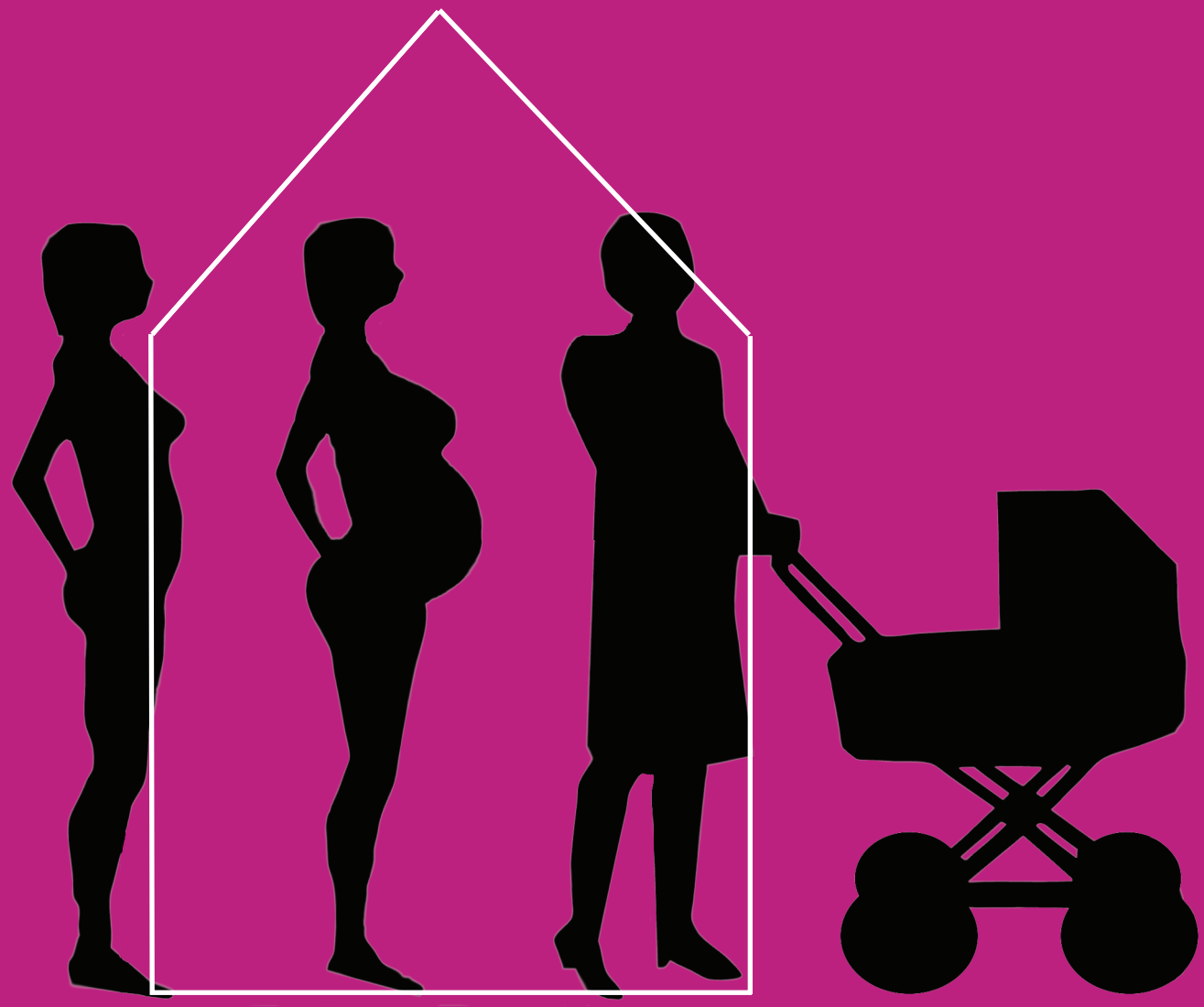
VITA NOVA *- new life -*

Design visions for the future of maternal health care



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CONTENT

Chalmers Technical University
Architecture: Master program
Health care and Housing
Master Thesis 2012

Title: VITA NOVA - *new life* -
Design vision for the future for maternal health care

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Roger Ulrich & Henric Benesch

Acknowledgement

We would like to express our gratitude to the many fellow students who saw us through our work: providing us with support, discussions, recommendations, reading our work and offered comments.

Thank you professor Peter Fröst for always encouraging and guiding us through all stages of our thesis work.

Above all we would like to thank the Swedish midwives association, especially Marianne M Nilsson, Ida Lyckestam and Monika Axelsson for enabling us and opening doors for us. You provided us with a tremendous amount of support, knowledge and enthusiasm.

Thank you!

Introduction

abstract

Since the 1940's the facilities for maternal health care are set inside hospitals. Hospitals are spaces designed for the ill, and by planning maternal health care in these facilities, pregnant women, though not ill,are exposed to the acute health care environment. The discoveries of Evidence Based Design have proved the connection between physical environment and clinical effects. This indicates the need for a new strategy. In the reports "A thousand voices for women's health", women stated that their hospital visits caused them to feel anxiety, fear and frustration (among other things). Some key factors that needed to be addressed were: reducing moving rates, promoting family to participate in patient recovery, and decreasing the feeling of isolation.

We suggest an alternative, to collect various maternal facilities and to separate them completely from hospitals (building, site and design). Further on, we propose that it is a good idea to combine maternal health care with the services of spa.

Based upon our analysis work, we have created some principles for the layout of functions and zones in a example of a maternity ward. The principles are general and can be applied to different building shapes and scenarios.

In our thesis the focus is put on the client room (patient room) and we research in how this space can change in its function by small messieurs.

We have created a high degree of generality and flexibility in a large and medium scale of planning. In the small scale (client room) we propose a detailed solution that can be transformed depending on the clients individual needs.

background

Health care is a very relevant topic in Sweden and Scandinavia right now are shown by the numerous investments being made in both new and existing health care facilities.

A large number of the existing hospitals in Sweden were planned between 1960- 80's. In the 90's there were some investments made for the refurbishment of these buildings. With the exception of a few, there has not been any new hospitals built in Sweden after the 1980's.

Due to the rapid development of technology and science (which are two important components) health care is one of the fastest changing sectors in our society today.

The demands on health care are different from what they used to be just some decades ago. A key factor is the shift in our attitude: we now focus on prevention and intervention more, rather than just treating the illness after the diagnosis is set.

During our third semester in MPARCH- at Chalmers we met Roger Ulrich who is the father of "Evidence Based Design". EBD is a method that integrates knowledge from different disciplines in order to establish measurable relationships between physical environment and its effects.

In the initial research done in 1980 Mr Ulrich presented a study done on patients in a surgical ward in Pennsylvania. In his case study, some of the patients had a view towards a green space, others against a bare wall. The researcher was able to show that the time for recovery and consumption of anaesthetics was significantly lower in the "green" group.

In "Evidence-based design for health care facilities" by Cynthia McCullough and co., the architecture-related factors that have been found to have positive effects on patient health are for example, contact with nature, low noise levels, views, access to natural light.

Since the 1940's it has been a norm in the western society to plan maternal health care to be spaces inside hospitals. These buildings are designed for the ill and by following this norm, pregnant women are exposed to acute health care environments. This standard leads to an attitude that equates pregnancy with an illness.

In the report "A thousand voices for women's health" women stated that their hospital visits caused them to feel anxiety, fear and frustration (among other things). Some key factors that needed to be addressed were: reducing moving rates, promoting family to participate in patients recovery, and decrease the feeling of isolation. These studies indicates the need for a new strategy for maternal health care.

During the second year of architectural master program, Healh care and Housing, we took part in numerous discussions among professionals and students. We debated about how to define the character of health care in modern society and its role in the future. A few argued that the space for health care could be connected and inspired by the architecture dedicated to service. A good example of this is the Maasland Hospital in Orbis, Netherlands where the large open space of a atrium is design like a hotel lobby and has the functionality of an airport.

The Dutch architect Henk de Jong has been involved in designing many new hospitals in the Netherlands. At a seminar at Chalmers in 2011 he gave his views on the development in hospital design:

- In the future hospitals will be built next to shopping centres or airport terminals. Partly it's about achieving maximum flexibility. But it is also about the fact that there is a shift in situation where the doctor's power is decreasing and the patient's power is increasing. The architecture must reflect through open solutions where the patient becomes more like a customer who seeks out health care"

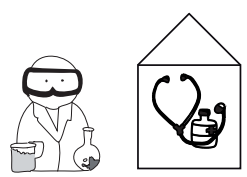
Therefore we suggest an alternative: to collect various maternal facilities and to separate them completely from hospitals (building, site and design). Furthermore, we propose that it is a good idea to combine maternal health care with the services of spa.

Maternity is a interesting topic, especially because it is such a existential question and a subject that we can relate to being young women. But what really made this subject appeal to us is the fact that the two of us have different cultural backgrounds (Islamic and Christian) and now we are settled Sweden (which is highly secularized country) so therefore our views are very eclectic.
Our discussions and designs are affected by this very fact and we made a conscious decision early on to investigate space that is equally appealing to all women no matter what their differences are.

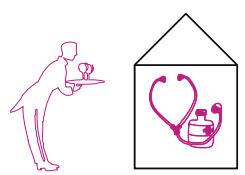
Historical events of Health care architecture

Late 1800 - present Sweden

Church & health care used to be highly connected just a few hundred years ago.



Science & health care have been inseparable from
the 1800's until today.



Could service & health care be paired in the future?

Until the early 1900's it was standard to give birth at home with the attendance of midwives. In the next coming 10 years machines (such as the x-ray) became more common in hospitals. The technical development meant that patients (for the first time) were moved between rooms of different functions (to access technical equipment). The medical technology advancements in 1920's created a opportunity for women to deliver babies in hospitals.

In the 40's, women were promised painless births in hospitals.
The procedure was also advertised as safe and sanitary and so the trend quickly became a norm in western societies. By the help of a injection of morphine and scopolamine women could deliver their babies in a amnesic condition, without the feeling of pain and loss of consciousness. The usage of these semi-narcotics later proved to have caused "Twilight sleep" in a number of cases. The term is applied to the combination of *analgesia* (pain relief) and *amnesia* (loss of memory). The drugs also had depressive effects on the central nervous system of the infants, resulting in drowsy newborns with poor breathing capacity *(Henry Smith Williams, Twilight Sleep)*. Moreover, deliveries included forceps, surgical instruments, confinement to bed, enemas, pubic shaving and arm and leg restraints.

In 1946 the Swedish government made some health care reforms and free hospital care was introduced.

1960's was the time of changes in design and organization of health care building in Sweden. Health care facilities went from being smaller independent organizations based in city centres, to grand institutions with pavilions structure based in the suburbs.

Between the 1960-1980's the economical growth of Sweden was remarkable and the government invested a lot in the social welfare. The architecture standards of this era was functionalistic and pragmatic.

Around the 1970's another big change started to take place; father wore for the first time allowed to accompany their partners in the delivery rooms.

Between 1970 and 1990's the number of planned surgical births increased in the western world.

During the 1990's Sweden went through two medical reforms: changes in the organisation in elderly care and cut downs in the psychiatric care.

Nowadays in Sweden the hospital and home births are the two most common alternatives for labour/ delivery. There are also a couple of alternative choices for maternal health care, such as BB- Stockholm., Födelsehuset and ABC clinic

history

Delivery procedures have changed dramatically over time.
Now mothers can explore many birth giving options from hospital deliveries to alternative maternal health care to home births.
Also, the birthing experience has changed with the presence of the partner, where it is encouraged for them to be fully involved in the labour process for emotional and physical support.

According to "Evidence-based design for health care facilities" by Cynthia McCullough, there are many benefits of promoting family to participate in the patient's healing process. In the case of maternal health care, the effects for example include reduction in: pain medications, caesarean section, and vacuum extraction and forceps.

There are a range of alternatives being introduced to promote the reduction/ elimination of medication use during delivery. Some of these include for example deep breathing, using a birthing ball to bounce or roll, different body positions, stretching, and walking. Other drug-less methods are rhythmic motions like rocking and swaying, sounds of chanting, humming, and singing, listening to music, and submerging in warm water.

History of spa

Ancient rome to present Sweden

The Latin title "Sanus Per Aquam" aka "spa" means "health by water"
The concept of spa can be traced back to ancient Rome, where the thermal baths were used for the cause of relief, relaxation and recovery.
Today the name goes hand in hand with the term of wellness which was stated in 1959 by Dr Halbert Dunn.He merged two terms; fitness and well-being. to create something called "Wellness" He meant that both body and mind needed to be in equilibrium.

A modern SPA offers a variety of treatments including massage, steam therapy, aromatherapy, sauna, acupuncture, yoga, mediation, skin therapy, medical hand and foot care, aesthetic treatments etc.

VITA NOVA -New life

Design visions for the future of maternal health care

The title stands for a metaphor marking a new stage in one's life.
A birth is not just having a child: it effects the parent/ parents/ family in every aspect of their life. The title has been chosen to point out that the action goes beyond just the act of giving birth and having a baby. It also marks out that the architecture dedicated to this moment must extend beyond generalizing the topic as purely medical and technical. *New life* will be given to the architecture as well, in order to foster an optimal environment for birth.

Why?

According to EBD the physical environments that surround us have tremendous effects on our mental and physical health. In the case of pregnant women, stress/ stressful environments can lead to premature births. Studies have shown that prematurely born babies stand a higher risk for allergies, weaken immune system and some emotional disorders. In the case of the mother, it can lead to trauma, depression and emotional detachment from the child.

In the report "A thousand voices for women's health" done in Canada, researchers investigated in what women want from future hospitals. The studies marked the following common desires

- Sense of belonging
- To be provided with options and the freedom of choice
- Prevention rather then treatment.
- Focus on wellness, not illness
- To be seen as a person, not just another patient
- Feel special

We wish to create a design vision for the physical environment of maternal health spaces so the number of positive outcomes (in health, social aspects and finance) can be increased.

We believe that our proposed hybrid solution can be a alternative approach to meet the demands of futures clients. Hopefully by this action, a more healthy attitude towards pregnancy/ maternity can be promoted.

What?

We are proposing a design vision for future maternal health care as an alternative to current standards.

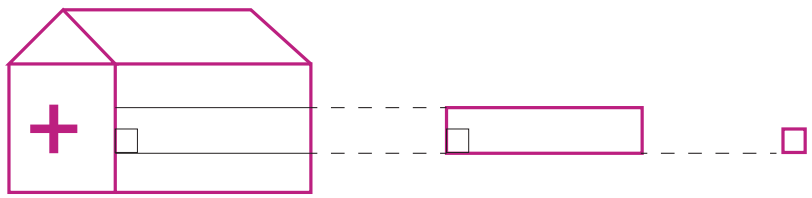
Our vision is specially created for Sweden with a 20 year perspective and the report consists of analysis and design.

A part of our concept is to introduce a hybrid: the combination of maternity health care with the services of a SPA. In our proposed alternative, we collect various maternal facilities and separate them from hospitals.

Maternity is not an illness. In this thesis the care receivers of maternal health care are referred to as "Clients"

After taking part of some studies/ literature, the idea of pairing the services of a SPA with space for maternity seemed natural to us. SPA offers space for recreation, where one can turn to when seeking harmony in body, mind and soul.

Early on, we decided to start a blog about our master thesis. There we document data from study visits, diary, internship reports, workshop reports etc.



Large scale:
Organisation of hospital / Hospital

Medium sclae:
Departments/ Ward

Small scale:
Room

In an interview for "Läkartidningen" Peter Fröst, professor in Architecture- Health care and Housing at Chalmers, stated that the most important findings of Evidence Based Design are those linked to the single patient rooms.

We agree with Peter Fröst and see the patient room as a first and arguably the most important step in finding better alternatives for maternal health care. Therefore we have focused our research on a single patient (client) room design. It has great potential for positive change in regards to technology, adaptability, functions, social, cultural and individual aspects.

How?

To maximize the number of positive effects, we have applied the following principles of Evidence Based Design in our work: close connection to nature, natural light, usage of natural elements/ materials, promoting clients integrity, freedom of choice, family centred care and reduction the number of transfers between different rooms.

Our ambition is to create a proposal that allows flexibility in three different scales of planning.

Large scale
We are working with a rational modular system and this structural approach creates the possibility to investigate different configurations of units on a larger scale.

This flexible attitude creates the possibility to try out different versions of (geometric) volumes, landscapes, and urban placement.

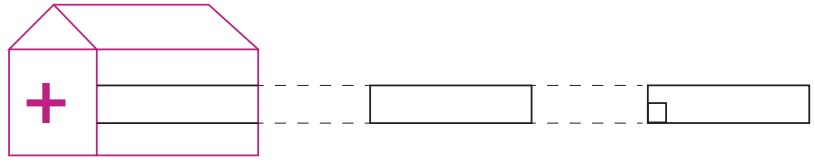
Medium scale
By analysing the different function, connection, flows and zones of various maternal wards we create a vision for the layout in a future ward. This layout is general and can be applied to different configurations of wards in maternal departments.

Small scale
The room design is created by applying different demands of for example Normal delivery, Postpartum, checkup, spiritual room (prayer and farewell), minor NeoNatal, documentation, information and consultation room in one space.

Aims

We wish to propose a valuable design vision for the future of maternal health care. The design is created with the ambition to increase the number of positive effects of the client's health.
Our goal is not only to provide a collected hub for maternal health care, but also a relaxed and inviting place for women to turn to during all stages of pregnancy.

We hope that our thesis will help start a discussion about maternal health care among different social groups. The blog is created with the ambition to reach a larger group of people.



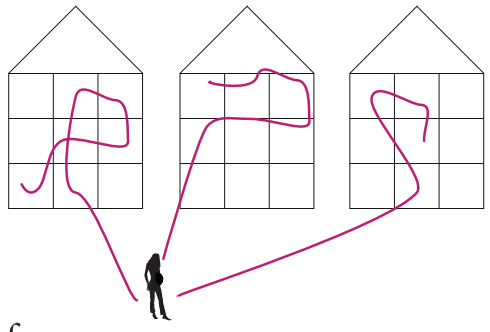
Strategies in Large scale

Both the analysis and the design work are created by the help of several Evidence Based Design strategies: close connection to nature, natural light, usage of natural elements/ materials, promoting clients integrity, freedom of choice, family centred care and reduction the number of transfers between different rooms.

The collaboration with Swedish midwives association (Barnmorskeföreningen) has been key in understanding the situation of current maternal health care in Sweden. In addition to that, we have made interviews, internships (at maternal wards), workshops and study visits in an attempt to understand the need and demands of both the clients (patients) and the care givers.

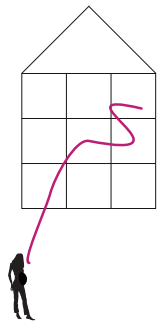
The workshops that we have made investigated different topics:
Workshop 1: Client room
Workshop 2: Qualities
Workshop 3: Study of shape
Workshop 4: Modular system

To achieve a high degree of flexibility in structure we have worked with a modular system.



