

MASTER

Design for a building

Institute of Crafts Mamelis

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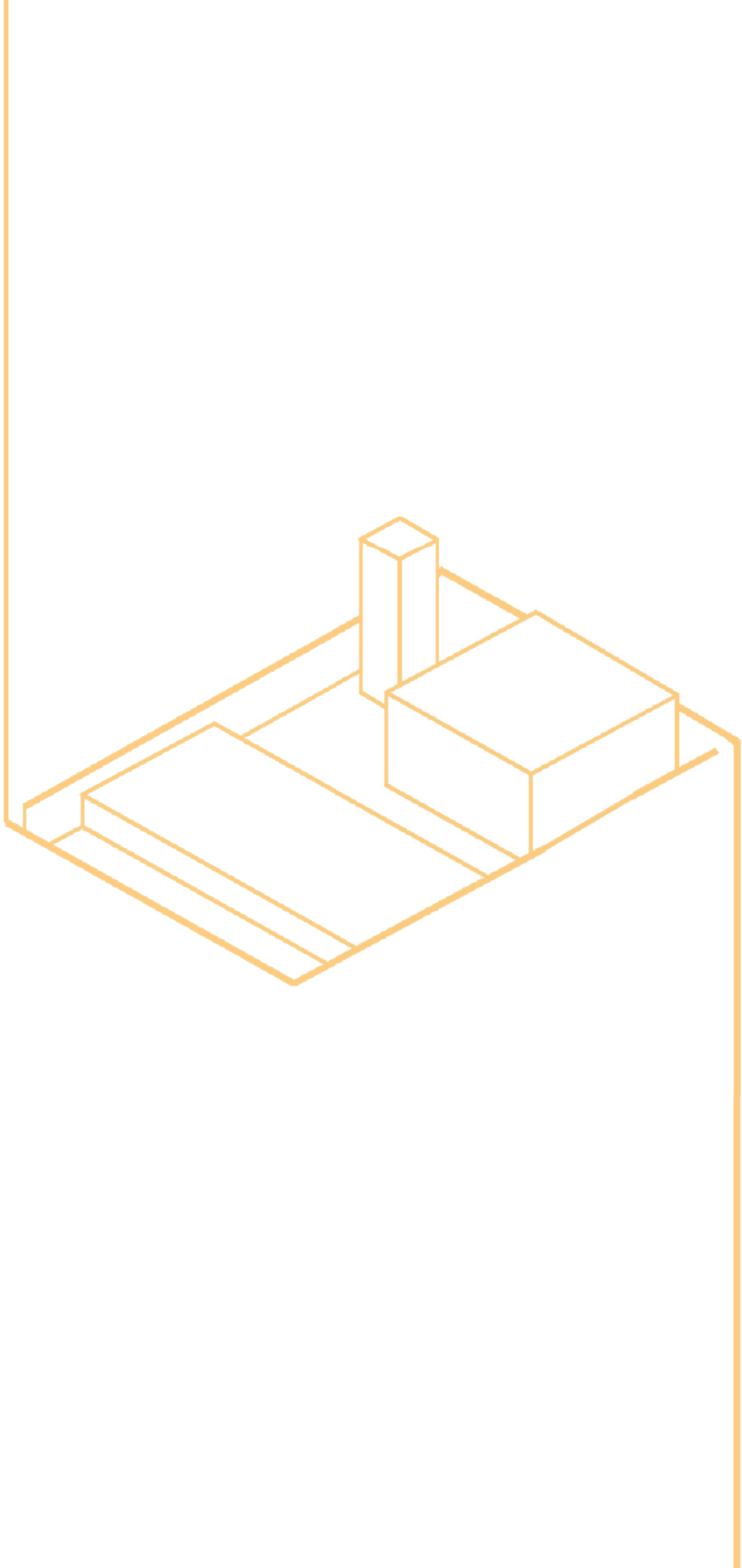
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DESIGN FOR A BUILDING

Graduation Studio "Masterly Apprentice II"

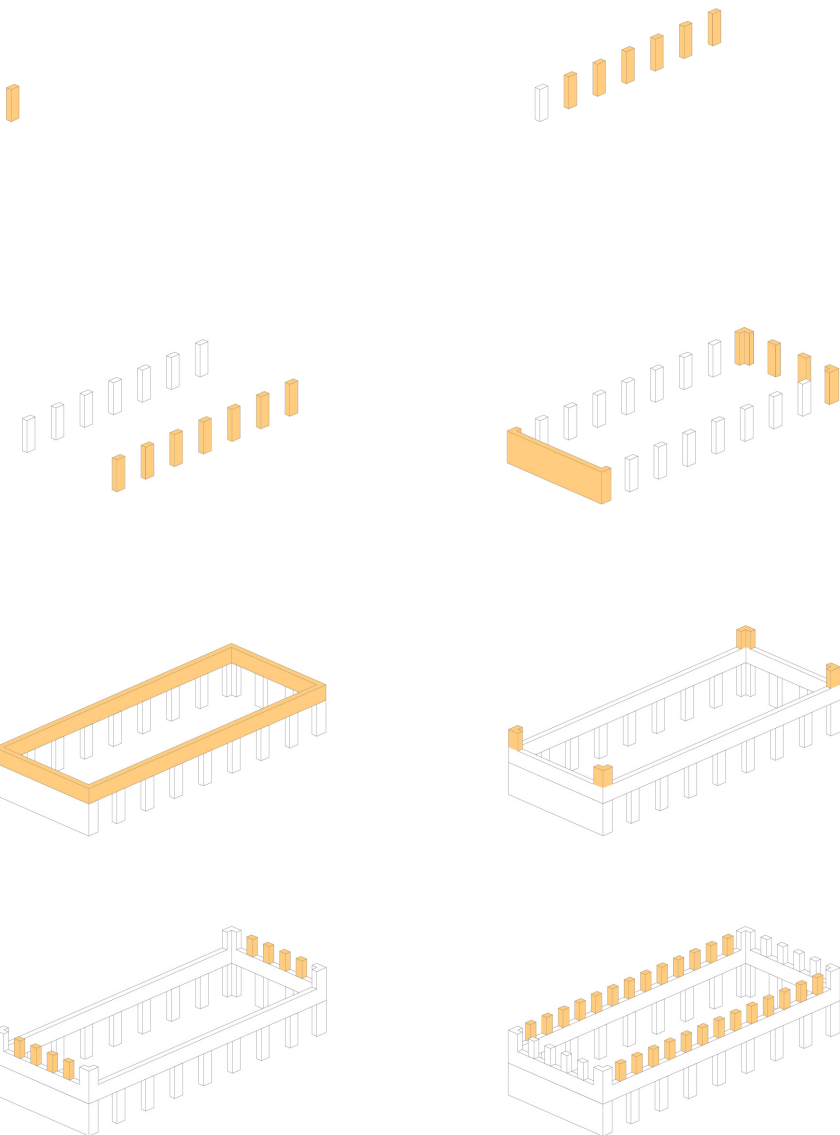
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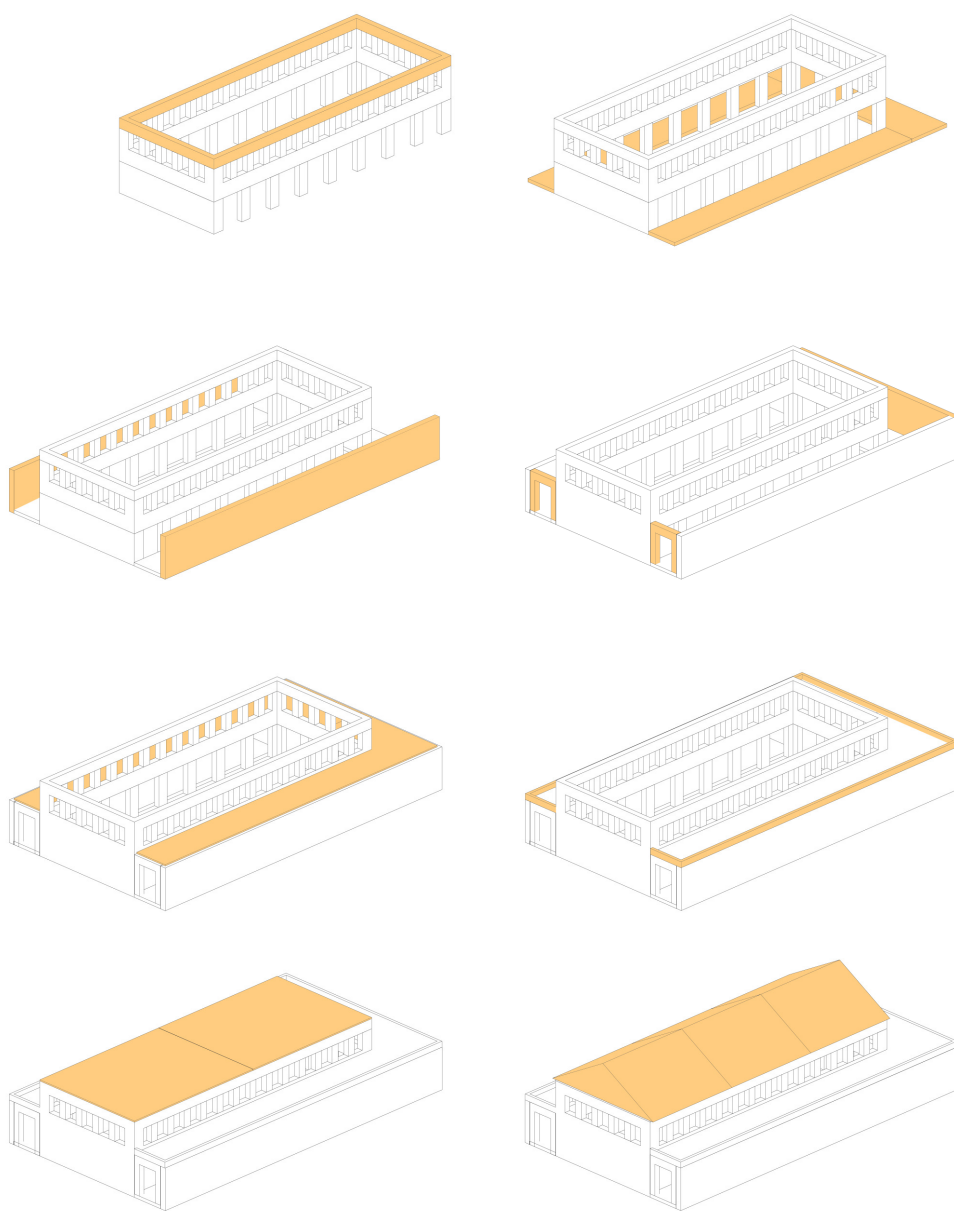
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Design for a building

LEARNED FROM A BUILDING

REFLECTING ON THE RESEARCH





THE RESEARCH

RECONNECTING TO THE ABBEY

In the companion booklet “Learning from a building: St. Benedictusberg Abbey” extensive research was conducted on the theory of Dom Hans van der Laan and his design for the Abbey in Mamelis. This research formed the groundwork on which this design was based. Which is why this research and primarily its conclusions will be shortly discussed as an introduction to the design. The previous pages show a step by step assembly of the abbey with building blocks. By deconstructing the building into these building blocks and then reconstructing it step by step, the influence of each addition became very evident. Through this process each step was relatable to a portion of the theory which van der Laan had written in his book “The architectonic space,” which created a better understanding of both the book and the building. This exercise eventually resulted in the following three core aspects which will be prevalent in the design contained within this booklet.

Walking & Working Spaces

Van der Laan makes a separation between working spaces and walking spaces. The working spaces are those spaces where we conduct our activities which require a small amount of movement space. The walking spaces are the spaces we move through and require more space. In the abbey these walking spaces are always connected and each door will lead into a walking space. The working space is then separated by a softer threshold, mostly a colonnade. This allows movement throughout the building without interruption of the core working spaces. Because of this separation it is possible to design the core spaces void of any routing elements and which allows them to stand as an individual entity.

Inside & Outside

The exterior of the abbey shows a very closed and anonymous facade, which reveals almost nothing of what goes on inside. The interior of the building however is a lot more open and has a relation to the nature outside. This contrast is created by making the core spaces higher than the surrounding walking spaces. By doing so the closed walls of the façade stand in the background of a much more open colonnade when inside the core space. This also allows for high windows which allow a relation to the outside from the core space, but are too far back in the façade to be visible from the exterior.

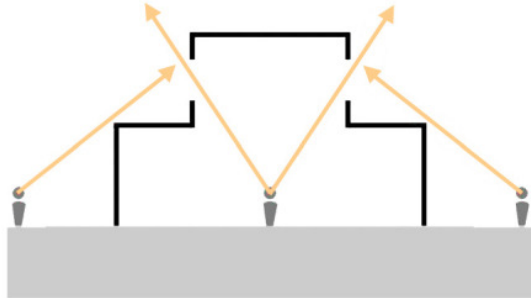
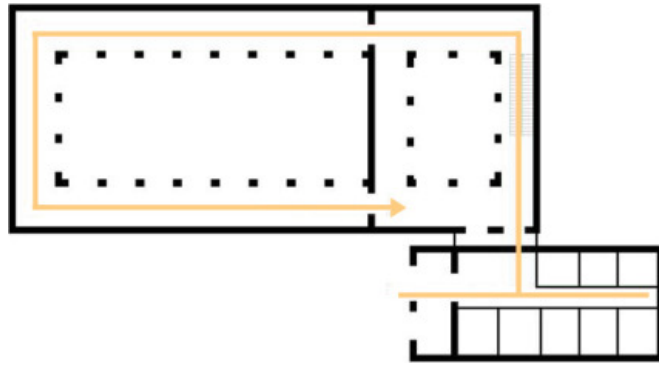
Verticality

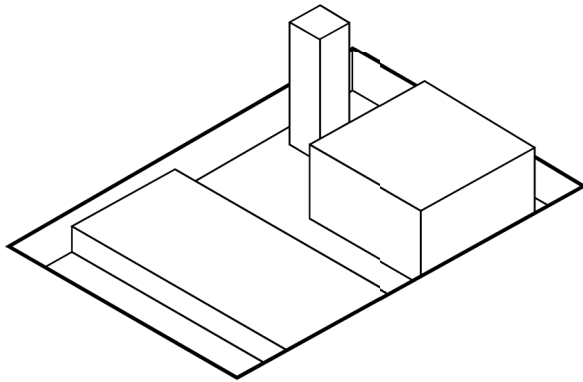
Van der Laan defines the human orientation to be horizontal, which is why vertical walls separate space. However due to this assumption it is also stated that horizontal planes do not separate space. It is because of this assumption that the connection between theory and practice started to fade when it came to the topics of ceilings and roofs. This is exactly why it is one of the aspects to be taken into the design.

[top]
Walking and working
spaces

[middle]
Inside & outside

[bottom]
Verticality





AN INSTITUTE FOR CRAFTS

THE CONCEPT

A DYAD OF SOLID & VOID

[top]
Solids

[middle]
Void

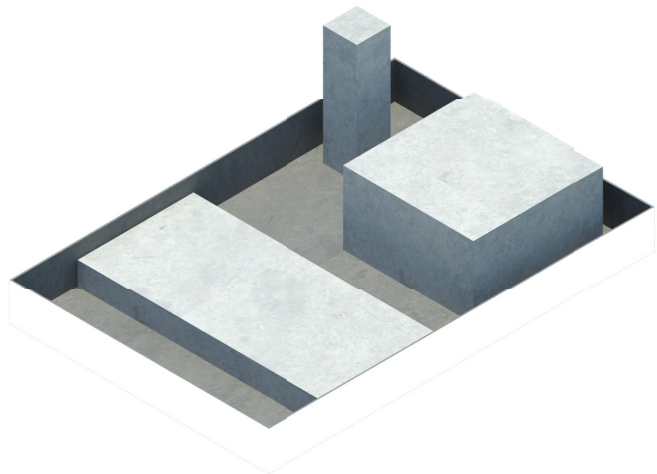
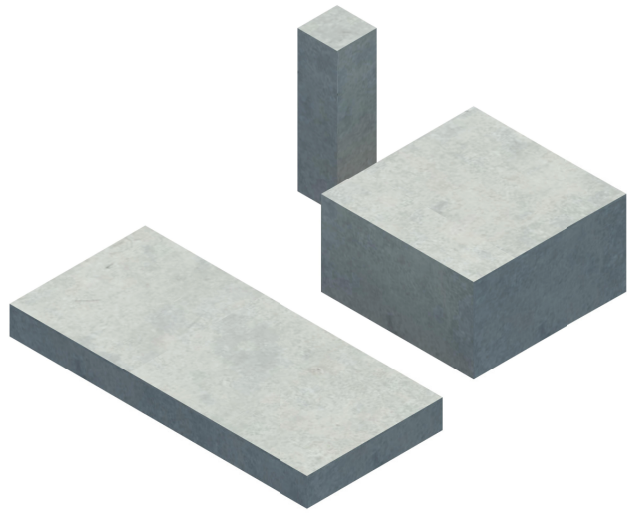
[bottom]
The dyad of solid and void

In “The architectonic space” it is discussed that the earth’s surface itself separates no spaces. It is a boundless natural field which is flat. By placing walls perpendicular to this surface we divide this boundless flatness into two sides relative to the wall. However there is no space separated from the boundless space. When a second wall is placed which relates to the first wall we do separate a part of the boundless natural field which exists between these two walls. In the book it is further discussed that the reliefs of the earth do not create this same effect. A hill is still related to the earth’s surface and therefore does not separate space from it. Further on in the book this is emphasized again by stating that the outside of the enclosed building space is a boundless, flat, open space.

Yet when visiting the site of the abbey the nature around it creates very prominent barriers and spaces. The hill on which the abbey stands is clearly present in its verticality, creating a distinction between the truly flat field in front of it and the overgrown rising surface. Even more so, the height differences between the roads and fields again create a distinction between the spaces. Not only the height is of significance here, but even the river and the trees create very distinct separations of space. However they are not considered to be the same vertical blockades that would separate space in the same way as the closed solids discussed in the theory of Van der Laan.

This gave the first indication against that boundless open field which was stated in the theory. Instead of being a boundless flat surface, the site had a high level of spatiality already present in its nature. The abbey stands dignified above the landscape as a vertical barrier, the trees create distinct spaces and even the flat river serves as a clear barrier.

To investigate this distinction between a open boundless context and a strong bounding context, the institute will be recessed into the open field. This allows the institute to appear as if it stands freely in the open field in accordance with the theory. However when descending into the building these same elements stand within a strong uncompromising boundary. Within that boundary will stand several solids which will be a composition of base shapes; the slab, block and bar. This difference in proportions will imbue each these shapes with different spatial qualities.



THE FUNCTION

REJUVENATION OF CRAFTSMANSHIP

During a visit to the abbey in Mamelis the craftsmanship that once resided within those walls still lingered. They were not however still an integral part of the daily life in the abbey. The letterpresses were laying around in a dusty room, the kitchen garden was left unattended and an extensive library filled with works from religion to fiction was only used by the few residential monks. This impression of craftsmanship being abandoned and forgotten behind enclosed walls were the reason for creating an institute for the crafts. A place where these crafts can be taken from their dusty resting places and brought back into the workings of society. It is a place where the crafts will not only be shown and presented, but also where these skills can be learned and taught. It will create an intermediary dialogue between the abbey and the public, where the institute will become a public buffer between society and the private abbey itself.

In “The craftsman” by Richard Sennet three steps are discussed which take place in the process becoming a craftsman. In order to facilitate the craftsmanship and its process in the institute it is necessary to take a closer look at those phases.

Historically the first step would be that of the apprentice. In the middle ages a child would be left in the care of a craftsman, who would raise this child until he would be of age. This phase has the student learning from the master by copying his actions. It was a relation where the craftsman decided what the student would learn, and the craftsman was the judge of the students’ performance.

After having spent the time as an apprentice in a craftsmans studio the student would become what was called a journeyman. The journeyman would travel around and no longer be bound to one craftsman to teach him. This entails that it was no longer a one-to-one teaching experience, but instead the student could decide for himself what skills he wanted to learn or what crafts he wanted to make. The phase of the journeyman was therefore a very inward and personal phase in becoming a craftsman. The journeyman determined his own path and his work was judged by himself.

The final step of becoming a craftsman is that of the master. A craftsman’s work is ultimately valued by its audience. This means that to transition from a journeyman to a master craftsman it is a matter of society’s appreciation of the work. If the work of the craftsman is valued highly he will be found a master craftsman in the eyes of society. It is the transition from a journeyman working as an employee to being able

to completely stand on their own and run their own business. Here is also where the dynamic of master and apprentice becomes evident. If society values the craft of an artist highly they will choose this craftsman to teach their child. It becomes circular where the apprentice has become a master who now in turn teaches a new apprentice and so on. In this manner the craft is passed down generations from master to apprentice.

In terms of the architecture these three phases will be resembled in the institute. The direct learning from a master is possible through studying their works in an archive or through lectures and workshops given by the masters themselves. For the masters it is possible to exhibit their work and sell it to a willing beholder. In contrast to this public relation of the master and apprentice there will be a more secluded segment for the journeyman. Dwellings and workshops will be present for the journeyman to work on their craft. Individually they can work in this inward and personal phase, while the connection to the institute still allows them to study and discuss their individual work during this phase.

THE SITE

A RISING LANDSCAPE



[top]
Site located in broader context

[next page top]
The site in relation to the busy intersecting roads and the nearby villages of Nijswiller and Mamelis

[next page middle]
The complete site as seen from the busy public street

[next page bottom]
The plot of the institute as seen from the abbey's access road

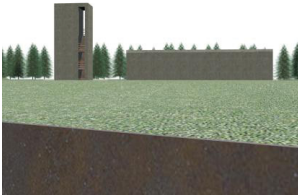
The site for the institute is located in a very natural area, with large fields and a high density of trees. The abbey stands prominently above the fields on top of a hill which is covered by a row of trees. The other dominant feature in the location is the road leading up to the abbey, again underlined by a row of trees on either side of it. The road curves upwards to the right in order to connect the busy public road to the abbey. Even though the abbey stands elevated and stands out in the location it still possesses a high amount of privacy due to being veiled by the trees.

The site is located between the hill and the busy road on the opposite site. This field can be divided into a front part, relating to the road, and a back part which relates to the hill. This division is again created by a tree line. It becomes evident that the tree lines are the structuring element in the site, both visually and structurally. They frame the access road, they withhold the abbey and separate the fields.



THE SITE

EMBEDDED INTERVENTIONS



The solids stand within an open field as seen from the recessed walking paths

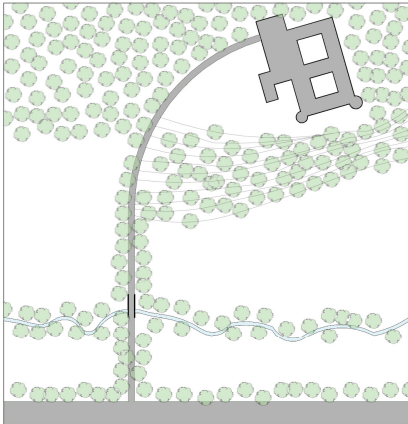


The solids stand enclosed within their actual context, as seen from within the enclosing void

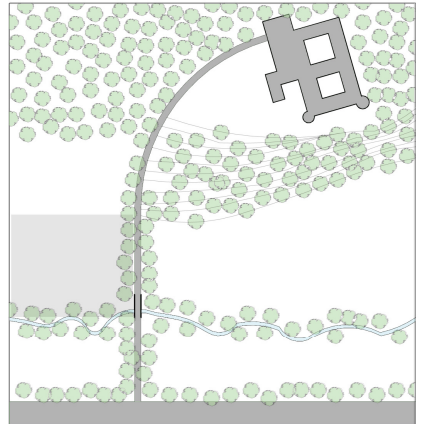
The institute itself will be placed in the portion of the field furthest from the street. This portion is enclosed by the hill and abbey on one side, the access road on the other and a small creek and tree line on the third. This creek and tree line assure a similar veil to that of the abbey, which will allow a level of privacy in relation to the public street.

In the current situation the nature is passed by in a car since the parking is located on the top of the hill next to the abbey. In order to slow down this movement through nature for experiencing it more, the parking will be placed at the bottom of the hill. The high density of trees in this location will hide the parking from view as to not make it a present influence in the canvas of nature.

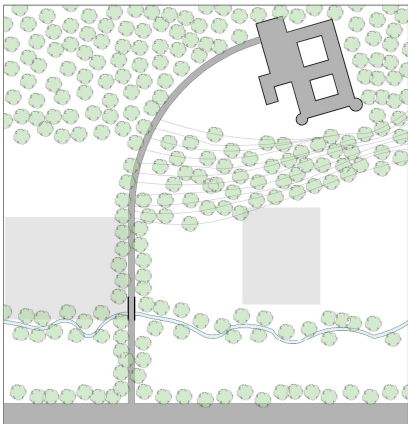
From the parking the visitor will step into the recessed walking paths which connect the parking both to the institute and to the abbey. These walking paths are recessed into the field, which embeds them into nature. This recessed walking path creates a duality in the appearance of the institute. From the recessed walking path the field lays flat at the eye level of the visitor. The solids of the institute appear to stand within this flat open field, as was the assumption in the theory of Van der Laan. When one enters the actual compound of the institute however it becomes apparent that the solids do not stand freely in an open field, but instead stand within a rigid boundary. Furthermore the recessed voids create a different, more emerged experience of the nature. Instead of passing through in a car, it is now a much more leisurely movement which takes place literally within nature. By placing the field at eye level the flatness of the field truly shows and the rising landscape of the hill in contrast becomes much greater. It creates an opposing aesthetic of two appearances. One shows the architecture rising above nature, while the other shows nature rising above the architecture. Both emphasizing the other, whether it is viewed from the open flatness or the enclosing void.



