
bezigheden en zorg doet. Maar die mogelijkheid is hier altijd.

V: En waar ga je dan naartoe om dat te doen?
A: Ook een teamkamer zoals waar wij nu in zitten, opzich voldoet deze ruimte prima aan de
behoeften. Er zijn er misschien er te weinig van, want vaak zijn ze bezet. Op de A en de C vleugel is
ook zo’n soort ruimte, maar daar zit geen raam in.
En er staat maar één computer, dus als mensen uitgepland zijn dan zitten ze hier, dus de ruimte is
gewoon vaak bezet. En dat is jammer. Het is wel zo als je ze vraagt, mag ik erin voor een half uurtje
dan is dat geen probleem. Dan gaan ze ergens anders even zitten, maar, goed het is soms wel vervelend.

V: En wat doe je dan in dat half uurtje dat je alleen in de kamer zit, is dat even tot jezelf komen met een
cup koffie?
A: Ja, maar meestal doe je dit soort dingen niet alleen, meestal als je op de noodknop drukt dan komen
je collega’s, vaak ga je daarna met elkaar nog even zitten en ga je even wat drinken en wat na-praten, en
dat je weet van elkaar dat je alles ervoor hebt gedaan. En dat moment kan dan ter plekke zijn, of aan
het einde van de dag is er een moment om bij elkaar te komen waar je dit ook kan delen. Dan is er een
ingepland moment, dus dat is hier eigenlijk wel heel goed geregeld.

V: Er is dus altijd een evaluatie is als er calamiteiten plaatsvinden?
A: Eigenlijk is er dagelijks een evaluatie, maar vaak is er niks, zeker in zo’n geval dan kan je dat
inbrengen als je de behoefte hebt om daarover te spreken, en kan je er met je collega’s hier dieper op
ingaan. Ook om je eigen ei kwijt te kunnen.

V: Dat is wel belangrijk neem ik aan?
A: Anders neem je het mee naar huis, en dat is niet goed.
Aanbieder: Dit is eigenlijk deels al een antwoord op een eerdere vraag van mij, maar ik stel hem alsnog, hoe bent u hierna mee omgegaan? Maar als je de calamiteit geëvalueerd hebt, is het dan ook voor je afgesloten?

Antwoord: Over het algemeen heb ik het dan wel afgesloten, maar sommige situaties grijpen je toch meer aan dan anderen. Omdat je met sommige patiënten toch een betere klik hebt. Sommige mensen komen hier toch iedere paar weken en dan liggen ze hier een week, dus die ken je dan heel goed. Als daar dan iets mee is dan neem je dat toch wel is mee naar huis. Maar je moet natuurlijk proberen dat zoveel mogelijk niet te doen. En daar zijn dan ook die evaluatiemomenten dan wel voor.

V: Zou er nog iets veranderd kunnen worden aan de ruimte, of aan de organisatie van de ruimten wat zou kunnen bijdragen aan het verwerken/evalueren van dit soort situaties?

Antwoord: Meer van dit soort ruimtes en ook wat groter dan de ruimte waar we in zitten zou mooi zijn. We zijn namelijk altijd met 7-8 mensen aan het werk en daar komt dan nog de teamleider bij en de zorgassistentes. Dus meestal zitten we hier met een stuk of tien mensen, dus dit wordt dan heel krap. En als er grote visite is voor iemand dan doen we dat ook hier in deze kamer, en dan projecteren we op het scherm. En dan zitten er een stuk of 5 artsen en twee verpleegkundigen bij, en dan is het ook best klein.

V: Daar had ik ook een vraag over, als er een bespreking is met een patiënt en dat vindt nu vaak plaats in de patiëntenkamer zelf, en dat vindt de patiënt wel vaak vervelend. Maar wat vind jij hier van, zou dit beter in een aparte ruimte kunnen plaatsvinden?

Antwoord: In sommige gevallen zeker wel ja, bijvoorbeeld met slecht nieuws. Ik heb regelmatig wel gehad dat één patiënt op een twee persoons kamer heel slecht nieuws kreeg en dat die andere patiënt daar heel erg van ontdaan was. Ook omdat dit voor die patiënt ook erg confronterend is. Dus in sommige situaties zou ik zeker daarvoor een aparte ruimte willen hebben. En dat is hier lastig want vaak moet je met bed en al die patiënt meenemen. Die zijn vaak zo ziek dat ze niet kunnen zitten, dus dat kan hier helemaal niet.

V: Dus kort gesteld zijn er nog dingen met betrekking tot de teampost, waar verbetering zou kunnen plaatsvinden?

Antwoord: Het is met overdrachten s’ochtends vroeg en om 15.00 altijd heel druk in de Teampost en dan ben je soms moeilijk verstaanbaar naar elkaar toe. Je moet toch belangrijke dingen over de patiënt aan elkaar vertellen en daar is hij dan wel wat klein voor. Maar dan kan je ook in deze teamkamer gaan zitten of bij de patiënten op de kamer. Wat ik wel vind van deze locatie is dat het eigenlijk alleen maar gericht is op de eerste paar kamers, de achterste kamers heb je niet zo goed in het oog en die hoor je dan ook niet. Maar midden op de afdeling is waarschijnlijk ook niet handig.
V: Meer overzicht over de hele vleugel zou dan wel handig zijn, maar dan bijvoorbeeld met een kamer die voor teammeetings en overdrachten gebruikt kan worden?
A: Ja, eigenlijk is dat wel handig, want ook die schuifwanden van Glas die we daarvoor hebben die werken eigenlijk ook niet goed. Dat houdt geen geluid tegen. Iedereen die langs loopt kan horen waar wij het met een overdracht allemaal over hebben.

V: Als je terugkijkt naar de patiëntenkamer en je denkt in de rol van de patiënt, kom je dan nog dingen tegen waar je verbetering in zou kunnen aanbrengen?
O of andere dingen waar patiënten tegen aanlopen en die ze aan jou vertellen?
A: De Badkamer is afschuwelijk maar dat vindt echt iedereen, waar ik patiënten wel veel over hoor is het klimatsysteem, dat het of heel koud is, dat het tocht door de roosters, of het wordt echt heel warm en het is hier op de vleugel vooral in de éénpersoonskamers met een sluis, die bedoeld is voor steriliteit en wordt gebruikt bij uitzondering, maar dat lijkt de oorzaak te zijn waarom het klimatsysteem daar niet goed werkt. Maar patiënten hebben er ook last van op tweepeersoonskamers, dat ze het gevoel hebben dat ze onder een tochtgat zitten.

