Maison de la Misericorde

Restoration booklet

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“Door polychromie werd het beeld in hoge mate geïdealiseerd, geheiligd als het ware. Door het enerzijds menselijke, anderzijds heilige van het gepolychromeerde beeld was het een functioneel hulpmiddel ter overbrugging van de afstand tussen het aardse en het hemelse.”

- H.H.J. Kurvers

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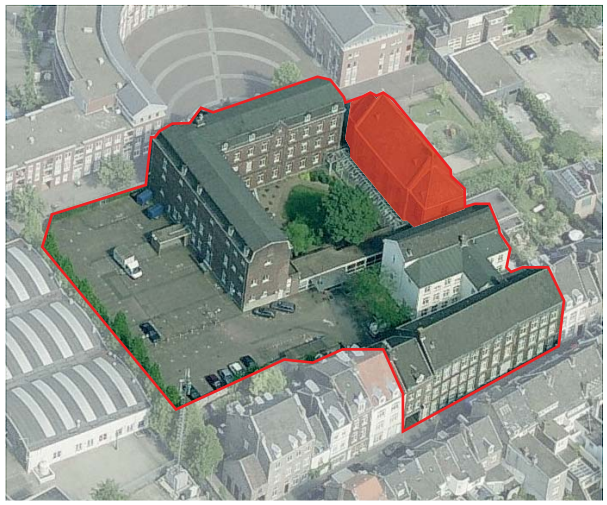


Figure 1. The Laymen’s chapel within the Miséricorde convent

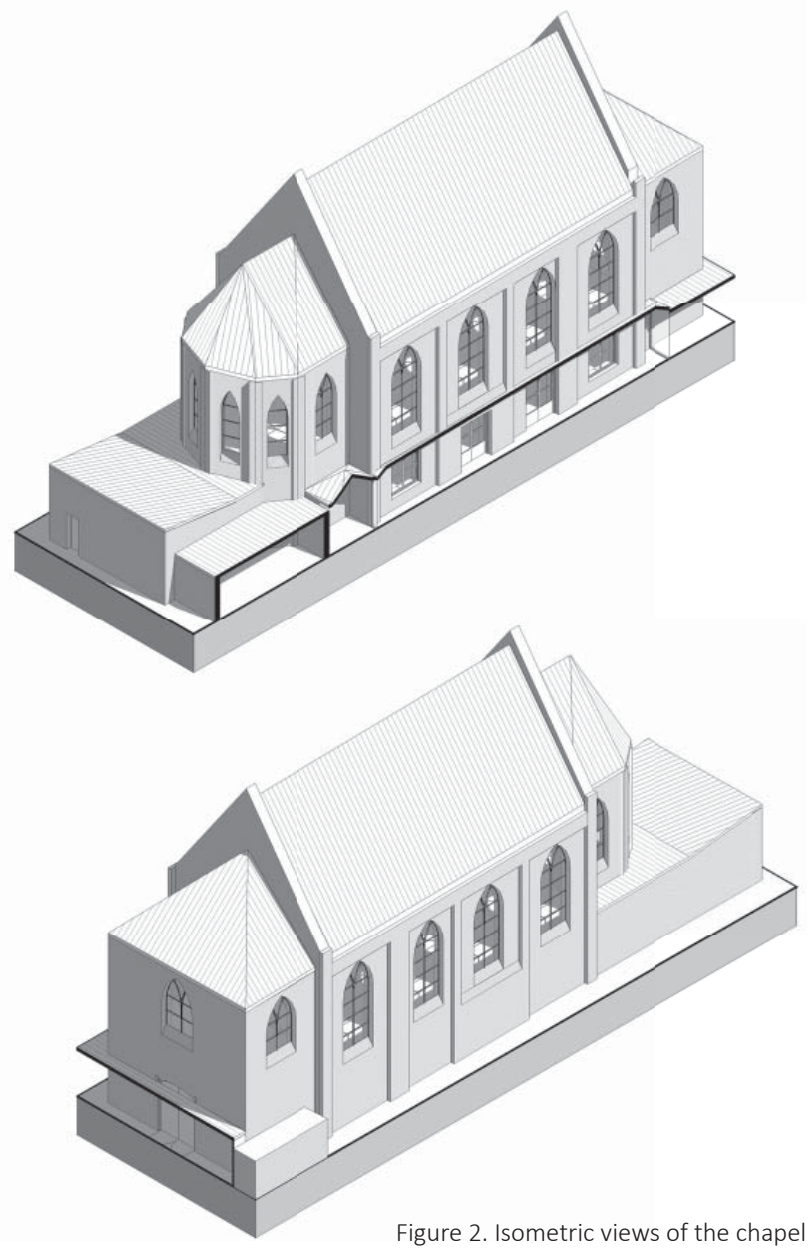


Figure 2. Isometric views of the chapel

Introduction

There will always be a need to restore things because if we don't, some things will be lost forever. Elements or buildings of historical significance can be labelled as a landmark. In the Netherlands there is a distinction between national, provincial and municipal landmarks. These historical structures are protected with these labels. The guidelines from these labels can give a direction for maintenance or when restoration is needed.

This report is a collection of data about the Laymen's chapel of the former convent called "Maison de la Miséricorde" located in Maastricht.
This chapel is part of the extensive history of the former convent and it forms an important layer in time. Built in 1896 for people from outside the convent and for the children that were educated here it was given the name "Laymen's chapel".
After the chapel several other buildings were built to form the building complex that exists today.

Project

With it's Gothic Revival architecture the Laymen's chapel was the second extension of the convent. Positioned in a right-angle from the Sisters ' chapel. The four bays long, single aisle chapel has a six-sided apse. To the west-side of the chapel is a portal.
The nave has a gable roof, the apse a shield roof and the portal a three-sided shield roof.
The brick walls have buttresses between which lancet windows with a brick tracery. The facade is finished with a heavy masonry list, including two block-lists and a sawtooth. The chapel's headboards are designed as spouts with shoulder pieces.

The interior of the chapel was covered with a simple paintwork design and the walls were lined with religious statues. In a later period these paintings were covered with another layer of paintwork, this time with vibrant colours and with a completely different style.
After the congregation of the Sister's of Mercy left the convent a group of squatters occupied the premises. They destroyed the statues in the Laymen's chapel, smashed the stained glass windows and used the pewters for bonfires.
When the City Centrum bought the former convent they re-developed it and the Laymen's chapel became an event hall. During this re-development a floor was laid in the chapel, splitting it horizontally in two. The space above the floor was not used from this time forward and left to itself, the space that became the event hall was redecorated. Linoleum was laid on the floor and the walls were painted white, the brickwork bases of the vaults were protected with wooden panels which were painted purple.
Since the new floor was added just below the windows of the chapel the ground floor became a dark space. Therefore new windows and doors were added on the north side of the building.
The community centre left the former convent in Januari 2013 and since then it has been left vacant.

Problem statement

Ever since the community centre left the building complex in 2013 it has been left vacant. Vacancy is dangerous for buildings due to a couple of reasons. It can be easier inhabited by squatters, vandalism and break-ins are more likely to happen because there is less social control and the liveability of the direct environment grows less. But also very important, for the technical state of the building, vacancy will mean a direct neglect of maintenance. This neglect can cause frost damage and several other types of degradation.
Degradation, next to vacancy, is also apparent in this building complex.
The worst degradation can be found in the building part the Laymen's chapel, structural cracks and damages caused by moisture, among other things, can be found throughout this building. Degradation has also ensured that the second layer of paint has begun to peel from the walls, showing parts of the paintwork underneath.

Position

To be able to decide what the right approach for this chapel is I need to take a stand. What is my position in restoration in relation with the Laymen's chapel.
This position will lead to an approach and the approach will lead to actual methods and techniques.

Method

The first part of this report will show the existing situation of the chapel. This includes photographs, materialization, a damage report and technical drawings.
Following the existing situation is the position in relation to the chapel.
The second part of the report will show what the decided restoration approach is.