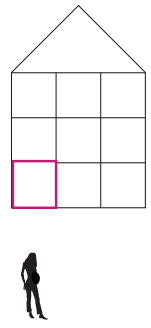
Before

In the Hospital of the 1950's and 60's the departments for diagnosis, surgery and recovery were made at separate "stations". The patients were moved from one station to another. The entire birth process took place in the hospital, and the length of stay was long.



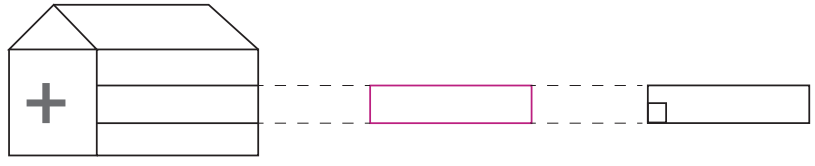
Now

Nowadays we are aware of the effects of patient transfers. Unfortunately, due to the fact that up until just recently focus has been on refurbishment of existing health care facilities, this problem could only be dealt with on some few levels. Today it's more common that patients move between different wards of the same department, for example, from delivery ward to postpartum ward.



Strategy for future

Judging by the studies made about the effects of patient transfer rates, we believe that it would be a good idea to create as much multi- functional space as possible. This would not only reduce the moving rates, even out the workloads within departments, but also improve the relationship between care giver - care receiver.



Strategies in Medium scale

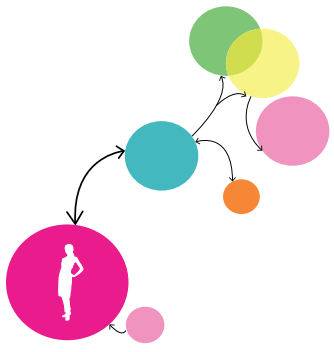
There are three main categories of users in health care environments: care receivers, family/friends of patient and care givers.

Studies show that the care receiver group power less, isolated and exposed in hospitals. The family/friend group often feel ignored and excluded due to hospital policies and regulations.
In an interview with the care givers at Östra Sjukhuset, staff expressed that some current regulations in wards result in the staff having to

deal with issues that do not necessarily require their involvement (for example kitchen chores, fetching equipment/ tools/ textile, going outside, entering a ward, taking a bath etc)

Keeping this in mind,our strategy is to study the role of
of these three groups and to improve the relationship between them.

We try to empower the client by providing them with choices, creating opportunities to stay independent and promoting the clients integrity. We believe that this approach will not only result in a better experience for all parties, but also help to improve the efficiency in a ward- when the staff puts their energy into medical labour and patients feel in control.

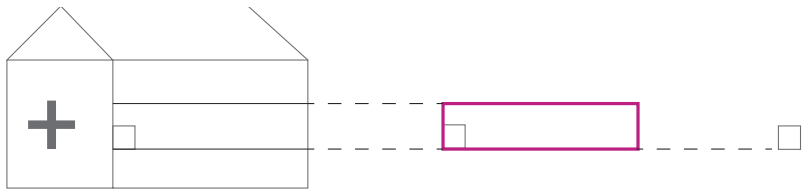


Today

Most of the functions are reached through staff. The connection to the outside world is often limited and the medical restrictions makes it difficult for family members to participate in the recovery of the patient.

Future

A family centred design invites and enables family members to participate in the recovery process. Patient has direct contact to as many factors as possible (outside world, staff, storage, recreation etc).



Strategies in Small scale

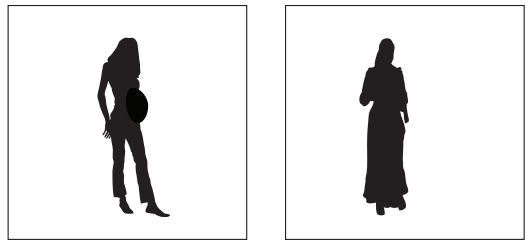
In current maternal health care facilities single patient room are not promised. The size of the client room varieties from hospital to hospital, but a common factor that these facilities share is the fact that the room is not designed from the patients point of view. Usually there is a lack of space for (care receiver): activities (reading, siting, surfing on the internet, etc), storage, bath and partner/family.

The institutional character is prominent and so patients are faced with medical/ technical equipment.

We propose that all rooms are designed from the clients point of view, generous in size and have a multi- functional approach.
Our design vision collects different functions: checkup, delivery, bath, postpartum, minor NeoNatal, spiritual acts, consultation and recovery, into one sole space.

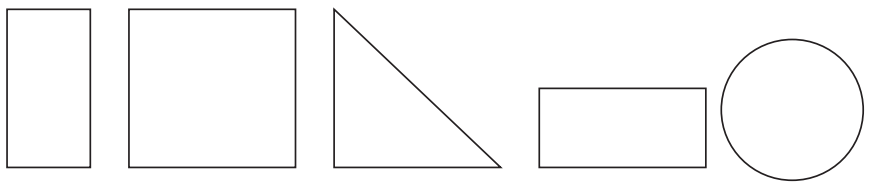
Today

Single patient rooms are still not a a standard in Swedish health care buildings.



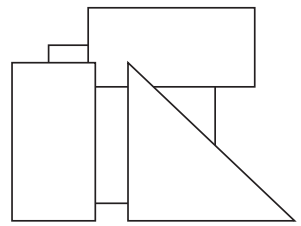
Future

We propose that all rooms for care receivers are single rooms of generous size, all client rooms should have access to private wc/ bath and space for recreation.



Today

Clients of maternal health care usually transferred between five different types of rooms in hospitals: checkup, bathroom, delivery room, postpartum and minor neonatal.

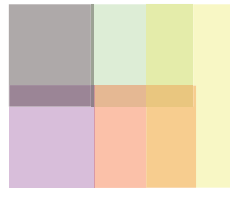


Future

We suggest a collected multi- functional space for checkup, delivery room, bathroom, postpartum, minor NeoNatal and consultation. This will reduce the transfer rates of patients.

Today

Clients of maternal health care use the space of four different types of room. Separated functions creates a need for approximately 80 square meters per client.



Future

By collecting different functions in one room, the total number of square meters per client can be reduced.
This will help in reducing costs of the facility.

Analysis

fragments from diary

The collaboration with the Swedish midwives association (Barnmorskeföreningen) has been key in understanding the current situation of Swedish maternal health care. In addition to that, we have made interviews, internships at maternal wards, workshops and study visits in an attempt to understand the needs and demands of both the clients (patients) and the care givers.

Internships

Thanks to Barnmorskeförening, we have had the privilege to make internship and work 8 hour shifts as midwife helpers, assisting a few deliveries.

"The first thing I noticed is that the staff is very flexible with their schedule and they always adjusted their time to patients' needs and demands. This means that they can be booked for one ward in the building but then depending on the situation they have to be in another ward. At "Ö" the different wards are located in various parts of the building so when we tried to map the staffs walk paths they showed very irregular patterns"

"...my beeper went off and the room-number I was assigned to for some hours of my shift flashed and vibrated through my blue outfit. My heartbeat rose when I saw Marianne running. She waved me in from a distance, smiling.

...the mother's contraction became more intense within five minutes and she was given nitrous oxide.

There were two screens in the room, showing the mothers and the baby's heartbeat. I hadn't had the chance to meet the head midwife in advance... The head midwife thought I was a medical student so she asked me for assistants...
I couldn't find the courage to speak so I did as she said. As I held and stroke the mother's leg to reliev her discomfort and I made an attempt to give her some telepathic assurance. I noticed that she was staring at her own reflection in the ceiling boards. I wondered why the boards exactly above her body had a glossy surface. I got my answer when the baby "Al" came out with a splash. Obviously they had been changed because of hygienic reasons and they glossy surface allowed the staff to clean them instead of having them replaced after every other delivery. They also had a unexpected positive effect on the patient, when she saw her reflection in them she was distracted by the image and this also gave her a sense of control of the situation which calmed her down"

Sana
29 jan 2012

"...When Marianne gave me the characteristic blue clothes and a pager, I felt like I was a part of the team. I was very moved and enthusiastic. By following Marianne and the other midwives, I was tracking their work. The staff knew why I was there and they was very helpful and welcoming. ...During my shift I helped out with three deliveries; all of them were different and unique.

At 15.00 Marianne got a new patient... The mother-to-be was in a lot of pain and quite far in her delivery, so the whole event proceeded pretty fast. I was amazed by Marianne, in only a small amount of time she was able to make real connection with the patient. Her voice was warm and calm and the women easily put their trust in her. After checking the condition of the patient we went to prepare some drinks for our new guests and also to bring all important equipment needed during delivery. Up until that time I hadn't realized that the midwives (due to poor planning) have to do a crazy amount walking/ running around the ward. Sometimes just for picking up equipment, medicines or towels for the baby. One could compare it with a hard work out session at the gym. I asked Marianne if the staff felt exhausted but she answered me with a smile. "I know that it is pretty extensive but sometimes it is good to be able to stretch your body and have the possibility to take a walk" Another delivery started and even this was a quick one. This time I even got to help the care givers by supporting the patient, holding her leg through contractions. It is hard to describe what I felt. It wasn't as scary as I thought, I was more excited and surprised. I was carefully observing the whole process, watching the people in the room move around... The patient's belongings were lying on the floor, which hindered the efficiency in the room...
... finally the baby was born. This was a magical moment that I will never forget. As soon as the mother saw her lovely baby girl, it seemed as if all the pain disappeared instantly.

...I hope that I and Sana will find a better solutions for the building and its facilities. We should consider the midwives working conditions and create opportunities for them.

At 20.30 I left the hospital with a lot of positive thoughts and felt determined to make a good proposal.

Aleksandra
8 feb 2012

Study trips

For the purpose of knowledge, quality and inspiration, we have made a number of study trips to different health care facilities in Sweden.

- BB Stockholm at Danderyd Sjukhus
- NeoNatal & IVA at Karololinska Sjukhuset
- Maternity wards & Childrens hospital at Uppsala Akademiska Sjukhus
- Infection Clinic, CRC & Women clinic; Malmö Sjukhus
- Operation ward at Sahlgrenska Sjukhuset

Visit to Östra Sjukuset

- *Staff rooms should be close to patient rooms so that the staff doesn't have to a long way to run in case of emergency.*
- *Coffee room can be combined with working/ computer stations. This provides the opportunity for the staff to have discussions in an unofficial and relaxed way, CTG screens (Cardiotocography) need to be there.*
- *Some part of the coffee room should be able to make separate for more heavy discussions .*
- *Staff should also have a separate resting area (for before/ after in-between working shifts) this area should not be close to the patient's area.*

Art on walls

•Today the "Ö" in general has very little art. Also the art has not been thought through as there is no art with nature themes.

Regulations

Patients are allowed to have maximum 2 people with them to the delivery ward, usually it's their partner. The restrictions are to avoid risk for infections.

•While in delivery the family is assisted by a team of three: one head midwife, one second midwife and one nurse's aide.

In general

•Staff expressed that they would prefer a solution in which one room could easily be reused for different functions. Patients could have one room dedicated to them from the beginning to the end (before delivery, during delivery and post-delivery).

•All different delivery wards should be at one floor level.

•Staff should have areas dedicated for them. The changing rooms are today in the culvert in a basement".

Jan 2012

Visit to BB Stockholm

"Their philosophy is to put focus on the new family by providing support, guidance and encouragement in parenting. They are engaged in health care during pregnancy, childbirth and also have gynaecological outpatients.

There are two wards at the clinic, maternity (floor level 9) and postnatal care department (floor level 4).

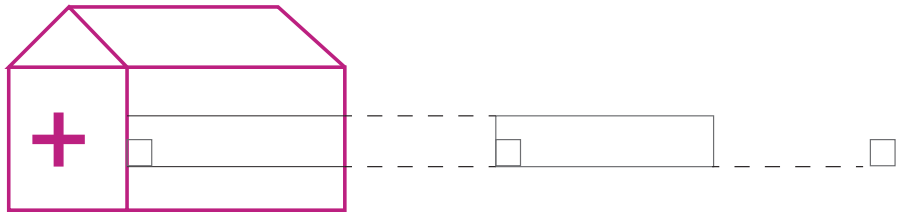
Walls have a soft green tone and together with the "wooden" floor, nature motived art and the subtle niches in the corridor relaxes the visitor at once.

The patient rooms have two characters: the "birthing room" and the "family room". The "birthing rooms" have activating symbols, bright colours, furniture and items that communicate strength, hope and courage. The "family room" has a more laid back character with softer light and furniture for rest.

All rooms are single patient rooms of generous size, private WC and shower. The family rooms are designed in a way so that a family of four can stay in the room overnight"

24/03-2012

standard case of delivery



Large scale

Nowadays in Sweden the hospital and home births are the two most common alternatives for labour/delivery.

Studies done by Pat Jones (Certified Nurse Midwife from Houston, Texas) have shown that a large group of women find the institutional character of hospitals stressful and uninviting.
Some of the components that cause stress are exposure of technical/medical equipment, other patients in acute medical situations, sterile atmosphere, lack of contact with nature/ and natural elements. However, there is also a group of women who will feel safe in hospitals environment. Hospitals are thought of as highly qualified and professional organisations due to the fact that one is offered the highest quantity/quality of advanced equipment and medical staff.

Hospital

The first contact between a pregnant woman and the care givers usually takes place between the eight - twelfth week of pregnancy. Usually the two parties set up time for an introduction set in a maternal health care environment. During their first meeting, both parties have a sit down to set up a "birth plan" where they book check-ups and information meeting for the whole pregnancy. The mother-to-be is provided with informations about different alternatives, rules/ regulations and outcomes.
She is also asked to chose the hospital she wants to deliver in, and consider who she wants to be accompanied by during labour and delivery (normally it is max 2 ppl).

When the labour starts, the women/partner/family contact the hospital to inform them about the situation. Thereafter, caregivers suggest the next step.

At arrival to the hospital, the woman and co. meet up with a midwife. The caregiver examine the woman's blood pressure, temperature and urine. They also listen to the baby's heartbeat in order to determine the stage of labour.

Alternative centres for birth/ support

Although *BB Stockholm* is technically connected to Danderyd Hospital it can still be regarded as an alternative maternal health care centre. BB- Stockholm consist of two wards; normal delivery and a postpartum ward. The design is created by the help of midwife and author Gudrun Abscal and their philosophy is to focus, and welcome the new family by providing support, guidance and encouragement in parenting.

But this option is not available for all women, only non- overweight, normal pregnancy and vaginal delivery are admitted.

Födelhuset in Göteborg is a nonprofit organization that offer women assistants and support in psychological, educational and legal matters of pregnancy. They also offer the contact with trained and experienced women of different ethnic origin like "Doulas". These women fill the function of "cultural bridges" between mothers to be (mostly non-European women) and midwives.
According to a research made by Sharareh Akhavan
(Medical Dr, PhD) and Ingela Lundgren (medical PhD), the support of Duolas offered to women with Somalian background decreased usage of pharmaceutical anaesthetic and helped in reducing lowering the rates of caesarean sections.

Another alternative to hospital birth is the *Alternative Birth Care (ABC)*. The idea is to let women give birth in a more home-like environment surrounded by family and friends. The women are not exposed to any institutional equipment/ furniture.
However, not everyone can use the services of ABC. Only women without any known health problems and "normal pregnancy" are admitted to the centre.

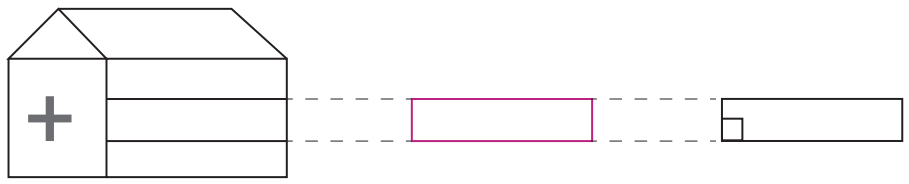
Home birth

The number of home deliveries in Sweden are increasing. When asked, women that have chosen this option express that they preferred to deliver in a place where they felt safe and comfortable.

The requirements for a home births are simple, the women are asked to pick a room/ space to deliver in, which has access to water and telephone. The presence of a midwife and partner/family is important. All necessary medical acquirements are provided by the midwife

The option of home delivery is not available for everyone. No first time deliveries, twins or pregnancy with complications are allowed.

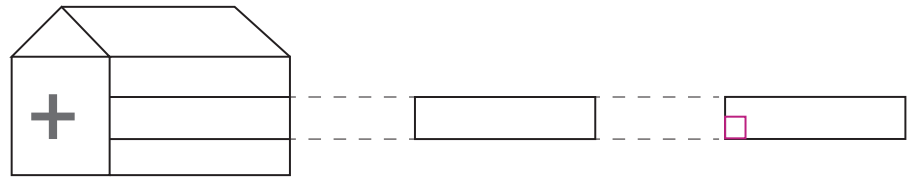
standard case of delivery



Medium scale: Hospital births

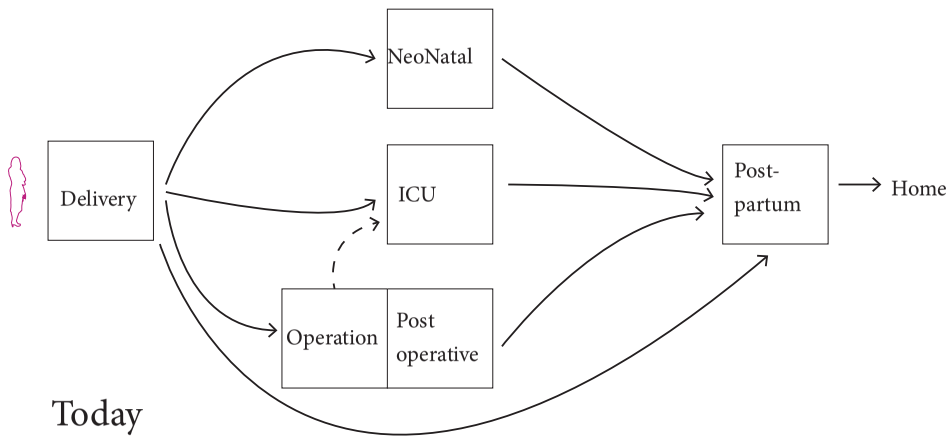
In hospitals, women start their birthing process
in a delivery ward. Depending on the character of the delivery,
the women can be moved to a secondary ward as for example:
NeoNatal, ICU and operative care. The time of stay in these secondary
wards depend on the state of health of the mother and child. When
they are out of risk, mother and child are moved to
a postpartum ward.