V: Zou dat ook kunnen komen doordat de deuren openstaan?
A: Ja dat kan, maar het is ook onmogelijk om overdag de deuren dicht te houden, als er iets gebeurt dan wil je daar zo snel mogelijk naar binnen kunnen en de schuifdeuren die er nu in zitten zijn ook wel heel zwaar vind ik, die heb je niet in een keer even zo open geduwd en met glas erin, dan moet hij toch open als iets is. Dat zou voor mij niet heel praktisch zijn.

V: Zijn er nog andere onpraktische dingen in de kamers?
A: Het formaat van de kamers, je bent soms met het bed aan het schuiven om de stoel naast het bed te kunnen zetten, om mensen even uit bed te kunnen laten. En ja voor de rest eigenlijk niet zo heel veel. Het formaat van de deuren van de eenpersoonskamers zijn erg klein, een bed past er echt precies tussendoor. Die bocht kan je bijna niet maken en als de bedsteunen omhoog zijn dan past het bed er eigenlijk niet tussendoor.

V: Merkt u bij familiebezoek nog, dat de familie en/of visite nog opmerkingen hebben over dingen die ze prettig vinden of minder prettig vinden aan de afdeling?
A: Ze zijn eigenlijk meer bezig met de patiënt zelf en mensen kunnen altijd wel een manier vinden om om het bed heen te gaan zitten. In principe mogen er maar 2 mensen bij een patient op visite komen. Dus dan heb je eigenlijk altijd wel genoeg ruimte.

V: En je hebt natuurlijk ook nog de pantry?
A: Mensen die mobiel zijn, zoals vaak met mensen die chemotherapie hebben, die gaan dan met hun bezoek in de pantry zitten.
V: Jullie hebben hier van allerlei soorten gevallen liggen, bijvoorbeeld mensen met chemokuur, maar ook herstellend van operaties?
A: Op verdieping 5 en 6 zijn vooral mensen die herstellen van operaties, op de tweede verdieping zit de IC en dit is de interne verpleging. Dus dat zijn chemokuren en mensen die complicaties krijgen en terminale zorg. Dat is het vooral.

V: En bij terminaal houden jullie al rekening mee dat ze op 1 persoonskamers liggen?
A: Ja zoveel mogelijk.

V: Als je een dag gewerkt hebt hier, is het dan dat je weer opgelucht bent dat je naar huis kan?
A: Nou, wel dat je weer buiten kan staan, ik zou hier wel een raam open willen gooien. Maar het is ook wel logisch dat het niet kan, dan springen de mensen er misschien uit. Maar het is wel, daar hoor je patienten ook wel over trouwens, dat je niet even een raam open kan zetten, even een frisse neus halen. Veel mensen kunnen g niet even naar het dakterras of naar buiten, en die zitten dan hier altijd, in een toch wel droge klimaatbeheersing. Wat dat betreft ben ik dan wel weer blij dat ik weer buiten kan staan.

V: Een binnen terras zou misschien al hierbij kunnen helpen?
A: bijvoorbeeld maar ook al in onze koffiekamer, dat daar een raam open kan, maar voor collega’s zou dat al lekker zijn. Ook al helpt het de patiënten niet direct, het zou voor ons wel lekker zijn. Bijvoorbeeld als het warm is buiten en de klimaatbeheersing staat ook warmte uit te stralen omdat de patiënten het koud hebben dan kunnen wij tenminste nog een raampje open zetten en lekker in de koffiekamer gaan zitten voor wat frisse lucht. Dat zou wel lekker zijn.

V: Zijn er nog meer van dat soort aspecten?
A: Wat je al eerder gehoord hebt, en wat je al weet dat is de badkamer.

V: De gangen lijken mij wel voor verbetering vatbaar, ik bedoel als ik hier binnenloop dan kom ik containers tegen en andere spullen die in de gang staan, zijn er nog andere punten die op dit aspect verbeterd kunnen worden?
A: Nou veel mensen raken de weg kwijt, dus het zou handig zijn om een hele grote B op de Teampost te zetten, zodat mensen vanuit de kruising gelijk zien waar ze heen moeten. We hebben ook wel is patiënten gehad die in een bed op de andere vleugel zijn gaan liggen.
A: Ik zou het wel leuk vinden als er wat meer kleur in de gang zou zijn, het is nu allemaal een beetje kleurloos, ik bedoel de entree vind ik wel heel vrolijk. Maar verder in het ziekenhuis is dat eigenlijk niet.
V: Misschien meer zicht naar buiten?
A: Bijvoorbeeld, alhoewel het zicht ook niet overal even mooi is.

V: Afsluiting gesprek…. (25 minuten) Wat is ongeveer de dagelijkse routine in jullie werk, als jullie bijvoorbeeld een ochtenddienst of avonddienst beginnen?
A: De ochtenddienst begint om half 8, dan gaan we eerst lezen, de overdrachten horen, kijken of er bijzonderheden zijn en dan tussen kwart voor 8 en 8 begin je met medicijnen uitdelen en dan maak je de mensen wakker, en soms is de keuken je al voor je geweest met het ontbijt, en dan maken zij de mensen wakker.

V: Dat is de ochtendroutine, en daarna begint gewoon de dag en doe je per patiënt wat er moet gebeuren?
A: Ja, je doet standaard alle controles overal, zodat je inzegerial alle gegevens hebt verzameld,

V: dat doe je als eerste?
A: Ja, eerst doe je het uitdelen van medicijnen en dan doe je vaak gelijk de controle en dan kan je overleggen met de patiënt, sommige mensen kunnen zichzelf helpen en dan leg je de spullen voor ze klaar. De mensen die geholpen moeten worden die ga je dan wassen of onder de douche helpen.

V: Is daar nog een planning voor of gebeurt dat op eigen inzicht?
A: Nee dat gebeurt gewoon, impulsief, ja nee, meestal als er meer mensen zijn die de grote douche nodig hebben dan weet je dat meestal wel, en dan wordt dat in de groep gegoooid wie er als eerste mag. Maar verder heb je je eigen kamers en die patiënten daar, dan zorg jij als vepleger voor dat daar alles gebeurt.

V: Dus eigenlijk wordt alles mondeling gecoördineerd?
A: Ja, we hebben ook een standaard afstemmoment om 11.00, een iemand is dan de stip en die coördineert de dagindeling en dan horen we ook even van iedereen hoe het overal gaat en wie waar hulp kan bieden.

(Wat is stip?)

V: Ik heb een patiënt gesproken die gaf aan dat hij vond dat hij geleeFd werd (Gewogen, chemo therapie, spoelen etc.) hij gaf aan dat hij wel zou willen weten wanneer de verpleegkundige langs zou komen om bijvoorbeeld de chemo toe te dienen. Zou een planningssysteem misschien handig zijn?
A: Nou met chemokuren heb je wel een vrij vast protocol wat je naleeft, en daar zitten ook wel vaste tijden in. Maar ik denk dat patiënten dit dan niet zo ervaren, want de patiënt drie keer per dag wegen, dat wordt verdeeld over de dag, dus dat zijn drie vaste momenten waarop dat plaatsvindt. En dan wordt vaak tegelijkertijd de medicatie gedaan van de chemokuur patiënten.

