

The story lives on

Optimizing Narrative driven Design for a
Zero-Waste conversion of ex churches

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Abstract

In Europe Christianity faces steady decline, causing dwindling attendance at churches. As a result congregations are no longer able to afford the upkeep for their churches, forcing them to end services in these buildings. This caused many grand and historic church buildings to become vacant, and means that many will follow in the near future. Because many of these churches have deep ties to the local community and historically served a very public role, fitting new functions are needed to keep these building sustainable and part of their community. To find an answer to this question, specifically relating to 19th century neogothic churches of the catholic counter reform, the following paper will research the basic principles of (Neo)Gothicism and the methods and process behind the creation of such a church and its furnishings. The aim of the research is to establish the relation between the interior, the symbols and the architecture itself to understand how they together conveyed the story of Christianity, and how this could possibly be adapted for a use after Christianity or how this can be used to establish a fitting new purpose for these churches. As part of a graduation project this research will put the main focus on the RK Barbarakerk, a church going vacant in Culemborg in the Netherlands. By diving in to the construction history and theory of the time the main principles of Gothicism will be established and an understanding of the relation between the architecture, furnishings and symbols will be gained. Then by observing the features of the Barbarakerk, these principles can be contextualized. Finally by comparing existing converted churches to see how they reacted to existing history, symbolism and iconography, illustrate their methods of storytelling through architecture. Finally showing the integral narrative nature of the (Neo)Gothic architecture being able to indicate their own most fitting future.

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Bas Nijenhuis – 4486269 – MSc3 Graduation studio Revitalizing Heritage: Zero-Waste Church

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Introduction

In an ever changing world the traditions and practices evolve along with the times. One of these changes is that religiousness is in decline and the churchgoing population shrinks. As a result of this ongoing development, one in four churches in the Netherlands now serves a new purpose (Ministerie van Onderwijs, Cultuur en Wetenschap, 2021). With the prediction in 2020 that around 1500 to 4500 churches will have to close in the next ten years, which as a result of the Corona pandemic's temporary ban on large gatherings, the aging parishes and communities that use the churches and the overall secularization, this number is likely to be rising still (BOEi, 2021; Rijksdienst voor het Cultureel Erfgoed, 2011).

Being threatened by demolition, these buildings are in need of a use for future. Not only is this relevant for maintaining some of the most characteristic buildings that often dominate the skyline of the old city center, it also helps limiting the waste produced by the building sector. Where this sector amounts for up to half of global carbon emissions (Treggiden, 2020), major gains can be made when shifting our focus to repurposing rather than rebuilding (TU Delft chair of Heritage and Architecture, 2022). Church buildings, especially older buildings, have an architectural and cultural distinctiveness, if not a uniqueness, which make them good candidates for recognition by preservation organizations and agencies (Duckworth, n.d.). Because the architecture and design of many of these buildings are unique to the use of a church, adaptive reuse strategies are challenging to implement but, due to their place in the vernacular of their respective neighborhoods and their ties to cultural heritage, the loss of the building is generally deemed tragic (Duckworth, n.d.). Creating sustainable methods of repurposing vacant churches for a future use will then not only save these characteristic buildings from demolition but also work towards the goal of a sustainable building industry.

This research topic is also the result of a personal fascination by historic buildings as a de facto time machine that reflect a past time, culture and practices. An historic church with often a prominent role in the cityscape is an example of a building that can teach us about the past (Duckworth, n.d.). As such, to preserve not only the building but also its history, the complete story behind the building should guide the repurposing and converting of these buildings for a new use.

This research is performed as part of the graduation requirement for MSc Architecture at TU Delft.

Problem statement & Relevance

To save this influx of impending vacant churches from demolition, good methods for keeping these buildings, their principles and stories alive have to be established. Hereby focusing on retaining both the heritage values of this heritage and help create a more sustainable built environment. This research aims to find fitting future for vacant religious heritage by implementing a narrative driven design.

Heritage is defined as an inheritance, the valuable material and intangible aspects of historic culture (Centre for Global Heritage and Development, 2022a). As this representation lays at the very core of heritage, the backstories behind physical heritage is fundamentally important to the understanding of the object itself. In the case of churches, they often have a prominent role in the city. Some of the older churches have become icons of their city as a result of their visibility due to their height and often decorations and among which many local and national monuments (BOEi, 2019), becoming part of the city's identity (Duckworth, n.d.). Identity and local character are part of a city's competitive edge, but are increasingly under threat and destroyed by globalizing processes of urban development (Tongji University, WHITRAP, & UNESCO, n.d.). Heritage and local culture then become determinants of the quality of life and the well-being of local communities, offering opportunities to both increase sustainable development potential and conserve cultural heritage (Tongji University, WHITRAP, & UNESCO, n.d.).

Often being used in the design of a museum, storytelling is adopted in their interpretive framework by use of audiovisual techniques to convey the meanings contained within artifacts (Lu, 2017). Narrative design is using the stories contained in the existing context of the design brief as a foundation to create a spatial storytelling within the design, conveying these stories through the shape and use of a building (Lum, 2019). A narrative driven design provides an ideal approach for a redesign where both tangible and intangible attributes are respected, therefore not only preserving a building but also the stories of the building. This means walking the tightrope between romanticism and rationalism to achieve depth in the architecture embracing and making the heritage values transparent and engaging to the user. Using narratives to combine both positive aspects of romanticism with rationalism could help design a more successful environment. This would imply creating a complete story, in which passion, feeling and rational functionality are in harmony. (Tissink, z.d.)

“Including a story in a building creates a level of meaning and connection to the patron or user that can be engaging and provoking.”

- William A. Browne, Jr., FAIA, LEED AP

This narrative driven approach can help capture and embrace the integral sentiments about a project, clarifying and reinforcing the projects goals (Sze T. et al., 2019). Approaching the building as a story when redesigning will allow to embrace the backstory and make it more legible to the user and the observer, adding a layer of depth and transparency to how it represents itself. This way the built heritage can be an open book of the heritage it represents, rather than just a building with for example a monument label. Though the narrative driven approach seems like an obvious strategy when dealing with heritage, where the backstory is essential to the quality of the building, this field is still underexplored. Especially how this narrative driven approach can aid in the minimization of

material and immaterial waste in churches, where icons and symbols no longer have a real place outside of their past religious meaning. This will then be the main focus of this research, filling the void of how the narrative driven design approach affects the potential for a circular and zero waste design that embraces and showcases its values. The aim of this research is to support future generations to appreciate and understand their past as well as giving them the tools to create a more sustainable built environment.

The transformation of obsolete built heritage is also closely related to circularity. Circularity means the reuse that which already exists, forming a closed loop system that is regenerative and focusses on the minimization of resource extraction and environmental impact (Ikiz Kaya, Dane, Pintossi, & Koot, 2021). Usually related to the reuse of materials, in the context of heritage it can also apply to the reuse of meaning and representation in built heritage. Heritage does not only provide the opportunity of maintaining the material components but also offer opportunities to increase the sustainable development potential of the historic cityscape (Tongji University, WHITRAP, & UNESCO, n.d.). Therefore preserving the historic cityscape while stimulating its continuous development.

To limit the scope of the research a main focus will be on the R.K. Barbarakerk in Culemborg. This late 19th century neogothic church is a prime example of the Catholic faith once again establishing their presence after being forced underground for centuries (Frijters, n.d.). With its grand stature and dominant place in the city center, it has become an integral part of the city image. However due to diminishing use and expensive maintenance urgently required, this building needs a plan for the future or will be under threat of demolition. Having been constructed as a catholic church, where iconography and symbolism play a significant role, this building also contains a rich inventory of items related to specific history, backstory and legend that will struggle to find a new place outside of religion. This provides the ideal candidate to test the effects of a narrative driven design on the circular redesign of vacant churches.

Currently the rising vacancy in churches provides a challenge for architects. In buildings like the R.K. Barbarakerk, the poor state of conservation makes the need for a future role urgent, or this characteristic building in the city center will be demolished. However when we define these buildings as our heritage, we specifically note that these buildings have inherent cultural and or historic value (Ministerie van Onderwijs, Cultuur en Wetenschap, 2019). Becoming a part of the historic urban landscape it becomes important that the values of these buildings don't fade away as the buildings lose their original functions and change to accommodate new functions (Tongji University, WHITRAP, & UNESCO, n.d.). As more churches become vacant in the coming years, understanding how using what is already there as a foundation for the redesign and a way to better integrate this will form an approach that maximizes the future potential of these building while safeguarding everything they have always stood for. Making sure that the values of the heritage will be maintained, embraced and even highlighted to the community. Resulting in a stimulating historic urban landscape where the heritage reflects the culture and history and provides great depth to the observer (Tissink, z.d.).

This research will be performed in conjunction with a design exercise as part of graduation requirements, for which the research will be the guiding theme as well as a guide to the decision making process. It will provide a foundation of how to respect and embrace heritage when it is in need of a new life. Additionally it can provide others with context for possible approaches for

heritage that use the inherent narrative of the building to achieve minimal physical and cultural waste, as well as maintain transparency as to why the heritage is heritage. These guidelines will demonstrate how to incorporate the stories of heritage in the spatial and structural form of the architecture itself. Allowing these buildings to be a teaching tool about culture and history for current and future users and observers.

Research Questions

In today's architecture, architects often use the shape, structure and space of the building as the main foundation for a redesign. Adding to this, being of the opinion that when dealing with characteristic buildings like religious heritage, the wish of the architect to add his own signature or voice to the building can result in the story portrayed by the building becoming blurred and unclear. Here the focus will be shifted to continuing the story that already exists as a foundation for the design process.

To address the topic of integrating the stories as part of the redesign process, and its effects on circularity within the design process the following main research questions and subsequential sub-questions are formulated: *How to make the stories that are integrated in religious built heritage legible in a redesign?*

- *What is the symbolic value of the neogothic church architecture of the 19th century?*
- *What elements tell stories and carry symbolic value in Catholic religious heritage?*
- *How are the intangible stories and symbolism connected to the tangible building and its elements?*
- *What are the effects of the narrative design approach to the circularity potential of the tangible and intangible building elements?*

The scope of this research will be limited by how these questions apply to the case study of the R.K. Barbarakerk, hereby preventing this thesis from become a study of theology.

