

Preserving spatial quality when transforming churches: different spatial solutions and their effects

Research Report

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10-05-2023**

Defining the spatial quality and Characteristic building elements in Neo Gothic churches

Characteristic building elements of Neo Gothic churches

From sources including: De bouw van kerken en kathedralen from Malcom Hislop and Het kerken boek Lier, Saskia van Lier give some characteristics to Neo Gothic churches:

- large stained glass windows
- rose windows
- pointed arches
- rib vaults
- (flying) buttresses
- ornate decoration

Attributes defining the spatial quality in Neo Gothic churches

From sources including: Architecture: Form, Space & Order by Francis D. K. Ching and Analysing Architecture by Simon Unwin the following principles can be established to give attributes to define spatial quality of Neo Gothic churches:

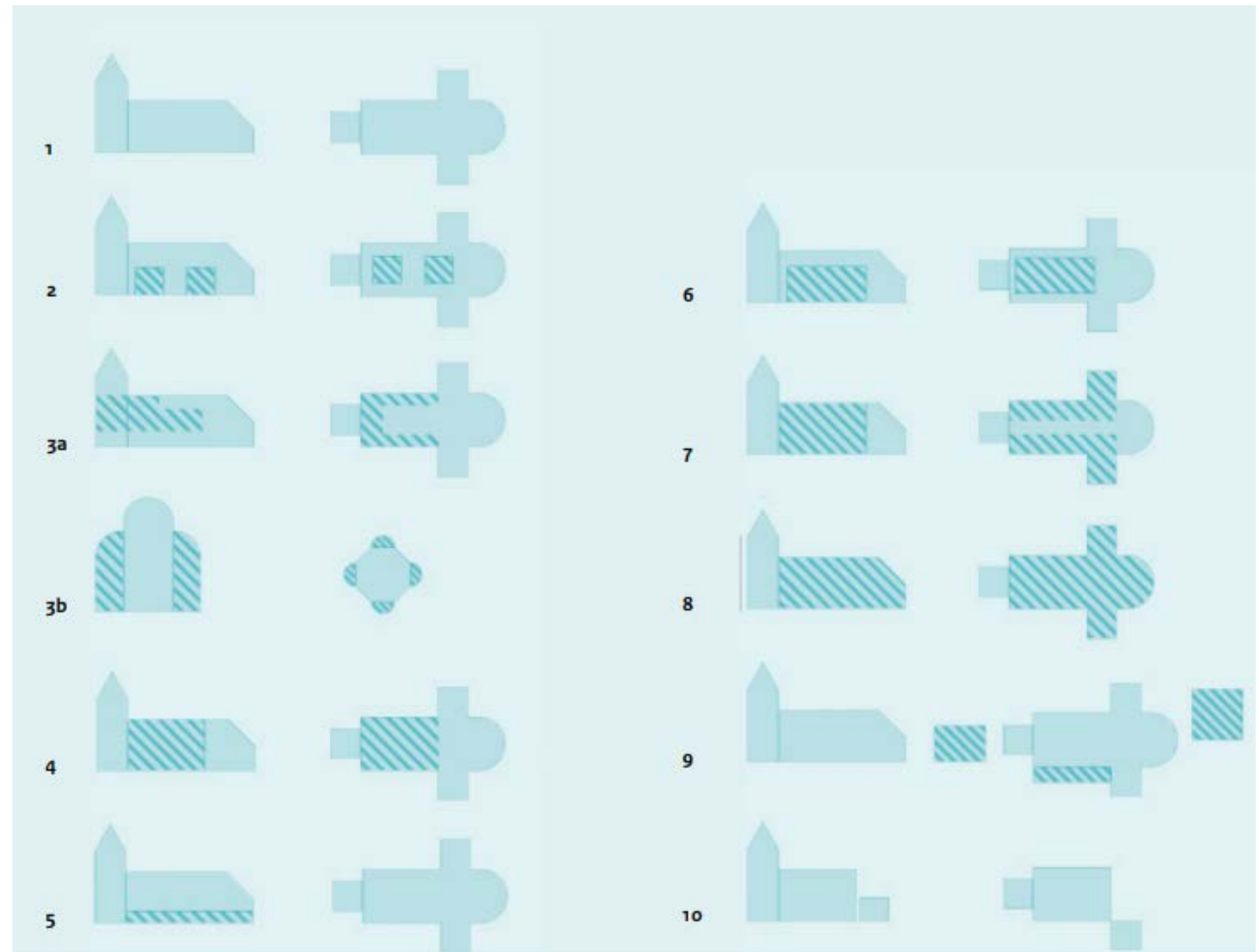
- The dimensions of the space - great height, smaller width, long length
- Proportions/ scale - big
- Threefold division
- Rhythm/ repetition
- Shape of the floorplan - cross shaped
- Lighting from above
- Long sight lines
- Symmetry
- Detail and ornamentation

Types of interventions

The document: Een toekomst voor kerken, 2011 prepared by the central government of the Netherlands, ten spatial solutions are presented on how to deal with the space in and around a church to create new functions. These ten solutions are shown on the right.

1. Full space remains intact
2. Loose built-in
3. Use ancillary spaces
4. Vertical splitting
5. Horizontal splitting

6. Box in the church
7. Lines of sight preserved
8. Fill
9. Additions
10. Partial demolition



Types of interventions analysed

Not all of the 10 interventions mentioned before are analysed. To delineate the research, a number of solutions have been selected to examine and have been better explained.

1. Full space remains intact

In this solution, the space remains completely intact but is utilized by another function. Because this strategy requires little structural intervention, it is not addressed in the analysis.

2. Loose built-in

With loose built-in, individual units are placed in the church space. These units have little impact on the spatial experience and may consist of scaffolding, floor structures or galleries.

3. Use ancillary spaces

In this strategy, only the ancillary spaces of the church are redesigned (such as chapels, side aisles or the galleries above the side aisles) here the main space remains open.

4. Vertical splitting

With vertical division, a dividing wall divides the church in two.

5. Horizontal splitting

A horizontal split involves dividing the building horizontally into two by adding a new floor.

6. Box in the church

A large, freestanding structure (a “box”) is built inside the church, filling most of the nave.

7. Lines of sight preserved

Here, the church is largely filled in but important sight lines are preserved, for example, from the entrance to the choir or from the floor to the vaults.

8. Fill

In this solution, the church space is fully utilized by completely filling it in with new spaces.

9. Additions

This strategy involves building on or on the exterior of the church. (This way is not included in this study because here the focus is on the exterior of the church, not the interior).

10. Partial demolition

Here part of the church will be demolished because, for example, the church is too large for the new function. This solution is also not included in the study because it is very dependent on which part will be very much demolished and it is not clear if anything will be added.

Case studies

The case studies being analyzed are:

De Petrus, Vucht
Dominican church, maastricht
Broeren church, Zwolle
Cuyperschurch, Sas van Gent
Westerchurch, Utrecht
St.-Theresia-van-het-kind-van-jezus church,
Borne
Sint-Gertrudis-van-Nijvelchurch, Heerle
Heilighart church, Breda
Grote Church, Hoorn

Design attitude of the Architect

In some of the case studies the design attitude of the architect has been analysed. This is done to gain inspiration and seeks answer to the question; how to react with the new design to the existing building? In these cases a few elements within the design have been selected and examined.

De Petrus

Vught

1884 (original)

2018 (transformation)

neo-Romanesque/
Neo Gothic

Library, Museum

De Petrus in Vught is a former Catholic church that was renovated in 2008 and transformed into a meeting center with a library, public workspaces, office spaces, hospitality and between these functions runs a museum. The bookcases sit on rails and can be slid away so that an event can be held in the middle of the church. The most striking feature of the transformation in Vught is the undulating new floor that has been added and flows between the old pillars of the existing church. A couple of extensions have also been made to the church where catering and offices are located.

Spatial solutions used:

- 3. Use ancillary spaces
- 5. Horizontal splitting

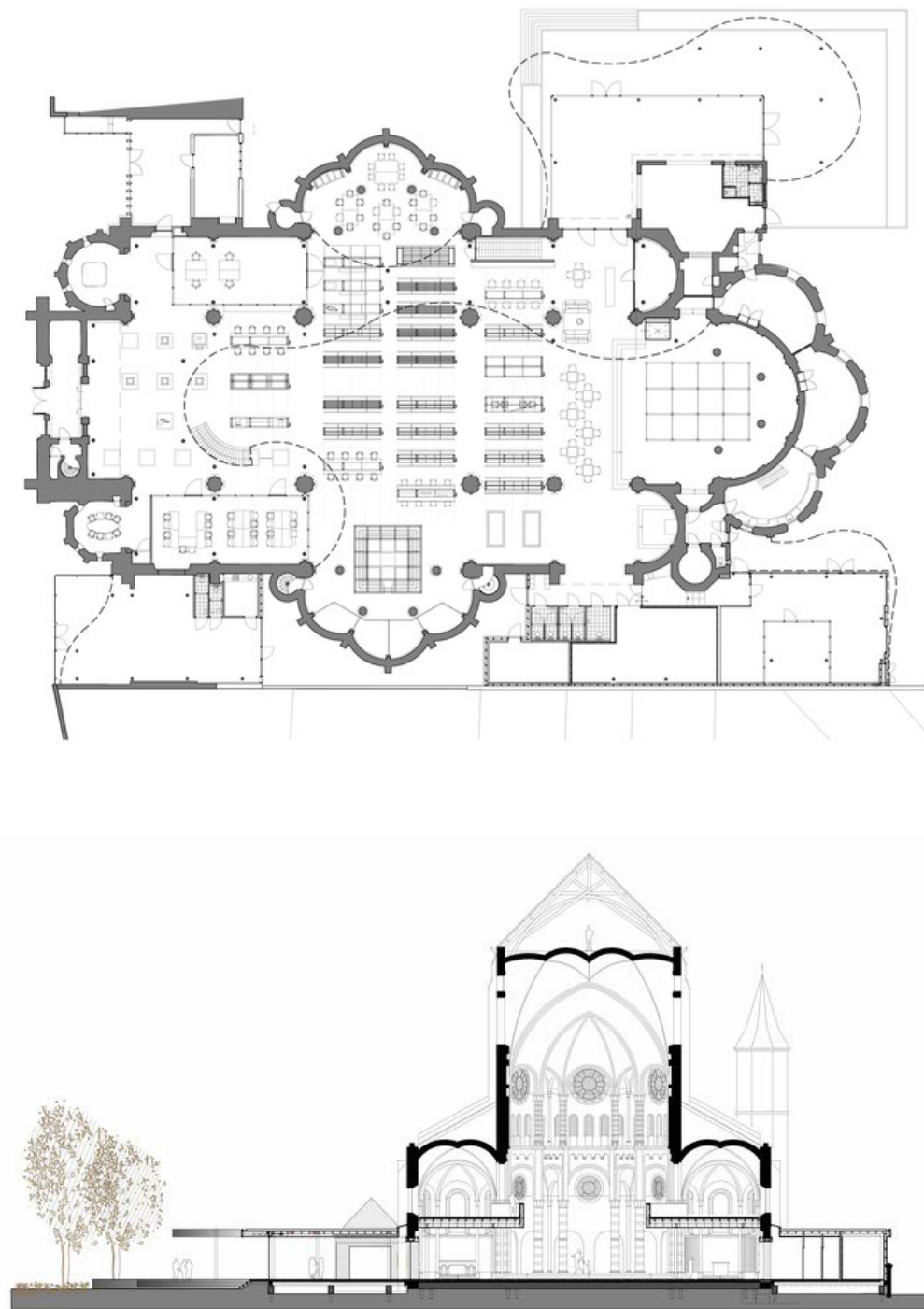
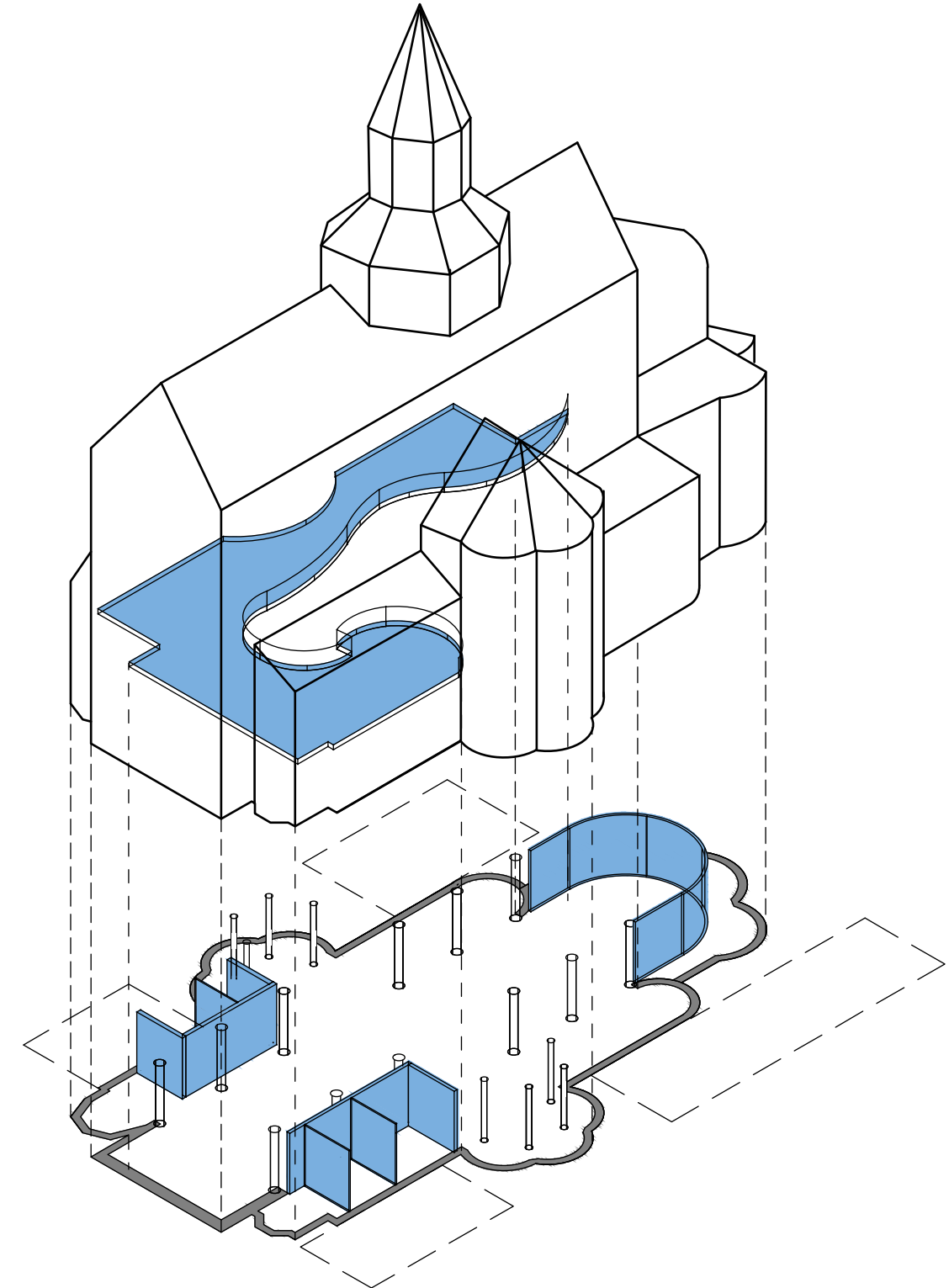
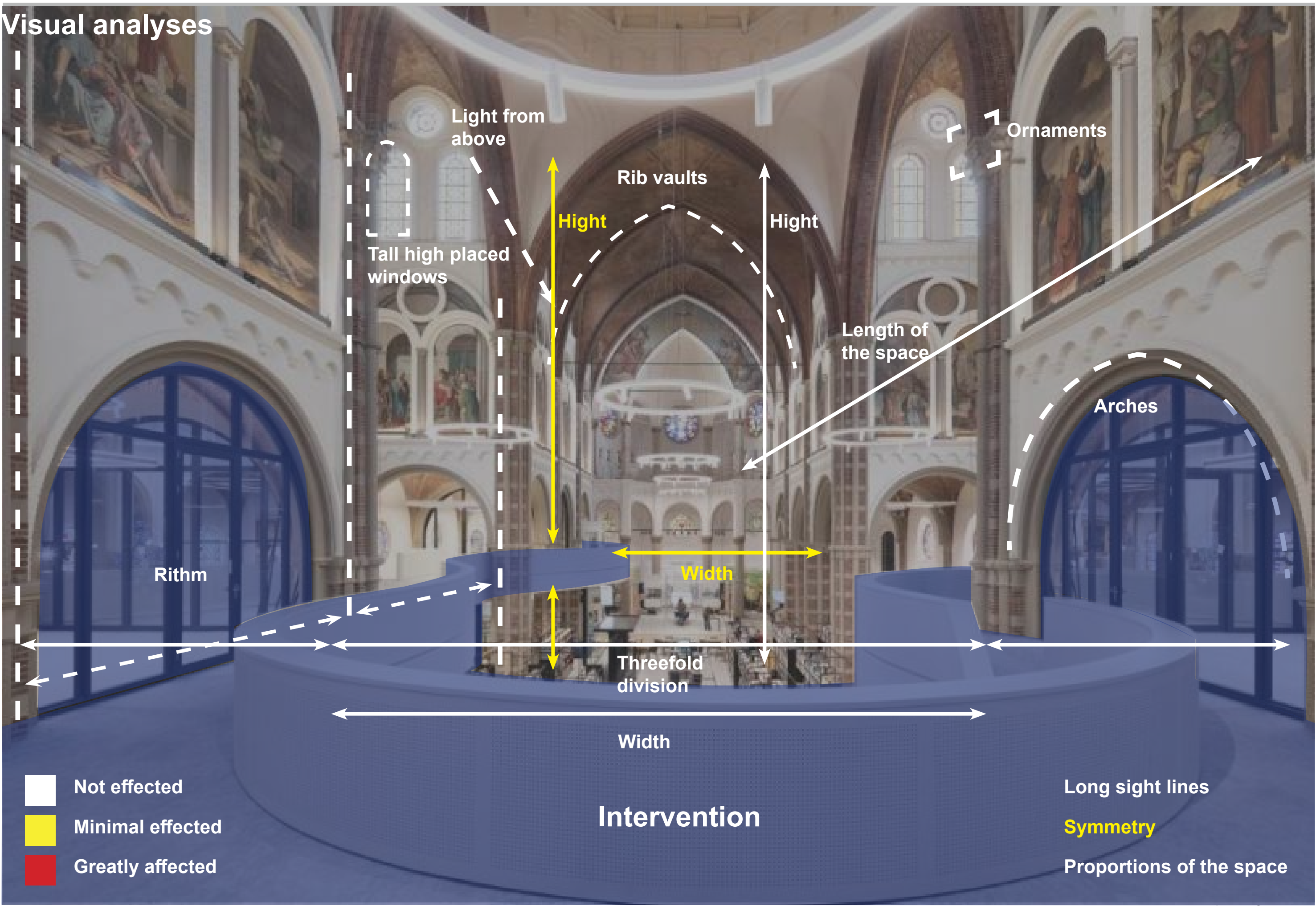


Image 1



Visual analyses



Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

Conclusion Spatial analyses

At the Petrus in Vught, the spatial quality has been well preserved. This is partly because the experience of the space has remained virtually the same. It may even have improved slightly compared to the old situation, because the extra floor made it possible to admire the space from multiple perspectives and heights. The analysis shows that the height and width have been affected by the new intervention in a few places, however, this is minimally affected and only in a few places. For example, the additional floor has been placed mainly on the sides and front of the church, leaving a large area open. The neo-Gothic elements are also little affected and can still be easily seen. The tripartite division of the church has also been preserved. Facades have been installed in the openings of the arches, but because they are made of glass, the tripartition is visually preserved.

Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	minimal	The height of the space is affected at a few places by adding an extra floor, this is mainly in the ancillary spaces but also a part of the nave.	5. Horizontal splitting
Width	minimal	At the level where the new floor is placed, the width of the space is affected, because the floor is a wavy element the width is larger at some places than others.	5. Horizontal splitting
Length	no		
Threefold division	no		
Rhythm/ repetition	no		
Lighting from above	no		
Long sight lines	no		
Symmetry	minimal	The symmetry of the interior space is affected because, de floor is an asymmetrical addition that goes through the entire space. The symmetry of the existing church is still visible.	5. Horizontal splitting
Proportions of the interior space	no		
Characteristic building elements of Neo Gothic churches			
Large stained glass windows	no		
Rose windows	-		
Pointed arches	minimal	The pointed arches are still visible but glass walls have been placed inside the arches opening. The arches itself have remained untouched.	3. Use ancillary spaces
Rib vaults	no		
(Flying) buttresses	-		
Ornate decoration	minimal	Some of the ornaments are less visible, because of the added floors and glass walls, but everything has remained intact and mostly visible.	5. Horizontal splitting 3. Use ancillary spaces

Design attitude of the Architect

Conclusion design attitude

This project sought to further accentuate the strong features of the existing church by making the new interventions a contrast to the old but in a subtle way. For example, the new steel window frames are a great contrast to the church in color and material but are made in the same shape as the arches. Also, the newly added floor is a complete contrast in shape but the color is the same as the white stucco on some of the walls in the church and also by allowing it to undulate between the existing pillars they actually stand out more. Thus old and new fit together very well.

Element: Window

- Shape

The shape of the windows is in line with the shape of the arches
- Material/Texture

The material of the windows is aluminium this is a contrast with the traditional materials from the church
- Color

The color of the windows are black, in contrast with the brick and stucco from the church
- Rhythm

The windows are placed inside the existing voids of the arches of the building and thus the rhythm is the same, the rhythm of the mullions is not derived from the existing church
- Detailing

The detailing of the windows is very sleek and smooth in contrast with the ornamental detailing of the church



Element: Bookcases

- Shape

The shape of the bookcases has no reference to the existing church, also the scale is not in line with the church so there is a contrast.
- Material/Texture

The material of the bookcases is aluminium and wood, thus there is a contrast with the brick of the church
- Color

The color of the bookcases is black, so again a contrast
- Rhythm

The bookcases are placed in rows on a certain grid. This grid has no reference to the grid of the church except that it all fits in the main nave of the church.
- Detailing

The detailing is very sleek and smooth in contrast with the ornamental detailing of the church



Element: Floor and railing

- Shape

The shape of the floor and railing is like a wave and meanders through the pillars of the church. This is a strong contrast with the structured design of the church.
- Material/Texture

The material of the floor and railing is steel beams and wooden cladding. Also a contrast.
- Color

The color of the railing is white, which is similar to the stucco of the church, this has continuity.
- Rhythm

There is no rhythm to be found in the waving shape of the floor, so there is contrast.
- Detailing

The detailing is again very sleek and smooth but the wood of the railing has been perforated with small holes which suits with the ornamental detailing of the church.



Element: Columns

- Shape

The shape of the columns is round, this is in continuity with the round shaped columns that can be found in the side aisles of the church.
- Material/Texture

The columns are made of steel and have a smooth surface, this is a contrast with the brick.
- Color

The columns are black, this color is nowhere to be found in the existing building.
- Rhythm

It looks like the columns are placed randomly in the space, in fact the columns are positioned to follow the shape of the floor. This does not have coherence with the existing grid.
- Detailing

The detailing is again very sleek and smooth in contrast with the ornamental detailing of the church



Image 3

Dominicanenkerk

maastricht
1260
Gothic
Bookstore

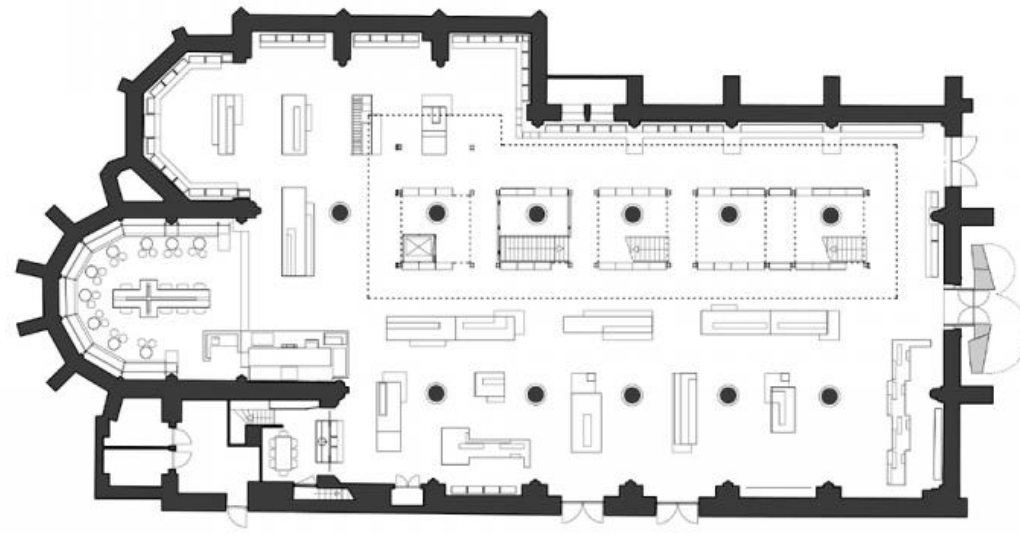
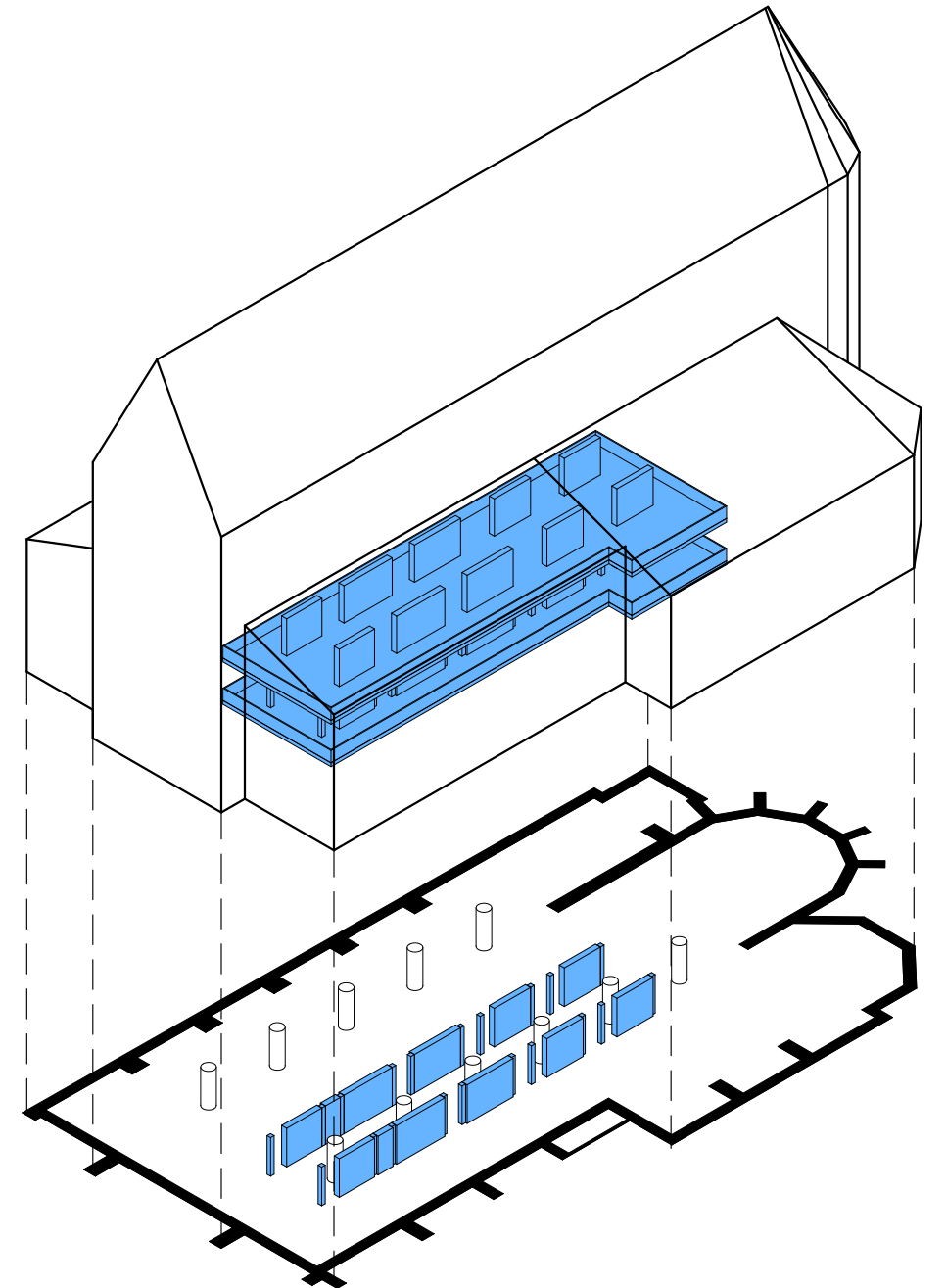
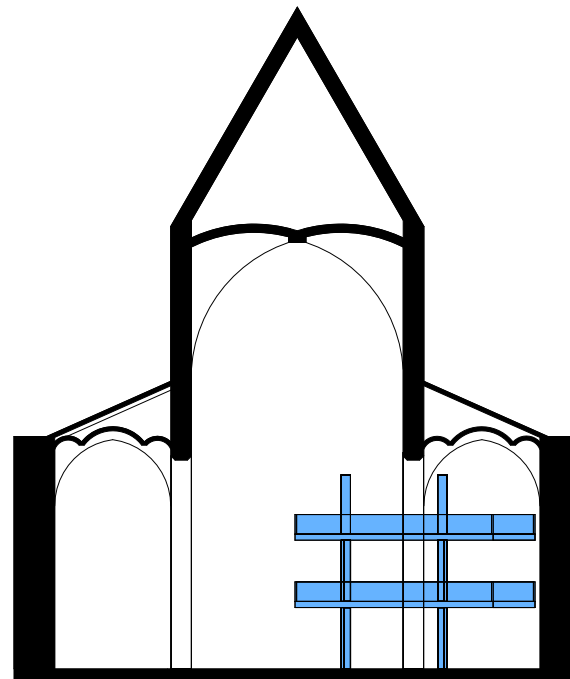


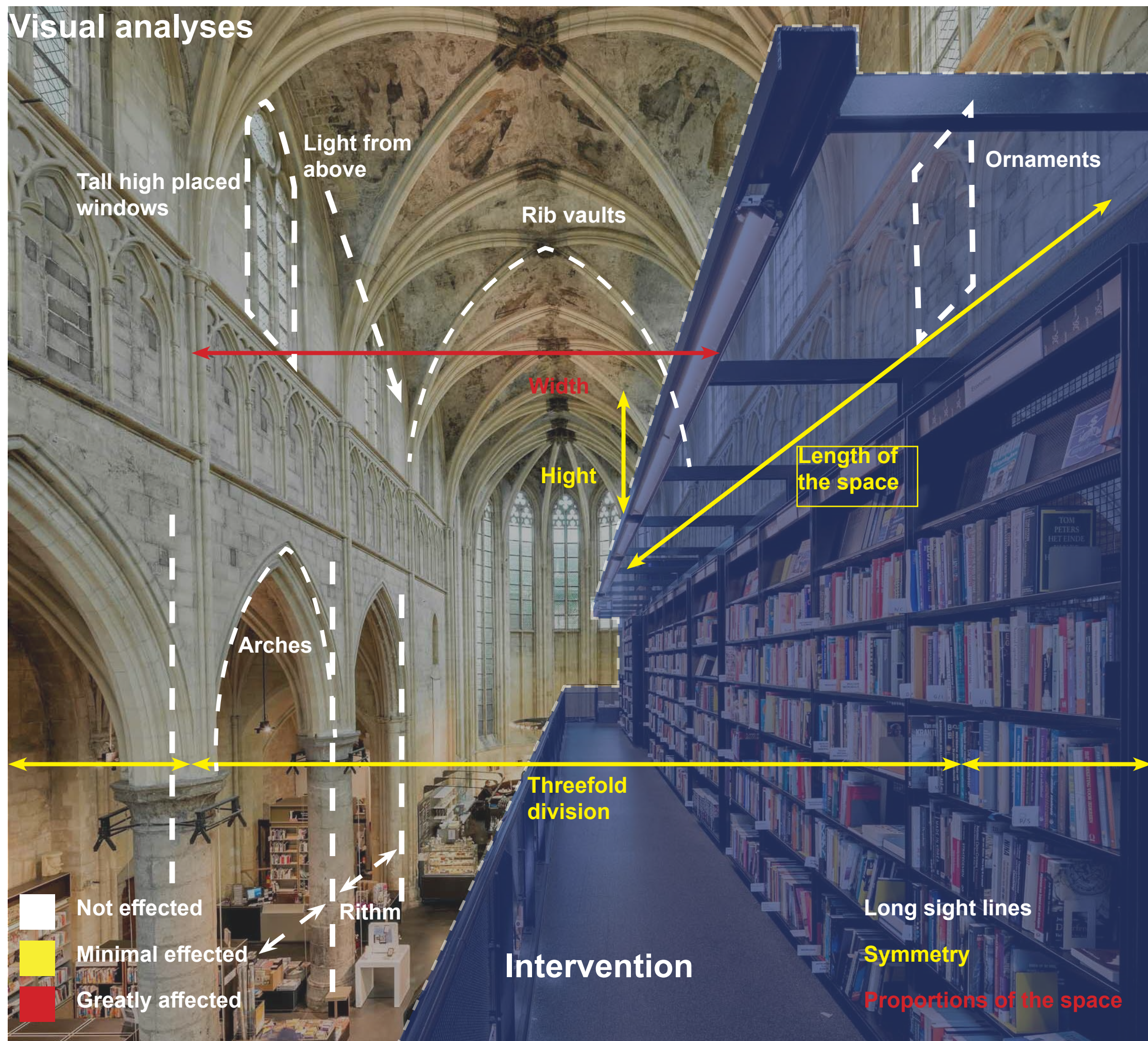
Image 4



Spatial solutions used:

2. Loose built-in

Visual analyses



Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

Conclusion Spatial analyses

At the Dominicanenchurch in Maastricht, the spatial quality has been preserved really well. Although multiple floors have been added on the right side aisle and part of the nave, a large part of the church remains open and unchanged. You can say that roughly half of the church is affected and the other half not. Yet, because the new construction is visually light and slender, it doesn't feel like a division between left and right, but more as an addition, while still maintaining the old interior space of the church as a whole. Continually, because of the new added floors with railings where people can walk on, you can experience the space even better from multiple levels and also see the ornaments and rib vaults up close. In addition, the length of the church is highlighted because of the new construction. The nave feels even more long and narrow. So even though the width of the space is heavily affected, it emphasizes the longitude. One other interesting aspect is that the new intervention makes the space asymmetrical.

Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	minimal	The height of the space is affected by the adding of a new level on the side of the nave. Though the height is substantially more affected on the side aisle where the complete space has been filled up with three additional floors. But because the nave itself has remained mostly open, the quality of the space still remains intact. You can still experience the height and behold the arches and rib vaults within the nave.	2. Loose built-in 7. Lines of sight preserved
Width	yes	The width of the church space has been affected, because the new element is blocking the entire right side of the church, reducing the width.	2. Loose built-in 7. Lines of sight preserved
Length	minimal	The churches length is partly blocked by the new element standing at the entrance or at the back. However in the other half of the church the length has remained fully intact and there the space even looks longer.	2. Loose built-in 7. Lines of sight preserved
Threefold division	minimal	Because of the new element the threefold division is less visible, however the new element is relatively open so you can still witness the division.	2. Loose built-in 7. Lines of sight preserved
Rhythm/ repetition	no		
Lighting from above	no		
Long sight lines	no		
Symmetry	minimal	Though this church is not fully symmetrical, the principle of the spaces does have a symmetry to it. By adding the element on the right side of the church. The composition changes to a asymmetrical one.	2. Loose built-in 7. Lines of sight preserved
Proportions of the interior space	yes	By adding the new element, the proportion of the space changes, especially the nave becomes smaller and looks taller.	2. Loose built-in 7. Lines of sight preserved
Characteristic building elements of Neo Gothic churches			
Large stained glass windows	no		
Rose windows	-		
Pointed arches	no		
Rib vaults	no		
(Flying) buttresses	-		
Ornate decoration	minimal	Some of the ornaments are less visible, because of the added construction but everything has remained intact and mostly visible.	2. Loose built-in 7. Lines of sight preserved

Design attitude of the Architect

Conclusion design attitude

In this project the intervention forms a visual contrast with the existing church. The material, color and detailing are contrasting the really ornamental and heavy appearance of the church. The intervention is a lightweight loose standing element in the open space of the church. The scale of the element does however follow the large scale of the space and accentuate length of the nave, the rhythm of the columns also follows the rhythm of the church.

Element: intervention as a whole

- **Shape** The shape of the whole intervention is really functional, you can see the construction and everything is sleek and modern. The scale is large and forms continuity with the long nave.
- **Material/Texture** The material of the intervention is aluminium and steel this is a contrast with the traditional materials from the church
- **Color** The color overall is black, in contrast with the church

Element: Bookcases

- **Shape** The shape of the bookcases has no reference to the existing church, also the scale is not in line with the church so there is a contrast.
- **Material/Texture** The material of the bookcases is aluminium, thus there is a contrast with the brick of the church
- **Color** The color of the bookcases is black, so again a contrast

Element: Floor and railing

- **Shape** The shape of the floor and railing is very strict and straight.
- **Material/Texture** The floor and railing have a steel construction, the floor has a finishing of canvas and the railings have perforated panels.
- **Color** The color of the railing is black, the floors have a black construction with grey canvas, there is contrast with the church.

Element: Columns

- **Shape** The columns are steel HEA profiles and thus are visual functional looking.
- **Material/Texture** The columns are made of steel and have a smooth surface, this is a contrast with the columns of the church.
- **Color** The columns are black, this color is nowhere to be found in the existing building.

- **Rhythm** The element has a clear rhythm, that follows the rhythm of the columns of the church
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church, the construction is visible

- **Rhythm** The bookcases are placed in rows on a certain grid. This grid follows the rhythm of the church, there is continuity.
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church

- **Rhythm** The floor and railing itself follow the rhythm of the structure
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church. The only detail is the handle on the railing and the perforated panels.

- **Rhythm** The columns are much like the bookcases placed within the same rhythm as the church.
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church

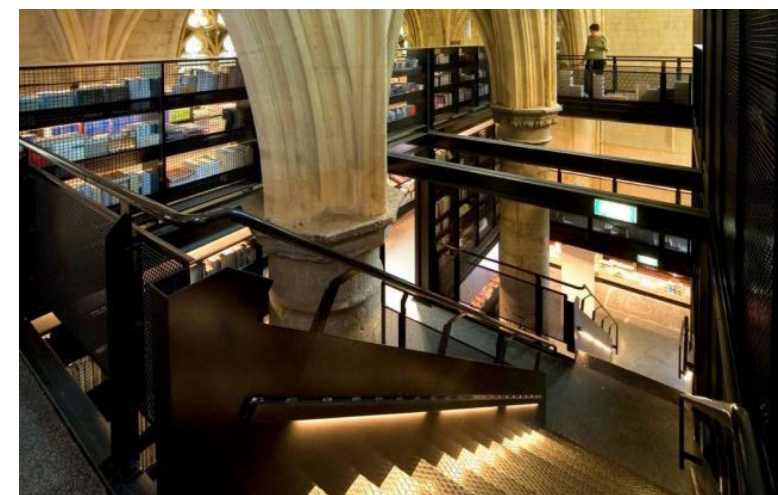


Image 6

Broerenkerk, Zwolle 1466 Gothic Bookstore, catering

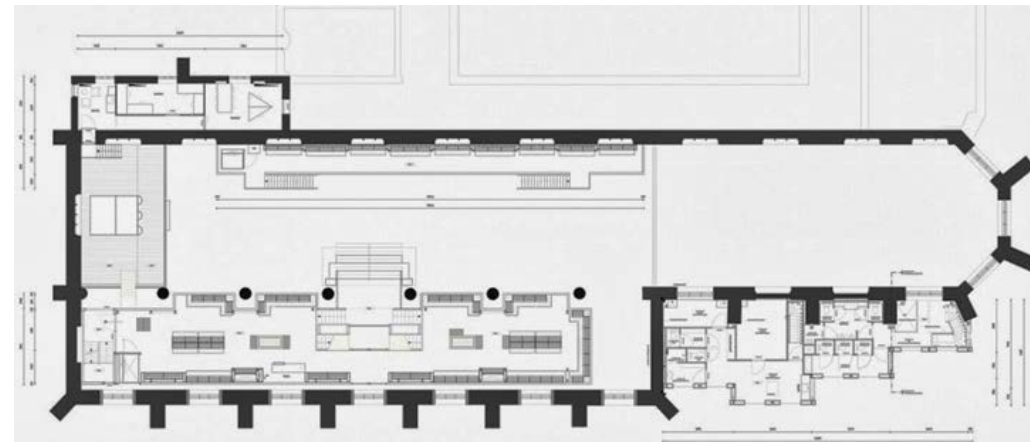
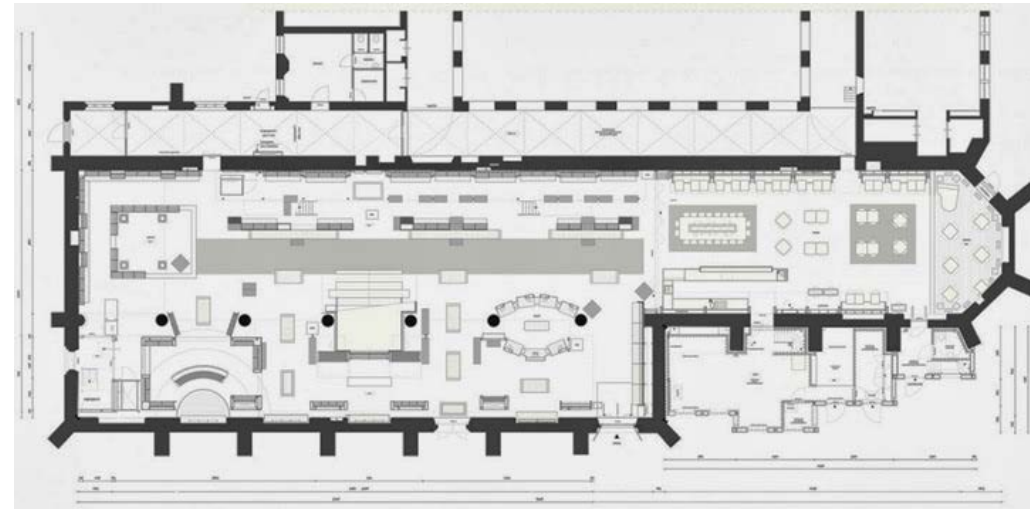
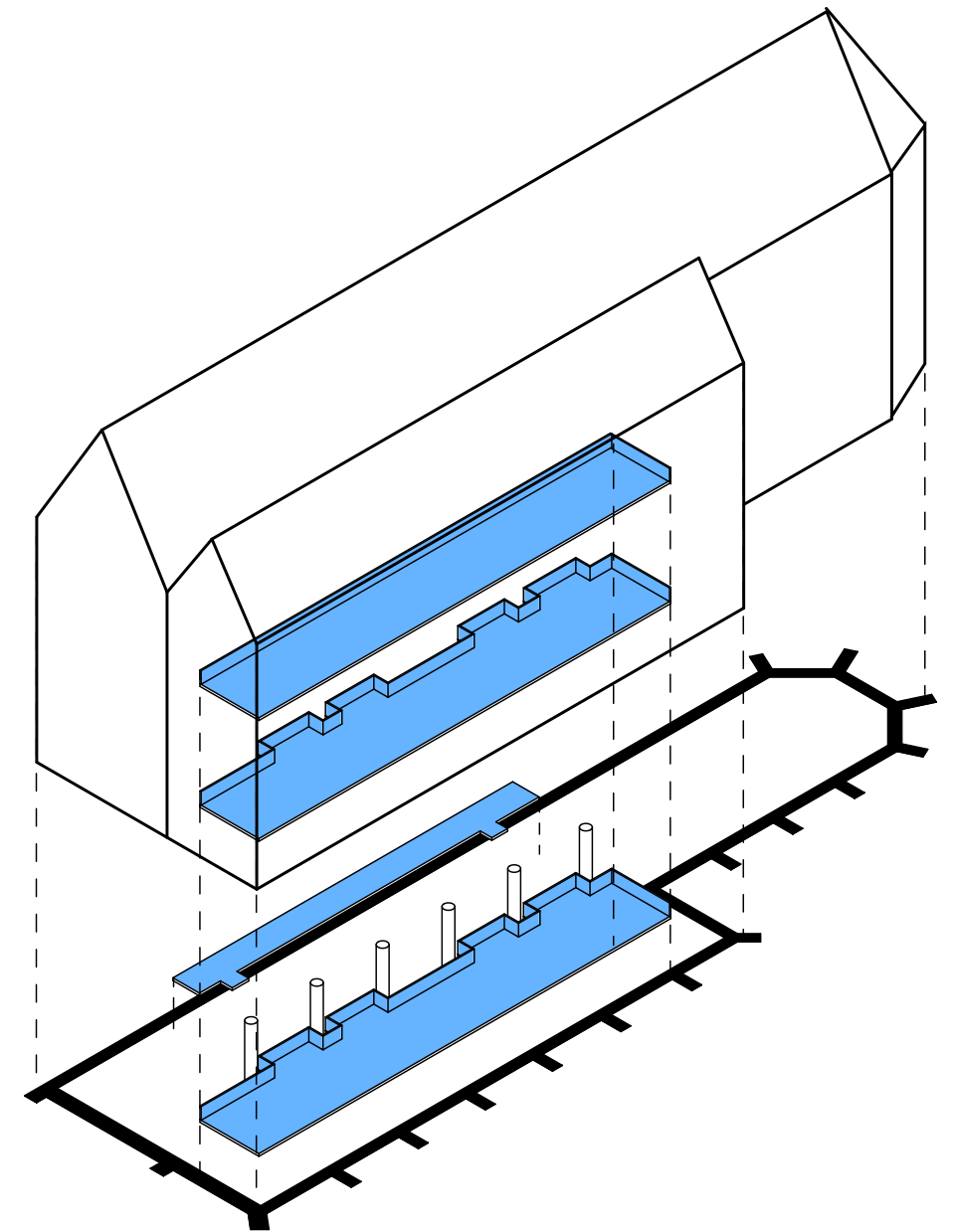
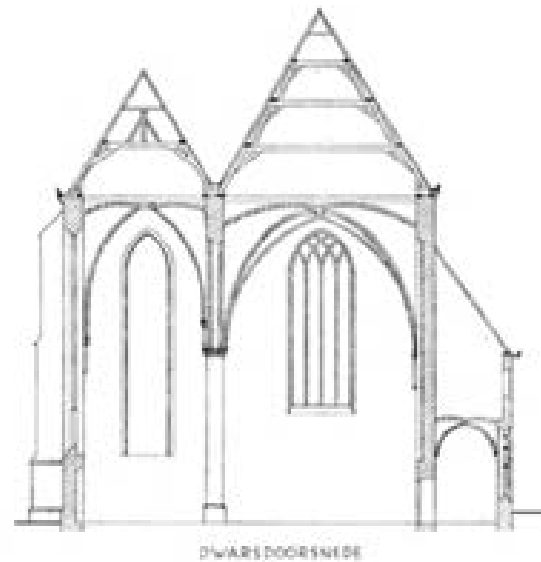
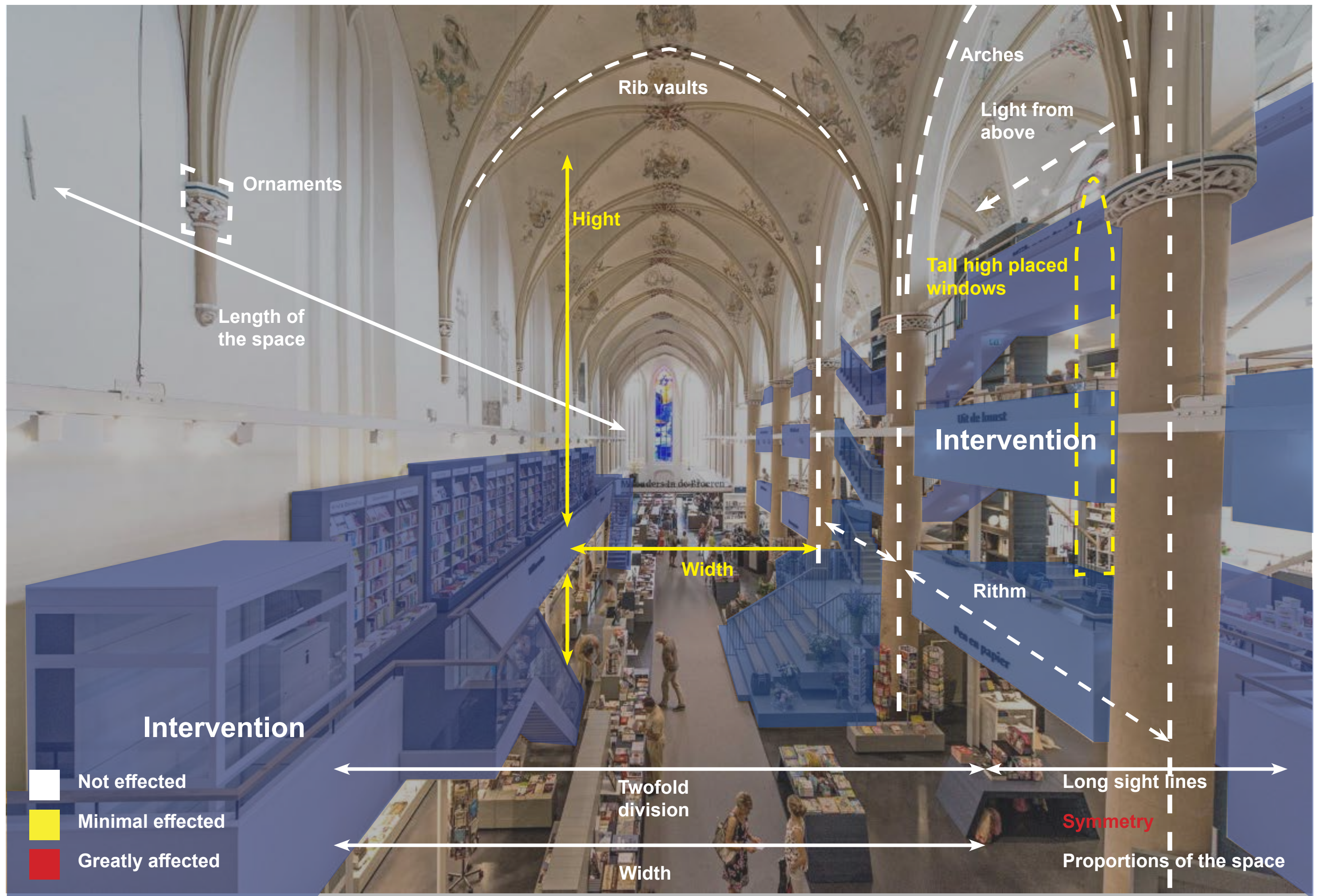


Image 7



Spatial solutions used:

2. Loose built-in
3. Use ancillary spaces



Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

Conclusion Spatial analyses

The spatial quality in the Broerenchurch, Zwolle has remained largely intact. Although the intervention is larg in scale, the experience of the space is still there. The added floors are all in the side aisle where the hight is the same as the nave. Except from the small added floor that is added on the left side of the nave. However because the nave is relatively high and this floor is relatively small it does not impact the space very negatively. The added floors in the aisle do have a big impact on the experience of this space but also creates the opportunity to experience the space at different levels. Because the church is was never symmetrical, the intervention does not feel inappropriate. Finally, most of the Neo gothic elements have remained untouched.

Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	minimal	The height of the space is affected by the adding of a new level on the side of the nave. Though the height is substantially more affected on the side aisle where the complete space has been filled up with three additional floors. But because the nave itself has remained mostly open, the quality of the space still remains intact. You can still experience the height and behold the arches and rib vaults within the nave.	2. Loose built-in 3. Use ancillary spaces
Width	minimal	The width of the church space has been affected, because the entire side aisle has been filled with the new addition. However the width of the nave has remained mostly intact.	2. Loose built-in 3. Use ancillary spaces
Length	no		
Twofold division	no		
Rhythm/ repetition	no		
Lighting from above	no		
Long sight lines	no		
Symmetry	yes	The symmetry of the nave is affected by adding a new floor on the left side. However the symmetry has remained visible. The church as a whole is and was never entirely symmetrical.	2. Loose built-in
Proportions of the interior space	no		
Characteristic building elements of Neo Gothic churches			
Large stained glass windows	minimal	The tall windows on the right side of the church are partly blocked by the added floors but this effect is very limited.	3. Use ancillary spaces
Rose windows	-		
Pointed arches	no		
Rib vaults	no		
(Flying) buttresses	-		
Ornate decoration	minimal	Some of the ornaments are less visible, because of the added construction but everything has remained intact and mostly visible.	2. Loose built-in 3. Use ancillary spaces

Design attitude of the Architect

Conclusion design attitude

This intervention seems to seek for continuation with its relation to the existing church. In terms of colour, rhythm and scale there are many similarities. The intervention is on the same scale as the church but seems to leave the nave as open as possible. The color used is mostly white which is the same as the interior of the church. Also the rhythm respects the original rhythm. However there are some differences, for example the detailing of the stairs and railing is more modern as well as the use of steel and glass.