PART I - EXISTING SITUATION

1_1 Photographs; exterior and interior

Figure 3. The chapel seen from the south

Figure 4. The chapel seen from the north

Figure 5. The first floor of the chapel; facing west

Figure 6. The ground floor of the chapel; facing west

I_II Drawings; Facades

Figure 7. North facade

Figure 8. East facade

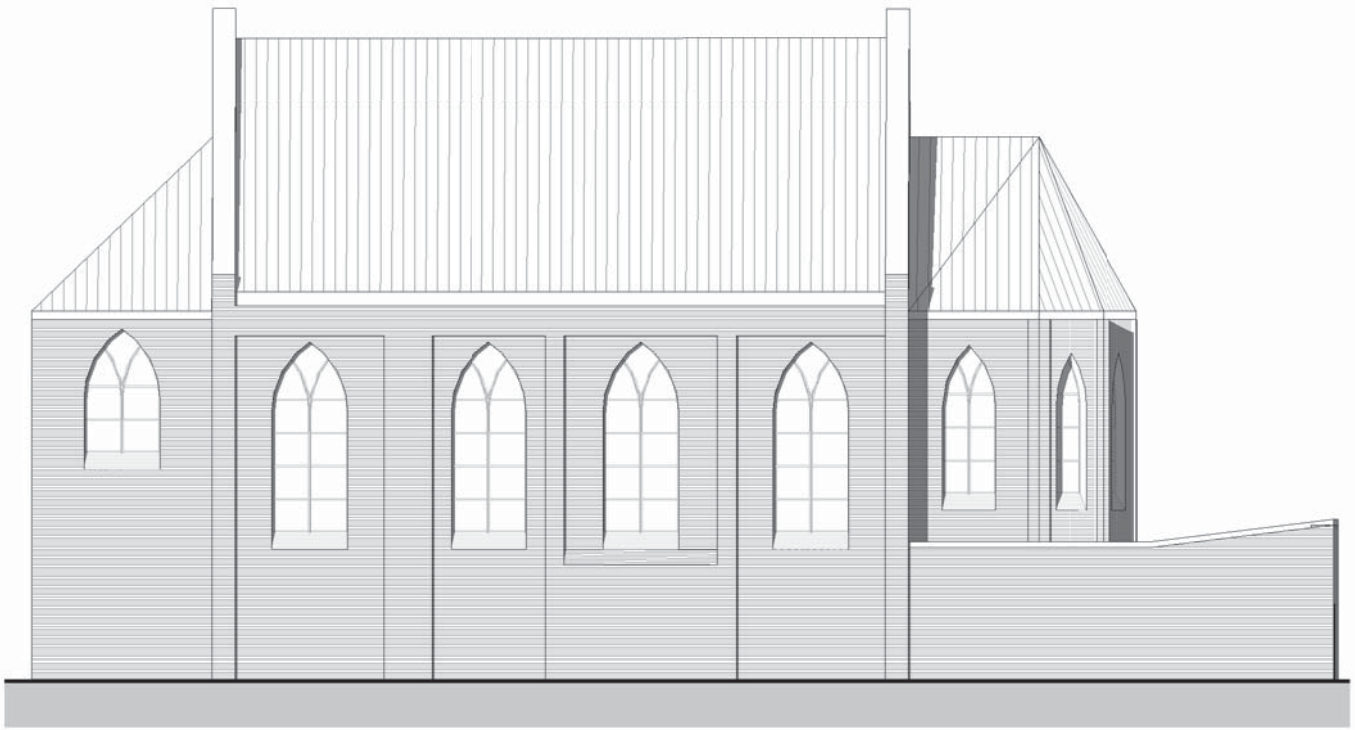


Figure 9. South facade

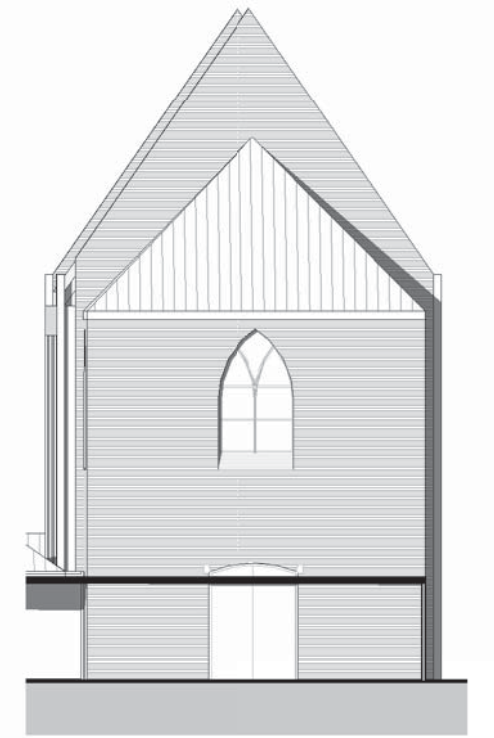


Figure 10. West facade
scale 1:200

I_II Drawings; Sections

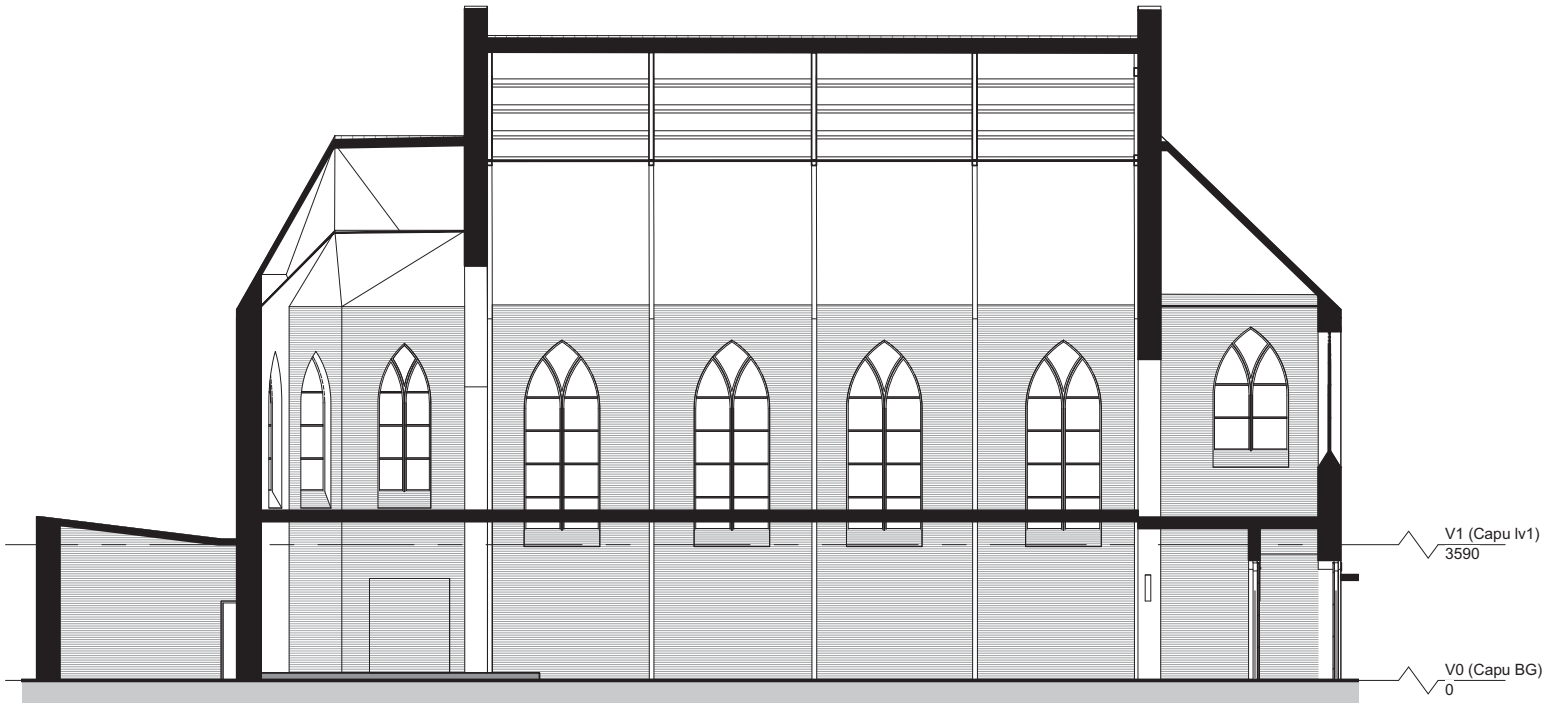


Figure 11. Longitudinal section

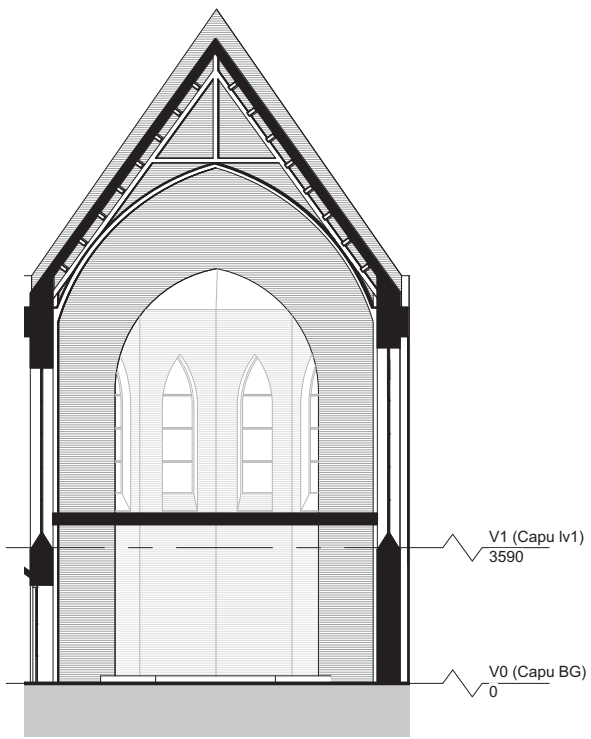


Figure 12. Cross section facing east

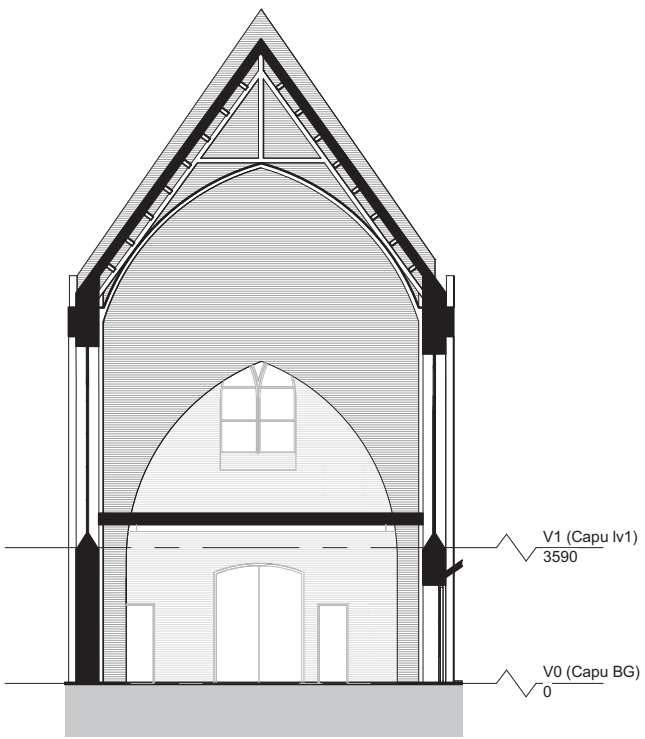
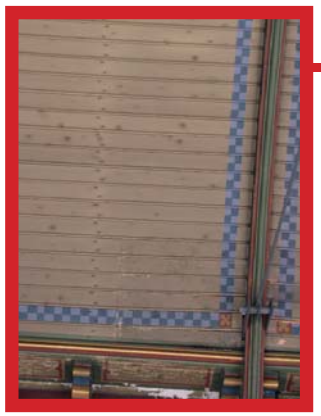
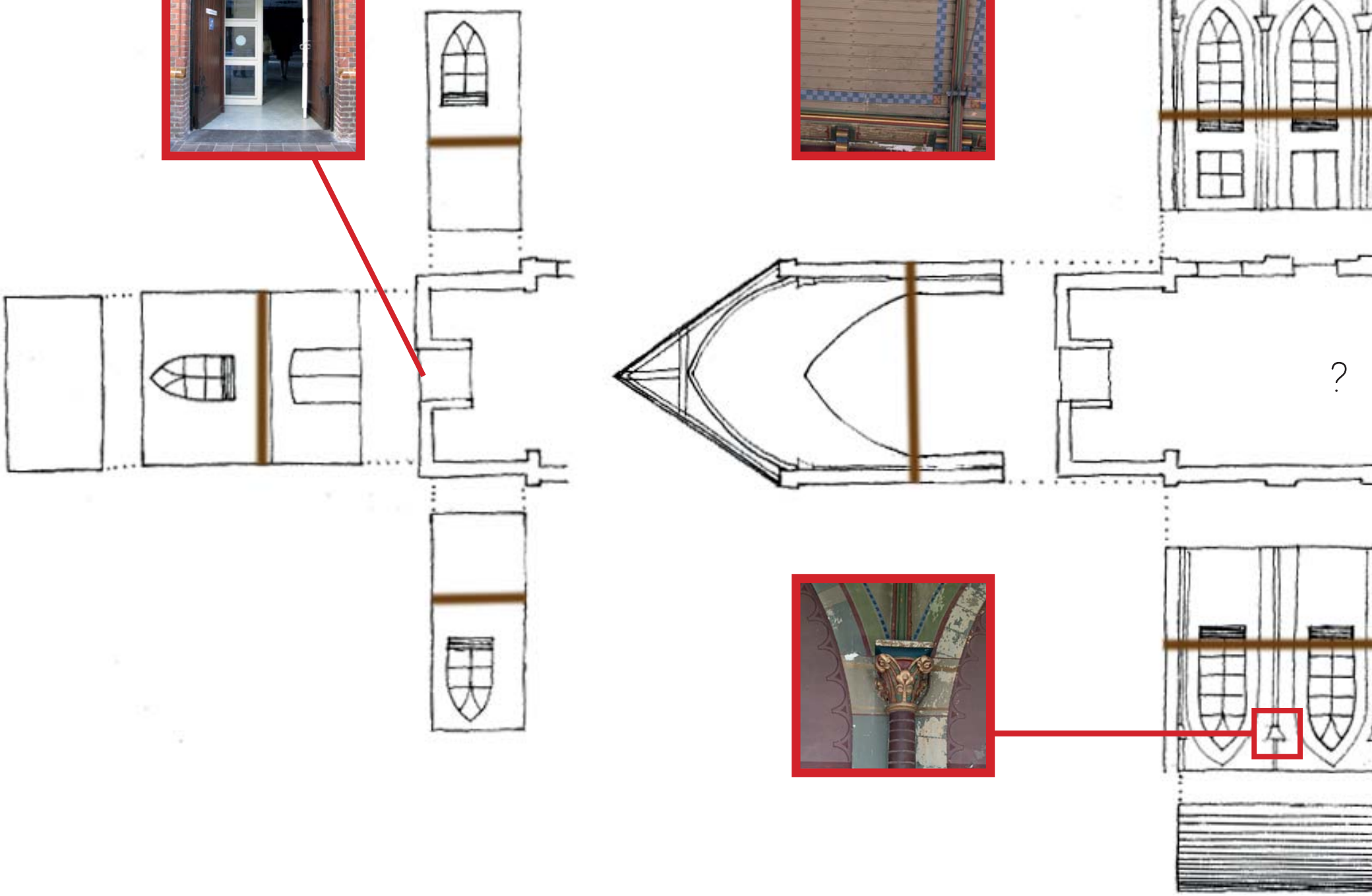


Figure 13. Cross section facing west
scale 1:200

I_III Materials





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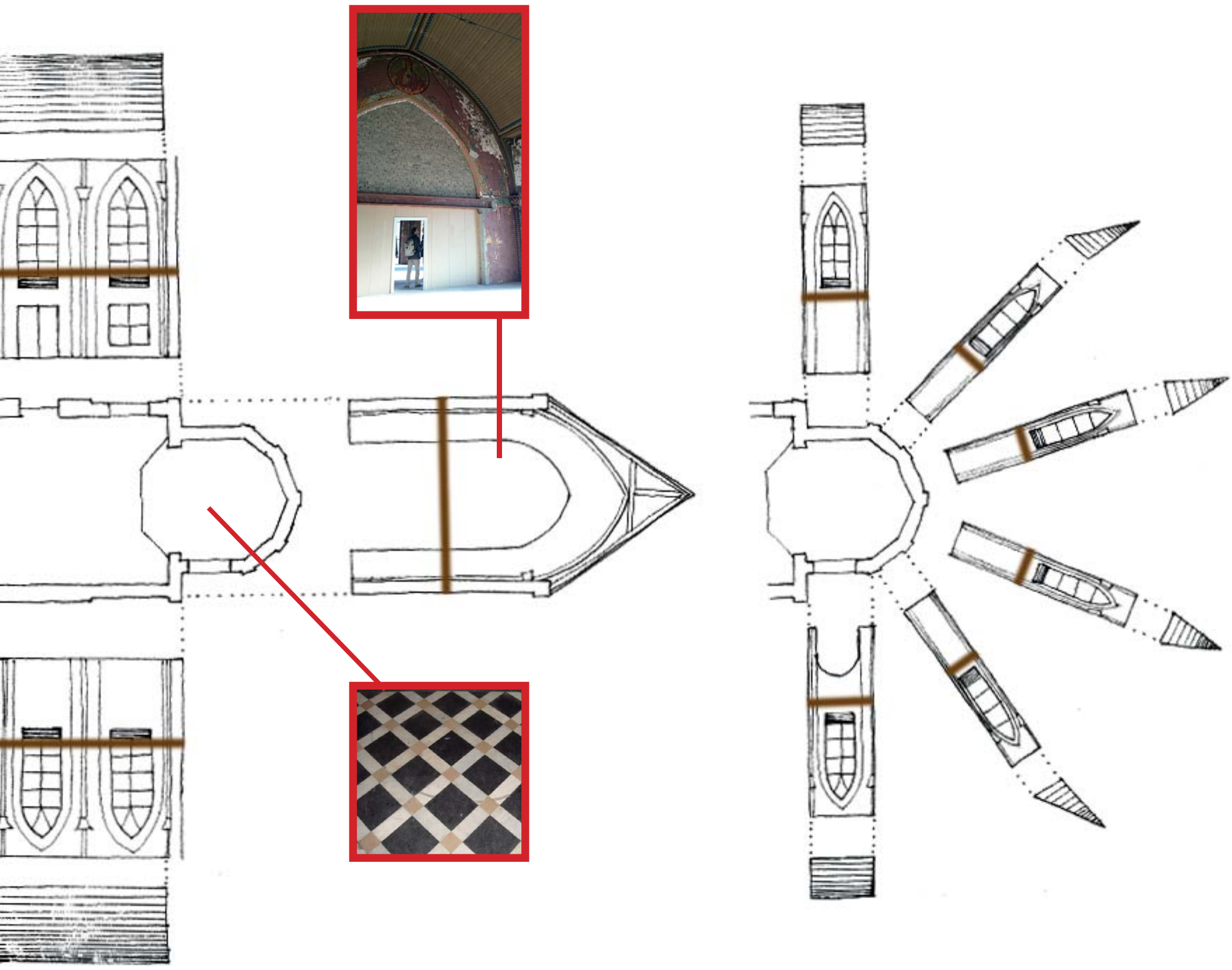


Figure 14. State of materials in the interior of the chapel
scale 1:200

I_III Materials

Exterior

The Laymen's chapel is built of dark brown brick, with a cross bond. The tracery of the church windows are made from red brickwork and a orange/brown glazed brickwork strip goes around the whole chapel.
Natural stone can be found above the main entrance of the chapel and the shoulder pieces of the headboards are also made from a type of natural stone.
The roof gutter is wood, painted white and presumably has a lead or zinc inner gutter.
On the roof lie bitumious slates, these slates are full of asbestos.
The doors, windows (not the church windows but the later addition) and frames are wood.

Figure 15. Glazed brickwork strip

Interior

The structure of the Laymen's chapel is hidden from sight by an original wood panelling of the barrel vault on the ceiling. It is most likely though, based on the time perspective, that the roof structure is timber.
The material of the ribs along the barrel vault is also timber. The outset of the vaults have a brickwork base and a natural stone Corinthian capital.
Due to the crack in the wall between nave and choir two steel HEA beams were placed there. Concrete blocks were used to fill up the empty space above the steel beams.
The new floor that divides the chapel in two storeys has a structure of steel beams that span the width of the chapel. Between the steel beams span timber beams on which wooden floor boards have been placed.
On the ground floor of the chapel wooden panels cover the brickwork base of the vaults, these panels have been painted purple.
In the choir the original tiling can still be found, in the rest of the chapel lies linoleum. Whereupon this linoleum lies is not currently known but presumably it is laid directly on the original floor. This floor exists of floor tiles in the aisles and wood around the pewters, as can be seen on photographs of the chapel when it stil functioned as chapel (figure 18 and 19 on the page to the right).