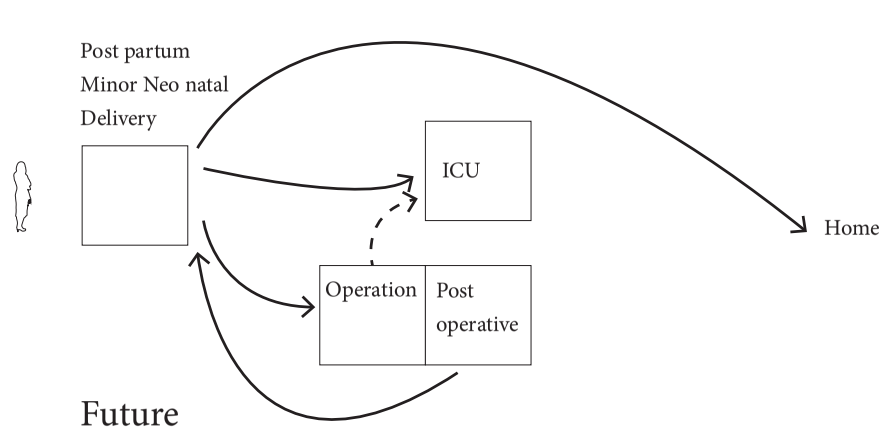
In a standard delivery case (without any complications) the woman is
moved directly from delivery to the postpartum ward.



Small scale: Hospital births

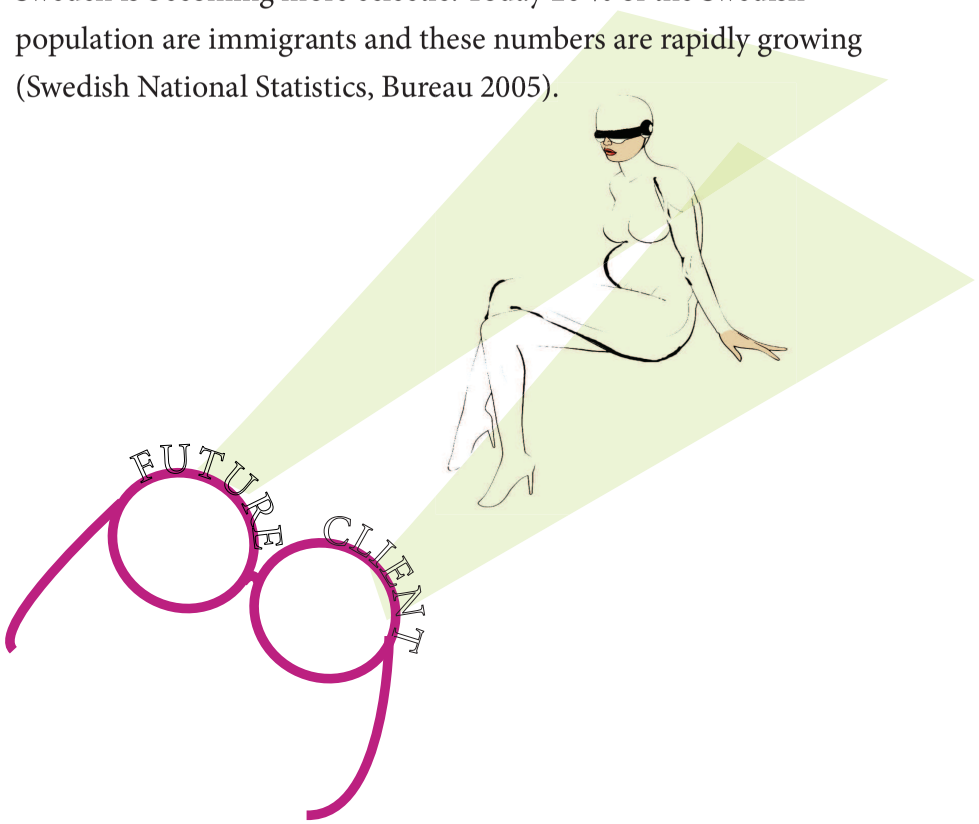
When the woman is assigned to a delivery room, the space is already
prepared for the delivery. On entering, the woman is immediately
confronted with medical and technical equipment such as nitro oxygen
tube, electrical apparatus, etc. The interior includes a delivery bed,
small closet, computer, two screens for monitoring, wash basin, seating
for spouse/family/staff, small movable table (for doctors equipment)
and a larger operation lamp.





This illustration shows the flow of patients in maternal health care today.

Sweden is becoming more eclectic. Today 20 % of the Swedish population are immigrants and these numbers are rapidly growing (Swedish National Statistics, Bureau 2005).



Nowadays people travel more easily and frequently. This creates a situation where disease can easily be transported between different parts of the world. This has a large impact on the population's health and due to globalization health care/ staff need to have a higher degree of competence (EBD for health care facilities by C. McCullough)

Easy access to information (for example by internet) creates a shift of power, where the care receiver group become more aware and demanding.

Marc Michel *(managing director of digital solutions agency)* believes that in the future, patients' health records will be more easily accessible to both caregivers and care receivers. The director states that *"patients will be much more empowered to make choices about medication, surgery, prevention, and intervention, taking into account their unique circumstances and preferences."*

In the report *"The future of health care in Europe"* the author explains that the future population is expected to be more overweight, which leads to multiple health problems and complications.

Biologically the best time for women to give birth is around 17 years of age, yet, in the western societies it is not unusual to give birth for the first time after the age of 30. Research has shown that women after 34 suffer more complications during pregnancy/ delivery.
The number of this high risk group is expected to rise in the future.

The report "*Midwives' experiences of doula support for immigrant women in Sweden*" shows that immigrants from no- European countries stand a higher risk for death of infant during/ after pregnancy. The research also points out that the cause of death in many cases are for example: poor communication between caregiver/ care receiver, cultural differences and lack of self confidence in the care receiver group.

workshop 1

Client room

This is an initial part of our analysis work, in this workshop we investigate the possibilities of a future client room. Focus is put on trying to find a suitable “partner” for future maternal health care.
We started with a brainstorming sessions which resulted is many unexpected themes. After going thought a number of choices we decided to investigate four themes in more detail; nature, culture, service and home. The next step was to visualize each theme and then discuss the possibilities and limitation of each theme.

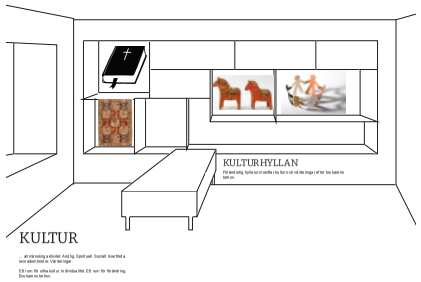
The workshop was done in an collaboration with two fellow student of MPARCH, Saga Karlsson and Anna Wrener.

Nature

The element of nature is important. In Hospital it can be tricky to fit in due to health restrictions. Nature can be brought into the building by using natural materials.

Culture

A “cultural shelf” changes appearance depending on the users state of mind. Patients can find support for his/her tradition, rituals, culture, religion, social standards etc in this piece of furniture.

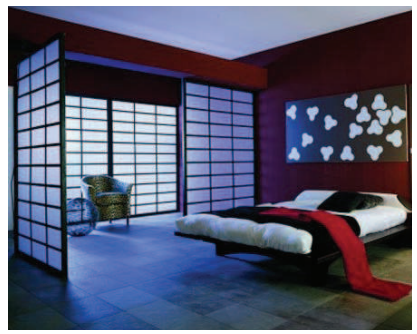


Service

Imagine that the patient is a customer. Provide the best service to achieve good business. Both for visitors, SPA and restaurant/ Café are essential.

Home

Privacy, colour and easy access to the outside (garden, nature and light) makes a patients feel at ease.



Scale of categories of client room

In the second part of workshop 1 we investigated different scenario's of a future client room. A scale of categories was created and we tried to clarify the character of our future vision.

The scale ranges from the most impersonal room; the "Institutional room" and ending with the most personal room "Sea room"

For the future design we decided to continue on developing ideas between scenario 2 and 3 (the professional but not non- institutional room and the cultural and home like room).

Scenario 1: *Institutional room*

Scenario 2: *the professional but un- institutional room*

In our project the rooms are created as a mix of scenarios 2 & 3.

Scenario 3: *The cultural and home like room*

Scenario 4: *The theme room*

workshop 2

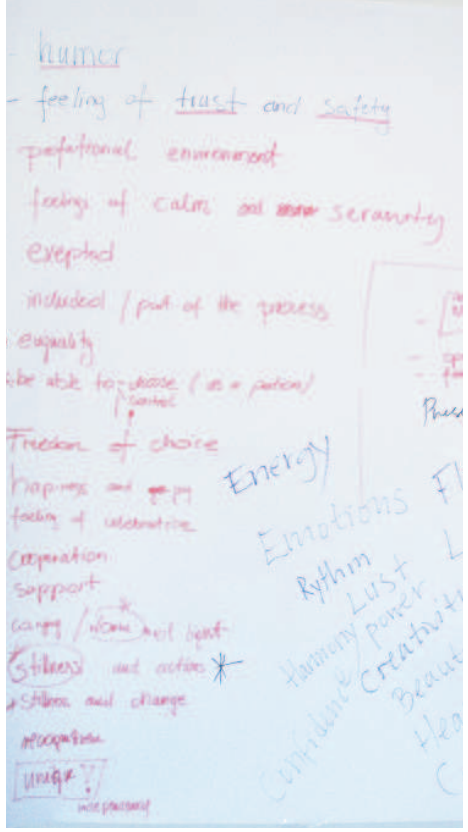
Qualities

In this workshop we tried to connect emotional terms to physical elements. E.g. What would “safety” be if it was an object in a client room. Furthermore, we investigated the connection between different items in a room, and functions in a typical floor plan.

The workshop was done in a collaboration with fellow students of MPARC Chalmers; Shadi Jalali Heravi, Anna Wrener & Saga Karlsson. And midwives; Ida Lyckestam Thelin, Monika Axelsson & Marianne M Nilsson.

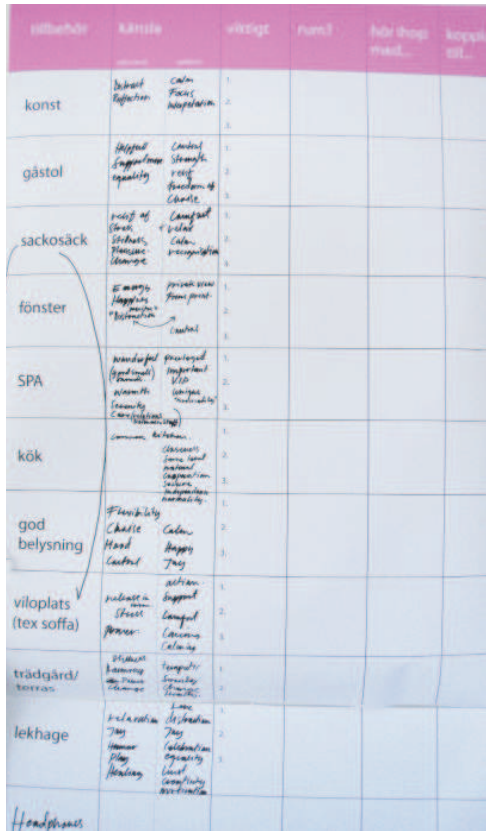
Valuable emotional terms

We divided our selves into to two teams; one care receiver team and one care giver team. Both took turns in naming valuable emotional terms in a health care environment. Surprisingly both teams stated similar terms. Trust support, safety, equality, joy, freedom of choice, serenity were mentioned several times.



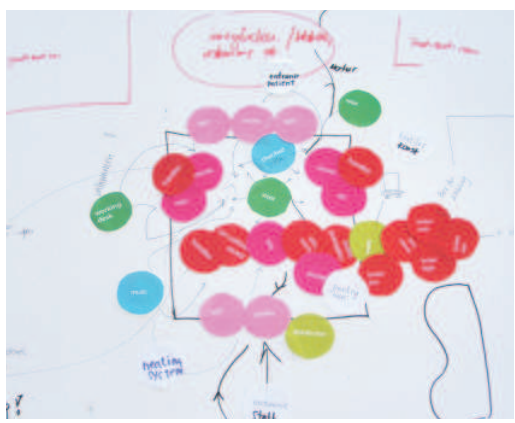
Emotional terms vrs Physical elements

The teams were asked to connect emotional terms to physical elements. This showed that technical equipment (tv, music, computer) is something that gives positive effects only if it is used and placed in a proper way. Natural elements almost always resulted in gave positive effect. Freedom of choice , and equality between the two teams aloud the two groups to connect in a more natural and relaxed way.

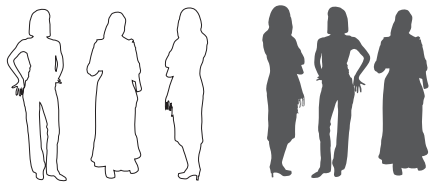


Connection between items - Patient room

The care giver team had the task to puzzle with various items to create a perfect patient room. The result showed that the connection to the outside was key, both by windows, light shafts and terraces/gardens. Another important discovery was the wish to create zones; starting with a “public” zone near the entrance to becoming more private towards the facade. Technical equipment was collected and set as a border between private and public.



The first part of this workshop helped us to define the most important factors in maternal health care. The three most valuable emotional qualities for the care receiver group proved to be equality, freedom of choice and V.I.P treatment.

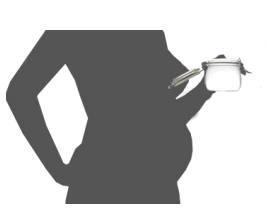


Today

The current standard is to treat care givers and care receivers as two separate groups in health care buildings.

Future

We suggest that these two user groups share more space with each other such as for example: day rooms, kitchen, recreation area etc.



Today

The client is not provided with many options (empty jar) and most factors of interior are pre- decided (light, temperature, style etc).

Future

Clients should be provided with options (such as light, temperature, style of client space etc).

Today

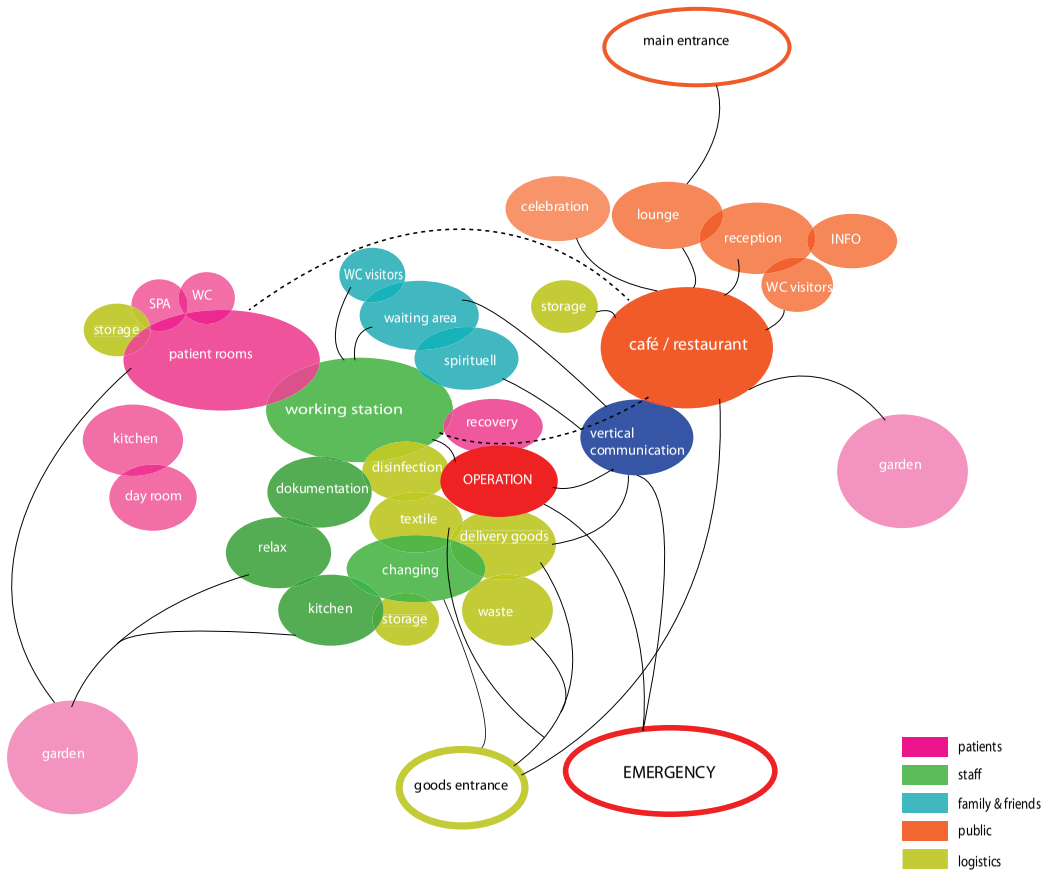
Client stands the risk of becoming one of many patients- anonymous.

Future

Client should feel special, important and treated as a VIP.

Pre- study

Previous to Workshop 3, we made a functional flower, mapping different rooms in a maternal ward. Our ambition was to compare our ideas to those proposed by midwives and fellow students.



Connection between functions - floor plan

Team “patient” played with the connection between different functions in a floor plan. They separated the total flow to/ from the building in to 2 categories; main entrance & a side entrance. Main entrance was to be used by patient, family & visitors. Side entrance for staff, emergency and goods delivery. Result showed that the connection to the outside was a key factor. And the wish to create private/ public zones was obvious even here.

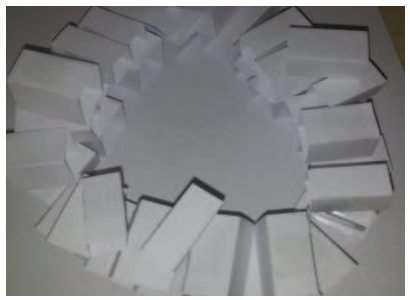
workshop 3

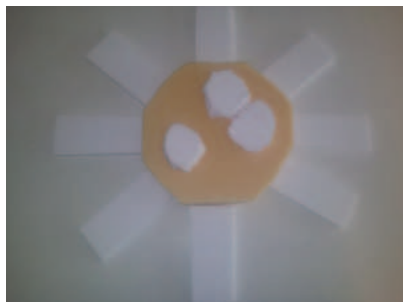
Study of shape

In this workshop we tried out different volumes to investigate scale, flexibility, and connections between the wards. Our ambition was to analyse a different configuration of the shape which could help to achieve: connections with nature, good light conditions and be able to fit in different shapes of sites.

Central Core

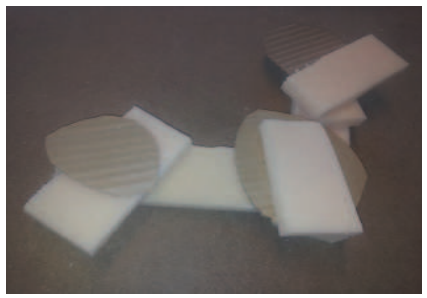
Small units it's are repeated and placed in different organic forms. The volumes have one public central core (reception/service/ ministration) and private units such as wards and/ communication point.





Vertical layers

Pieces of material are stacked on top of each other to create several central points. The different shapes/ materials represent different functions.