Element: intervention as a whole

- **Shape** The shape of the whole intervention consists of multiple floors and railings, that almost resembles balcony's between the existing pillars. It are free-standing constructions that are mostly kept away from the nave.
- **Material/Texture** The materials used in this intervention are mostly steel for construction and wood, stucco and glass for the railings, this seems to connect with the existing
- **Color** The color overall is white, this is in continuity with the church.

Element: Bookcases

- **Shape** The shape of the bookcases has no reference to the existing church, also the scale is not in line with the church so there is a contrast.
- **Material/Texture** The material of the bookcases is wood, but most of its finishing is white stucco so that is consistent with the existing
- **Color** The color of the bookcases is white. There is continuity

Element: Floor and railing

- **Shape** The shape of the floor and railing is very straight, though they follow the rhythm of the church.
- **Material/Texture** The floor and railing have a steel construction, the floor has a finishing of carpet and the railings have variates finishing with white stucco, glass or steel posts.
- **Color** The color of the railing varies from white, black steel or transparent glass (continuity and contrast)

Element: Columns

- **Shape** The columns are round in cross section and made of steel, they appear thin and lightweight in comparison with the church.
- **Material/Texture** The columns are made of steel and have a smooth surface, this is a contrast with the columns of the church.
- **Color** The columns are white, which is in line with the walls of the building

- **Rhythm** The floors follow the shape of the floorplan of the church, they are brought back at the places where there is a pillar
- **Detailing** The detailing is very minimalist. There is some detailing but it is mostly kept clean and simple.

- **Rhythm** The bookcases are placed in rows on a certain grid. This grid follows the rhythm of the church, there is continuity.
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church

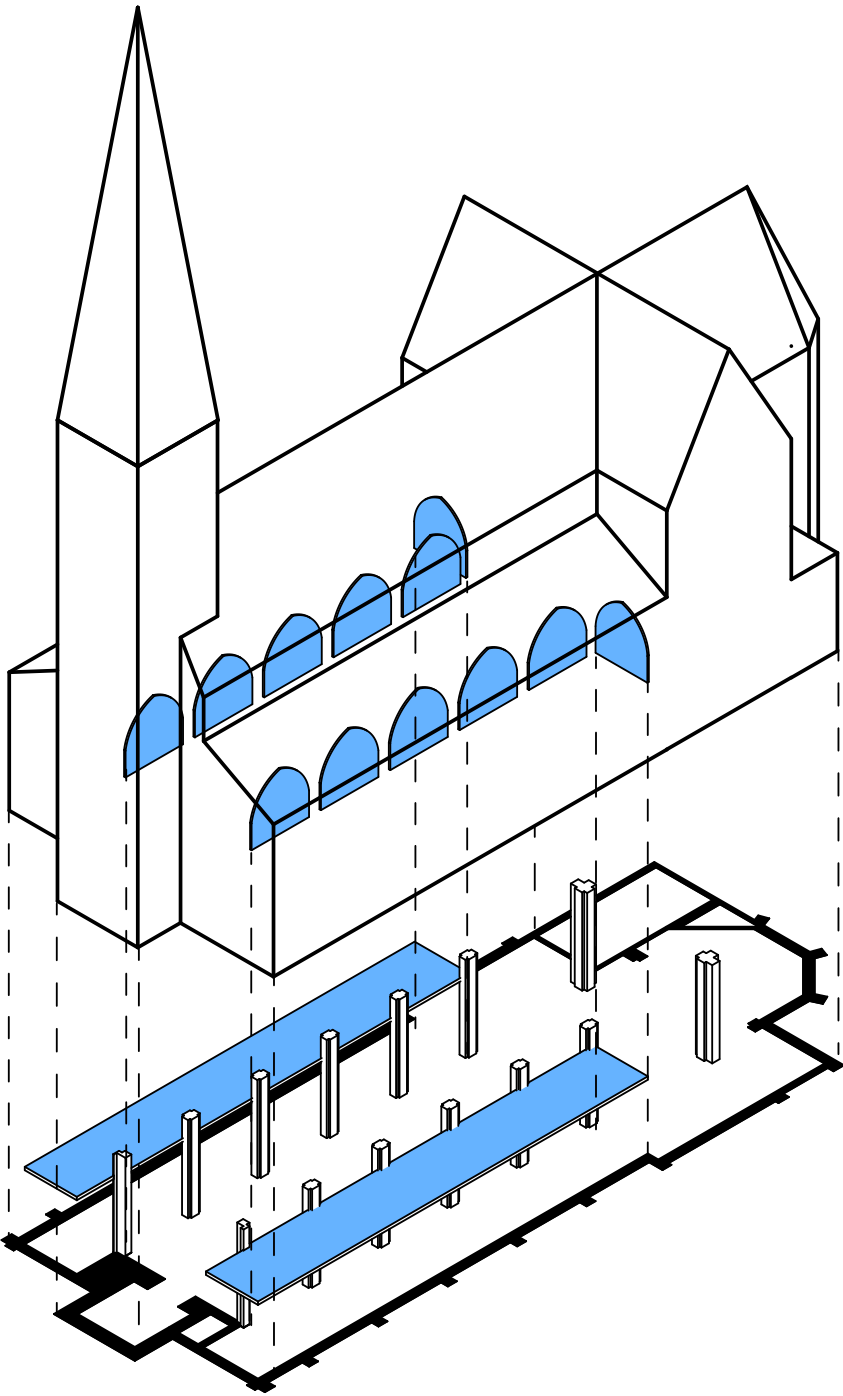
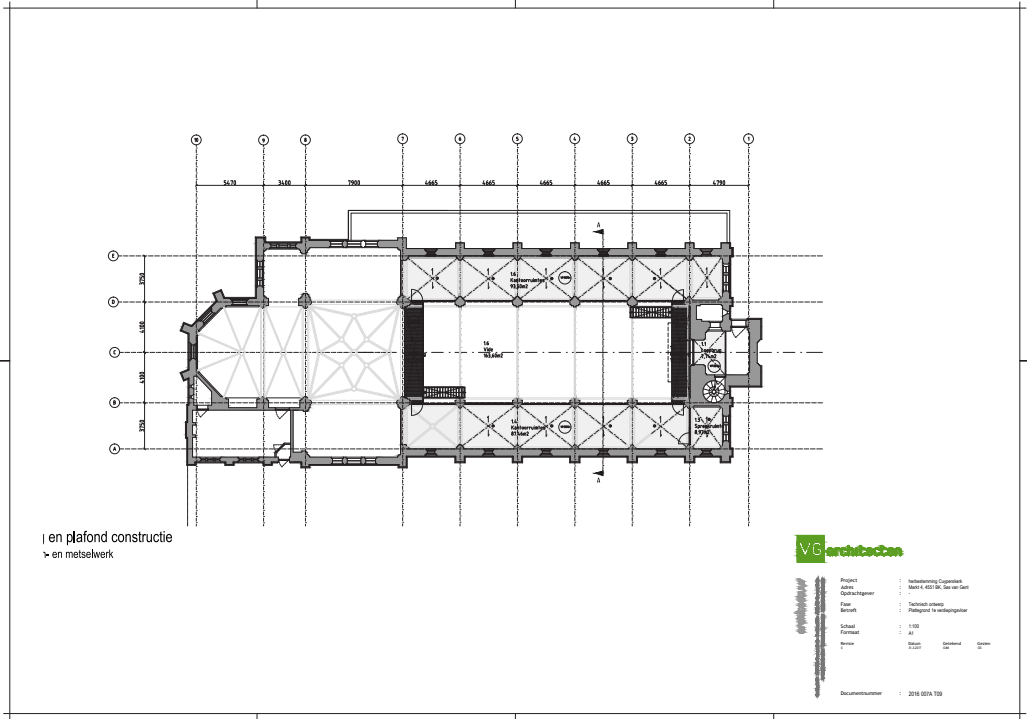
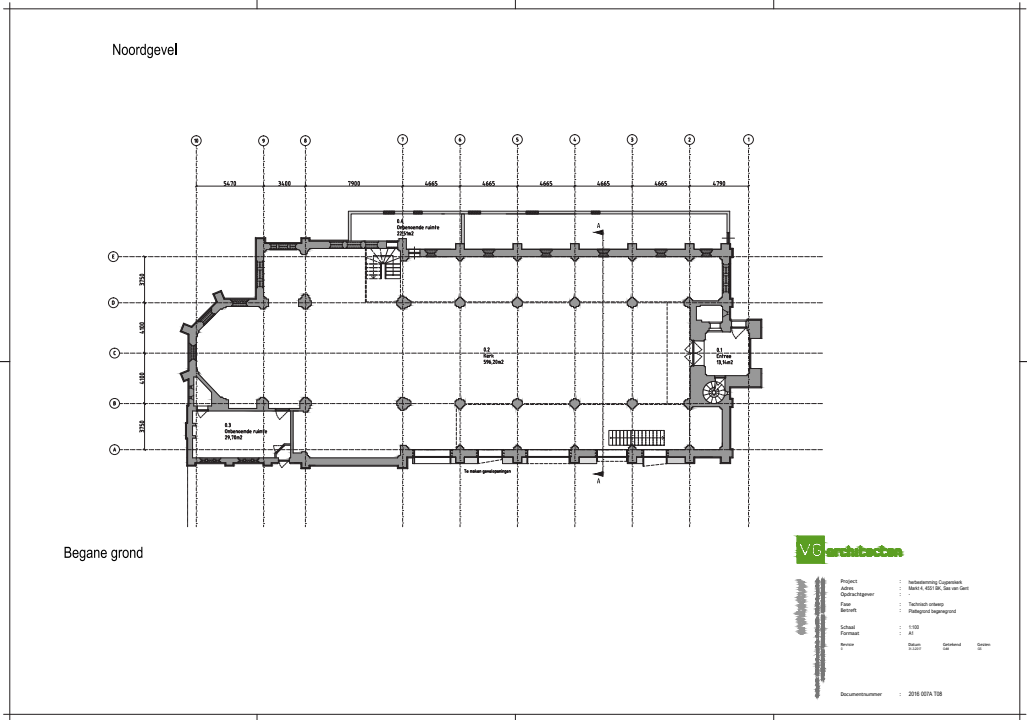
- **Rhythm** The floor and railing itself follow the rhythm of the structure
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church. The only details are the handle on the railing and the steel posts in some of the railings.

- **Rhythm** The columns are much like the bookcases placed within the same rhythm as the church.
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church



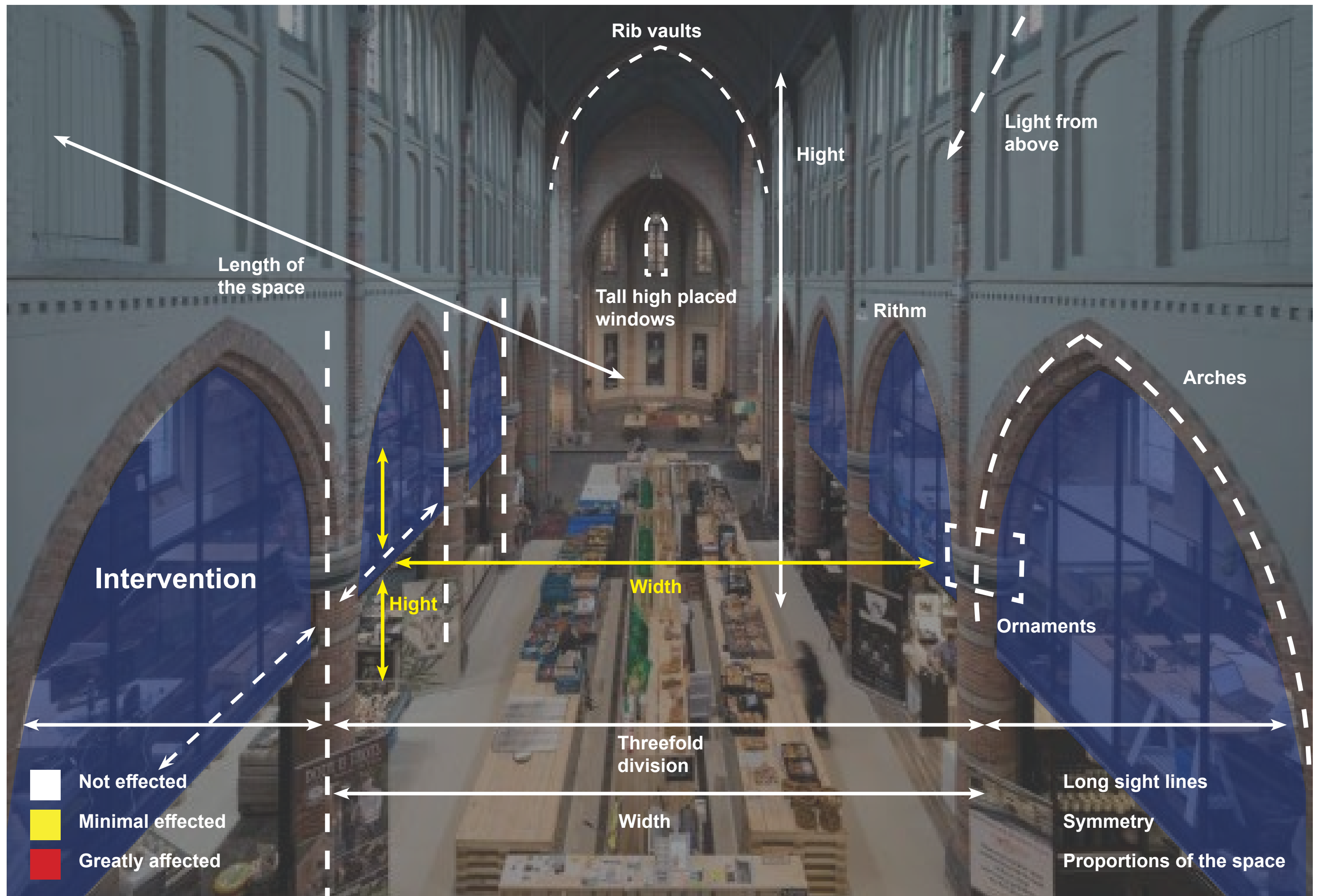
Image 9

Cuyperskerk
Sas van Gent
1892
neo Gothic
Covered marketplace



Spatial solutions used:

3. Use ancillary spaces



Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	minimal	The height of the space is affected within the side aisles. Because a new floor is added, the space has become half the height. But the nave has remained untouched and thus the effect overall is minimal	3. Use ancillary spaces
Width	minimal	At the level where the new floors are placed, the width of the space is affected. But because they used very transparent windows you can still experience the width of the space. Also the with at the ground floor level has remained the same.	3. Use ancillary spaces
Length	no		
Threefold division	no		
Rhythm/ repetition	no		
Lighting from above	no		
Long sight lines	no		
Symmetry	no		
Proportions of the interior space	no		
Characteristic building elements of Neo Gothic churches			
Large stained glass windows	no		
Rose windows	-		
Pointed arches	minimal	The pointed arches are still visible but glass walls have been placed inside the arches opening. The arches itself have remained untouched.	3. Use ancillary spaces
Rib vaults	no		
(Flying) buttresses	-		
Ornate decoration	no		

Conclusion Spatial analyses

The spatial quality in the Cuyperskerk, Sas van Gent has remained almost untouched. The small intervention that is made only affects the side aisles. Here floors have been added as well as glass walls. The overall effect is very subtle. You can see what has been added, because the minimalistic modern style the new clearly separates the old. However, the main space, the nave, has not been effected at all. A very subtle way to make extra floorspace but limiting the spatial impact.

Design attitude of the Architect

Conclusion design attitude

This intervention is very subtle in style and seems to highlight the existing structure. The edition is also quite small in size. An extra wooden first floor is added in both side aisles to create office space. These offices are separated from the rest of the church by newly added steel windows that fit within the arches. The additions look minimalistic and modern and create a contrast with the existing church. But because it is so minimalistic it doesn't draw your attention that much and highlights the existing.

Element: intervention as a whole

- **Shape** The shape of the whole intervention consists of an extra first floor in the side aisles of the church and new windows to separate this top space from the nave.
- **Material/Texture** The floors are made from wood, the construction of steel and the windows from aluminium and glass.
- **Color** The floors are from wood and are not treated. The steel is black

- **Rhythm** The floors follow the shape of the side aisles, as well as the windows and construction.
- **Detailing** The detailing is very minimalistic and modern. In contrast with the ornamental detailing of the church.



Element: Windows

- **Shape** The windows follow the shape of the arches that separate the side aisles from the nave, on the bottom, they are attached to the floor
- **Material/Texture** The windows are from aluminium with glass, they have a smooth texture
- **Color** The color of windows is black, a contrast with the rest of the church

- **Rhythm** The windows follow the rhythm of the arches of the church. There is continuity.
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church



Element: Floor

- **Shape** The added floors are located in the side aisles and you can see the beams and floor plates.
- **Material/Texture** The floors are made from untreated wood with a carpet finishing.
- **Color** The wood is untreated, the wood texture is visible. The carpet is black, both a contrast with the existing.

- **Rhythm** The two floors follow the shape of the side aisles, the rhythm of the church is still good visible.
- **Detailing** The detailing of the floors is basic. The floor beams and wooden plates are visible from the bottom.