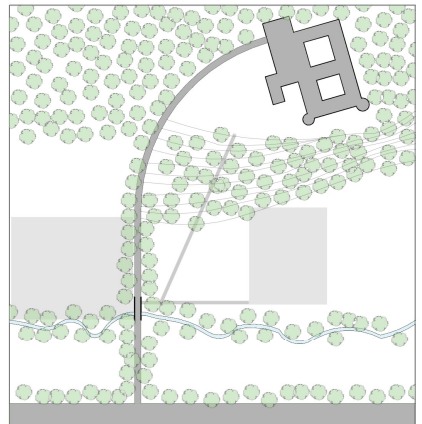
The existing site



Location for the parking



Location for the institute



Connecting recessed paths

The Apprentice

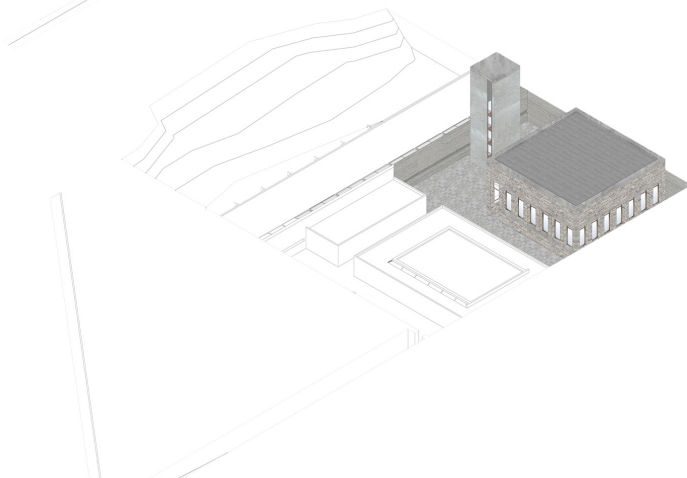
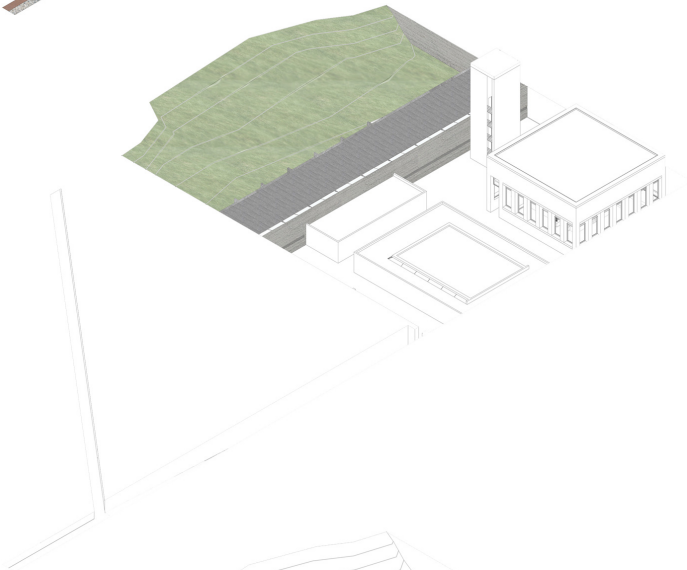
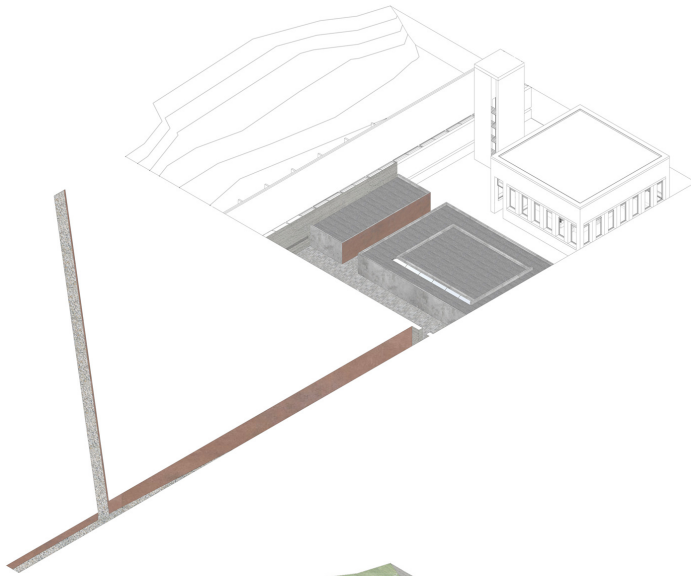
The apprentice is the first step in the process of becoming a craftsman and also serves as the first part of the institute. It is translated into the function of a library, where the studying of the craft can be conducted on a theoretical level. The phases of the apprentice and master are naturally closely related, which holds true within the institute. The apprentice can learn from the master by visiting the exhibition space, however the further studying of the crafts can be conducted within the library.

The Journeyman

The journeyman is a more secluded fragment in the stages of becoming a craftsman. Similarly this part of the building is also created as a secluded part of the institute. This segment is where the apprentice starts working on his own work and skills. In terms of function this will be a row of workshops and dwellings. In order to keep these spaces secluded within the institute they are connected by a corridor which is placed between the public and private segments of the institute. This allows the dwellings to stand semi-isolated within the complex. Here the journeyman can work on his craft in seclusion and focus on the inward process of developing his skills.

The Master

The final step of becoming a master craftsman is in the feedback of society. In order to get this feedback the public will need to observe the works. It is therefore logical that this phase will require exhibition spaces. In these places the art can be valued by the public and society can consequently give feedback to the skills and work of the craftsmen. Here the circular relation between master and apprentice will also be apparent as the apprentice can examine both the work of the master as well as learn from them within the lecture space.





A shoulderheight opening in the enclosing wall creates the relation between the public segment and the private corridor connecting to the dwellings

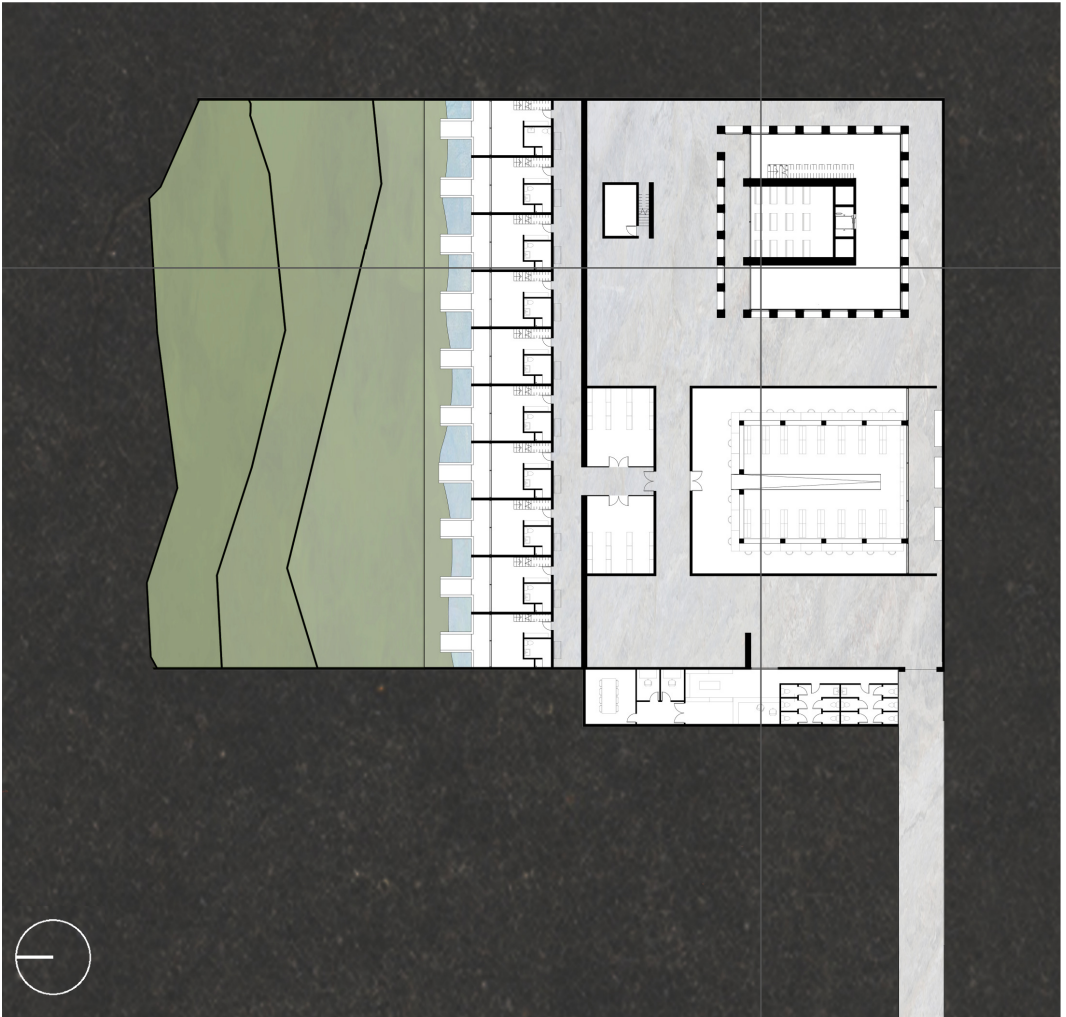
[next page]
Floor plan of the ground level of the institute (-5m)

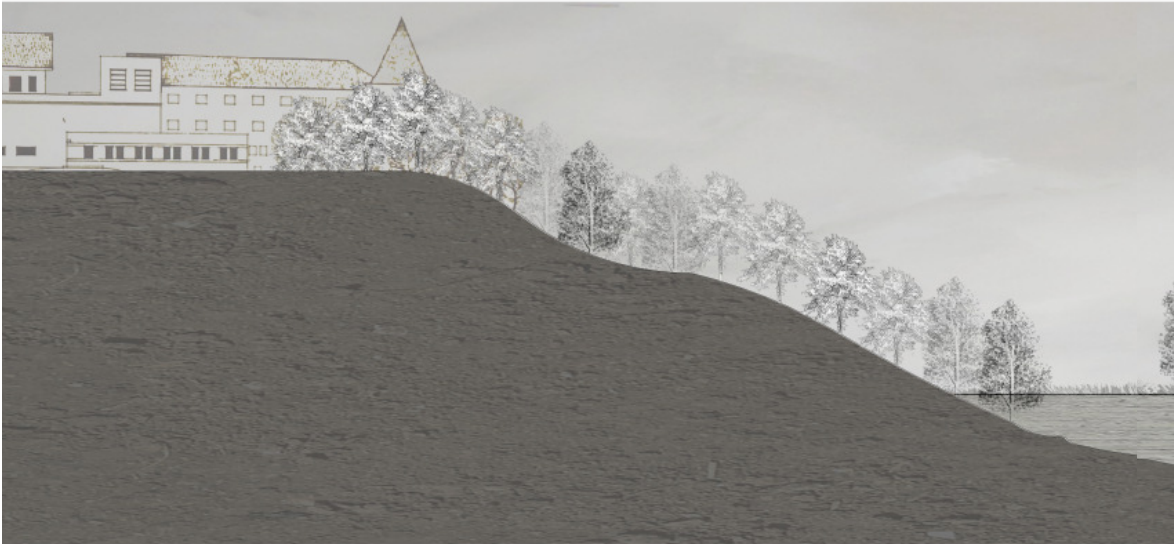
The institute is essentially divided into several compartments. The first being the strongly bounded public space. The second is the space where the institute opens up to nature and literally lets the hill come inside the complex. These two segments of the institute are divided by a corridor along the length of the complex. On the public side this corridor appears to be inside the surrounding wall, with only a long opening on shoulder height revealing what happens inside. From the other side this corridor gives access to the dwellings and this opening in the wall brings light from the public space into the corridor.

The segment which opens up to nature allows for an open side to the institute. Here the enclosing landscape folds down to no longer create the strong bounding walls. Instead the institute opens up, allowing the dwelling to be placed on the same ground level as the rest of the institute and still being able to have an open façade. To ensure that this segment is still closely related as part of the institute the bounding walls are extended into the hill where they slowly merge into the landscape. This creates an interaction where part of the hill becomes enclosed within the institute and nature and architecture merge.

The enclosed public space can be divided into two spaces, the entrance and the exhibiting spaces which are separated by the library's volume. The entrance space is entered immediately when stepping into the complex. It is an open space connected to the entrance building which houses the reception, toilets and offices. This allows visitors to collect themselves and take care of any necessities before entering the actual exhibition space of the institute.

The exhibiting space is a sizeable open square in which two volumes stand. The square itself can be utilized to hold workshops or seminars. It extends into the two volumes by continuing the floor seamlessly into the volumes to create a natural wandering space through the interior exhibiting spaces. It allows both of the volumes and the square to become one interconnecting space. The initial threshold for entering the volumes is very low since they are only present in moving between two walls, a very direct application of van der Laans theory. The floor extends into this space, the materials of the exterior continue into the interior and no door has to be opened. The threshold lies purely within the nearness of these two architectural elements of the wall.

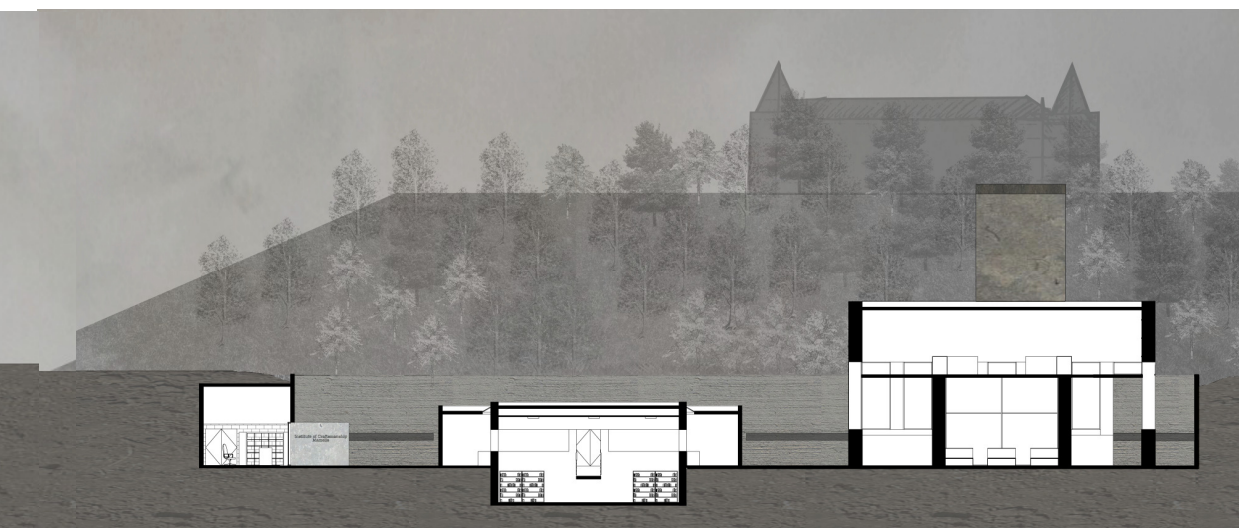


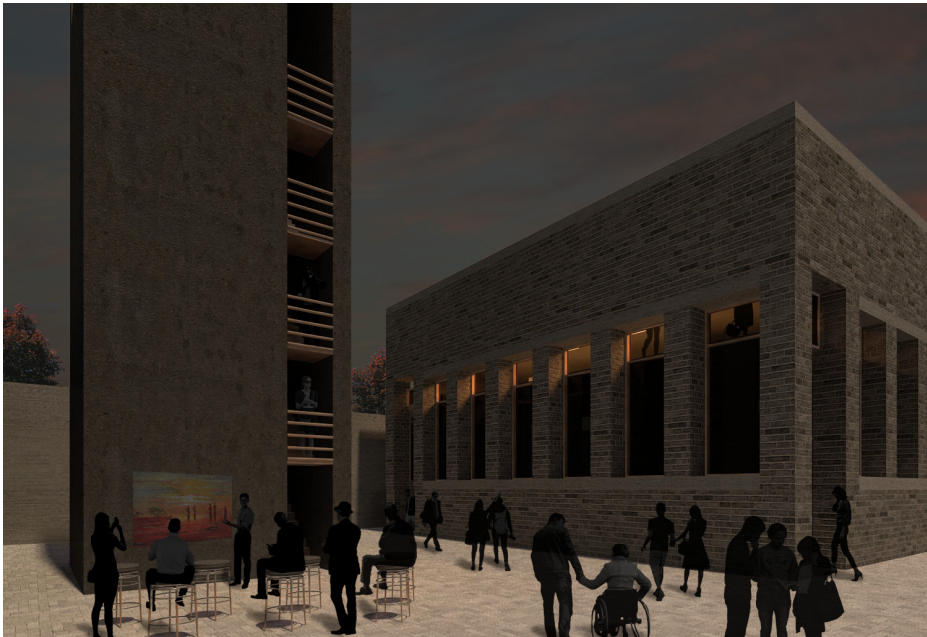


Section North - South

Section West - East







The exhibition square as a meeting space, connecting the two buildings



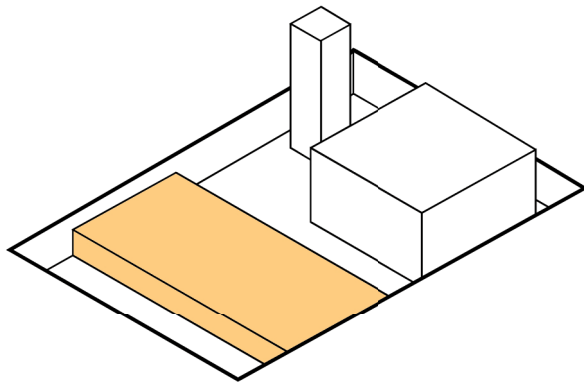
The institute opens itself to merge with the surrounding landscape

THREE STAGES OF BECOMING A CRAFTSMAN

SEGMENTS OF THE INSTITUTE

THE APPRENTICE

STUDYING AND ENTERING





The apprentice is the first stage in becoming a craftsman as was mentioned before. In relation to the institute it is also the first segment one enters when visiting the building. It encompasses the entrance of the building and the public library. Firstly the visitor comes from the recessed walking paths and moves through a cut in the outer walls of the institute. Here one is confronted with a closed volume which stands rigidly within the complex. It has a nearness to the outer wall which separates it, yet is not wide enough to allow passage through it. The friction of placing the solids within a context becomes visible in this relation between the object and the surrounding wall.

Confronted with this friction the visitor will move his gaze towards the elements which surround this interaction. The block volume is noticed behind the wall, the column shaped solid rises even higher over it to the left. With the eyes continuing in this line, the visitor will find the abbey standing on a hill which rises behind the concrete outer wall. Completing the visual search moving to the left, one will finally come across an open space to his left. Within this open space a cut through the obstructing library volume allows access to the rest of the institute. Opposite to this opening the institute formally introduces itself, with the bounding outer wall opening up to greet the visitor and to announce both the name for the building as well as the entrance building.

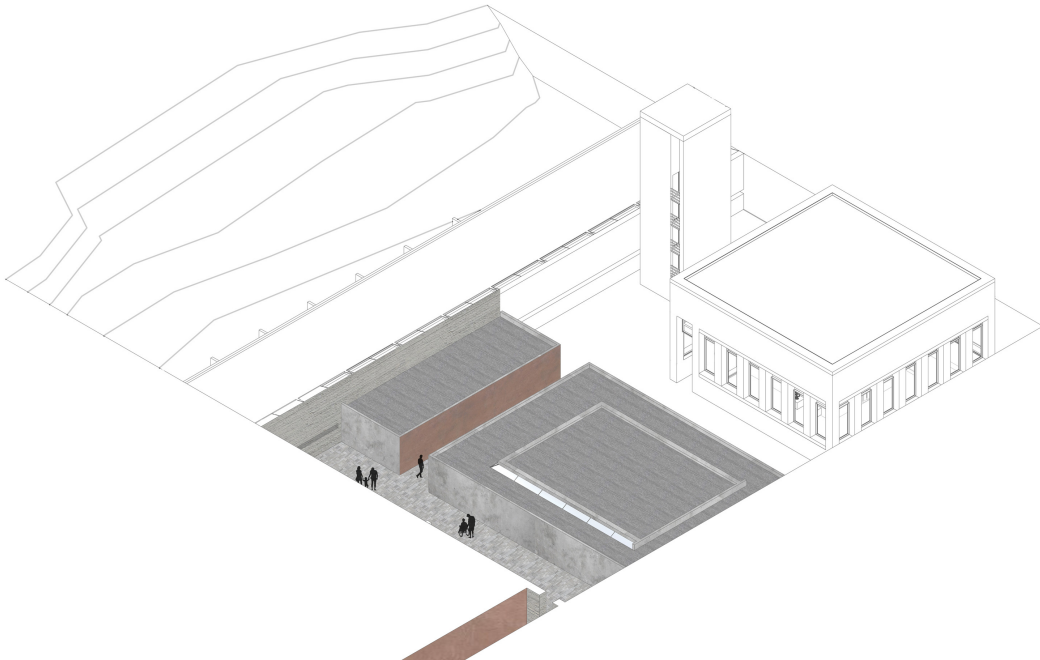


In this entrance building the reception will be found, together with a small showroom for inquiring about any of the exhibited pieces. This space also houses the supporting functions of offices and restrooms. This allows the visitors to complete any necessities prior to entering the rest of the functions which the institute has to offer.

Opposite of the entrance building is the aforementioned cut through the solid which connects the entrance space to the exhibition space. This cut has a clear differentiation in materiality from the solid form, which communicates the same appearance as the recessed paths did leading up to the institute. These paths and this cut both are used as voids cutting through the solid, allowing for passage through them. Looking through the passage, the secondary segment of the institute can be seen, the exhibition square. Furthermore the wall of the passage has a fold which moves into the volume, allowing access to the library.

[top]
Entrance to the institute, breaking through the boundary of the complex

[bottom]
Entrance building to the left and the cut in the solid, with abbey in the background

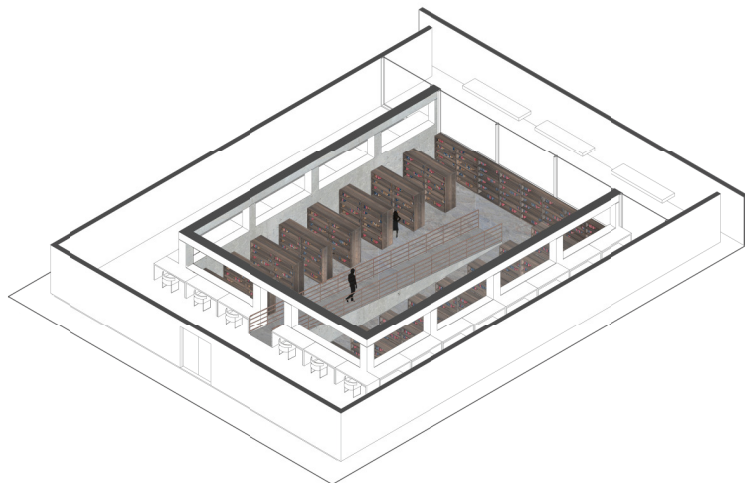
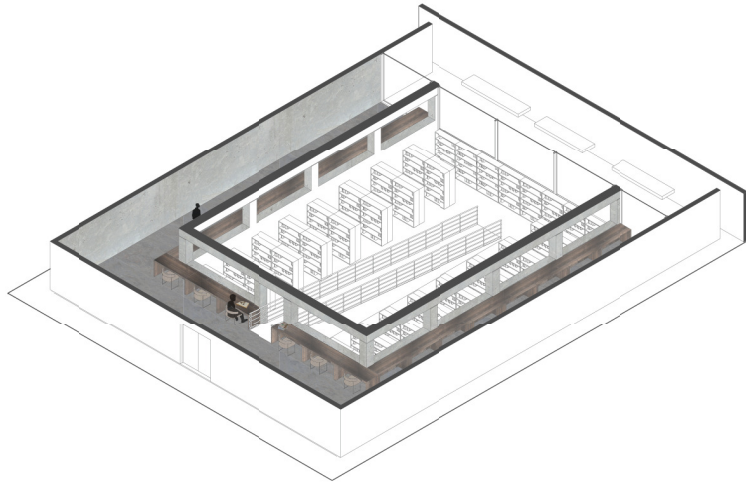
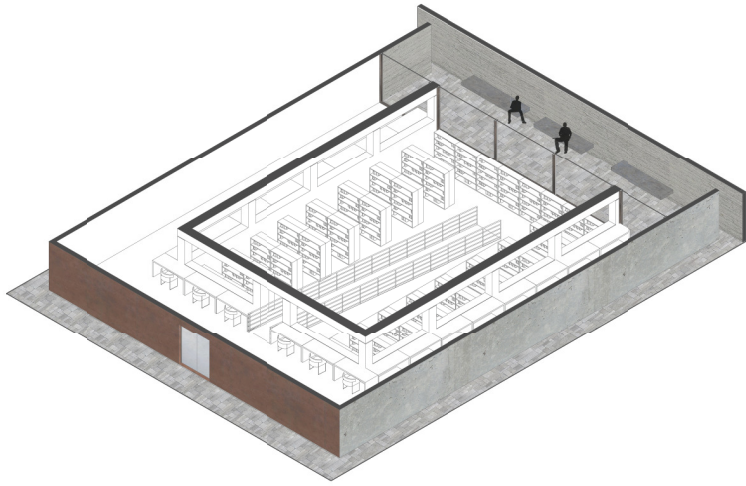


[top]
Segment of the institute
dedicated to the phase of
apprentice

[sidebar]
The friction in nearness from
the patio

[Next page, from top to
bottom]
Exterior Patio;
Surrounding workspaces;
Recessed repository

The library can be accessed from the passage which has been cut through the slab solid. Its interior organization captures the concepts of verticality, surrounding spaces and the relation between inside and outside. From the exterior it appears as a solid concrete slab which obstructs the connection between the entrance space and the exhibiting space. From the interior however it is a much more open space with natural light falling softly from the ceiling onto the concrete. The recessed core space of the library allows the space to feel a lot more open than the outside as well due to its larger height. Finally the back of the library features an exterior patio where the volume is left open against the bounding wall, again bringing natural light into the space and giving a more open atmosphere to the interior. This patio is located against the bounding wall of the institute, where as previously mentioned the library stands disconnected from this bounding wall. From the exterior this creates a friction where the nearness of these elements does not allow for passage, nor are they connected. In the interior however this disconnection gives a more open aesthetic to the space, where this same friction now works to bring natural light into the patio.



The inside space of the library is based on a division between the spaces where people work and the space where the collection is kept. The collection is the core of a library and is therefore placed central and recessed into the floor. The working spaces are created around this core to have the workspaces overlooking the collection. This allows for the routes to be free from interrupting the workspaces. The placement of the workspaces directly around the recessed core allows for movement behind the work desks without creating an interaction with the people at work since their attention is aimed towards the core. Similarly the collection can be accessed without even passing through these workspaces.

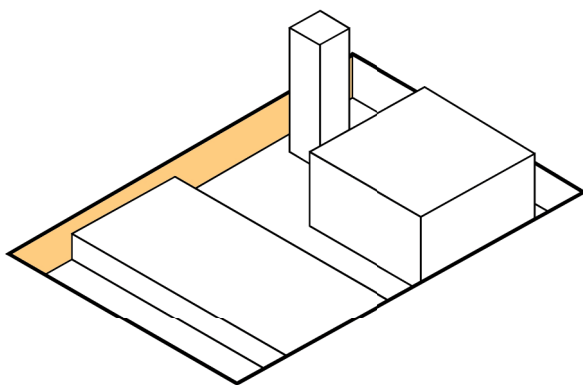
The repository space is created to be the central element of this building. Its floor is lower than the surrounding spaces, giving an emphasis on the larger central space. The surrounding spaces are designed to be focusing on the central core, with the orientation of the people using these spaces being concentric. The central space is emphasized even more through the use of the skylights. These are located around the concrete which surround the central space. and allow natural light to fall onto this concrete. Even though these walls are thick and made of concrete, the spatial orientation still allows view lines across the entire library, making it appear more open and light.