Figure 16. Red brick tracery


Figure 17. Bitumious slates and wood gutter

I_IV Paintwork

Due to the degradation of the outer paint-layer in the chapel an older layer with paint has become visible.
Photographs found at the local archive show how the chapel transformed from a basic interior design to a luxurious appearance.
These old photographs in combination with photographs from the current situation have lead to a good impression of what each layer looked like, not only in design but also in colour.

The layer of paint that was applied when the chapel was built is very simple. It mostly consists of light yellow painted stones, with a strip depicting natural elements. This strip is coloured with green and light blue colours. Above this strip the yellow painted stones continue, except on the headboard walls that divide choir, nave and portal. Above the strip on the wall between nave and choir a dark blue underground with yellow stars is visible. Five circles, each with an image inside, and a yellow strip with red letters lie above this starry sky.
The image in the circles are hard to discover because the photograph is the only source of their existence, but four of them could be geometric images of flowers whereas the topmost image is more complex and could even be a depiction of a holy person.
The wooden vault were painted together with the first layer of the walls. These paintings have not been painted over. Figure 23 shows how these paintings look.

The second layer of paint was applied to the chapel in a later period, when this happened exactly is unknown but the reason for painting over the first layer can be assumed.
The best assumption is that building the chapel cost so much money that the congregation didn't have enough money to put in the extravagant paintings they wanted. Not wanting to leave the chapel bare they chose a basic paintwork to cover the interior until the time came that the convent would have enough money for the paintwork that was actually meant to cover it.
This paintwork has a pink/purple underground with red stencil-work on it. Here too a strip with a natural depiction, with green and blue colours, goes around the chapel. This strip is on the same height as the strip of the other layer.
The walls with windows show green and pink/purlbe colours above the strip. As can be seen in figure 22.

Figure 18. The original interior, 1896

Figure 19. The second interior, date unknown

Figure 21. The strip, paintwork peeling and revealing

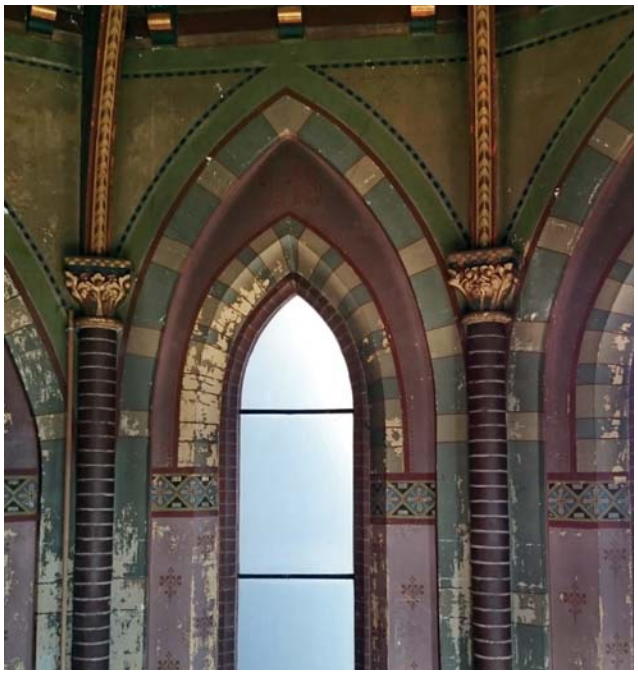
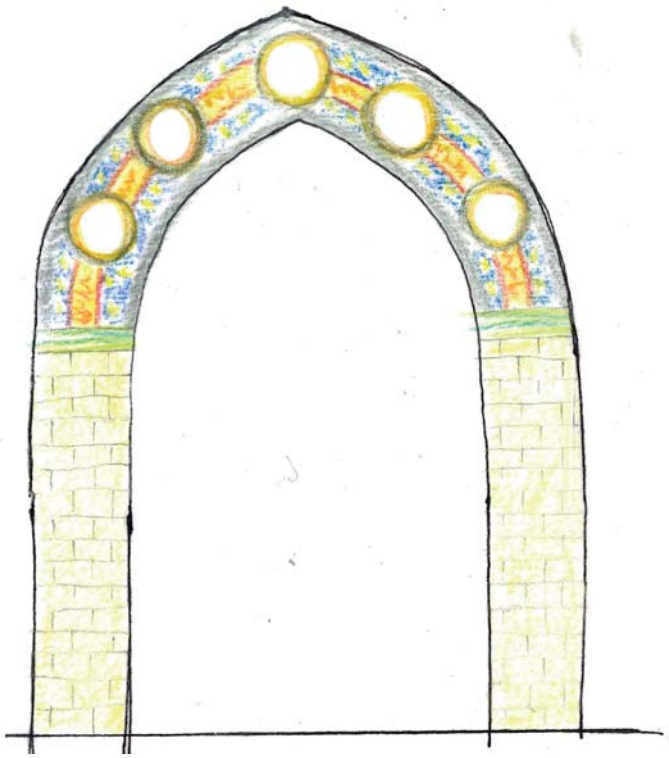
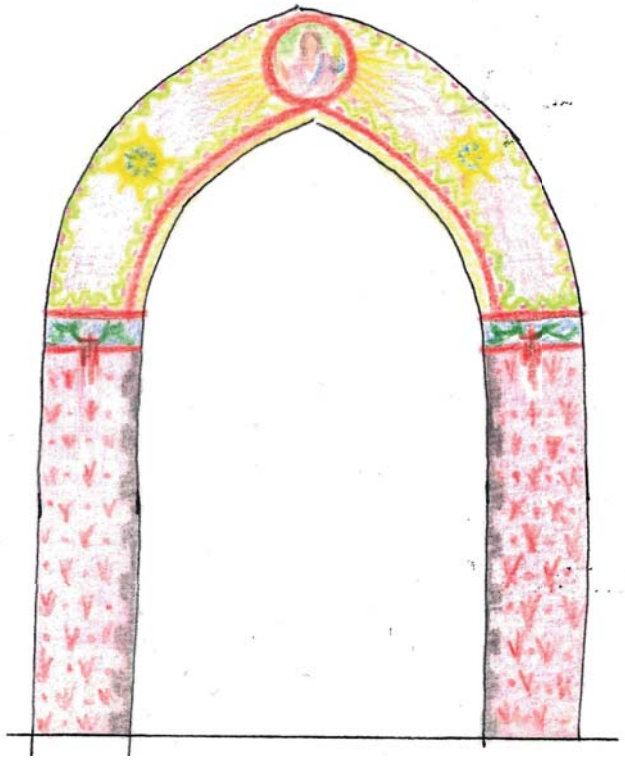


Figure 22. The paintwork on the walls; choir

Figure 23. The paintwork of the vaulted ceiling; choir



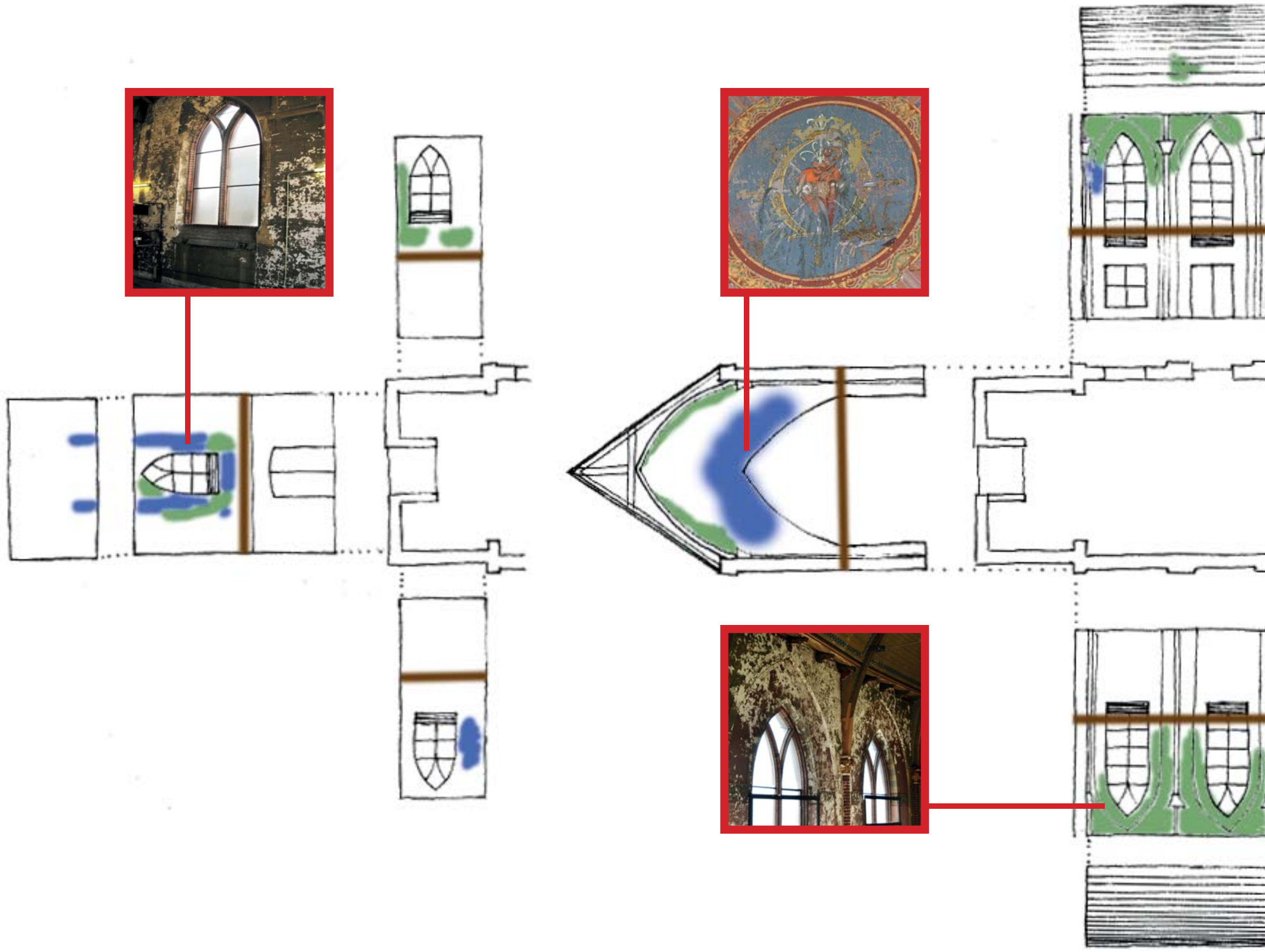
The first layer



The second layer

Figure 20. Impression of the paint layers

I_V Damages



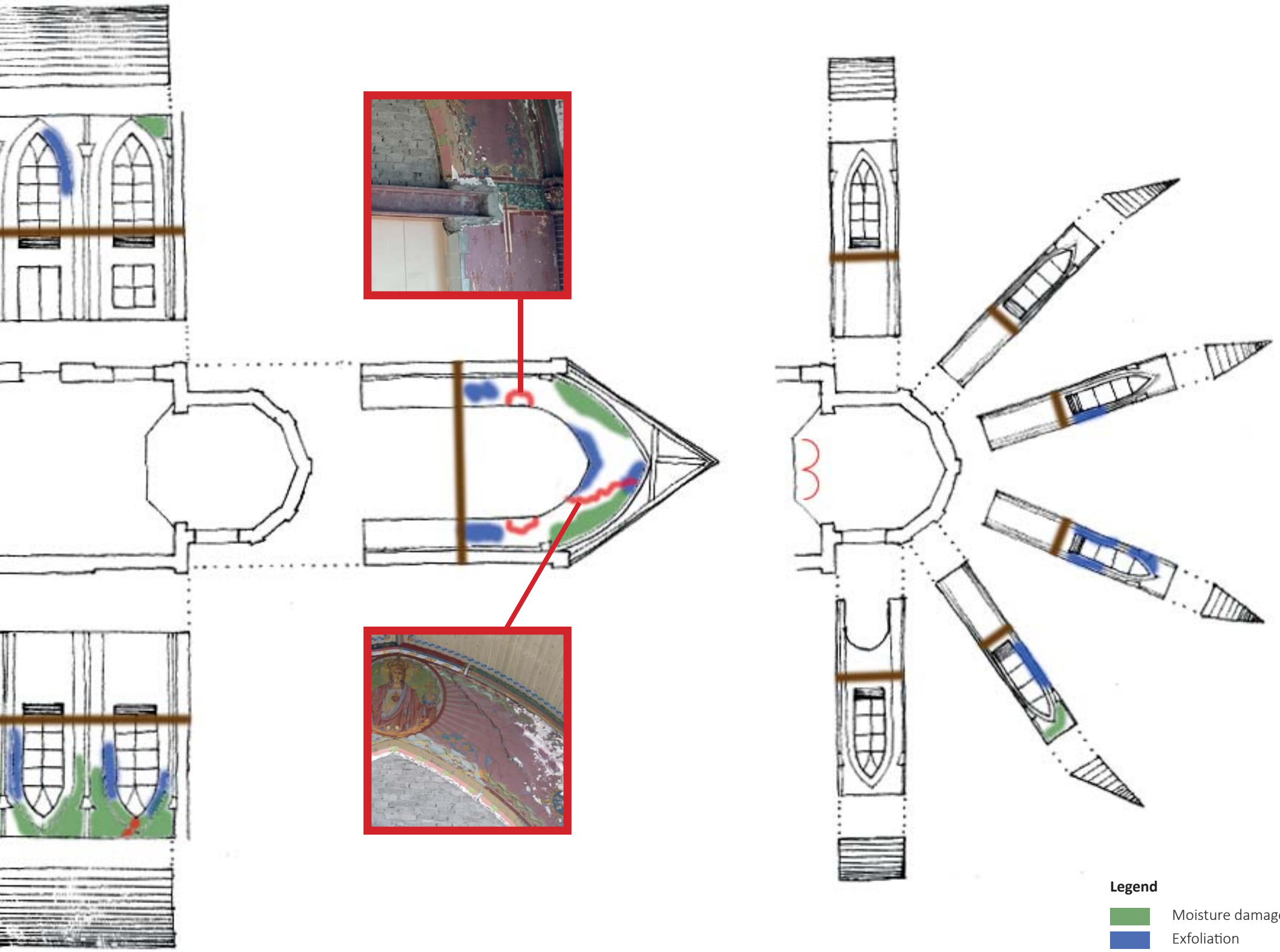


Figure 24. State of damages in the interior of the chapel
scale 1:200

I_V Damages

The Laymen's chapel has a couple of different damages in the interior. These damages can be divided between structural damages and superficial damages.
The superficial damages form no threat or serious consequences for the building to stay upright. They do however form a problem on technical, aesthetical or cultural/historical areas.