Element: Columns and structure

- **Shape** The columns and beams that carry the floor are square shaped. A contrast with the existing church.
- **Material/Texture** The columns and beams are made from steel. A material not used in the church before.
- **Color** The columns and beams are black, a contrast with the church.

- **Rhythm** The columns are placed behind the existing columns of the church and thus follow the rhythm of the church. The beam is also located there.
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church

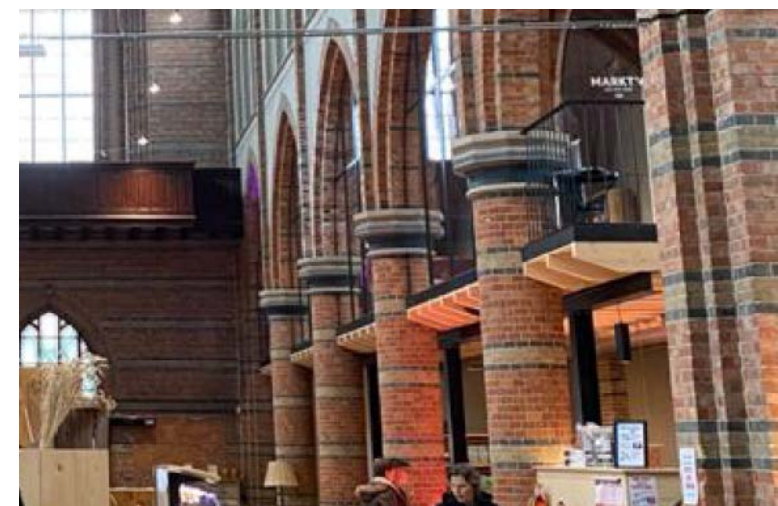
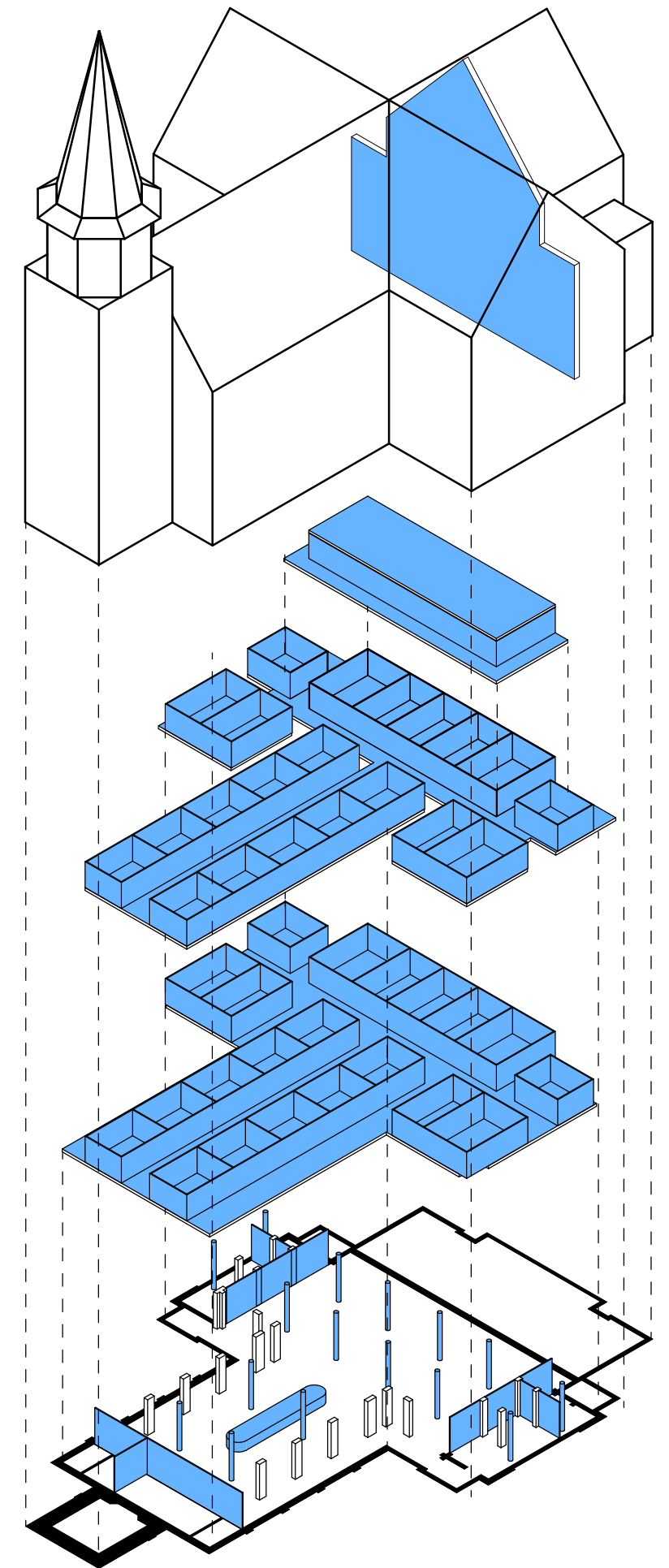
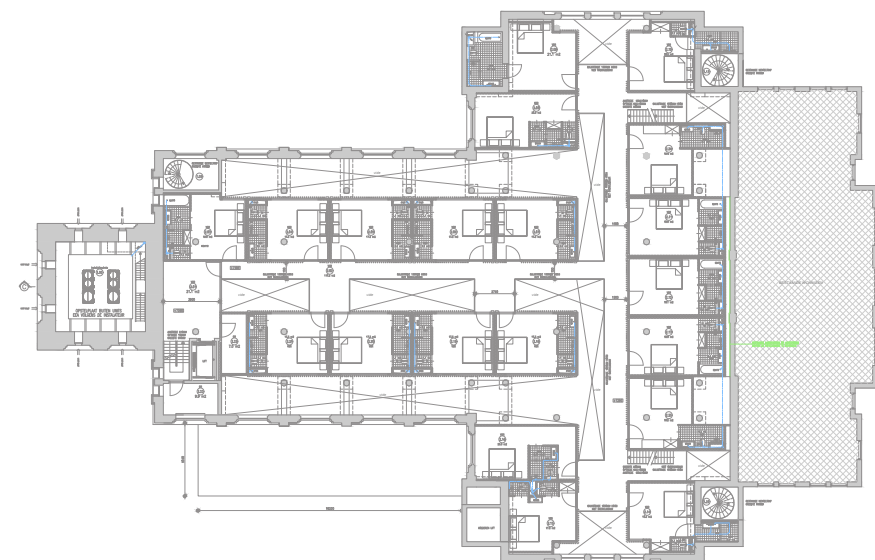
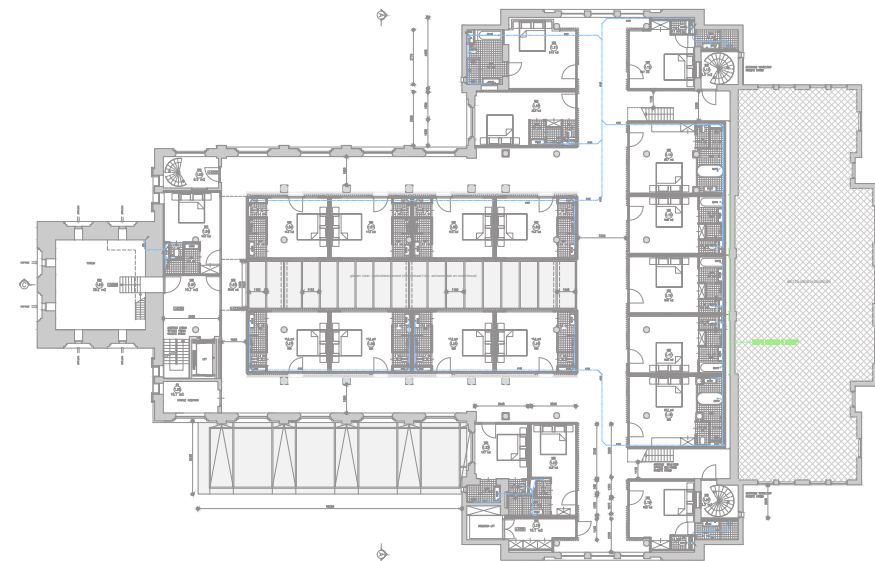
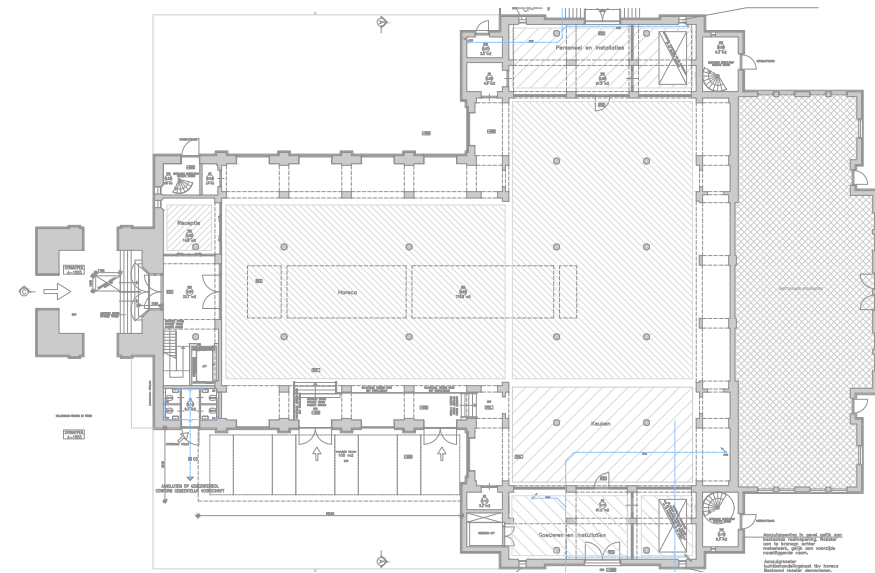


Image 11

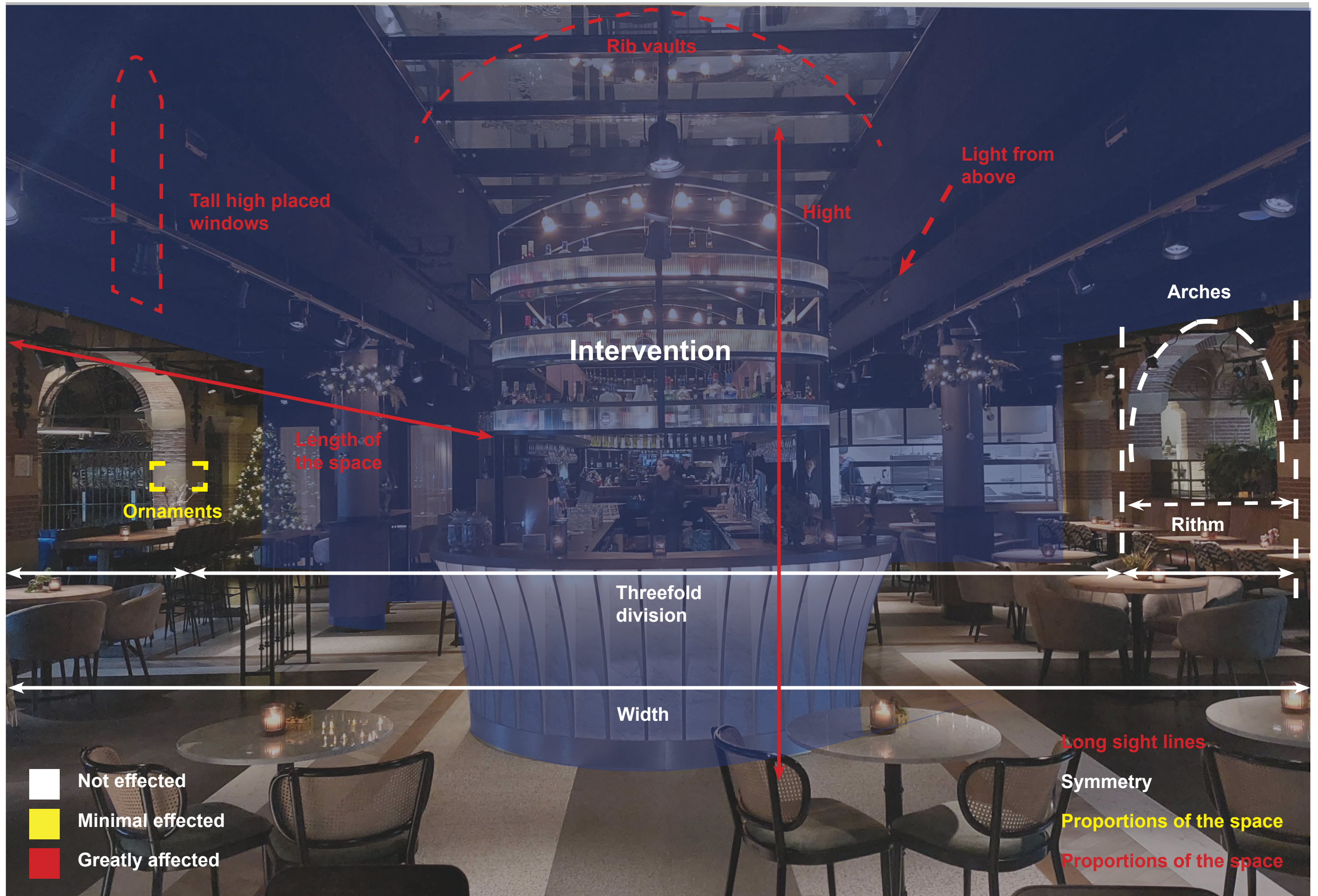
Grote kerk

Hoorn
1864
health center



Spatial solutions used:

- 4. Vertical splitting
- 5. Horizontal splitting



Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

Conclusion Spatial analyses

The spatial quality in the Grote Kerk Hoorn is affected. There are two different types of spatial solutions applied here, namely: Vertical splitting and horizontal splitting which affects the spatial quality so much. The vertical split ensures that the length of the space is reduced and that the back of the church is no longer visible. The addition of an extra floor causes even more adverse effects. the vaults can no longer be seen and no light comes in from above. Separately, these spatial solutions can be considered but together they create a very poor spatial quality. also unlike in the Petrus, the added floor here is completely closed with only a small skylight.

Hoorn

Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	yes	The height of the space is affected by adding an extra floor spanning the entire church. When standing on the ground floor, the tall windows, rib vaults and lighting from above are blocked because of this. When standing on the new floor, you can see these elements though but this is only visible for the hotel guests and not public.	5. Horizontal splitting
Width	no		
Length	yes	The length of the space is affected because the church is also split in half. The backside of the church has apartments, so there is no sight line from the front to the back anymore.	4. Vertical splitting
Threefold division	no		
Rhythm/ repetition	no		
Lighting from above	yes	The lighting from above is affected because of the new added floor. There is now only light from the windows at the sides.	5. Horizontal splitting
Long sight lines	yes	Because of the vertical splitting the sightline from the front to the back is blocked	4. Vertical splitting
Symmetry	no		
Proportions of the interior space	minimal/ yes	The proportions of the interior space are effected because the nave is shorter because of the vertical splitting and much lower due to the added floor. What remains is a church divided into 3 separate spaces.	4. Vertical splitting 5. Horizontal splitting
Characteristic building elements of Neo Gothic churches			
Tall stained glass windows	yes	Most of the windows are blocked from sight because of the added floor	5. Horizontal splitting
Rose windows	-		
Pointed arches	no		
Rib vaults	Yes	The rib vaults are less visible because of the added floor. They are only visible when walking on the first floor.	5. Horizontal splitting
(Flying) buttresses	-		
Ornate decoration	minimal	Some of the ornaments are less visible, because of the added floors and walls, but everything has remained intact and mostly visible.	4. Vertical splitting 5. Horizontal splitting

Design attitude of the Architect

Conclusion design attitude

Element: First floor

- **Shape** In this project a floor has been added that covers the entire floor plan and creates a first floor in the building. The floors ignores the shape of the church. However create a bit of openness, a glass ceiling has been made in the centre
- **Material/Texture** The newly added floor is a concrete floor with a glass ceiling in the middle.
- **Color** The ceiling of the new floor is painted black to create a style of luxury and to make it less noticeable

Element: Bar

- **Shape** In the centre axis of the church a long bar has been added with round edges and a luxurious style
- **Material/Texture** The bar is made from wood but look modern and hip. A steel rack is added to store the liquor.
- **Color** The bar itself is painted white and has a black top. Also the racks for liquor are black.

