ECHO SPACE I TREATMENT CENTER

AN ACTIVE ROLE FOR ARCHITECTURE IN THE PROCESS TOWARDS HEALING; *A TREATMENT CENTER FOR VETERANS WITH PTSD*

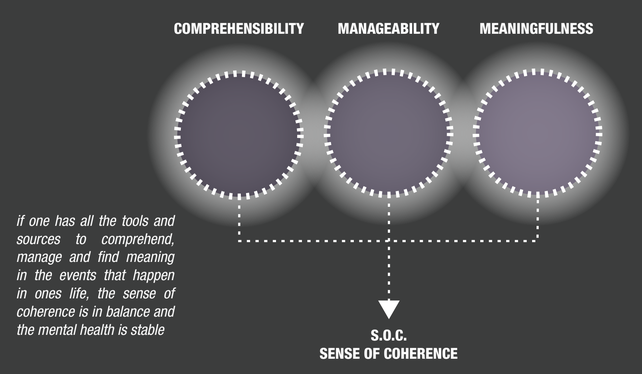
"The experience of war changes a man" .. War and everything that is related to it can strongly affect soldiers. The emotional impact of combat, the years of training to emotionally disconnect when in a combat zone, and the vast differences between the military culture and the civilian culture puts veterans at risk for long term mental health problems. More spefically veterans' PTSD or Post Traumatic Stress Disorder. Unfortunately at least 7% of all Dutch veterans have PTSD and are in need of treatment to help them manage their anxiety disorder in their daily life. Luckily there are specialized therapies and treatment centers available for them to seek help.

Currently, however, there is a strong separation between the positive notion of the treatment for mental disorders(mental growth and well-being) and the architecture which facilitates them. The awareness of this separation opens up the opportunity for redefining architecture for mental health care purposes in which architecture can play a leading role. Allowing architecture as a fundamental part of treatment; surpassing the bias of the facility envelope and establishing itself as the spatial embodiment of the process towards healing.

ECHO SPACE is a project that activates its architecture, to provide its patients with tools to comprehend their environment and help them manage their anxiety disorder related environmental triggers. Where the therapy sessions get to the core of their PTSD, the architecture of the treatment center provides them with the tools to understand their civilian environment once again so their journey of rehabilitation into civilian life can start and their environmental triggers related to their PTSD are relieved.

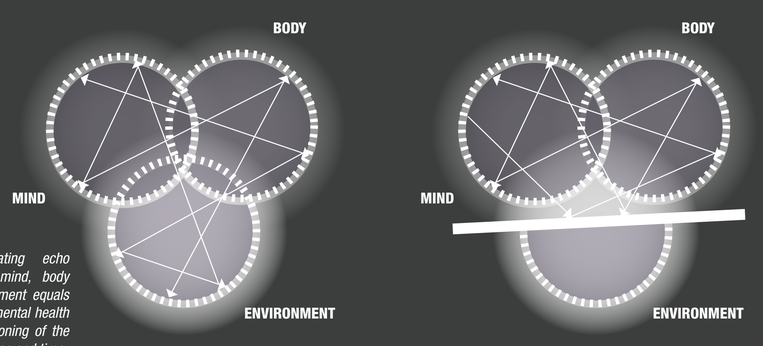
ECHO SPACE treatment center provides a symbolic, guiding and place specific design that can help veterans with PTSD regain trust in their civilian culture, recognize themselves as part of it again and bring home the tools our built environment can give us, to help structure our lives, our thoughts and our position in it. When we activate architecture, we can help those who are lost in their process towards healing, so that after a long period of war, they can finally come home.

THE SALUTOGENIC MODEL I A MODEL FOR HEALTH CARE DESIGN;
" THE BALANCE OF THE THREE PILLARS OF THE SENSE OF COHERENCE"



if one has all the tools and sources to comprehend, manage and find meaning in the events that happen in ones life, the sense of coherence is in balance and the mental health is stable

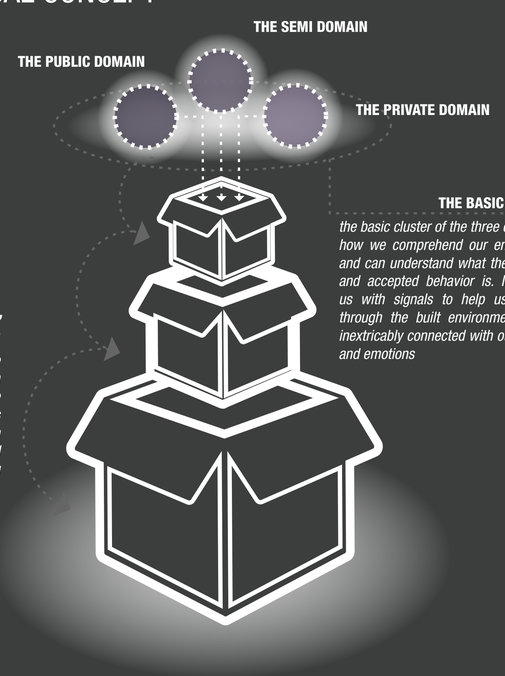
THE PHENOMENOLOGICAL CONCEPT I THE CONCEPT OF MENTAL STABILITY;
" THE CONSTANT ECHOING BETWEEN MIND, BODY AND ENVIRONMENT"



a resonating echo between mind, body & environment equals a strong mental health and positioning of the self in space and time

the disconnection of the mind & body with its environment causes a disheveled positioning of the self, jeopardizing the mental health