First the structural damage of the chapel. This damage originates from since the building was built. The problem here lies in the timber structure of the roof.

Phase 1 till phase 4 in figure 25 show why these damages appeared and where they came from.

Phase 1 shows the original structure of the Laymen's chapel. This section shows the load-bearing walls, the barrel vault and the force distribution in the building.
In this first phase no horizontal connection was made between the two load-bearing walls.
This kind of connection is made to keep the walls rigid. The forces that are apparent in the structure of the roof are distributed down to the walls and outwards. Usually these outward forces are contained with a direct connection between two opposing walls. This way these walls will not undergo any tension and will stay upright.
Missing this vital connection, the walls of the chapel began to expand/bulge outward. This is shown in phase 2. The expansion/bulging of the walls caused the wall between the nave and choir to split in two and it caused the gutters to break.
Around the period of the redevelopment of the convent in 1979 the biggest damages in the chapel were strutted, visualized in phase 3. Two steel HEA beams were added under the arc in the wall between the nave and the choir. Later they filled the space between the beams and the masonry with concrete blocks, ensuring the wall wouldn't collapse.
The latest addition to the structure of the chapel are tension rods. These tension rods make the horizontal connection between the two load-bearing walls. In theory this would re-establish the balance of the force distribution of the walls.
However, it is worth to point out that only three of those tension rods were placed whereas there are five trusses (in Dutch: "kapspant").
The trusses next to the headboard walls did not receive tension rods, so the possibility remains that the crack is still growing.

Some of the superficial damages are related to the sagging of the roof structure. As stated above, the walls expanded and caused the gutters to break.
Through the broken gutters water was able to leak into the walls which in turn caused a lot of damage to the paintwork inside the chapel. This damage is coloured green in figure 24 on the previous page. On these places everything has been pushed of the walls, leaving only the base layer whereupon the paintwork was made.

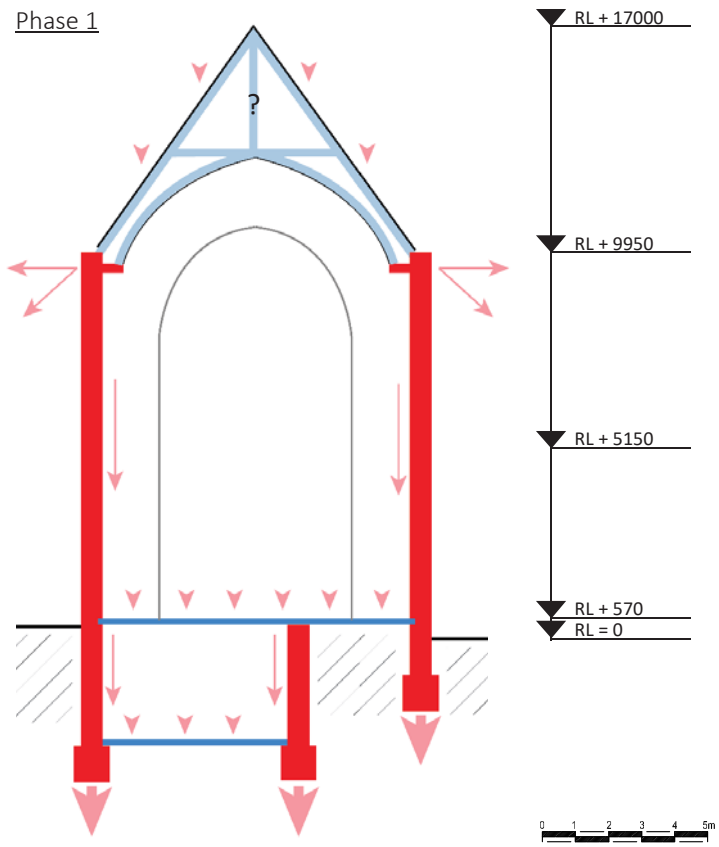
During the redevelopment of the convent to City Centrum two steel HEA beams and concrete blocks were added to the wall between the nave and the choir. This addition, however well meant, never added to the structure of the chapel. The crack in the wall could still grow because the load-bearing walls weren't connected at that point yet.
So in stead of supporting the chapel this addition actually only made more, and unnecessary, damage.

In the same period a new floor was added to the chapel. This wasn't meant to do anything for support but this addition too has damaged the chapel. The points where the floor is embedded in the walls will always be visible, bricks have been taken out together with the layer of paint that covered it. Detail 3 on page 24 shows how this floor is assembled.

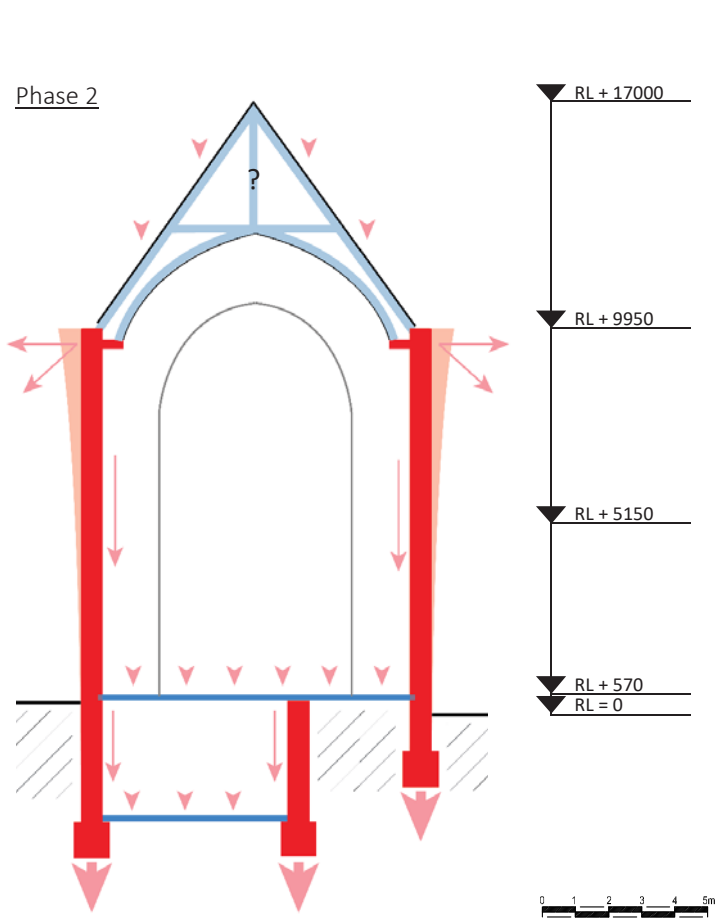
In some places the latest layer of paint has begun to peel of the walls, revealing the older layer of paint underneath. The places where this type of damage occurs is coloured blue in figure 24 on the previous page. This type of damage seems to occur on random spots in the chapel.
This damage comes from within the chapel, it is caused by how the chapel used to be heated. Due to peak hours that the chapel had to be warm the uppermost layer has begun to peel from its underground.

The ground floor is now covered with linoleum, underneath presumably lies the original floor. If this floor is damaged is unknown, as stated before this original floor exists of floor tiles in the aisles and wood around the pewters. Since the pewters were used for bonfires during the time squatters were living there, there is a chance serious damage was done.

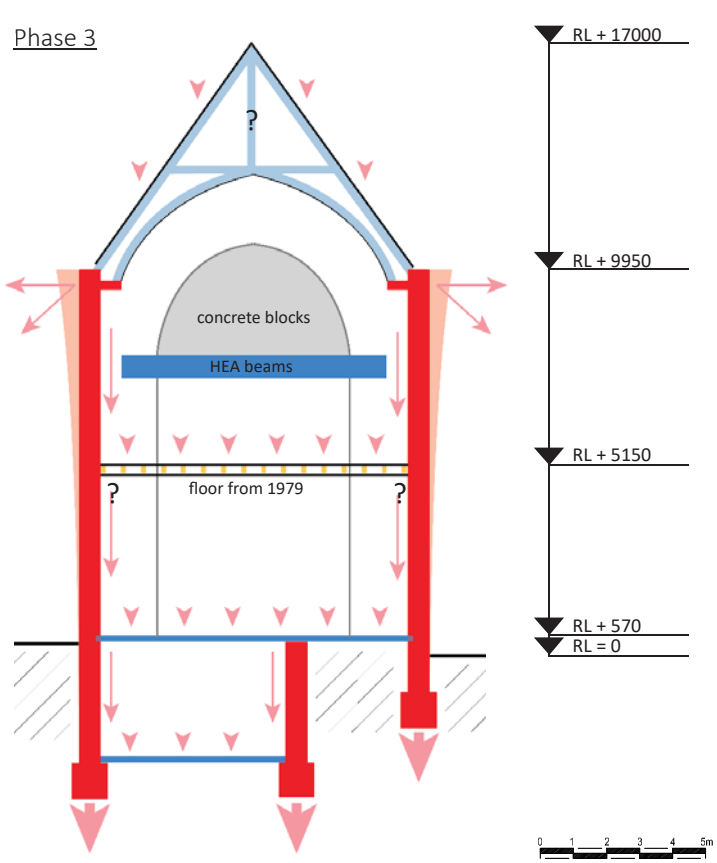
The most superficial damage can be found almost everywhere in the interior of the chapel. This damage is caused by the way the chapel used to be heated. Underneath the chapel is a cellar, this cellar was used as a cokes cellar. The heating of the chapel was done by burning cokes, meaning that soot particles are all over the interior of the chapel.