The aim of this research is to analyze neogothic catholic churches as a linear narrative to create a comprehensive understanding of the existing values and their representation, which can then form a basis for a redesign. The research aims to discover how interpreting and approaching the building as a story can both make its historical and cultural values more visible and legible for current and future generations, as well as how a deeper understanding of church icons and symbols might aid in giving these elements a purpose in their future after religious significance. Additionally adding to the current circularity and zero-waste challenge the notion of cultural and or historic waste where symbols and artifacts are treated as an integral part to the building, are kept in mind in the conversion process and have a fitting place after the building is transformed. This means to embrace these buildings as a reflection of the past, safeguarding the heritage the buildings represent even after having lost its original purpose. Therefore the aim is to find a strategy that guarantees that the new function after a transformation makes sense on a spatial and narrative level, hereby truly fitting into the canon of the building.

Methodology

In order to find the desired answers to the questions of this paper, first the main principles of (Neo)gothic architecture are explored through historical publications by the leading architecture theorists of the gothic revival period. By studying Pugin and Violet-le-Duc the principles on which the reemergence of the Gothic architecture style is found. To then shift the focus to a more domestic view in the Netherlands, 'de Heilige Linie by Alberdink Thijm is consulted. To contextualize this slightly and put it in the proper historical context, broader historical literature is also consulted. These sources are then compared and provide a thorough background of symbolic meaning and principles of the (Neo)gothic architecture itself, as well as providing an initial background on symbols, artifacts and icons in the church and their meaning.

To establish the storyline of the construction of a Neogothic church, a historic overview of such a church, in this case the case-study of the RK Barbarakerk, is reviewed along with the timeline of the architect. Through this method both an inventory of symbols and symbolic artifacts in a Catholic Neogothic church is gained. By comparing these to the gothic principles and historic context, the relation between the object and the architecture is established.

To understand the influence of gothic architecture and Catholic artifacts on the renovation of a former church, some reference projects are analyzed. These references provide insight into how previous architects reacted to the existing features and symbolism that are or were present in the former church buildings. Through the means of comparison and picture analysis, as well as referring back to the founding principles of Gothicism that were explored earlier, the applied strategies are deduced. These strategies are then tested with the gothic principles to establish what the effect of these reference interventions are on the grander storyline as portrayed by the building. For the selection of the reference projects primarily publicly well received and well published church conversions are chosen, this should give the best chance to find the most effective intervention methods.

To conclude the found principles features and narrative methods are then compared and related to the main case-study of the RK Barbarakerk. Doing so provides an overview on how this church relates to similar churches of its time and the gothic ideals published by the contemporary architects and theorists. This will result in an overview of how the stories of the neogothic buildings and artifacts can relate to uses and principles outside of religion. This results in a set of guidelines of universal features and strategies that can be employed for a primarily narrative adaptation of a 19th century former catholic church, as well as some more specific notions as they relate to the case-study.

To minimize bias the subject is approached from various different angles, as well as using different but highly accredited sources. By creating a broad overview of the various aspects that make a Neogothic church, the presence of an inherent and linear narrative in the Neogothic church architecture is most accurately observed. By contextualizing this in the historic context as well as with current conversion strategies, an objective overview of the effects of the narrative on the architecture, as well as the architectural intervention on the narrative is established.

Theoretical framework

In this research various topics are introduced. First of all is the narrative driven design process. As defined by Sze T. et al. Narrative driven design incorporates storytelling into the design process (2019). Where narrative design usually is employed for new designs with a specific goal in mind, this research will apply the narrative method to the redesign of the built religious heritage that is the focus of this graduation studio. Narratives are then defined as stories, a spoken or written account of connected events (Oxford Languages, n.d.). For the built heritage that is the focus of this research that translates to the principles the original buildings were constructed with and what they were meant to portray and represent, and how to make them apparent and legible.

The next topic is the subject of icons and symbols. As we are dealing with religious heritage, there are various elements that portray scenes from the bible and symbolize a great spiritual meaning or connection. These symbols are often giving physical shape in the form of icons of saints and attributes. Some of these symbols and their meaning can be found in McNamara's book on how to read churches (2011). About the significance of the saints that are portrayed in the church a wealth of knowledge can be found on catholic web sources. These will not only dive into the backstory behind the saint itself but explain their connection to various fields and practices in and outside of the Catholic faith. This way the transformation architecture can react to the entire backstory, creating new functions that make sense with the space, structure and story to make a sensible ensemble. This allows even the symbolic icon or ornament to get a functional and fitting place in the transformed church.

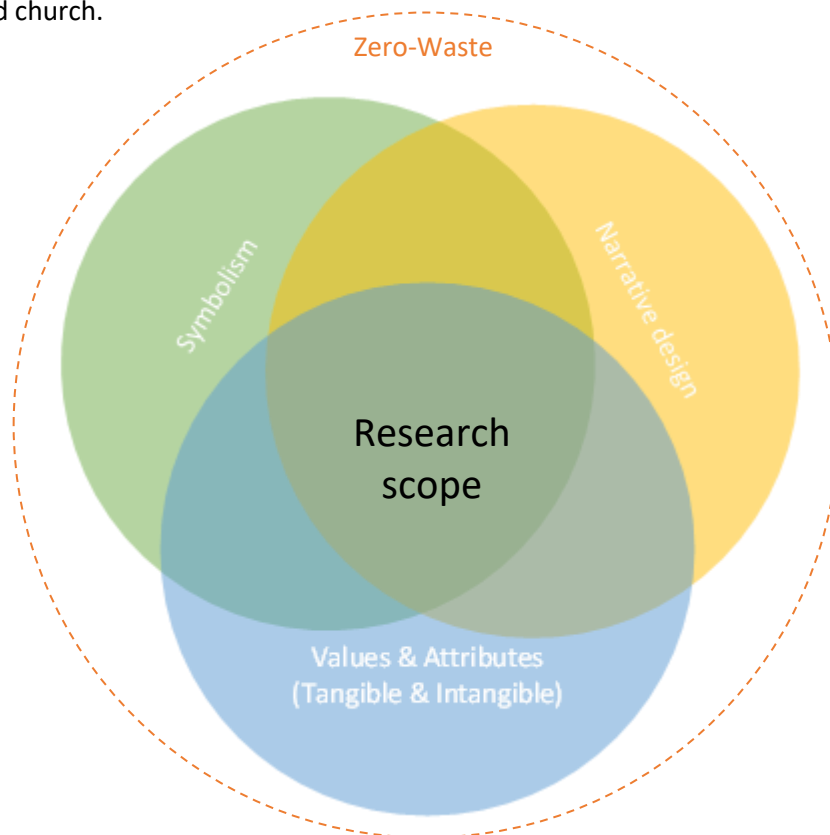


Figure 1: Primary research fields, illustration by author.

Another topic that will be discussed are tangible and intangible attributes. These are often parts or elements of a building that are deemed by experts or communities as culturally or historically significant (Ana T and Ana R., 2012). To be transparent and academic in establishing their values they can be categorized and put in a framework. In the field of heritage, values play an important role and have to be well defined by experts and the communities that represent and are represented by these buildings. These values can be established from publications about the heritage and monument descriptions in case the heritage is also a classified monument.

Finally the concept of zero-waste or circularity. Being strongly related to terms like conservation, restoration, conversion and renovation, these definitions can be found in Roders, Re-architecture (2007). Mainly describing various approaches to the level of adaptation to the building when transforming a building, in this thesis the focus will mainly lay on conversion and adaptive reuse (Bullen & Love, 2011; Conejos et al., 2011; Langston et al., 2008). Mainly differing in the extent of reuse of materials and how and where building elements can be moved within the building, these strategies seek to maximize the integration for a new use for the building while maintaining the original structure and giving a new place to elements that were removed in other parts of the building. Hereby achieving an absolute minimum of waste generated by the transformation process. Thus achieving Zero-Waste.

Results

What is the symbolic value of the Dutch neogothic church architecture of the 19th century?

Throughout Europe the first signs of a reappraisal for Gothic architecture came with the rise of romanticism in the arts. Within the romantic movement, architects would start reacting to the rigid Neoclassical forms and inspire themselves with the architecture of the middle ages. This architecture of tall, sharp and skeletal architecture invoked feelings of emotion, respect for tradition and nostalgia. Especially focusing on the gothic shapes and spires to also invoke a sense of mystery and wonder (Myrone, 2020) (Figure 4).



Figure 2: *Karl Friedrich Schinkel - Medieval City (1815), Staatliche Museen zu Berlin.*

The Preference for this style of architecture would be brought to the Netherlands after King Willem II finishes his studies in the UK and, being inspired by the British medieval architecture he encountered during his studies, would start having gothic inspired building being built in the Netherlands (Koninklijke verzamelingen, n.d.).

This new interpretation of Gothicism would base its architecture primarily on the shapes and visuals of the gothic architecture. This objectively superficial interpretation of Gothicism, where the shapes are often mimicked in plaster, is therefore often loathingly called Stuccadoorsgotiek (Rosenberg, 1972).

With the rise of a new generation of architecture theorists at the start of the 19th century, a new appreciation for the founding principles of Gothicism would emerge. Spearheaded by A.W.N. Pugin in England and Viollet-le-Duc in France, architects would start using the fundamental principles of Gothicism

to construct primarily new churches (Lewis, 2021). Coinciding with the counter reform and the reestablishment of Catholicism in public life, the Catholics would pick this gothic revival movement as a style to reestablish their presence. At this time the gothic architecture would be considered the truest Christian architecture by the architectural theorists of the time (Hill, 2008).

While church architecture has taken many forms, Gothicism was the only style that was considered truly invented by the church itself. The gothic architecture is appreciated for its honest and true construction, which Christians compare with the biblical truth (Lewis, 2021). In classical-inspired architecture items like pilasters are used to decorate buildings while serving no loadbearing purpose, in Gothic architecture the columns and ribs all serve constructive functions (A. W. N. Pugin, 2015). This truth of construction is visible in the ribs carrying the heavy vaults, the (flying)buttresses carrying the forces downwards and the pointed arches, efficiently guiding the load of the walls and ceilings around large openings. These large openings would create a large ingress of light, compared to the light of god in Christian faith (Thijm, 1858). Another major ground rule for the ecclesiastical architecture was the west to east orientation. However with the revival of Gothicism in the 19th century. Churches would often have to be built within the existing and city structure, limiting possibility in many cases to freely choose the orientation of a church (Frijters, 2011). During this time of gothic revival, industry also rises and makes mass production possible. With gothic detailing with icons, gargoyles etcetera, being known for showing off individual craftsmanship, new studios would be set up by architects and artists to produce these elements in a gothic inspired style. For the production of these artisanal decorative elements, these art studios would however not shy away from using industrial methods to create their pieces (Frijters, 2011). Setting themselves apart from the rising arts and crafts movement at the time, these studios would use existing and developing technologies to better and evolve their craft. With this focus on craft but utilization of modern production tools, these new gothic art production studios would find themselves somewhere in between the revolutionizing industry and the artisanal and craftsman based Arts and Crafts movement (Frijters, 2011).