V: Hartstikke bedankt voor alle antwoorden en bedankt voor het interview
INTERVIEW MET VERPLEEGKUNDIGE B

Oncologieverpleegkundige op Vleugel A, interview afgenomen op 15 februari 2012
V: Introductie, doel van het interview,

V: Hoe lang werkt u hier al?

V: Wat is een van de leukere of waardevolle ervaringen die je hebt meegemaakt op deze afdeling in de afgelopen jaren?
A: Het zijn meer algemene situaties, die je onder één noemer kan scharen zeg maar, situaties waarin je merkt dat je net iets meer klik hebt met een patiënt en zijn naaste dan de meeste keren. Je hebt altijd goed contact om het zo even te zeggen, maar bij sommige mensen heb je iets meer een klik, raken je net iets meer doordat ze opend en meer open zijn.

V: Zou je hier een voorbeeld van kunnen noemen?
A: Nou het gaat dan denk ik vooral meer om innemende mensen zeg maar, afgelopen zomer heb ik een jonge vrouw verpleegd en haar ouders zaten bij haar, toen zij aan het overlijden was, maar dat waren hele innemende mensen ze waren heel zorgzaam voor hun dochter maar ook heel open naar ons toe. Ze stelden zich echt wel open over hun dochter, maar ook naar ons toe. Dat bedoel ik eigenlijk met innemende mensen, dat je echt contact hebt met ze. Dat je een band krijgt met die mensen. Bij heel situaties blijft het zakelijk en dat is ook goed, want daar hou ik zelf ook wel van. Maar soms zijn er situaties dat het net iets verder gaat en dat zijn ook wel de situaties waarin het mij net iets meer raakt zeg maar en waardoor het iets meer bijzonder wordt.

V: Maar zou je zeggen dat de ruimte van de afdeling daar nog een rol in speelt, of kan het net zo ergens anders plaats zou kunnen vinden?
A: Zou kunnen...

V: Is het niet zo, dat je zo’n binding makkelijker krijgt in een eenpersoonskamer dan in een tweepersoonskamer?
A: Ja, dat natuurlijk wel, dan is er toch iets meer mogelijkheid voor contact, of intiemer contact in de zin van gesprekken omdat je dan niet iemand hebt die mee
zou kunnen luisteren, dus dat speelt wel mee.

V: De patiënt heeft dan eigenlijk de meeste invloed, hebben jouw directe collega’s ook nog directe invloed op?
A: Nee, denk ik niet, het zou namelijk heel goed kunnen dat het mij wel heel goed klikt, maar met mijn collega niet. Dus hoe ik dat beleef met die patiënt hoeft niet voor mijn collega zo te zijn.

V: Wat is een van de meer zware of stressvolle situaties geweest in de afgelopen jaren die jij hebt gehad hier op deze afdeling?
A: Dat was recent, drie weken geleden, dat was wel vrij stressvol. Toen kreeg er iemand hier op de gang, die zat op de home-trainer en die kreeg een hersenbloeding. Dat was wel vrij stressvol, dat was ook nog is tijdens bezoekuur, dus dan lopen er ook nog veel mensen rond waarvan je niet wilt dat die dit allemaal zien. Wij stonden met iemand die niet goed werd op de fiets en die op een bed moest of waar dan ook maar die zelf niet van die fiets af kon komen. We dachten allemaal mijn god wat krijgt die, wat gebeurt er allemaal?

V: Dat vond plaats op gang? En wat doe je dan in zo’n situatie?
A: Ik stond daar samen met een collega, en een andere collega is de artsen gaan halen, het was gelukkig nog voor 5 uur dus dat de artsen nog in huis waren. Want buiten kantooruren heb je te maken met dienstdoende artsen. Dus die waren er gelukkig nog, andere collega ging die halen. Het gaat dan ook allemaal weer een beetje vanzelf, er was dan ook iemand die zich over de familie ontfermd, twee andere collega’s hebben een bed gehaald en ik en een collega van mij die bleven bij de meneer. Toen hebben wij hem op een bed gekregen en toen zijn kamer ingereden. En dan moet je ook een beetje lak hebben aan het bezoek, dat heeft dat het minste prioriteit. Maar al die dingen bij elkaar maakten het geheel wel stressvol.

V: Waren er toen ook dingen waarvan je zoiets had, dat heb ik nu niet en dat heb ik nodig, of waar je toen behoefte aan had op dat moment? Misschien had je wel een nis in de gang willen hebben waar je hem even in weg kon stoppen?
A: Natuurlijk, het was heel vervelend dat het op de gang was, dat je niet andere patiënten voor dat beeld kon beschermen, dus dat is niet dat je denkt van dat kan ik voorkomen. Toevallig was dat in publiek gebied maar het kan ook buiten op straat gebeuren, of hier beneden in de hal. Dat is dan maar zo, dat is lastig, maar het was niet zo dat ik had, hadden we maar gordijnen of iets dergelijks.

V: Toen dat afgelopen was, had je toen ergens behoefte aan om jezelf terug te trekken, om dat te kunnen verwerken, wat je had meegemaakt.
A: Ik ben wel iemand die dat ronduit aan collega’s moet vertellen ja, de behoefte om het van je af te praten. Sowieso ben je hier dan niet alleen, de collega’s die bij je waren die hadden ook avonddienst dus dan werk je met die mensen tot half 12. Dun dan heb je het nog een poosje daarover en die nachtdienst komt dan weer en dan heb je het er ook nog over. Dun het is meer dat je het met elkaar er veel over hebt.

V: Doe je dat op een speciale plek, op de teamkamer of op de teampost?
A: Nou dat gebeurt vooral op de teampost en daar heb je misschien wel een punt, Dat is vrij gehorig, dat is natuurlijk met die glazen ramen, die eigenlijk altijd open zijn omdat het natuurlijk gelijk ook een balie is. Maar wij bespreken daar ook heel veel ellende, over patiënten, of zelfs gewoon een telefoongesprek: Bijvoorbeeld kan je nu en nu komen, want die meneer daar gaat het niet goed mee. Kamer 12 en Kamer 1, die horen alles, je zou eigenlijk dit interview op kamer 1 moeten doen dan kan je ervaren wat die allemaal horen waar wij het allemaal over hebben. En dat is dan wel iets waar wij het over hebben als we praten met collega’s is dat wel lastig is.