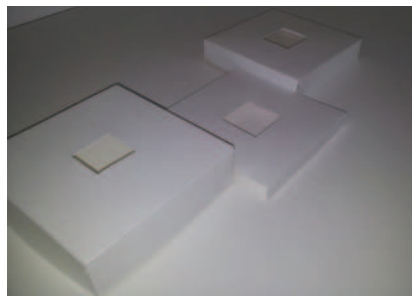


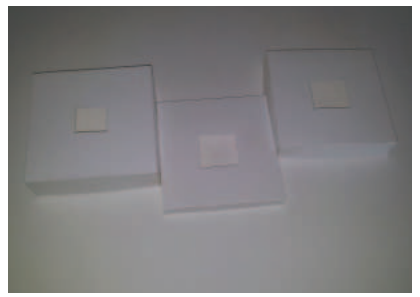
Separate units

A small rational unit with one central core is created and repeated. The units are placed out without any obvious connection to each other.

Collected units

Several units, each with its own central core, are placed out with a close connection to each other.

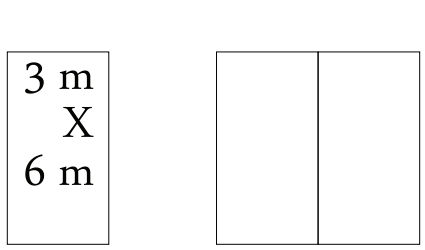




Modular system

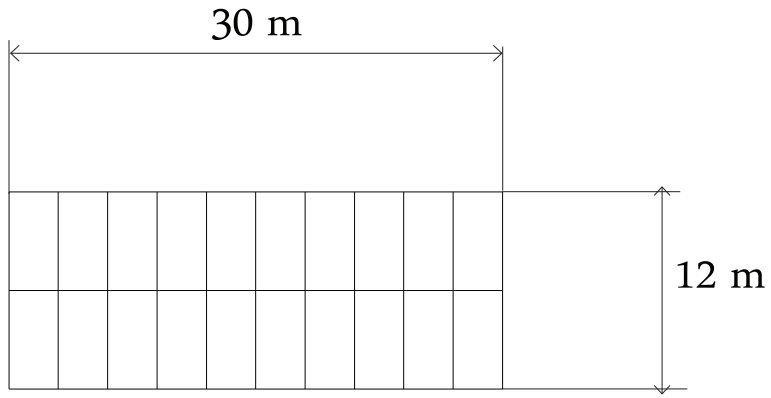
To offer a high degree of flexibility we are working with a modular system. Each module is 3 m X 6 m (a common module size) which works well with many prefabricated components in buildings today.

More so, we found the size to be good for creating a multi- functional client room. Based upon our analysis work (study visit, workshops and research) we believe that we need two modules to create one client room.



Two modules are required to create a client room.

We then created a typical base unit to play with. It consist of 20 modules and the dimensions are set to insure natural day light through the unit and too avoid long corridors.



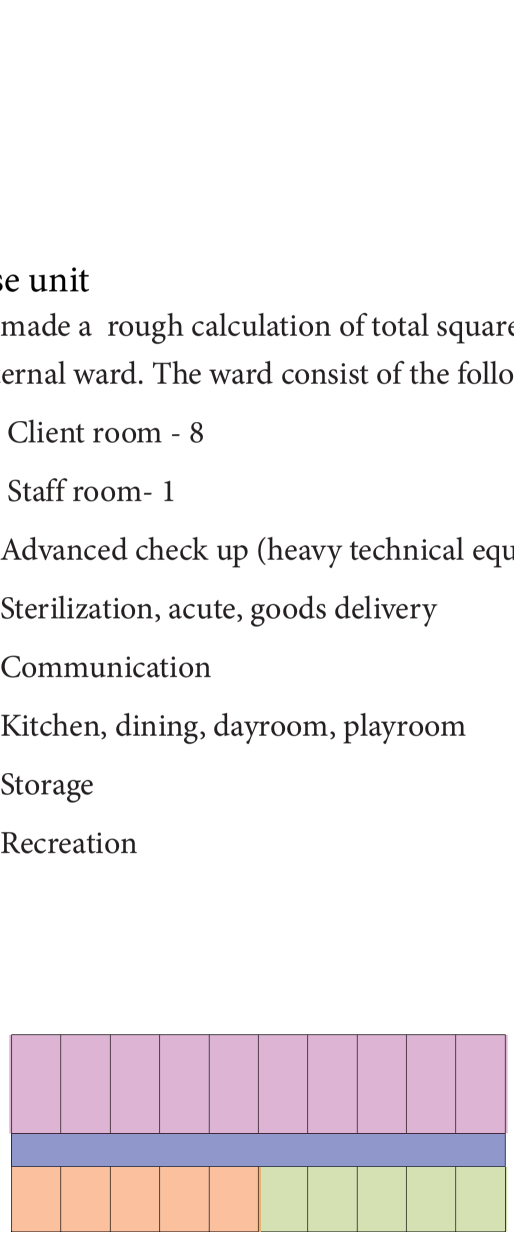
Base unit

We made a rough calculation of total square meters in our visionary maternal ward. The ward consist of the following room/ rooms

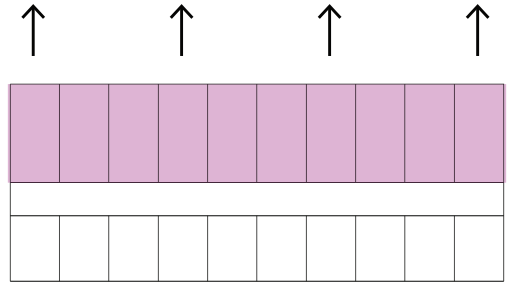
- Client room - 8
- Staff room- 1
- Advanced check up (heavy technical equipment)
- Sterilization, acute, goods delivery
- Communication
- Kitchen, dining, dayroom, playroom
- Storage
- Recreation

The rooms can be categorised in 4 different zones; client zone, staff zone, common facilities and core functions/communication.

- Client zone: client room, storage & recreation
- Staff zone: Staff room, working stations , storage & advanced checkup
- Common: Kitchen, dining, dayroom, playroom
- Core functions: corridors, vertical communication, delivery goods, sterilization, acute room



The division of the four zones in a one base unit.

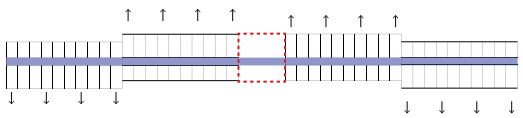


The patient zone open ups towards the outside.

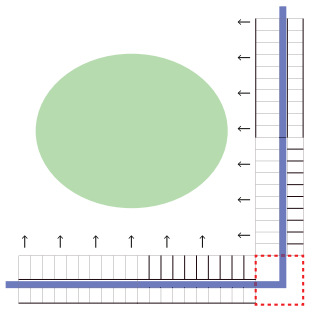
Configurations of base units

According to our estimations, we need 4 base units to create one ward. The following diagrams show different possible configurations of 4 base units (one ward).

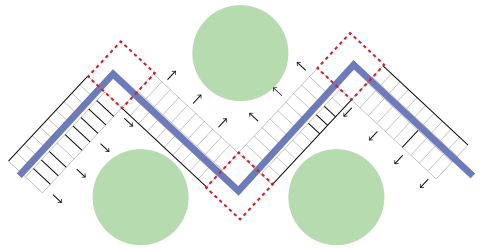
We analyse the qualities and limitations of each configuration. Focus is put on: possible entrance situations, monitoring, movement /distance and formation of outside space. Another important aspect is wether it is possible to repeat the configuration to form a whole building (consisting of multiple wards) for maternal health care.



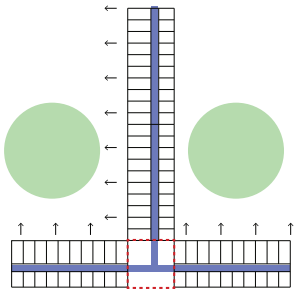
"The straight line" -gives static movement through space, long distances.
Entrance can be set in the middle. One nurse's station is required for monitoring.



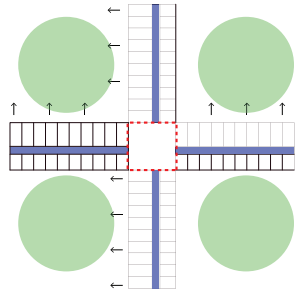
"The L" gives a semi static movement through space. Entrance can be set in the breaking point. The ward can be monitored from one point. It is possible to create a more private green space between the arms.



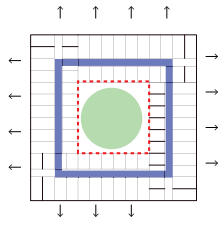
"The zigzag" - playful movement through space. The configuration allows three "natural" entrance situations (due to the shape)). Two nurse station are required for monitoring the ward. Possibility to create three different green areas. Limited overview and long distance between the ends.



"The upside down T" somewhat disrupted movement Entrance station is set in the crossing. One nurse station is required to monitor the ward. The shape "frames in" two green areas.

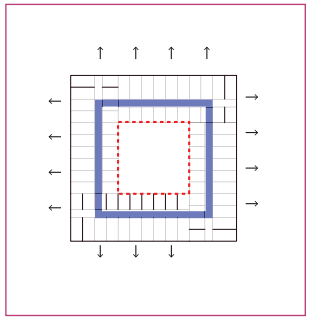


"The cross" disrupted movement due to four different directions. Entrance can be set in the meeting point of the base units. One nurse station is required to monitor the ward. Possibility to create four different green areas.

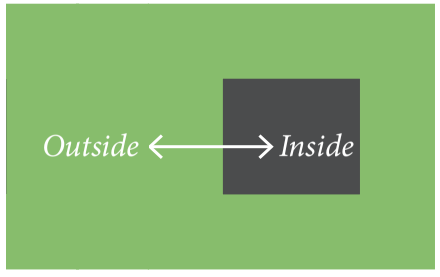


"The square" - continuous movement, short distances. Entrance can be set in one of the corners. Two stations are required for monitoring the ward. Possibility to create one private green area.

We chose to continue our work with "*the square*"

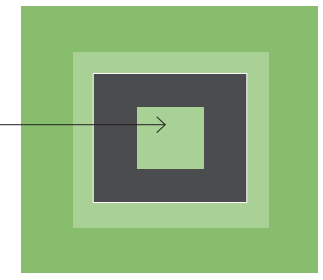


Principle for building



Today

Usually one moves from the outside to inside of a building.



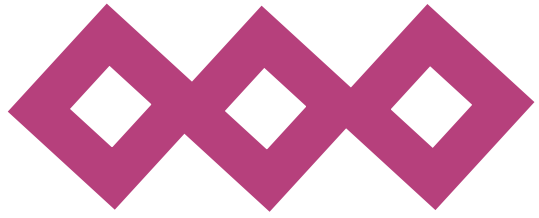
- *Outside*
- *Semi outside (terrace/ balcony)*
- *Inside (building)*
- *Semi inside (atrium)*

Future

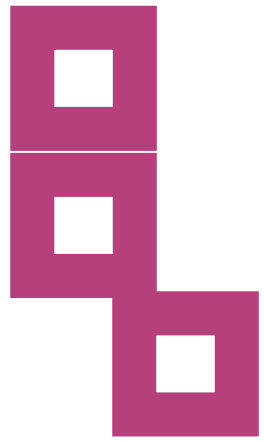
Our model studies resulted in a principle for our design vision: the connection between outside-inside is emphasized by creating layers of "semi zones"

The following diagrams show different possible configurations the chosen shape. We analyse the qualities and limitations of each configuration. focus is put on: connection between units, public/ private character and formation of outside space

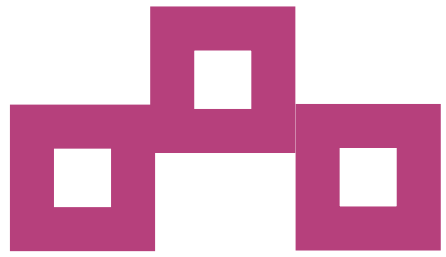
"three lined squares" continues movement both in both each squares, and the "three lined square". Static appearance, no natural formation of outside space. No natural possibility to crete different characters of units.



"three zigzags" focused connection points but disrupted movements through the whole building.
Playful appearance and several natural formation of outside spaces.

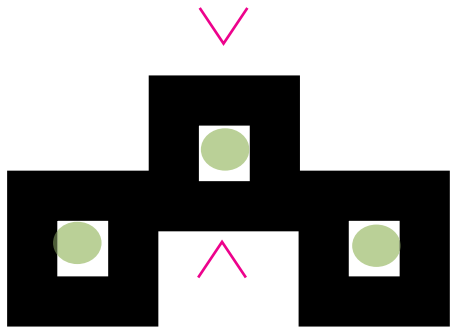


"One and the two" One main movement path. Possibility to create different characters for different parts of building. Natural formation of outside spaces.



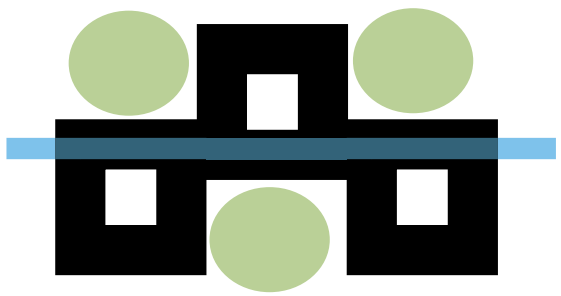
"Trinity" - a main path connecting all three parts. A natural central point. Possibility to create different characters for different part. Natural formation of outside spaces.

We chose to further develop *trinity* to create one possible example of a VITA NOVA.



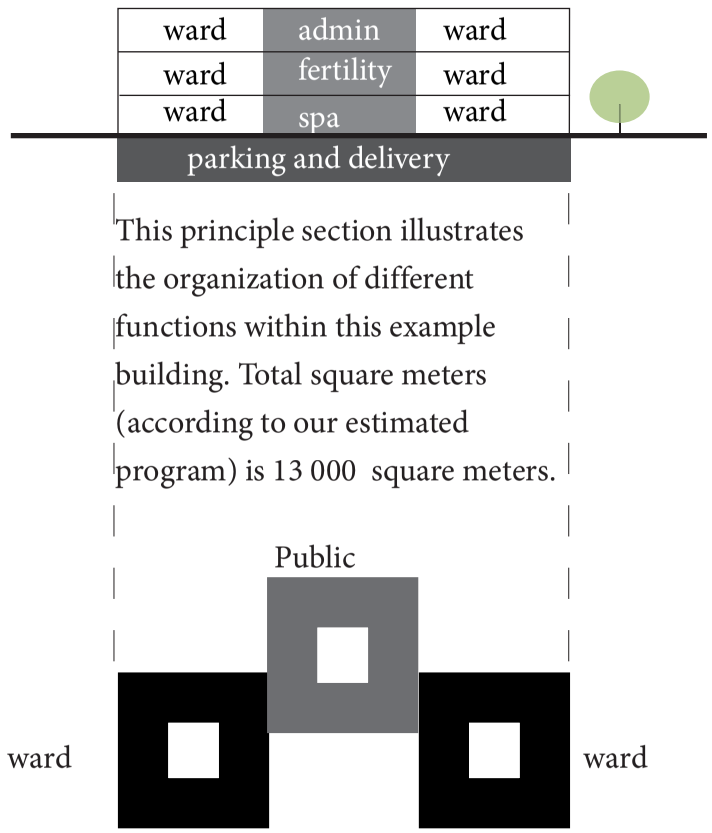
Two possible (obvious) entrance situations can be seen in the diagram.

As explained in previous diagrams, each unit has its own atrium/ light garden.



One main walk path, connects all units to each other.

In addition to the atrium in the centre of each unit, there is a possibility to arrange outdoor recreation areas.



This principle section illustrates the organization of different functions within this example building. Total square meters (according to our estimated program) is 13 000 square meters.

Further more, we propose that middle square is dedicated to public functions, and the two squares on each sides are wards for maternal health care. (for more information see appendix on page 95)

Evaluation of analysis

To present some standpoints that have been important to us in our work, we have listed the most valuable factors in the following text.

Evidence Based Design

Connection to nature; daylight, greenery and water features have been proven to have positive effects on people. In health care environments these factors help in reducing stress, sense of pain and usage of pharmaceutical medications.

Family centred care; a family centred design invites and enables family members to participate in the recovery process of the patient. In health care environments this helps in speeding up the recovery of a person, reducing the sense of isolation and promoting patient integrity.

Reduce moving rates by designing multi- functional space; functions of different rooms are collected into one sole space. This leads to lesser number of patient transfers between wards which decreases stress.

Focus on wellness

To plan formaternal health care in hospitals is questionable to us and to many others. There are numerous researches that point out women requirements for future health care. The need to focus on wellness is emphasized in many studies. Spas are facilities dedicated to wellness. The strategies of EBD can easily be implemented in a hybrid- that combines spa services with maternal health care. This creates a situation where women are more empowered and gives them a sense of importance. By this action we could promote a new attitude towards maternity, which opens the door for future visions.

Freedom of choice

When care-receivers are provided with options in health care, thier role becomes more active. This can lead to a decreased amount of stress in patients, which helps in reducing negative outcomes. Freedom of choice can also work as positive distraction (which is a important strategy of EBD).

Equality

Shared spaces between care-givers/ care-receivers can result in the feeling of equality and control in both user groups. This also promotes social interactions in a unofficial/ uninstitutional manner. Shared spaces help to promote a sense of belonging to a community, which can result in people sharing their experiences and knowledge with each other.

Flexible space

Our analysis has shown the importance of having a flexible approach in health care building structures. We see that a modular system with dividable dimensions helps in enabling future transformations.
More so, we investigate multi- functional space which reduces the total amount of square meters of such a facility and makes our proposal more economically supportable.

Collaborations with Swedish midwives association

By consistent interaction with the members of this association we quickly recognized the main stakeholders; caregivers, care- receivers and family/friends of care receivers. Close observations helped us map the needs of each group. We believe that without this phase of experiments and active participation, we wouldn't have been able to present a design solution of any value to maternal health care. Our study trips have resulted in an understanding in the current standards of health care architecture. However, it is important to mention that in some aspects these experiences also limited our visions. We sometimes found it hard to imagine solutions that were beyond upgraded version of what already existed.

Based on the listed standpoints, we have developed a proposal of a vision for the future maternal health care in Sweden 2030. The design focuses on one room and will be presented in the following chapters of our report.