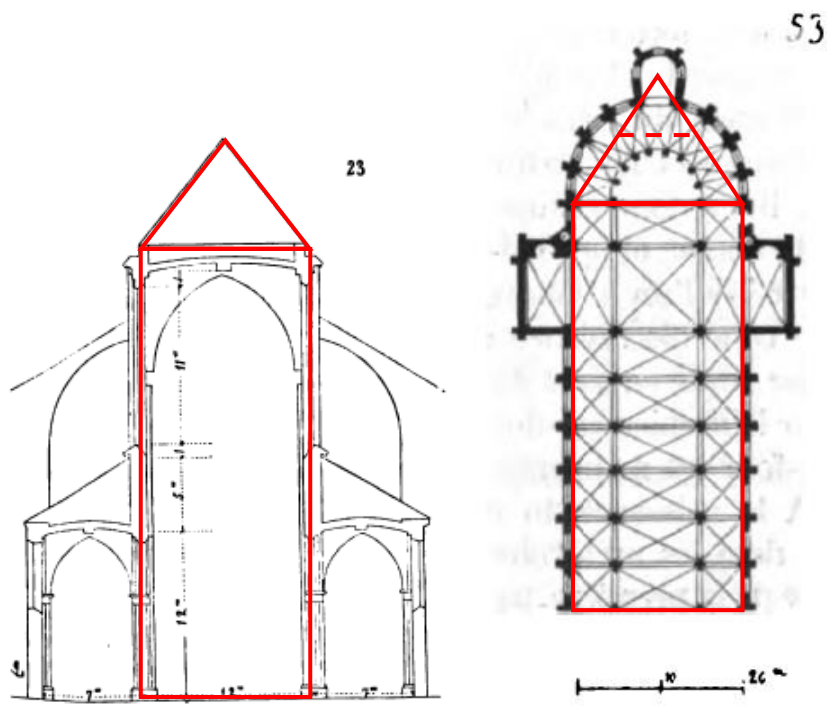


Figure 3: Relation between elevation and floorplan , *Dictionnaire Raisoné de l'Architecture Française du XIe au XVIe siècle* (Viollet-Le-Duc, 2015)

For the construction of church buildings itself there would be symbolism in both the floor plan and detailing (Figure 6). In principle the shape of the floorplan of a church would be an elongated square representing the temporary of the earth as god's creation, as described by Alberdingk Thijm (1858), the most prolific theoretic of the Dutch Neogothic movement. He continues to describe the churches construction as being fundamentally segmented in three. Starting with the main nave and aisles, intersected by the transept and finished with the choir (Figure 7). This division in, and use of the number three would become leading theme as this reflects the holy trinity. The previously described division in three sections would also reflect the publicly accessible nature, and the gradient in sanctity of interior parts. The main nave and aisles are for the public to attend sermons, the transept houses holy altars where a churchgoer can pray to specific saints for guidance, and then the choir would be the holiest place in the church, reserved mainly for the priest (Pugin, 2015). This floorplan would often come to resemble a Latin cross. Where the three sections of the church "honored" god in length, the use of a tower would honor him in height, also usually divided in threes, these towers would be topped by an octagonal roof or spire (Thijm, 1858).

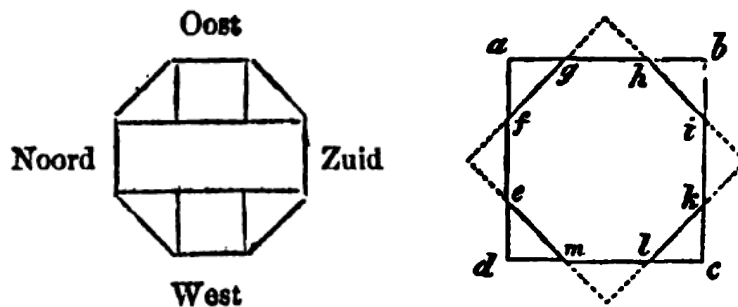


Figure 4: Constructions and relations of symbolic shapes , *De heilige Linie* (Thijm, 1858)

This octagonal created from two equilateral squares (Figure 7), would reflect back to the Beatitudes or eight blessings recounted by Jesus (Thijm, 1858). These towers also served the practical role of housing bells to call for prayer, but later would be mainly designed for the architectural effect. The square fundamentally represented the temporal and earthly, and the triangle the godly and spiritual relating to the holy trinity (Figure 8). Both the elevation section and the floorplan would form a marriage of the elongated square with the triangle, the elevation pointing upwards to heaven and the floorplan pointing eastwards along the holy line representing godliness with the consistent sunrise in the east (Pugin, 2015). By combining the elongated square with the shape of a medieval shield, a symbol of medieval nobility, the shape of lancet windows can be explained (Figure 8) (Thijm, 1858).

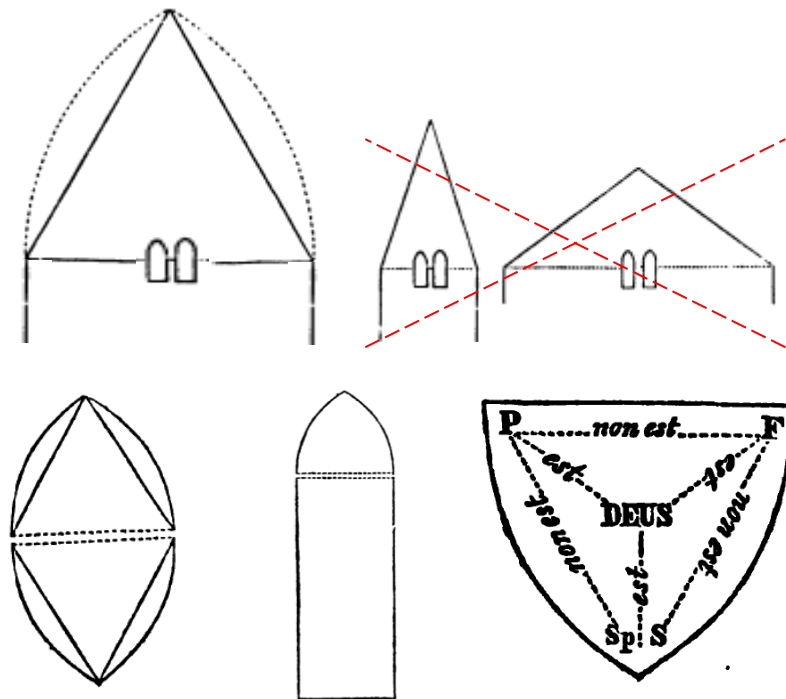


Figure 5: Constructions and relations of symbolic shapes, Top: *The True Principles of Pointed or Christian Architecture* (A. W. N. Pugin, 2015); Bottom: *De heilige Linie* (Thijm, 1858)

These are just some of the many ways in which the architecture itself holds symbolic value as a sort of personification of biblical meanings and principles. Finally the gothic church would regularly be decorated in a manner that reflected a comic book (Rosenberg, 1972). In medieval periods this was catering to the uneducated and illiterate where the used statues, paintings and iconography would tell the story without words. (Frijters, 2011) The people would be educated about biblical meaning and history by the images they were presented with in and around the church. For this purpose interiors were often richly painted with icons, patterns and stained glass that all conveyed a specific story or meaning (Lewis, 2021). A final recurring detail feature is the trefoil and the quatrefoil, this shape composed of the outline of respectively three and four overlapping circles, is often found in window or rosary tracery and as relief details in ornamentation throughout the church (Figure 9). These trefoils and quatrefoils resemble clovers and once again symbolize the holy trinity and the earth itself (Pugin, 2019). These are just some of the many ways gothic architecture uses symbolic meaning, however this research focuses mainly on the symbolism that is relevant for analyzing and understanding the Heilige Barbarakerk in Culemborg, the main case-study of this research.