THE THEORY I A MERGE OF A PSYCHOLOGICAL MODEL AND A PHILOSOPHICAL CONCEPT

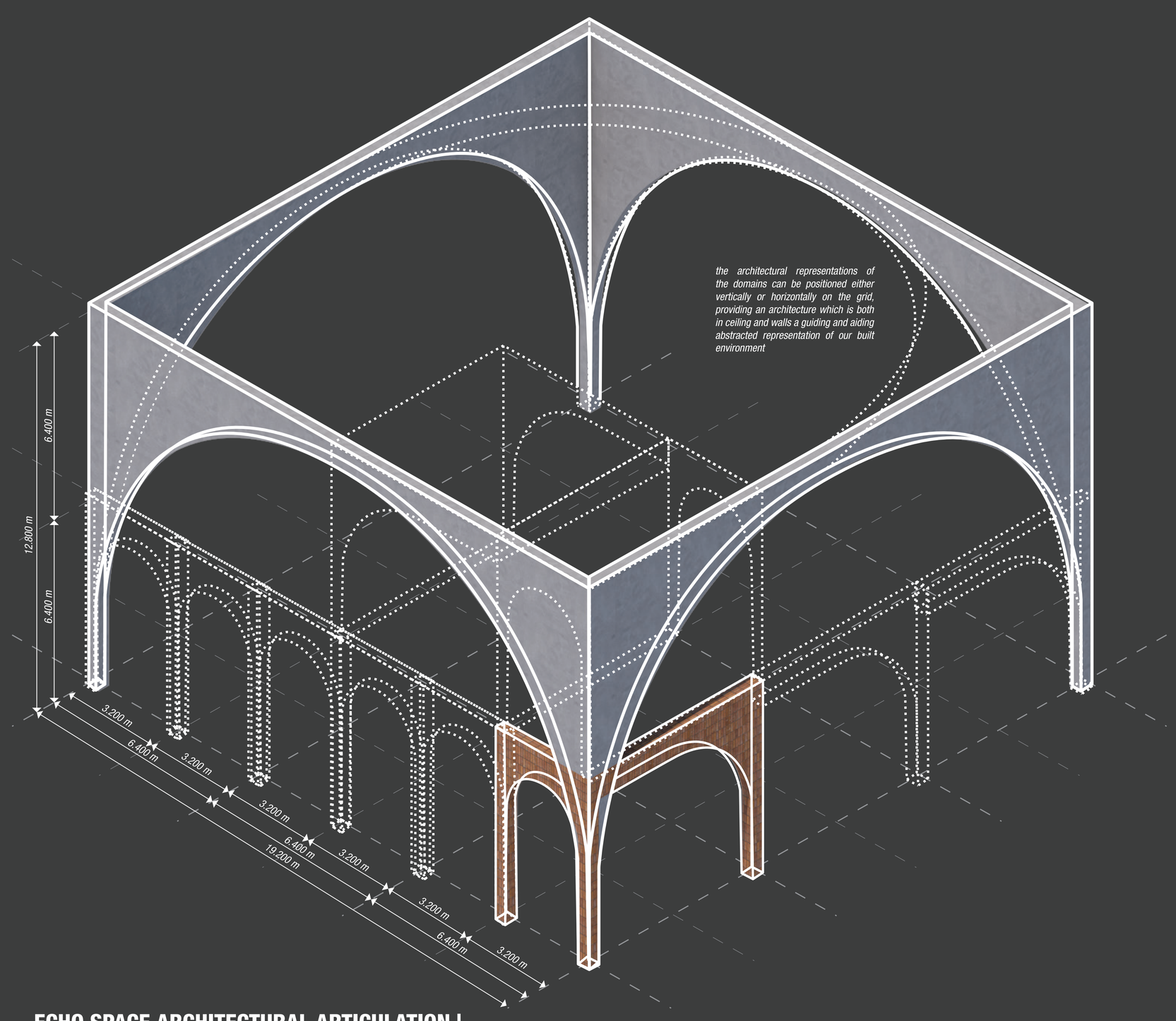


THE BASIC CLUSTER
the basic cluster of the three domains is how we comprehend our environment and can understand what the expected and accepted behavior is. It provides us with signals to help us navigate through the built environment and is inextricably connected with our feelings and emotions

THE "*CLUSTER-WITHIN-CLUSTER*" CONCEPT
in our civilian culture you can find the basic cluster of the three domains from the smallest scale to the scale as large as the whole world. It infinitely repeats itself as a box-in-box construction, with each its own (unwritten) expected and accepted behavior and consequencing feelings and emotions.

THE CONCEPT I THE CLUSTER-WITHIN-CLUSTER CONCEPT

THE ARCHITECTURAL REPRESENTATIONS I THE ARCHITECTURAL ARTICULATION OF THE CONCEPT, THE LANGUAGE OF ECHO SPACE TREATMENT CENTER



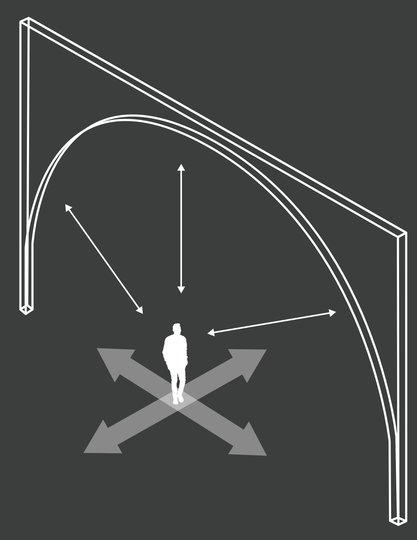
the architectural representations of the domains can be positioned either vertically or horizontally on the grid, providing an architecture which is both in ceiling and walls a guiding and aiding abstracted representation of our built environment

ECHO SPACE ARCHITECTURAL ARTICULATION I
THE INFINITE FLOW OF THE ARCHITECTURAL REPRESENTATIONS ON THE GRID

THE PUBLIC DOMAIN I
ARCHITECTURAL REPRESENTATION

The public domain is a domain where anonymity is high and the freedom of movement is expected. It is the domain where our built environment gives us the most indenpendance.
Therefore the architectural articulation and representation of this domain should provide a non-directional, transparant and large scale gesture. Yet, in the case of ECHO SPACE treatment center it should provide and embracing gesture to suggest the safety guarantee veterenas with PTSD need in their process towards healing.

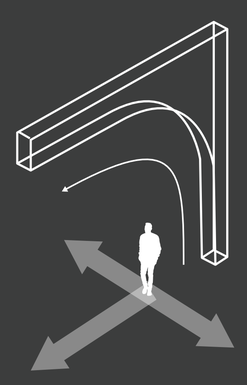
The large scale arch provides them with all these qualities, embracing the public domain and all its functions, providing them with the tool to acknowledge the presence of a public area, yet giving them total freedom of movement and transparancy towards the adjecent environment



THE SEMI DOMAIN I
ARCHITECTURAL REPRESENTATION

The Semi domain is a transactional domain, where we find the connections and guidance towards either the public or private domain. It is in this domain where the rules and regulations about behavior are most difficult to comprehend. Since it is a transactional domain it balances between the rules and regulations of the public and private domain. A strong directional guidance is therefore necessary.

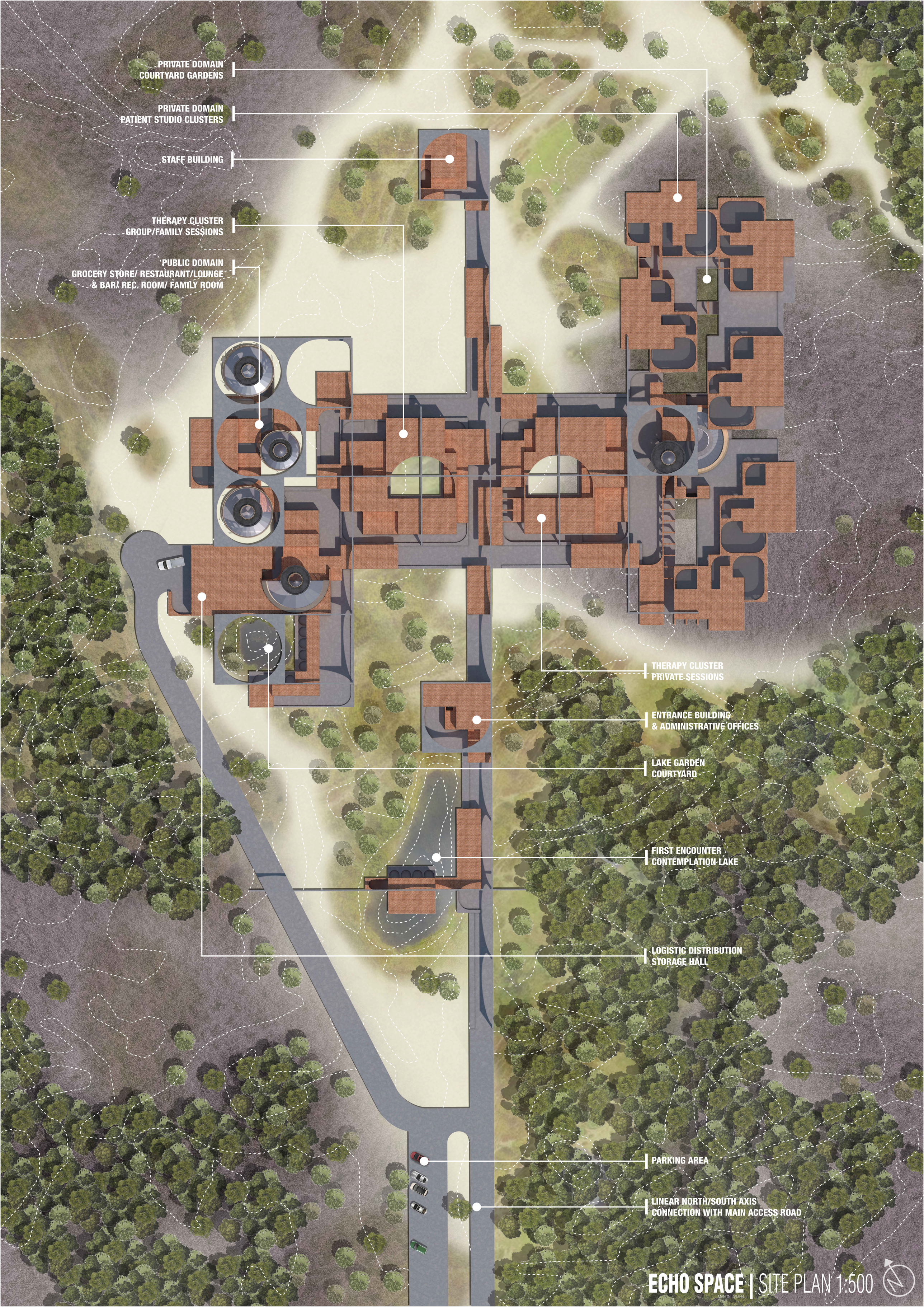
The one-sided directional semi-arch, doesn't only match its architectural representation by name (~semi~) but also expresses a very strong directional guidance. In the case of ECHO SPACE treatment center it will always point towards more private settings and domains, providing veterans with the tool to always find calmer grounds in case anxiety hits.