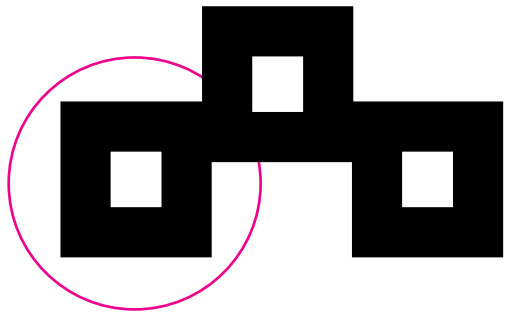
Example of a maternity ward

example of a ward

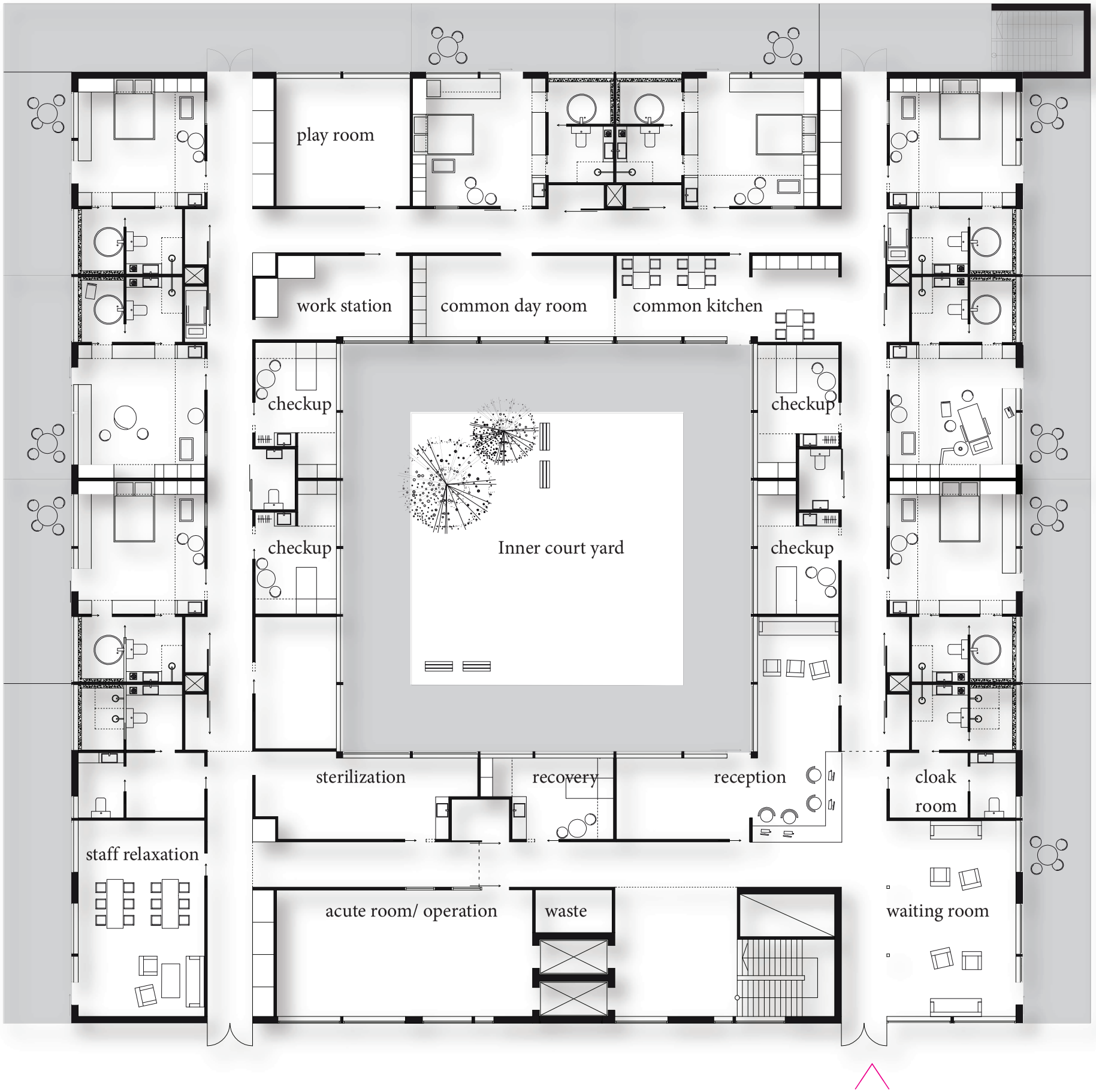
On the following page one possible example of a “VITA NOVA” ward is presented.

The outer layer of the ward consist of space dedicated to the two main users groups private zones: client rooms and staff relaxation areas. Every ward has 8 client rooms. These space are followed by the communication zone; such as corridor and vertical communication. The inner layer is dedicated to staff working area and common rooms. These spaces are directly connected with the inner court yard.

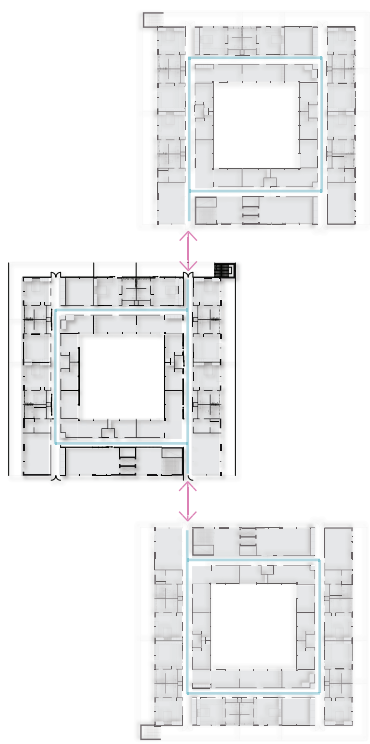
One unit in a “trinity” solution consist of three stories, with one ward on each floor. Such a ward is 1700 sqm and has a inner court yard. It is designed according to the future vision building principle (see diagram below).

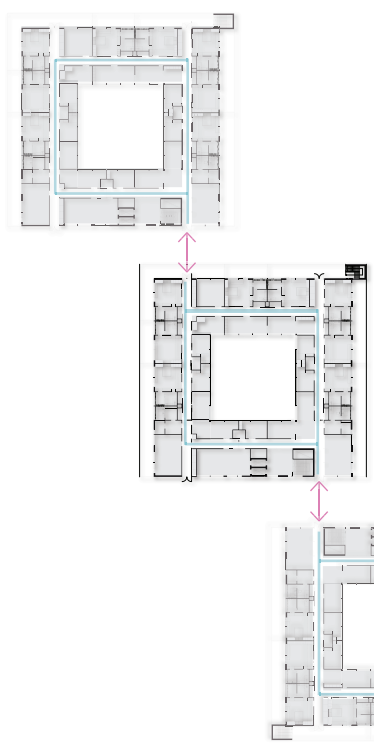


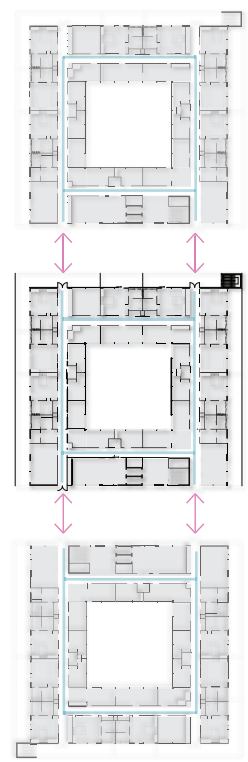
- *Outside*
- *Semi outside (terrace/ balcony)*
- *Inside (building)*
- *Semi inside (atrium)*


play room
work station
common day room
common kitchen
checkup
checkup
checkup
checkup
Inner court yard
sterilization
recovery
reception
cloak
room
staff relaxation
acute room/ operation
waste
waiting room

example of ward: flexibility

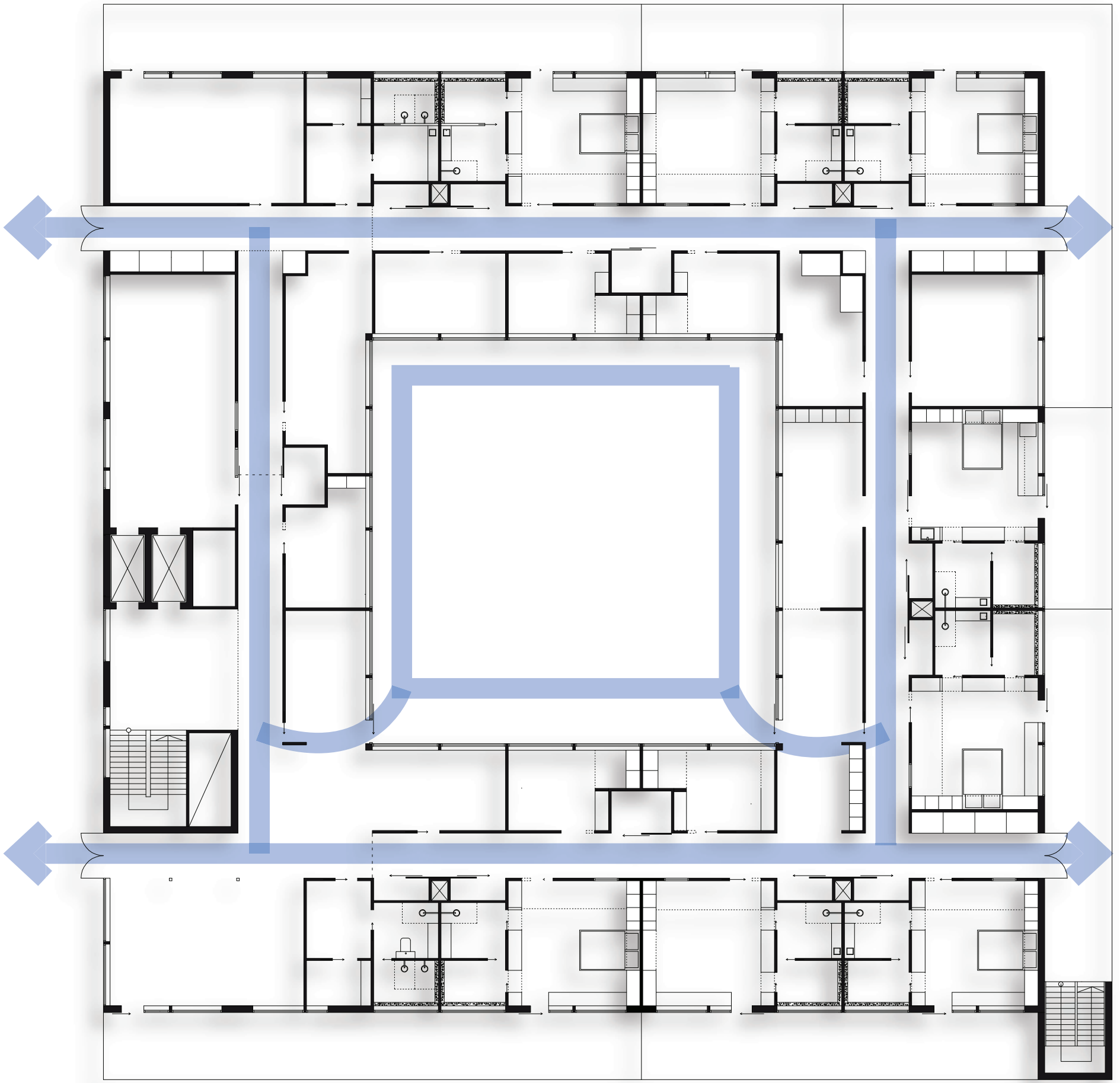




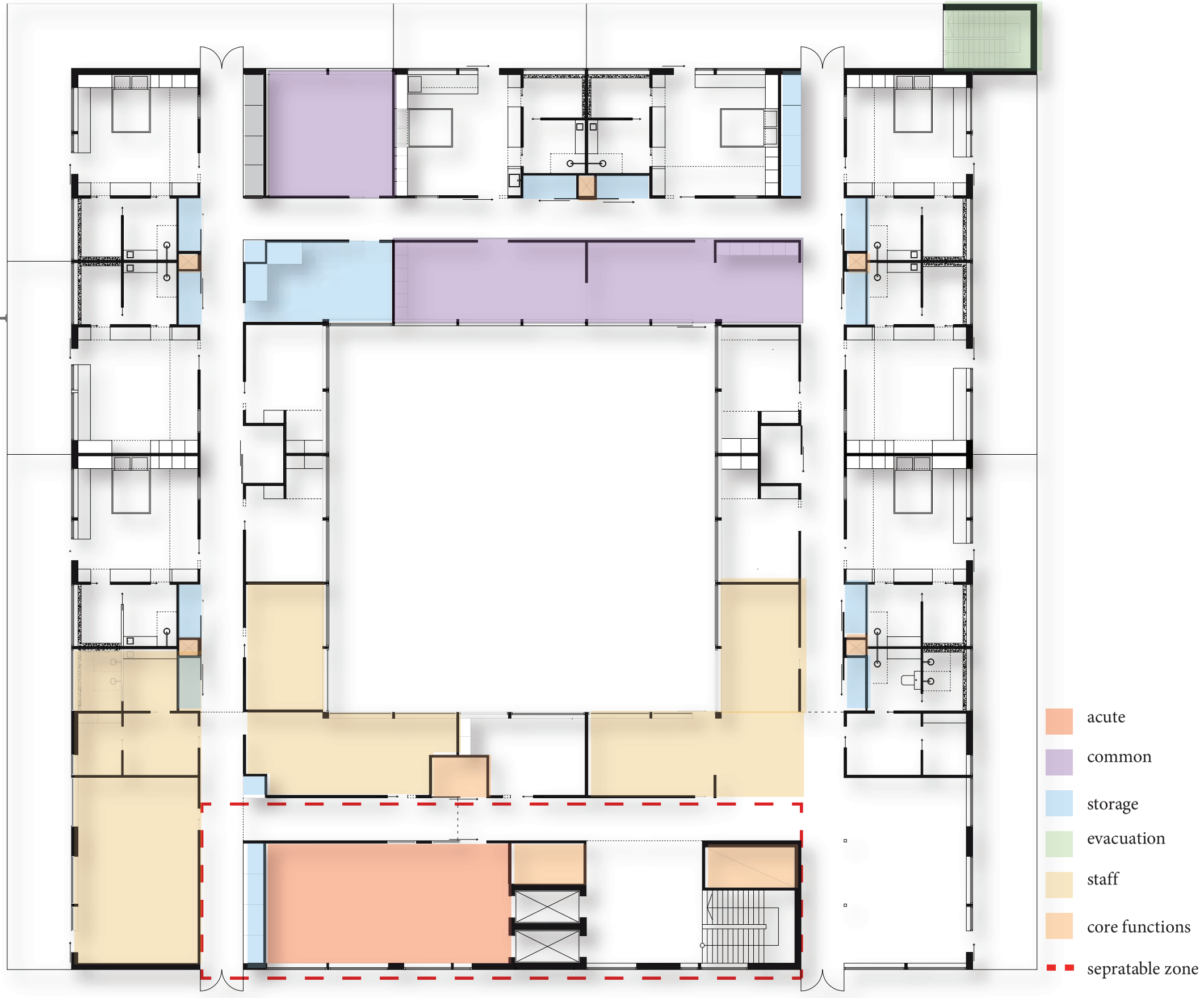


The layout plans create possibilities for the building to change in the future.