Element: Hotel rooms

- **Shape** The hotel rooms are located on the first and second floor. It are white boxes positioned loosely in the space of the church
- **Material/Texture** The walls of the hotel rooms are made from a timber frame and are white plastered and the doors and windows are from plastic
- **Color** The walls of the hotel rooms are all white, the windows and doors are black

Element: Construction

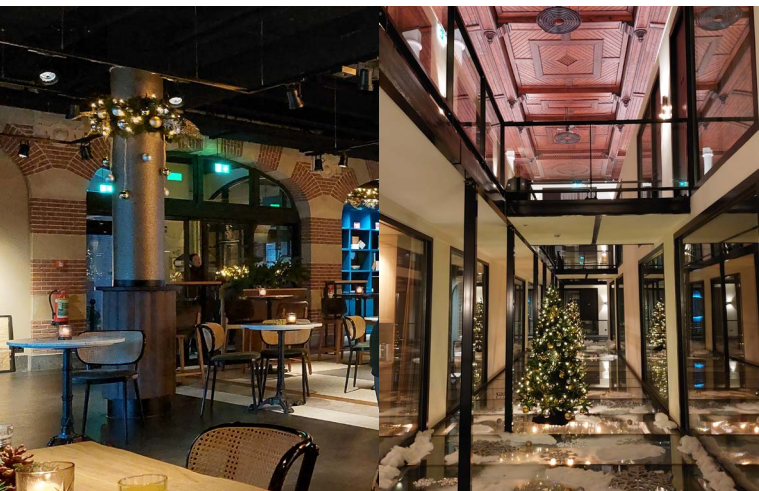
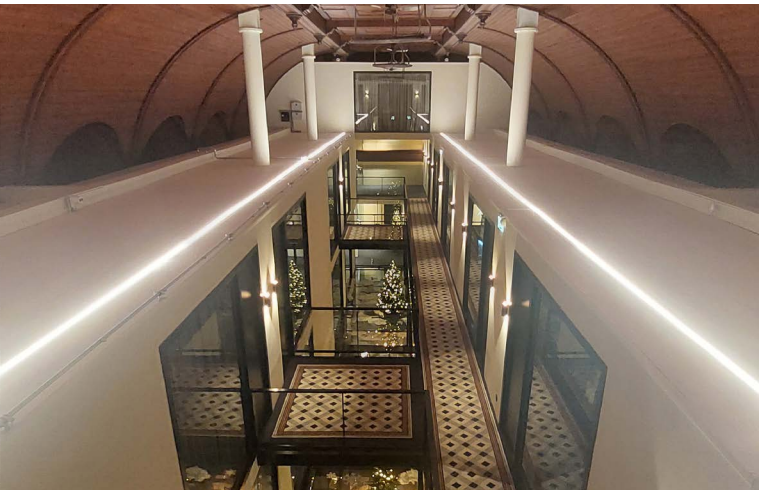
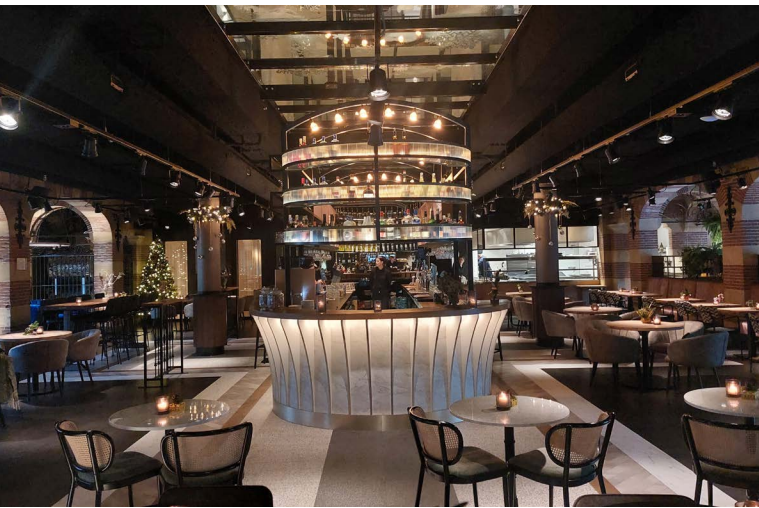
- **Shape** The construction on the ground floor consist of big round columns. On the first and second floor they are slim square columns
- **Material/Texture** The culums on the ground floor are concrete with a smooth finish, on the top floors they are from steel.
- **Color** The culums on the ground floor are grey with a wooden cladding on the bottom, the columns at the top floors are all black

- **Rhythm** The floor ignores the rhythm and division of the existing church
- **Detailing** The detailing of the floor is very sincere. The concrete is painted black and all installations are visible and are not tucked away.

- **Rhythm** The bar itself is located at the centre of the church, thus in the middle of the nave. This makes it the centre of attention
- **Detailing** The detailing of the bar is luxurious, the bar has slats perpendicular mounted on the sides. Also a lot of lights have been used to create luxury atmosphere

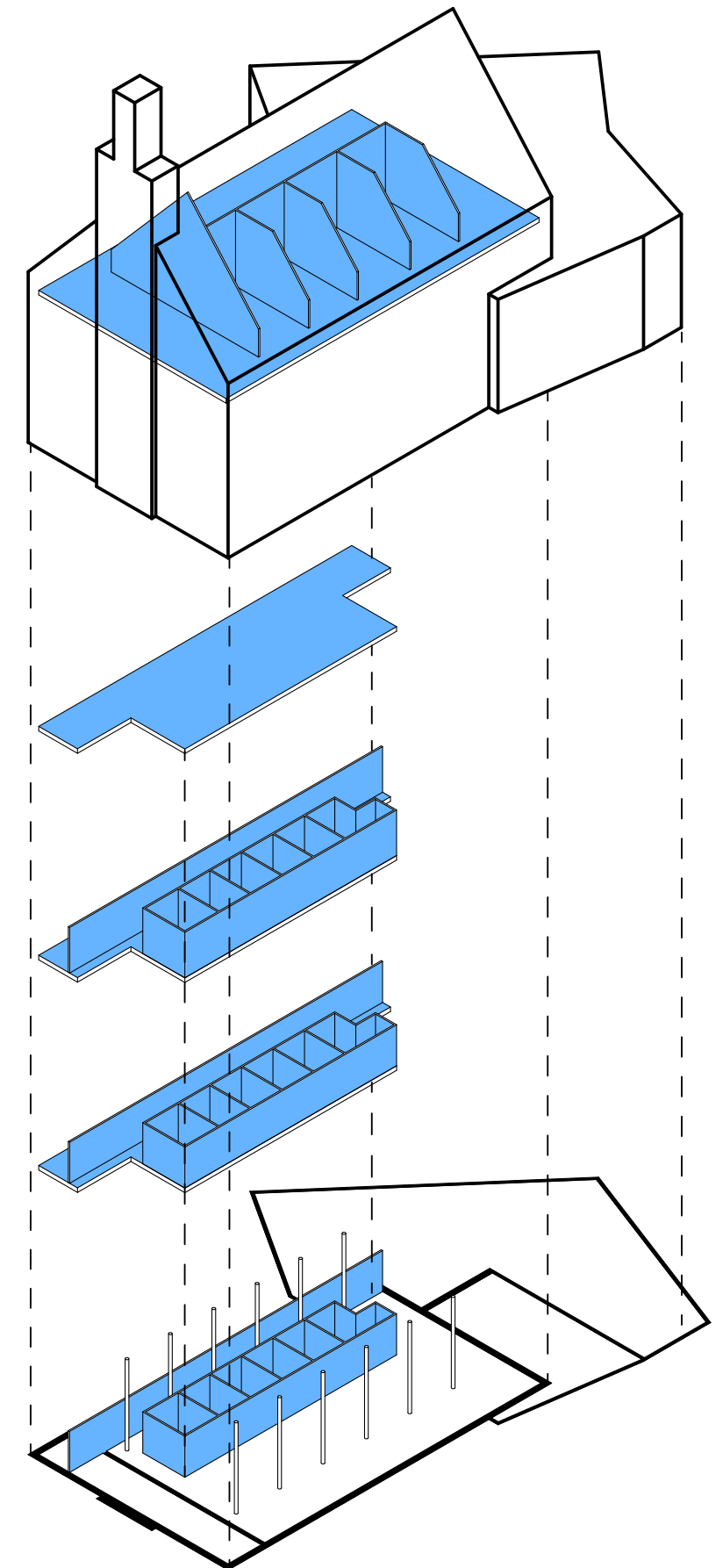
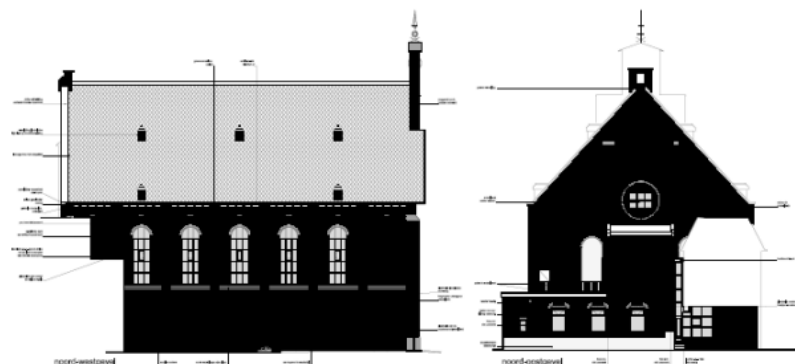
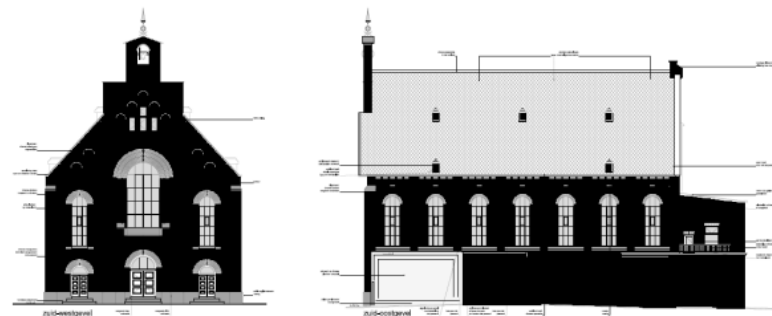
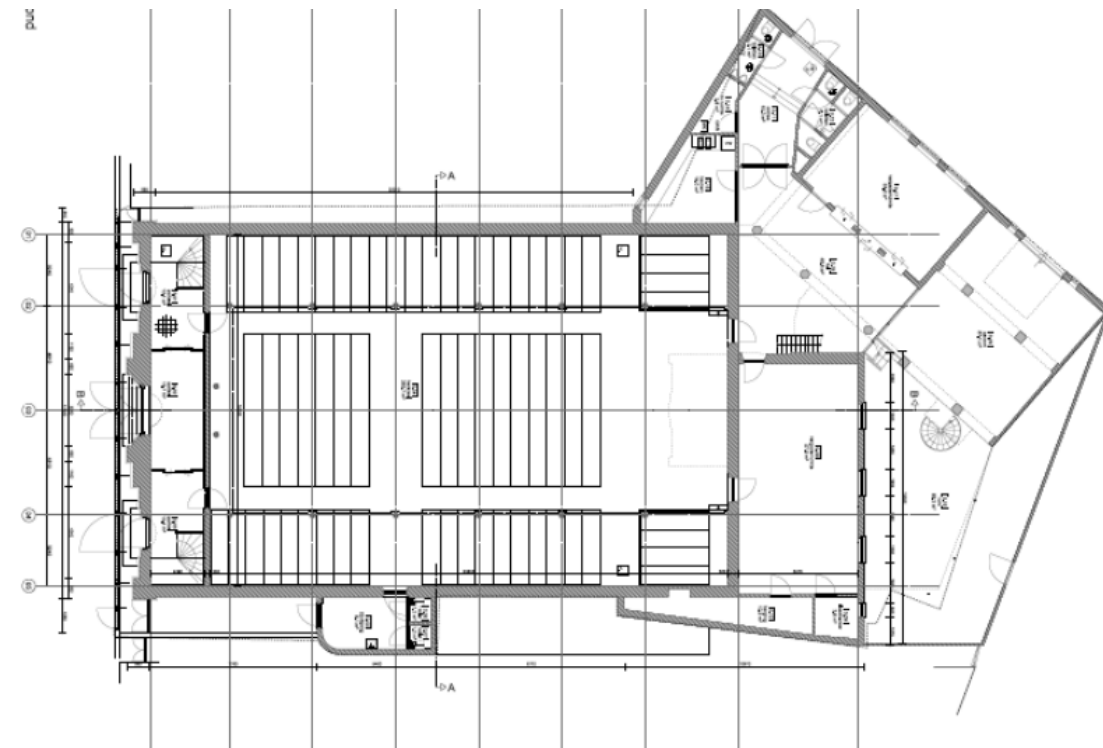
- **Rhythm** The hotel rooms are located on the first and second floor, they ignore the rhythm of the church
- **Detailing** The hotel rooms have a clean detailing in contrast with the ornamental detailing of the church

- **Rhythm** The columns follow the new added elements and ignore the existing rhythm
- **Detailing** The detailing is very sleek and smooth in contrast with the ornamental detailing of the church



Westerkerk

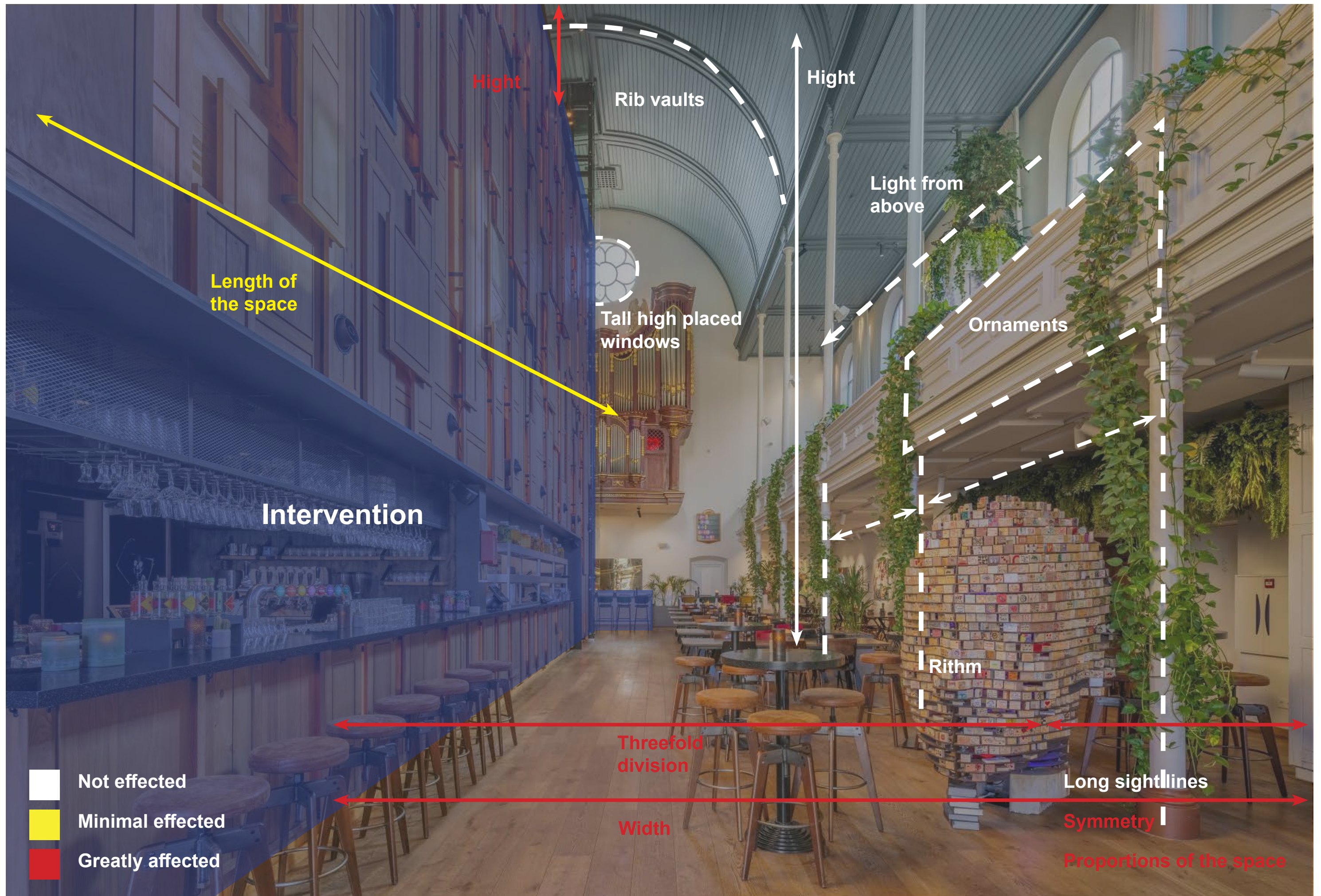
Utrecht
1891
Eclectic/ neoclassical
Hotel



Spatial solutions used:

6. Box in the church

Image 13



Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

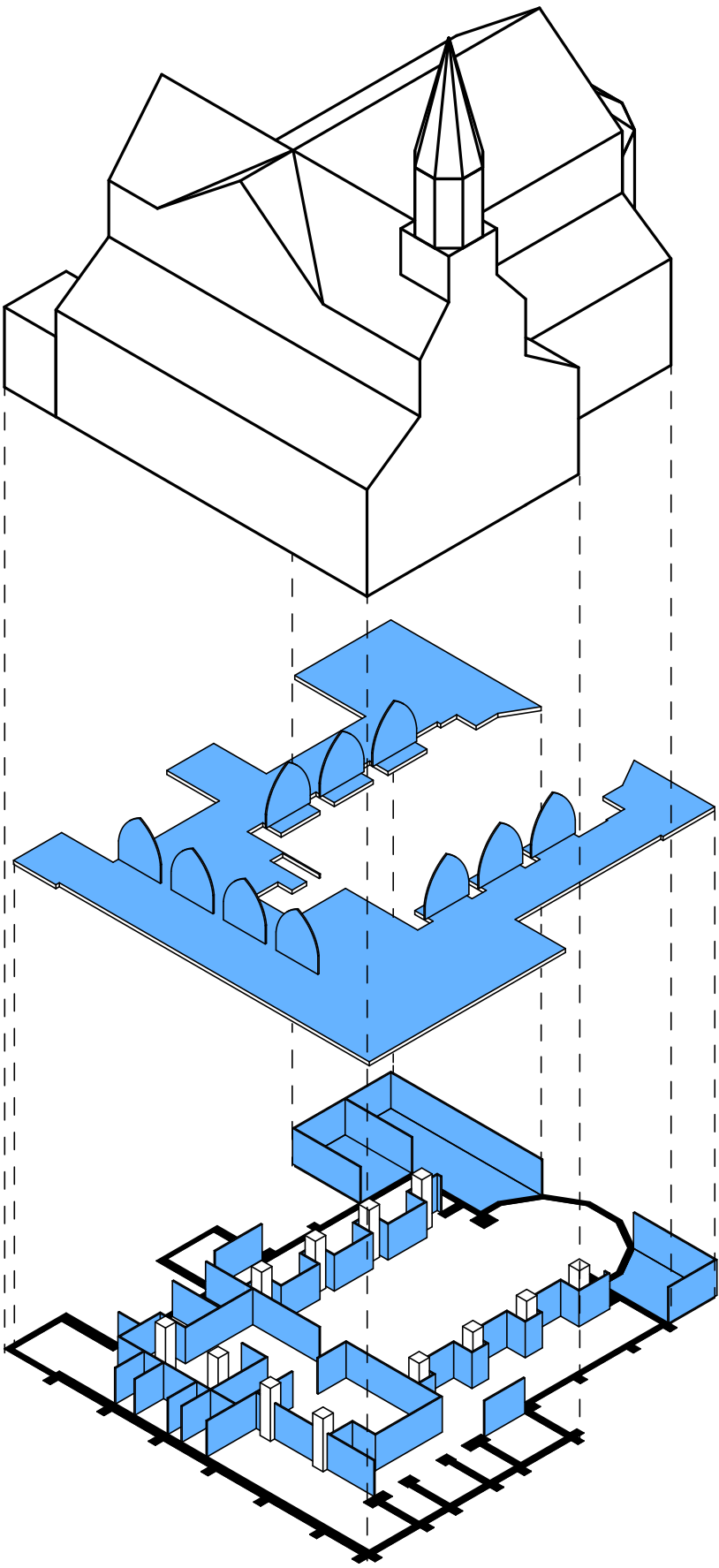
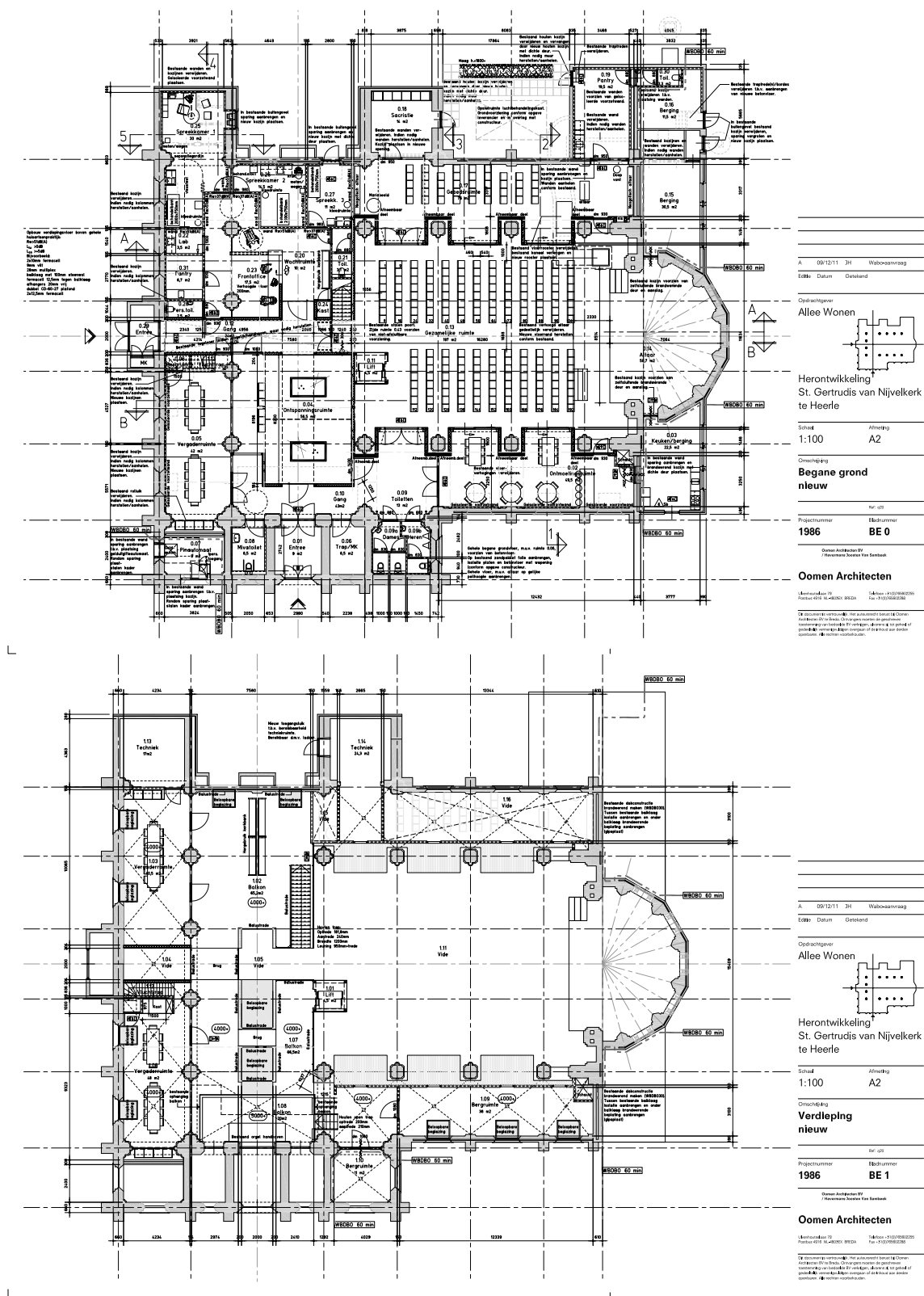
Conclusion Spatial analyses

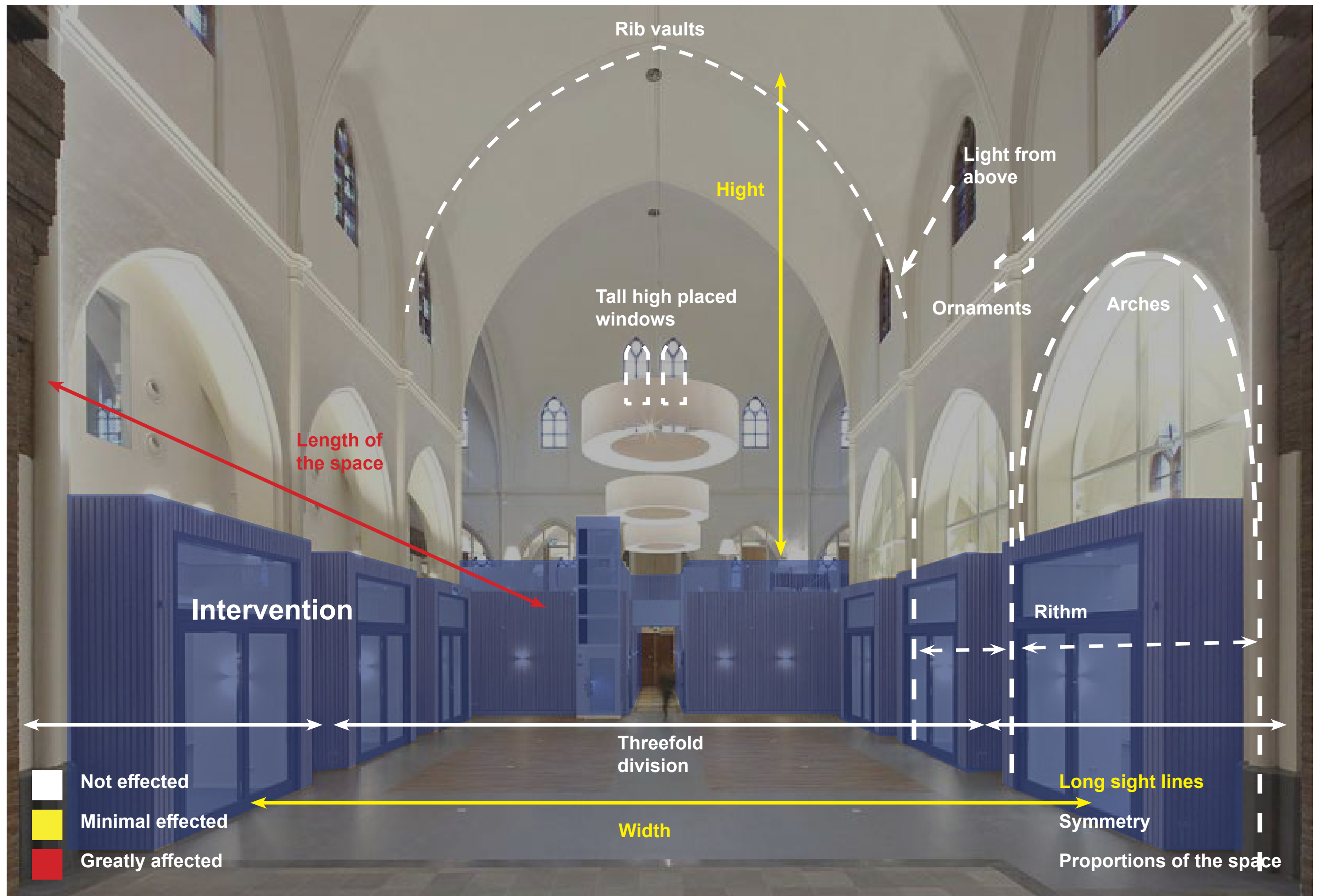
The spatial quality in the Westerkerk Utrecht is reasonably well preserved but also affected. the height, width, symmetry and proportions are all disadvantaged. By adding a large volume to the left half of the space, the right half has been kept completely intact, yet the space is experienced very differently. The nave now feels narrow and relatively high. in contrast, the characteristics of the Gothic style are almost unaffected and you can imagine what the space looks like without the new volume.

Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	yes	The height of the space is affected by because of the new added box placed on the left side of the church. Here there is only a few meters left between the top of the box and the ceiling.	6. Box in the church
Width	yes	The width of the church is way smaller due to the new box. This spans almost the entire length.	6. Box in the church
Length	minimal	The length of the church is mostly kept intact but at the axis of the new box there is nly a few meters on the front and back.	6. Box in the church
Threefold division	no		
Rhythm/ repetition	no		
Lighting from above	no		
Long sight lines	no		
Symmetry	yes	The symmetry of the church is greatly affected. The church was fully symmetrical but has converted to a a-symmetrical one.	6. Box in the church
Proportions of the interior space	yes	The proportions of the interior space are changed. When standing on the ground floor. The nave feels way narrower.	6. Box in the church
Characteristic building elements of Neo Gothic churches			
Tall stained glass windows	minimal	A lot of windows on the left side of the church are blocked from sight because of the ne box.	6. Box in the church
Rose windows	-		
Pointed arches	no		
Rib vaults	no		
(Flying) buttresses	-		
Ornate decoration	minimal	Some of the ornaments are less visible, because of the added volume, but everything has remained intact and mostly visible.	6. Box in the church

Sint-Gertrudis-van-Nijvelkerk
Heerle
1864
health center

Spatial solutions used:
7. Lines of sight preserved (partly fill)





Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

Conclusion Spatial analyses

The spatial quality in Sint-Gertrudis-van-Nijvelkerk in Heerle is impaired in places but is reasonably well preserved. Especially the length of the nave is affected but just as well you can still see part of the back of the church. Because of the added rooms at the back of the church, the height is less there. They also created meeting rooms in the side aisles. This still leaves the rest of the church well exposed.

Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	minimal	The height of the space is affected by adding an extra floor spanning the entire church. When standing on the ground floor, the tall windows, rib vaults and lighting from above are blocked because of this. When standing on the new floor, you can see these elements though but this is only visible for the hotel guests and not public.	7. Lines of sight preserved (partly fill)
Width	minimal	The width of the nave has become a tiny bit smaller due to the extra rooms created in the side aisles, however the nave as is kept mostly intact.	7. Lines of sight preserved (partly fill)
Length	yes	The length of the space is affected because the church is also split in half. The backside of the church has apartments, so there is no sight line from the front to the back anymore.	7. Lines of sight preserved (partly fill)
Threefold division	no		
Rhythm/ repetition	no		
Lighting from above	no		
Long sight lines	minimal	Because of the vertical splitting the sightline from the front to the back is partly blocked but the sightlines to the ceiling is preserved.	7. Lines of sight preserved (partly fill)
Symmetry	no		
Proportions of the interior space	no		
Characteristic building elements of Neo Gothic churches			
Tall stained glass windows	no		
Rose windows	-		
Pointed arches	minimal	The pointed arches are filled with newly placed windows. So you can still experience the arches	7. Lines of sight preserved (partly fill)
Rib vaults	no		
(Flying) buttresses	-		
Ornate decoration	no		

Heilighartkerk

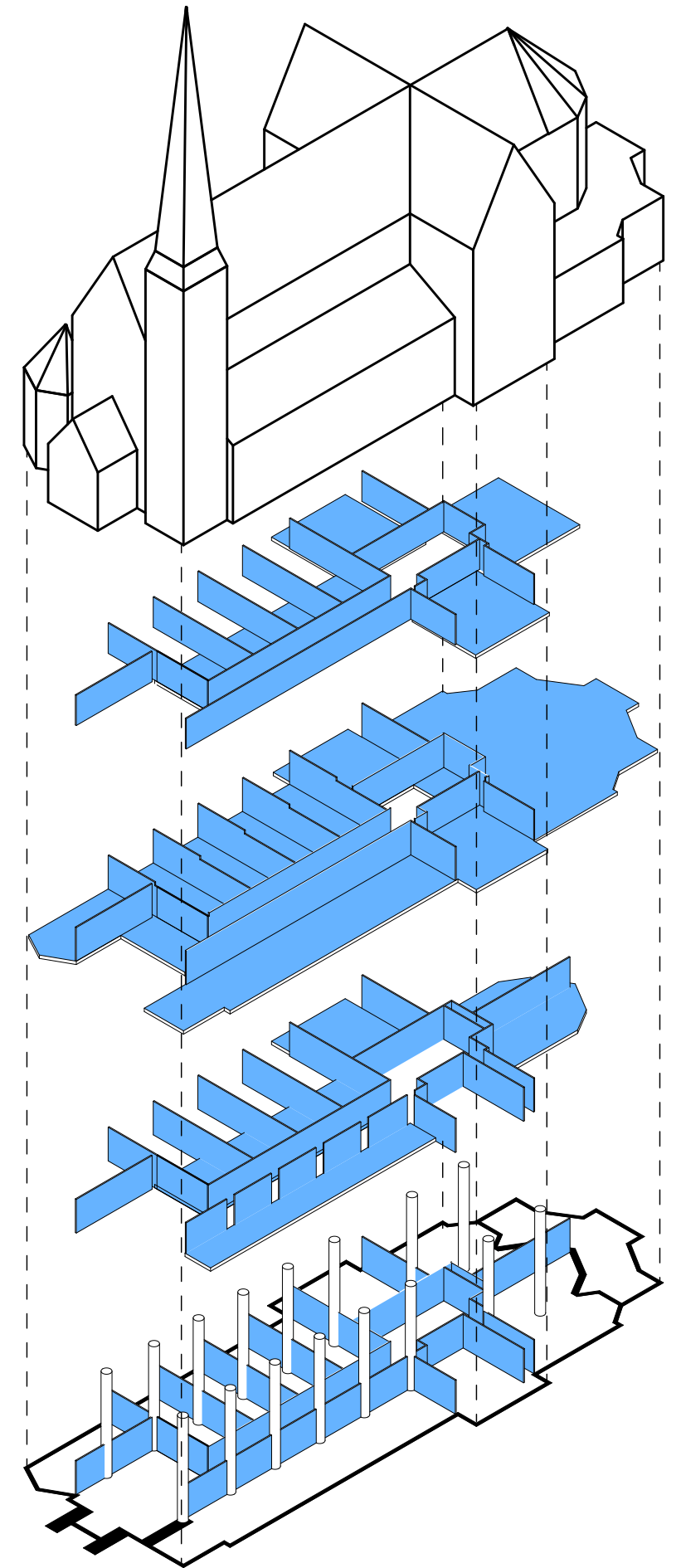
Breda
1864
Housing

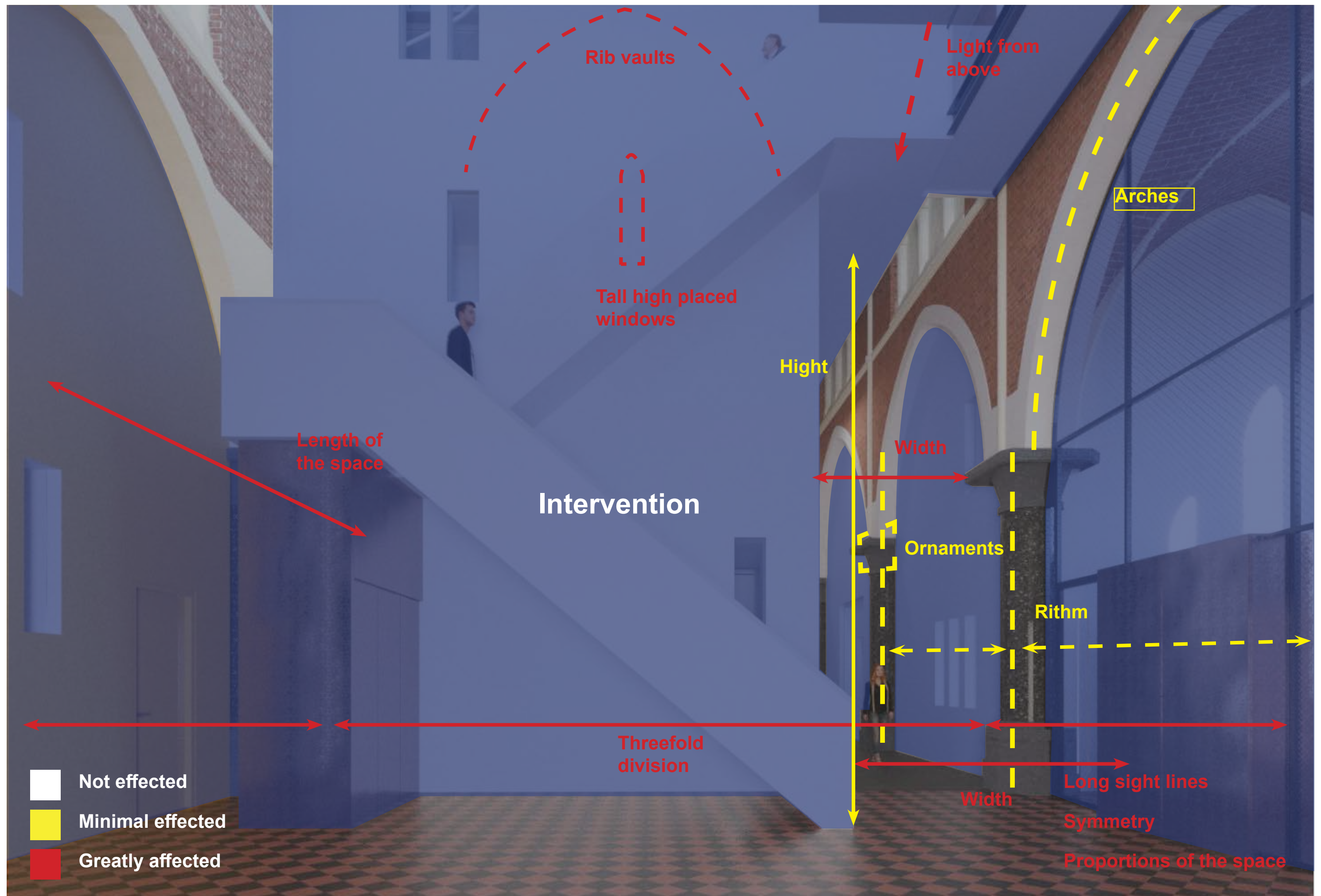
Spatial solutions used:

8. Fill



Image 16





Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

Conclusion Spatial analyses

The spatial quality in the Heilighartkerk in Breda has been seriously affected. Because the entire volume of the church has been filled with rooms, there is almost nothing left of the original interior of the church. Only at the entrance a small open space has been kept where the stairs to the rooms and a corridor to the back are located. This solution is a very poor choice if you want to preserve the experience of the space. All the attributes are affected.