V: En een evaluatie moment, ik heb doorgekregen dat dat iedere dag is, helpt dat voor jou?
A: Nou weet je wat het lastige is, dat is altijd na de dagdienst, en dan is het zeker een goed moment, ik weet niet of je de koeienkamer kent waar we altijd zitten, maar daar ga je dan met je collega’s met wie je op dat moment dienst heb gedraaid ga je wel daar even zitten met een kopje thee, en als er dat soort dingen gebeurt zijn dan kan je het er even over hebben. Maar in de avonddienst heb je dat niet, dan zitten we in de teampost met z’n allen, en dan moet je eraan denken dat je de raampjes dich doet, omdat anders iedereen het hoort. En dat komt omdat de teampost gelijk balie is zeg maar.

V: Maar je hebt geen kamer waar je apart even naartoe kan? Zoals vleugel B een team/familiekamer heeft?
A: Ja op de B-vleugel hebben ze dan een kamer die vrij dicht bij de teampost zit, die daarvoor gebruikt kan worden. Maar die hebben wij niet, voor ons is de koeienkamer, maar dan ben je best wel ver de afdeling af, daar ga je niet even zitten met z’n 3en (je bent met z’n drieën s’ avonds.) Ik denk dat je dan ook de koeienkamer bedoelt, ik bedoel het is eenzelfde soort kamer als de B vleugel heeft, maar minder bereikbaar voor ons. Dun als je hebt over de beleving van ruimte, dan is dat van de teamkamer of van de verpleegpost is dat wel een nadeel.

V: Heb je voor jezelf op dat moment na dat moment nog behoefte aan een speciale plek of denk je dan van nou.. Ik heb het wel van mij af kunnen praten en heb het daarmee voor mezelf wel afgesloten, ik ga lekker naar huis, doe mijn eigen dingen en ik denk er niet
meer aan?

A: Ja, inderdaad, ik hoef niet iets van een kamer te hebben waar we ons tot onszelf zouden kunnen komen, die behoefte heb ik niet.

V: Zijn er nog andere dingen die je tegenkomt tijdens je dagelijkse bezigheden tegenkomt, waar je hinder van ondervindt?

A: Nee er is weinig opslagruimte, er staat altijd veel op de gang, bedden, rolstoelen, weegstoelen. Karretjes. Daar is weinig opslag voor. Soms, omdat ik hier nu al zo lang ben is het natuurlijk een soort van gewenning, maar soms als er nieuwe collega's komen, die hebben het dan bijvoorbeeld over afval. We hebben natuurlijk veel te maken met cytostatica afval, daar hebben wij twee speciale bakken op wielen voor in de spoelruimte die we naar de kamer moeten rijden, terwijl je dan hoort dat er in andere ziekenhuizen er op iedere kamer één zo'n bak staat. Dat is soms wel een dingetje, als mensen spugen, of je hebt een ongeluk met cytostatica, dan moet je eerst zorgen dat je die bak hier hebt voordat je het kan opruimen. Terwijl als je zo'n bak op iedere kamer zou hebben het veel efficiënter en veiliger zijn, want wat gebeurt er nu, moet ik het nu neerleggen of loop ik er even mee over de gang. Dat is best gevoelig, want ook wasgoed moet in speciale zakken en alles wat dus met cytostatica in contact is geweest, dus de infuusystemen en dat soort dingen, maar ook als mensen hebben overgegeven, die bakjes met spuug moet allemaal in de speciale cytostatica afvalbak, waar we er eigenlijk maar 2 van hebben. Dus soms grijp je wel is mis. En als je dan hoort dat het in andere ziekenhuizen anders geregeld is, denk je wel is van goh dat zou veel handiger zijn. Dat bedoel ik dan ook met gewenning, ik ben gewend dat we dat hier zo hebben.

V: Zijn er nog meer van dat soort dingen, die je meekrijgt?

A: Het stopcontacten contactpunt, is maar aan één kant, want dat is niet altijd heel werkbaar, soms willen patiënten aan de andere kant het infuus hebben, omdat ze aan de andere kant beter uit bed kunnen stappen en dan redt het snoer het soms niet. Soms is je patiënt zo behangen met toeters en bellen dat je het gewoon handig zou zijn om aan de andere kant een stopcontact zou hebben. Maar ook voor de patiënt zelf, als ze hun mobiele telefoon op willen laden, kastje staat aan de andere kant, dus dat is eigenlijk helemaal niet handig. Daar lopen we vaak tegen aan. En ik heb nu geen dagdiensten meer, ik draai alleen maar avonddiensten, maar die badkamers zijn veel te klein. Het zou heel leuk zijn als we een hotel waren en iedereen zich zelfstandig kan redden maar, heel vaak sta je daar met twee personen, ik en de patiënt en als het tegenzit nog een infuuspaal. Nou dat past niet. Dus dan moet of de deur openblijven, met het resultaat dat de hele boel onder water loopt of de douchedeur moet open staan omdat de infuuspaal erin moet.
Zo hebben we een keer een patiënt gehad in een tweepersoonskamer, die was niet goed geworden op het toilet, en de deur van de badkamer stond open. En die lag daar in het toilet op de grond met de infuuspaal in de deur van de badkamer. Maar omdat die deur openstond en de patiënt en infuuspaal daar stonden kon de deur van de badkamer niet dicht, maar stond die ook gelijk in de weg van de deur naar de gang toe. Dat is echt iets wat je mee moet maken voordat je daar tegen aanloopt. In de nachtdienst was dat, patiënt zat helemaal onder het bloed en in de kreukels, dus kan je niet direct daar weghalen. Dus voordat mijn collega langs die openstaande badkamer deur was gekomen en die patiënt had gelopen duurde dat toch wel een flinke tijd. Dus toen hadden we op dat moment wel iets van, hier is toch niet zo goed over nagedacht. Natuurlijk sloot het niet helemaal af omdat de badkamerdeur iets kleiner is dan de schuifdeur naar de gang maar je kan er niet meer bij op dat moment, met een bed of met een brandcard. Dat was ook wel een beetje stressvol.

**V:** Krijg je nog wel is opmerkingen mee van patiënten over dingen waar zij wel is last van hebben?

**A:** Patiënten klagen eigenlijk altijd over dit (Grijze gedeelte bij het raam, wat zicht op bed hoogte naar buiten blokkeert), dat zit precies op hun hoogte kijkend vanuit het bed, dus vanuit bed kunnen ze eigenlijk niet naar buiten kijken, dat is eigenlijk heel vervelend. Dat er geen ramen open kunnen, kijk het hoeft niet zo open dat mensen eruit kunnen springen, maar al is het maar dat het op een kiertje kan.