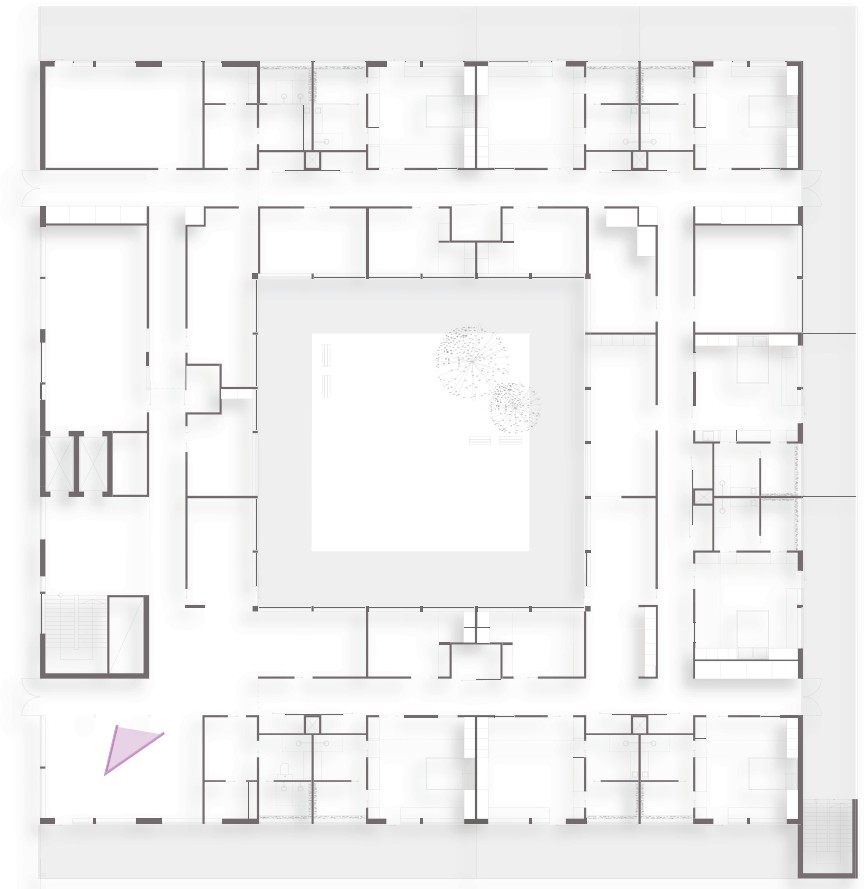
example of a ward: flow



example of a ward: zones

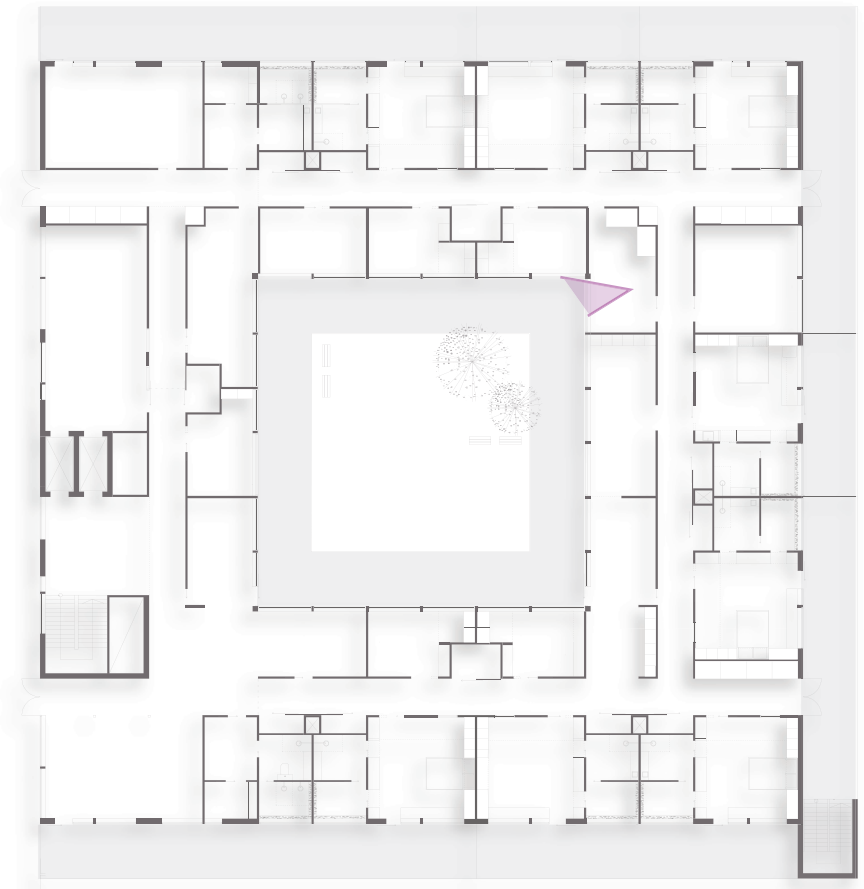


example of a ward: visualization



View towards the reception from the waiting room

example of a ward: visualization

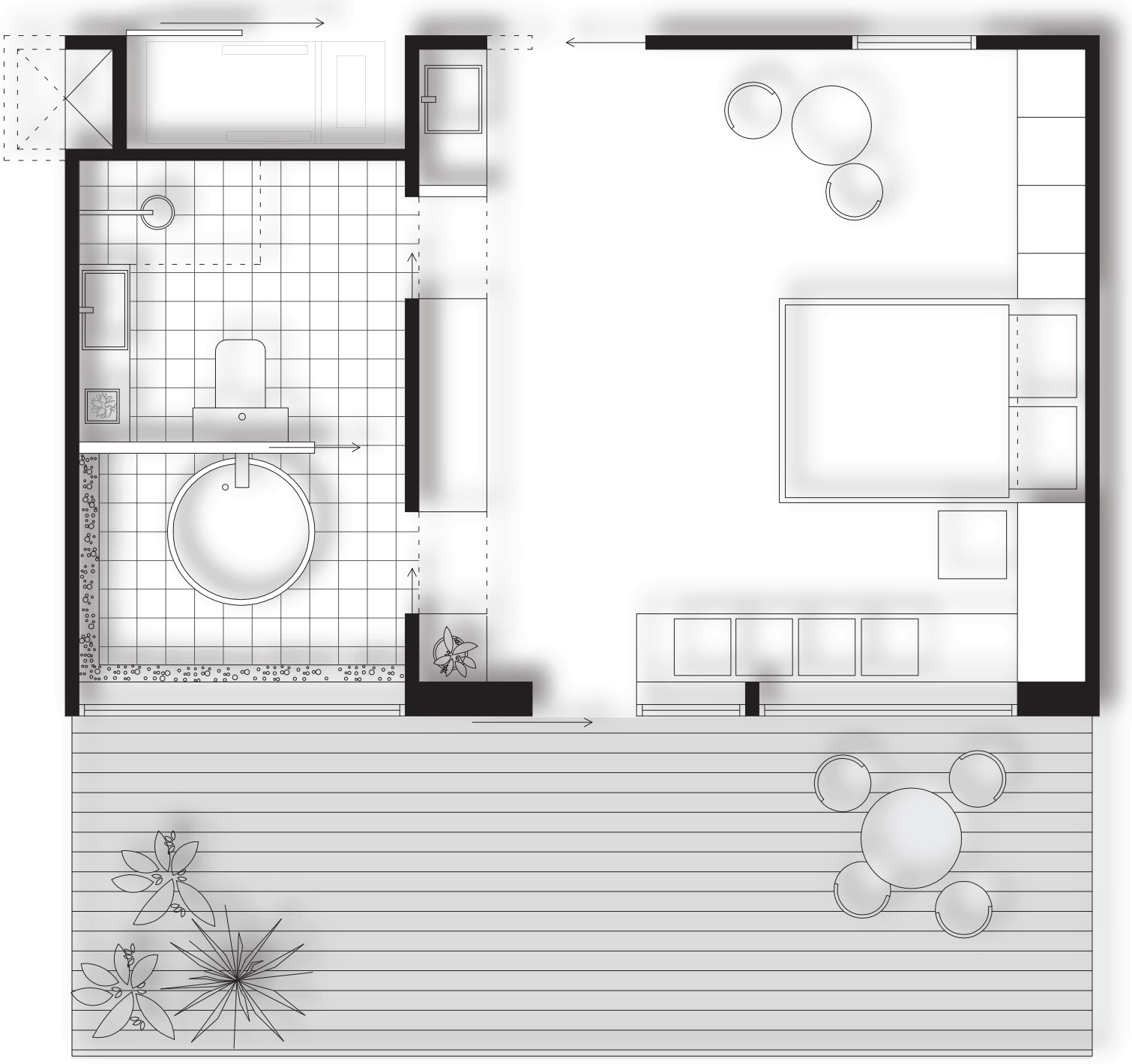


View towards the atrium from the day room.

Multi- functional client room

client room

Each multi- functional client room is 53 sqm and has a attached private terrace of 27 sqm. The interior of this space is adjustable, and so it can meet the need of different individuals (users). The room can used during three stages of maternity: pregnancy/before deliver, during delivery and after post delivery. The client room has a homelike yet Professional character, and the concept is inspired spa and hotel. Accordingly, it is possible to check in to the room one week prior to expected delivery and one week after delivery.

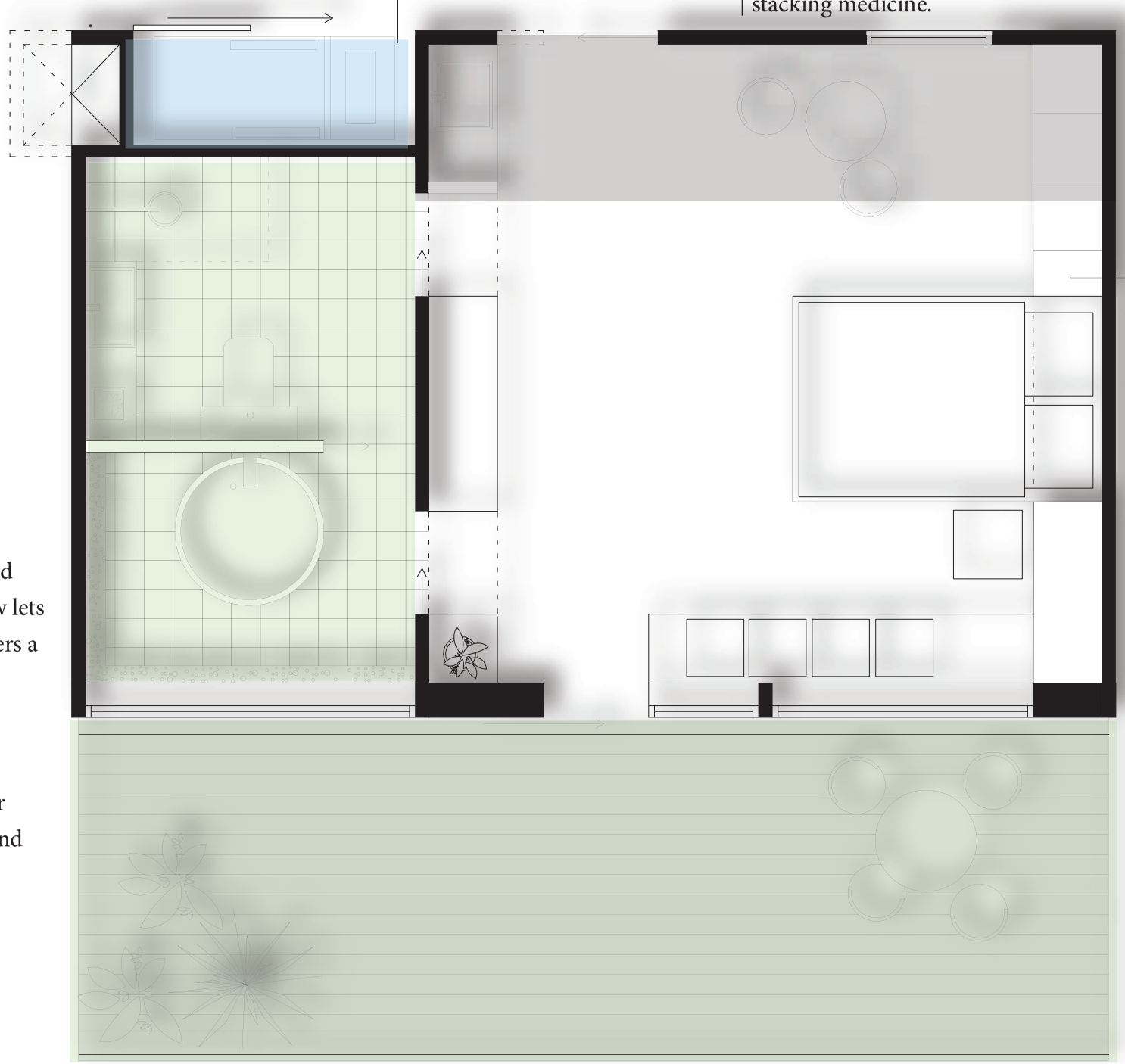


welcome to your personal room!

client room: zones

Storage zone
One storage (3 sqm) per room for larger medical equipment such as a delivery bed/ chair/ extra beds etc.

Staff zone
a more public part of the room can be used for monitoring a minor NeoNatal case, documenting, monitoring and stacking medicine.

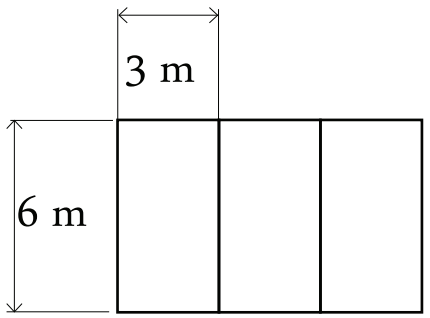


CLIENT'S ZONE
a more private zone.
Can be used for delivering, BB, checkups, consultation,
spirituel area etc.

Recreation zone
Private SPA with bathtub, shower and wc. A large window lets in daylight and offers a view to the terrace.

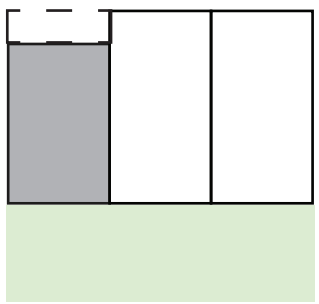
a private terrace for recreation, social and spirituel activity.

client room: principles

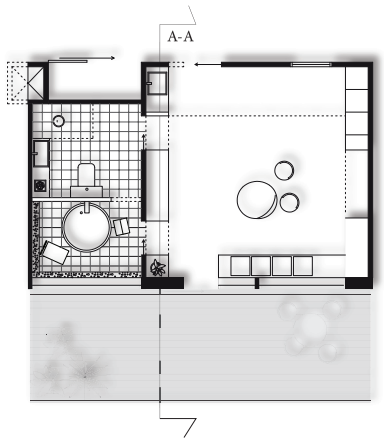


The area dedicated to a client is the 3X modules.
The size of a client room is 53 square meters.

The frame marks storage space dedicated to each room (3 square meters)



The grey zone marks a private spa (bath and wc). The white space represents the client room.
Green marks a semi outside zone, terrace.



Functional shelf:

A: Storage for clients personal belongings

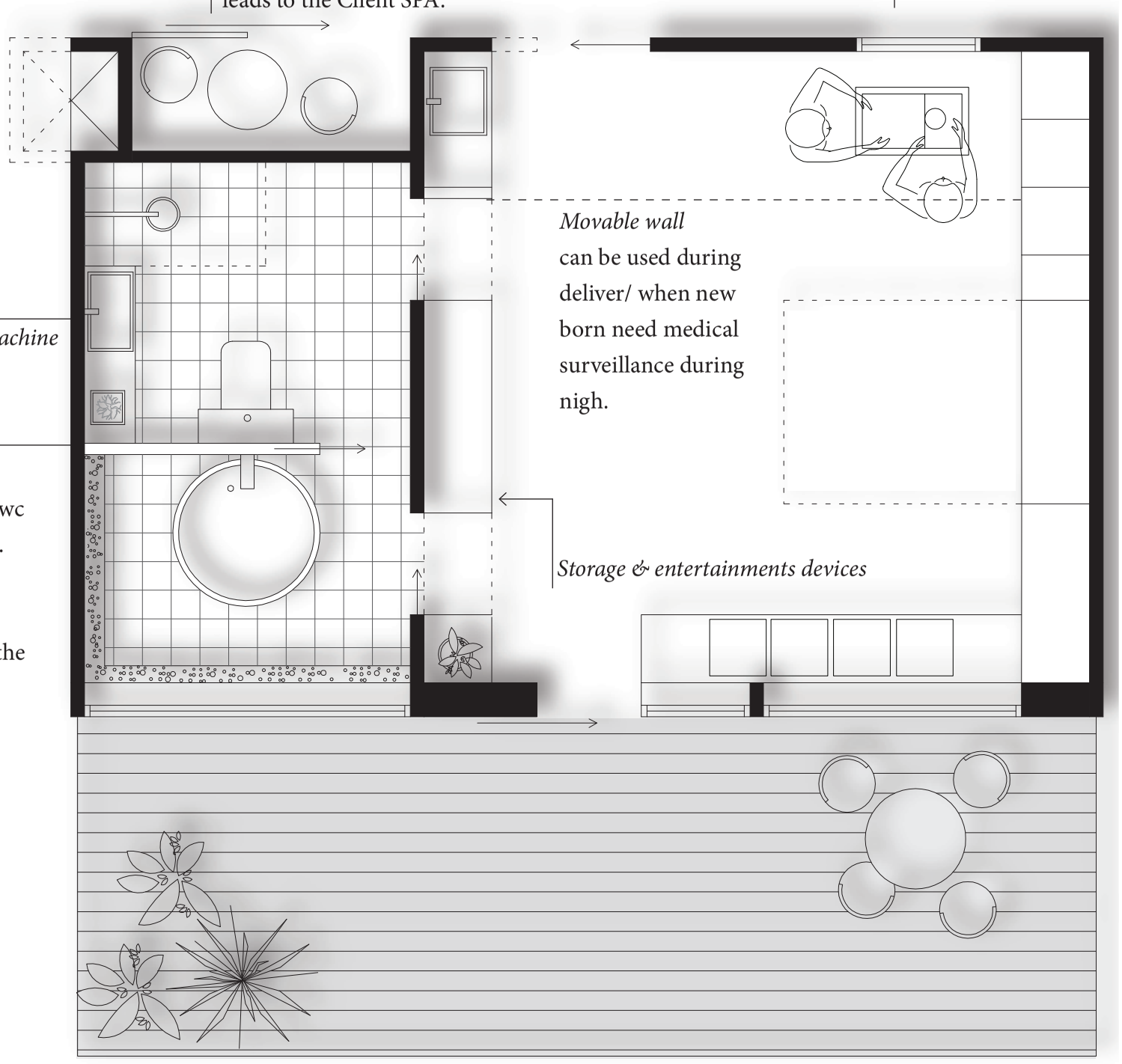
B: Storage for operation lamp and foldable bed

C: Storage for medicines and acute techinal equipment

client room: special features

Storage
for textile and equipment.
One storage per two rooms.
A small door from the storage
leads to the Client SPA.

Window to hallway
creates possibility to monitor
the client from without
disturbing the client.



Towel warmer machine
is hidden under
the sink

Private spa
batch room and wc
can be separated.
It is possible to
use bath tub
for deliveries in the
future

Movable wall
can be used during
deliver/ when new
born need medical
surveillance during
nigh.

minor neonatal

Functional self
a main feature in the
room This piece of fixed
furniture is packed with
everything from medical
equipment/ cultural/
spiritual/ religious
symbols.

Double bed

Niche
can be used as seating
furniture/ extra bed.
Boxes for storage/
table are hidden under
the niche.

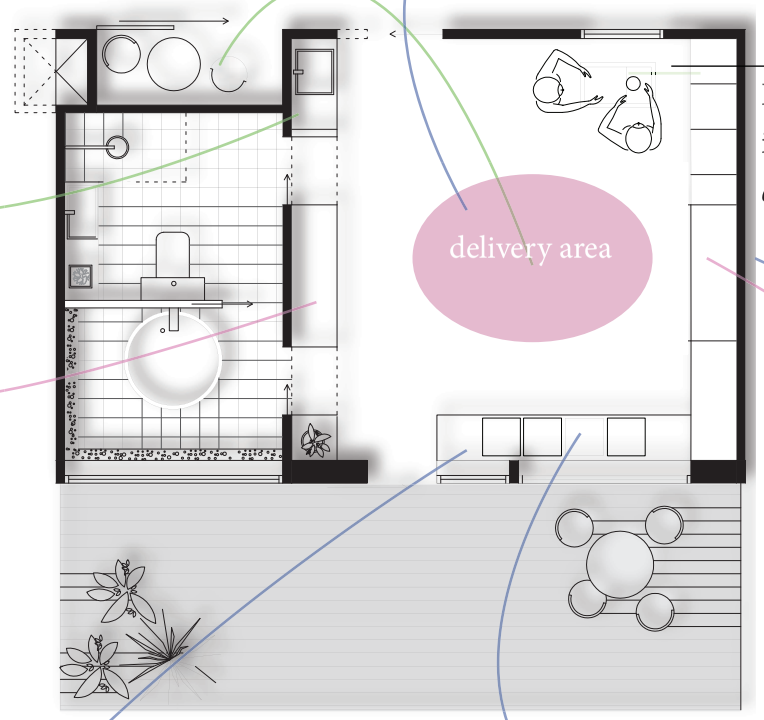
Terrace
Can be used for
relaxation and
physical activity

client room: special features

Equipment for delivery
is moved to room from
storage *before delivery*.

Tools/ equipment are moved from client room
to disinfection room *after delivery*.

Mobile table for medical tools is
tkaen out from under the sink
before delivery



Baby crib
is taken out from functional shelf
after delivery.

The television screen is used as
a computer screen to
monitor the client and baby
during delivery

Lamp for deliver and
nitro- oxigen is hidden in the
functional shel *during delivery*

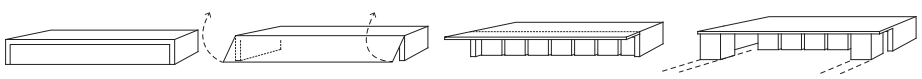
Client moves from the delivery furniture to
niche while equipment is moved out from
room and the double bed is unfolded *after delivery*

family/ friends can sit here during delivery

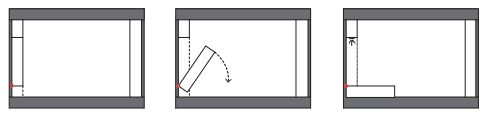
before delivery

during delivery

after delivery



The niche has a foldable flap of 30 cm. When upraised, it gives a
width of 90 cm and the niche can be used as an extra bed *after deliver*



A foldable bed is hidden in the functional shelf
during deliver

through a clients eyes

Sara is a 30 year old high school teacher pregnant with her second child. During a ultrasound check in 18th week of her pregnancy she found out she was expecting twins.