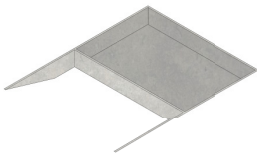


Workspaces overlooking the recessed repository with the patio in the background

THE JOURNEYMAN

LIVING AND CREATING





[top]
Recessed space of the enclosing void

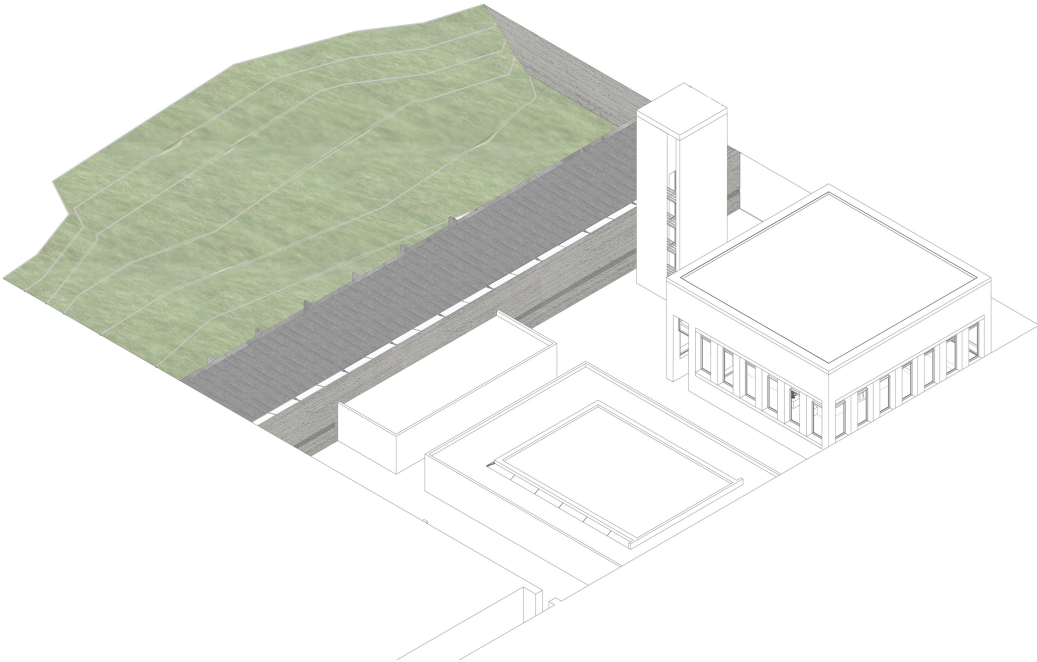
[middle]
Half recessed, half revealed space

[bottom]
Extended bounding walls enclosing part
of the hill

The public portion of the institute has a very inward character, which emphasizes the relation between the solid shapes and the enclosing void. However for the dwellings this inward focus would become obtrusive, due to its different more intimate function. For these dwelling it was therefore desired to break this inward focus to allow for a more open outwards focus. To achieve this the natural field will need to fold downward to allow one of the surrounding walls to be open on both sides. This allows the wall to have two faces, one which is part of the inward focussed institute and one which faces outwards from the dwellings.

In order to become a part of the rest of the institute this fold will need to be enclosed. This is done by extending the perpendicular enclosing walls beyond the two faced wall, bringing the fold into the building. By doing so the landscape becomes integrated with the institute, where the hill extends into the complex. This creates not only a duality between the inward and outward focus, but even more so gives the dwellings an engaging scene when looking outside. The abbey, the trees and the hill all come into the institute where the residence have a private section of nature to themselves.

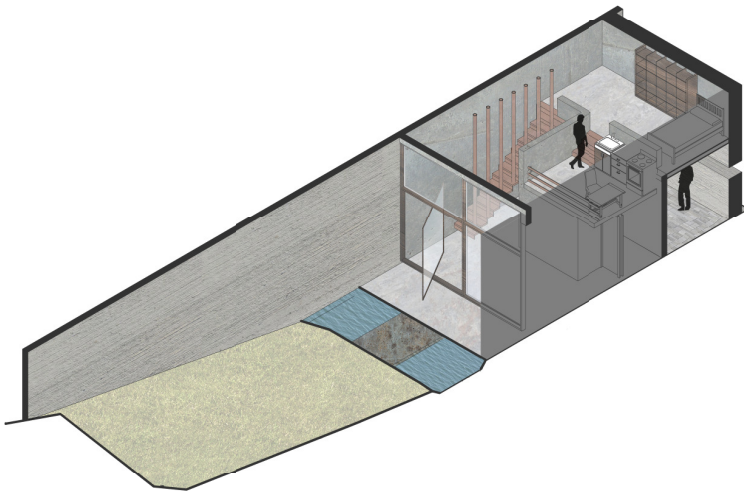
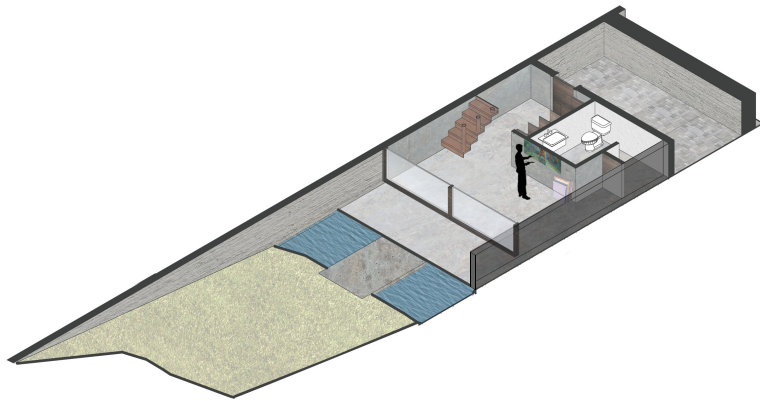
On the side of the institute the dwellings appear only through a chest high opening within the enclosing wall. This eludes to something more being behind it, but it remains private towards the public part of the institute.



The dwellings are open towards the outside of the institute and more enclosed towards the public inside. This gives the dwelling a clear orientation, emphasized by a large glass facade on the open side. The dwellings are accessed from a connecting corridor. This corridor serves as an intermediate between the public and private segment of the institute. It has a visual relation through a chest high opening along its length. This creates a dialogue where the visitors can see that the dwellings lay behind the enclosing wall, while the residents experience the light falling into the corridor from the public part of the institute.

The dwellings are created for the journeyman, where the focus lies upon the craft. Which is why the layout of the dwellings are focused around the space of the workshop. This space is located on the front end of the dwelling and is connected to an exterior patio in front of it, with the living function placed behind it. These living function are placed in a vertical manner, to allow the workshop space the needed height.

The wet functions are placed above each-other with the bathroom on the ground floor. The kitchen is located above it on the mezzanine with a seating area which connects back to the workspace. The bedroom is placed furthest back to create a layer of privacy. Due to this space laying furthest back in the dwelling it receives light through a skylight.



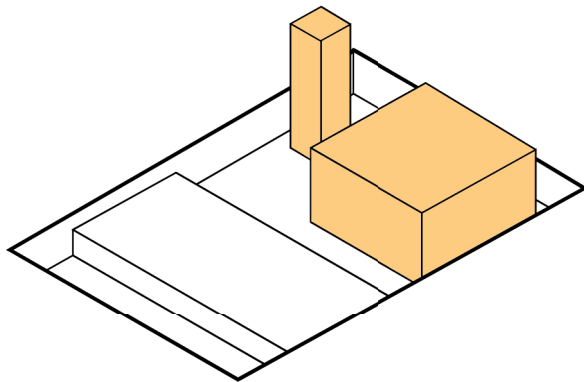
The facade that connects to the outside serves as a large frame to the dramatic gesture of the hill coming into the institute. It emphasizes the openness on this side of the complex by leaving the entire wall as a transparent element. The glass wall is divided into four segments with one horizontal division and one vertical division. The vertical division allows the residents to close off either the bottom part or the top half. This creates a scene where the privacy can be assured through closing the lower half, while still maintaining a view to nature in the upper half. On the flipside it is also possible to shield incoming sunlight by blocking the upper half and still retaining the view of nature in the lower. The horizontal separation creates an open-able portion of the glass wall which allows residents to move through it and connect to the patio and nature.



Each dwelling frames the natural environment as a backdrop to the crafting space

THE MASTER

EXHIBITING AND EXPLORING



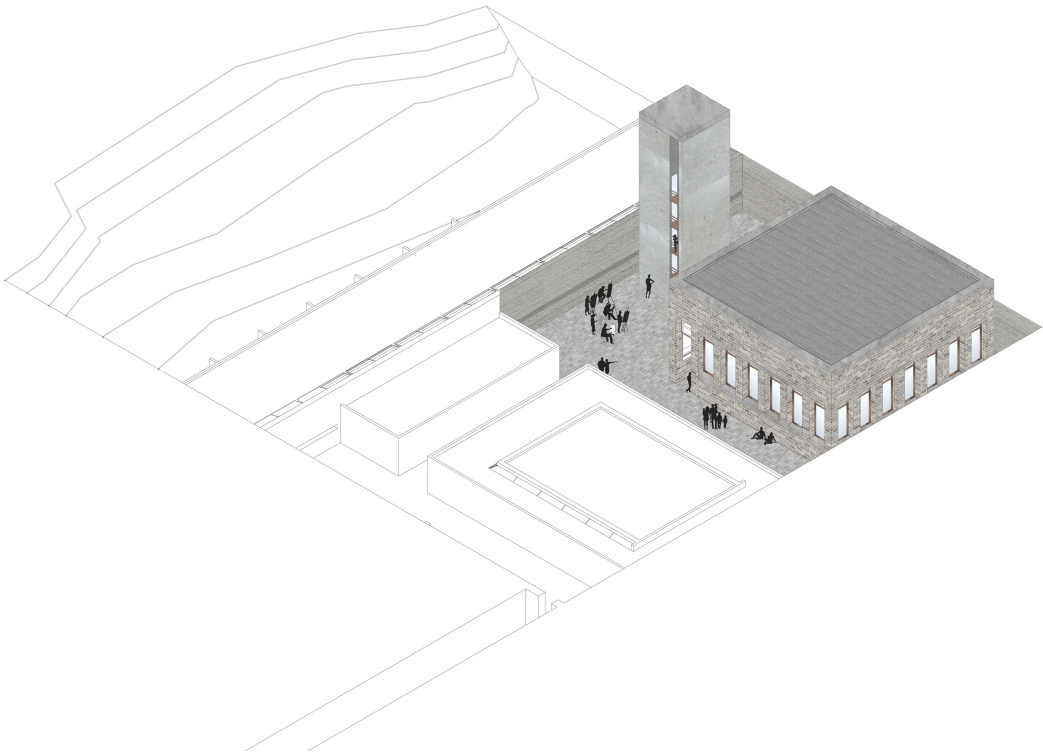
The main aspect of the institute is the exhibition spaces. The complete exhibition area is an open square with the block and the column volume placed inside it. The square itself can be used for visitors to roam around and can also house workshops or demonstrations. From this square people are invited to roam around and wander into the two volumes without a strong threshold. To achieve this the ground of the square continues into parts of the volumes. In the block volume the ground continues into an open walkway which leads through the volume and connects back to the square at the end. The tower similarly has the square continue through the volume on the ground floor to invite people inside.

The towers interior can then be accessed directly from the square. Each level of the tower has an interior component where art is exhibited and an exterior part where the open staircase leads to the next floor. The visitors spiral upwards in this fashion, moving through an alternation of inside and outside. By doing so each floor becomes a conscious separation from the previous, where each time the visitors exits the interior space more of the surrounding nature is revealed and visible. So, when climbing the tower the view of each floor will evolve from the introverted complex to a rise above the surrounding field. Ultimately at the very top of the tower the interior space presents a large viewing platform. Now the visitor is on equal height with the abbey and a large window allows a clean view of the nature, hill and abbey.

Relating to this sequence of revealing the natural context with each floor, the interior space reveals the lineage and history of the institute with each floor. Every craftsman who has been a part of the institute will be recollected in this exhibition, where a small representation of their work will be shown. This lineage can show the continuation of apprentices becoming masters who teach new apprentices and so on. The length of the tower is thus used to create a route which reveals both the natural surroundings and the lineage of the institute.

The large exhibition building has an exterior composition of a colonnade being vertically enclosed by two solid volumes. The storey floor is placed halfway along this colonnade to create two different spaces. One with a low wall and large openings above it and one with very low openings and a closed wall above it.

The ground floor has that low wall, which separate the direct view between inside and outside. However the large openings above



[top]
Segment of the institute dedicated to exhibiting

[next page top]
The exterior walkway

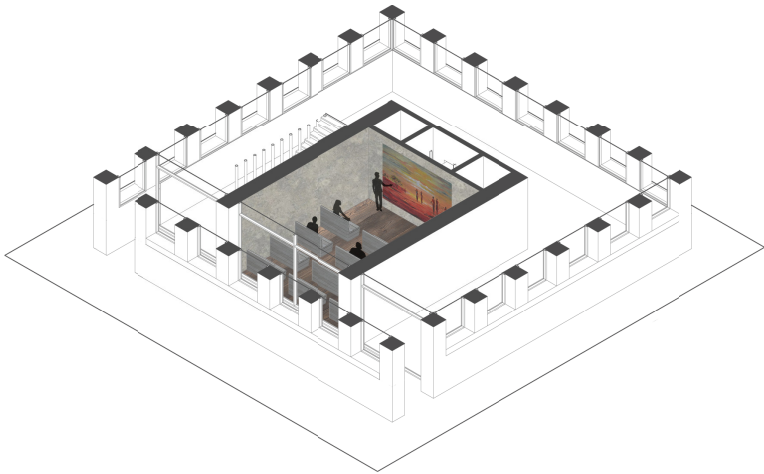
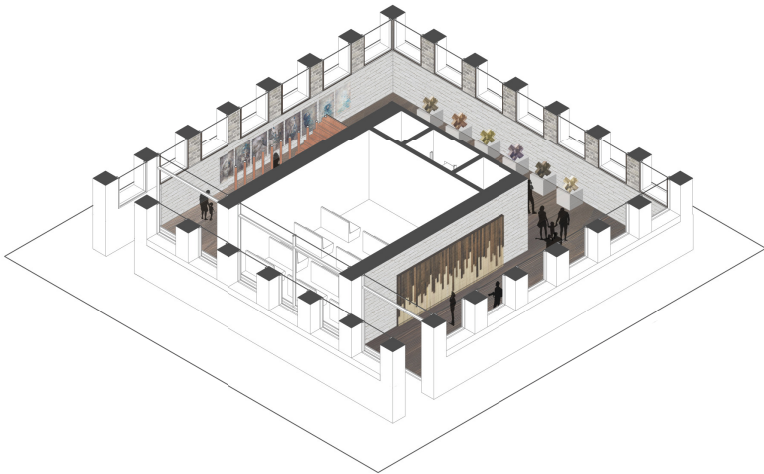
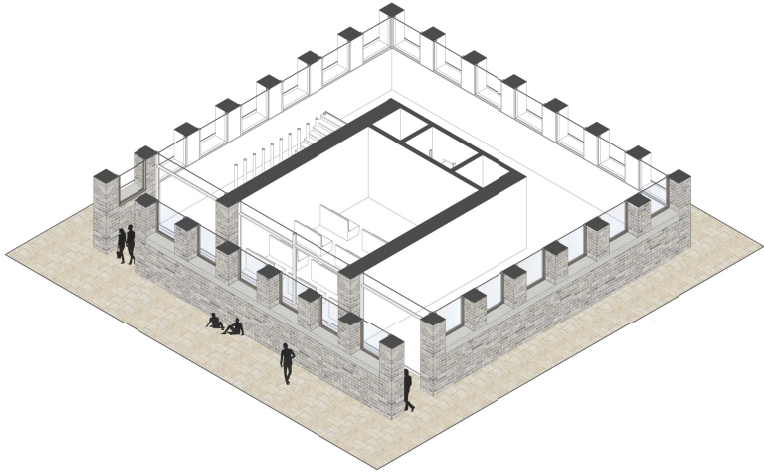
[next page middle]
Exhibition space

[next page bottom]
Lecture room

it bring in a lot of natural light and still create a visual relation to the outside. This allows the ground floor to feel like an extension of the outdoor square.

Firstly the visitor enters the building simply by walking between the two walls into an exterior walkway. Here the materiality continues in the exact manner as the outside. The floor continues seamlessly and the same brick is visible on the facade as in this walkway. From this exterior walkway the actual interior and exhibition space can be entered. This exhibition space is an extension of the exterior walkway and has the threshold of a glass plane, to ensure a visual continuation, but a thermal separation. This exhibition space is designed as a path which connects back to the exterior walkway.

The exhibition space still communicates a similar language as the exterior, but deviates slightly to emphasize its shift in function. Here the wall still shows the same brick pattern as the facade, but is made a uniform white to allow the art pieces to be placed against a neutral background. The high window openings allow a strong visual relation to the outside. Between the exterior walkway and the round going exhibition space lies a central space. This space is used to place an elevator and houses the lecture room, for presentations given by the craftsmen.





The ground floor exhibition space as an extension of the outside



The introverted upper floor of the exhibition space

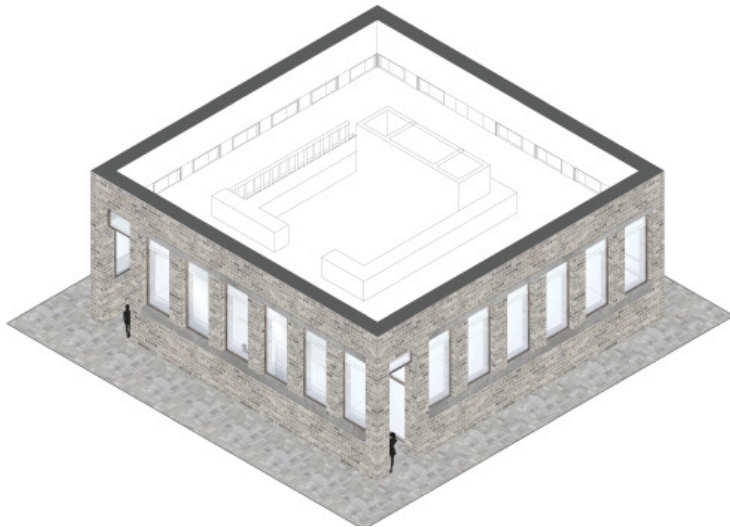
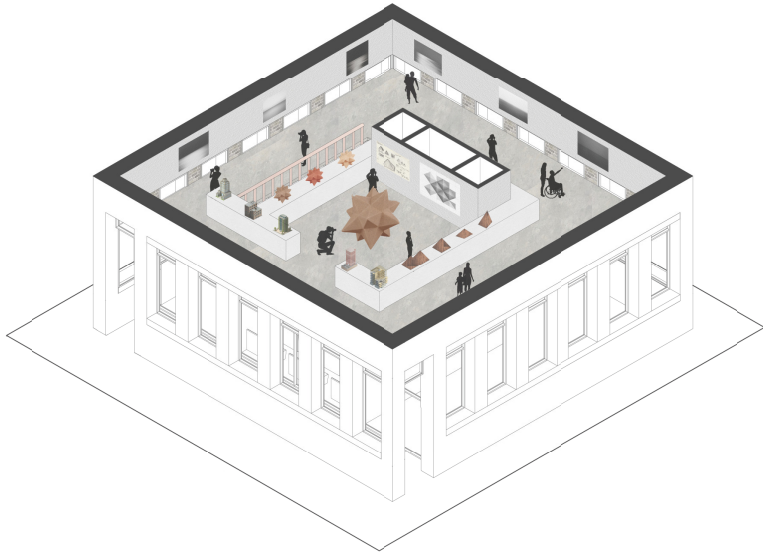
[top]
Exhibition space

[bottom]
Facade and exterior walkway

The upper floor of the exhibition building is in comparison to the ground floor very introverted. It serves as a contrast between both spaces, where the lower floor has the focus connected to the outside, the upper floor places the focus inwards onto the exhibited pieces. The window openings are located very low to the ground to bring a small amount of natural light into the space. However on eyelevel the space is enclosed and there is no visual relation to the outside. The materiality here emphasizes this change as well. The brickwork of the facade and lower floor is no longer visible. Instead the walls are a clean uniform white.

The space is divided into a surrounding route and an interior exhibiting space, separated by low wall elements. These elements create a round going boundary around the central space which can be used to place the exhibition pieces. These pieces are mostly small pieces due to the nature of the institute and its intimate craftsmanship. However larger pieces can be placed as well, with space being available for very large pieces in the central space. For exhibiting the actual process of attaining the skills it would be possible to use the surrounding low wall elements to exhibit the test pieces with the larger resulting piece standing in the centre of this space.

The central space is emphasized not only by the low wall elements, but also by the lighting fixtures. The lighting fixture in the ceiling are a reflection of the low walls' shape. By reflecting this shape in both the low wall elements and the ceiling the central space becomes emphasized both horizontally and vertically. Again this introversion is underlined by the use of the artificial light instead of the use of natural light as was the case in the lower floor.



MATERIALITY

THE MATERIALS

COARSE CONTEXT & REFINED VOLUMES

[top left]
Bounding wall of institute

[top right]
Floor of institute exterior

[middle left]
Wall of volumes within complex

[middle right]
Floor of volumes within complex

[bottom left]
Walls of access route cuts

The enclosing void of the institute has a very rough materiality to visualize its exterior bounding function. The walls are made of coarse concrete which are left to weather conditions. This emphasizes the rigidity of this enclosing void, it stands within the ground as a rough immovable barrier. The floor is constructed of natural stone paving which continues into some portions of the building, connecting the buildings and lowering the thresholds of entering.

In contrast to the rough enclosing void, the buildings within this space are made of smoothly finished concrete. They have an appearance of being created and finished with the attention of man, instead of being the coarse unfinished materials of the enclosing void. Similarly the floors are mostly made of a smooth concrete surface which translate the transition of outside to inside within the materiality, because of the change from natural stone paving to the smooth concrete.

Throughout the institute there are several connecting tissues, such as the recessed walking paths leading up to the entrance, the cut through the slab volume and the stairs of the tower. All the connecting tissues are created from a similar material to attain a language throughout the institute. It emphasizes the interventions that these connections required, the cuts they made. It also guides visitors since the materiality has a constant meaning of connecting and movement throughout the design.

Walls

Floors

Surrounding
boundaries



Buildings



Incisions
through solids



THE MATERIALS

EXTERIOR TO INTERIOR

[top left]
Facade and exterior walkway wall

[top right]
Floor complex and exterior walkway

[middle left]
Lower exhibition space wall

[middle right]
Floor lower exhibition space

[bottom left]
Upper exhibition space wall

[bottom right]
Floor upper exhibition

The main exhibition building differs in materiality from the smooth concrete that the other buildings feature. In doing so the building stands out within the complex as being a central actor. It does however still retain the man-made appearance of the solids within the void through the use of brickwork. The flooring of the enclosing void continues into an open walkway within the building to connect the building and the square around it.

The ground floor continues the brickwork of the exterior, however they are painted in a white finish to create a more neutral background to the art pieces. At the same time this achieves a distinction between the exterior and interior, while it still is closely related through the continuation of the same brickwork both inside and outside.

The upper floor loses the appearance of brickwork, to emphasize the difference between the two spaces. This space has no longer the strong relation to the outside and is much more inward focused. It serves as a completely neutral background to the art pieces inside. Therefore the walls here have a smooth stucco finish, without any brick pattern.

Walls

Floors

Facade & exterior
walkway



Lower floor
exhibition



Upper floor
exhibition

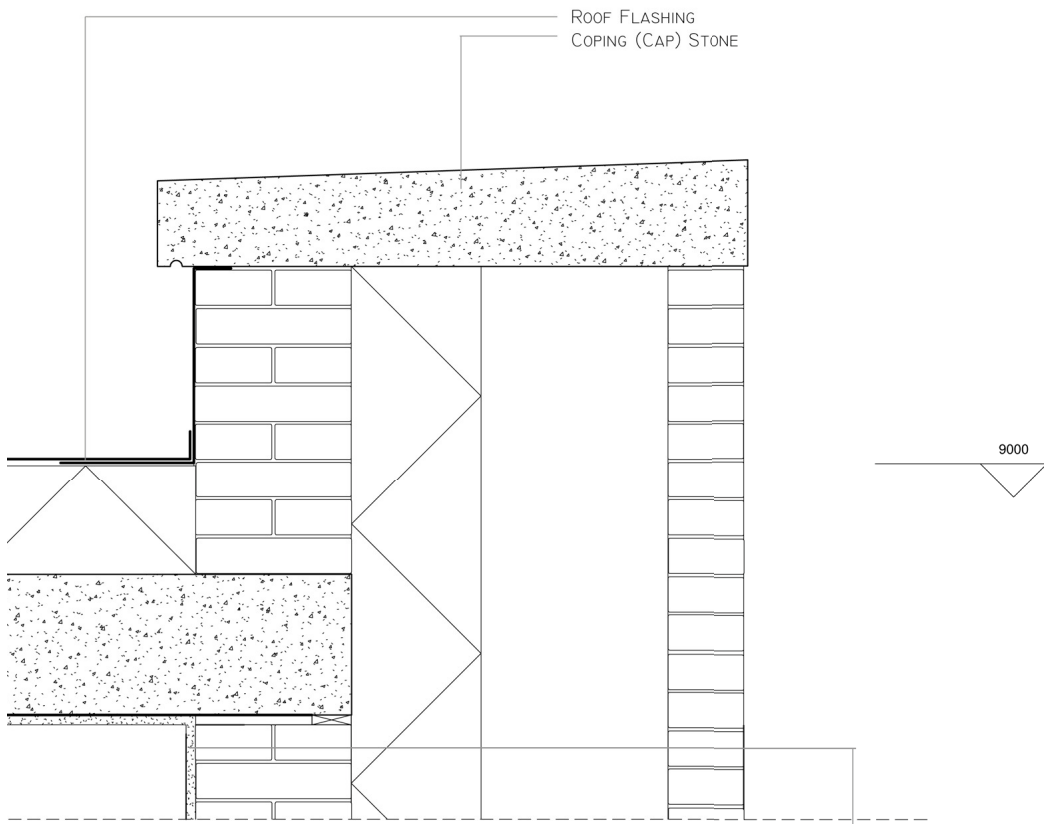


THE EXHIBITION FACADE

HIDING AND REVEALING

The façade of the exhibition building features high openings in its façade, which are separated by a floor to create different atmospheres on the two floors of the building. In the façade the openings appear as one element, however on the interior they are separate into a portion of the ground floor and a portion of the top floor. In order to ensure this visualization the glass panes within the opening had to be separated into three segments. One for the ground floor, one for the top floor and one for the thickness of the floor. These three segments are placed flush to one another to ensure a smooth visual from the exterior. By connecting the glass panes with a structural silicone it is possible to have a minimal barrier between the three panes. These minimal barriers combined with a reflective sheet behind the floors pane allow the exterior to have the appearance of one continuous glass pane. With the sun shining onto the glass the only hint of the storey floor is the two thin lines of structural silicone. However when the main light source comes from inside the building, the two open glass panes allow light to pass through while the floor pane does not. This creates a situation where the storey floor reveals itself, now showing the inner workings of the building. The contrast allows the exhibition space to present itself in two ways. As a sturdy rigid building and as a building which opens up to reveal its intricate working.