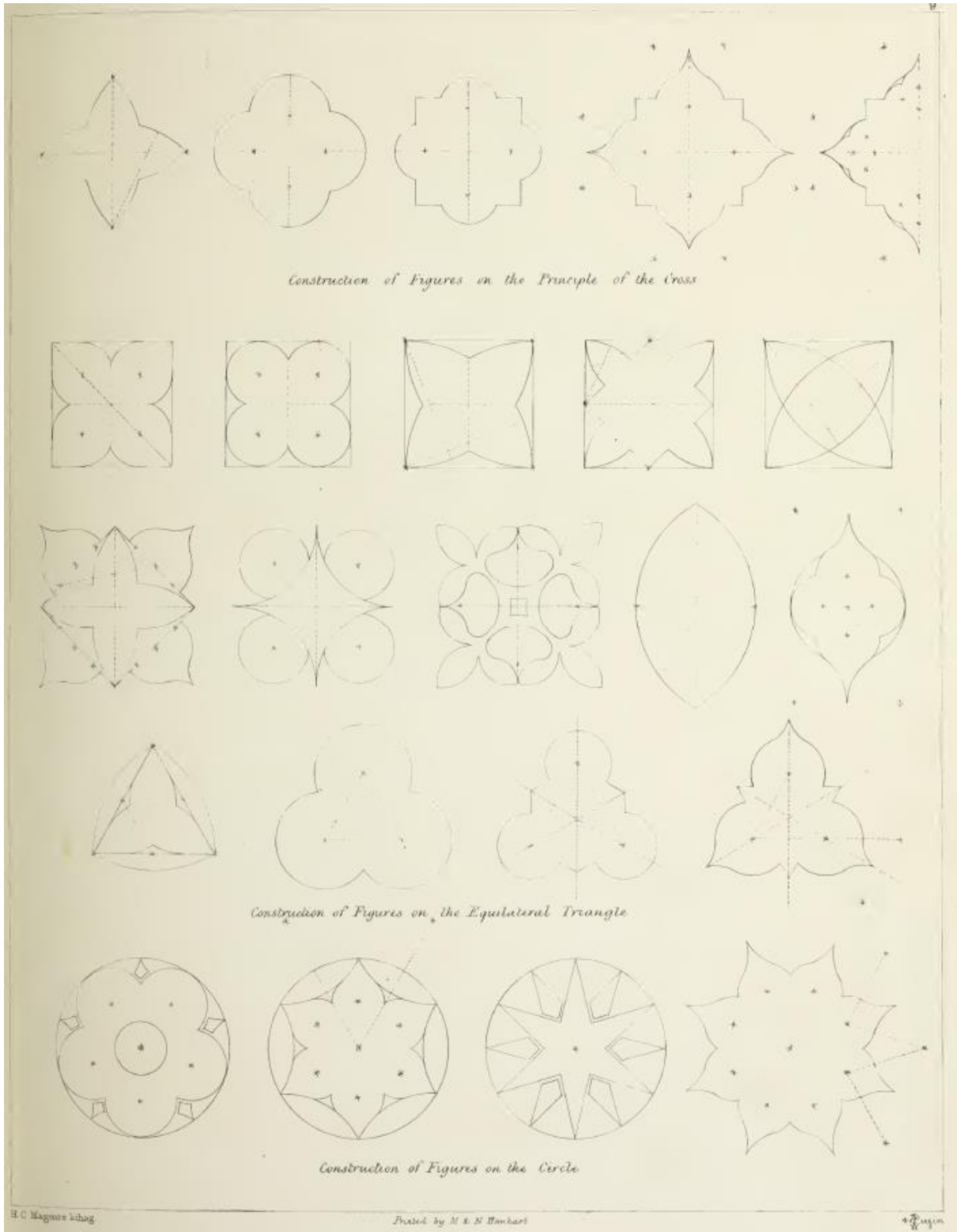


Figure 6: Diagram of the trefoil and related clover shaped patterns and derivatives , Glossary of Ecclesiastical ornament (A. W. Pugin, 2019)

What interior elements tell stories and carry symbolic value in Catholic religious heritage?

Apart from the symbolic meaning that the architectural features of gothic churches have as previously discussed, the church also uses interior artworks to tell more stories to the churchgoers. For this section the focus will be primarily on the inventory of interior symbolic and meaningful elements of the Heilige Barbarakerk in Culemborg.

The late 19th century catholic church would be delivered in a relatively clean state after completion. In the years following the completion the church would gradually get more decorated and filled in (Figure 10) (Genootschap A.W.K. Voet van Oudheusden, 2004).

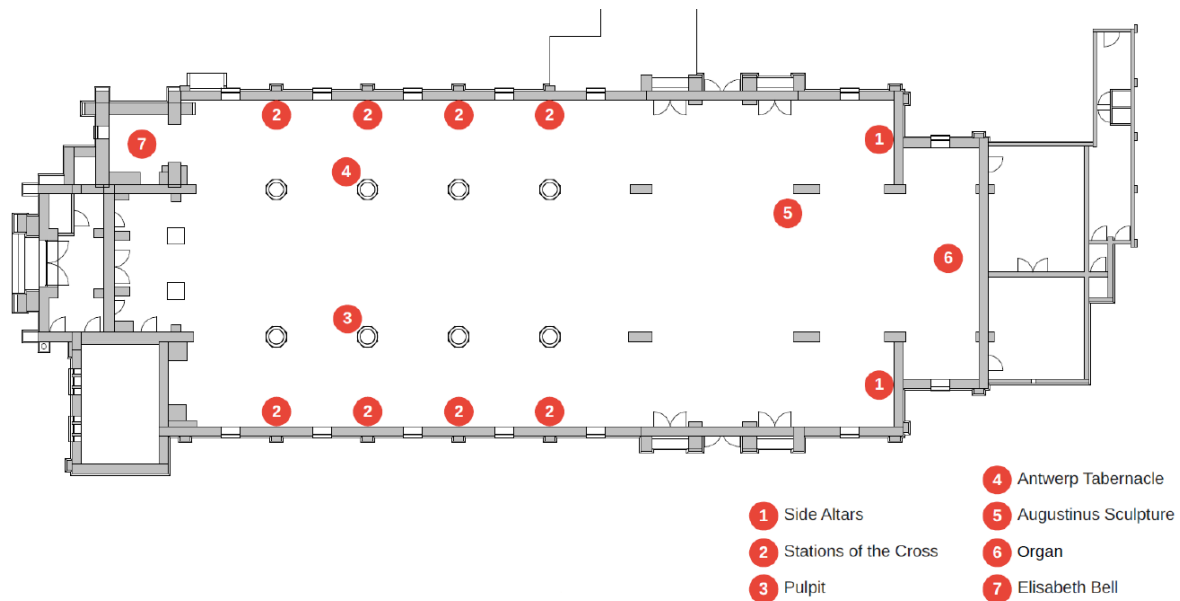


Figure 7: Locations of icons and symbolic features in the RK Barbarakerk, illustration by author.

In its current state the church is more modest than it was around the 1920's as a result of the polychromed choir being painted over during a restoration and renovation. Due to a lack of funds to fully restore the faded polychrome paintings and the new liturgical interpretations as a result of the second Vatican council (Genootschap A.W.K. Voet van Oudheusden, 2004). During this council it was established that the church should shift focus to the church congregation rather than the relics and elaborate altars, resulting in the 'wreckovation' or second iconoclasm in catholic churches (Rose, 2001). This resulted in icons being (re)moved and altars dismantled, as well as moving the interior layout like the location of the baptistery to align with modern interpretations of worship in church. The Heilige Barbarakerk was effected by this Wreckovation in the cleansing of the choir, a new main podium and altar and a new layout of the church benches and baptistery (Genootschap A.W.K. Voet van Oudheusden, 2004). As a result the current Barbarakerk is a relatively clean and sterile neogothic church with only a few icons and altars.

Of the three altars present in the church, one is devoid of all symbols or other decorations, this altar is the result of the renovation after the second Vatican council, it exists for the sole purpose of the priest being able to use it for his sermons and ceremonies. The other two altars are more traditional gothic and ornamental altars. These altars, one of which displays Mary accompanied by two martyr saints and the other showing Jesus post crucifixion with Mary and Joseph accompanied by angels.

These two altars were a place where churchgoers could pray to one of the saints of the altar for specific guidance, help or to pray for the dead. These saints are patrons to different aspects of life which relates to their own history how they became acknowledged as saints (McNamara, 2011) (Appendix). Praying to these patron saints is then believed to help with problems, usually ones that these saints are patrons to. In addition to the altars there are a number of statues of saints, mainly Jesus, Mary, Saint Barbara and Saint Augustine. These statues serve similar purpose as the altars as providing a specific place to pray to a specific saint (McNamara, 2011) (Figure 11).



Figure 8: The altar of Mary, (Genootschap A.W.K. Voet van Oudheusden, 2004)

Another major presence in the church is the paintings of the stations of the cross. These artworks depict the road to Jesus's crucifixion and subsequent rising from the dead. These serve to educate churchgoers about the most important stories of the bible, visualizing them to make sure everyone can know and understand these stories (McNamara, 2011). Above the stations of the cross are stained glass windows portraying the seven works of mercy, divided in the seven corporal and the seven spiritual works of mercy. Each of these works displays a quote of charitable or gracious actions to live by. Each of these quotes is illustrated by a specific saint, named at the top of the window, that

portrays the work of mercy represented by the window (Genootschap A.W.K. Voet van Oudheusden, 2004) (Appendix).

The final pieces holding symbolic artwork is the pulpit and the tabernacle. The pulpit, the podium where the priest holds his sermons, is decorated with reliefs portraying the four evangelists (Genootschap A.W.K. Voet van Oudheusden, 2004). These evangelists are biblically the ones conveying and spreading the word of god (McNamara, 2011), similarly to how the priest would do this in the church. The soundboard overtop that amplifies the priest's voice during sermons displays the holy spirit with the seven spiritual gifts (Genootschap A.W.K. Voet van Oudheusden, 2004). These gifts or charismata signify specific powers or abilities people have to live a decent life and help others (Goldammer, 2020), similarly relevant in the case of the pulpit as the priest will not only convey the importance of these powers humans have, but also use these powers to help his congregation. The tabernacle is decorated with a depiction of the last supper and a pelican, a symbol for Christ's sacrifice (Goldammer, 2020). These panels hide the sacred relics that can be kept inside as the main purpose of the tabernacle is to be a safe that hides the most sacred relics. These artworks covering the tabernacle are of the type that confront churchgoers with stories from the bible, and not artworks that represent the role or significance of the tabernacle itself.

When it comes to the saints portrayed in the church, their history is almost universally that they were either charitable in life spending their own lives to serve and help others, or being persecuted and despite adverse circumstances staying strong in their beliefs and even dying for them (McNamara, 2011) (Appendix). Whether or not this is all a specific outing of belief, it shows the church's historic position in the city where it provides shelter for people in difficult times and provides the poor and needy with aid through religious charity. In their core these saints represent people that lived selfless lives and helping others. This is then an inspiration to the current observers to be charitable and help those in need.

How are the intangible stories and symbolism connected to the tangible building and its elements?

At its core, the architecture and interior symbolism and iconography portray straight stories for the bible. These stories are there to educate and guide its congregation members to live good lives, understand the bible's teachings and use these teachings to help the broader community (McNamara, 2011). However the building teaches us more history, when one looks a little deeper it also tells the history of the catholic community and their presence in the Netherlands and the story of 19th century architecture and the related politics.

After the reform and iconoclasm in northern Europe, the Catholics would be persecuted and exiled, completely removed from public life. After being gradually allowed back, the Catholics would still have to practice their faith outside the view of public life in clandestine churches. Then after a period where under the control of the state the Catholics were allowed to construct new churches (Museum Catharijneconvent & Rijksdienst voor het Cultureel Erfgoed, 2021b). At around the start of the 19th century, the Catholics were once again completely free to construct their own churches in prominent places in the city. This resulted in that the rising catholic community starts constructing grand new churches right in the public's view to reestablish their presence in the city (Museum

Catharijneconvent & Rijksdienst voor het Cultureel Erfgoed, 2021a). They consciously chose the neogothic architecture because this architecture in their minds reflected a time where the catholic faith flourished (Lewis, 2021). This architecture that was invented and developed by the Catholics themselves would not only integrally embody the reemergence of the Catholics in the city, but also show power in the grandeur of the high towers and sharp roofs that would dominate the city's skylines (Lewis, 2021). Additionally, the ornate nature of the gothic architecture would catch the eye of anyone in the city, ensuring that these new churches would scream that the Catholics are back and reestablishing their role in the city (Lewis, 2021).