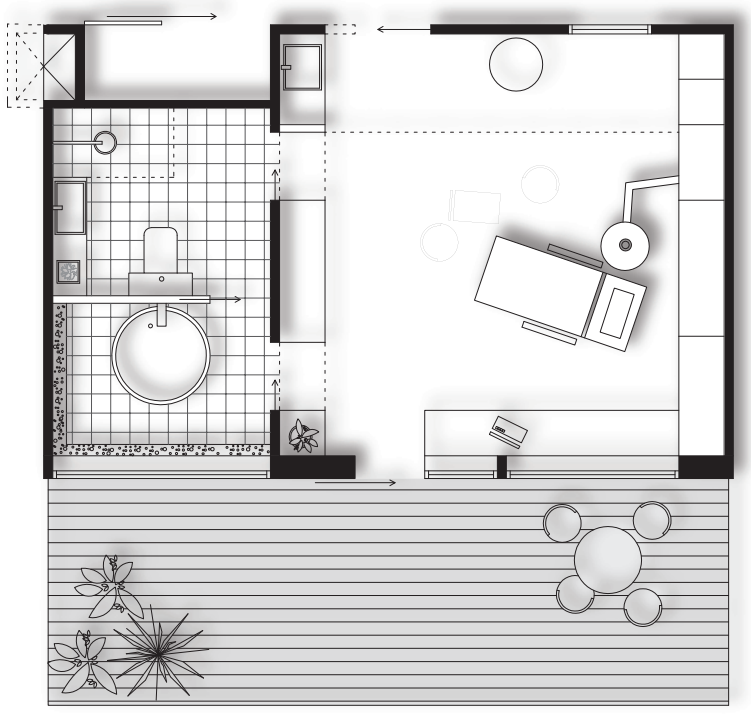
Until week 33 both babies where growing properly and there was no reason to worry. In an check in week 34 the midwife found that one of the babies wasn't lying in a proper position. A team of care givers had a discussion with the couple and suggested that in case of emergency the delivery could be done by a planned Cesarian. Sara had always hoped to deliver in a natural way but for the sake of her children safety, she agreed.

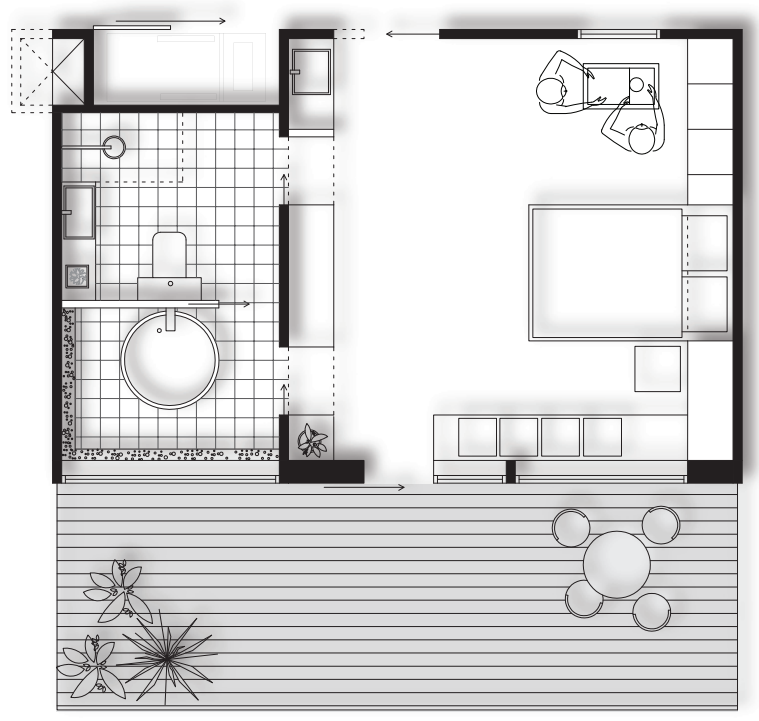
In week 35 Sara started to feel ill and her condition worsened as time went by. She had trouble sleeping, her body became swollen and when her contractions stared she was quick to sign in to the hospital.

She was kept at the hospital for 2 weeks and spend most of that time trying to relief her un-comfort.

Sara's water broke down in the end of week 37. Sara gave a vaginal delivery to the first baby, he was healthy but due to the premature birth he needed to be kept in a incubator for observation. The second baby was laying in a breech position and after a 30 min struggle, care givers decided for a Cesarian. She had to be moved from her room to a operation theatre quickly and in a safe and private way.

Fortunately the second baby also came out healthy and Sara could relax. The little family had to stay in the clinic for some days to avoid harm and complications in the babies heath conditions.

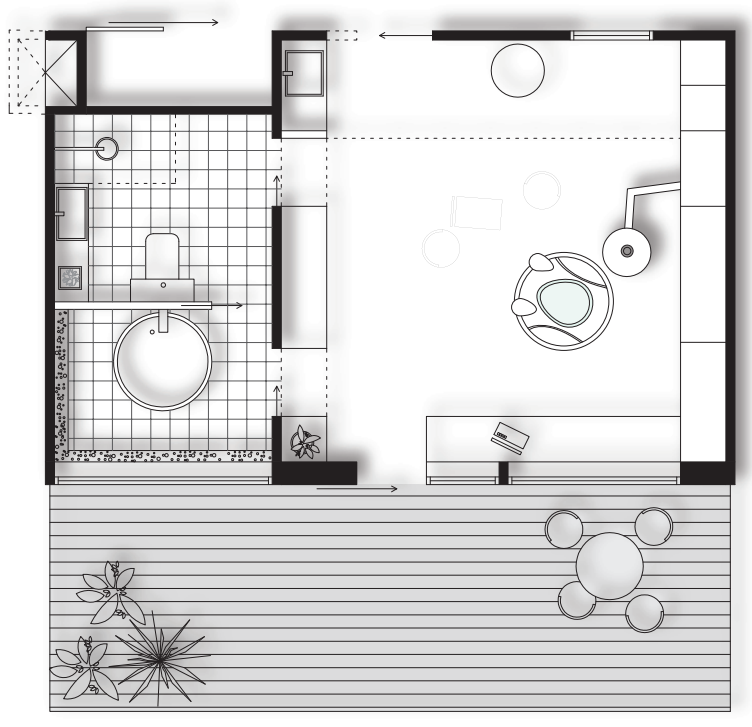




Sara is relaxing on the niche while Viktor learning to change the baby diaper.

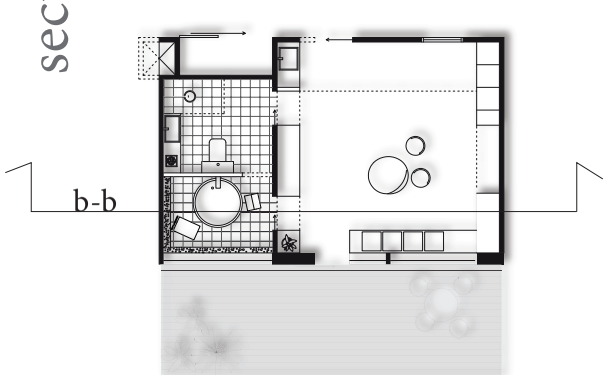
through a clients eyes

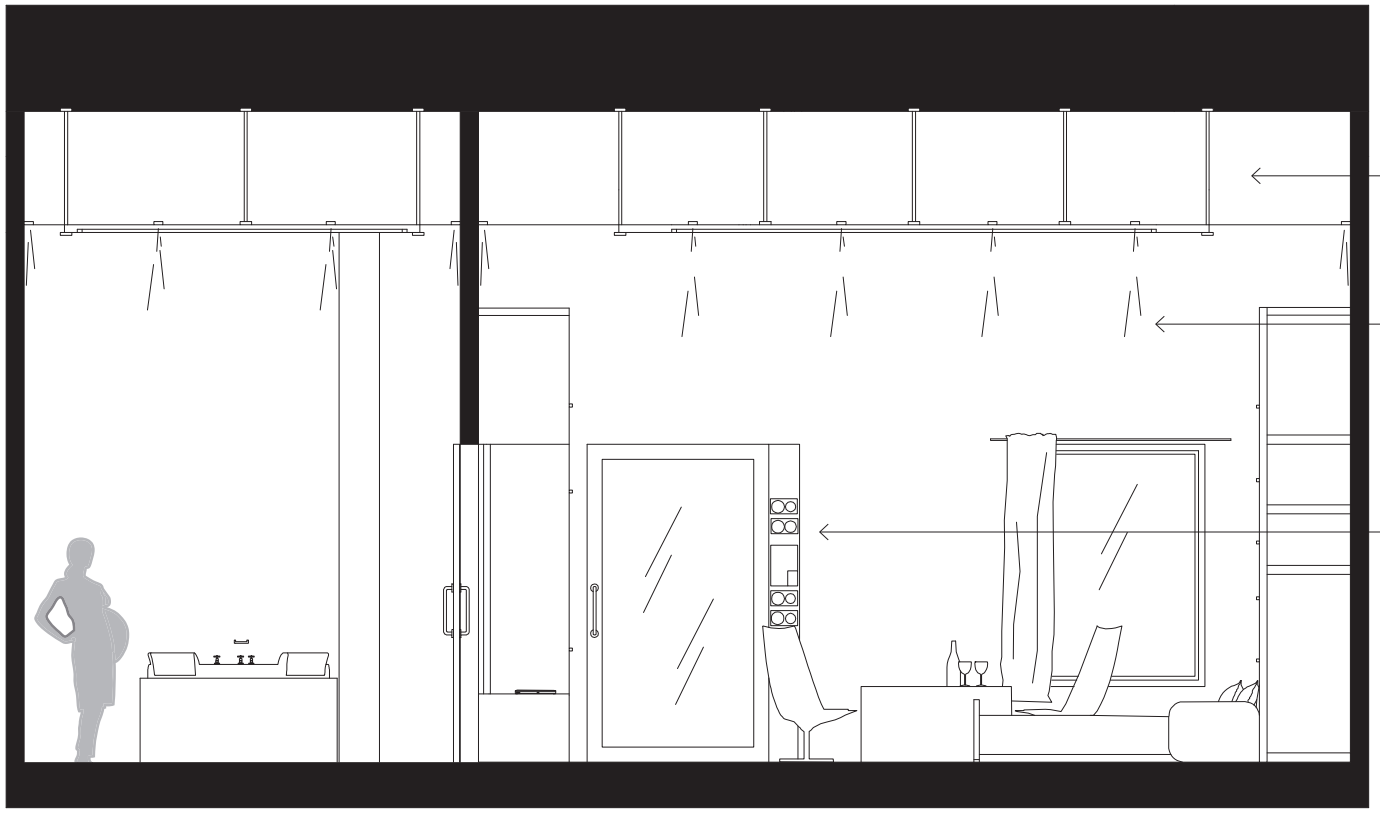
Ivana is 41 and works as a lawyer in Göteborg. It was love at first sight when she met Göran in an Ica shop 8 years ago. They have a lot in common, both are first generation immigrants from Balkan and they moved to Sweden in an young age. Four years ago the two decided to start a family but without any positive results. The first pregnancy ended in a miscarriage in week 10, the second miscarriage happened in week 13 and the third in week 11. After 4 years of trying Ivana is finally pregnant again. Because of her age and fertility record Ivana met her midwife regularly. In week 27 she was told that she had high blood pressure and care givers feared a premature delivery. The parents-to-be were under a lot of stress and Ivana's body started to react to the situation in a negative way. And because it is not uncommon that a delivery kick starts due to the stress and the couple decided that Ivana should check into the centre immediately. She stayed at the centre a total of nine days. The first week was only about relaxation and meditation in the spa facilities in VITA NOVA centre.



Ivana felt comfortable delivering in a delivery chair.

section b-b





Technical equipment is hidden in the ceiling.

Clients can chose the colour of the room walls. The appearance can be changed by the help of a light projector hidden in the ceiling.

Collected electrical panel by the door. It is possible to control the temperature, colour of the wall, light, sound etc from here.

foux floor create a sense of natural material. The materials are steril and easy to keep clean.

Each client has their own spa attached to their room.

Nadifa is a healthy 23 years old woman pregnant with her second child. She moved to Stockholm from Somalia only three months ago, but due to the fact that several of her family members are settled there, Nadifa dose not feel alone.
She first came in contact with “VITA NOVA” in the seventh month of her pregnancy, the maternal health care centre was recommended to her by Amna (a somalian doula).

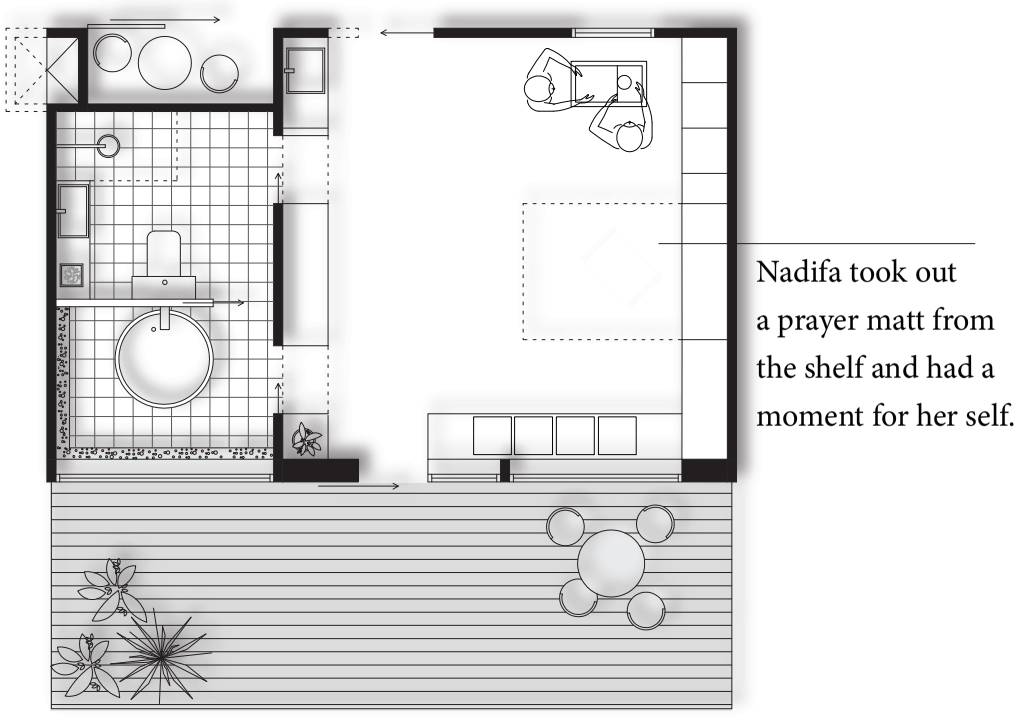
The main reason for why Nadifa chose to deliver at “VITA NOVA” is because of the centre’s policy: family centred care.

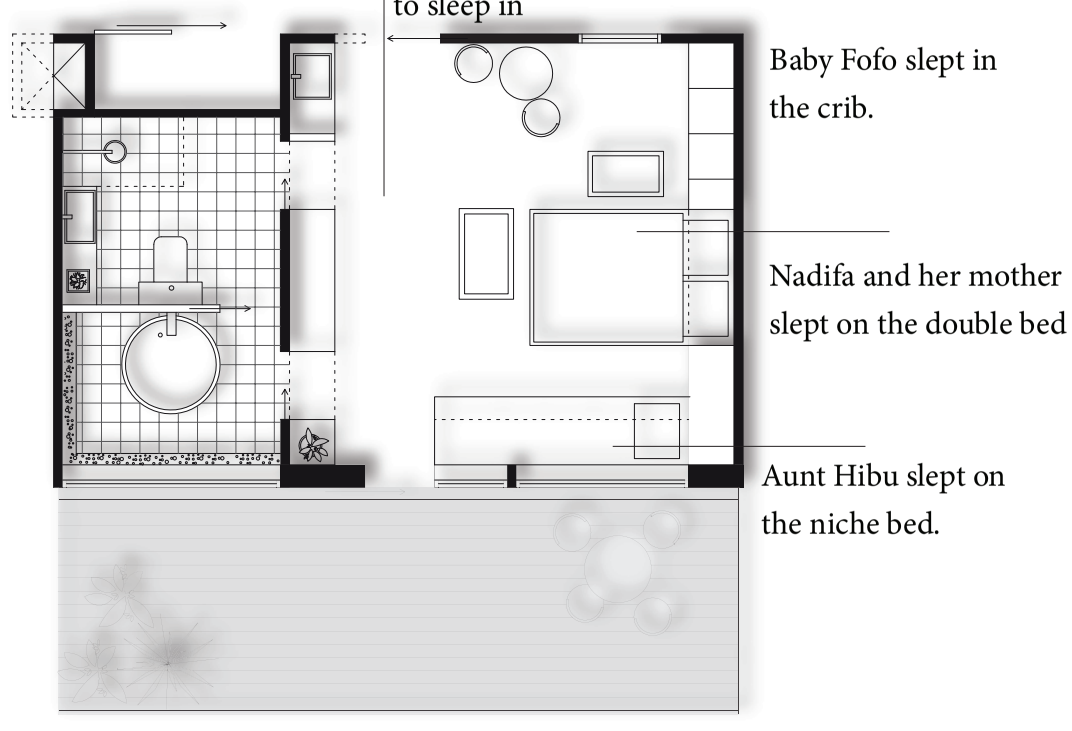
Her contraction started in week 40 according to the plan and she and her mother set of to clinic quickly. When care givers examined her they found that she was in an early stage of her delivery.

Nadifa wanted to pray before the delivery started and so all caregivers left the room to give the family some privacy.
After the prayer she was asked to chose how she deliver, decide the temperature of her room, light, textiles and wall colour. She was also given the choice to decide how many of her family members could stay overnight with her in her room.
Nadifa felt comfortable and at ease because she was accompanied by her mother, aunt Hibu, Amna and her son Erastu.
For the delivery the caregivers recommended painkillers but Nadfia was not comfortable taking anaesthetists. Instead she put her focus on a beautiful plant on the terrace and followed the instructions of the caregivers.

After giving birth to her second son, Nadifa and her family stayed in the room over night.