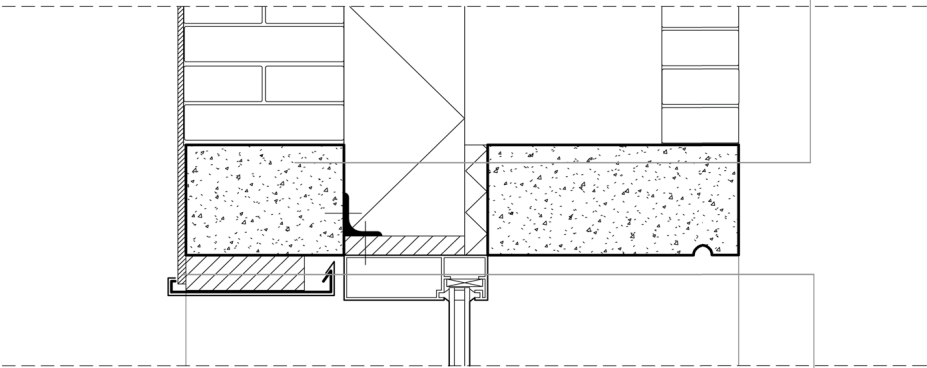


ROOF FLASHING
COPING (CAP) STONE

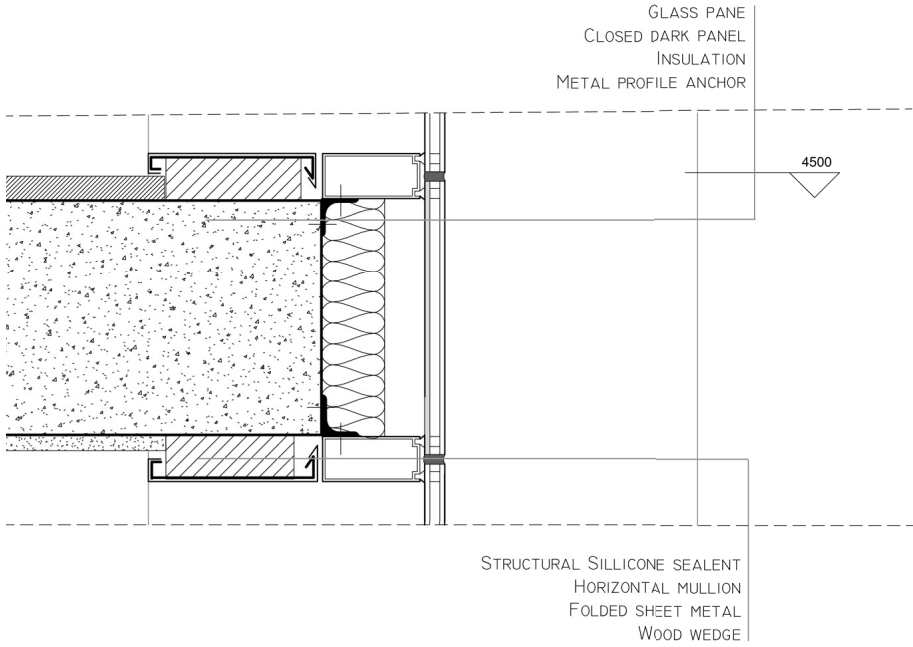
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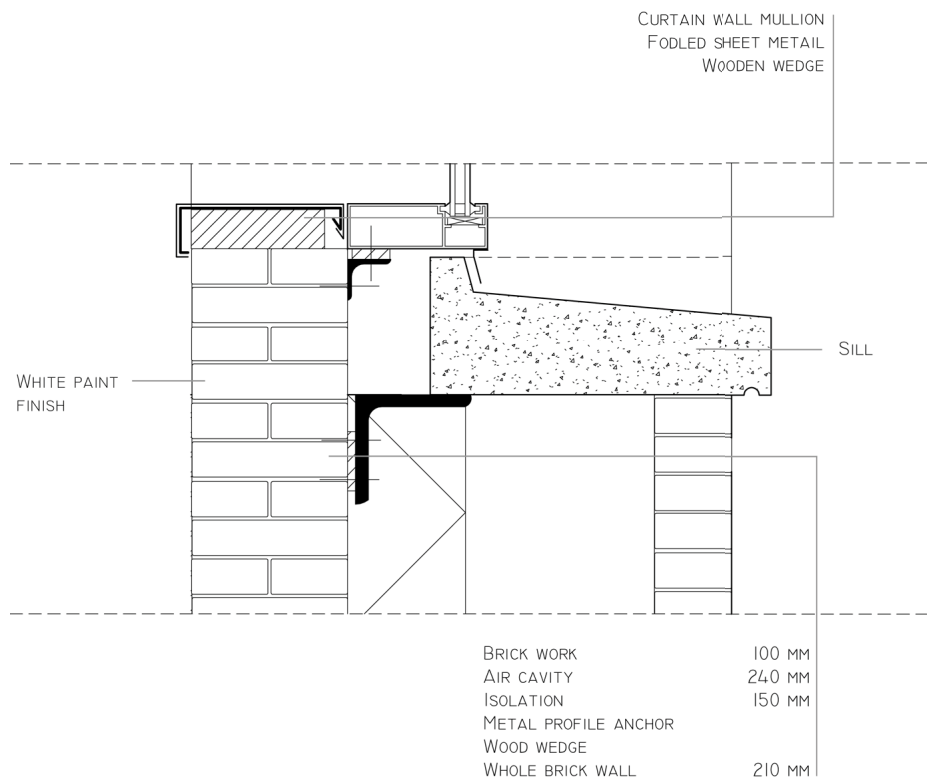
BRICKWORK	100 MM
AIR CAVITY	240 MM
ISOLATION	150 MM
WHOLE BRICK WALL	210 MM
STUCCO WALL FINISH	10 MM

CONCRETE LINTEL FOR BRICK WORK
ISOLATION
CONCRETE LINTEL FOR WHOLE BRICK WALL

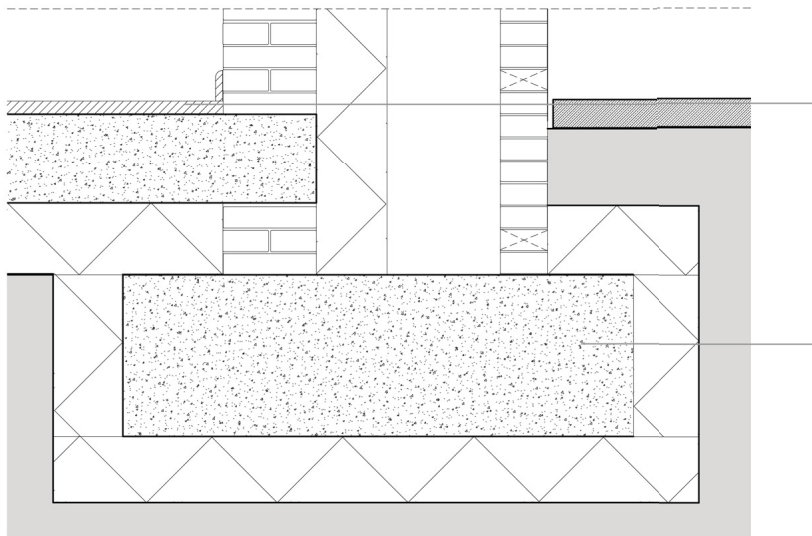


CURTAIN WALL UPPER MULLION
FOLDED SHEET METAL
STUCCO WALL FINISH





NATURAL STONE
BRICK WORK 100 MM
AIR CAVITY 240 MM
ISOLATION 150 MM
WHOLE BRICK WALL 210 MM
WOODEN FLOOR



SAND
PROTECTIVE MEMBRANE
CONCRETE FOOTING

REFLECTION

MASTER & APPRENTICE

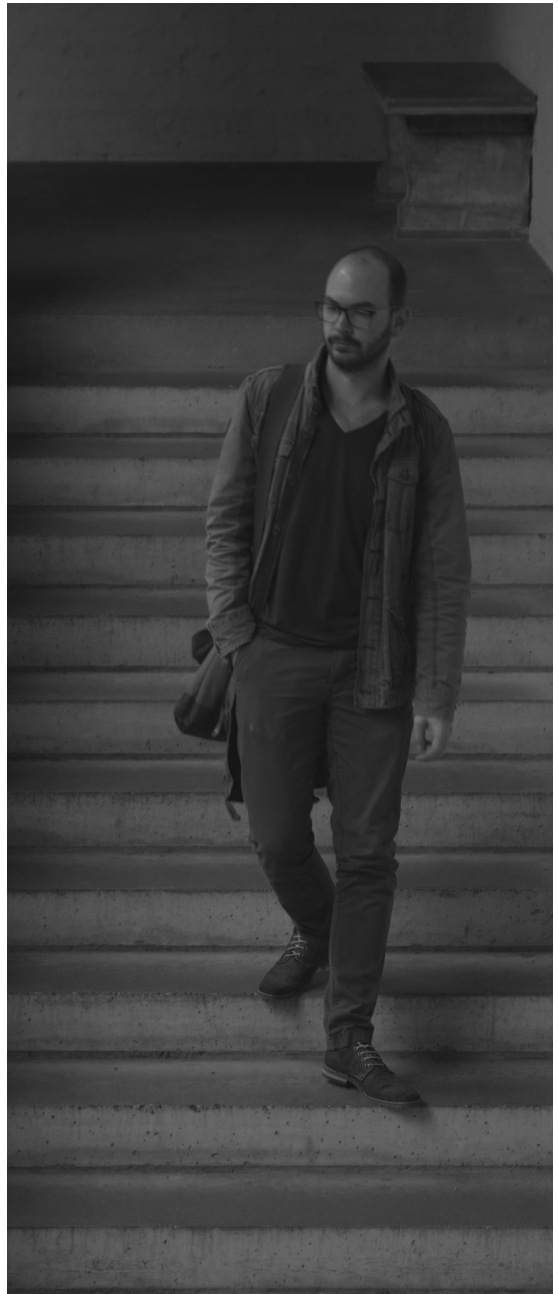
Masterly apprentice had an interesting beginning with the learning from a building and delving deep into every aspect of it. What was difficult however was trying to step away from copying the master in the second part of the studio. The design mostly showed very similar features as the abbey itself, with many colonnades and a similar aesthetic with white painted bricks. It started to become not learning from, but a copying from.

While this was a natural progression after having studied the building so intensely it did feel like it was not completely my own design. It was when I took a step back and away from the research that the design started to feel less forced and more about taking what I learned less exact and binding. It was not about exactly what was done in the building, but how and why Van der Laan did it this way. Focussing no longer on the exact aesthetics and appearance of the abbey, but instead looking more at the underlying ideas and concept to take into my design. However the influence of the abbey still lingered and the design remained to appear as “a Van der Laan”. It was therefore necessary to take a complete sidetrack away from Van der Laan and try to find my own voice in the design. Assisting greatly with this transition was the secondary layer of masterly apprentice, the other students.

It was by looking at the works of others and listening to their feedback that the design started to steer away from Van der Laan and moved more towards my own. By explaining the design to other I felt which part I could defend easily and which parts were simply there because it was the way it was done in the abbey. This relation within the studio was incredibly valuable to me both in shaping my design, but even more so in expanding my knowledge and skills simply by discussing my work and the work of others within the studio. From simple things like presentation methods to defending my design, it was always useful to be a part of the ongoing studio.

Before starting the studio I had the notion that most graduation studios would result in a sort of similar looking end results. However throughout the studio it became clear that this studio allowed very different projects to be created, while still maintaining an overarching connection between each. The studio was a very enjoyable and engaging period of time where I certainly learned a lot from the Van der Laan, the tutors and the fellow students. The design that was the result of this studio in my opinion has become something where the underlying themes that I took from the research are still present, but no longer in the way of van der Laan but that of my own.

In the end learning from a building for me was not about taking a close look at the building, but much more of the step after this close research. It was for me about making the connection between this building and my own design. Being able to take elements from the research and using them in a way that is benefiting for me and not binding in my design. Therefore the real learning for me came not from looking at the building itself, but more from applying the findings myself and analyzing those results.



ACKNOWLEDGEMENTS

First and foremost I want to give great gratitude towards my parents, who have always been supportive during my years of education. I truly appreciate everything they have done for me in order to pursue this education. During every step of the way I could always count on their help in any manner that they were able to, for which I will always be grateful.

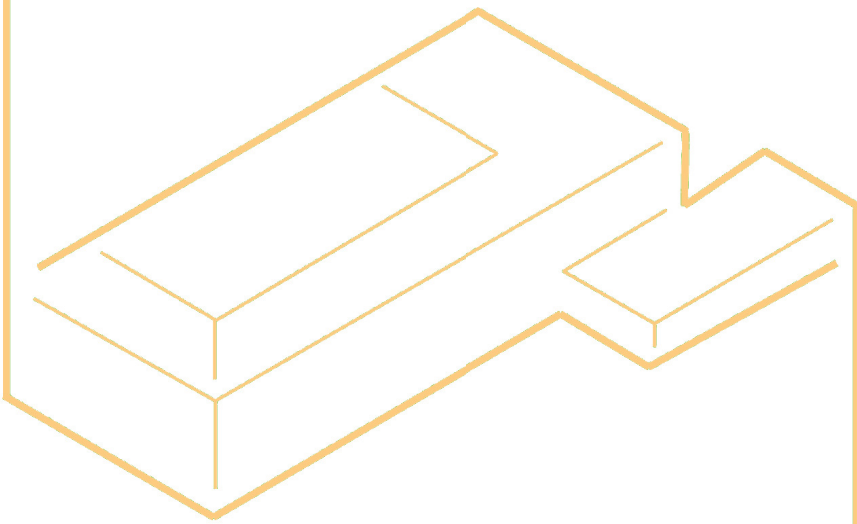
Towards my tutors Jacob Voorthuis and Jan Schevers also many thanks for always being able to give insightful feedback and being able to motivate me in my design many times during the process.

I would also like to thank Dick Pouderoyen for his time and efforts in being my third tutor. Although it was late in the process, his critique and feedback were always valuable. Furthermore his extensive knowledge on the theory and work of Dom Hans van der Laan were invaluable during my process.

I would also like to thank Kristina Buzaityte, Milan Meeuse and Aldo Hein for always being able to bother them with any questions and for their feedback on my design. Also to the other students in the studio for creating a working environment which was always a joy to be in.

It would like to thank the residential monks of the St. Benedictusberg Abbey for their hospitality during my multiple visits to the abbey. Especially for Lambertus Moonen for his time and insights during the tour he gave me within the abbey.

I would like to thank any friends and family who have contributed to my design and who have supported me throughout the process.



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LEARNING FROM A BUILDING

Graduation Studio "Masterly Apprentice II"

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Learning from a building

A METHODOLOGY

by Matteo Basso; Kapilan Chandranesan

How do we learn from a building?

To understand the process of learning from a building it is useful to break it down into its fundamental components and define them.

Subject

A human activity such as learning requires us to reflect on the agency of such action. The agent, at the centre of the learning process, is who, consciously or unconsciously, is engaging with the building at hand, deriving lessons from it.

The studio Masterly Apprentice - Learning from a Building is concerned with the subjectivity of this learning process and conceives the individual students as its agents.

Bachelard, french phenomenologist, gives a clear perspective on how one could understand the working of the agency. He defines the agents as "speaking beings," or as those subjects who receive a poetic image and recreate it, through their imagination. They "resonate," hearing the poem, and "reverberate," speaking it, thus making it their own[1]. For example, admiring an impressionist painting of a landscape will enrich the viewer's experience of landscape thereafter by adding a new layer to his perception.

"When I receive a new poetic image, I experience its qualities of inter-subjectivity. I know that I am going to repeat it in order to communicate my enthusiasm. When considered in transmission from one soul to another, it becomes evident that a poetic image eludes causality"^[1].

When we study a building we are not specifically looking at the contextual conditions and the causal relationships that influenced it. Instead, we are concerned with the individual experience of the qualities of the building which we have perceived and that we have further researched.

"I always come then to the same conclusion: the essential newness of the poetic image poses the problem of the speaking being's creativeness. Through this creativeness the imagining consciousness proves to be, very simple but very purely, an origin. In a study of the imagination, a phenomenology of the poetic imagination must concentrate on bringing out this quality of origin in various poetic images"^[1].

Through learning from a building we become creative in understanding it and combining it with our personal experiences. We become conscious, and therefore start making things our own

through the act of designing.

The subjectivity of this process, is rather more an inter-subjectivity, which opens up at least two reflections.

Firstly we have, on one hand the agent's subjective experience and on the other the object which is the building at hand, its contextual setting, its interpretations, its readings, its narrations, and more simply its "reverberations". The intersubjectivity lies in how these factors "resonate" within the agent. The intersubjectivity ties us to the architect who designed the building, through learning from it. Secondly we notice an inter-subjective layer within the various students undergoing similar processes of resonance and reverberation, but directed at different buildings. Here the learning becomes a horizontal phenomenon by which the peers influence and inform each other's ongoing processes, much alike the Montessori method.

Object

The learning process cannot exist without the object of perception elaborated into an experience. To understand this process it is useful to break down the object in question - the building - into its fundamental components. If we consider a building to be a complex whole we can describe it as being a material and a theoretical construct, tangible and intangible at the same time. We identify the tangible, material reality, with the elements that make up a building; and the intangible, theoretical construct, with the concepts that appropriate the elements of architecture into the specificity of each building.

These two fundamental moments – material concepts and intangible concepts - in the experience of learning from a building can be collectively called architectural aspects. In the way Wittgenstein intends "Aspekt"; as a phenomenological object, one makes experience of ^[2].

It is important to understand that the building is approached in aspects. The experience of it cannot be in its wholeness, rather more it has to go through a reading of various aspects and a recombination of them, once understood.

The architectural perception thus depends on the contextual conditions of experience.

Recreating an image through a model is an example of how one can learn from aspects of the building that are merely one part of its

existence. The moment described through the picture of the building captures a specific position in space, a specific lighting condition, specific material compositions, and a specific atmosphere which are among the many experiences that can be had of the building. The picture of the model, then, recreates the conditions captured in original picture.

The physical elements and groups of elements participate in the creation of the unity of the building. These elements are to be intended as all the tangible components, as stairs, walls, windows and doors, materials, furniture and so on and so forth.

The concepts are, on the other hand, relationships between us and our environment, bringing together the different elements in understandable patterns.

“The concepts help us understand ourselves and our environment. When things look chaotic and confusing, a concept can help establish order in that chaos by showing us how we might understand something. Alternatively, where first we might see “nothing much,” a concept can help us see things that we would otherwise not have noticed by identifying patterns and things”^[3].

Activities

As we have defined the subject along with the object of this learning moment, we are missing the connection that brings them together. As a sentence cannot be complete if verbless, the learning cannot exist without an activity. These activities are done by the subject -the actor- upon the object -the aspects of the building-.

These activities are a plethora that encompasses analytical thinking and sensible experience alike. Because of the high degree of subjectivity, we are faced with activities of very different nature, depending on one’s attitude towards the aspects of the building and on how one approaches learning.

Quite broadly, we identify three moments within which every activity can fall. The moments are ordered depending on proximity between subject and object. The building and the experience of it can happen through different degrees of contact.

The three moments are: the moment of intimacy, when one learns in the physical presence of the building; the moment of detachment, when one learns in indirect contact through thought, or physical means and representations; and the moment of reconnection, when one learns through application and design.

The first two moments involve the attention towards the building

itself, the third has its primary attention elsewhere, while maintaining an instrumental relationship with the building.

Moment of intimacy:

sensing; observing; abstracting; conceptualising; recording; describing; abducting.

Moment of detachment:

abstracting; conceptualising; analysing; comparing; connecting; imagining; redrawing; copying; reconstructing; exploring; abducting; anticipating design.

Moment of reconnection:

discussing; testing; intuiting; remembering; applying; iterating.

Conclusion

“The image offered us by reading the poem now becomes really our own. It takes root in us. It has been given us by another, but we begin to have the impression that we could have created it, that we should have created it. It becomes a new being in our language, expressing us by making us what it expresses; in other words, it is at once becoming of expression, and a becoming of our being. Here expression creates being.”[1]

So when is it not merely a reproduction?

Doing something with what we have learned means we have imbibed it with our personal interpretation, making it part of our language. That aspect exists through us, we exist with it.

Matteo Basso

Kapilan Chandranesan

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[1] Bachelard, G. (1994). *The Poetics of Space*. Beacon Press.

[2] Wittgenstein, L. (1977). Anscombe G. E. M., ed. *Remarks on Colour*. University of California Press

[3] Voorthuis, J. (2016, September). *Analysis and Critique*. Eindhoven [Powerpoint slides].

MODEL MAKING

by Philip Groeneveld; Dario Sposini

When referring to an architectural model, it is common to consider them as a three dimensional representation of the actual design. However models can be useful tools to investigate, analyse and research a building or a design process. Within the process of the analysis and investigation of their respective buildings, a common assignment carried out by studio was the recreation of a picture of the interior through a model. The quest of this assignment was to understand in-depth the various aspects that make up the interior as captured in the picture. The first stage was the selection of the interior view of the building to reproduce. The final goal was not the model itself but a picture of it that will be comparable to the original image of the building's interior. Therefore relevant attention was devoted to the process of selection of the picture as it should be able to express the peculiar characteristic of that interior. A wide angled picture will definitely provide a vast amount of information about the space but will be lacking in specificity towards aspects that add character to the space. On the other hand a zoomed view, will focus too much attention to specific elements that the larger picture is missed. Therefore a proper framing will be the one that focuses on the key characteristics of the building where distractions are reduced to the essential.

However a question can be raised about the necessity of reproducing a picture of a building by the means of a model. This question has been argued during the tutorials and the answer has been found, mostly, only during the realization of the model itself or after its conclusion. The creation of a model has some relevant implications that has been, somehow, discovered during the process itself.

First of all, in order to reproduce a photo it is fundamental to have a proper knowledge of the geometry of the building. Therefore, since the early stages, we began to generate a series of questions upon the building and its materialization. Question that can hardly be answered only by looking at the selected picture. Therefore the photograph become only a reference and different sources of information were researched, such as: extensive descriptions, reproduction of original drawings and experience of the real space. By doing so, we started to enrich the picture with meanings and information, combining what was seen in the picture with the knowledge gathered from different sources.

It is through this process of observation, analysis and synthesis that we began to develop an extensive understanding of the building as whole. In effect, the analysis of the picture with the motive of recreating the

same through a model served as a gateway to the study of the building at hand.

The research and analysis of the actual building in its manifestations of material, detail, proportion provided sufficient information for the faithful reproduction of the original image.

The process of the photo's recreation

In order to create a clear idea about how an images can be reproduced by the means of a model, it is important to introduce the differed layers or elements that compose the photograph. Some of the layers that have been recognized within the photos and then investigated in the models are: proportion, material, detail and light. By isolating these layers from the others, we could identify a general approach on how the models have been built and describe a framework in order to compare those models.

Firstly by analysing the images it is possible to recognize the picture as a composition of elements. These elements can vary greatly from furniture, walls, floors, columns structural elements. They differ from each other in scale, size and role within the composition. They will form the fundament of the images that we are going to reproduce affecting the final composition picture. The reproduction of an images through models, requires us to possess a clear understanding of the space and the spatial relationship between those elements and how they appear within the composition. A proper understanding about how sizes and dimensions define the real space, will enables us to create a correct understanding of the composition of the image. The example of the building realized by Auguste Perret (Edificio 25 bis rue Franklin, Paris, 1903) is an interesting example on how this analysis of elements occur in the model. The photo of the apartment is filled with different typology of furniture. In order to create a proper reproduction of this interior it was relevant to faithful create those objects. The student accomplished this by creating parts of the furniture using the 3D printer which provides a precise scaled rendering of the original objects, which then has been carefully put in the right place.

The second layer we identify is the one referring to the materialization. This layer concerns everything that is related to the surface of the space, from colour to texture. In reproducing the surfaces as seen in the actual building into a scaled model, it was not the materials itself that were reproduced but the materiality that the original materials effected.

While in some cases the material quality was reproduced by emulating the production of the actual material, in yet other cases the materiality was recreated through completely different media. For example, in the reproduction of the images of the Canova Museum designed by Carlo Scarpa, the student tried to recreate the reflective materiality of the marble flooring by pouring ceramic within a glossy mould. He tested different mixture of powder in order to achieve the proper reflection of the floor's marble. On the other hand for the realization of the model of Villa Moller by Adolf Loos, the textures that bound the surfaces of the interior were recreated through prints of the textures on various types of paper which in their final effect reflect the materiality of the actual materials.

Details as well, were fundamental for the accurate realization of the image. This could be accomplished, for example, by carefully connecting the different materials, by placing attention to small details such as the size and proportion of the window frame, the use of non-architectonic elements that make up the composition and so on. This helps the viewer to understand the proportion and scale of the space he is looking at. In the example of The Daily Express Building designed by Owen Williams, the central composition of the picture was occupied by a large printing press. In the reproduction of the image, in order to create an proper understanding of the measurement of the space, it was important that this machine was reproduced with the right level of detail. This printing machine gave the space a higher level of perceptive reality. The last layer that we distinguished in reproducing the picture was the one referring to the light quality as captured in the photograph. This layer has something less to do with the object that has been explored, but more with bringing together of all the previous layers in combination with light. Finding the right balance between texture, detail and shape of the objects that occur in the picture was central to refine the composition of the image. However by achieving the right balance between those layers and light will results in faithful reproduction of the original photo.

The reproduction of the image is not the reality itself, but it is a picture that has been burden with much more meaning and knowledge by accomplishing the realization of the three-dimensional model. It helps us to understand the spatial quality of that specific observed interiors, yet provide information of the entire architecture. The analysis accomplished wasn't an abstract exploration of an architecture but a

tangible experience of the space. The assignment developed within the domain of the actual conditions such as light, materiality, vantage points etc. that define an architectural experience.