**V:** Niet het geluid van de gang of de kleuren van de kamer?

**A:** Nee kleuren niet, nee ik denk dat dat wel heel goed gekozen is, ook niet geluid van de gang, maar licht van de gang wel, dan vinden ze het vrij licht blijven, omdat het bovenlicht natuurlijk in de deur zit. En de ventilatie, nou valt dat op deze vleugel nog mee ten opzicht van de B en de C vleugel. En dan is deze kamer nog het ergste, maar dat komt door het hoofdkanaal, wat hier in de buurt zit en door de ventilatiemachine buiten. Dit horen ze vaak. Maar op de B vleugel hebben ze de roosters zelfs afgeplakt omdat het teveel doortocht. Maar hier hoor ik ze niet zo.

**V:** Heb je nog specifieke redenen waarom je alleen de avonddiensten doet?

**A:** Ja door kleine kinderen,
V: Wat vind je van de sfeer in het ziekenhuis tijdens een avonddienst, is dat prettiger voor jou?
A: Ik heb er zeker geen hekel aan, aan avonddiensten, ik vind avonddiensten qua hectiek wel prettiger dan een dagdienst. Een dagdienst is ook zeker leuk, dan gebeurt er veel meer, maar het is in een avonddienst allemaal wat rustiger en wat relaxter. De patiënten toch ook wel, in de avonddienst valt het bezoekuur dus dan zie je veel dat ze de afleiding van het bezoek hebben, dus er heerst wel een andere sfeer dan overdag.

V: En hoe zou je dat omschrijven?
A: Wel minder hectisch, rustiger. Wij lopen met minder mensen, er gebeurt minder veel, mensen hoeven niet meer weg voor onderzoek. De sfeer is rustiger dan overdag.

V: En hoe is het overdag?
A: Ja de dag begint rond kwart voor 8 en dan heb je doktersvisite, de etenskarren gaan rond, er wordt gewassen, chemokuren, mensen die opgenomen worden, de hele rataplan, mensen die voor andere onderzoeken weg moeten.

V: Als mensen voor een scan weg moet, wordt hij dan in een bed daar naartoe gereden?
A: Het hangt een beetje van zijn toestand af, als hij voor een foto naar de röntgen moet dan zou dat ook nog wel met een rolstoel kunnen. Maar andere onderzoeken gaan ze wel in bed, want of ze krijgen een roesje, of ze zijn daarna niet zo lekker, dat ze dan iniedergeval met hun bed weer terug kunnen.

V: Dat is ook met bestraling zo?
A: Nee, dat kan weer van alles zijn, dan gaat vaak een patiënt ook lopend naartoe, als ze niet ziek zijn dan lopen ze gewoon daar zelf naar toe. Dan weten ze de weg en waar ze zijn moeten en dan gaan ze zelf. Dat kan van alles zijn.

V: Heb je nog wel iets opmerkingen gehad van familieleden wat zij hier van vinden van dit ziekenhuis? Ik heb het idee dat de meeste mensen dit ziekenhuis in vergelijking met andere ziekenhuizen als gemoedelijk beschouwen.
A: Dat is wel het meeste wat we horen ja, gemoedelijk. Ze vergelijken het altijd als rustiger dan andere ziekenhuizen waar ze zijn geweest. En misschien is gemoedelijk wel een goede omschrijving.

V: Hebben ze dan nog wel kritiekpunten?
A: Er zijn natuurlijk altijd patiënten met familie die kritiek hebben, die makkelijker klagen dan complimenten geven, maar nee. Ik denk dat het over het algemeen als positief ervaren wordt. Persoonlijk is ook wel wat ze vaak zeggen, dat er tijd is, dat ze de rust ervaren of het kopje koffie bij de wachtruimte, dat wordt vaak genoemd.
V: Wat patiënten vinden van de gesprekken met de dokter om het bed?
A: Het is natuurlijk ook een houding van ons en de artsen om daar zorg voor te dragen. Ik denk vaak, dat op een tweepersoonskamer, de mensen kijken elkaar de hele dag aan, ik denk dat het makkelijker zou zijn als je naast elkaar ligt. Dan kan je elkaar iets meer vermijden als je daar behoefte aan zou hebben. En als je met z’n tweeën ligt ben je wel zo op elkaar aangewezen, als je met z’n drieën ligt kan je nog zeggen ik kan me iets distantiëren van die twee, dan is er iets meer variatie mogelijk. Nu is het zo afhankelijk wie je tegenover je krijgt, dat ik mij soms wel afvraag of ik die tweepersoonskamer nou zo goed gekozen vind. Je ziet natuurlijk alles van elkaar.

V: Afsluiting interview.
INTERVIEW MET VERPLEEGKUNDIGE C
Oncologieverpleegkundige op Vleugel A,
interview afgenomen op 15 februari 2012

V: Introductie van het interview, wie ben ik, doel waar ben ik naar op zoek etc.

V: Hoelang werkt u hier al? en waar heeft u hiervoor gewerkt?
A: Ik werk hier al drie jaar, en daarvoor heb ik voornamelijk gewerkt in de verpleeghuis sector, bejaardenzorg.

V: Hoe bent u hier terecht gekomen?
A: Ik ben hier gekomen via een patiënt, ik werkte op een palliatieve afdeling en daar hadden we tijdelijk een patiënt die ook behandeld werd in het NKI-AVL, die werd hier dan opgenomen met complicaties en daardoor kwam ik hier vaak op bezoek. Ik was toen al een beetje aan het twijfelen wat ik wilde doen, en toen kwam ik hier in het ziekenhuis terecht, de uitstraling dat pakte mij meteen eigenlijk. Dus zodoende heb ik de stap gewaagd en werk ik hier.

V: En hoe vindt u het om hier te werken?
A: Ongeacht wat hier allemaal behandeld wordt vind ik het een heel leuk ziekenhuis om te werken. Het is klein, eigenlijk ken je de meeste mensen van de kliniek, ook al is het alleen maar van gezicht. De kleinschaligheid dat bevalt me wel.

V: En hoe lang werkt u eigenlijk in de zorg in totaal?
A: Sinds 1982, dus dat is al 30 jaar inmiddels.

V: Wat is een van de leukere, of anders gesteld waardevolle ervaringen die je hebt gehad met een patiënt in de afgelopen jaren?
A: Vorige week is er nog een patiënt getrouwd, waar ik bij was en dat was heel bijzonder. Het was een spoedhuwelijk, de vrouw was terminaal en kwam te overlijden. Ze wilde nog heel graag trouwen. Dat heeft ze toen vorige week dinsdag gedaan en die woensdag is ze nog met de wensenambulance naar haar geboortedorp geweest en naar Katwijk aan Zee gegaan. Vierentwintig uur daarna is ze overleden. Dus dat was wel heel bijzonder.

V: Is ze toen thuis overleden of is dat hier gebeurt?
A: Nee zij is hier in het ziekenhuis overleden.
V: En het trouwen vond dat toen plaats op een eenpersoonskamer?
A: Ja, bommetje vol, heel veel familie..