THE PRIVATE DOMAIN I
ARCHITECTURAL REPRESENTATION

The Private domain is the domain where we express our identities the most, where we are the ones who decide the rules and regulations of our own private domain, and the domain we can comprehend the easiest. Because we all know and have a private domain, we can relate to the rules and regulations that count in others. The private domain is an inclusive and focussed domain, which should embrace us and keep us safe.

The small scale arch provides them with all these qualities, it is an inclusive, introverted space, with a linear focus towards the adjecent environment. The scale of the arch provides a human scale feeling and will translate for veterans into a safe and embracing environment.

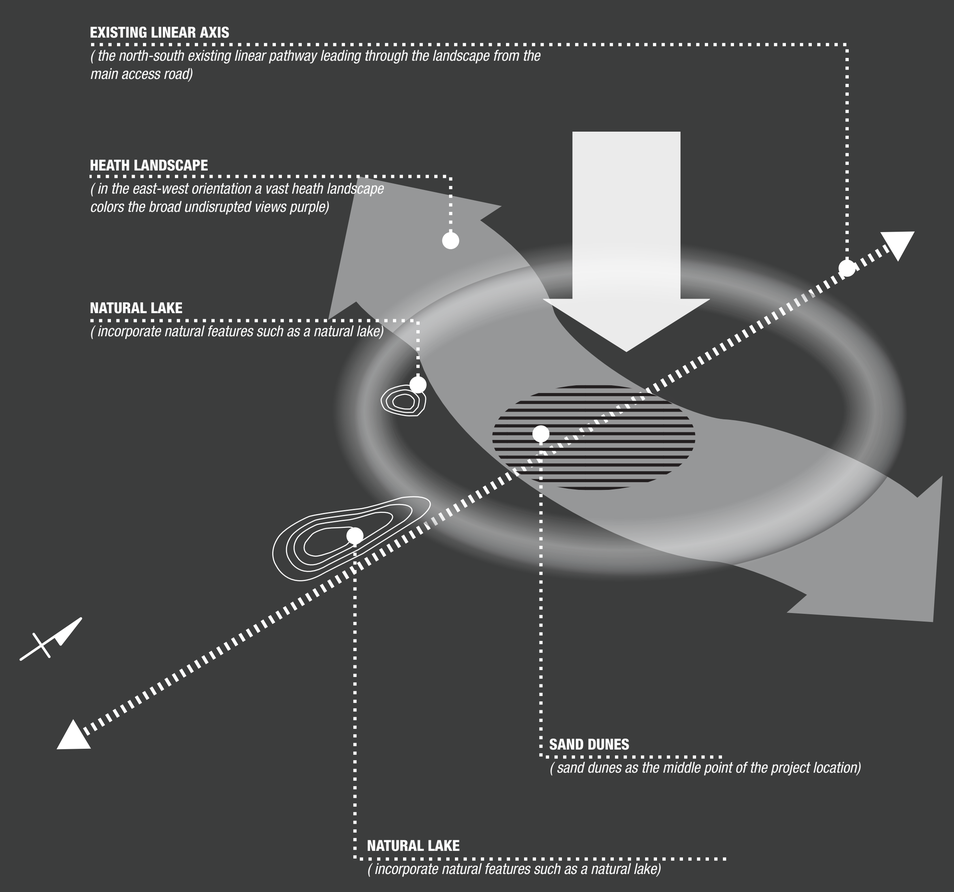


ECHO SPACE | SITE PLAN 1:500

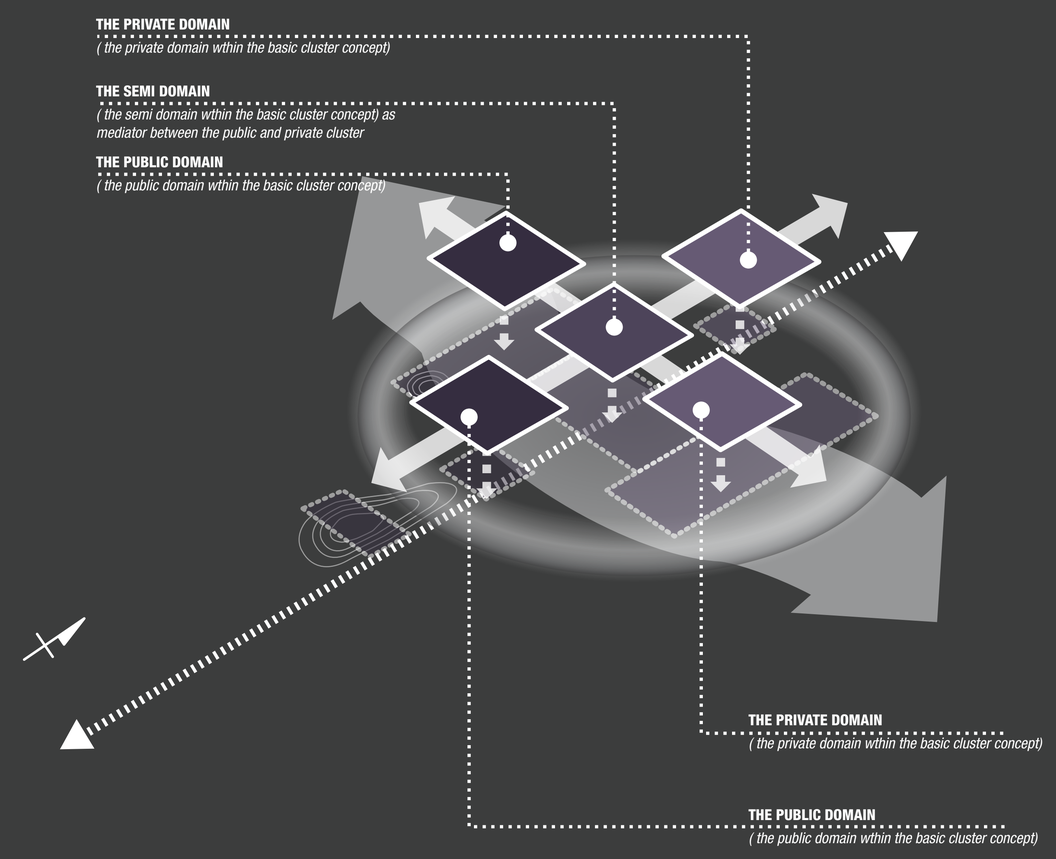
MANON DAMEN

ECHO SPACE I DESIGN PROCESS

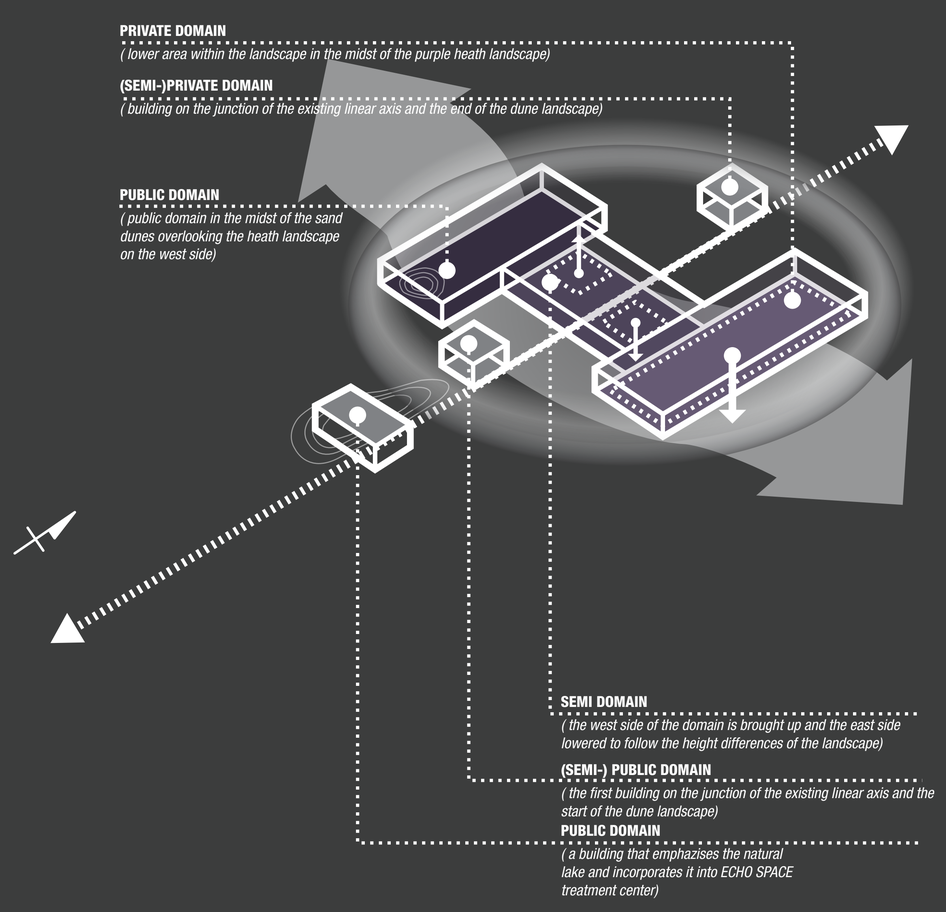
A DIAGRAMMATIC OVERVIEW OF THE DESIGN STEPS TAKEN IN THE PROCESS



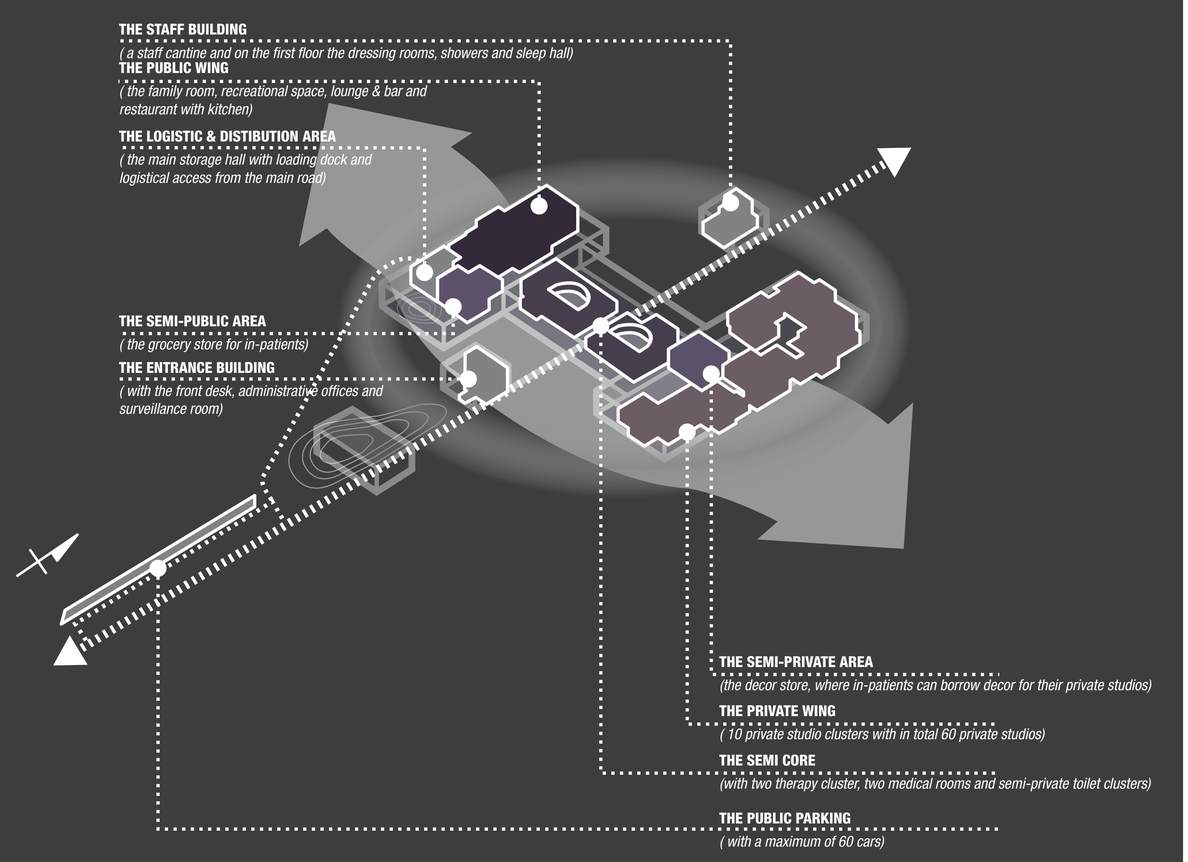
STEP 01 I POSITIONING OF ECHO SPACE IN THE LANDSCAPE



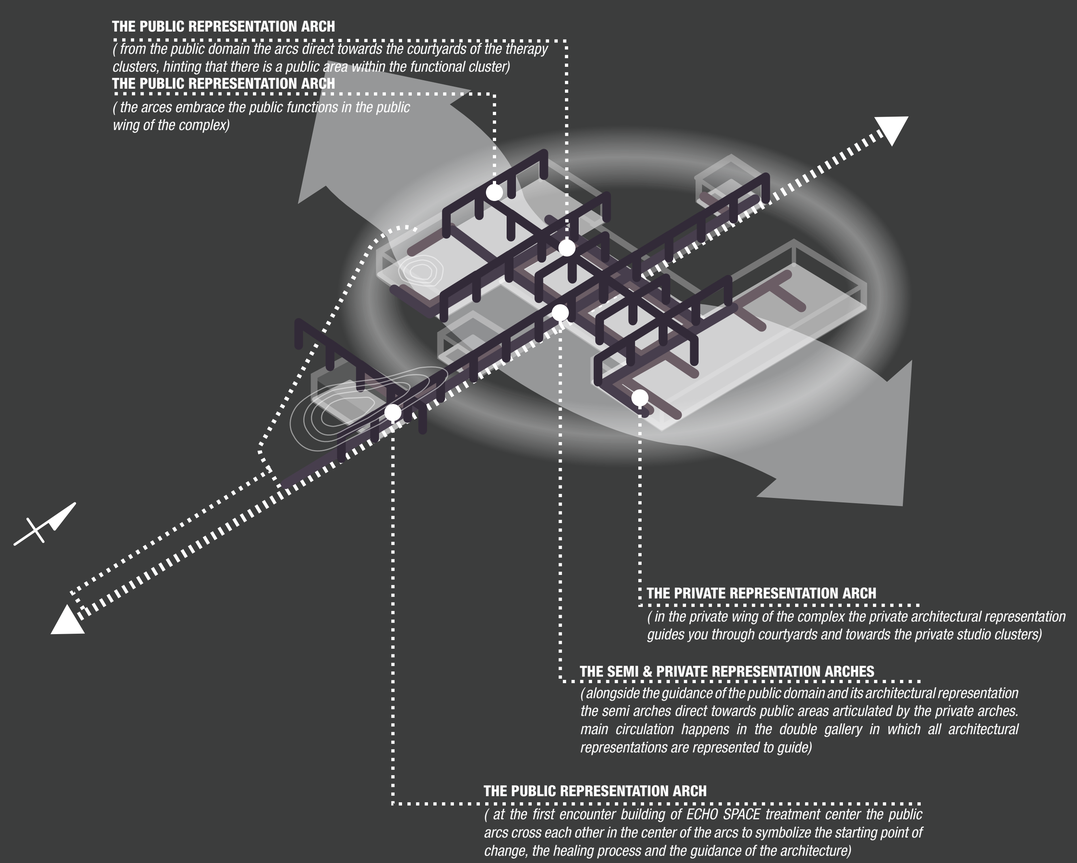
STEP 02 I INTRODUCING THE BASIC CLUSTER CONCEPT & TRANSFORMING IT INTO THE FOOTPRINT OF ECHO SPACE