With the revival of gothic architecture and a reappraisal for the ornament, a new need for craftsmen to construct these ornaments would arise. For this, some architects would start setting up their own studio for gothic church ornaments (Frijters, 2011). With the influx of Catholics wanting to reinstate their position in the city with a grand gothic church, this was a major source of large scale orders and therefore a major source of business for architects (Frijters, 2011). By establishing studios that sourced and created ornaments for the new gothic churches, the architects would be able to deliver a full package in the form of a fully outfitted and decorated church (Frijters, 2011). In the case of the Barbarakerk, it would be designed and constructed by Piet van Genk. This architect came from a family of artists, craftsmen and carpenters turning his commissions for new churches as a source of work for the entire family. The van Genk family turned in to a family art business that created and outfitted new gothic churches for Catholics in and surrounding Breda (Frijters, 2011). Not only would the family profit from building these churches, family would also be instrumental in the acquisition of these commissions for new churches. Among others the Barbarakerk would be constructed by van Genk as a result of a cousin being an influential congregation member in the community in Culemborg (Frijters, 2011). The end result is a building that is truly linked with its interior artworks by the family business that was behind its creation.

It is notable however that Piet van Genk was not deeply interested using symbolism in his architecture. In the Barbarakerk he opted for cheaper construction and large scale use of plaster to imitate gothic constructions that contradict the honesty of construction that would become a pillar of the gothic revival philosophy. His architecture would be closer to the Willem II Gothicism where it was more about the shape and image than the philosophy. The exterior of his church would remain simple, ornamented with natural stone detailing on key constructive points, and extra natural stone features on the façade and tower to emphasize it (Figure 12).



Figure 9: Contrasting degree of decoration between the front Facade and the back of the church , Pictures by author.

Aside from using symbolic patterns like the trefoil, he chose not to decorate the outside of his church with statues or other icons. Throughout the churches that were constructed by van Genk, their principle construction would remain consistent and fairly rigid in their rhythm and proportion (Frijters, 2011). In a church that is dedicated to Saint Barbara, a saint that is symbolized with a tower with three windows (Appendix), he would not use this feature to construct his own tower but rather stick to the rhythm he used in his previous and subsequent church towers. Though van Genk was praised for his ability to accommodate various budgets to construct decent gothic churches, he would not become known as the first choice gaining most of his commissions as a result of friendly politics and through familiarity (Frijters, 2011).

What are the effects of the narrative design approach to the circularity potential of the tangible and intangible building elements?

When it comes to the redesign of the church, there are two stories the architecture can cater to and reflect. Narrative design has always been present in the church as it was designed to translate biblical stories and meaning through its architecture and decoration (Tkac, 2019). From its detailing to the interior decoration, the church was designed to reflect both the teachings of the church, as well as signifying the rebirth of Catholicism in the Netherlands (Frijters, 2011). This current storytelling can then be continued in a redesign to reflect both its ecclesiastical history and its societal history, as well as its new role after a redesign. With the already integral nature of storytelling in catholic church architecture, one method of further integrating the narrative in the architecture, is to convert the church to a function that still reflects its historical purpose, using transformation methods that reflect its historic practice (Tkac, 2019). Looking at other church conversions in the Netherlands, many keep the open character of the meeting space that the church traditionally was to the local community. Examples like the bookstore boekhandel Dominicanen in Maastricht, the Broerenkerk in Zwolle and the library de Petrus in Vught transform existing churches into public bookstores or libraries to keep the historically accessible, open and educative nature of the church after the conversion. Using the height to create levels, bringing visitors closer to the

vaults and painted artworks. Their redesign focusses more on highlighting present values in these churches than continuing their story (Figure 13).



Figure 10: Added layers and historically inspired features in the interior of the churches (de Petrus left, Broerenkerk right), Pictures by ArchDaily.

Using design cues from historic architecture like the pulpit (Vught) and a rood screen separating the choir (Broeren), they react to their historical context (Figure 13). Icons and altars often get removed, as a result of being integrally religious and therefore hard to adapt to a new context, if they remain in the church they often become a part of a museum like installation showing these artifacts of the former church (Figure 14).



Figure 11: Religious relics on display at DOMUSDELA in Eindhoven, Pictures by DOMUSDELA.

Preserving the tall and open character is a common goal in renovation of gothic churches. An example that stays functionally close to its origins is JADS in s' Hertogenbosch, this church was transformed into a lecture hall. In this conversion the church would remain relatively unchanged with the original podium serving new use for lecturers and movable benches making use of the open space to be adaptable for various types of lectures or gatherings (Figure 15).



Figure 12: JADS lecture hall, a minimal intervention approach to convert a church, Picture by JADS.

The use then stays close to the original where the preacher is replaced by the docent or lecturer, the congregation by the students and teachings move from being about the bible to being about data science. Maintaining the original open nature of these churches also incentivizes minimal interventions, retrofitting modest levels in the church drastically increases usable space while minimizing the need for large adaptations to the structure and minimizing usage of new materials for the adaptation of the structure (Ministerie van Onderwijs, Cultuur en Wetenschap, 2019). The church would however be cleaned from icons and artworks most likely being sent of to a catholic depot for storage until some other institution finds a use for it, like is the case with most church conversions .

Due to the integral nature with which these artworks are created specifically for their original church, often by the architecture studio or a closely related art studio, these items will not hold the same significance and historic value outside its original church, and likely end up stored in a warehouse for the rest of their existence. Understanding their role and origin in the neogothic

structure can however provide hints into integral methods of converting these buildings. The icons and artworks are artifacts of the renewed appreciation for craftsmanship in the neogothic movement (Lewis, 2021). Using this as a starting point it would make sense to have this craftsmanship as a guiding theme for the redesign, using local resources and craftsmanship for the resources limits the transport and factory emissions (Stichting E.V.A., 1995). This provides an opportunity where the conversion architecture not only reflects the historic context of the building but uses it for a sustainable redesign. Taking inspiration from the neighboring eco village EVA-Lanxmeer, the use of local resources, energy supplies and participation can help ensure a culturally and historically rooted conversion that also emphasizes sustainability (Stichting E.V.A., 1995). Employing cocreation as a method, the church can cater to this by transforming to a charity workshop. This charitable aspect matches one of the original purpose of the church and the history of many of the saints portrayed in the church, relating these icons to its new use after of religion.

Discussion

In the previous chapters it became clear how deeply rooted the storytelling and the symbolism is in the architecture and decoration of a catholic neogothic church. Whether intentional or not, some of the more successful church conversions make use of the buildings history and tries to get people closer to its stories and characteristic features. This research showed that the church was built as a whole, with its icons and other furnishings often part of the package, constructed or crafted by an art studio that was often linked, related or even part of the architecture firm in charge of constructing a new church. This package of church and furnishings would be the personification of bible stories for the users, providing them with something akin to a comic book showing various aspects of the story. Past the surface level the symbolism is even more deeply rooted in the construction, detailing and architecture of the church itself. With a high presence of number symbolism and symbolic shapes and orientations, the complete church is a reference to biblical meanings. After these churches are converted this meaning mostly fades or becomes anecdotal. Because the symbolism is so specific it becomes almost impossible to shift the symbolism in a way that has meaning outside of the religious. Nevertheless do these symbols add a layer of depth and a reflection into its history after a church is converted. The symbols become museum pieces that explain the former life of the building, as well as provide inspiration for new features for the conversion of the church. Because the symbolism of numbers and basic shapes provides a very strict and consistent rhythm to the building, this can be utilized and reacted to in order to make new additions or alterations feel more rooted in the existing structure.

Conclusion

Analyzing the founding principles of Gothicism quickly points out the importance of symbolism and storytelling in the construction of neogothic churches. Bringing this back to our main case-study of the RK Barbarakerk a couple of interesting deviations can be observed. Having finished his education a few years after Cuypers, who would become the dominant force in Dutch gothic revival, van Genk would take the gothic principles as mostly visual guidelines. Where Cuypers set out to reinvent Gothicism and use its fundamental principles to create a true and integral catholic architecture, van Genk would stick closer to the earlier romantic ideals of Gothicism. It can be observed that churches like the RK Barbarakerk in Culemborg find themselves in between the romantic 'stucadoorsgotiek' and the heavily principled Neogothicism as promoted by the major architectural theorists of the time like Cuypers, Pugin, Violet-le-Duc and Thijm. As such van Genk's churches rely less heavily on symbolism, materialization and orientation, but instead seek to become established in the city structure by their high stature, towers and more general gothic characteristics and relying on some principles of the 'stucadoorsgotiek' that was harshly denounced by the more prominent Gothic theorists of the time. Because of this these churches are a bit more understated and subdued. It seems reasonable that this also played a role in van Genk becoming less of an established name in Neogothicism than for example Cuypers and some of his more successful students despite having played a major role in the construction of churches in the larger area around Breda.

Because van Genk chose not to follow the gothic playbook too strictly, all present symbolism in his churches is fairly contained to the icons and the artworks. Apart from this the main gothic principles that were employed are the solid but light structure and the traditional rhythm in elevations and the floorplan. Because this creates a situation where not every detail holds meaning and not every part is equally precious, these churches are extremely suited to adaptation and more extensive renovation after these buildings outlive their usefulness as a church. As long as the rhythm and spatial, light and open qualities are upheld, these churches can undergo reasonable changes without significant losses in meaning and historic or cultural qualities represented by the building. In comparison with a church by Cuypers or Pugin, where every detail is specifically crafted, polychromed and ornamented, as well as being part of a very integral system of proportional and material symbolism, this leaves a lot less room for substantial intervention, making these churches more difficult to adapt to other uses that require physical interventions to the structure.

During the late 19th century and early 20th century the gothic architecture was appreciated as being the true Christian architecture, now in the modern time many of the architectural principles aside from the Christian connotations still hold true. In essence the gothic way of building was about honesty in structure and materials, these almost proto-modernist themes are still valued by current architects. One big difference with more modern building philosophies though is the value and importance of the ornament. Where now the structure itself is regarded as the beauty in buildings by most architects, the gothic architecture heavily employed ornaments to highlight key points of the structure, as well as highlight the craftsmanship of the builders and stone carvers that constructed the churches. This importance and celebration of traditional craftsmanship played a large part in Gothic and Neogothic architecture. When gothic churches are inevitably converted for a new use, it makes sense to uphold this appreciation for craftsmanship in any alterations or additions by choosing elaborate and ornamental construction methods where builders can show off their skill as well as highlight the crucial points of the architecture. Not only will this integrate in the

philosophy of the gothic building but this will also provide an opportunity to connect a historically community oriented building back with its community. By either catering with its new function to the community by giving them a place to explore their crafting abilities, or by using local craftsmen to show their skill in decorating and advertising their ability in the new or altered constructions in the former church. Because of the heavily diminished popularity of the ornament in recent years most renovation architects choose clean and elegant additions to monumental churches to complement the existing ornament and bring people closer to it. Specific ornamental features are still rare in these type of renovations but perhaps due to their historic and stylistic relevance warrant more exploration in church renovation and conversion architecture.