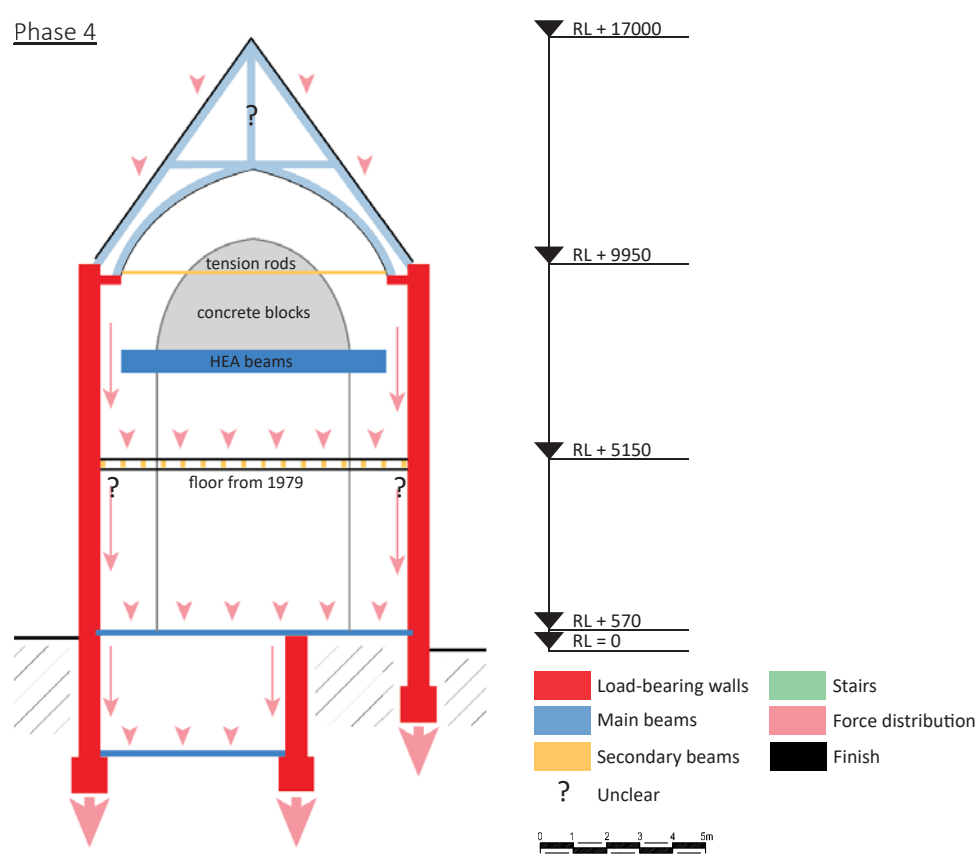
Original structure



First damages appear



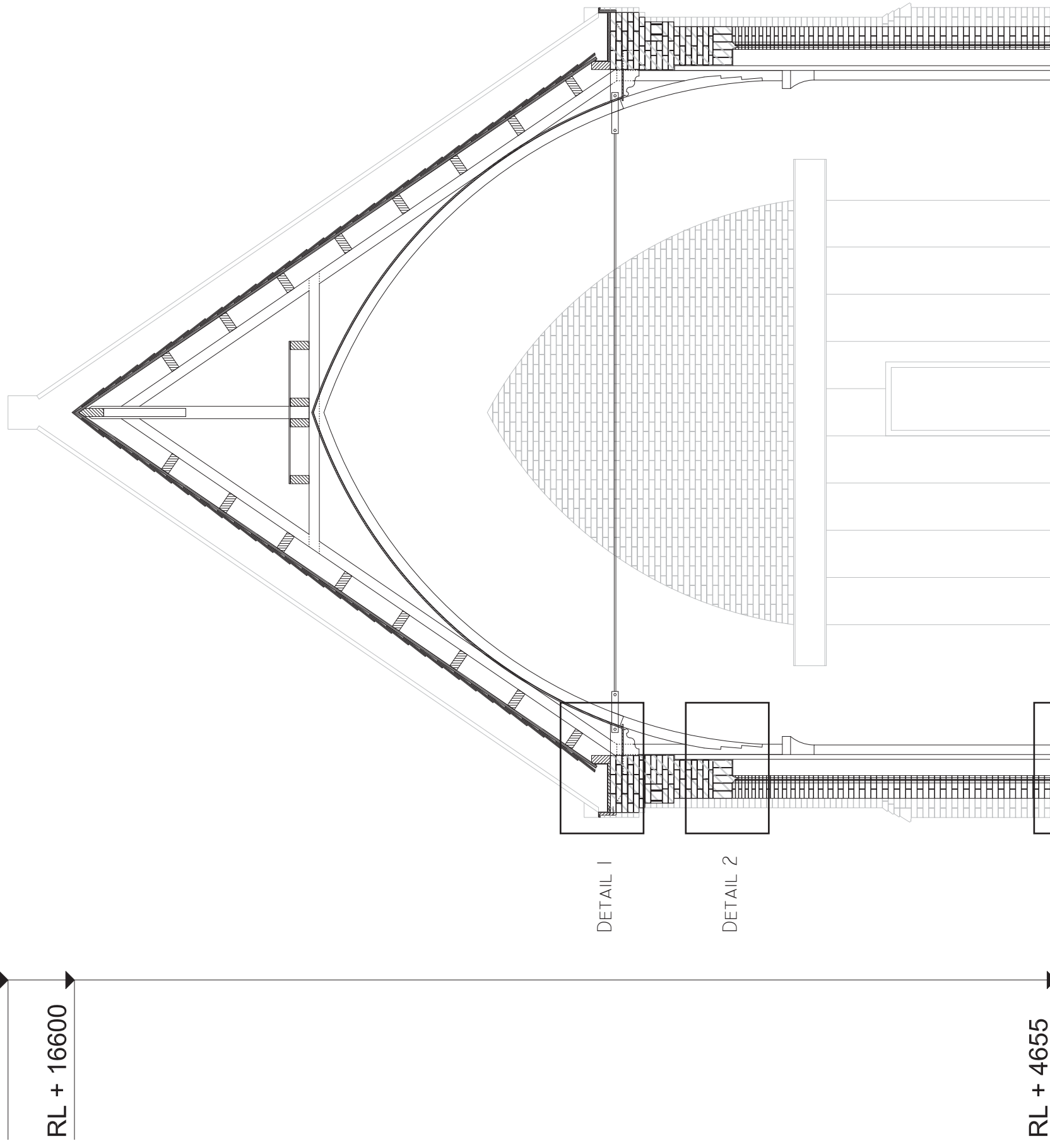
First repair attempt



Present situation

Figure 25. Structural damage

I_VI Technical drawings



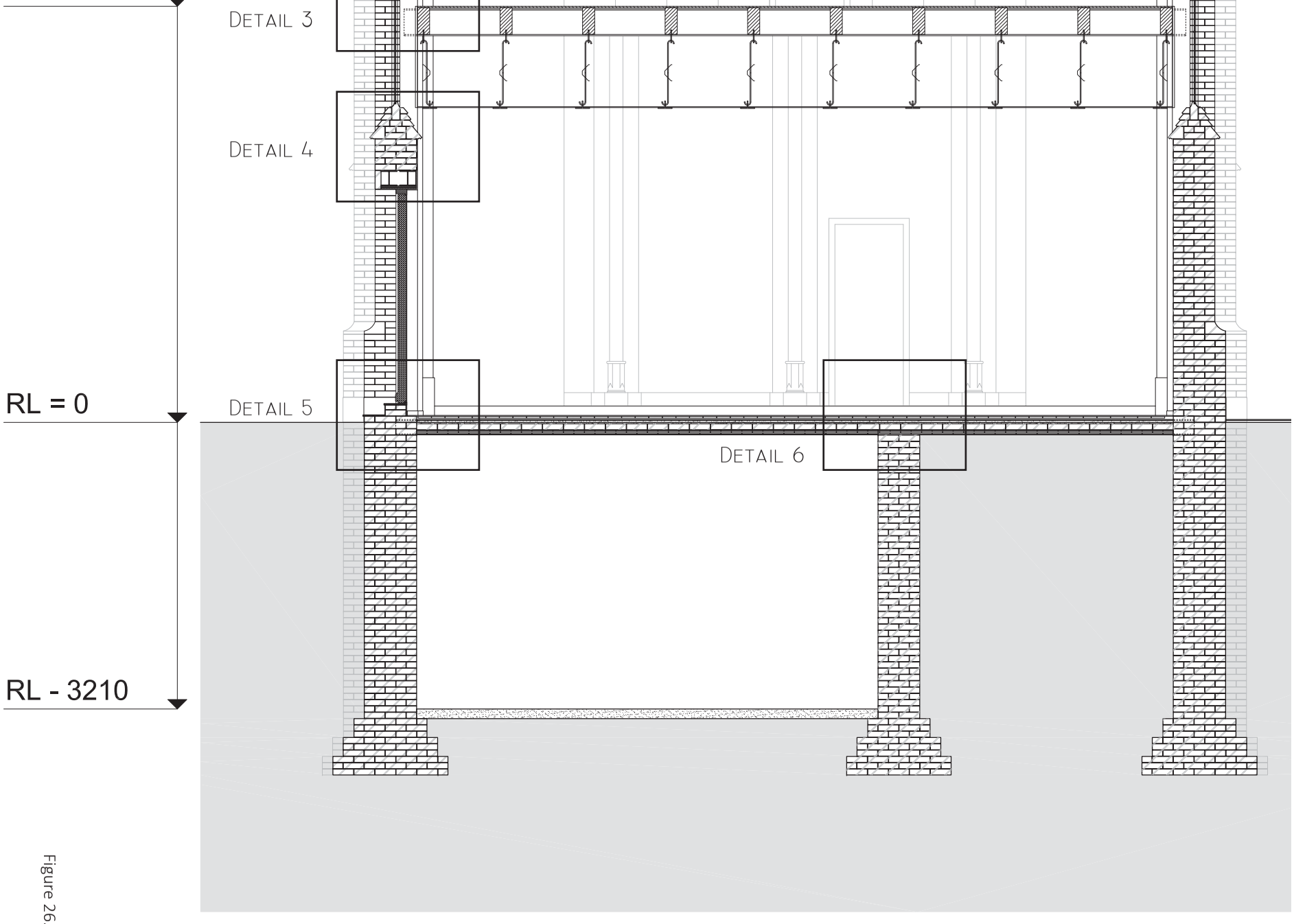


Figure 26. Cross section of the chapel; facing east
scale 1:50

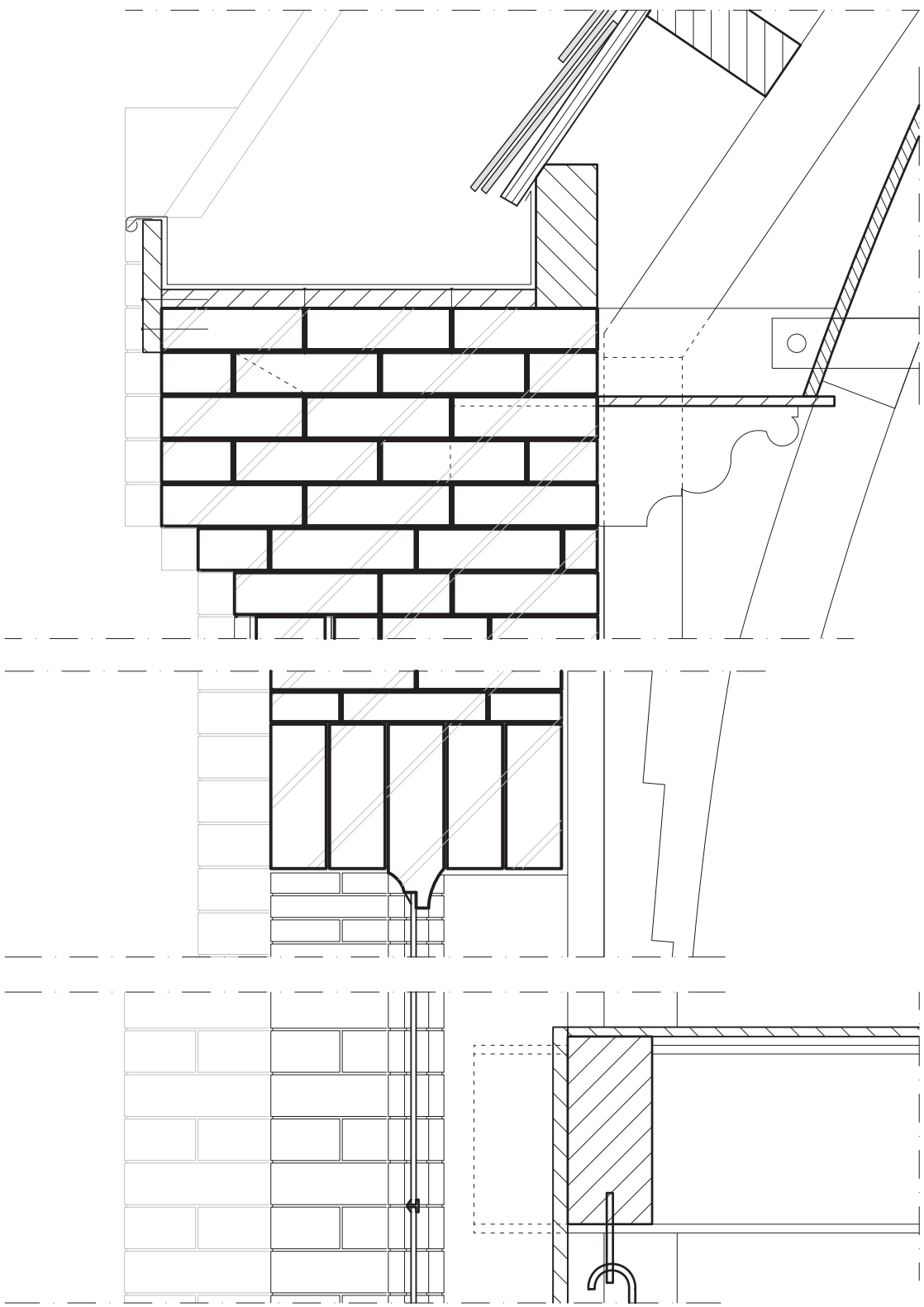


Figure 27. Details 1-3
scale 1:5

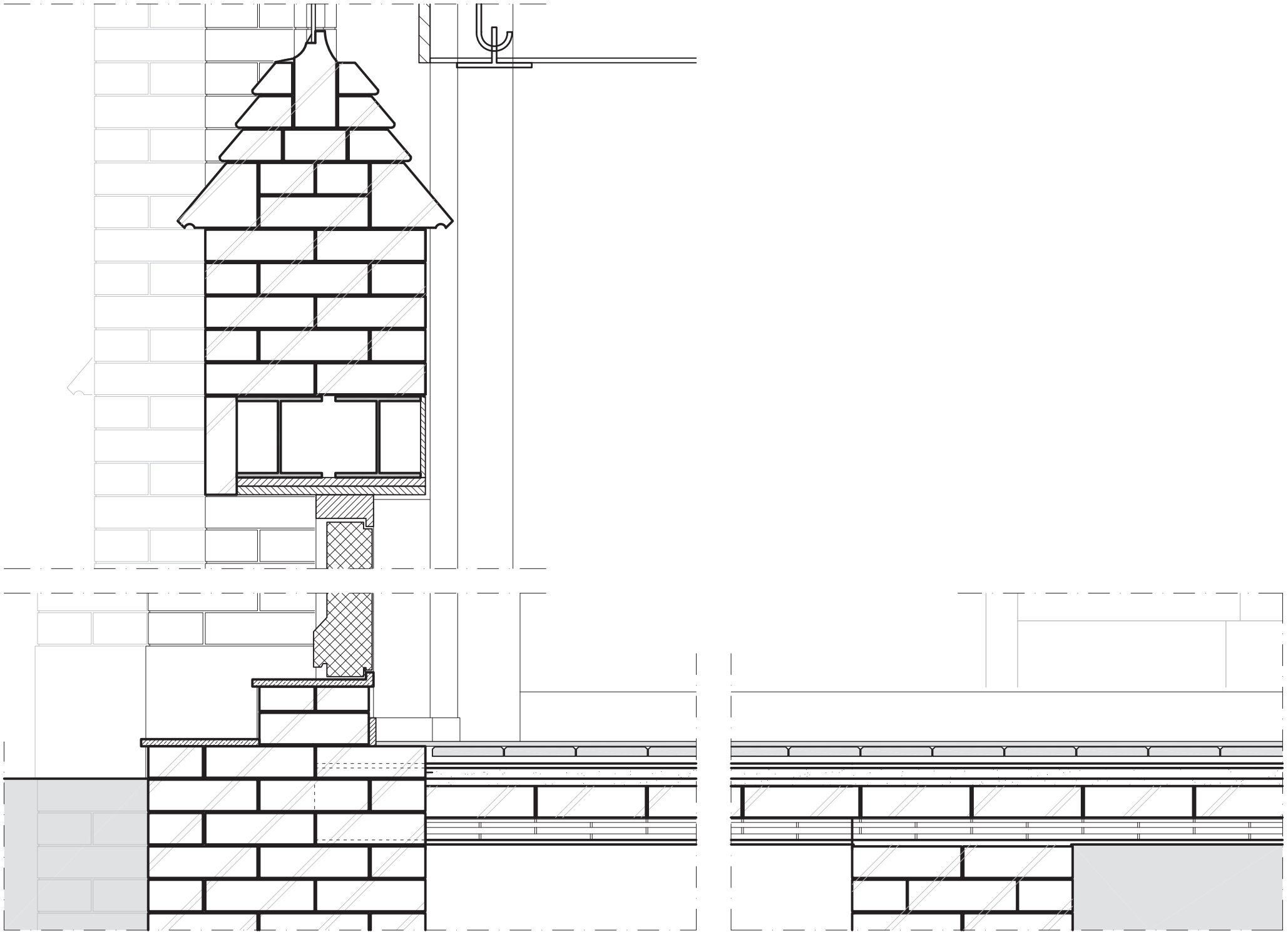


Figure 28. Details 4-6
scale 1:5

Position

"De kleurige afwerking, immers, vermeerdert het architectonisch effect van het gebouw en brengt onderscheid en hiërarchie aan in het vormenstelsel. Kleur, kleurige banden en kleurige afwerking leggen uit hoe het gebouw moet worden gelezen (...) zij onderstrepen de decoratieve elementen." H.H.J. Kurvers - Restauratie vadamecum - *Afwerking in kleur*

Maison de la Miséricorde can be seen as a special convent. Whereas other convents or monasteries were built at one time, this convent wasn't. Starting in a house along the Capucijnenstraat it developed to a convent consistent of several buildings over a span of 123 years. This is a significant value of the Miséricorde convent wherein every building part represents a layer in time.
The Laymen's chapel also represents a time layer in the convent of Maison de la Miséricorde and within this building part several time layers can be distinguished on a finer scale.
These layers are valuable to the chapel and to the convent because they show the growth and prosperity of the congregation of the Sisters of Mercy.

It is because of this reasoning that the interior of the Laymen's chapel is valued higher than it's exterior. The interior shows its history and tells the story of the development of the chapel and the convent on a different scale and with more finesse than the exterior does.

The most prominent elements in the interior of the Laymen's chapel are the addition of the floor underneath the church windows and the degradation of the paintwork above this floor.
The floor divides the chapel in two spaces which demolishes the spacial qualities that belongs to these kind of religious buildings. It takes away the experience of the imposing interior building qualities as it was intended.
The multiple (paint)layers overlapping each other create a confusing image. It is thus essential for the chapel to appear serene. Understanding what is visible is crucial in this case because the paintwork has an inseparable bond with the architecture. A better understanding of the interior restores the architecture of the chapel with its meaning/iconography. This can provide a visual and substantial unity for the chapel again, which it has lost now.