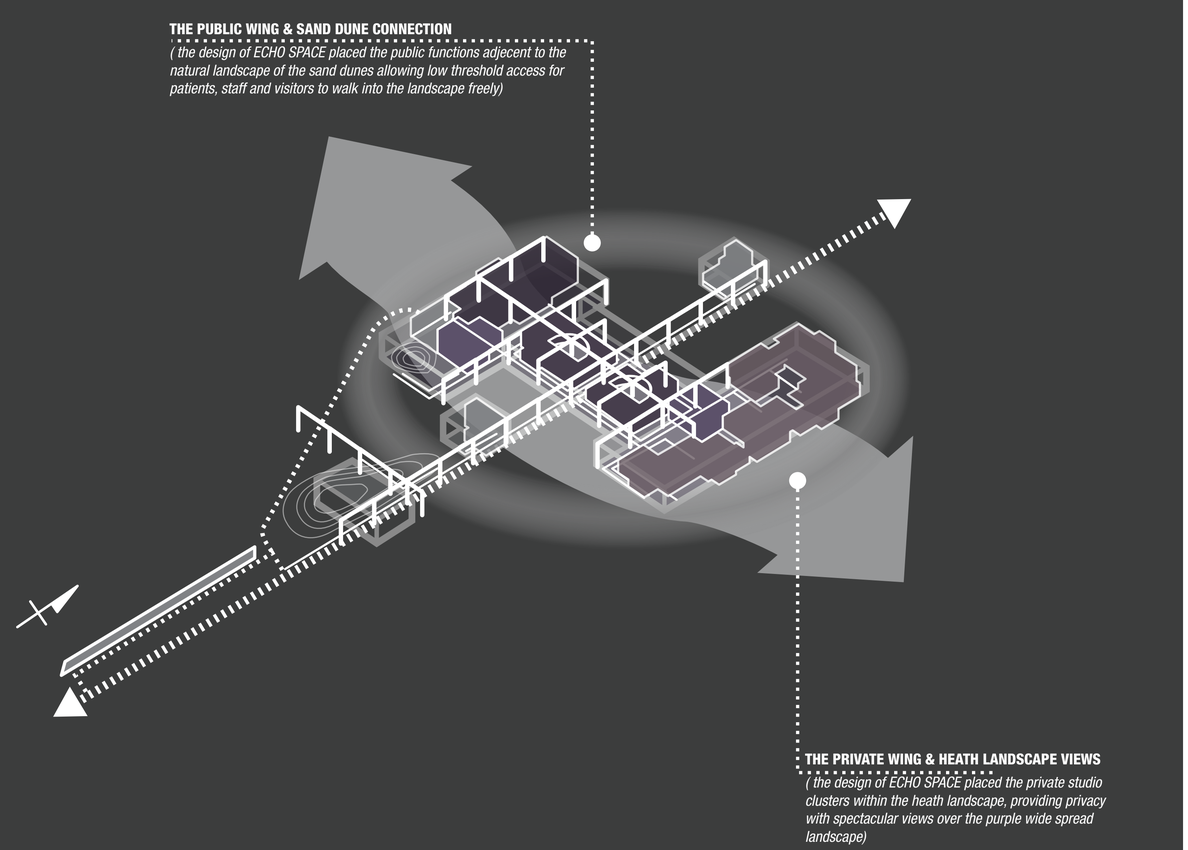
STEP 03 I TRANSFORMING THE FOOTPRINT TO CONDITIONS OF THE NATURAL LANDSCAPE



STEP 04 I INTRODUCING THE PROGRAM ACCORDING TO THE BASIC CLUSTER CONCEPT



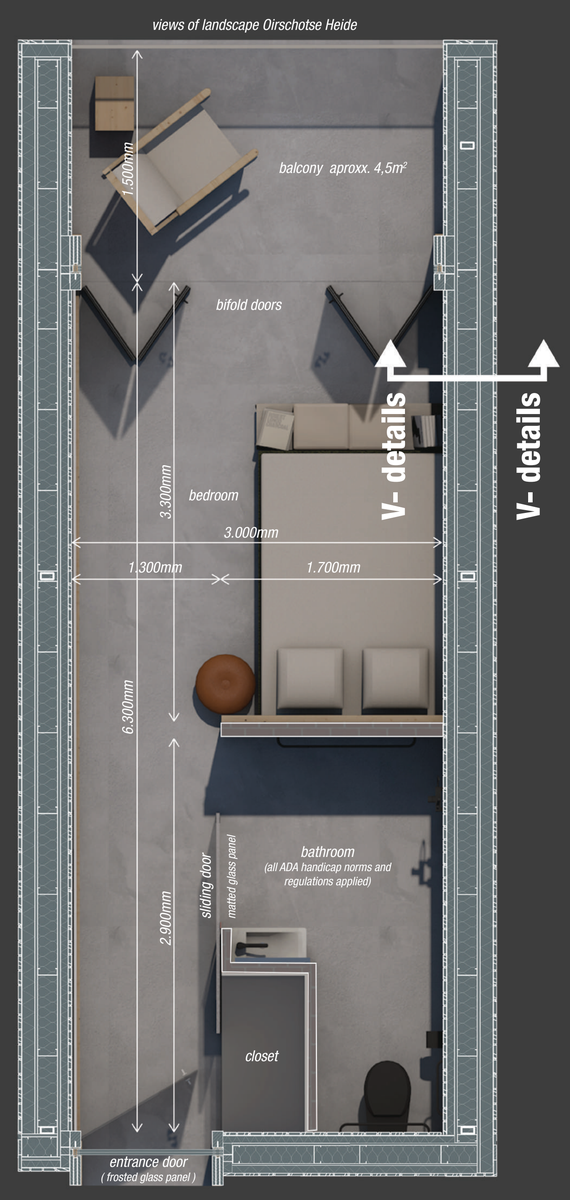
STEP 05 I IMPLEMENTING THE GUIDING PRINCIPLES OF THE ARCHITECTURAL REPRESENTATIONS



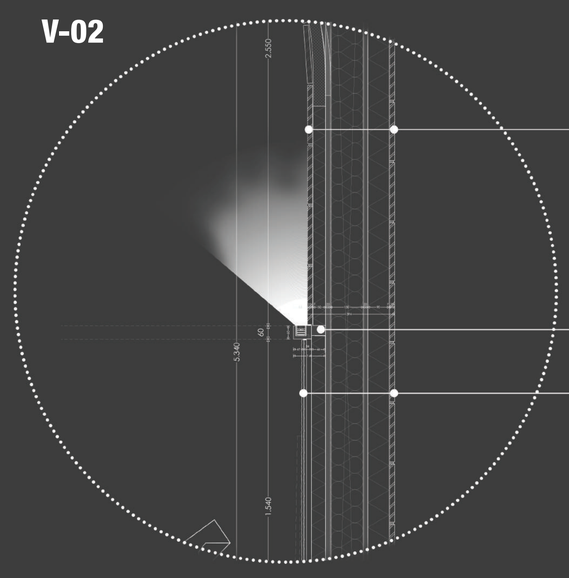
STEP 06 I ECHO SPACE TREATMENT CENTER " A GUIDING & AIDING SPACE SPECIFIC DESIGN"