The gothic architecture that is employed by architects in the 19th and early 20th century represents a quite linear story. When these buildings are converted this story will always live on in some respect. Here it becomes the role of the architect to respect that story and keep the most relevant parts of the story visible and legible. It becomes almost inevitable that a church with its inventory of art and cultural historic artifacts will at least partially a museum. Then by displaying and contextualizing these former religious symbols and icons it can become something that transcends its religious role and becomes something that may be applicable to modern life. Where these items represent stories of charity, community, education and workmanship, these principles hold true and remain relevant in modern culture. These icons can then form the link from the historic role in the community to how the church still holds a place in the community after religious services have stopped. Historic churches with significant positions in the city structure often become recognized as monuments because of their cultural historic importance, stemming from a large and central role in the community. Therefore to keep these stories alive, visible and legible after such a church is converted, it is perhaps most important to keep these buildings public and accessible, as they were always intended to be.

References

- BOEi. (2019, December 5). advies en ondersteuning bij kerkenvisies. Retrieved November 3, 2022, from <https://www.boei.nl/kerkenvisie/>
- BOEi. (2021, November 17). Kerken en afstuderen anno 2020. Retrieved November 3, 2022, from <https://www.boei.nl/mensen-vertellen/kerken-en-afstuderen-anno-2020/>
- BOEi | Formelen: essentieel voor de bouw van een (kruisrib)gewelf. (2021, December 8). Retrieved from <https://www.boei.nl/mensen-vertellen/boei-blog-formelen-en-gewelven/>
- Bullen P.A., Love P.E.D. Adaptive reuse of heritage buildings. *Structural Survey*. 2011;29(5):411–421. [Google Scholar]
- Centre for Global Heritage and Development. (2022a). *Heritage Impact Assessment: an Introduction*. Rise 360. <https://rise.articulate.com/share/TbLTw8A3N6KGGKqeMFj3lhXYHvxfeieXu#/>
- Centre for Global Heritage and Development. (2022b, maart 2). *Online introduction to Heritage Impact Assessment*. <https://www.globalheritage.nl/news/online-introduction-to-heritage-impact-assessment>
- Conejos S., Langston C., Smith J. Le Vie Dei Mercanti SAVE HERITAGE: Safeguard of Architectural, Visual, Environmental Heritage. Naples, Italy. 2011. Improving the implementation of adaptive reuse strategies for historic buildings. [Google Scholar]
- Duckworth, L. C. (n.d.). Adaptive Reuse of Former Catholic Churches as a Community Asset (Master-thesis). University of Massachusetts - Amherst.
- Frijters, J. J. H. (n.d.). *Solied en doordacht* (Thesis). Universiteit van Amsterdam.
- Genootschap A.W.K. Voet van Oudheusden. (2004). Het nieuwe Roomsche rondom: De Sint-Barbarakerk te Culemborg. *Culemborgse "voetnoten,"* (32).
- Hill, R. (2008). *God's Architect: Pugin and the Building of Romantic Britain*. Penguin UK.
- Ikiz Kaya, D., Dane, G., Pintossi, N., & Koot, C. A. (2021). Subjective circularity performance analysis of adaptive heritage reuse practices in the Netherlands. *Sustainable Cities and Society*, 70, 102869. <https://doi.org/10.1016/j.scs.2021.102869>
- Koninklijke verzamelingen. (n.d.). Nooit gebouwd den haag. Retrieved from <https://www.koninklijkeverzamelingen.nl/tentoonstellingen/148-nooit-gebouwd-den-haag>
- Langston C., Wong F.K.W., Hui E.C.M., Shen L.-Y. Strategic assessment of building adaptive reuse opportunities in Hong Kong. *Building and Environment*. 2008;43(10):1709–1718. [Google Scholar]

- Lewis, D. F. (2021). *A.W.N. Pugin*. Historic England.
- Lu, F. (2017). Museum architecture as spatial storytelling of historical time: Manifesting a primary example of Jewish space in Yad Vashem Holocaust History Museum. *Frontiers of Architectural Research*, 6(4), 442–455. <https://doi.org/10.1016/j.foar.2017.08.002>
- Lum, T. (2019). *Designing Stories: A Narrative-Driven Design Process for Architecture*.
- McNamara, D. R. (2011). *How to Read Churches: A Crash Course in Ecclesiastical Architecture*. Amsterdam, Nederland: Amsterdam University Press.
- Ministerie van Onderwijs, Cultuur en Wetenschap. (2019, May 6). Een toekomst voor kerken; een handreiking voor het herbestemmen van vrijkomende kerkgebouwen. Retrieved September 30, 2022, from <https://www.cultureelerfgoed.nl/publicaties/publicaties/2011/01/01/een-toekomst-voor-kerken-een-handreiking-voor-het-herbestemmen-van-vrijkomende-kerkgebouwen>
- Ministerie van Onderwijs, Cultuur en Wetenschap. (2021, 20 januari). *Eén op de vier kerkgebouwen heeft een nieuwe functie*. Nieuwsbericht | Rijksdienst voor het Cultureel Erfgoed. <https://www.cultureelerfgoed.nl/actueel/nieuws/2020/11/30/een-op-de-vier-kerkgebouwen-heeft-een-nieuwe-functie>
- Museum Catharijneconvent & Rijksdienst voor het Cultureel Erfgoed. (2021a). Religieuze interieurs in Nederland, Waardevol erfgoed - Kunstwerkplaatsen van de neogotiek. In www.catharijneconvent.nl.
- Museum Catharijneconvent & Rijksdienst voor het Cultureel Erfgoed. (2021b). Religieuze interieurs in Nederland, Waardevol erfgoed - Waterstaats kerken. In <https://www.catharijneconvent.nl/>.
- Myrone, M. (2020). *Gothic Art and Gothic Culture in the Romantic Era*. Cambridge University Press eBooks, 406–425. <https://doi.org/10.1017/9781108561044.020>
- Oxford Languages. (n.d.). Narrative. In Google.com. Retrieved from <https://www.google.com/search?q=narrative+definition>
- Pereira Roders, A. R. (2007). *Re-architecture : lifespan rehabilitation of built heritage - basis*. Technische Universiteit Eindhoven. <https://doi.org/10.6100/IR751759>
- Pugin, A. W. (2013). *Contrasts: Or, A Parallel between the Noble Edifices of the Middle Ages and Corresponding Buildings of the Present Day*. Cambridge, Verenigd Koninkrijk: Cambridge University Press.
- Pugin, A. W. (2019). *Glossary of Ecclesiastical Ornament and Costume, Compiled from Ancient Authorities and Examples*. Alpha Editions.

- Pugin, A. W. N. (2015). *The True Principles of Pointed or Christian Architecture: Set Forth in Two Lectures Delivered at St. Marie's, Oscott - Scholar's Choice Edition*. Scholar's Choice.
- Rose, M. S. (2001). *Ugly as Sin: Why They Changed Our Churches from Sacred Places to Meeting Spaces and how We Can Change Them Back Again*.
- Rosenberg, H. P. R. (1972). *De 19de-eeuwse kerkelijke bouwkunst in Nederland*. Den Haag ('s-Gravenhage), Netherlands: Rijksdienst voor de Monumentenzorg-Staatsuitgeverij.
- Staatliche Museen zu Berlin. (n.d.). Staatliche Museen zu Berlin - Mittelalterliche Stadt an einem Fluß. https://recherche.smb.museum/detail/967064/mittelalterliche-stadt-an-einem-flu%C3%9F?language=de&question=%22Karl+Friedrich+Schinkel%22&limit=15&controls=none&collectionKey=NG*&collectionKey=NGAlteNationalgalerie&objIdx=11
- Stichting E.V.A. (1995, May). Stichting E.V.A. Ecologisch Centrum voor Educatie Voorlichting en Advies. <http://www.eva-lanxmeer.nl/>. Stichting E.V.A. Retrieved from http://www.eva-lanxmeer.nl/sites/default/files/files/ontstaan/EVA%20Brochure%20mei%201995_0001.pdf
- Sze T., Zapata R., Rosenstein K., Halkowich S. & Wong A. (2019). Narrative-Driven Design:: Incorporating Storytelling into the Design Process. In <https://www.gensler.com/>. Gensler. <https://www.gensler.com/doc/research-narrative-driven-design>
- Storytelling* (Master Thesis). University of Cincinnati.
- Thijm, J. A. A. (1858). *De Heilige Linie*. Kessinger Publishing, LLC.
- Tissink, F. E. (z.d.). *Narrative-driven design* [Master thesis]. TU Delft.
- Tkac, A. (2019). *Architectural Daydreams: Using the Space Between Fiction and Reality to Explore the Potentials of Architectural*
- Tongji University, WHITRAP, & UNESCO. (n.d.). HUL. Retrieved November 3, 2022, from <http://www.historicurbanlandscape.com/index.php?classid=5353>
- Treggiden, K. (2020). *Wasted: when trash becomes treasure*. Ludion. Brussels
- TU Delft chair of Heritage and Architecture. (2022). Revitalizing Heritage: Zero Waste Church: Studio Text 2022/2023. In [Brightspace.tudelft.nl](https://brightspace.tudelft.nl/). TU Delft. <https://brightspace.tudelft.nl/d2l/le/content/503098/viewContent/2985095/View>
- Viollet-Le-Duc, E. (2015). *Dictionnaire Raisoné de l'Architecture Française du XIe au XVIe siècle*. BoD - Books on Demand.



MSc Graduation studio:
Revitalizing Heritage:
Zero-Waste Church

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04-11-2022

Appendix: Stained glass, icons and artworks: an inventory of the RK Barbarakerk.