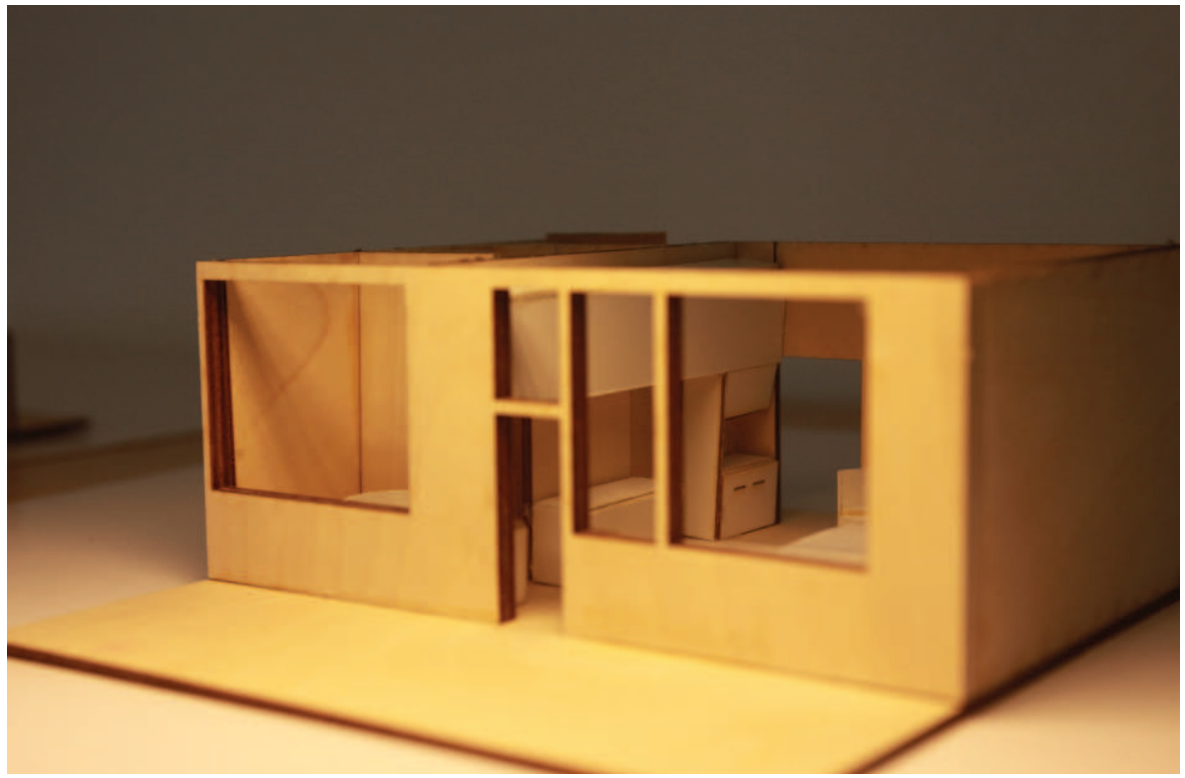
through a clients eyes

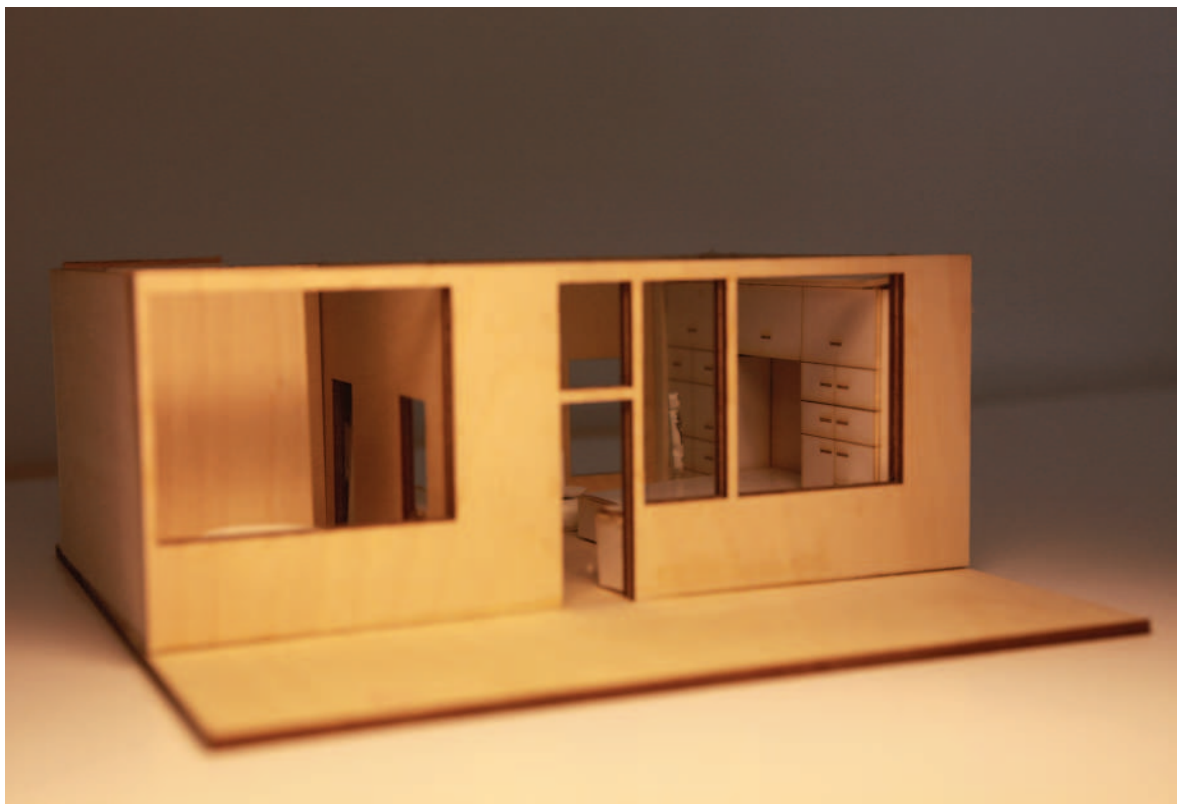


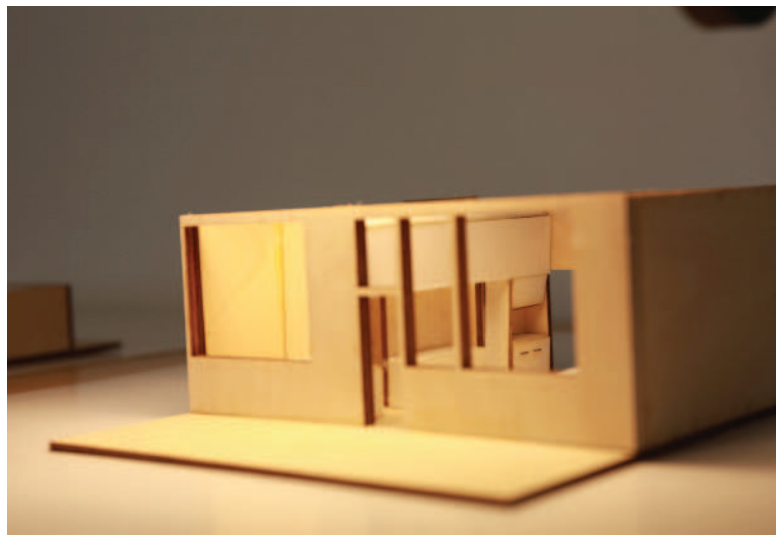


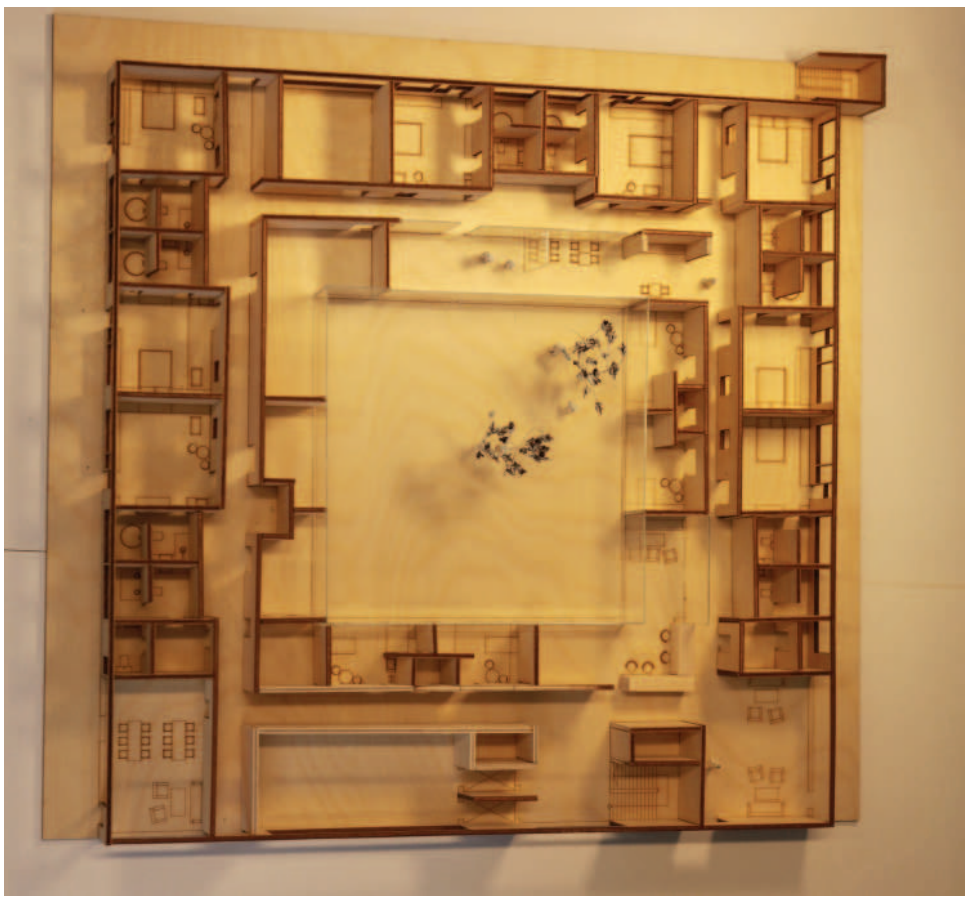
Erastu is happy to have a new brother.

Model pictures









Summary

summary

Maternity is an existential question and a subject that we can relate to being young women. What makes it even more interesting, is the fact that the two of us have different cultural backgrounds - which effects our fundamental understanding, point of view and expectations.

Some time in January 2012 we presented a preliminary idea for our Master Thesis to Peter Fröst; we wanted to learn more about architecture dedicated to maternal health care. Coincidently Peter had been contacted by the Swedish midwives association (Barnmorskeföreningen) some months previous to our meeting about an urgent need to create a designed vision for the *future delivery rooms*. We were unsure how to approach the task, and initially there was a conflict of interest about the framework and an uncertainty about the outcomes (from our side).

Looking back, we see that our thesis has taken another direction from how we planed it (design proposal of a building). However, the key question remained the same throughout our work: how can we improve the positive outcomes of health care with the help of architecture. We wanted to create a flexible solution and one of our goals from the get-go was to investigate space that would be appealing to individuals, no matter their differences.

During a later consultation with Professor Fröst, we realized that we had lost perspective in our work - the large task we gave to ourselves resulted in rushing into designing. Instead, we needed to identify the fundamental values and demands of maternal health care facilities and develop general principles that would be applicable to different designs solutions.

The idea of combining health care and service is not totally new, but it is not always considered a norm in planning.

In this thesis we suggest that maternal health care facilities are combined with services of a spa. The reasons for our proposed hybrid are many:

- it preventa some negative health effects caused by stress
- it goes well in hand with the Evidence based design principles that have been applied in our work
- focus is put on wellness so that we promote a more truthful attitude towards maternity (it is not an illness)
- we see it as a suitable solution for meeting the requirements/ demands of the future/future patients.

This has been a very satisfactory experience for both of us. We have gained knowledge about the health care sector in general, stakeholders, maternal health care standards, architecture dedicated to health care and future prospects.

We would like the reader to see our proposal as one of the many possible solutions for future maternal health care. The most important goal that we wished to achieve with our work is to start new discussions about: new solutions in maternal health care, changes in attitude towards maternity and focus on individuals.

We hope that this thesis will result in more insights regarding this topic, raise of public interest and increase of the understanding about connection between physical environment and clinical effects.

Så vill de förbättra förlossningskliniker

örslag. Mer spa eller otell och mindre jukhuskänsla. Det är iljön som rkitekturstudenterna ana Rabia, 28, och leksandra Piechota, 7, vill att Göteborgs arn ska födas i. I sitt xamensarbete har de agit fram förslag på ur framtidens örlossningskliniker kulle kunna se ut – och alt att flytta ut dem rån sjukhusen.

nära kontakt med läkare, arnmorskor och gravida ar Chalmersstudenterna ana och Aleksandra i sitt xamensarbete ”Vita nova – ew life” tagit fram en idé å ett rum som är anpassat fter den som ska föda. Med

Chalmers.

känslan av ett spa eller hotell snarare än ett sjukhus vill de se en naturlig miljö med parkett, blommor och fina färger. Och i stället för att använda sig av flera olika rum under graviditet och förlossning vill de att allt samlas i ett och samma. Detta har de kommit fram till efter att ha assisterat som barnmorskor på Östra sjukhuset, intervjuat gravida, besökt kvinnokliniker och jobbat med Barnmorskeföreningen. Genom en nära dialog har de tittat på hur vården skulle kunna förändras i framtiden.

– Det tas för givet att gravida kvinnor är sjuka och därför placeras de på ett sjukhus, en miljö som kan vara traumatisk. Vi vill ha mer service än vård, helt enkelt mer välmående och spa i mödravården, säger Sana Rabia, som nu tar sin masterexamen i arkitektur vid Chalmers.

Därför föreslår Chalmersstudenterna nu att förlossningsklinikerna flyttar ut från sjukhusen och blir mindre institution och mer tjänst.

– Vi tycker att det är intressant att diskutera i Sverige om man verkligen måste vara i en sjukhusmiljö när man föder. Dessutom vill vi inte att kvinnor ska hålla på att flyttas runt mellan vårdgivare, det ska vara samma barnmorska, samma plats och rummet ska gå att förändra efter funktion, säger Rabia.

ANNE KYBJÄR
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Aleksandra Piechota och Sana Rabia.

Ett enda rum

Så skulle det kunna se ut:

53 kvadrat. I stället för att röra sig mellan flera olika rum med en gemensam yta på 80 kvadratmeter föreslår studenterna att det bara ska handla om ett rum under hela förlossningen på 53 kvadrat.

Som ett spa. Byggnaden ska inte vara ansluten till ett sjukhus och uppbyggd som ett spa, där man checkar in några dagar innan man ska föda och sedan checkar ut när det är dags att åka hem.

- **Familjen ska ha möjlighet att stanna i rummet och det ska gå att förändra efter den gravidas önskemål och behov.**
- **I huset ska det finnas läkare på plats och utrustning för neontalvård.** Vid akuta fall får man flygas över till Sahlgrenska.

Arkitekturstudenterna Sana Rabia och Aleksandra Piechota har i sitt examensarbete tittat närmare på hur framtidens förlossningskliniker skulle kunna se ut. – Vi vill att känslan ska vara mer som ett spa eller hotell än sjukhusmiljö, säger Sana Rabia.

Skisserna är gjorda av Sana Rabia och Aleksandra Piechota.

Framtidens kliniker planeras

Förlossningsvården är i behov av förändring. Anledningen är trångboddhet och platsbrist för att kunna tillmötesgå kraven som kvinnorna har. Att skapa mindre känsla av sjukhus är också en aspekt som tagits med när man nu kikar på möjliga förändringar.

– Vi har exempelvis tittat på att dölja all utrustning som lustgas och sladdar bakom en vägg som man drar för när förlossningen är över. Och att göra miljön mer hemmalik, säger Ingrid Carlgren, biträdande vårdenhetschef på Östra sjukhuset.

Att flytta ut förlossningsklinikerna från sjukhusen är dock ingen tanke som finns ännu. Däremot delar man studenternas syn på att bara ha ett rum, där förlossningsrummet skulle kunna göras om till ett BB-rum.

– Meningen är att det ska bli färre förflyttningar och byte av personal, så att det blir en kontinuitet och att man ska slippa eftervårdas på andra avdelningar, säger Ingrid Carlgren. **ANNE KYBJÄR**

Appendix

Estimated program used to create a example scenario of "VITA NOVA"

Normal delivery ward

A maternal health care delivery ward.

client rooms
Staff
Social areas &
communication

Postpartum

Department for mother and baby after delivery.

client rooms
Staff
Social areas &
communication

Neo Natal

Intensive care unit. Specialising in the care of ill or premature new-born babies.

client rooms
Staff
Social areas &
communication

ICU

Intensive care unit. For severely ill patients who requite monitoring, advance treatment and care.

Acute in taken
Operation
Staff
Recovery
Communication

Emergency

Fertility clinic

Clinics that assist people in fertility issues.

labs
consultation
staff
social

Gynaecologists

The medical practice dealing with the health of the female reproductive system

checkup
consultation
staff
communication

Restaurant/ Café

Kitchen
Dining
communication
lounge

Library

Green area

Court yard, terrace,
balcony

Staff & administration

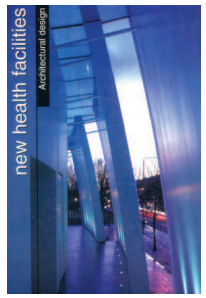
Resting room
Changing rooms
Office
Gym

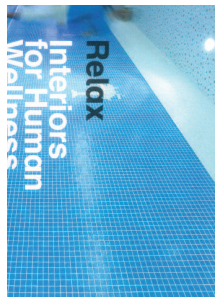
Parking

Logistics

References

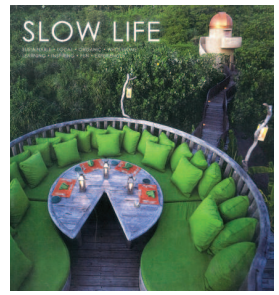
references


new health facilities
Architectural design

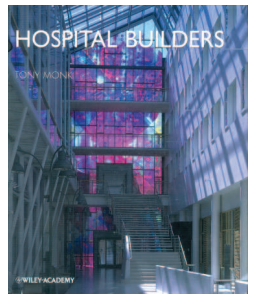

Relax
Interiors for Human Wellness


DESIGN

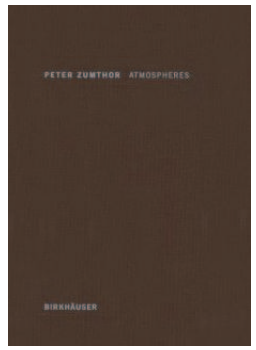

The Architecture of Hospitals

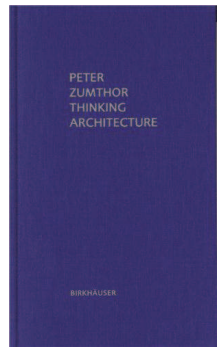

SLOW LIFE


Sustainable Healthcare Architecture

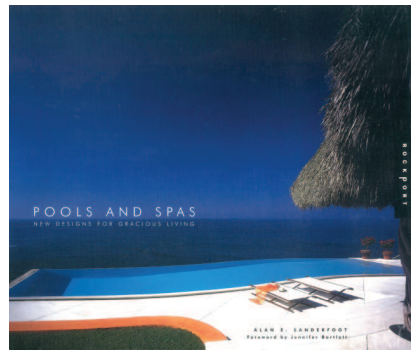

HOSPITAL BUILDERS
TONY MONK
WILEY-ACADEMY


Gudrun Abascal
ATT FÖDA


PETER ZUMTHOR ATMOSPHERES
BIRKHÄUSER


PETER
ZUMTHOR
THINKING
ARCHITECTURE
BIRKHÄUSER


Delivering the FUTURE


POOLS AND SPAS
NEW DESIGNS FOR GRACIOUS LIVING
ALAN E. SANDERFOOT
Foreword by Jennifer Barrigan
rockport


AKADEMISKA SJUKHUSET
Landstinget i Uppsala län
LOKALFÖRSÖRJNINGSPLAN 2011


axel ritter
smart materials
in architecture, interior architecture and design
birkhauser

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