V: Had dat ook ergens anders kunnen plaatsvinden?
A: Ja, normaal gesproken gebeuren dit soort ceremonies in de Glazen Zaal, maar op dat moment was er een pianoconcert. Daar konden we toen geen gebruik van maken, dus we moesten het doen met de kamer die we hadden.

V: En hoe werd dat ervaren door de patiënt en familie?
A: Het was goed, het was emotioneel maar het was wel heel mooi. Het huwelijk werd ook nog door de pastoor ingezegend en het was goed, en de familie kreeg nog alle ruimte en alle tijd voor alles. En de ambtenaar van de burgerlijke stand was er ook om het nog te bekrachtigen.

V: Waren er toen ook nog leuke en/of grappige momenten?
A: Nee, dat niet, het was een heel mooi moment. Je maakt hier eigenlijk heel veel verdrietige momenten mee, en de situatie waarom ze ging trouwen was eigenlijk ook heel triest. Maar gewoon de blijheid van de patiënt en dat ze toch nog ging trouwen en dat was gewoon heel erg waardevol.

V: En wat heeft de meeste indruk gemaakt op jou op dat moment?
A: Het was het mooi maken van de patiënt, mooie kleren aan, ze werd opgetut door haar dochters en dat je echt dacht van ja, het is gewoon nog even een feestje. Ook dat mensen nog even binnenkomen en zeggen: ‘oh wat ben je mooi’. Dat maak je niet heel veel mee, dat is heel bijzonder als je dan bij zo’n moment mag zijn. Ik zorgde al vier dagen voor haar en toen was het ‘s morgens om half 12 van nou ze gaat vandaag nog trouwen om 3 uur. Dan moet je nog even alles in het werk stellen om dat gereed te krijgen, ook om de kamer dan niet teveel ziekenhuis te laten zijn.

V: Hoe doe je dat, of hoe maak je een kamer minder ziekenhuis?
A: Dat was natuurlijk op een eenpersoonskamer, en die bedden staan hier zo recht en je hebt die stomme reling. Toen heb ik het bed schuin gezet zodat je eigenlijk de foto’s die je op het prikbord had en op de muur meer zichtbaar werden. En ik heb de infuuspaal in de hoek gegoooid, zodat de foto’s die genomen werden zo min mogelijk ziekenhuis gevoel uitstraalden. Zo, van nou ik wil het nog een beetje op een normale kamer laten lijken.

V: Dus eigenlijk juist de apparatuur, die je associeert met het ziekenhuis, uit het beeld halen?
A: Ja precies.
V: Dus voor jou, maakt de apparatuur, het bed hoe dat er bijvoorbeeld uitziet. Dat geeft het een ziekenhuis uitstraling? Niet zoveer hoe de kamer er zelf verder uitziet?
A: Ja, precies. Het is meer wat er omheen hangt, de infuuspaal, de reling achter het bed waar spullen aan gehangen kunnen worden. De papegaai (Steun om uit bed te komen) en die stang voor het infuus. Dat heb ik er allemaal afgehaald, zo nou van om het zo min mogelijk ziekenhuis te laten zijn.

V: Wat is voor jou een zware en/of stressvolle ervaring in het ziekenhuis geweest?
A: Dat zijn toch wel de jongere patiënten die komen te overlijden, die eigenlijk jouw leeftijd hebben. Die niet alleen patiënt zijn maar ook belangstelling voor jou hebben. Dat komt het geestelijk ook veel dichterbij, en als die dan komen te overlijden en je bent er heel nauw bij betrokken geweest dat kan dan wel een hele impact geven.

V: Ik neem aan dat die situaties zich plaatsvinden in een eenpersoonskamer en als die patiënt dan overleden is, heb je dan nog behoefte aan een plek voor jezelf waar je je kan terugtrekken?
A: Ja eigenlijk wel, en we krijgen steeds minder ruimte daarvoor, de ruimtes die we daarvoor hebben worden al gauw als werkplek gebruikt dus dat wordt wel steeds minder en dat is eigenlijk wel jammer. Want dat soms wel flink emotionele momenten en dan moet je dan nog net een plekje vinden waar daar ruimte voor is en dat wordt steeds meer zoeken van waar kan dat dan.

V: Zou je op dat moment naar buiten willen of is het op de afdeling zelf al voldoende afzondering genoeg?
A: Op de afdeling is wel goed, ik vind dat wel dat de veiligheid die hier is voor het personeel voor onze collega’s die is duidelijk aanwezig, we zijn er allemaal hier voor elkaar.

V: Want dat bedoel je met ‘Veiligheid’ er voor elkaar zijn onderling? Elkaar in de gaten houden?
A: Ja dat is veiligheid, er is ook een evaluatie, ook soms wel dezelfde dag, dat ligt er maar net aan op wat voor tijdstip iets gebeurt. En we proberen wel elke dag te evalueren en we hebben ook wel is gehad dat we pas twee weken later de casus gingen bespreken van wat er geweest was. En dat je dat gewoon nog eventjes nog een keer kwijt kan en door kan nemen. Dus ruimte om te evalueren is er zeker wel en er wordt ook zeker tijd voor gemaakt.

V: Maar had je op dat moment toen die patiënt kwam te overlijden, heb je het toen een plek kunnen geven? Was er op dat moment een ruimte beschikbaar waar je even tot jezelf kon komen?
A: Ja ik was er niet zelf bij, de patiënt overleed in de nacht en ik had er wel bij willen zijn omdat je al een tijd voor die patiënt had gezorgd. Maar dat is gewoon maar zo, je kan hier niet 24 uur zitten. Gelukkig niet, maar die patiënt had je inmiddels zo te pakken gehad dat je daar echt wel over nadacht en dat je daar nog even mee bezig blijft. Op dat moment is zo’n evaluatiemoment gewoon erg waardevol want je kan dan gewoon nog even je ei kwijt en je verhaal kwijt. En ook wat je dan ook zo raakt.
V: En die evaluaties vinden plaats in de Teamkamers en daar zijn er eigenlijk niet voldoende van?
A: Ja, inderdaad.

V: Hoe ben je daarna nog met de situatie omgegaan, of is het daarna nog een keer teruggekomen? Of heb je het daarna wel af kunnen sluiten?
A: Ja, ik heb het daarna wel afgesloten en je leert er ook wel weer van hoe waardevol dat moment dat ook wel is, je leert er ook van om je grenzen te bewaken. Ook al is dat wel heel lastig als je weer een klik hebt met een patiënt, om dan niet weer die grens over te gaan. Maar ik heb zoiets van als het gebeurt dan gebeurt het. Het is hier als met een lach als met een traan. Het is gewoon mensenwerk. Sommige patiënten die pakken je gewoon, in de goede zin van het woord. En dat vind ik ook het mooie van dit beroep.