REDRAWING

by Tim Penners

When analyzing a building and especially when presenting the findings, it will be necessary to create drawings of this building. In order to get these drawings it will therefore be needed to redraw the source materials. Firstly to avoid plagiarism of course, but more so to create base drawings on which it is possible to project your own analytical layers. In current times it is often necessary to digitalize the drawings in order to use them in digital programs. This means that drawings cannot simply be traced by placing them underneath transparent paper. So in order to recreate the drawings one has to closely analyze them. Look at each line, what it represents, where it starts, where it ends, its thickness, its position related to the other lines. Then translate all these elements onto the new medium in order to create a drawing that conveys that same information.

When redrawing it obviously requires firstly to find drawings to redraw. Often these drawings will be presentation drawings with already a certain layer of analysis over it, or a specific style of drawing from the architect. Often with older buildings the drawings will be hand drawn, incomplete or very small and therefore blurry. In order to create the drawings yourself from these sources it is important to examine them very closely. By connecting various drawings together, from different versions of the same drawing or a floor plan and a section, inconsistencies can often be found. From varying measurements, to missing elements or information it is most often not enough to have only one source drawing. One might have an expansive drawing of the surrounding, but the building is only a black shape. Another drawing might focus on an interior and another purely on the walls.

It is here that a twofold nature of redrawing can be found. One is the drawing at face value, its aesthetical layer. It can communicate a certain language, with a floor plan being only clean black lines or something that for example also shows materiality and has a more realistic appearance. It can be useful to recreate this style in order to learn presentation styles, however mostly we use the second layer. The layer we look at what the drawing means. What the lines mean and how they are related to the actual building. It is the information within the drawing that is desired. It is a certain aspect of information that will be distilled from the drawing, in order to create a drawing oneself. Whether it is the measurements of the spaces or the exact thickness of the wall, mostly one source is not enough to attain all the needed information. Each drawing tells its own story and is necessary to find out what story that is and which story one's own drawing should tell. Many drawings

are abstraction of the real building, necessarily so in order to keep them understandable and not convoluted. Architects often prefer to have idealized version of their building in the drawing, presenting them in ideal states without any construction blemishes. In the case of the St. Benedictusberg Abbey for example it became evident that there was a strict separation in the archived drawings. The drawings could be divided into before and after the building was built. The ones before the building was constructed were drawn by the architect himself and featured eight windows in a row. However during the construction it was decided to place fourteen windows instead of those eight. So every drawing that was made after the building was realized featured fourteen windows. These drawings were "correct" even though they weren't created by the architect himself, while those of the architect were no longer in accordance to reality. This is exactly why it is important to check the story behind the drawing and see what information it conveys. After doing so it is possible to gather the needed information in order to make the drawing. However taking multiple sources will often result in conflicting information. A drawing focusing on purely the measurements of the spaces will mostly have "perfect" numbers, one with wall thickness in its story will give different measurements however. Even more conflicting might be when trying to connect the information of a floor plan with that of a section.

Yet it is exactly when comparing multiple drawings, that we start to investigate and question the drawings and their validity. As a sort of collage information is gathered from multiple drawings and combined to create one new drawing. Questions about these discrepancies are when we start to truly learn from the drawing. When we get a measurement of a wall and the measurement of the windows in this wall and they do not match in our drawing we start to search for reasons why. Now it is important to note that it is not a case of one drawing being wrong and one being right. We must realize that these source drawings have also been redrawn by a person, where they did their own questioning and came to their own conclusions. Therefore it is not enough to take one source as being factual, but to be critical about the information for which the drawing was created. What story the drawing was meant to tell, what information it conveys. Again we can create our own drawing by extrapolating information from other sources and relating them.

The inconsistencies between sources become even more

evident when using new methods of 3D modeling software. Here it is not about just tracing over the original drawing, it is about taking information from the source in order to really understand where each element is in the building and how each element relation to each other within the building. So when accurately creating the floor plans, section and elevations for the building it is necessary to be aware of each element in the drawing and its relation to the whole. Much more so then when one simply observes the original drawing on its own. In the case of simply observing we already conceptualize that drawing in our mind, we quickly make an impression of the whole but lack the attention of the individual elements. When we start gathering the information for our own drawing through measuring, comparing and redrawing them ourselves we discover the beauty of the plan and understand the building better.

In the studio for example a lot of the building were designed a long time ago and the drawings are no more than sketches without exact measurements. However in most cases the students did have some idea of an elements size within the building. It then becomes not about exact measurements, but in relating the drawing to this known size. For example using the brick pattern by Mies van der Rohe, the plastic number of Hans van der Laan or a strong grid pattern by Owen Williams to deduce further measurements for the rest of the building. Of course these measurements will not be exactly true to the reality, but they convey a story that is about that plastic number or that grid size in the building.

So in redrawing we learn mostly through actually looking closely at the sources and analyzing them so closely as to be able to create a coherent set of accurate drawings. In questioning what a drawing tries to convey and comparing them to each other it is possible to take this information and apply them to our own drawings.

BUILDING IN TIME

by Kristina Buzaityte; Milan Meeuse

From the beginning of the Masterly Apprentice II studio we are confronted with time in architecture. All our learning objects are objects from the past. The appreciation of the building that each student picked, can never be valued on their own. In order to do so we need to place the building in a complex framework of references and relations created throughout time. Thus, we need to concern ourselves with the specific time span that the building was built in. The building and its architect were, like we are now, inspired by cultural happenings, technological breakthroughs and prevailing societal spirit of that time. We soon came to the understanding that in order to learn from a specific building, there is a necessity to grasp the process of the development of ideas.

Recollection of the past

We like to think of ourselves as truly original designers. Though, in contrary to the common sense of the word, “original” already suggests an origin of the design or idea we often like to point out the fact how architects distinguish themselves from one another and try to be, as independent as possible from our predecessors. But if we take a closer look at the master architects which are chosen for this studio, the relevance to each other cannot be unseen: The Hedmark museum by Sverre Fehn being greatly inspired by Carlo Scarpa’s Castelvecchio^[1] or, Le Cobusier’s Plan Libre ideas that originates from Auguste Perret’s concrete structure^[2] just to name a few. Moreover, as T. S. Eliot writes:

‘[...] if we approach a poet without this prejudice we shall often find that not only the best, but the most individual parts of his work may be those in which the dead poets, his ancestors, assert their immortality most vigorously.’^[3]

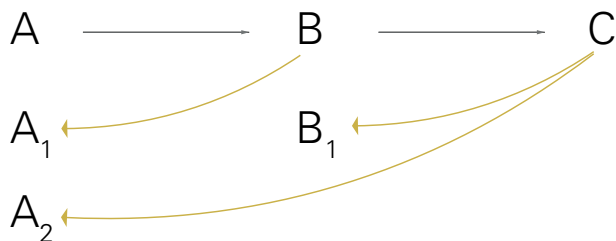


Fig. 1. Scheme of reflection on the past objects.

That proves that none of our designs are completely new ideas in architecture. We learn from collective memories and we pass our knowledge to future generations. So called 'new creations' are actually a careful compilation of ideas or a mutation of concepts from past architecture. The best ideas survived through time and were applied in multiple buildings each time a bit changed and altered. R. Dawkins introduced us with the name for this phenomena - a meme - an idea, behaviour, or style that spreads from person to person within a culture.^[4]

'Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperm or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via process which, in the broad sense, can be called imitation.'^[5]

Here, Dawkins shows a Darwinistic approach to cultural development which could be brought into relation with the birth of, for instance, new styles within art and architecture. Cultural beliefs, like organisms, evolve according to the survival of the fittest. The objects and theories society remembers have proven to be the strongest memes, while the lesser ones did not withstand time and were forgotten. Like genes, memes survive through mutation and alteration, each time a meme is used by a successor, the idea or belief is reinterpreted to the needs of the new object. Let's take for example Roman architecture which was greatly influenced by Ancient Greek buildings and was later rediscovered in Renaissance and neoclassical styles. Each forming a reflection and interpretation of the previous one. This is illustrated in Fig.1. Let's take a building A, which is interpreted by building B, thus B forming A1. By the time that B is formed A is no longer perceived in the same manner, and becomes A1. Building C is again a successor of B, and therefore reflecting B and A in a new way: B1 and A2. This eventually makes C a combination of alternated beliefs of B and A.

So, learning from a building never involves learning only from one building in particular. The analysis of the buildings portray not merely the ideas of the buildings themselves, but an intricate network of references to past concepts. However, one is not capable to cover this whole spectrum of predecessors and successors, it is simply too vast

to examine. Therefore, we make choices according to our individual experiences and prior knowledge. So in fact, we choose what we want to learn from a building.

Applying interpretations

It is evident that we are learning through researching and applying. We research our selected buildings and conclude relevant findings, which are open to our personalized interpretation.

During the design process we take these interpretations from the analyzed building and use them as a starting point for a concept.

We then enrich them with ideas drawn from prior experiences and coincidental encounters with other projects which elude our interest. We develop our designs while applying these interpretations in a concrete and physical form. In doing so we derive a compilation of reflections drawn from the building we analyzed and its connected network.

A schematic representation of this process is shown in Fig. 2. In this scheme we take E as the building we analysed. A and B are a part of E's network (past references), so E is a compilation of the reflections of A and B, making E consist of A1 and B1. E greatly influences our design, and in doing so giving us a new interpretation of E and its network. C forms an outside influence which is seemingly disconnected from E. Nonetheless, we find this reference interesting and relevant to our design. Therefore G becomes a compilation of both the interpretation of C, E, A1 and B1. Through collective work and similar interests within the Masterly Apprentice II studio, our designed projects might be influential for designs within the studio. This complex process can be expanded, and becomes even more intricate the more it progresses.

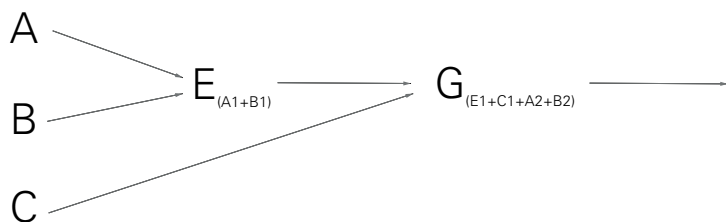


Fig. 2. Scheme of design process.

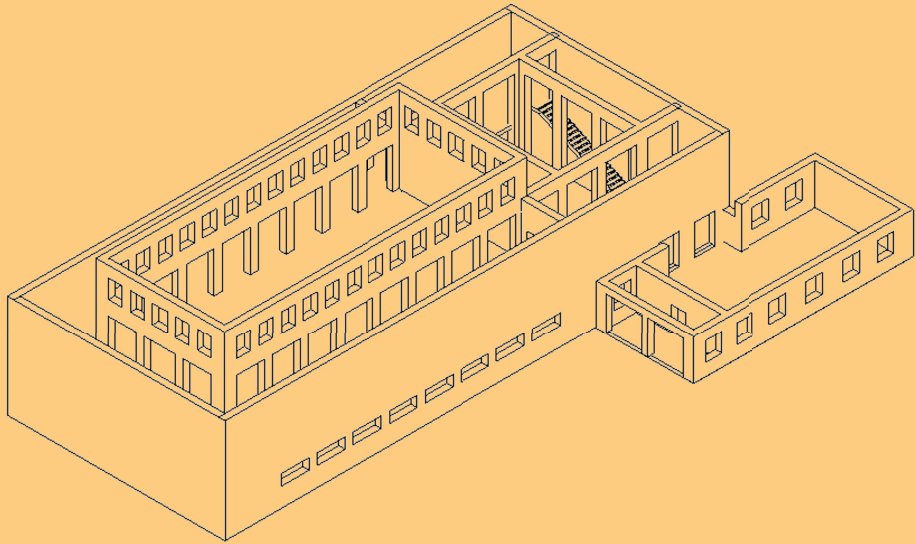
Our designs are unique objects, but they are not original. Through the choices we make in the analysed building and its network we derive with our individual concepts. However they are the combination of ongoing collective architecture memory. This makes learning from the past evident in each of our designs. Thus, learning is a recombination of past ideas compiled in a personal way.

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St. Benedictusberg Abbey

Dom Hans van der Laan



INTRODUCTION

LAYOUT OF THE BOOKLET

The analysis within this booklet will discuss the broader work of Dom Hans van der Laan and have a specific focus on his extension to the St. Benedictusberg abbey in Mamelis. This building and architect were chosen because of the strong connection from the building to the theory of Dom Hans van der Laan, which he discussed mostly in his book "the architectural space". This allows a close examination of both the building as itself, but also in relation to the underlying theory. What are the discrepancies between both and where does the building enhance the written word of the book or vice versa.

Especially after reading the book it was a point of interest to see how these concepts were brought into practice, and to what extent these purely theoretical ideas would translate in the architecture. Because of this it was also important to be able to visit the building relatively easy and often. Being able to experience the building at multiple stages during the research would be valuable, as the knowledge gained during the reading of the theory would change the underlying understanding of the building for each visit. The ability to gather needed information whenever this becomes valuable to the process was also desirable for the process. In other words, when new insights were gained through the research it was possible to return to the building and verify or disprove these insights, as well as gathering the data regarding these insights.

The main research method used will be to link the theory and the practice. This is done by taking the building apart and reconstructing it step by step. Each step will then be analyzed and linked to the theory of Dom Hans van der Laan in order to see how the theory is translated into the building. Besides analyzing the building in relation to the theory, the building will also be analyzed in the way it is as a building itself separate from the theory. For this analysis an iconic photo of the church will be replicated through the making of a model. This means analyzing the photo thoroughly and taking the lessons from this process to analyze the rest of the building. In other words the photo analysis will be used to find the most important themes in replicating it. After determining these themes they will be applied to the rest of the building. Themes like light, materiality and composition will be discussed in this section.

The booklet will be structured in a manner which discusses it from a very rational perspective to a very personal insight. This will be done through several activities as was discussed in the methodology. The following activities, or chapters, will compose the research booklet.

Connecting

The first part of the booklet will be about connecting the building to a larger context. By doing so a broader background is attained on which the further analyses can be built. This connecting is not directly about the building itself, but will help by creating a framework around the building. By connecting to the time period, the architect and theory, the building becomes an actor within a larger context instead of being an object on its own.

Redrawing

Redrawing is where the building is understood in its most basic and objective form. By looking at the drawings available and comparing these the basic elements of the building are understood. Where every space is located in relation to each other and what function each space holds.

Conceptualizing

By distilling certain concept out of the building's design, it is possible to closely observe how these concept influence the building and its atmosphere. It is no longer about the rational information, but the underlying themes which are not immediately recognizable, but will become prominent when abstracting the building down to these concepts.

Observing

Finally observing is about the subjective experience of moving through the building. What atmospheres does one come across within the spaces of the building. An initial visit will be void of any background knowledge, while a later visit may give a new experience of the space due to attained background knowledge.



CONNECTING

CREATING A FRAMEWORK

BUILDING IN TIME

HISTORY OF THE ABBEY

[Top left]
Elevation of the design by
Dom Hans van der Laan

[top right]
Floor plan of the design
by Dom Hans van der
Laan

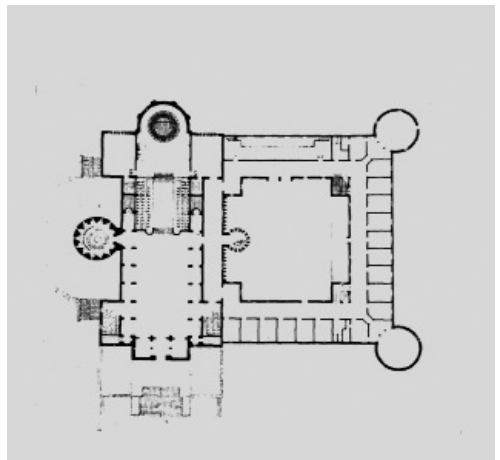
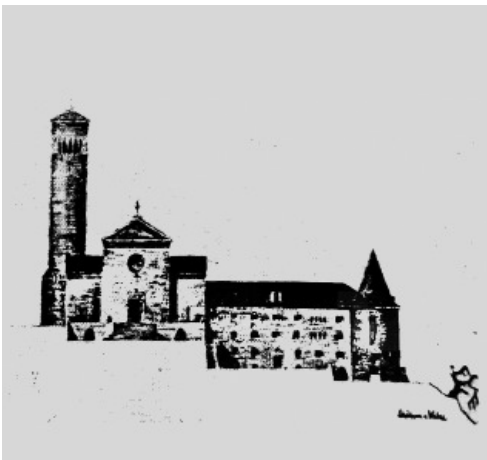
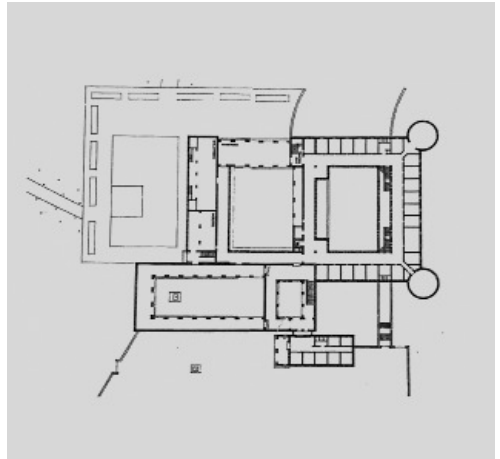
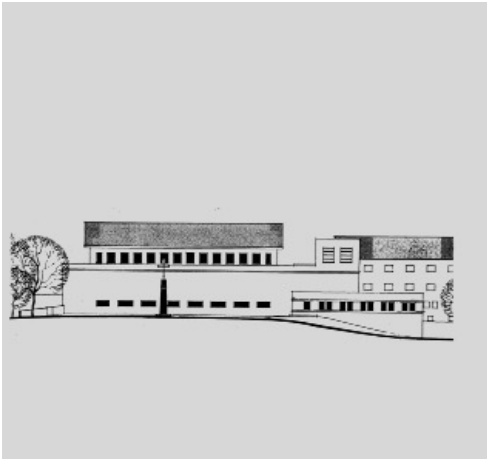
[[bottom left]
Elevation of the design by
Dominicus Böhm

[bottom right]
Floorplan of the design by
Dominicus Böhm

The original abbey was constructed between 1921 and 1928 between the villages Wahwiller and Lemiers. It was placed freely within the landscape on a wooded hill, close to the border with Germany. The design was done by Dominicus Böhm & Martin Weber with references to Morish and medieval designs. It was commissioned by Dom Romualdus Wolters and was occupied by mostly German residents. The abbey was planned to feature a church, but because of the economic situation at the time the budget did not allow for this addition. The problems for the abbey did not end there. During the second world war the residential monks were mandated to return to Germany and serve in the army. The following years the abbey was occupied by soldiers from the American army and border patrols. Even though a lot of the abbey and its interior was destroyed during that period, the vestry and library were saved due to the efforts of the only monk who still resided within the abbey. Because of these efforts there was an interest to restore the abbey and re-inhabit it after the war. In 1947 it was handed over to the Congregation of Solesmes. This meant that it was now officially a Dutch abbey, which was to be populated by inhabitants of the St. Paulusabbey in Oosterhout.

The restoration was an arduous undertaking, since the war had left the abbey in a desolated state. A lot of unholy events had taken place here, which had left the abbey's dwelling situation with only the bare necessities. The Benedictine order however made a real effort to reinstate the abbey. The building was completely renovated, the furniture was renewed, the library collection extended and even the surrounding woods were replanted. In these times of new prosperity the original plan for a church was commissioned anew. Dom Hans van der Laan, who was a resident of the abbey, was asked to design this extension to the abbey which would hold a church and a crypt. The crypt was finished in 1961 as a flat slab next to the original abbey. The church, which completed this slab was completed in 1967. Upon completion of the building it became apparent that there was a desire for the furniture to be designed in accordance to Van der Laans' theories as well. This eventually led to an entire series of furniture which was completed in 1973.

The original design for the church which was designed by Böhm simultaneously with the rest of the abbey was quite different from the eventually realized design of Van der Laan. The church was designed as the fourth side of the inner courtyard, with the other three sides being the living quarters which were actually built. The orientation of the church was in line with the road on which one approaches the building, with a large staircase leading into the building. This allowed the church to be the main focus for visitors, with a staircase leading them naturally into the church. However what probably attracted more attention was the very large tower which was designed to be standing alongside the church. This tower which was more than twice the size of the actual church was most likely



used to give the building stature. The rest of the building was also designed in this thought of stature and monumentality. The entire building was designed to be standing at the top of the hill, with the abbey having the appearance of a castle, complete with inner courtyard and corner towers. The tower was almost literally meant to be towering over the building and to overlook the valley.

The design of Dom Hans van der Laan however took a different approach when he was tasked with completing the abbey. He removed the original placement of the church to make room for a secondary courtyard, connected to the original one. The new placement of the church was "in front" of the abbey. Furthermore it was rotated 90 degrees, which means that the building is now approached from the side. According to Van der Laan the original design had a too large detachment towards the church with its highly placed entrance for which the large staircase had to be clambered. Instead Van der Laan wanted to guide visitors towards the church. He did this by making the building take-in the visitors firstly into an entrance building and then guiding them along the open atrium towards the church itself.

THE ARCHITECT

DOM HANS VAN DER LAAN

In the period when Van der Laan was born the architectural field was starting to see classic examples of modern architecture and urban planning. This movement started to get accelerated in the period of the 1920s when Van der Laan spend two years studying in Delft. Steel, glass and concrete where produced in high quantities and became the material which defined this movement. New theories and treatises where being published by for example Le Corbusier and Frank Loyd Wright, which made the period in which Dom Hans van der Laan grew up one of turmoil and many discussion within the field of architecture.

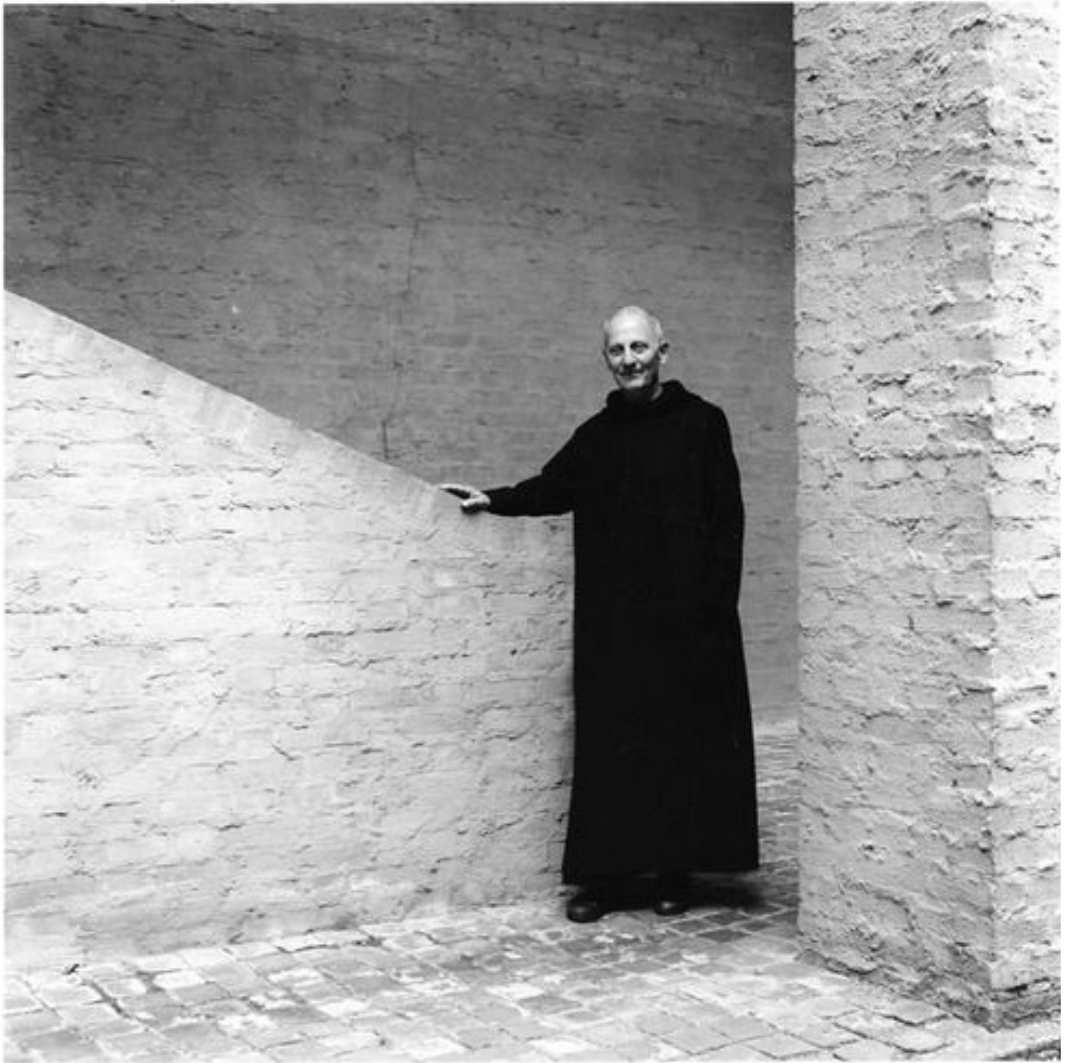
Van der Laan started joining these discussion when he joined the BSK (Bouwkunde Studentenkring). Here students discussed various topics, however the start of this group was inspired on the work "De moderne bouwkunst en hare beloften" by Moliere who was also present in the discussions. It was partly due to Van der Laan that these discussion were initiated, since he was more experienced than his fellow first year students. He gained this experience by working as an intern at his family's architecture firm before starting his education in Delft.

In Delft he started studying mathematics and physics which would become very prevalent in his later theories. It was during this period in which Van der Laan was experiencing and experimenting with many subjects, that he came in contact with the ecclesiastical existence. He joined a young abbey of the Benedictine order in Oosterhout where he studied philosophy and theology for the first years of his life within this abbey. Furthermore the liturgy and the ecclesiastical topics would became of great interest to him. This became even more important to him when in 1931 he was appointed as sacristan, which left him in charge of maintaining the sacristy, the church and their contents. During this period of extensive care of these objects it was that Van der Laan started looking very closely at the design of the liturgical objects. With this interest he started a studio within the abbey with a few fellow monks. In this studio he would work on the designs for chalices, lecterns and furniture. More importantly though, he returned to the field of architecture and it was here that he started on the earliest versions of his theory on the Plastic Number.