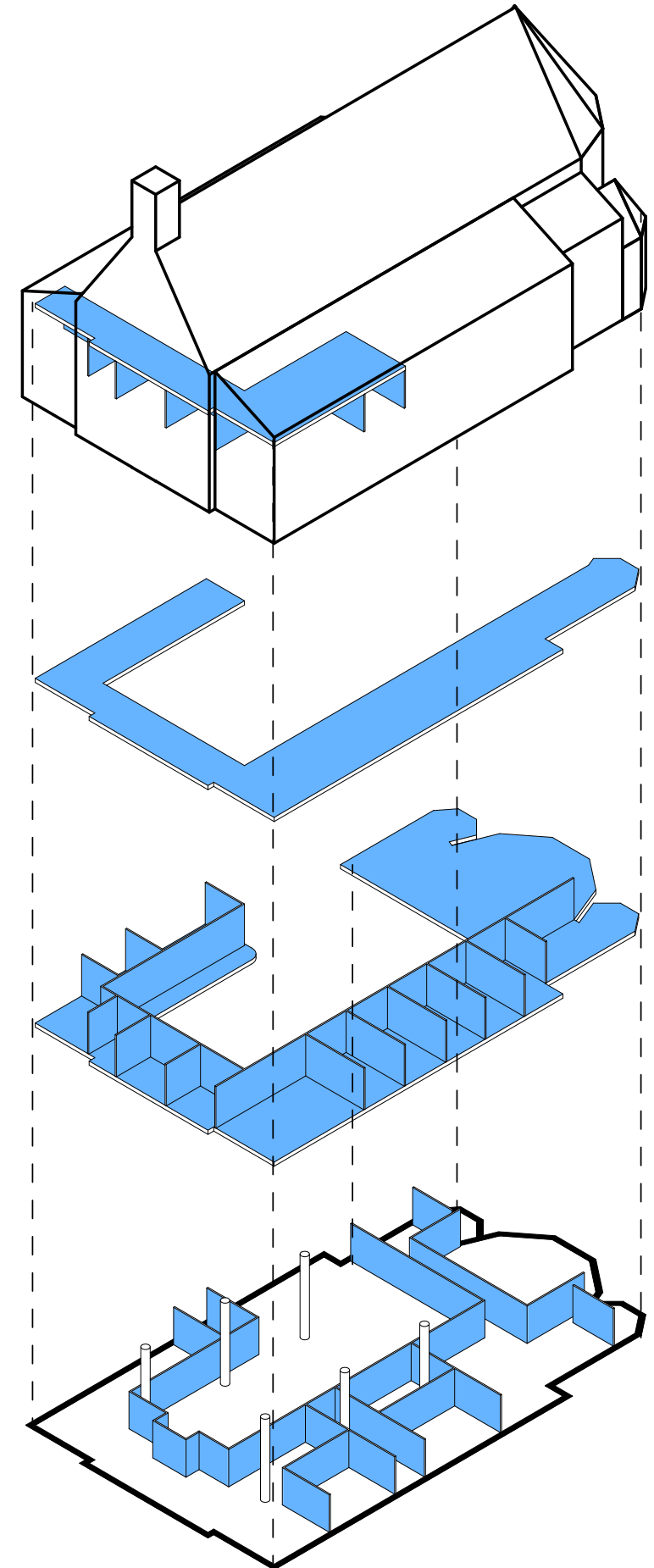
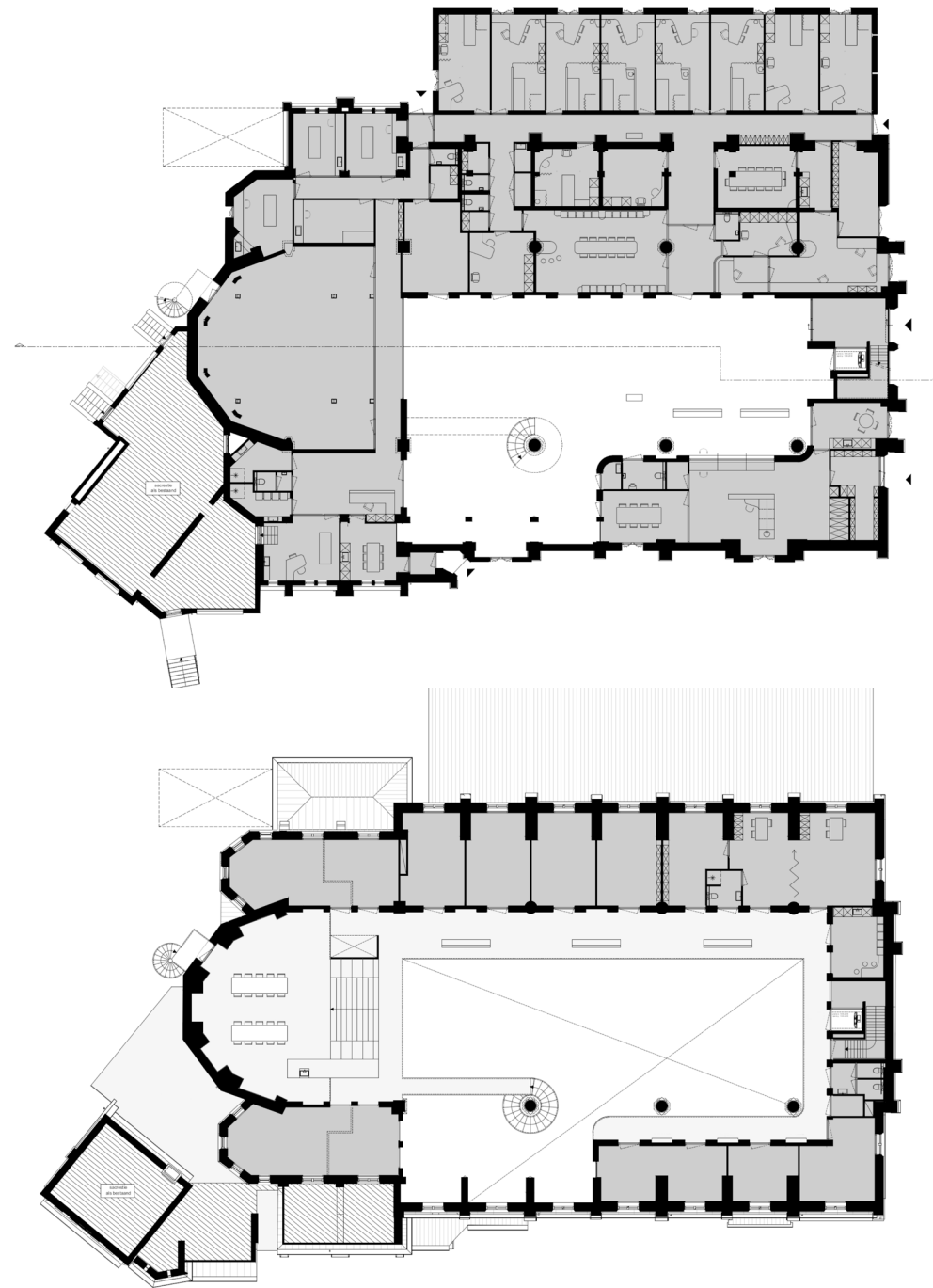
Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	yes	The height of the space is affected by adding the staircase and galleries in the nave. Behind the staircase apartments have also been made partly in the nave. This leaves only a very small hallway with the original Hight.	8. Fill
Width	yes	The width of the nave is brought down to narrow hallway in the biggest part of the church. Only at the entrance the original width has remained.	8. Fill
Length	yes	The length of the space is affected because the nave is filled up with apartments. There is one hallway that goes from the front to almost the back but even there in the backside is an large wall that blocks the few to the choir.	8. Fill
Threefold division	yes	The threefold division is only visible at the entrance but in the rest of the church it is not visible anymore	8. Fill
Rhythm/ repetition	minimal	On the right side of the church the rhythm is still visible, but on the left it is completely blocked.	8. Fill
Lighting from above	yes	From the ground floor no windows can be seen anymore because they are blocked. Only on the right side at the top of the nave there are a few left open to give some light.	8. Fill
Long sight lines	yes	The new intervention blocks every interesting view except for the hallway, however this does not go from front to back entirely.	8. Fill
Symmetry	yes	The church has become a-symmetrical due to the intervention	8. Fill
Proportions of the interior space	yes	Because of the added volumes the original proportions of the spaces have lost.	8. Fill
Characteristic building elements of Neo Gothic churches			
Tall stained glass windows	yes	Most of the windows are blocked from sight because of the added volumes.	8. Fill
Rose windows	-		
Pointed arches	minimal	Most of the arches are visible but filled in with walls.	8. Fill
Rib vaults	Yes	The rib vaults are less visible because of the added volumes.	8. Fill
(Flying) buttresses	-		
Ornate decoration	minimal	Most of the ornaments are less visible, some can only be seen when entering a apartment.	8. Fill

St.-Theresia-van- het-kind-van-jezus kerk

Borne

1891

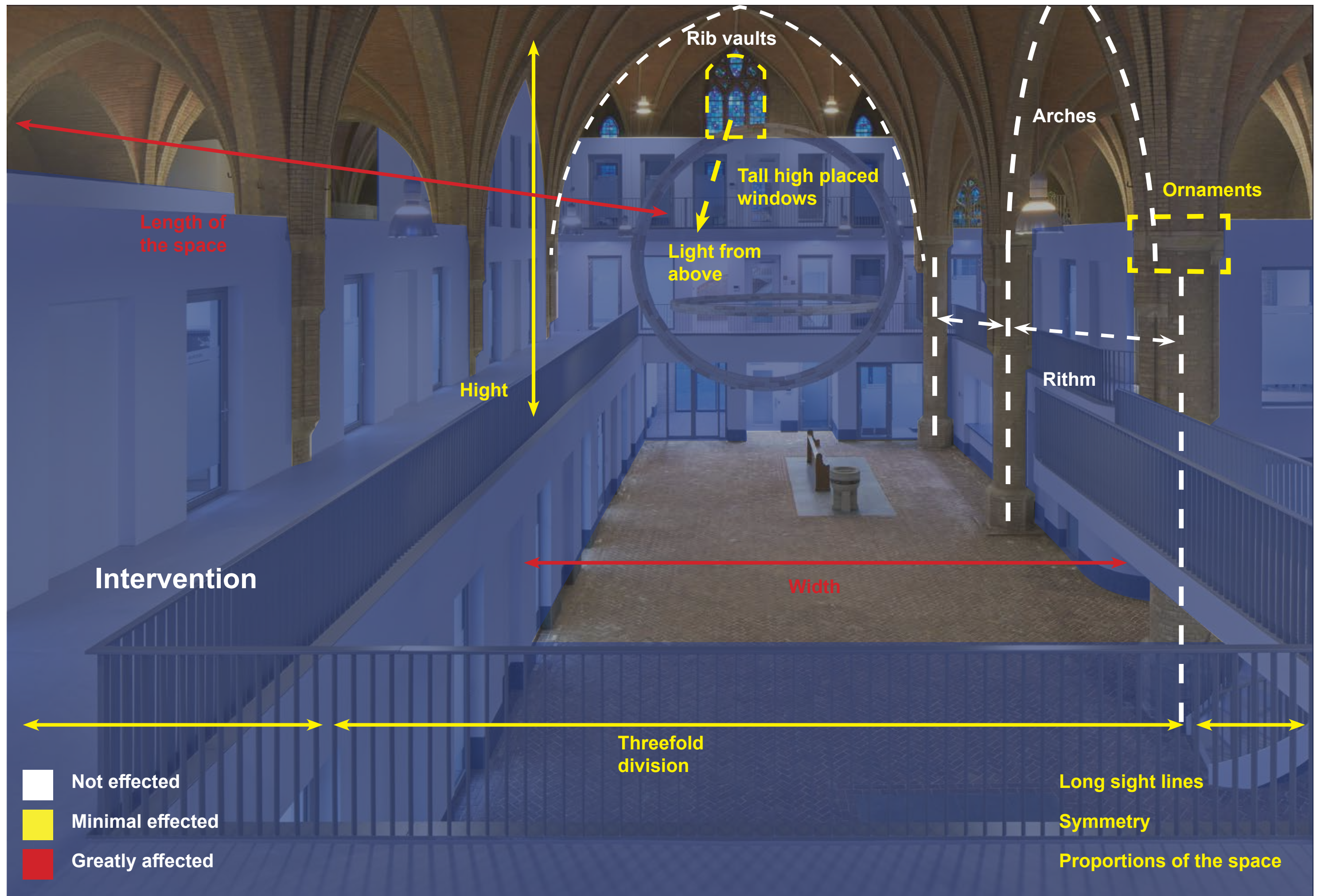
health center



Spatial solutions used:

7. Lines of sight preserved (partly fill)

Image 18



Assessment: How are the attributes that form the spatial quality and the Neo Gothic elements affected?

Conclusion Spatial analyses

The spatial quality in the St.-Theresia-Christ-of-Jesus church in Borne is impaired on a number of levels. In the middle of the church a kind of square has been created, which preserves the openness of the church to a reasonable extent. At the edges, rooms have been created up to three stories high, which obstructs the view of the outer walls, but because of this the vaults and arches remain clearly visible. Because of the access to the rooms, the church seems narrower and less long, but because this is not the case everywhere, the original size of the church remains visible.

Attributes defining the spatial quality in Neo Gothic churches			
Attribute	Is the attribute affected by the Intervention?	Effect	Which type of intervention caused this effect?
Dimensions of the space			
Height	minimal	The height of the space is affected mostly in the side aisles but also partly in the nave at the front and back where additional rooms have been added and the added galleries that are made in the nave.	7. Lines of sight preserved (partly fill)
Width	yes	The width of the space is made smaller because of the added rooms on the side. There is only a small open space in the middle now.	7. Lines of sight preserved (partly fill)
Length	yes	The length of the church has also been affected with new additions on the front and back.	7. Lines of sight preserved (partly fill)
Threefold division	minimal	The threefold division is still there and is still noticeable but less obvious.	7. Lines of sight preserved (partly fill)
Rhythm/ repetition	no		
Lighting from above	minimal	Some of the windows have been blocked from view, this is blocking some of the light.	7. Lines of sight preserved (partly fill)
Long sight lines	minimal	The sightliness to the ceiling are still there and also to some of the outer walls when standing on the higher floors but because of all the added program much of the sightliness are blocked.	7. Lines of sight preserved (partly fill)
Symmetry	minimal	The symmetry is still noticeable but way less obvious.	7. Lines of sight preserved (partly fill)
Proportions of the interior space	minimal	The proportions of the space have been affected because the interior feels way smaller.	7. Lines of sight preserved (partly fill)
Characteristic building elements of Neo Gothic churches			
Tall stained glass windows	minimal	Some of the windows have been blocked.	7. Lines of sight preserved (partly fill)
Rose windows	-		
Pointed arches	no		
Rib vaults	no		
(Flying) buttresses	-		
Ornate decoration	minimal	Some of the ornamentation has gone lost with the adding of the boxes, but many have remained in sight.	7. Lines of sight preserved (partly fill)

Conclusion table:

After the visual analyses of the 9 case studies were completed, the results are presented in a conclusion table, on the right.

Spatial solutions	Loose built-in		Use ancillary spaces			Vertical splitting (transverse)	Horizontal splitting		Box in the church	Lines of sight preserved (partly fill)		Fill
Case study	Dominican	Broeren	De Petrus	Broeren	Cuypers	Grote	De Petrus	Grote	Wester	St.-Gertruidis	St.-Theresia	Heilighart
Height	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Width	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Length	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Threefold division	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Rhythm/ repetition	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Lighting from above	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Long sight lines	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Symmetry	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Proportions of the interior space	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Tall stained glass windows	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Pointed arches	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Rib vaults	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>
Ornate decoration	<div><div></div><div></div></div>		<div><div></div><div></div><div></div></div>			<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>	<div><div></div><div></div></div>		<div><div></div></div>

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