V: Ik merk dat je heel veel verschillende groepen patiënten hier hebt, je hebt terminale patiënten, mensen die alleen een chemo krijgen en goeie verbeterkans hebben en mensen die een levensverlenging hebben door de chemokuur. Nu zie je vaak terminale patiënten met een andere patiënt op een kamer liggen. Zou je denken dat deze patiëntengroepen gescheiden moeten worden?
A: Die vrouw die vorige week getrouwd is die lag een paar weken geleden op een tweepersoonskamer en daar kwam een andere patiënt over uit een ander ziekenhuis die was eigenlijk nog in de fase dat er nog van alles onderzocht werd. Er was dan wel het vermoeden van maagkanker wat die andere patiënt ook had. En toen zei de patiënt over het andere ziekenhuis kwam: ‘Nou ik hoop toch niet dat dit mijn ‘voorland’ is, het zien van andere patiënten, wat er dan allemaal met je kan gebeuren. De patiënt over het andere ziekenhuis overleed eerder dan de patiënt die vorige week overleden is.
Het is een voorbeeld, is dat mijn ‘voorland’ en af en toe is dat heel schrijnend, want er zijn ook wel patiënten die zeggen: ik wil op een eenpersoonskamer, hoe lastig dat soms ook is, want ik kan er niet tegen om bij andere zieke mensen te liggen. Maar ik heb nog nooit gehoord dat ik iemand heb horen zeggen dat hij niet bij andere op een kamer wilde liggen omdat die persoon heel ziek is.
En aan de andere kant het is ook een onderdeel van het leven, je kan het wel heel beschermend voor iemand maken maar, sterven en ziek zijn is ook gewoon onderdeel van het leven. Je hoort van heel veel patiënten ook, hoe erg het ook is, we hebben allemaal hetzelfde, we hebben allemaal kanker. Iedereen die hier loopt weet, daar is ook een patiënt die kanker heeft.
V: Hoe staan de patiënten er dan eigenlijk in als ze hier zitten?
A: Als ze aan het kuren zijn ze eigenlijk aan het overleven, dat zeg ik ook altijd tegen ze, je bent nu aan het overleven en als je straks klaar bent met kuren dan begin je pas met het verwerken. Want dan ga je pas bedenken wat is mij allemaal overkomen? Ze zitten op dat moment in zo'n achtbaan.

V: Je merkt dat ook aan hoe mensen er in staan? Meer dat het eigenlijk een algemeen gevoel is?
A: Ja, ze leven eigenlijk van kuur naar kuur. Er zijn maar weinig patiënten die ze zeggen van ik heb kanker en ik doe nu een kuur, ook al is het het maar levensverlengend, die zeggen ik ga toch tussendoor een week op vakantie en ik neem alsook een weekje uitstel van mijn kuur. Toevallig is er nu een patiënt die dat wel doet, maar die leeft dan nog wel: die zegt, ik wil ook nog de leuke dingen doen buiten mijn behandeling. Er zijn ook heel veel patiënten die dat niet doen want die willen eerst die chemokuur afmaken en daarna verder met de leuke dingen doen. En helaas zien wij toch heel vaak dat ze daar dan niet meer aan toe komen.

V: De volgende vraag heeft betrekking tot de sfeer die er in een ziekenhuis hangt, wat vind je een fijnere dienst om te draaien is dat de ochtend of de avond shift? Of misschien zelfs de nachtdienst?
A: Nou de nachtdienst is helemaal niet mijn ding, maar dat maakt mij niet zo heel veel uit. Ik vind de afwisseling tussen de dag en de avond dienst eigenlijk wel prettig. In de dagdienst is het vaak de hectiek, de artsenvisite, de verschillende disciplines die hier dan rondlopen en als je avonddienst hebt, heb je nog deels de hectiek van de dagdienst waar je invalt en als dat eenmaal weg is dan kan je rust weer terugkrijgen op je afdeling. Dan heb je zoiets van iedereen is weg, dus nou kunnen we ons ding weer doen.

V: Dat maakt niet uit, dus het is niet voor jou of de dag of nacht dienst prettiger is?
A: Nee, dat maakt eigenlijk niks uit. Soms dan kom je eerst in een hele rustige dagdienst en dan neem je dat over en dan kan je s ‘avonds nog een heksenketel krijgen. Of je valt in een avonddienst in een hele drukke dagdienst en dan heb je nog heel veel dingen daarvan over te nemen, maar vaak is het dan na acht uur s ‘avonds als je gegeten hebt het vaak weer rustig.

V: Als er zo’n acute situatie optreedt, iemand die ik eerder interviewde gaf aan dat op dat moment, bij een longbloeding eigenlijk te weinig spullen in de buurt waren om daar snel op te reageren, zou je denken dat er meer opslag nodig, bij de kamers, maar kleiner nodig is?
A: Opzich, vind ik dat wel meevalLEN, je hebt natuurlijk je alarmsysteem, waardoor je eigenlijk relatief snel hulp bij je kan zijn. Dus ja, kijk is iemand nou bekend, dat je weet hij heeft kans op een longbloeding dan kan je spullen dichterbij zetten, niet dat daar nou ruimte voor is. Maar in principe, als de noodbel goed wordt gebruikt dan zijn je collega’s in een mum van tijd hier. Dus dat tijdsbestek vind ik wel te verwaarlozen. In een acute situatie is het ook maar net de vraag wat je dan doet, want de adrenaline giert door je lijf, dan is het altijd maar de vraag doe je het goed, ja of nee.
V: Maar het is wel zo dat als je de weg hier eenmaal kent dat je de spullen snel kan vinden?
A: Ja, misschien in de stress van het moment dat je niet alles kan vinden. Maar in principe zijn alle vleugels wel hetzelfde ingedeeld.

V: Zou je meer daglicht in de gangen willen?
A: Ja, dat wel, nou ook in de kamers eigenlijk. Als je een dag gewerkt hebt en je bent klaar dan denk je opeens, van oh, de zon schijnt. Soms heb ik gewoon het gevoel dat ik de hele dag niet naar buiten heb gekeken. Dat ik niet eens weet wat voor weer het is. Ik heb ook het gevoel dat het hele kleine raampjes zijn.
(metalen stuk precies op kijkhoogte van het bed)
Ja dat zeggen patiënten ook hoor, die zitten hier dan tegen aan te kijken. Die vinden dat echt vreselijk.
Maar het is soms echt, van oh ja het is eigenlijk mooi weer buiten, dat is niet erg als je aan het werk bent, maar dat gevoel heb ik wel hoor.