ECHO SPACE I PRIVATE DOMAIN

PATIENT PRIVATE STUDIO CLUSTERS



PRIVATE STUDIO with bathroom & balcony



EXTERIOR WALL [Rc = 8,4]

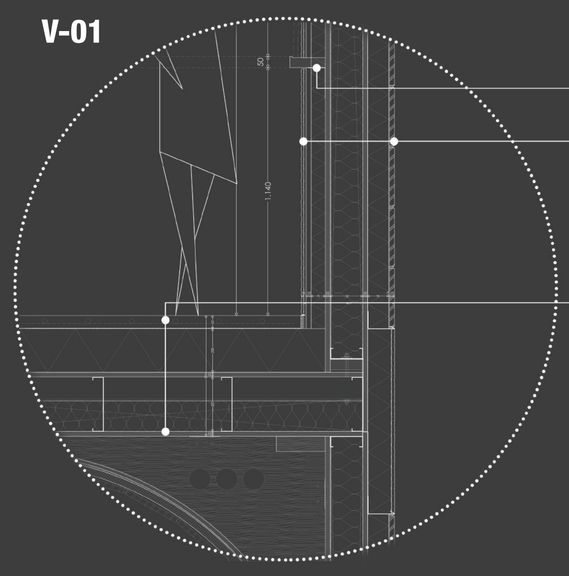
(from interior to exterior)
> brick strips, 23mm; red melange 260x80mm; 7mm double mortar layer
> EPS insulation 50mm
> OSB-3 board 22mm
> vapor barrier foil
> Steal frame C150mm; with mineral wool blanket insulation
> OSB-3 board 22mm
> EPS insulation 90mm
> brick strips, 23mm; red melange 260x80mm; 7mm double mortar layer

WALL WASHER LED UPLIGHT

LED strip uplight in wooden reveal mounted with steal ancors

EXTERIOR WALL [Rc = 8,4]

(from interior to exterior)
> plaster; RAL9010 Pure white; granule dimension 1.8mm
> gypsum board 12,5mm
> vertical wooden slats ; core-to-core 600mm
> EPS insulation 70mm
> OSB-3 22mm
> vapor barrier foil
> Steal frame C150mm; with mineral wool blanket insulation
> OSB-3 board 22mm
> EPS insulation 90mm
> brick strips, 23mm; red melange 260x80mm; 7mm double mortar layer



WOODEN REVEAL FOR DECORATIVE PURPOSES

Wooden reveal 65mm perpendicular to wall, mounted with steal ancors

EXTERIOR WALL [Rc = 8,4]

(from interior to exterior)
> plaster; RAL9010 Pure white; granule dimension 1.8mm on gypsum board 12,5mm
> vertical wooden slats ; heart-to-heart 600mm on EPS insulation 70mm
> OSB-3 22mm
> vapor barrier foil
> Steal frame C150mm; with mineral wool blanket insulation
> OSB-3 board 22mm
> brick strips, 23mm; red melange 260x80mm; 7mm double mortar layer on 90mm EPS

1ST FLOOR [Rc = 9,3]

(from interior to exterior)
> grinded concrete floor topping, 60mm; with floor heating tubes on net 150x150mm
> EPS pressure-resistant floor insulation, 200mm
> OSB-3 22mm
> Steal frame C250mm; with mineral wool blanket insulation 140mm
> OSB-3 board 22mm
> air pocket with vertical OSB-3 board 22mm (fixation of arc), core-to-core 600mm
> OSB-3 board 22mm
> EPS flex insulation 50mm
> brick strips, 23mm; red melange 260x80mm; 7mm double mortar layer on 90mm EPS

ECHO SPACE treatment center has accomodations for 60 in-patients to stay in a private studio with shared living spaces. In total there are 10 clusters, divided over two levels, which each provide 6 private studio's and a shared kitchen, living room, recreational hallway and core positioned facilities such as laundry and storage.

The number six derives from the organisational structure of the military, where a group of six soldiers make up one military section. It is within this formation that the "military brotherhood" is most established. Having six patients in one cluster allows for amical bonds to develop amongst peers, whilst maintaining an emotionally manageable demography and providing required privacy and intimacy in the comfort of the patients private space.

The private clusters are architecturally articulated with the architectural representation of the private domain and the semi domain, leaving the representation of the public domain behind closed doors, clearly defining the space as a private domain. The shared spaces are articulated with the semi-arc, providing direction to the private studio's and facilities. The private studio's are articulated by solely the private inclusive arc, creating an intimate space with a focussed view towards the landscape.

The materials together form a calm pallette to assure an environment in which patients can relax and de-stress. The brick and concrete defined building continue in the private clusters, but to provide a more homely environment materials such as rough decor plaster up to 900mm & 2700mm above finished floor levels are added to provide a "blanc canvas" on which patients can place paintings and other decorative elements they brought from home or got at the decor store to personalize their space and shared space together. Specially placed wooden reveals allow for patients to plug-and-play with the walls of their private cluster without having to use paint, nails or drills.
The window frame are articulated in the same young and bright oak wood. The frames are narrow and deep to emphasize the moment of entering/leaving a space & looking out of a window into the landscape. This will make patients and visitors more aware of the changing environment and their position in it.
The studio's have ceiling high window and door frames, seperating them from the exterior and the shared spaces of the private cluster. The through and through window frames allow a maximum amount of natural light to exude into the spaces. However, privacy cannot be compromised; therefore all window frames towards a private space, including the front door of the cluster have frosted glass panels, allowing light to diffuse into the spaces, without compromising on privacy.

LAMINATED WOODEN WINDOW FRAMES
(oak wood with durable sealant)
Durable sealant is UV-resistant, waterproof, resistant to wood worm and discoloration

INTERIOR PLASTER
(RAL9010 pure white)
rough textured plaster, matted

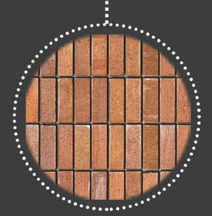
COMPOSITE STONE
(calacatta 22mm composite slabs)
placed in wet cells, water proof finished seam with flexibel sealant

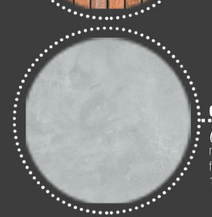
SHARED KITCHEN & LIVING ROOM
(approx. 90m²)

ENTRANCE
(all private doors in the private domain have frosted glass panels to guarantee privacy)

RECREATION HALLWAY
(approx. 50m²)

BRICK STRIPS 23x260x80mm
(red melange dark anthracite grout)
stacked brick strips, 23mm Red Melange wall finish.Mounted on EPS insulation with approx. 7mm brick mortar





CONCRETE FLOOR FINISH
(grinded and coated concrete floor finish)
matt grinded and repellent coated concrete floor finish, 60mm with floor heating tubes on steal netting 150x150mm

PRIVATE STUDIO'S
(6 studio's of approx. 20m² with private balconies of approx. 4,5m²)

SHARED FACILITIES IN CORE OF THE CLUSTER
(The shared facilities such as a large storage and coatcloset and a laundry room with double appliances)

HANDICAP TOILET
(handicap toilet of approx. 5,5m²)