During the second world war many churches were damaged or even destroyed, which led to a new need for designing and constructing churches. In concurrence with this movement the ecclesiastical order was interested in new insights into the liturgy and contents of their faith. Van der Laan profited greatly of this interest in a re-evaluation of the church design, since his ideas on architecture where taking serious shape during this time. The newly introduced lectures on ecclesiastical architecture would therefore make great use of these ideas and

[image]
Dom Hans van der Laan
standing in front of the
iconic stairs

theories of Van der Laan. From this lecture series the Bossche School, which focused on ecclesiastical architecture as well, would gain a decent amount of popularity. It used roman and Syrian Christian examples in order to extrapolate the classical principles of architectural ordinance. During the period in which Van der Laan started to translate these lectures into the book "Le Nombre Plastique" he also started working on his design for the abbey in Mamelis. It was around 1977 when the entirety of his theory was released in the book "De Architectonische Ruimte" that this design was completed as well. It was in this design that Van der Laan was able to show how these new theory's and insight would have an effect on the practice of architecture.



THE THEORY

ARCHITECTONIC SPACE

[top left]
Largest set of squares

[top right]
Second set of squares

[middle left]
Third set of squares

[middle right]
Fourth set of squares

[bottom left]
Smallest set of squares

[bottom right]
Five sets of squares with
six transition-measures

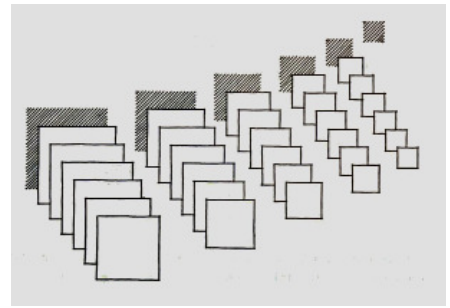
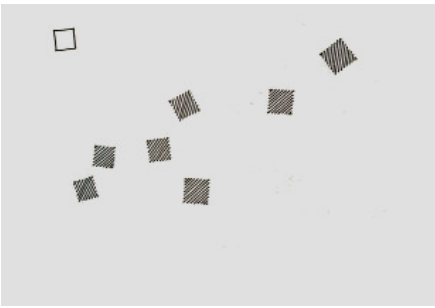
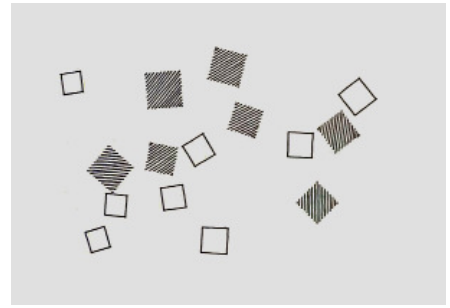
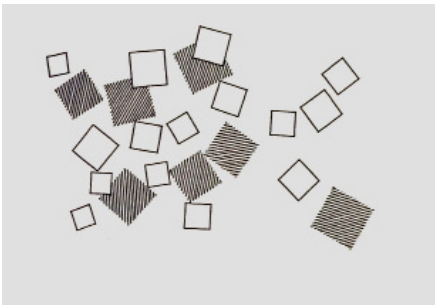
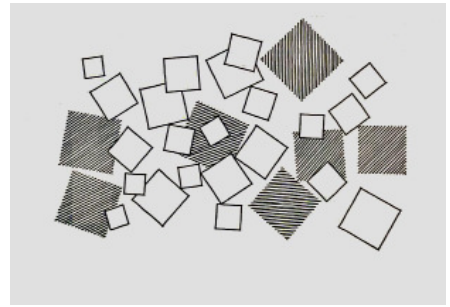
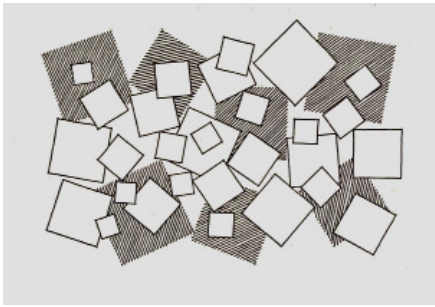
This chapter will serve an introduction into the larger theoretical work of Dom Hans van der Laan. It will discuss subjects that will not be brought up directly in the further research of the abbey, but nonetheless still serve an important role in understanding the subject. By doing so this chapter will help shape the background knowledge on the subject in order to form a framework on which to start the analyses of the abbey.





The plastic number

This part of the theory will discuss the plastic number, arguably the most iconic theory that Van der Laan has produced. Dom Hans van der Laan took a large interest into finding a form of order in the natural occurring spaces. Every natural occurring element has a unique size and no two object can ever have the exact same dimensions. However we still distinguish these sizes into large, small and of whether they are of a similar size. It is here that Van der Laan tried to find logic and a system of measurements for aesthetics in architecture.

It starts with an experiment dealing with the way we cluster sizes within a certain range into a group of similar sizes. The experiment has test subjects taking a piece of paper and dividing this exactly into two equal sized pieces. The results of these test were to the human eye perceived as being two pieces with the exact same measurements. However when closely measuring the actual dimensions it turned out that these were off by a margin of up to $1/25$. This result means that, according to the tests, the human eye will not be able to distinguish a size differences smaller than $1/25$ between two objects. This is the first manner of grouping sizes in nature, where any two sizes within a $1/25$ margin would be experienced as being of similar size.

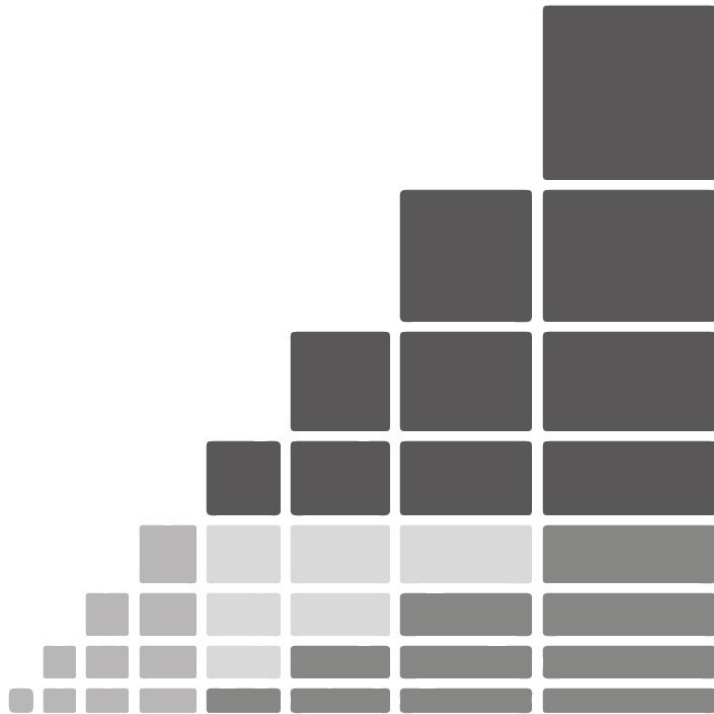
Continuing with these results a second experiment was conducted. Take 36 square pieces of paper, each $1/25$ smaller than the previous square. When these squares are placed in sequence from small to large or vice versa it is clear to see the relation between them and the equal decrease or increase in size between each square. When we randomize these squares by shuffling them around we can still conclude that they are all of different size, but we can no longer form a concrete image of each individual size. We can no longer see the underlying structure of all the pieces together, but what we can see is that certain pieces are about the same size. For a start we can distinguish some of the squares as being "the largest", which can be removed from the pile and be placed in a separated group. From the squares that are left in the pile again a group of "like sized" can be identified. Taking these out again and continuing this process will leave result in several groups of distinguished sized squares. When forming these groups there will always be a doubting moment whether a certain sized square belongs to one



-  White forms
-  Blocks
-  Slabs
-  Bars

group or the other. Whether it is the smallest of one group, or the largest of the next, these sizes are the transition-measures which separate the groups. Eventually we will end up with five groups, with six squares forming the transition measures between these groups.

These transition measures are what lay the foundation of the plastic number. By taking their relative measures and placing them in grid, they create a set of shapes which are identifiable from each other since they are the bounding measures of the distinct size groups. Of this shapes several groups can be identified, namely the blocks, slabs, bars and a set of six shapes which fall between these categories named the white blocks. The resulting relations of these sizes are what is called, the plastic number





REDRAWING

RATIONALIZING THE BUILDING

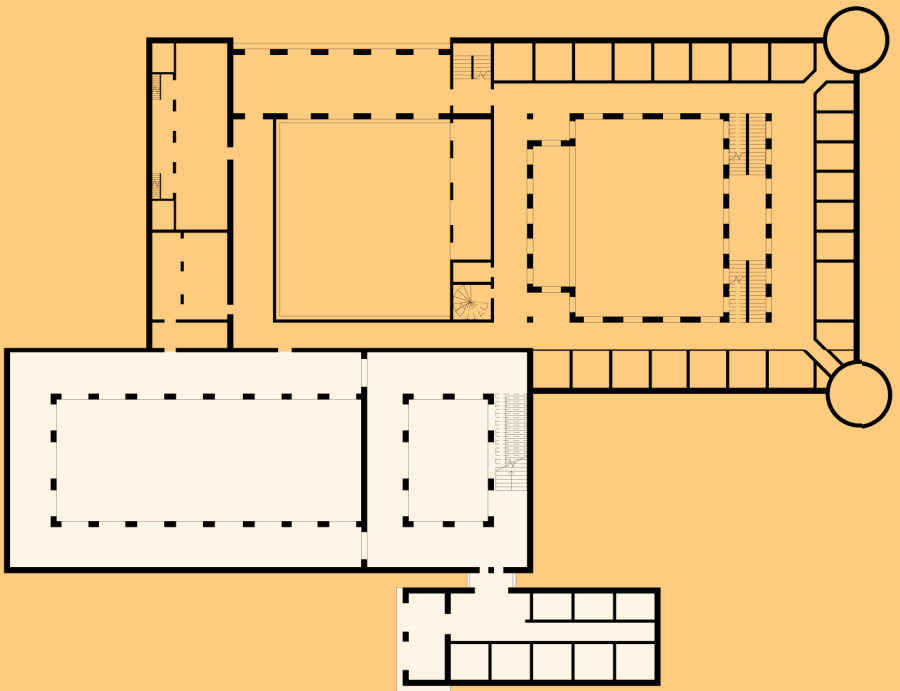
A SET OF DRAWINGS

REDRAWING THE BUILDING

The St. Benedictusberg abbey consist of multiple parts. The most notable separation between parts is that of the old abbey and the extension by Dom Hans van der Laan. Mostly due to difference in materiality, but also in their style and design. This research will focus on that part of the abbey which was designed by Dom Hans van der Laan, and more specifically the public part of this design (the part before “het slot”).

The extension of van der Laan has a strict division between the private parts where the monks reside and the public functions. In Dutch it is called “slot” which means that beyond a certain threshold no visitors are allowed. In the building this translate into a closed door located in the public section of the building. It is because of this strict division that the public part can be regarded as a separation from the overall building. Furthermore most documentation only focuses on this part of the building, partly due to privacy for the monks. The final argument for focusing on the public part is that the building itself stands separated from the rest of the abbey, it is its own element.

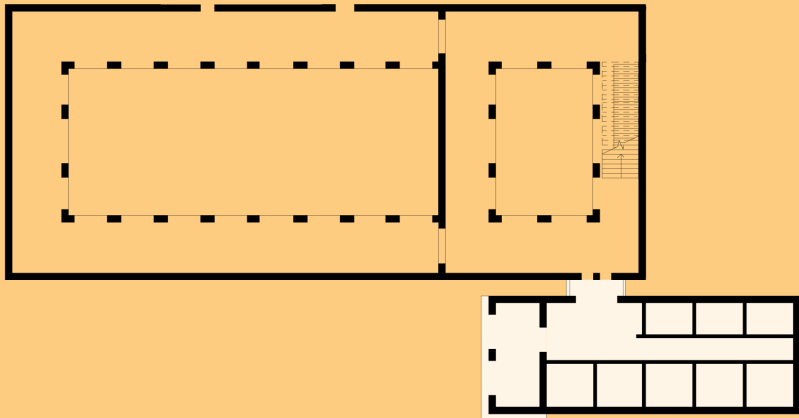
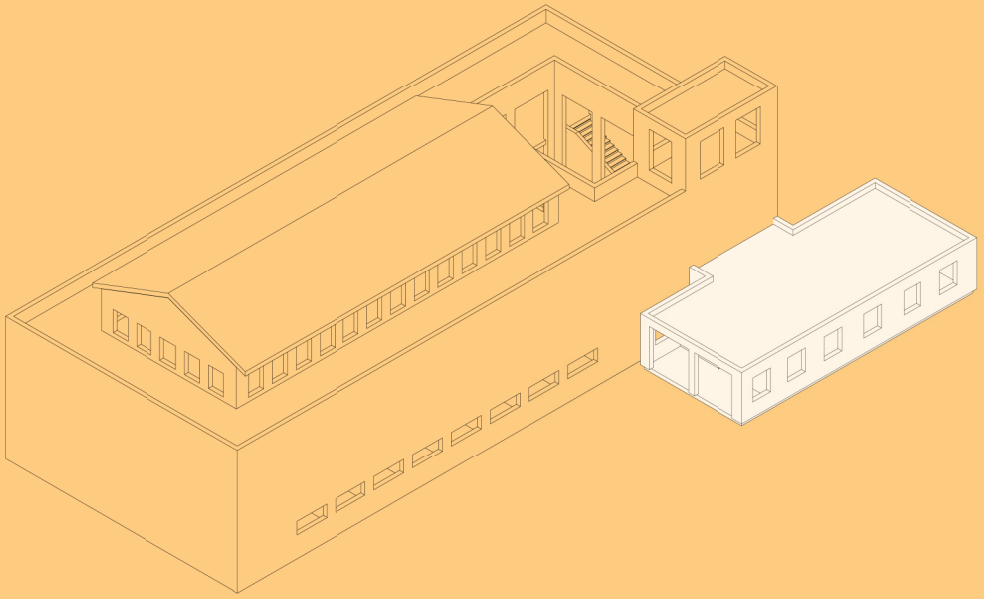
The public part, and thus the focus of this research, consists most notably of the church and the crypt, which are placed above each other within the same volume. They are connected by an atrium which spans both levels and serves as an interior courtyard. This courtyard atrium is accessible from a separate building in front of the abbey, which serves as an entrance building. This chapter will discuss each of these elements in their function and their layout, which will serve to create a rational understanding of the building before moving onto the rest of the research.





Entrance building

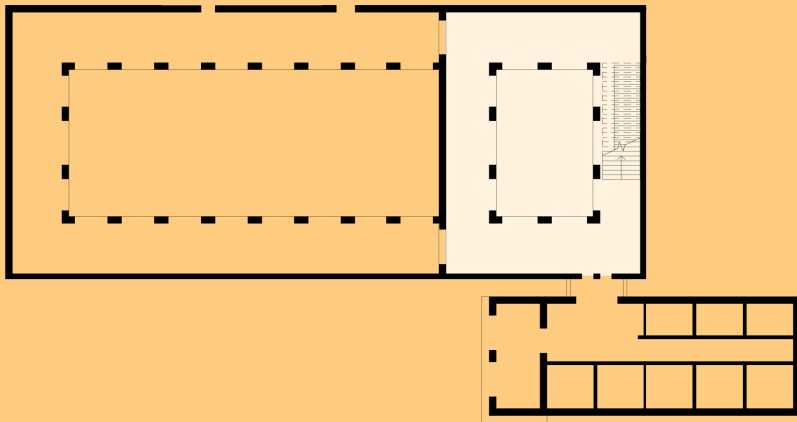
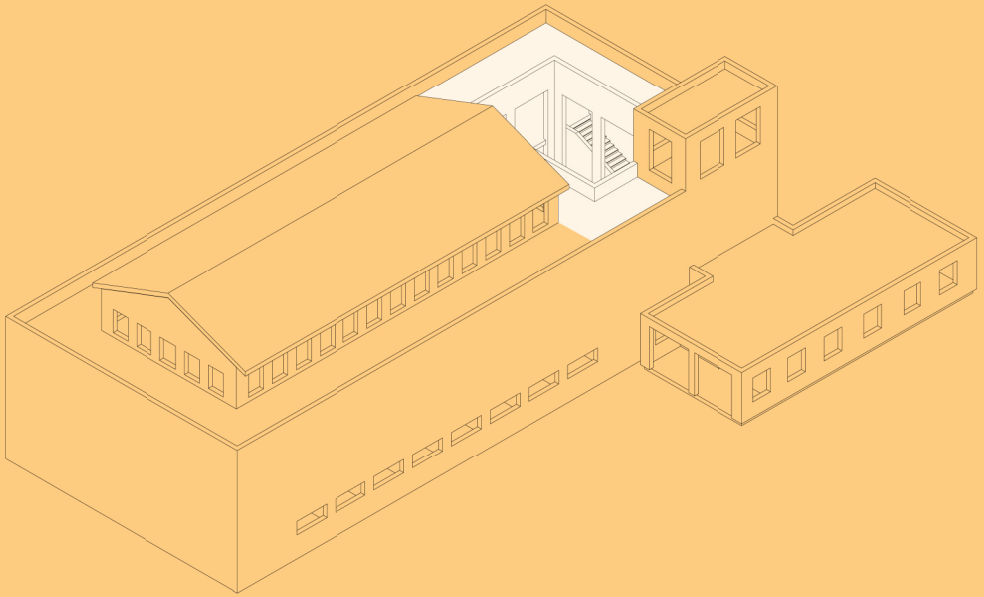
The entrance building is placed almost as a separate extension to the main building. It is positioned parallel to the length of the main building and is connected to it by a short corridor. The entrance building itself is similarly to the main building a long block shape, but is about half the height of the main building. This entrance building is used to contain the administrative functions for the abbey and to guide visitors into the building. From the parking lot one first steps onto the porch like front of the building. Through the height difference of the floor and the presence of a roof in this porch one is already within part of the building before opening the actual door. From this porch it is possible to talk to the doorman through a connecting window, or to enter the actual building through the door. Once through the door one steps into a central space which connects the entrance building to the main building. Connected to this central space is a room for the doorman and a corridor with more offices. Originally the entrance space served no further function but welcoming the visitor. Currently several elements are placed within this space which showcase various purchasable items, such as books postcards or candles. Continuing to the main building, one enters another porch like space reminiscent of the one on the exterior. Again a difference in floor height and a very similar composition of the earlier entrance ensure that this intermediate space feels different from both the spaces which it connects. Going through this intermediate space one enters the atrium.





The Atrium

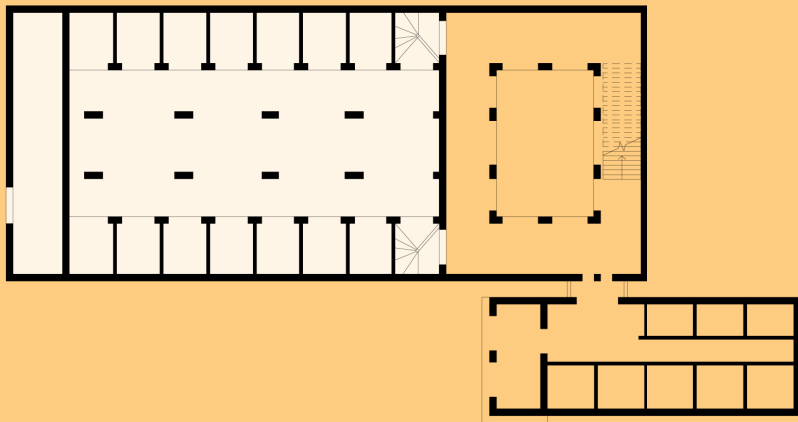
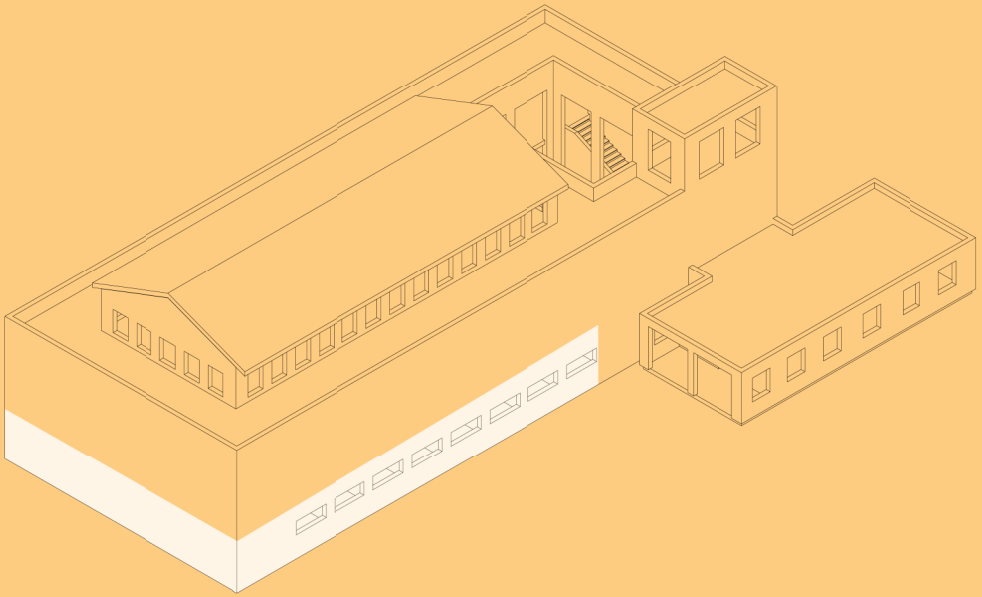
In contrast to the dark entrance building, the first space which one enters in the main building is a very light and open atrium. This atrium can be seen as the central space for the building which connects to the church, crypt, and entrance building. The atrium also connects to the rest of the abbey complex, but this section is private and therefore only a closed door is visible of this connection. When entering from the entrance building the first sight of the atrium is the staircase, which is perhaps the most iconic and photographed element of the building. This staircase connects the two levels of the two levelled colonnade which surrounds the atrium. The atrium itself can be entered by moving through this row of columns where again a height difference in the floor is used to reinforce the notion of different spaces. From the atrium one can move along the colonnade and enter the crypt, or take the stairs to the second level and enter the church, which is located directly above the crypt.





The Crypt

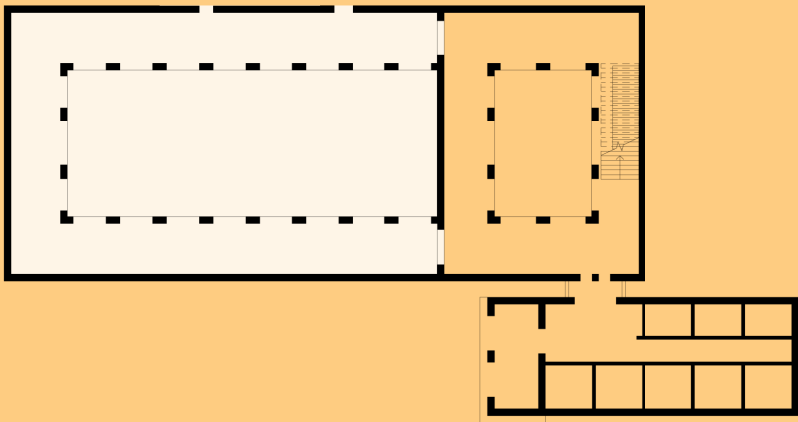
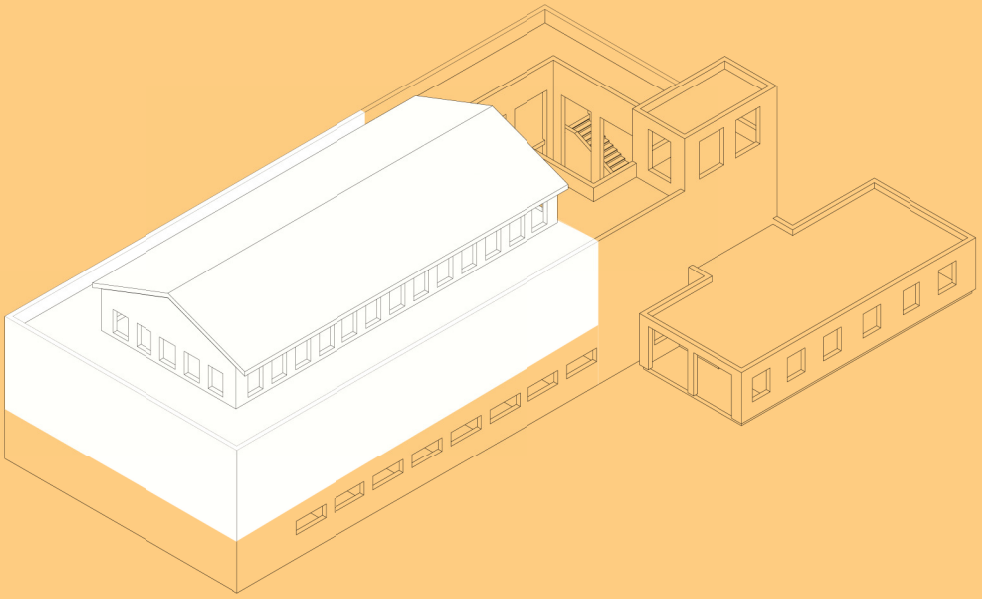
The crypt is located partly below ground level and therefore has to be entered through a small but open space containing a short spiral staircase at either the back right or back left of the crypt. From these stairs one enters into a walking space surrounding the central space of the crypt, demarcated by a row of columns. Along this walking space, in the outer walls of the crypt, small spaces are located which seems to be hollowed out of these walls. These spaces vary in their completion, from altars dedicated to certain saints, to a confession stand or a place to light candles for beloved ones or ones dearly departed. The central space of the crypt is where the main function is located. Rows of seating are placed in front of an altar for praying and contemplation. Light openings are located only on one side of the crypt, due to the crypt being enclosed by the rest of the abbey above and directly to the right of the crypt.





The church

Quite similar to the crypt, the church also features a central space surrounded by a walking space which can be entered from either the back right or back left. The church however lacks the small hollowed out spaces along this walking space. Another difference is the higher roof of the central space which separates the surrounding and central space to a higher degree than in the crypt. This height difference in the ceiling creates a more open central space and a more enclosed surrounding space. The central space is also similar to the one of the crypt in composition of the rows of seating oriented towards an altar. Placement for light opening in the church are less limited than in the crypt since the space is completely above ground and its roof is open to the sky instead of having another space above it. Because of this it was possible to extend the roof of the central space in height and place light opening all the way around this extrusion.





CONCEPTUALIZING

ABSTRACTING THE BUILDING

MODEL MAKING

LEARNING FROM A PHOTO

[top]
Original photograph

[bottom]
Photo of the model

One of the learning methods used in the research was to identify one iconic photo of the building and replicating this photo in a 1:30 model. In order to replicate this photo a thorough analysis of this photo was conducted. By filtering certain aspects out of the photo it was possible to gain a clear view of all the different elements which in relation to each other formed the intricacies of the photo. The separate elements which were distilled out of the photo as separate analyses were light, materiality, composition and elements.