V: Zijn er nog andere dingen, waar je tegenaan loopt?
A: De tweepersoonskamers zijn best wel krap, als je kijkt in de badkamer, nou daar is het eigenlijk huilen met de pet op, zeker als je nog iemand moet helpen. Als er op een eenpersoonskamer iets gebeurd en er wordt bijvoorbeeld door iemand bij geslapen dan staan er twee bedden in een éénpersoonskamer, je kan dan echt je kont niet keren hoor op dat moment. Dus dat is eigenlijk best wel klein. En dat de deuren precies op maat zijn en dat de bedden er eigenlijk net doorheen passen, dat is heel erg op de millimeter gemaakt. En we hebben één sluiskamer, dat is kamer 11, daar moet je echt niet met grote spoed iemand uit de kamer halen want dat lukt je echt niet. Dat is allemaal precies op maat.

In de tweepersoonskamers gaat het al beter, opzich kan je hier wel goed met je bedden manoeuvreren maar het blijft moeilijk. Vooral als je patiënten hebt die op een tweepersoonskamer liggen en die privacy willen en die dan de bedgordijnen dichtdoen dan is het helemaal bedompte bedoening.

V: Hoe zit het met de Ventilatie, ik hoor dat mensen wel is op de tocht zitten?
A: Nou deze kamer (Kamer 5) waar we nu in zitten is wel het ergste hoor, je hoort de ventilatie nu ook. Nou moet ik zeggen, van de zomer hadden we bedden gesloten en toen was deze kamer leeg. En toen heb ik een mail gestuurd naar de leiding of ze toch nog is een keer naar wilden kijken. Want het tochtte hier ook echt, je kon de lucht voelen. Dat is minder geworden, maar het geluid daar kunnen ze niks aan doen want het zit boven één of andere hoofdschacht waarschijnlijk. Patiënten liggen hier dan ook niet graag. Zeker de patiënten die hier al vaker gelegen hebben, die zeggen dan al ik wil niet op Kamer 5.
V: Krijg je nog andere opmerkingen mee van patiënten van dingen die onplezierig of als plezierig worden ervaren?
A: Ze willen eigenlijk allemaal een eenpersoonskamer, maar goed dat is natuurlijk niet te realiseren en dat hoeft natuurlijk ook niet altijd. Er zijn ook patiënten die vinden het prima om met zijn tweeën op een kamer te liggen, en ook wel prettig eigenlijk. Die twee persoonskamers heb je gewoon ook nodig om dat contact te houden. Anders zit je natuurlijk helemaal geïsoleerd op je kamer, dat is ook nergens voor nodig. Patiënten die hier komen ervaren het wel als prettig, om hier de behandeling te ondergaan.

V: Merk je soms dat als er een grote visite is dat dat knelpunten oplevert?
A: Donderdag is altijd de grootste hoop, en Zaterdag. Maandag valt wel mee, op donderdag zijn de radiotherapeuten erbij. En dan staat er soms een mannetje of tien rond het bed.

V: Wat vind je van patiënt besprekingen, ik bedoel als er slecht nieuws is, is dat eigenlijk heel vervelend, niet alleen voor de patiënt zelf maar ook voor de kamergenoot, wat vind jij hier van?
A: Slecht nieuws gesprekken op een twee persoonskamer zijn eigenlijk waardeloos. Of je moet met de patiënt ergens anders naartoe of je moet aan de andere patiënt vragen mits hij beter te been is of hij even ergens anders naartoe wil gaan. Maar dat is echt waardeloos. Als mensen nog mobiel zijn proberen we wel is naar de teamkamer te gaan, om ze toch privacy te geven, maar dat lukt ook niet altijd.

V: Patiënten geven aan dat ze soms overlast hebben van het lawaai van de gang omdat de deur steeds open staat, hoe ervaar jij dat?
A: Nou dat valt wel mee hoor, s’ avonds na tien gaan het licht in de hal ook deels uit en dan is het rustig op de afdeling. Ja natuurlijk, de spoelkeuzen zit om de hoek hier in het midden en als nachtdienst en je moet de po spoelen gebruiken, dan is het snel op de pedaal drukken dat die deksel dicht gaat en dan snel de deur dichtdoen want dan heb je inruim geval de herrie van de spoelkeuzen niet op de gang. Deuren die dichtvallen, de deur van de medicijnkamer die zitten op een dranger, als die dichtvallen dat zijn eigenlijk de herriemomenten, en die schuifdeuren van de kamers maakt niet zo veel herrie.

V: Heb je het idee dat als je op de teampost zit dat je wat meer contact zou willen hebben met de kamers die achter je zitten? Dat je meer overzicht hebt over wat er gaande is in de kamers?
A: Ja dat is eigenlijk wel een nadeel, want je hebt alle kamers in je rug, je zit eigenlijk meer naar je collega’s op de C vleugel te kijken. Maar daar gaat het eigenlijk helemaal niet om, het gaat om de patiënten. Een andere organisatie zou wel optimaler kunnen zijn, dat je bijvoorbeeld rondom de balie de kamers hebt.
V: Maar je hebt niet het idee, dat door deze organisatie dat je dingen hebt misgelopen de afgelopen jaren?

V: Ik heb nog een specifieke vraag naar aanleiding van een gesprek met een patient die ik gister teruggeluisterd heb, en die zei, als ik aan de chemo zit mag ik niet naar beneden, is dat ook zo?
A: Ja dat is zo, dat is puur uit veiligheid. Als bijvoorbeeld de infuuszak lek raakt waar de chemo in zit. Of het infuus wordt per ongeluk losgetrokken omdat je met je draadje ergens achter blijft hangen. Het gebeurt in het ziekenhuis. Dan moeten ze hulp gaan zoeken en dan weet niemand daar wat ze moeten doen. En hier op de afdeling, wij weten wat we moeten doen. Als een patiënt naar boven loopt met een lekkende infuuspaal dan is de hele route “besmet” en nu hou je het gewoon op je afdeling. En de mensen die dan 20 uur zo’n chemo krijgen, daar worden wel is uitzonderingen voor gemaakt. Maar wij bepalen of dat mag ja of nee, wij schatten in of de patiënt dat kan met onze instructies. Want er zijn wel patiënten die het mogen maar dat zijn er maar weinig.

V: een 20 uurs schema is minder zwaar?
A: Nee, het is meer dat je zou maar 20 uur verplicht op je kamer moeten blijven zitten. Of mensen moeten naar de radiotherapie, ja dan moet je wel is uitzonderingen maken. Of ze willen even naar de glazen zaal om iets te halen bij de creatieve therapie. Dus sommige mensen krijgen er wel toestemming voor, maar dat is altijd in overleg met ons en wij bepalen of het mag.

V: Afsluiting. Bedankt voor het interview.