PRIVATE CLUSTER with six private studios and shared facilities

ECHO SPACE I PUBLIC & SEMI DOMAIN

FROM THERAPY ROOMS TO THE BAR & LOUNGE; THE ARCHITECTURAL ARTICULATION OF ECHO SPACE TREATMENT CENTER

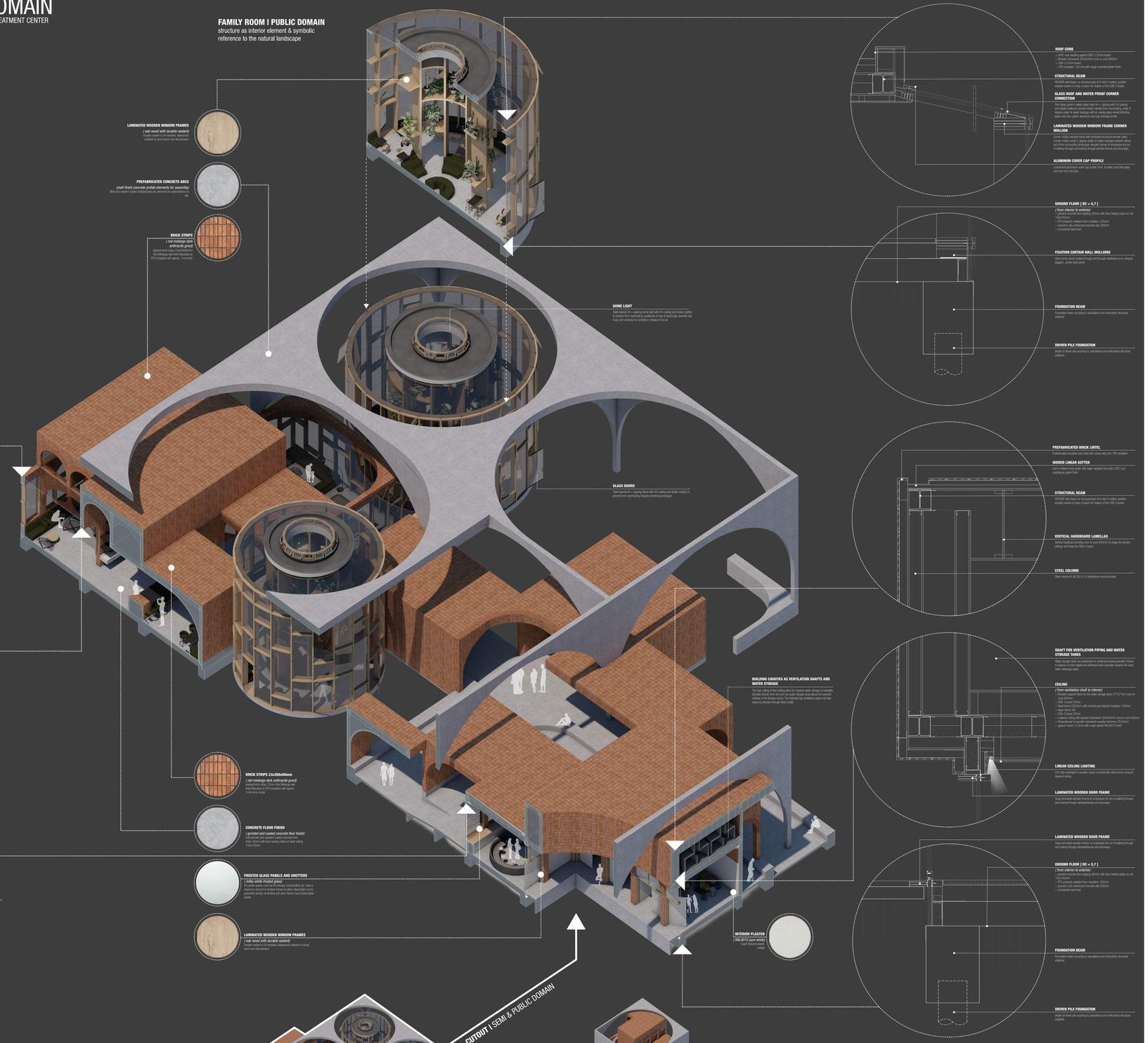
From the double gallery around the therapy rooms towards the public domain, the architectural language of ECHO SPACE treatment center evolves from an inclusive oriented environment of the therapy room facing the courtyards towards an exterior oriented transparant public area with direct access to the natural landscape of the Oirschotse heide.

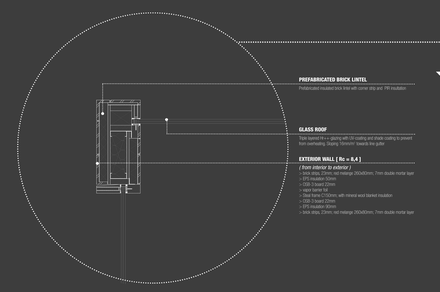
The double gallery around the therapy cluster consists out of a split level open air gallery. The inner gallery connected to the therapy rooms is raised and accessible only through several ramps, providing a more private access to the therapy rooms yet leaving it completely open to the exterior.
The therapy cluster itself has a courtyard only accessible from within the therapy rooms, creating a private outdoor area for patients.
The therapy rooms itself have the maximum amount of windows to allow natural light to seep into the rooms. To provide privacy, the windows and doors of the therapy rooms have frosted glass, which allows light to diffuse into the rooms but keep people from looking into the rooms where private therapy sessions are in process.

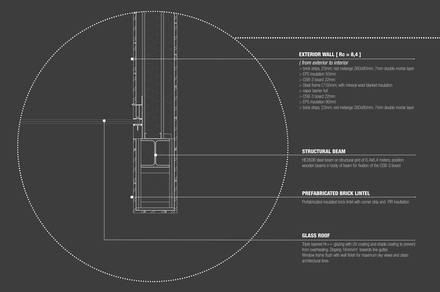
The main gallery is leveled with the floor level of the public domain, where all public functions are positioned. Visitors, such as family, can meet with there relatives in these areas. The public domain has two entrances directly from the main gallery and is connected to the natural landscape. This allows visitors and patients to enjoy the natural landscape adjecent to the indoor spaces which are all architecturally articulated by high curtain walls and glass roofs, creating a low threshold indoor-outdoor relationship with the natural environment.

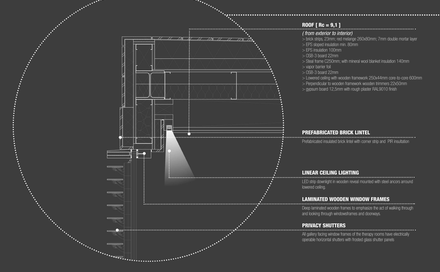
The design of the structural support of the glass curtain walls aren't merely functional as they become part of the interior and symbolize a domesticated version of the surrounding trees through materialisation, design and additional indoor potted plants which are placed on the horizontal mullions of the structure.

The chosen building method of ECHO SPACE is a steel frame structure, to allow slim structures, architectural and structural freedom without compromising on energetic and thermal conditions. This provides high interior comfort without compromise on the architectural standards for ECHO SPACE treatment center.