The chosen photo is taken in the church itself, however it is taken in such a way that both the church space and the surrounding colonnade are clearly present in the composition of the photo. This illustrates one of the main elements of the researched theory, the walking and working spaces. The monk present in the church is clearly engaged in an intimate activity for which he remains stationary. In contrast to this monk, the colonnade shows a monk moving through this colonnade in a more engaged form of activity. In other words, the contrast between the two monks shows how these different spaces are utilized beautifully as it was described in the words of Dom Hans van der Laan in his theory. Adding to this relation between the two spaces, the photo shows even more contrast in the lightness and openness of the working space. The colonnade or walking space on the other hand appears darker and more enclosed due to the closed wall and lower ceiling.





Composition



Light influences



Materiality



Elements

COMPOSITION

LAYOUT OF THE BUILDING

[top]
Composition of actual
building

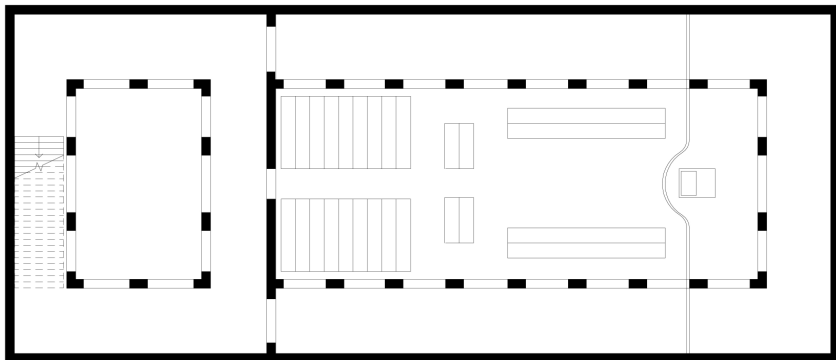
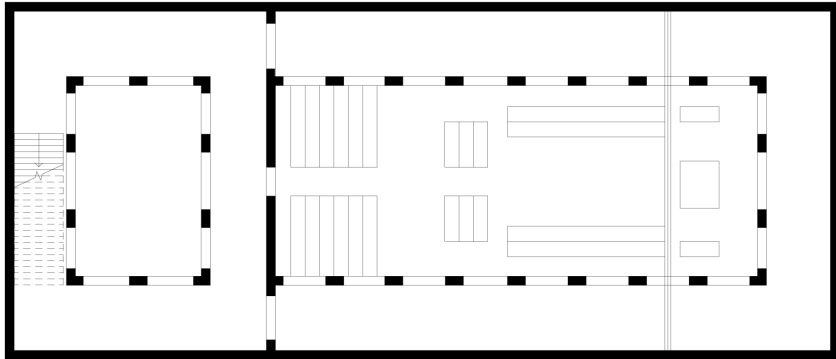
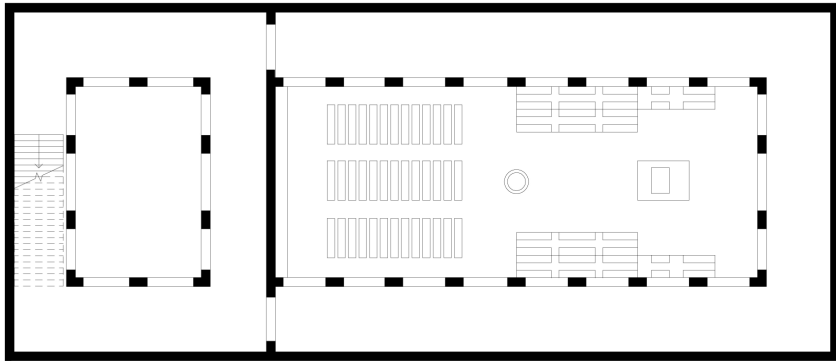
[middle]
Composition proposal

[bottom]
Composition proposal

The composition of the church and especially their dimensions are mostly derived from the plastic number. By taking one measurement as a starting point, the rest of the dimensions can be attained by utilizing the plastic number. In this case the thickness of the column is used as this smallest measurement, which is based on the size of the brick in the masonry pattern. So, by starting with the thickness of the column, the width of the column can be deduced. Applying the same method again will yield the height of the column. Then the distance between columns can be deduced together with the dimensions of the architrave to gain a portal structure. Extending this portal structure leads to a wall, relating these walls creates a colonnade and this colonnade encloses the now created space. This method of the plastic number can even be extended further to the composition of entire design by Dom Hans van der Laan.

The furniture for both the crypt and the church have a similar composition, with a central element in the form of an altar at the "back" of the space with benches placed in straight lines focussed on this altar. In older drawings and sketches the composition of the furniture appeared to be quite different. A larger focus was placed on create a space around the altar, where presumably the monks would be seated. Almost separated from this space we find the arrangement of benches for visitors that are present in the present day lay-out. However these benches are far fewer in number and there is a larger distance between these public seats and the seats for the monks. According to one of the monks in the abbey, this change was made due to subsidies being paid to the abbey not as a fixed number, but instead it was determined by the amount of seating for the public. This probably resulted in the change of the more secluded space around the altar, to extend the arrangement of the benches for public use.

The colonnade is mostly kept free of furniture and is mostly utilized as a supporting function for the main space of the church. Close to the entrance are some of these supporting functions, like holy water fonts and a small bench on which bibles and the liturgies booklets are placed. The colonnade section behind the altar has a similar supporting functions, where tables are placed holding the relics used during the mass and seats for the monks hosting the mass.



THE LIGHT INFLUENCES

ACCENTUATING SPACES



[left]
Bright left side of the
crypt

[right]
Dark right side of the
crypt

As mentioned before the light in the photo emphasizes the difference between the open working space and the more enclosed walking space. The working space is the only place where windows are placed which, due to their high elevation do not reach fully into the surrounding colonnades. Remarkable however is how illuminated the church is when taking into account that the only entry of light comes from the row of relatively small openings beneath the roof. However by placing the openings this high it creates a very strong impact of the light coming into the church. Especially during the services when the incense creates a veil of smoke the high openings give an effect of alternating light rays coming in. This effect is also highly effected by the time of day because of the fact that the openings are placed all around the space. This allows the space to have different lighting effect at different moments of the day.

In the rest of the building it is always an contrast of light working spaces and darker walking spaces. The working spaces are mostly illuminated from all sides, while the walking spaces are only open on one side. Therefore the walking spaces gain a directionality, directing the attention towards the illuminated side. Because of this the

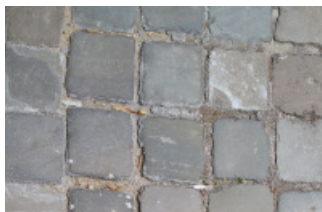
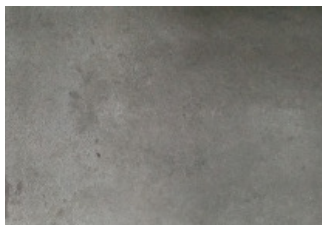
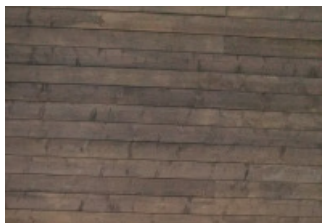
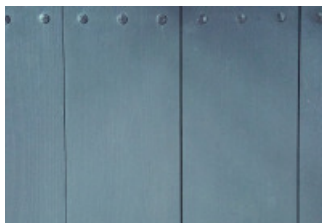


walking spaces are clear in communicating the direction of the design, the open lighter side again stands in contrast to the darker closed wall.

An interesting extension of this contrast can be found in the crypt. The crypt is placed underneath the church and against the private section of the abbey. Through this placement the crypt has limited places for light openings. So, while the crypt is, similarly to the church, designed very symmetrical along its longitude, the crypt gains a movement within its space created by the light. The crypt has window openings on its left side, which is connected to the outside. However the symmetrical opposite side is connected to two other spaces and therefore cannot hold these same openings. These conditions give the space a very different left and right side, although both side are created to be mirror images of each other. The wall inserts on the left side appear very open while the same architecture on the right side appears very closed and gives the impression that the inserts are in fact "dug out of the wall".

THE MATERIALS

DIFFERENTIATING SPACE



Overall the building appears to have a consistent use of materiality. The prominent use of white painted brickwork and concrete dominates most of the building, both inside and outside. However when looking closer some interesting diversions can be found. For example the entrance building features a very different materiality than the rest of the building. Here the white plastered brickwork of the walls has been exchanged for a wooden finish. This change in materiality not only give a clearer distinction between the entrance building and the “actual” building, but it also gives the entrance building a more warm and inviting appearance. This use of wood however is not a complete diversion from the materiality of the building. The same wood is also applied for most of the ceilings in the building, such as in the atrium and the church. Another example of a difference in materiality to differentiate spaces is used in the floors. The interior floors are all created from smooth concrete. The floor of the atrium instead is created from stones, which gives a stronger identity to the atrium as being an outside space and its openness to the sky.

The connections between different materials is also worth taking a closer look into. In the church columns are very prominent in its design, and although they stand “simply” onto a concrete floor it is apparent that this connection has been consciously designed. The floor contains a rise in height for the colonnade. The columns are placed exactly on the edge of this height difference, which means that they no longer stand “simply” onto a concrete surface. Multiple options could be applied to have the columns simply standing on the concrete, by placing them on the inside of the height difference or placing them slightly further into the height difference. In this case however the column is placed exactly on the height difference, with the column continuing through the elevated floor section of the colonnade. This connection creates a relation between the height differences of the floor through the continuation of the column. It also emphasizes the clear line of separation between the church and the colonnade by having the column and rise in the floor being flush.



ELEMENTS

INFILL OF THE SPACE

[top]
Bench for the monks

[bottom left]
Baptismal font

[bottom right]
Church bench

The elements in the photo and building are mostly the furniture and liturgical pieces. These elements are useful to investigate since Dom Hans van der Laan designed them himself as well. He designed them according to a clear underlying concept. Each piece starts with a 2-dimensional footprint, either a side view or a top down view depending on the function. Then from this 2-dimensional footprint the entire piece is protruded into a full object. For example the church benches have a clear side view of the seat and the backrest intersecting. This side view is then extruded to create an entire bench. The furniture pieces are created through carpentry and all have a similar appearance of wooden planks which have a grey painted finish.

The liturgical elements, like the baptismal font, have a different method of designing. They are created through an arrangement of stone blocks, which were very expansively drawn out by van der Laan. In the archive multiple drawings can be found of these kind of arrangements in which each block has been drawn separately with its own dimensions. Then another drawing shows exactly where and how each separate block has to be placed in the arrangement. The baptismal font for example consists of 16 blocks, each with different dimension. Only by following the instruction on how to arrange these blocks it can become one coherent piece. It is due to this level of involvement of van der Laan that the elements within the building can achieve a high level of coherence.



MAKING THE MODEL

RECREATING THE PHOTO

[top]
Furniture models

[middle]
Turning foam into a brick wall

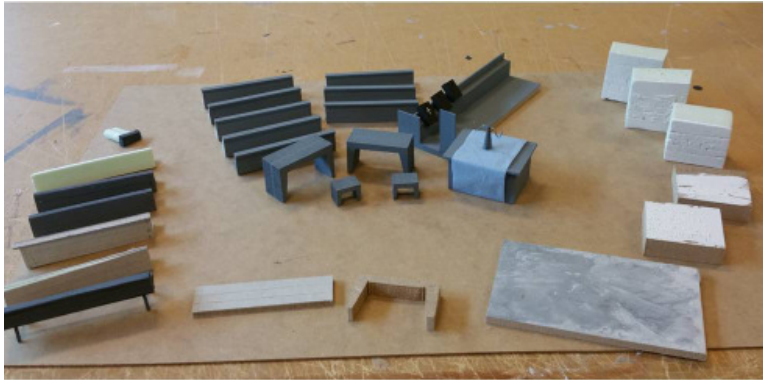
[bottom]
Turning wood and filler into concrete

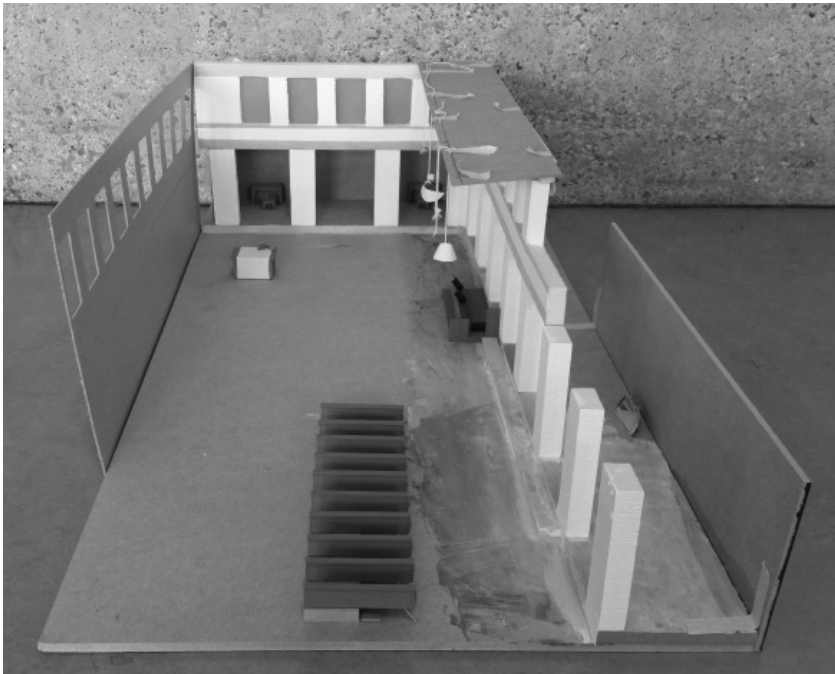
After analyzing the elements and concepts which together form the photo, it was possible to start recreating these elements. Starting with the composition in raw shapes without materiality the components which would need to be made were compiled. After attained these raw components, the next step was to make them appear as they do in the photo. Firstly recreating the stucco brick walls it was important to get a level of depth into the material. This was achieved by first cutting the brick shapes roughly out of the base shape. The material in the photo is not cleanly applied, with the mortar sticking out at certain points which creates a inconsistent appearance. To emulate this in the model, filler was applied loosely into the earlier created seams. The final step was to paint over both the filler and base material in order to make it appear as one element, as it is in the photo.

The concrete floor in the photo is not uniform in color, which meant that again the applied method had to be applied semi-untidy. In order to have the effect of these color differences, different amount of black paint was added to the filler. These different colored fillers were then applied in layers onto parts of the floor plate. Next these parts where very briefly blended into each other to fill in the gaps and create more natural transitions between the colors. Finally the filler was sanded which revealed all the color differences while simultaneously making them flow into another and making the floor one flush surface.

The benches were made by attempting to recreate the separate elements of which they consist, since their appearance clearly shows a central core, with separate planks attached to it. However the scale was too small for this approach. Therefore it was chosen to first create a composed element of the core with the two outer layers by connecting three materials together. From this composed element it was now possible to create the shape of the bench and finally to carve the seams between the separate planks out of the outer layer of the composed element.

The stand-out elements in the back of the church required less detail, since they are out of focus. Therefore it was easier to create these element in a simpler version of the method used for the benches. They no longer required the composed materials. The elements furthest in the back could be created from simply one piece of painted wood, as they lacked most detail in the photo.





Complete model



Photo from specific angle

BUILDING BLOCKS

ASSEMBLE AND DISSASSEMBLE

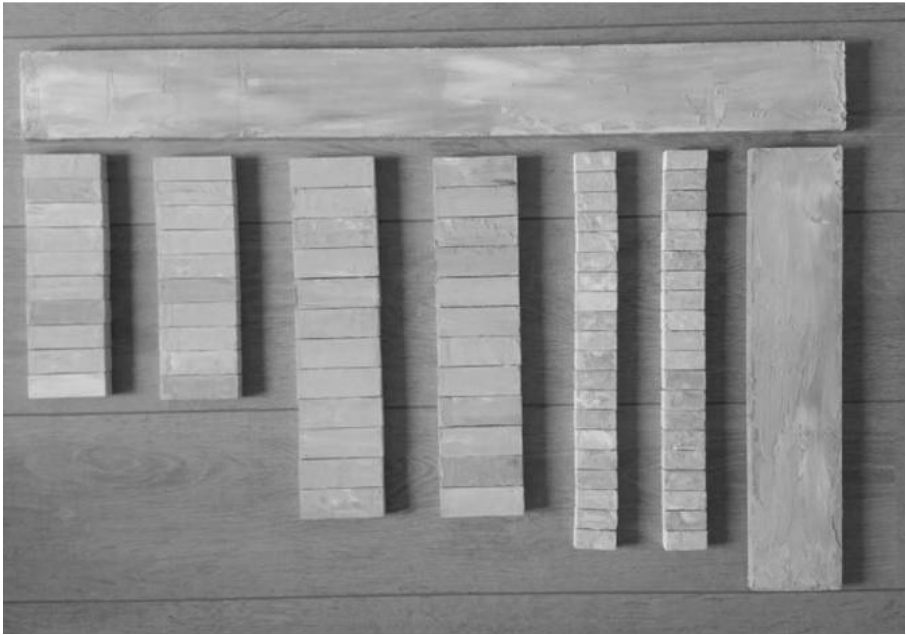
[top]
Dissassembled blocks

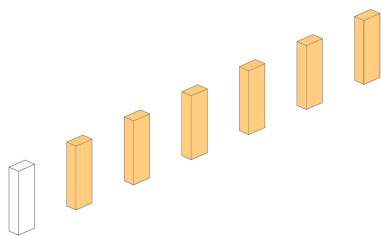
[bottom]
Assembled church

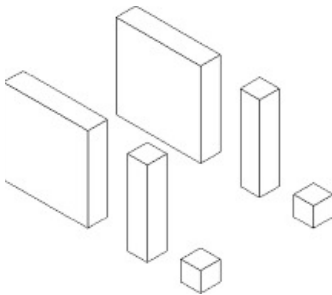
Dom Hans van der Laan utilized many forms of building blocks himself throughout his work. His abacus and his morphotheek are examples of these building blocks, which he not only uses to illustrate his theories, but also to apply his theories. Through the multiple instances in which these building blocks seemed to appear throughout the research it was chosen to utilize a similar method. In this chapter the building will be deconstructed into separate elements, or building blocks. From these building blocks the building will be re-assembled step by step. Each step will then be linked to the theories of Van der Laan and discuss what influences each step has on the overall design.

The plastic number and very mathematical setup of the building ensured that these building blocks could actually be utilized. It was possible to abstract the building down to only a handful of different blocks, which could still create the entire design. Without the influence of the plastic number it would most likely be impossible to abstract a building down into a set of blocks, because of its variation in dimensions.

Not only were the building blocks usable to recreate the building design, it was also possible to use these blocks in order to experiment with the theories of Dom Hans van der Laan. When reading his explanations it is easy to accept them as true, but when trying to apply the theory through the use of simple building blocks it was possible to really get a feeling of what he meant in his descriptions.



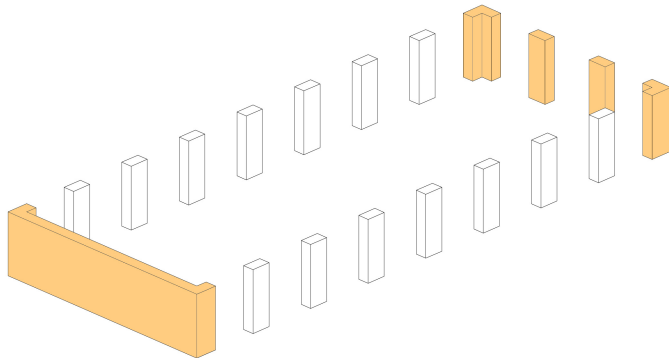
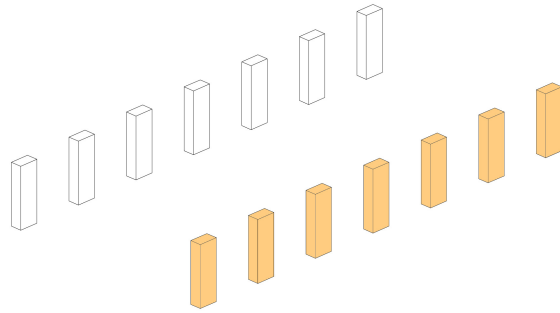


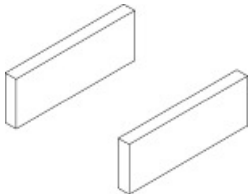
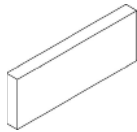


By placing a single block on the surface of the earth one simply heightens a small portion of the surface. However it does not separate any space since the top surface of the block still relates to the earth's surface. If one stacks more blocks on top of this one the upper surface diminishes in size relative to the sides and loses its connection to the earth's surface. It is then that it becomes a self-contained form. The first architectonic datum, the column.

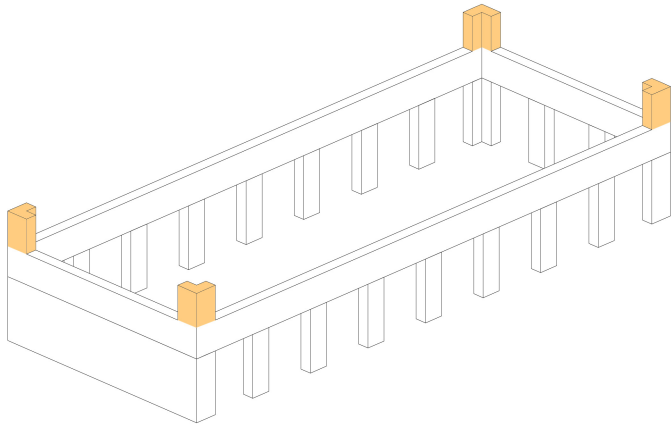
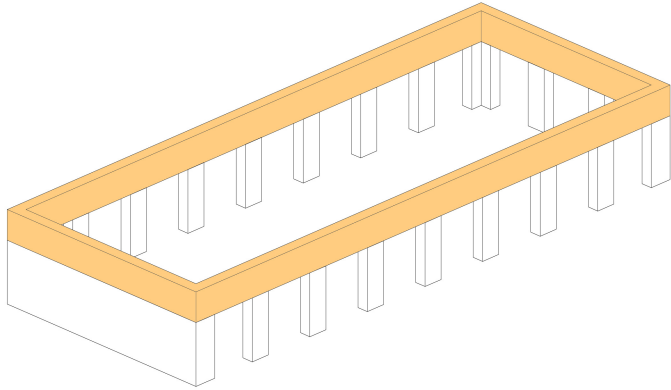
The column does not however separate space, similarly as a dot does not separate space on a piece of paper. If a line is created on this piece of paper however it does separate the paper into two halves. This means that in order to separate three dimensional space the column has to be broadened into a slab. This gives us the second architectonic datum, the wall. Even if the line on the piece of paper is dotted it separates the paper into two parts. Equivalently a row of columns communicate this same division.

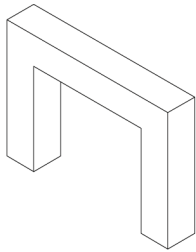
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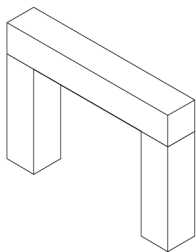


The architectonic datum of the wall has been used to separate space from the boundless natural space. However a single wall does not cut off and enclose a piece of space. Remember that a single wall simply divides the boundless space into the two sides of the wall, with the space still being boundless in the opposite directions. In order to bound a portion of this boundless space it is necessary to block it on the opposite side as well. Therefore in order to enclose a portion of the boundless space a second wall is needed. When these two walls have a certain nearness they will attain a relation and create an enclosed space between them. This is the third architectonic datum, the architectonic space.

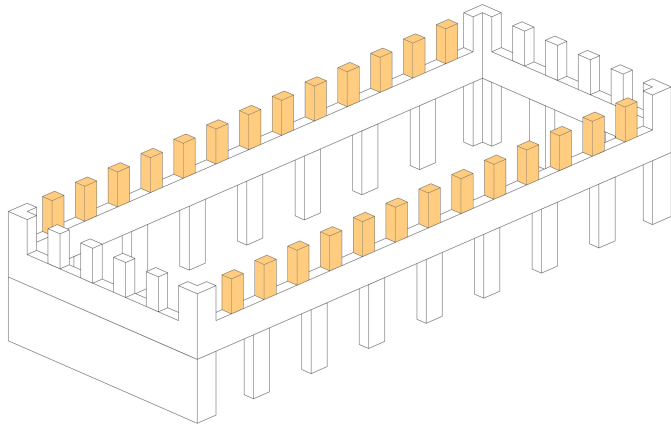
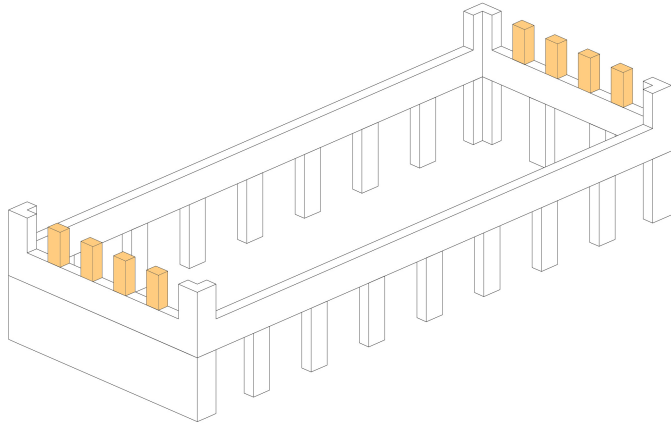




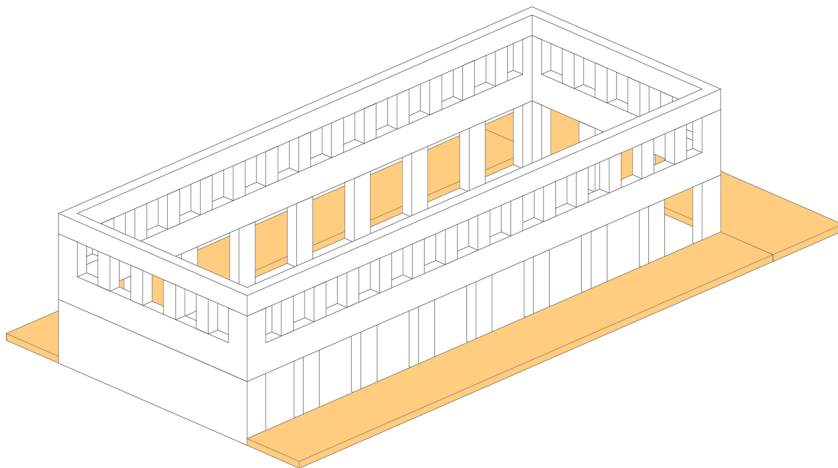
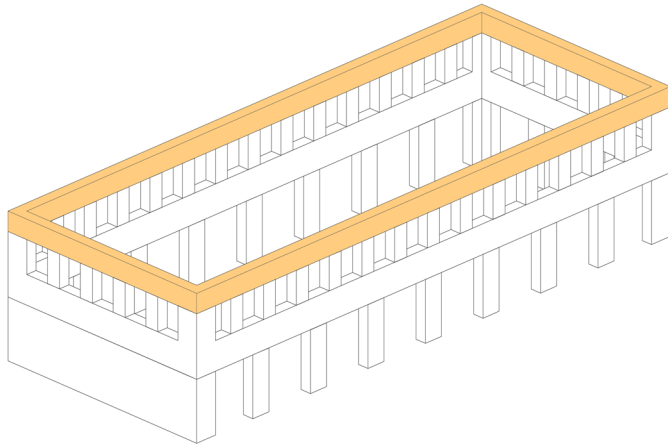
When creating a void inside the solid wall it starts to create holes. If the hole becomes large enough in proportion to the wall it will start to shape the wall. The sides of the void no longer simply relate to each other, but they start to relate to the entire wall. The wall now becomes a frame around the opening, where the void dictates the solid. The wall now falls apart into three elements. The vertical parts of the wall become two columns, and the horizontal element becomes a lintel. The solid of the wall is now longer the dictating element, but insteads the voids dictate a collonade.