For the Laymen's chapel to show its cultural significance it is necessary that the building can be experienced as a chapel again, while further show it's rich history.

PART II - RESTORATION

II_I Approach

The first thing that has to be done is controlling the damage. Crackmonitors will have to be placed on the crack between the nave and the choir to see if the crack is stabilized.
Only if the crack is stabilized further actions can be taken. If this is not the case however and the crack is still moving/growing that means that the structural problems of the Laymen's chapel have not been completely solved.
As stated earlier there remains a possibility that not enough tension rods were placed to provide a stable situation for the timber structure. One of the possibilities is to place the two extra tension rods connecting load-bearing walls on the trusses next to the headboard walls.
Additional research and investigation would further provide a good scope of the current situation.

When the structural problems have been solved the building has to be made waterproof. In case of the chapel this means that the gutters have to be replaced. Since there is extensive water-damage it can be assumed that the gutters are in such a bad condition they can't be repaired but have to be replaced.
To stabilize the temperature inside the chapel, necessary for the condition of the paintwork, the roof will be insulated and the roofing will be replaced. The roof is now covered in bituminous slates, this will be replaced for natural stone slates. Detail 1 on page 40 shows the technical solution that belongs to this method.

After establishing that the chapel is structurally stable and it is waterproof other activities inside can be started.

The floor that divides the interior of the chapel in two will be removed, reconstructing the spaciousness of the building interior. Demolishing this floor will leave holes in the walls where the steel beams are now embedded. These holes will be filled with new brickwork on which a plaster will be added, this plaster base will be painted white. This way the scars that the floor made will be visible and can be understood to belong to the same time period as the white paint layer that remains on the walls beneath the (demolished) floor.

The two steel HEA beams and the concrete blocks that lie in the headboard wall between nave and choir will be treated likewise. As they pose no threat to the structure of the chapel these later additions can be removed. First the concrete bricks will be removed and later the two HEA beams. Removing these elements sounds easier than the actual execution of this action. The concrete blocks are cemented onto the existing building. The blocks will have to cut away and the remaining cement will have to be chiselled. This could cause damage to the surrounding paintwork and to the surrounding brickwork thus this work should be done with great care. When removing the concrete brickwork, attention should be paid to the crack in the headboard between the nave and the choir. In theory the removal of the concrete brickwork should form no danger to the structure of the chapel, however if the crack appears to be moving/growing than the activities should be stopped immediately and another form of action should be taken.
The removal of the two HEA beams comes with the same advice as the removal of the concrete brickwork. When removing the HEA beams the brickwork surrounding them should be cut away (only the bricks that were added when they were placed here) and when they are removed the empty holes should be filled with bricks on which a plaster base will be added. This in turn can be painted white, making visible these scars belong to the same time period as the white paint layer.

The (purple painted) wood panelling that covers the brickwork bases of the vaults will be removed, it is unknown what the state of the material is behind the panelling. After removing the panelling, additional research will have to be done.

The floor of the Laymen's chapel is currently covered with linoleum. To be able to make an accurate plan of action the underground will have to be exposed and this linoleum will have to be removed. Since squatters destroyed the pewters for bonfires it can be assumed that the floor where the pewters stood will not be in an excellent state. Where necessary the wooden parts will have to be replaced.
The tile floor however is harder to damage but it could still be the case. The tile floor of the nave, together with the platform in the choir will have to be polished. Tiles that are missing can be replaced, loose tiles will be fastened and cracked tiles may be repaired.

To strengthen the "chapel experience" new stained glass windows will be added to the church windows. The original windows were shattered by the squatters around 1980 but new stained glass will help enhance the experience value of the chapel. This new stained glass will be done by an artist like figure 30, showing clearly that they belong to another time.
Behind the stained glass windows an additional window will be placed. This additional window will be placed on the exterior of the chapel and creates a more stable indoor climate, necessary for the condition of the paintwork. In addition to the indoor climate the additional windows ensure that the stained glass windows can't easily be thrown in from the outside.

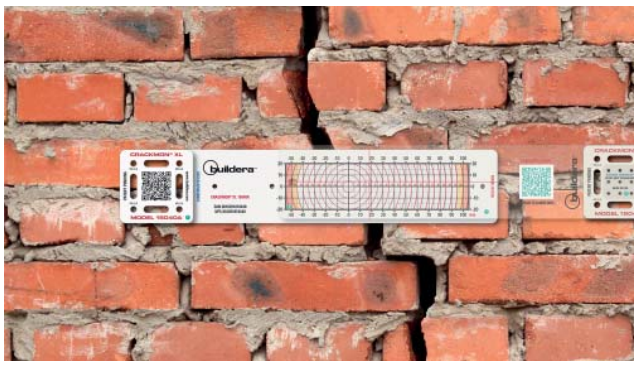


Figure 29. A crackmonitor

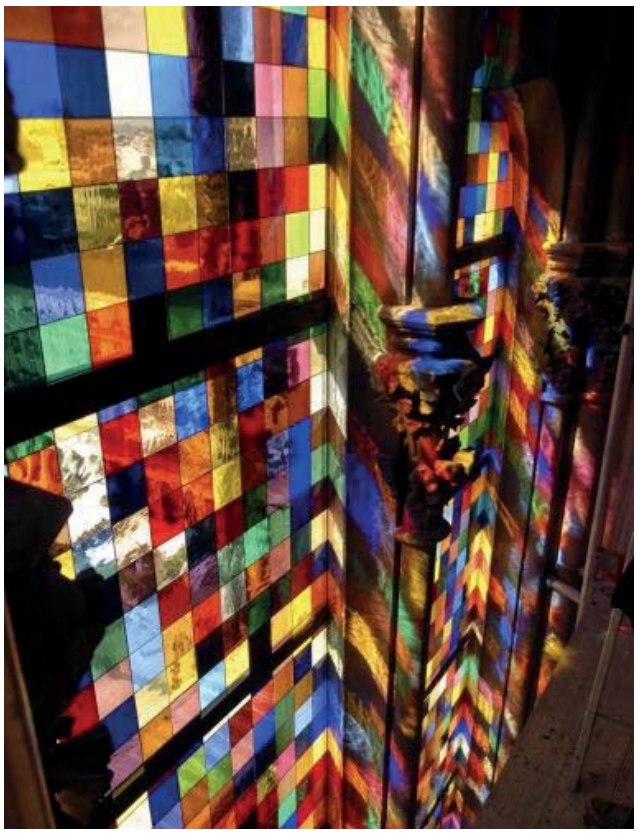


Figure 30. Cologne, Germany; Stained glass window

The treatment of the paintwork is far out the most time consuming activity. First, the current situation will have to be thoroughly documented before any changes are made. Second the peeling paint will have to be removed with a pallet knife with rounded corners, this way the least damage will be done to the underlying paint-layer. This method will reveal a little more of the paintwork underneath.
At the places where all the paintwork is gone the plaster base will have to be re-established. In order for this to happen the current plaster will have to be removed until the brickwork underground is revealed, only in the places where all the paintwork is already gone(!). A new plaster base will be created, with the same material composition as the original plaster base has. This exact composition will have to be researched from a sample of the plaster base that is removed.
When these activities are done the cleaning of the paintwork can begin. The dirtiest place qualifies as the norm for all the paintwork in the chapel. The cleaning starts with the friendliest approach and gradually goes on to harsher methods. The friendliest approach is a dry method, for this method a polymer is used. This polymer is applied to the surface and when the polymer is pulled away, the dirt comes off with it. Does this method not do the appointed task, then may be moved on to the next method and so on, and so on.
After the polymer comes water (no additions), then water with a little hand soap, and gradually on to biting materials as ammonia. The actual cleaning method depends on the situation and it tested on a small spot before the whole chapel is done likewise.
When all the paintwork is clean the RAL colours can be retrieved and documented. With the data of the RAL colours a new addition to the paintwork can be made.
To create a more serene appearance the parts that lost all paintwork and have received a new plaster base will be reconstructed to look like the second paint-layer. This will be done via a method that is called <?> . At a distance this method will look like the painting is just like original paintings, closer up it will be visible that this paintwork consists of stripes in stead of the exact painting of the original layer. Using this method will acquire the serene look that fits the chapel and on the other hand will not be exactly the same as the original and can thus still be seen as a later addition, mainly for professionals.
After the last paintwork is added, a transparent paint-layer will be added to all the paintwork, giving it an extra protective layer for influences from the interior of the chapel.

The exterior of the chapel asks for less attention. The facade will only require repointing.

Repointing will not be done all over the chapel but rather on places where the current repointing is gone. This includes places where building parts leaned against the chapel. To be able to place the right repointing for the facade some samples will have to be taken and researched.
A repointing of the same composition of materials will be used, this way it can discolour in the same manner that the rest of the pointing has done.