Stained glass, icons and artworks: an inventory of the RK Barbarakerk:

1. Feed the hungry – S. Elisabeth



2. Quench the thirsty – S. Gertrudis



3. Shelter strangers – S. Henricus



4. Clothing the naked – S. Vincentius



5. Visit the ill – S. Tarcisius



6. Release prisoners – S. Michael



7. Bury the dead – S. Barbara



8. Pray for the living and the dead – S. Petrus Canisius



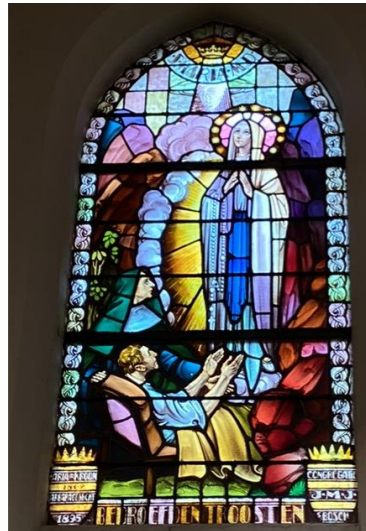
9. Forgive insults – S. Ioseph



10. Patiently bear injustice – S. Andreas



11. Comfort the afflicted – S. Maria MD



12. Give counsel in difficulties – S. Ioannes N. Ioannes N.



13. Teach the ignorant – S. Aloisius



14. Admonish sinners – S. Ioannes



Depictions of the (C corporal & Spiritual) Works of Mercy.

Corporal: 1 - 7

Spiritual: 8 - 14

(All these stained glass windows were donated by wealthy members of the church congregation.)

The saints portrayed in the stained glass windows:

1. Hongerigen spijzen – S. Elisabeth

St. Elizabeth of Hungary:

(lived: 1207 - 1231, canonized 1235; feast day November 17)

After being widowed joined the Franciscans, built a hospice for the poor and sick and served the rest of her life there.

Best known legend often depicted in artworks:

While unexpectedly crossing her husband during one of her charitable errands, the loaves of bread she was carrying turned into roses, convincing her husband of the worthiness of her kind endeavors, about which he had been chiding her.

2. Dorstigen laven – S. Gertrudis

St. Gertrude of Nivelles Gertrude of Nivelles:

(lived: 626 – 659)

Refused to be married and founded a monastery and became abbess. She became known for her devotion to scholarly and charitable works, and taking care of orphans, widows and pilgrims. She was also visited by spiritual visions and knew the bible by heart. She lived an ascetic lifestyle.

Patron saint to: travelers, Recently dead, gardeners and the mentally ill. Also became associated with rodents (symbolizing souls). Later would also become unofficially known as the patron of cats and cat owners.

In iconography often depicted with rodents at her feet or climbing her robes.

3. Vreemdelingen herbergen – S. Henricus

Henry II, or Saint Henry:

(Lived 973 - 1024, canonized 1146; feast day July 13)

Duke of Bavaria, Last Holy Roman Emperor of the Saxon dynasty. He was canonized by Pope Eugenius III, more than 100 years after his death, in response to church-inspired legends. Known as the great architect of cooperation between church and state. His canonization is justified for being a great representative of the medieval German priestly kings.

Patron saint to: all Oblates.

4. Naakten kleden – S. Vincentius

St. Vincent de Paul:

(Lived 1581 - 1660, canonized 1737; feast day September 27)

Founder of the Congregation of the Mission (Lazarists, or Vincentians) for preaching missions to the peasantry and for educating and training a pastoral clergy.

Established the Confraternities of Charity—associations of laywomen who visited, fed, and nursed the sick poor. The wealth of these women aided him in establishing the founding and other hospitals. He also cofounded the Daughters of Charity in 1633 (the first noncloistered religious institute of women devoted to active charitable works).

Patron saint to: charitable societies.

5. Zieken bezoeken – S. Tarcisius

St. Tarsicius:

(Likely lived around 300)

After Mass he took consecrated Hosts to imprisoned Christians awaiting martyrdom. On his way he encountered a group of pagan boys and men harassing him and demanding to see what he carried. Tarsicius refused and the mob attacked him and Tarsicius hid the Hosts. Eventually the mob killed Tarsicius but when they turned him over to see what he hid, the hosts had vanished. His body was recovered and buried in the catacomb of St. Callixtus, his relics are now located in Rome at the church of San Silvestro in Capite.

Patron saint to: First Communion and Altar servers.

6. Gevangenen verlossen – S. Michael

St. Michael the Archangel:

(feast day September 29/May 8)

One of the Archangels. Depicted as a great captain, the leader of the heavenly hosts, and the warrior helping the children of Israel. regarded as the helper of the church's armies against the heathen and against the attacks of the Devil. The numerous representations of Michael in art reflect his character as a warrior: he is shown with a sword, in combat with or triumph over a dragon, from the story in the Book of Revelation (Apocalypse).

7. Dooden begraven – S. Barbara

St. Barbara of Nicomedia:

(Lived around 300; feast day November 4) Namesake of the RK Barbarakerk and patron saint to Culemborg.

Saint Barbara was the daughter to a heithen father, who was locked away by her father in a tower to protect her. Despite having barely any contact to the outside world she converted to Cristianity. Reluctant to stray from her new faith despite her father's pleas, she got beheaded by her father with a sword, dieing as a marter.

Barbara would become the patron-saint of Culemborg after 1421 when the then Lord of Culemborg creates a commune of religious men that would pray daily for the Lord's well-being, as the protector against sudden death, these men would be devoted to Saint Barbara. After this the main church of Culemborg would also be devoted to Saint Barbara, and she would evolve to being the Patron-Saint of Culemborg. In the city of Culemborg there are many depictions of the Saint as a result, and many of the city's churches get their name from this saint.

Patron saint to: protection against fire, explosion, lightning and sudden death. Also patron to Architects, Engineers, Firefighters, Artillerymen and Ballplayers.

In iconography often depicted with: A palm branch or peacock feathers, a tower with three windows, the Chalice and the Host, A cannon and/or a Sword. As a Virgin Martyr she is usually depicted with blond hair, a palm branch and a crown.

8. Voor levenden en dooden bidden – S. Petrus Canisius

St. Peter Canisius:

(Lived 1521 – 1597, canonized 1925; feast day December 21)

Was a doctor of the church, Jesuit scholar and a strong opponent of Protestantism. Called the second apostle of Germany. He taught at universities around Germany, Austria and Switzerland. He delayed the advance of Protestantism and sought to renew the Roman Catholic Church in Germany by means of his friendship with the Holy Roman Emperor and numerous magnates, by his preaching around Germany, by extending the Jesuit order and especially by his desire to provide worthy and scholarly priests. His major work, the *Triple Catechism* (1555–58), containing a lucid exposition of Roman Catholic dogma became the most famous catechism of the Counter-Reformation, going through 400 editions in 150 years.

9. Beledigingen vergeven – S. Ioseph

St. Joseph:

(Lived around 0; feast day March 19/May 1)

Lived as a Carpenter, he was a decedent of the house of King David, husband to Mary and father to Jesus. Teacher of the craft of carpentry to Jesus.

Patron to: the universal church in Roman Catholicism, Mexico, Canada and Belgium.

10. Onrecht geduldig lijden – S. Andreas

Saint Andrew the Apostle:

(Lived around 0; feast day November 30)

One of the twelve Apostles of Jesus and the brother of Saint Peter. Called by Jesus to follow him, Andrew asked Jesus for signs of the earth's end. Before Jesus' call he was an disciple of St. John the Baptist. St. Andrew became known as the first called by Jesus and his missionary activity around the black sea. **Patron to:** Scotland, Russia and social networking. In iconography he is represented with an X-shaped cross.

11. Bedroefden troosten – S. Maria MD

St. Mary Magdalene:

(Lived around 0; feast day July 22)

One of Jesus' most celebrated disciples and the first to see Jesus resurrected. Jesus cleansed her of seven demons, likely meaning curing her of a physical disorder. Wanting to anoint Jesus' body she found Jesus' tomb empty. She was also instructed by Jesus to tell the apostles that he would ascend to God. According to Medieval legend she was John's wife, and according to French tradition she evangelized the Provence.

Patron saint to: the contemplative life, converts, glove makers, hairstylists, penitent sinners, people ridiculed for their piety, perfumeries and perfumers, pharmacists, and women.

12. In moeilijkheden goede raad geven – S. Ioannes N

St. John of Nepomuk:

(1345 - 1393, canonized 1729; feast day May 16)

Murdered during the check conflict of church and state in Bohemia in the latter 14th century. He was a doctor of canon law and received several church offices. In 1390 he was the vicar general for the archbishop of Prague. He helped thwart the king's ambition to make a new bishopric out of the province of Prague. John was arrested as the archbishop's chief agent. Wenceslas personally tortured him with fire, after which he reconsidered and released him on an oath of secrecy regarding his treatment. John, however, was dying, and, to conceal the evidence, Wenceslas had him gagged, shoved into a goatskin, and cast into the Vltava River. Bohemian Catholics later regarded him as a martyr.

Patron saint to: Bohemia (Chechia), Confessors, Bridges. He is venerated in Austria and Spain.

13. Onwetenden leren – S. Aloisius

St. Aloysius Gonzaga:

(1568 - 1591, canonized 1726; feast day June 21)

Italian Jesuit, Destined for a military career as a nobleman, he was educated at the ducal courts of Florence and Mantua and at the royal court of Madrid. He resigned his inheritance and social status and entered the Jesuit order. Noted for his asceticism, he quickly volunteered to care for the sick and dying at a Jesuit hospital when plague broke out in Rome. Shortly before his ordination, he contracted the disease himself and died at age 23.

Patron saint of: Roman Catholic youth.

14. Zondaars vermanen – S. Ioannes

St. John the Baptist

(Lived around 0; feast day June 24)

A Jewish prophet of priestly origin who preached the imminence of God's Final Judgement and baptized those who repented in self-preparation for it. Sometimes seen as the forerunner of Jesus. He had a circle of disciples and Jesus was among the recipients of his baptism.

Patron saint of: Builders, tailors, printers, Baptism Conversion to a faith, people dealing with storms and their effects (e.g. hail) and people who need healing from spasms or seizures.

Goldammer, K. M. A. (2020, November 12). Religious symbolism and iconography | Description, Meaning, Types, Influence,

& Facts. Retrieved from <https://www.britannica.com/topic/religious-symbolism>

Mensching, G. (1998, July 20). *Saint - Saints in Western religions*. Encyclopedia Britannica.

<https://www.britannica.com/topic/saint/Saints-in-Western-religions>

Catholic Online. (n.d.). *Saints & Angels - Catholic Online*. <https://www.catholic.org/saints/>



The altar of Mary (*Likely constructed by the van Genk art clan*)

Portrayed: H. Maria (Center), H. Barbara (Left), H. Caecilia (Right)

St. Mary or the Virgin Mary

(Lived around 0; feast day July 22)

The virgin mother of Jesus, biblical accounts are given of her humility and obedience to the message of God have made her an exemplar for all ages of Christians. She is named the second Eve, immaculate mother of god. Betrothed to Joseph. Mary is the center of various celebrations and has a central role in many Cristian sects.