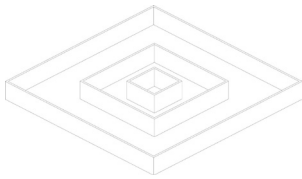


This comes from a close relation between the solid and the void, but it also a matter of how to present them. If the opening is small in relation to the wall, the void becomes subservient to the solid and the wall will be the dominant aspect. If it is however presented as columns and lintels it is the void that becomes dominant over the solid and the wall is no longer expressed as a solid wall.

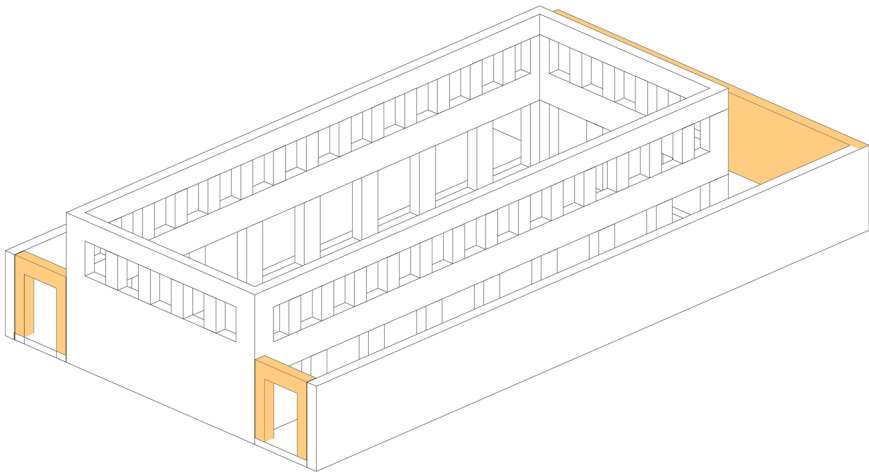
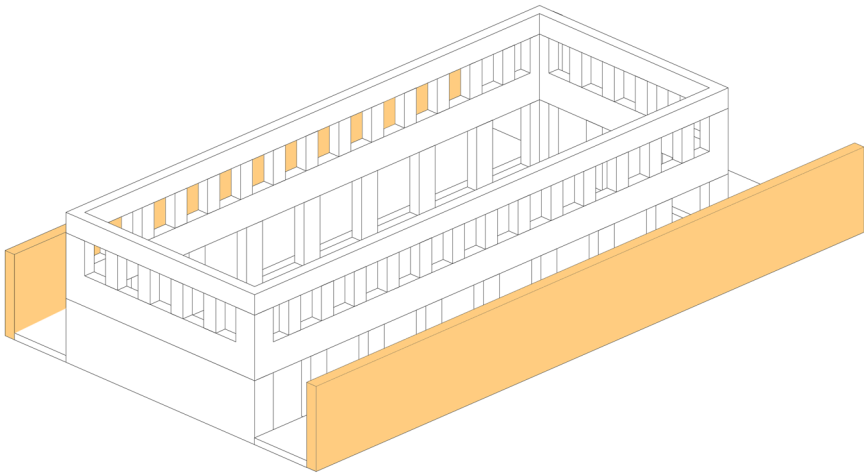


The relation between solid and void determines the appearance and interpretation of the wall. In the lower half of the church's wall it is a relation in which the voids are the dominating factor, which gives the wall the appearance of a colonnade. For the windows in the upper part this dynamic is different. Already the term windows gives an indication that the voids are less dominant here. The solid is instead the dominant part, leaving the visual appearance of the wall intact as being one element. It is a solid with voids in it, instead of voids with solids around them. This is emphasized by using different sized windows at the end of the row of windows. These two outer windows are less wide than the other, leaving more solid surface on the outside of the row of openings than between each opening. By doing so the solid surface appears wider around the entire row of opening. This giving the appearance of the openings being placed within this solid wall, instead of a consistent row of columns that enclose openings in the lower part.



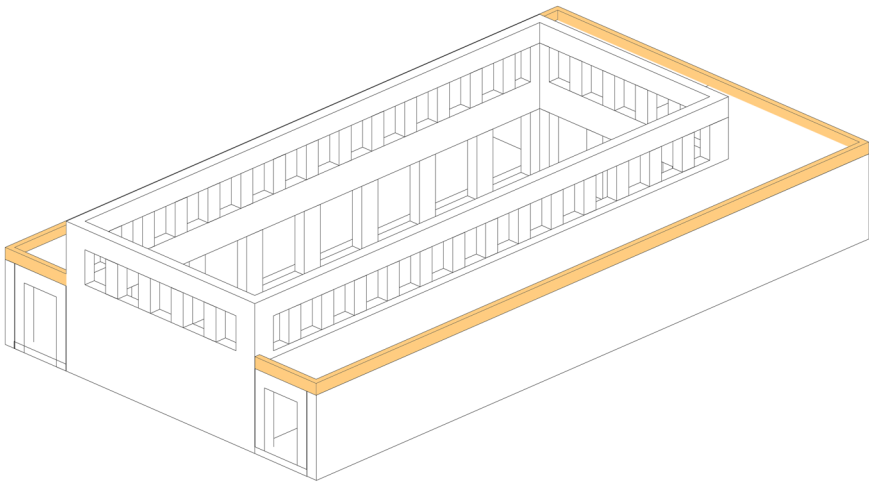
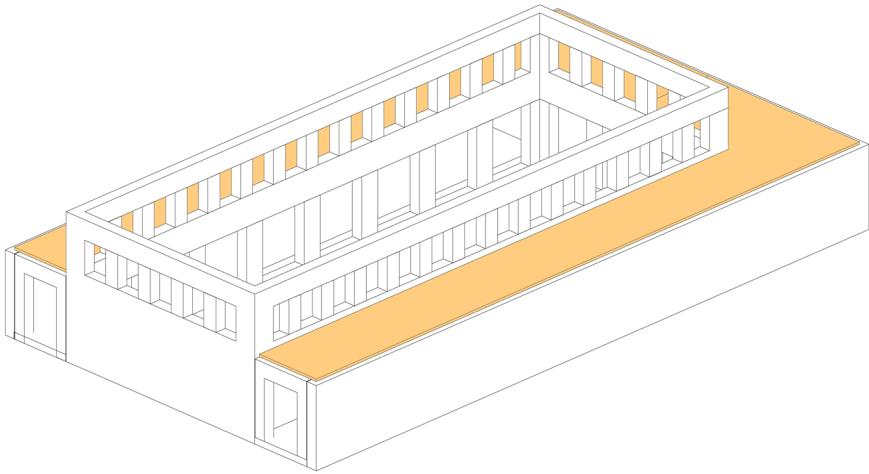


The more movement an activity requires, the more space it demands. The more manual they are, the less space they need. Therefore the space we inhabit and involve in our existence is not uniform. It is comprised of intimate spaces for working and wider spaces for walking. Even more so people require a threefold demarcation of space. Working in an intimate space works for a period of time. However people will soon desire a broader space to walk in. This again is too restricting for a longer period of time since our visual field would be too restricted. Therefore a third much wider demarcation is needed around these spaces. This desire works in both directions, since a person in the largest space, will grow a desire for a more intimate space which it can relate to himself. In the largest demarcation the enclosing walls become relatively lower than in the much more intimate spaces since the space between those walls is much larger. Due to this relation the occupant would again desire back to the more intimate space, which can be related more to himself. It becomes an interplay of these spaces that alternately require or dismiss each other.

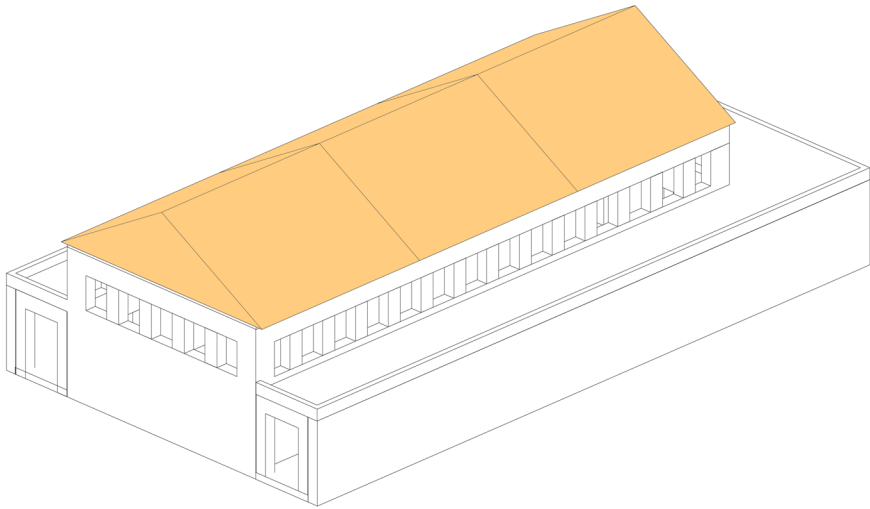
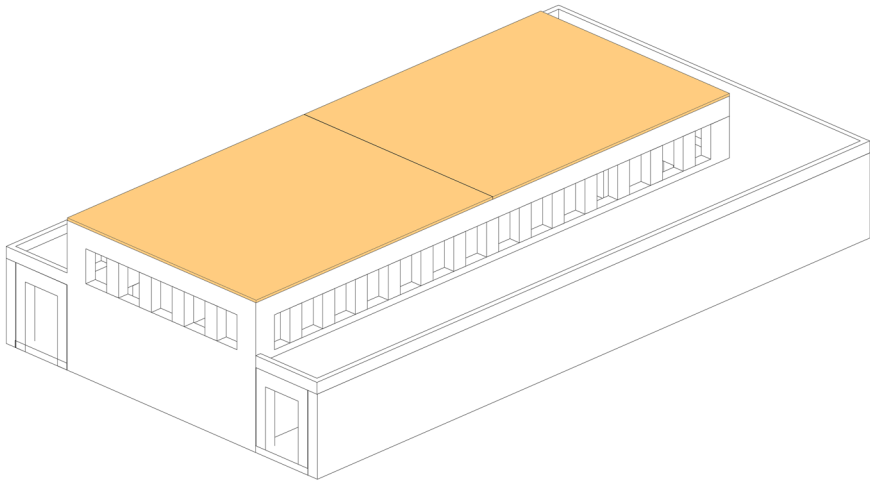


A house is an addition to nature, which completes the natural space and makes it inhabitable for mankind. It serves as a mediator between the extremes of man and nature. This requires the house or building to be created in accordance with the requirements of the natural environment, but also in coexistence with the requirements of our own.

This entails that the architecture should reconcile the extreme terms of man and nature, which enables man to maintain himself within this nature. The inside of a building should be a pleasant and open inhabitable space. While from the outside the architecture should stand as a fortified human existence to oppose the nature.



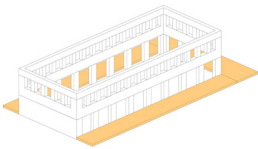
Man is a horizontally oriented being and its space lies not upon the earth's surface, but between walls. The vertically oriented walls intervene in that horizontal orientation, which is why they separate our experience space. It is therefore not possible for horizontal planes to have this same effect. The earth's surface appears as an infinite mass of which one can not distinguish its entire surface as the boundary of a form. This lack of a distinguishable thickness is why no relation can form in correlation to the distance between the ground and the ceiling.



The previous section and this section both deal with the horizontal elements of the abbey, which create the verticality within the building. However as seen in the previous part, the theory in the book "Architectonic space" denies that these have an effect on the space which they confine. In the two drawings to the left however it is curious that the abbey features a slanted roof, but has a flat ceiling from inside the church. Even more so the lower walking space around the church has a much smaller verticality than the church itself which creates a strong distinction between the two spaces. It appears here that a discrepancy starts to exist between the theory and the practice. Every step up to this point has been linkable to a portion of the theory, but in verticality this strong link ceases to exist.

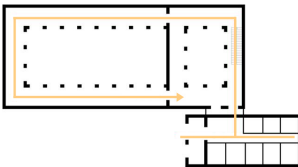
WALKING AND WORKING SPACES

SEPERATING AND CONNECTING SPACES

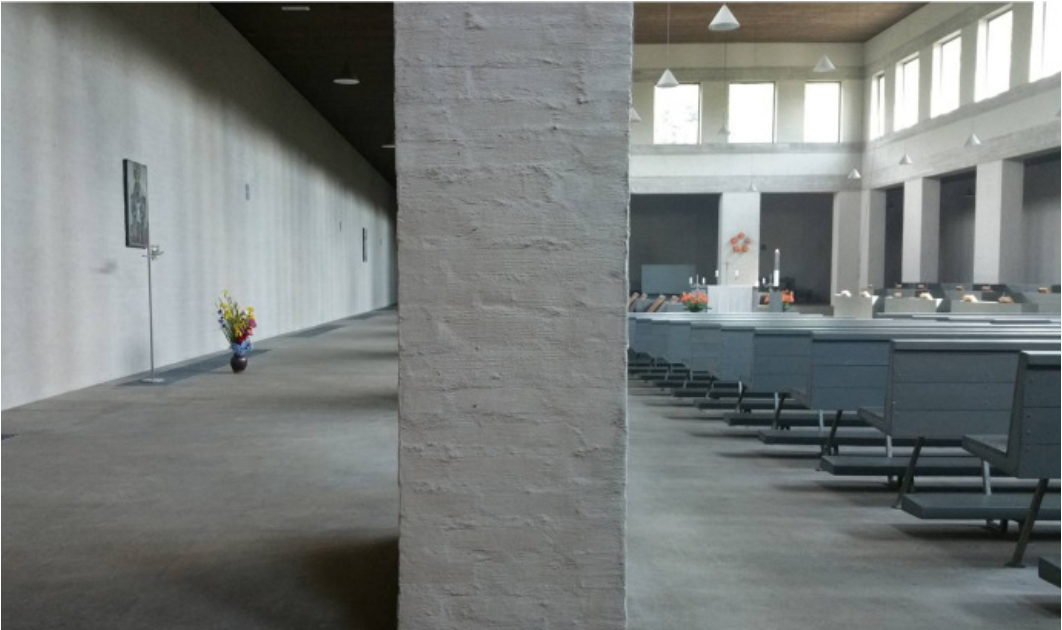


In Van der Laan's book "the architectonic space" he describes a separation between working and walking spaces. The working space is a central space in which stationary activities take place. In these working spaces the activities require little room for moving around and mostly have no direction within them. Surrounding these working spaces are the walking spaces. These spaces feature activities which do require a lot of space to move in and they are usually used to move between working spaces. In the theory these spaces are always illustrated as an inner room and an outer surrounding room, both with closed walls. This gives a very narrow and abstracted illustration of this juxtaposition which makes it appear very strict.

In practice however these spaces have a much more nuanced relation. Firstly the boundary between them is not a closed wall, but mostly an open colonnade. This creates a less strict relation between the two. Furthermore the practice illustrates how the distinction between these spaces can be utilized instead of simply describing them. In the building all the walking spaces are connected to each other, which means that when a visitor steps through a door he/she will step from a walking space into another walking space. In order to move into a working space however there is no longer the hard threshold of the door, but instead the softer threshold of a colonnade.

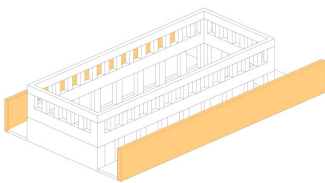


It is here that the distinction between these two spaces becomes more clearly illustrated, beyond the strict explanation of the book. The interconnection of the walking spaces ensures that someone can move throughout the building without interrupting any working space. The working spaces themselves can therefore be designed free of any routing elements. In other words, the core spaces can stand on their own as a space.

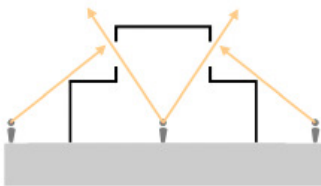


INSIDE AND OUTSIDE

ENCLOSED AND OPEN



A secondary effect of the walking/working spaces dynamic is found in the inside and outside relation. The outside, in the words of Dom Hans van der Laan, should serve to show a fortified human existence. The abbey is private from the outside and reveals barely anything that goes on inside the walls. However the interior should be a pleasant space which does not have these enclosed walls. This is possible in the building because of the walking space. The walking space has two sides, which on one side has the closed exterior wall, but on the other side has an open colonnade. Because of this the colonnade serves as a sort of buffer within this inside outside dynamic. From the outside it is a closed solid wall, which from the inside is not experienced as such because it is beyond the layer of the colonnade.

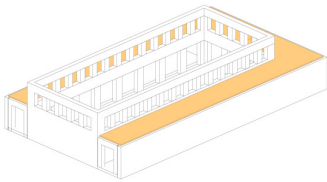


The interior has a much more open appearance firstly because of the mentioned colonnade, but also because of the high windows. These windows are placed high in the inner working space and create a connection to the outside. The high windows bring in plenty of light, but also show the surrounding trees and nature from the inside. From the outside however these windows cannot be used to look inside the building because they are placed high and beyond the closed wall of the facade.

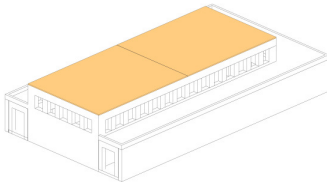


VERTICALITY

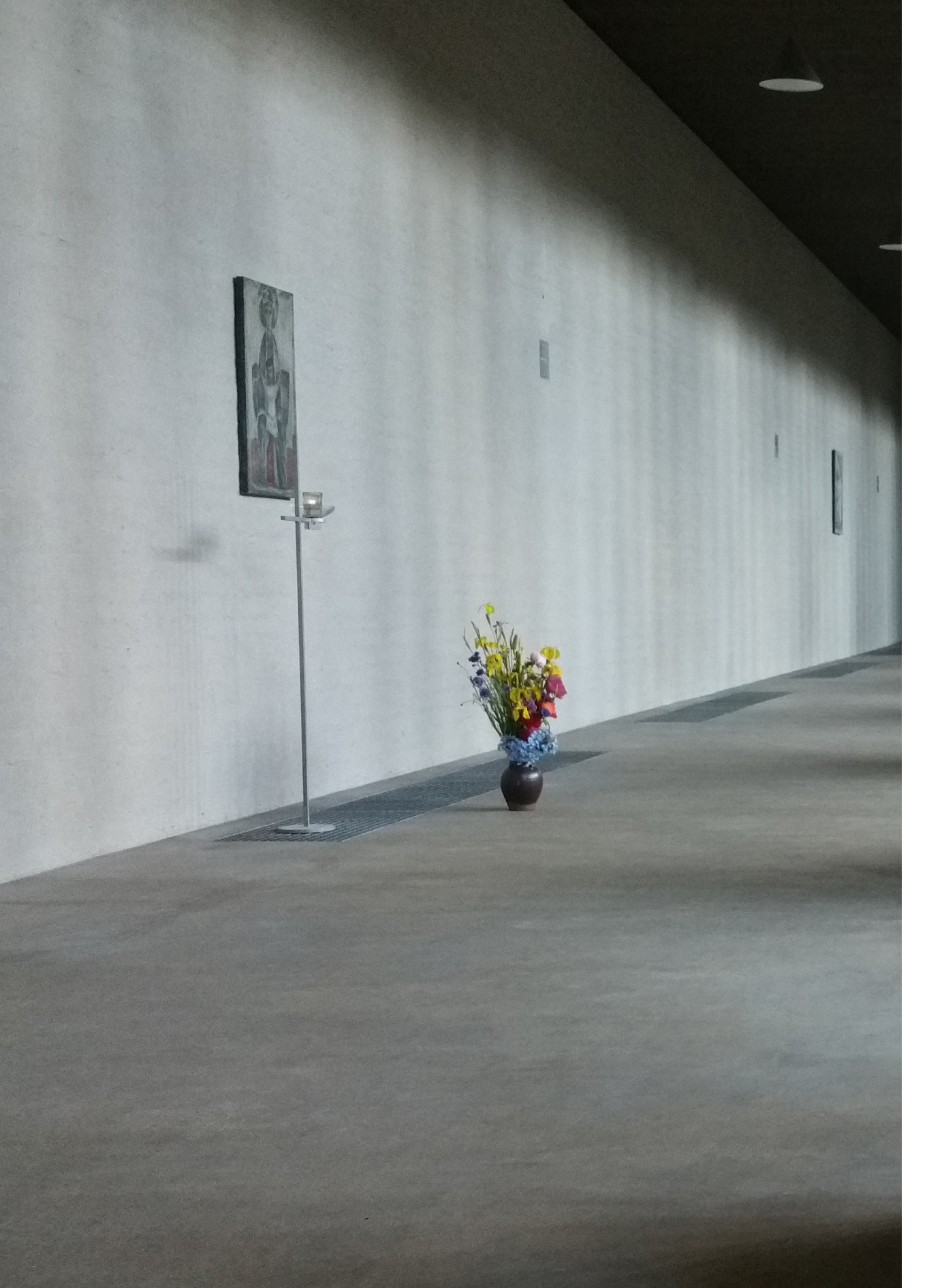
HORIZONTAL SEPERATING ELEMENTS



During the analyses with the building blocks it was fairly straightforward to see what theory from the book applied to which step in the process. However the final steps lacked these connections to the theory. These steps were those where the roof and ceilings were applied to the building. It is here that the connection between theory and practice started to falter. This is mostly due the theory of van der Laan focusing on a horizontal plane instead of a vertical plane. He describes architectonic space as a space between two vertical element, since humans are horizontally oriented. However he does not extend this theory into a vertical plane, precisely because we as humans are oriented horizontally. It is therefore that the theory lacks on the influences of verticality and its effects on the architectural space. Although it is featured in the building itself, like the atrium and height differences between walking and working space, it does not have a connection to the theory. Whether it did not fit within the contents of the book or another reason, it is an interesting distinction within the theory and practice.







OBSERVING

EXPERIENCING THE BUILDING



To the side of a busy street a line of trees frame a path, an entrance. They frame a route placed in nature, contrasting the boisterous road. The path leads forwards and curves to the right where it vanishes behind the trees. The abbey itself is not yet visible, yet a threshold has been passed into another atmosphere.



Through the trees and bushes, the building reveals itself piece by piece. As an enclosed composition of volumes it stand within nature. It stands as a white private composition, revealing nothing of its inner workings.



Standing in the dark entrance building of the abbey, a light falls into the space. To the left is a bright open atrium, framed by an small plateau. It contrasts the darkness of the corridor, it is an invitation.



It rains in the atrium. Standing in the secluded colonnade as a bystander, the openness of the atrium seems as a different place. The light, the rain, the open space. It is a distant sight taking place behind the proscenium of the colonnade.



Descending down twisted stairs slowly reveals the dark crypt over a low wall. It is a conscious descend. Moving down, around a bounding wall, into a dark space. It demands attention, quietness and respect from any visitor consciously descending into the crypt.



The church is vacant until the chanting of monks fills the empty space with sounds, the smoke of the incense reveals the rays of light coming into the space from high windows. The architecture is filled with life. When the mass is over the space is empty again, no people, no sound, just the space.

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pg. 31 Images retrieved from the book
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Architectonic space

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SUMMARY

The studio "Masterly Apprentice" emphasizes the learning from other building, and how we can use the elements which we learn. Therefore the first part of this graduation thesis is focused on the analysis and learning from an existing building. In this case, the St. Benedictusberg Abbey by Dom Hans van der Laan. Through closely connecting the theory of Van der Laans book "The architectonic Space" to the building it was possible to learn from it. The relation between theory and practice reinforced each other. The practice gave a more realistic interpretation of the theory, while the theory explained the underlying concepts of the practice. Through relating these two aspect it was possible to identify several core concepts to use in the second part of the graduation, namely the design. These concepts consist of; the relation between inside and outside, the relation between walking and working spaces and the vertical relation between spaces.

In the design it was desired to create something that would add to the direct relation of the abbey. It was therefore chosen to create an institute which would act as an intermediate between the private abbey and the public. In this institute the neglected forms of craftsmanship which resided within the abbey would be brought back into the public. In order to do so, the institute allows for the teaching and learning of crafts, but also for exhibiting and promoting the craft.

Conceptually the design was created to have two appearances, one which aligns with Van der Laans' theory of the earth being purely flat surface. The other which illustrates that the surrounding surface is not a uniform flat space. Therefore the institute is half submerged, to create both an appearance of volumes standing in a field, and an appearance of volumes standing in an enclosing void.

The learning from the abbey resulted in several design decisions, such as the organization of spaces and how they would be used. Using both the verticality of the buildings to create different spaces, but also modifying Dom Hans van der Laans' theory of the working/walking spaces in order to create clear relations between spaces and their separate functions. Furthermore the inside and outside relation from the abbey was also adapted to create volumes which appeared anonymous and coarse from the exterior, but created hospitable spaces from the interior.

The learning from a building allowed for a good starting point in terms of concepts and design ideas. However in the further

design it could become too limiting in its presence over the design. Because of this it was essential that the learning from was to be clearly outlined into schematic concepts instead of detailed aspects of the building. The schematic concepts were usable and adaptable in the design, where as the actual detailed aspects of the building would only result in copied elements.