Figure 31. Impression paintwork; two layers

Figure 32. Impression method <?>

II_II Spatial impression

Figure 33. New interior; facing east

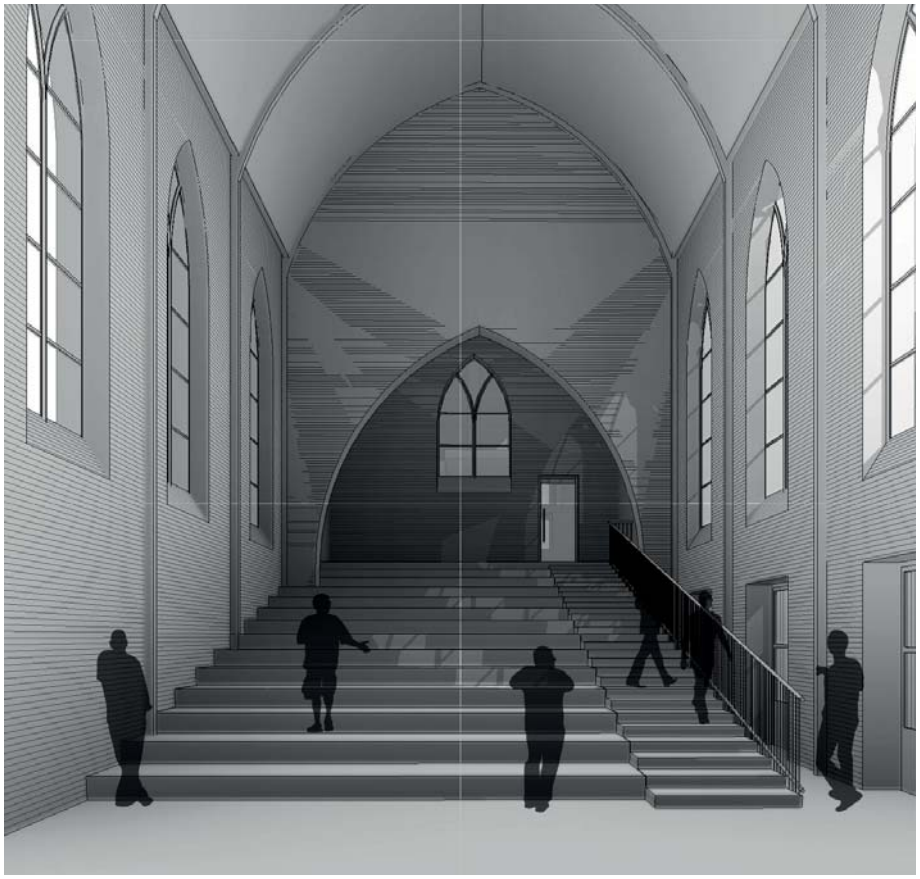


Figure 34. New interior; facing west

II_III Drawings; Facades

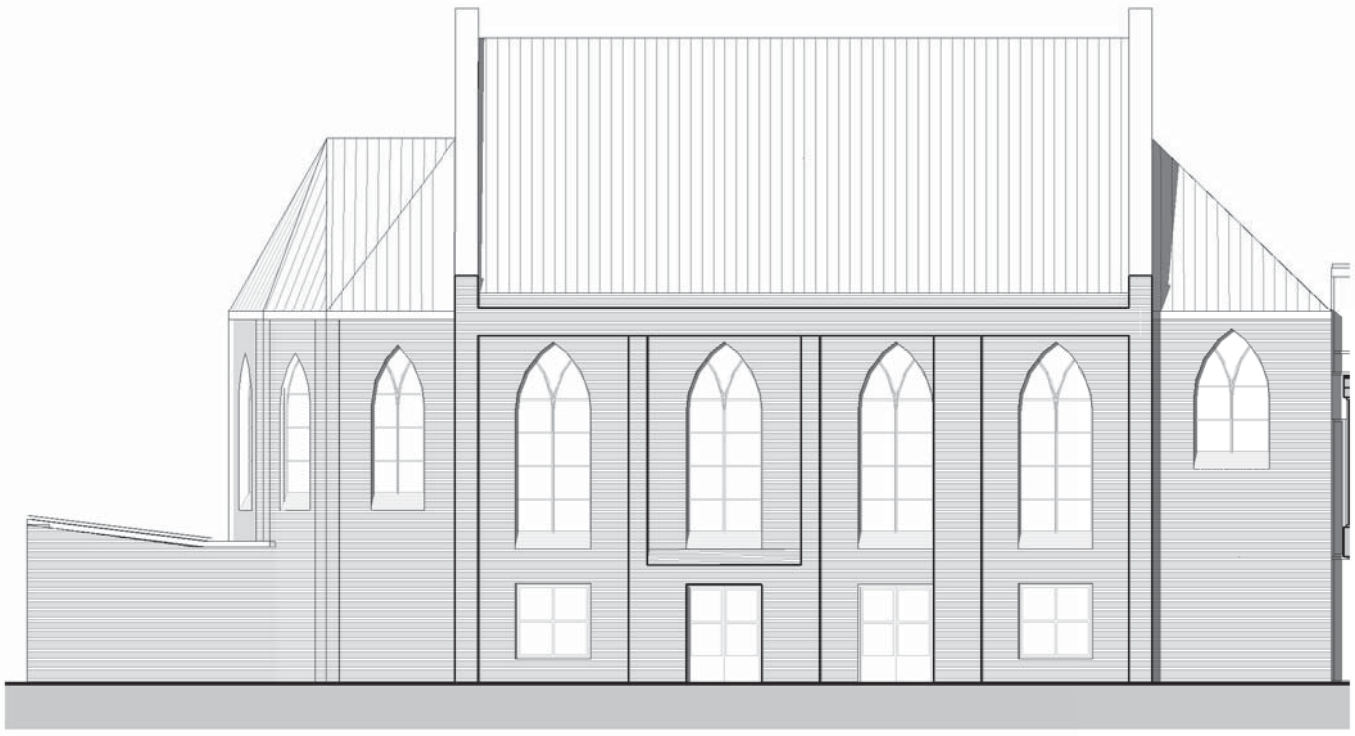


Figure 35. North facade

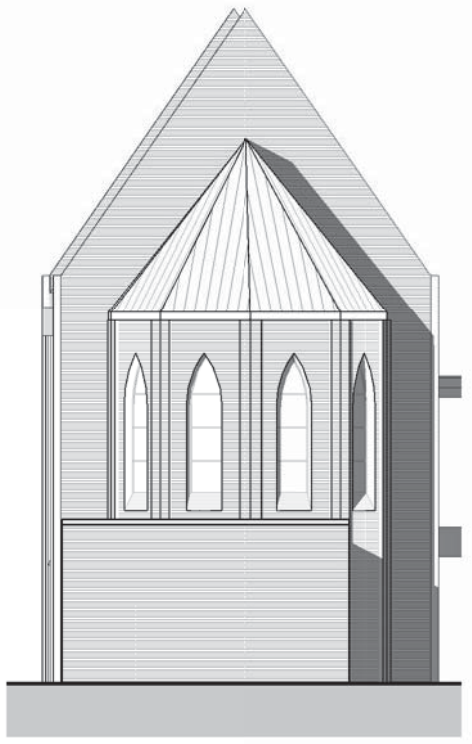


Figure 36. East facade

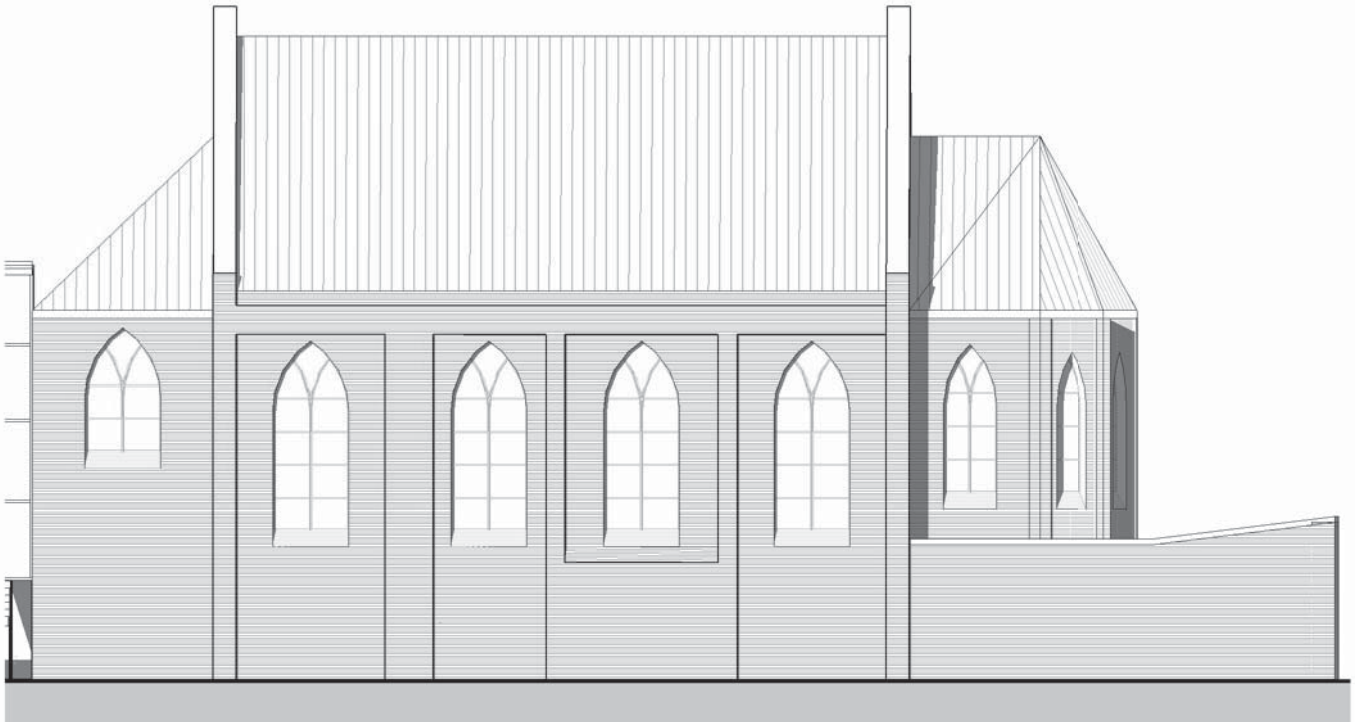


Figure 37. South facade

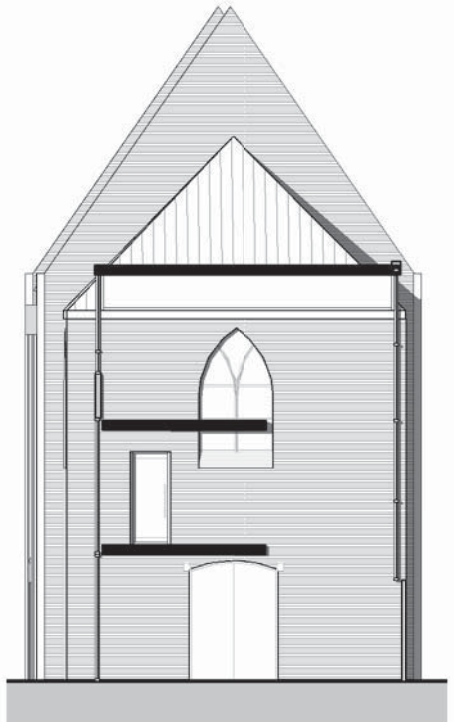


Figure 38. West facade
scale 1:200

II_III Drawings; Sections

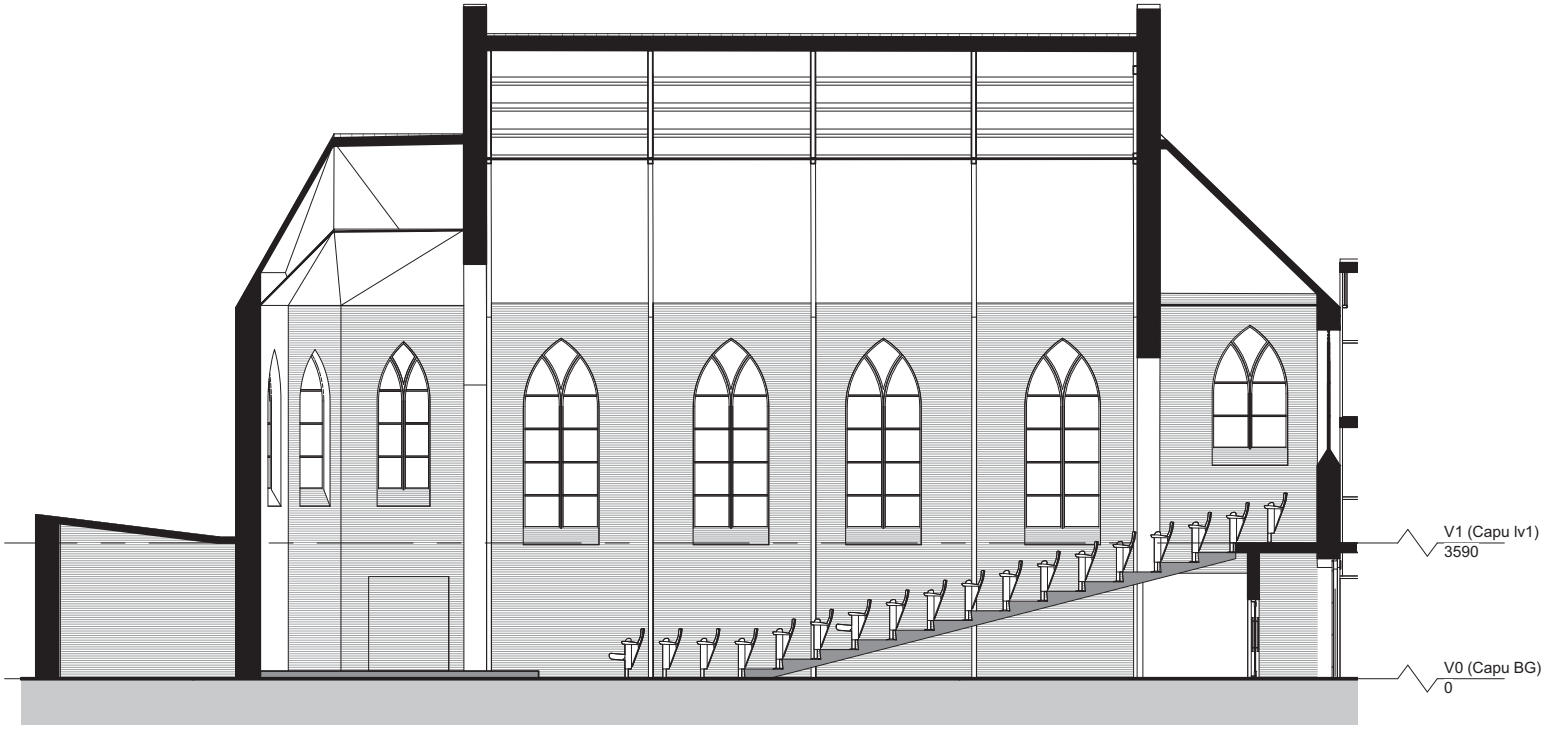


Figure 39. Longitudinal section

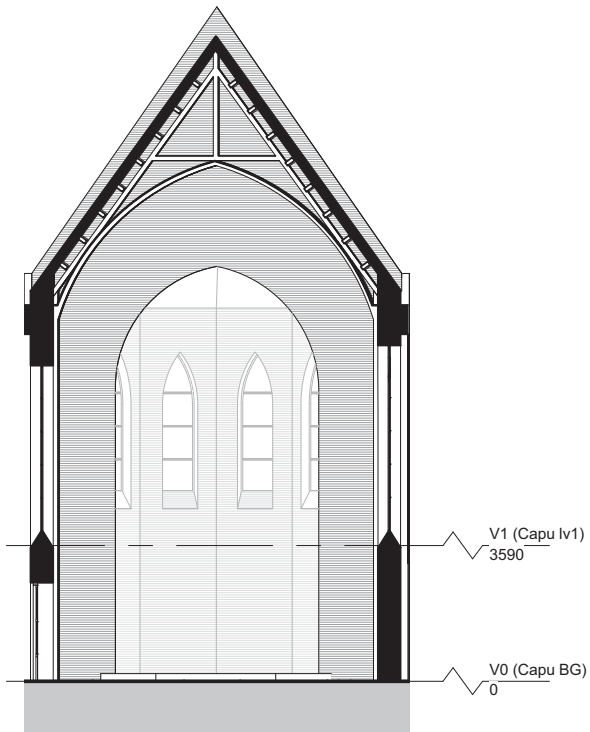


Figure 40. Cross section facing east

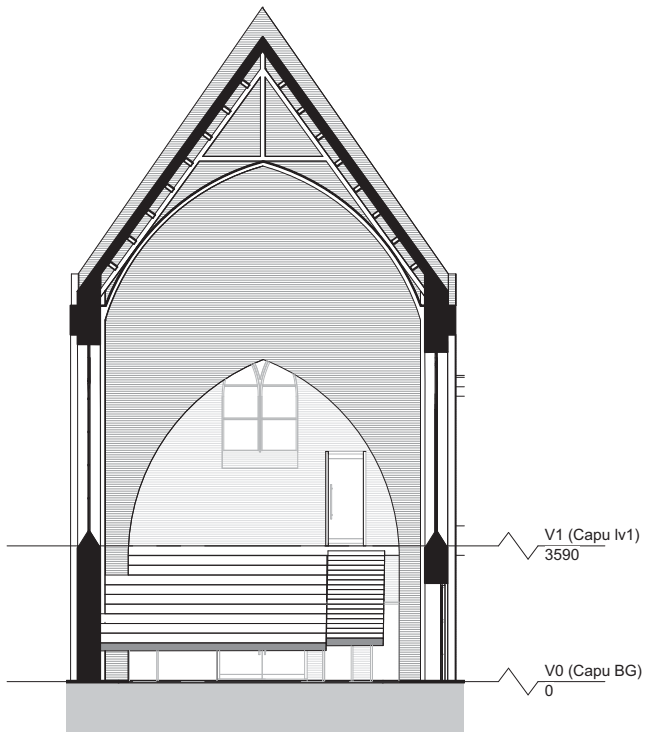
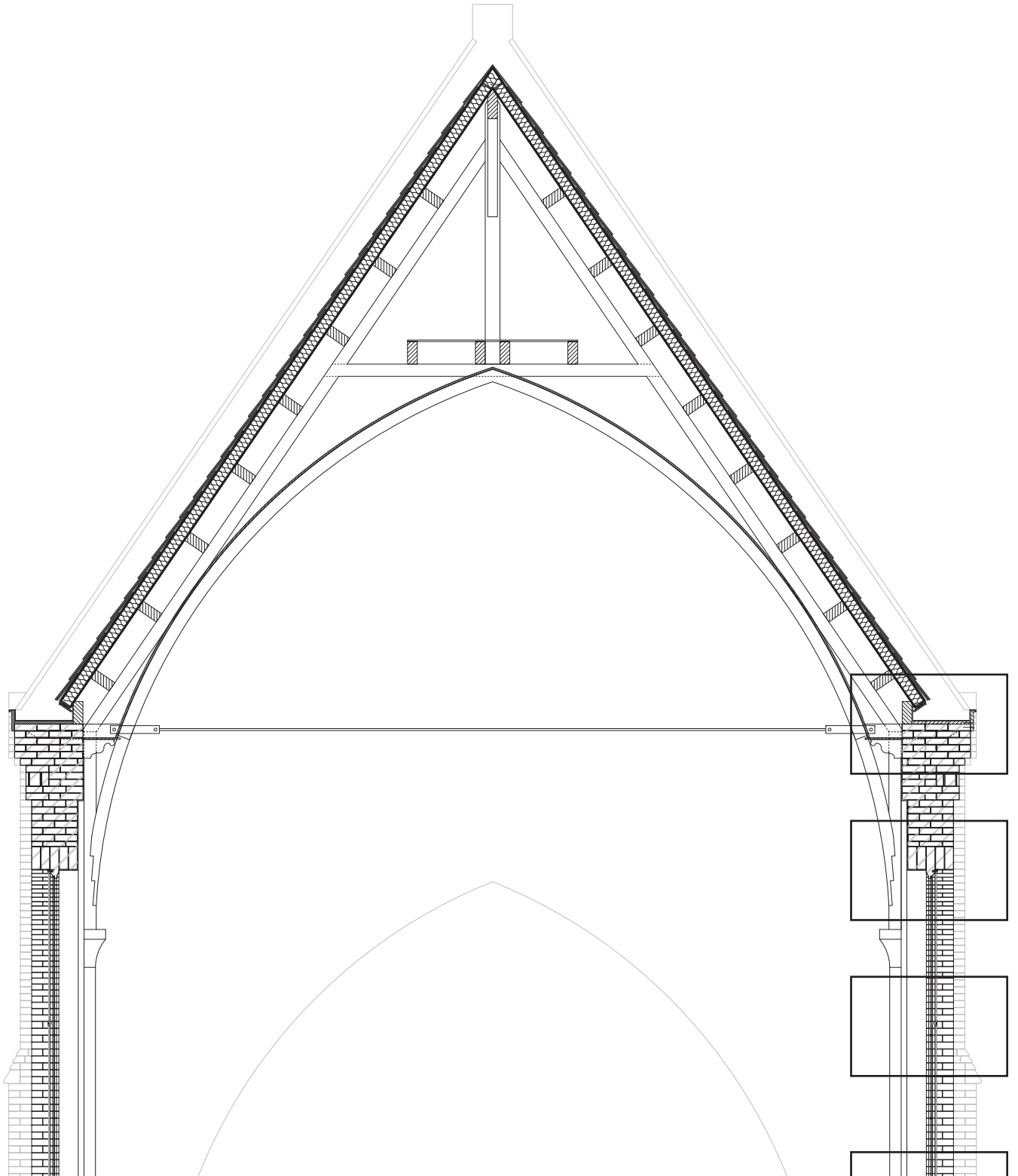