ECHO SPACE I TREATMENT CENTER

FLOOR PLAN AXONOMETRIC AND VISUALISATION

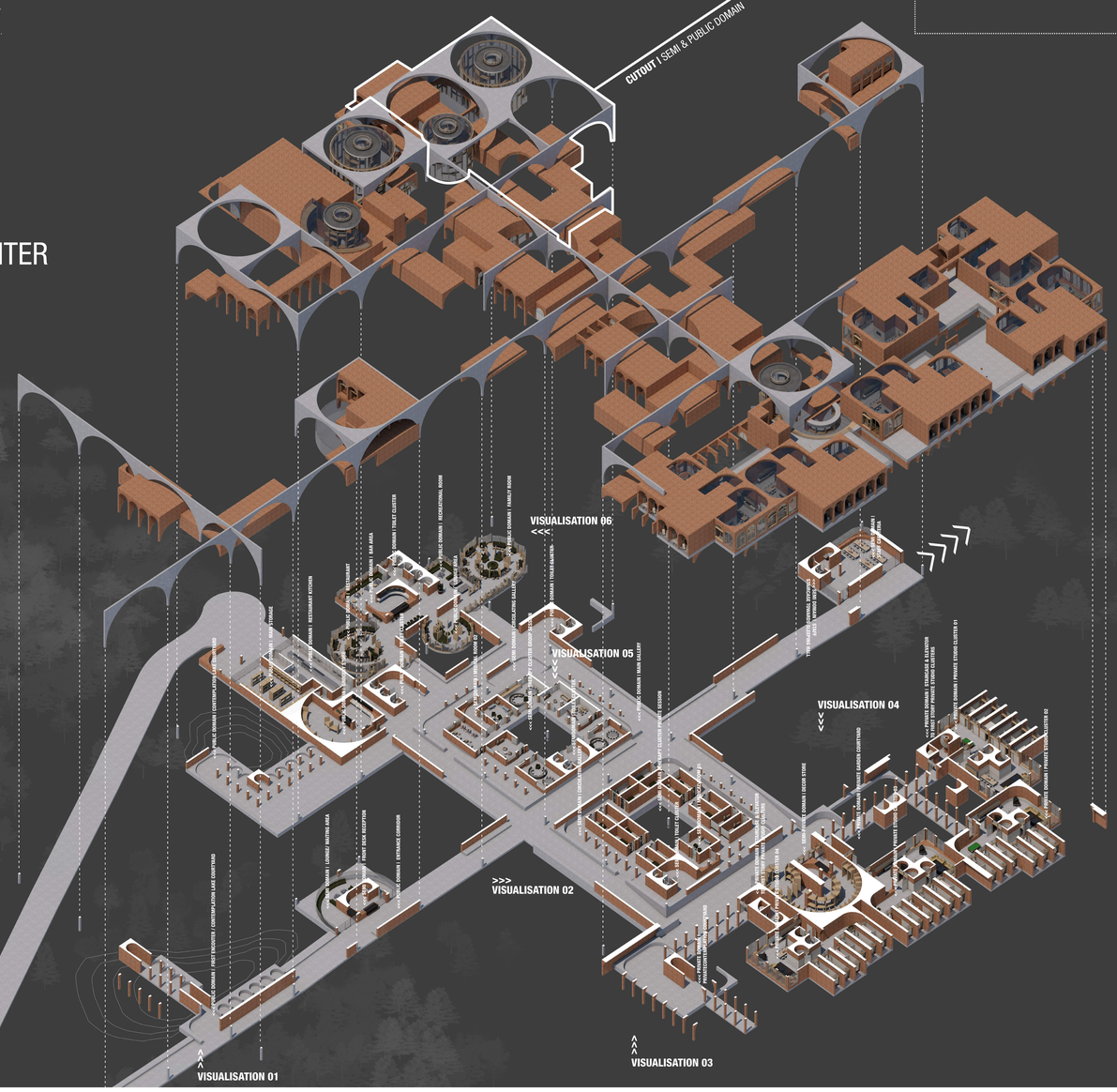
ECHO SPACE treatment centers' design and program developed out of the concept of an abstracted bufferzone, which functions as an in between world for veterans when rehabilitating from the military culture to the civilian culture. In this process of rehabilitation it is important for veterans to re-learn how the civilian built environment is constructed from three domains; The public domain, the semi domain and the private domain. Through these three domains we can comprehend our environment and consequently we know what the accepted and expected behavior is in each specific domain. This allows men to position themselves in the built environment, our culture and teaches us who we are as individuals. ECHO SPACE treatment center, therefore, is a center where veterans can learn to position themselves in the civillian culture again so that they can regain trust in their built environment providing them relief from their environmental triggers related to their PTSD.

The program of the treatment center is therefore different from other treatment facilities and functions more like an abstract miniture city in which all domains are represented.

According to the Cluster-within-cluster concept the program is layed out from the most private functions (the private studio's for the patients) in the right wing of the building towards the semi-private functions in the mid-right section of the building, then leading towards the semi-public functions in the mid-left section of the building, to end in with the public functions (such as the restaurant and family room) in the left wing of the building.

The architecture of the building constantly articulates in which domain you are and directs and guides you towards the other domains. By using architectural representations for each of the three domains the entire building can be built up out of three basic architectural articulations, which results in an abstracted guiding and aiding environment. This environment then provides the veterans with the tools to comprehend the civilian built environment after they leave the treatment center.
They can apply these tools to not just to comprehend their built environment, but also to manage their reactional behavior they have to environmental triggers by applying the tools learned whilst at ECHO SPACE treatment center. This allows them to search for areas in the built environment to provide them with a better suited setting for their emotional state.

The architecture and its language first reveals itself to visitors in the first encouter, which is the first built structure of ECHO SPACE they will encouter when coming to the treatment center. It is here, that visitors can take some time to let everything sink in with beautiful views over the natural lake. After the first encounter visitors and patients can check in at the entrance building, where the staff will make sure patients and visitors will find their way through the building to settle in.

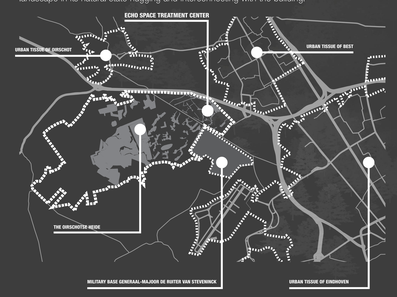


ECHO SPACE I LANDSCAPE

THE RELATIONSHIP BETWEEN THE BUILDING AND THE LANDSCAPE OF THE OIRSCHOTSE HEIDE

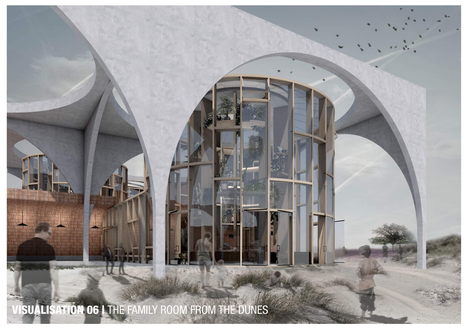
The Oirschotse Heide is a diversed natural heath landscape in between three urban tissues and the military base camp Generaal-Majoor de Ruiter van Steveninck. The Oirschotse Heide offers a location full of context from both the civilian and the military culture as it was a location of battle during the 2nd World War, as a former training ground for the military base on the edge of the landscape and nowadays as a leisure area for the civilians of all surrounding urban tissues. It is rich of different spatial compositions, from open stretches of heath landscape, sand dunes, thick forrests, shrubs and young tree patches. Together with its good connectivity to the urban tissue it becomes a low threshold, contextually rich and spatially interesting location as a true bufferzone between the two cultures for veterans to rehabilitate into civilian life.

ECHO SPACE treatment center is a big building which manifests itself within the natural landscape of the Oirschotse Heide. The building is therefore positioned within the sand dunes and heath landscape to reduce impact on the landscape and minimize the amount of trees that have to be removed. Besides the thoughtful positioning of the entire building the design allows the natural landscape to move into the structures, only paving the areas where pathways and building are necessary, creating an interesting play of courtyards, gardens and built environments on the location of ECHO SPACE treatment center, letting the entirity of the structure breathe and the landscape in its natural state hugging and interconnecting with the building.



VISUALISATION 08 I INTERIOR OF A PRIVATE STUDIO CLUSTERS' SHARED LIVING AREA

VISUALISATION 07 I INTERIOR OF THE FAMILY ROOM


VISUALISATION 06 I THE FAMILY ROOM FROM THE DUNES

VISUALISATION 05 I DOUBLE GALLERY AROUND THE THERAPY ROOMS

VISUALISATION 04 I THE JUNCTION OF THE SEMI-DOMAIN AND PRIVATE DOMAIN

VISUALISATION 03 I PRIVATE STUDIO CLUSTER AND CONTEMPLATION COURTYARD

VISUALISATION 02 I MAIN GALLERY LOOKING TOWARDS THE THERAPY CLUSTER

VISUALISATION 01 I FIRST ENCOUNTER