Figure 41. Cross section facing west
scale 1:200

RL + 17400

RL + 16600



DETAIL 1

DETAIL 2

DETAIL 3

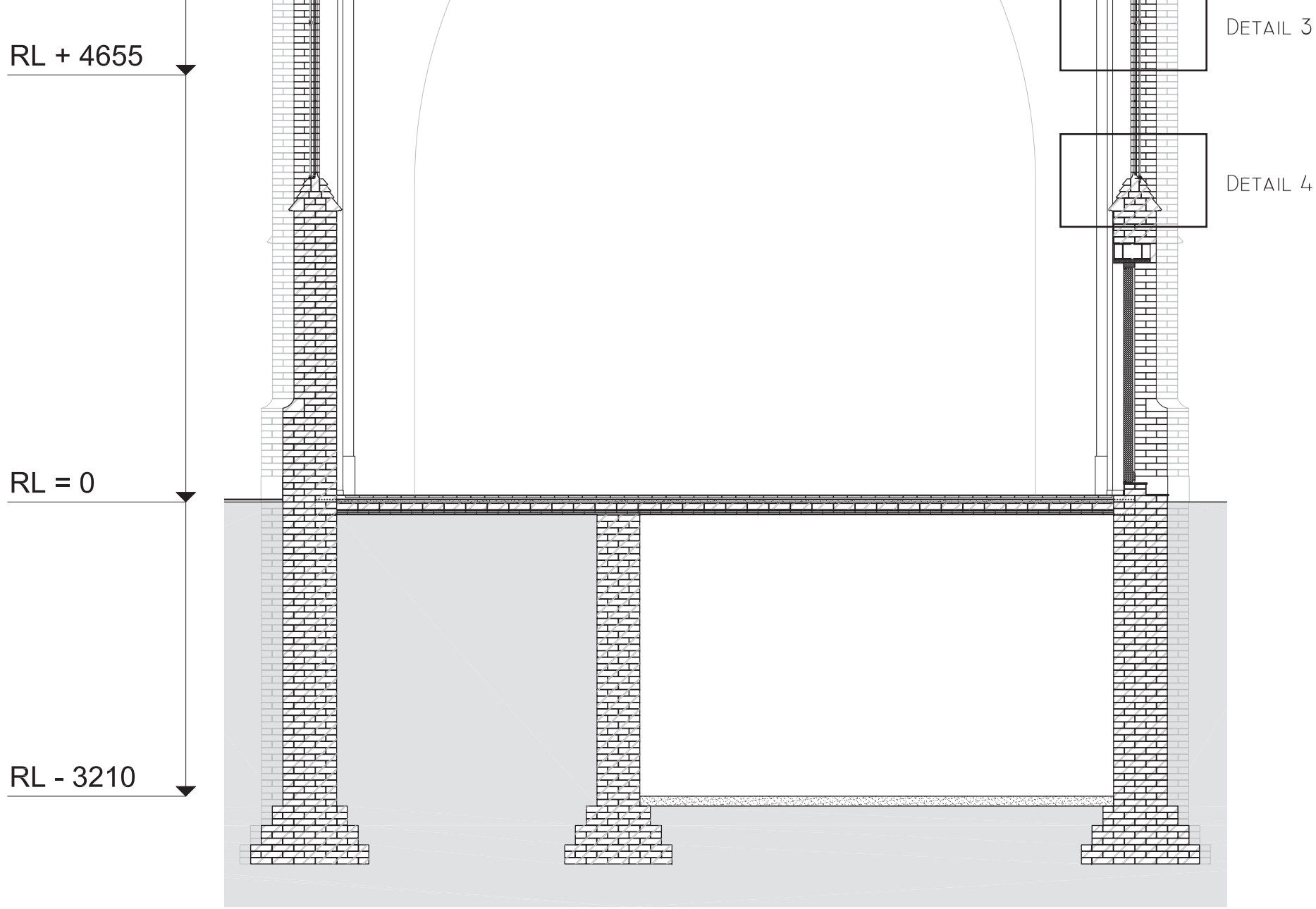


Figure 42. Cross section of the chapel; facing west
scale 1:50

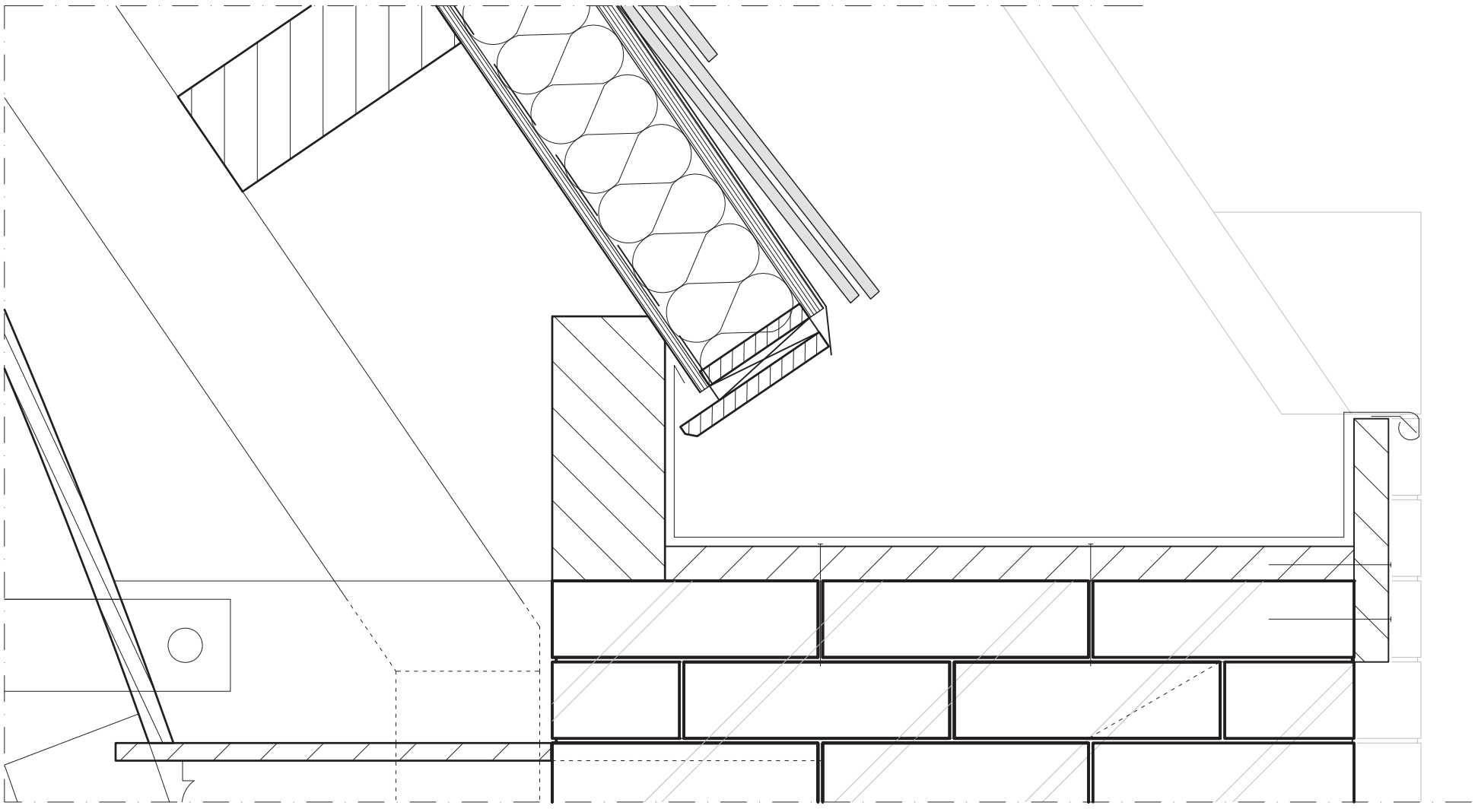


Figure 43. Detail 1
scale 1:5

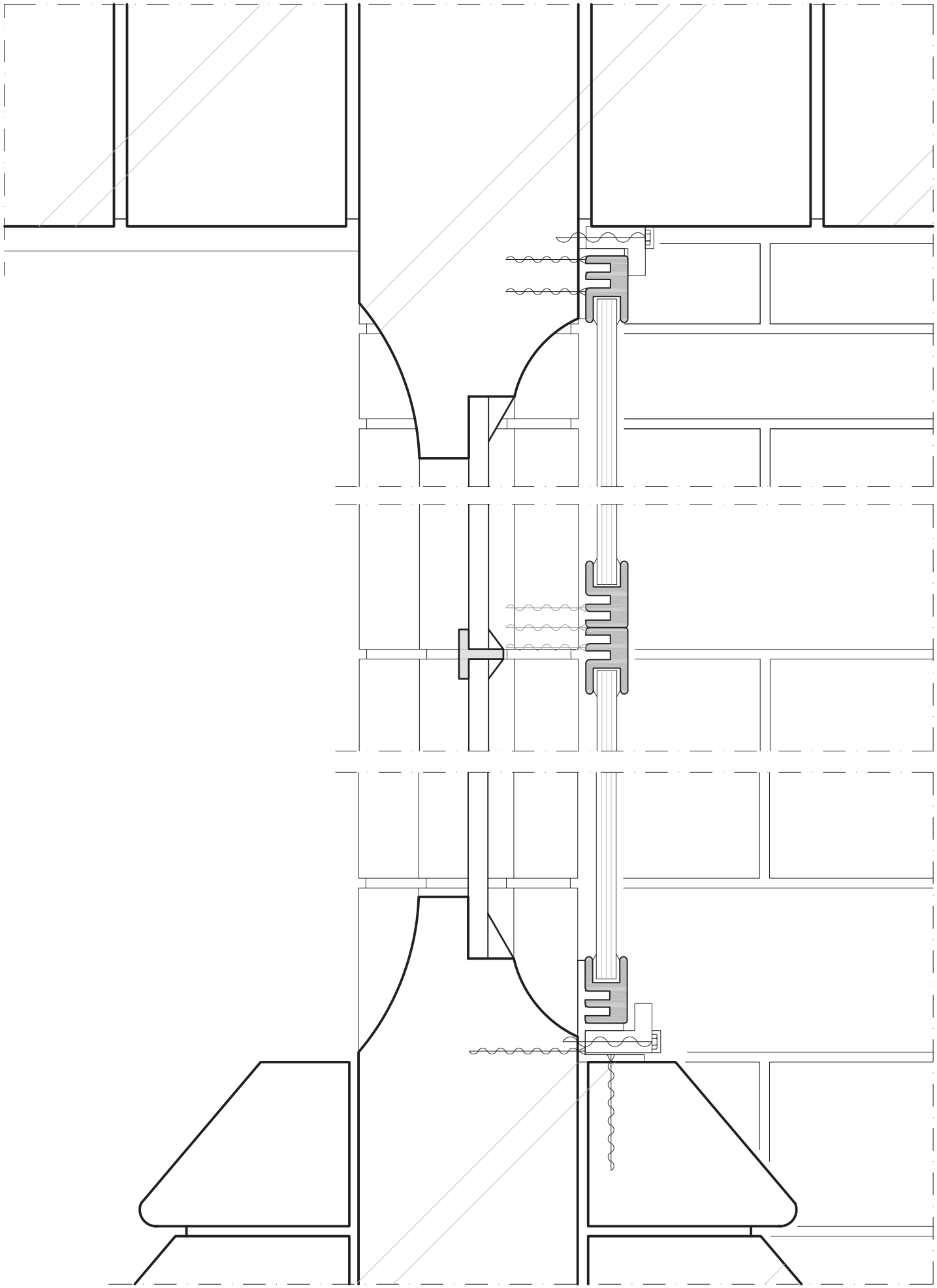


Figure 44. Details 2-4
scale 1:2

BIBLIOGRAPHY

Front page
Photograph made by the author on 16-02-2016

Figure 1
Figure based on a photograph from the website of http://www.bing.com/maps/ made by the author

Figure 2, 7 - 13, 33 - 41
Made in Autodesk Revit by the author

Figure 3 - 5, 15, 21 - 23
Photograph made by the author on 16-02-2016

Figure 6, 17
Photograph made by Remco Veldt on 11-03-2016

Figure 14, 24
Handdrawing by the author, with photographs made by the author and Remco Veldt

Figure 16
Photograph made by the author on 11-03-2016

Figure 18 - 19
Photograph from the archive of RHCL

Figure 20, 31, 32
Handdrawing by the author

Figure 25
Figure made by the author

Figure 26 - 28, 42 - 44
Made in Autodesk AutoCAD by the author

Figure 29
Photograph taken from the website https://static1.squarespace.com/static/4ff3cb5ce4b05dff6b7ae07e/t/561ee1c3e4b0d814f1e38bac/1444864460098/crackmon-xl-15040a-flat-view-concrete2-brick-1500x844-20151014.jpg?format=1500w consulted on 07-05-2017

Figure 30
Photograph taken from the website https://s-media-cache-ak0.pinimg.com/originals/ee/38/da/ee38da99c81059fa7b2a982b2f507a8d.jpg consulted on 07-05-2017