Patron saint of: human beings, motherly watching over them. Also groups that include mothers; blood donors; travelers and those who work in the travel industry (such as airplane and ship crews); cooks and those who work in the food industry; construction workers; people who make clothes, jewelry, and home furnishings; numerous places and churches worldwide; and people who are seeking spiritual enlightenment.

Often depicted in art with a crown or a rose and the baby Jesus.

St. Barbara of Nicomedia:

(Lived around 300; feast day November 4) Namesake of the RK Barbarakerk and patron saint to Culemborg.

Saint Barbara was the daughter to a heithen father, who was locked away by her father in a tower to protect her. Despite having barely any contact to the outside world she converted to Cristianity. Reluctant to stray from her new faith despite her father's pleas, she got beheaded by her father with a sword, dieing as a marter.

Barbara would become the patron-saint of Culemborg after 1421 when the then Lord of Culemborg creates a commune of religious men that would pray daily for the Lord's well-being, as the protector against sudden death, these men would be devoted to Saint Barbara. After this the main church of Culemborg would also be devoted to Saint Barbara, and she would evolve to being the Patron-Saint of Culemborg. In the city of Culemborg there are many depictions of the Saint as a result, and many of the city's churches get their name from this saint.

Patron saint to: protection against fire, explosion, lightning and sudden death. Also patron to Architects, Engineers, Firefighters, Artillerymen and Ballplayers.

In iconography often depicted with: A palm branch or peacock feathers, a tower with three windows, the Chalice and the Host, A cannon and/or a Sword. As a Virgin Martyr she is usually depicted with blond hair, a palm branch and a crown.

St. Cecilia

(Lived around 300; feast day November 22)

One of the most famous virgin martyrs of the early church. She was a noble Roman who vowed her virginity to god. When she was married against her will to the future saint Valerian, she told him that an angel of god wished her to remain a virgin. He promised to respect this wish if he were allowed to see the angel. She replied that he would if he were baptized. On his return from baptism he found Cecilia talking to the angel. She then converted his brother Tiburtius, who also saw the angel. Both men were martyred before she was. According to tradition, she "sang in her heart to the Lord" as the musicians played at her wedding. She distributed her possessions to the poor, which enraged the prefect Almachius, who ordered her to be burned. When the flames did not harm her, she was beheaded.

Patron saint of: Music and Musicians.

In art she is often represented playing the organ.



The Pulpit (1911)

Portrayed around the platform: the four evangelists.

The Four Evangelists:

- Matthew – a former tax collector (Levi) who was called by Jesus to be one of the Twelve Apostles.
- Mark – a follower of Peter and so an "apostolic man".
- Luke – a doctor who wrote what is now the book of Luke to Theophilus. Also known to have written the book of Acts (or Acts of the Apostles) and to have been a close friend of Paul of Tarsus.
- John – a disciple of Jesus and the youngest of his Twelve Apostles.

Portrayed on the soundboard: The Holy Spirit surrounded by the seven virtues of the holy spirit.

The seven virtues:

1. Sapientia (Wisdom)
2. Intellectus (Understanding)
3. Consilium (Council)
4. Fortitudo (Fortitude)
5. Cognitio / Scientia (Knowledge)
6. Pietas (Piety / Reverence)
7. Timor Domini (Fear of the Lord)

St. Augustine of Hippo:

Statue gifted as a commemoration of the Priest-anniversary of the pastor (1943).

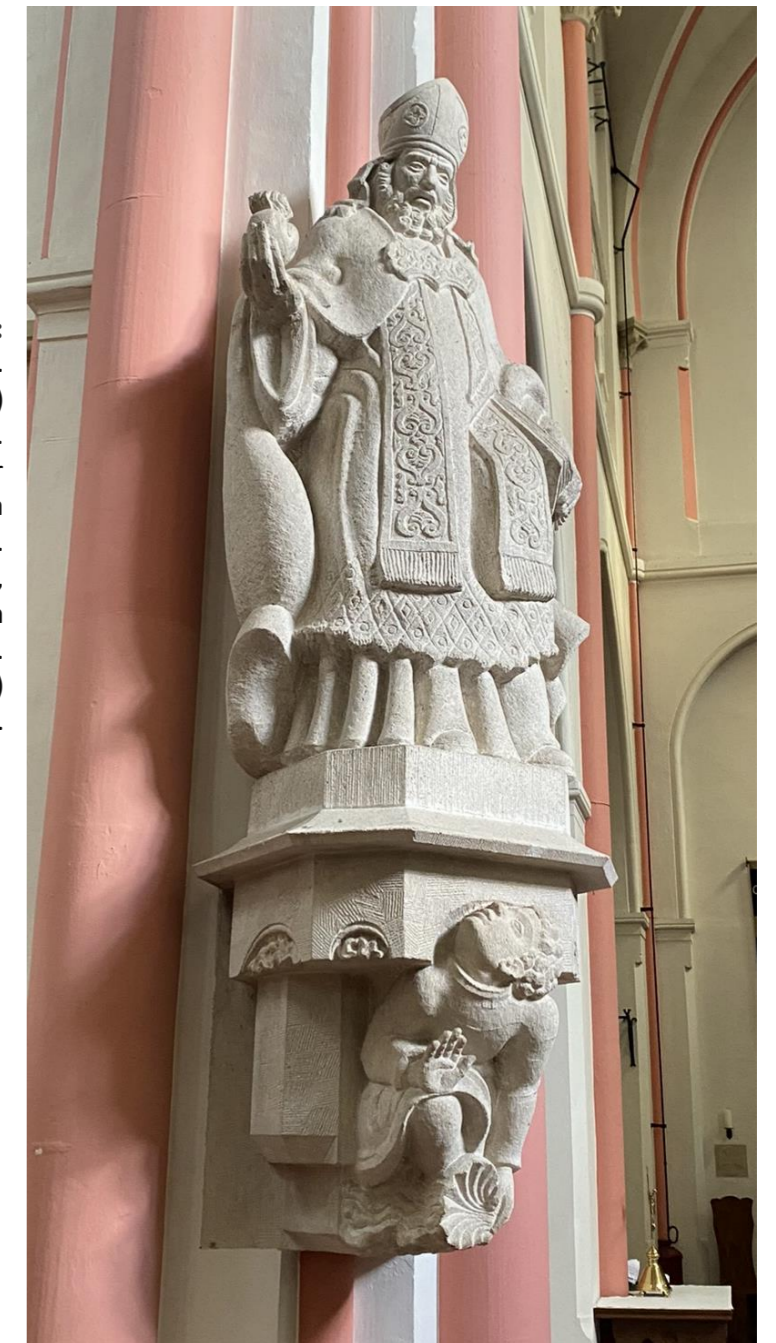
(354 – 430; feast day August 28)

Christian bishop and theologian.

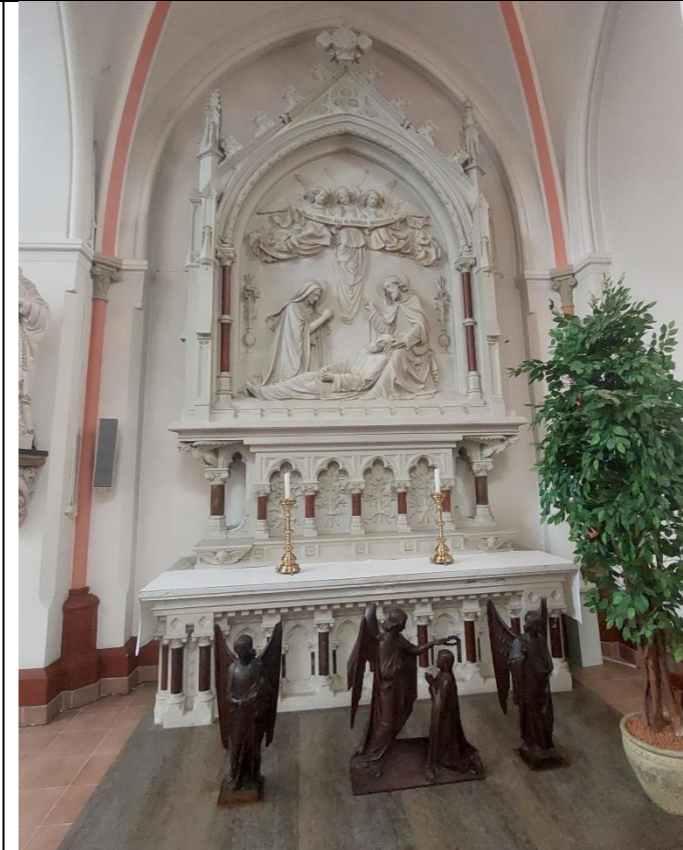
One of the Latin Fathers of the Church and perhaps the most significant Christian thinker after St. Paul. Augustine's adaptation of classical thought to Christian teaching created a theological system of great power and lasting influence.

His writings influenced the development of Western philosophy and Western Christianity, and he is viewed as one of the most important Church Fathers of the Latin Church in the Patristic Period. In Roman Catholicism he is formally recognized as a doctor of the church. His most important works are: Confessions (c. 400) and The City of God (c. 413 – 426)

Patron saint of: brewers.



Remaining artworks



Throne of mercy (De genadestoel):

Around 1628 already part of the altar of the predeceasing clandestine church.
Painted by a pupil of Peter Paul Rubens.

Depicting:

God, Jesus and the Holy spirit (The Holy trinity)

The tabernacle of Antwerp (1825):

Its origin how it ended up in the church is unclear.
A decorative safe with turnable and lockable interior that can house and protect holy relics.

Panels depicting:

The Last supper (top)

A Pelican representing the Holy Spirit (Bottom)

Inscription: Beati qui in Domino moriuntur

Translation: Blessed (are they) who (will?) die in the Lord. Revelation 14:13

An altar to pay respect and pray for the dead.

Also likely created by the van Genk art clan.

Consecration cross

Consecration crosses are crosses on the interior walls and exterior architecture of a Christian church or cathedral, showing where the bishop has anointed the church with chrism or holy water in order to consecrate it. There is sometimes a place for a candle in front of each cross which is lit on the anniversary of the consecration. The crosses signify the sanctity of the church.

Further symbolism

Beatitudes

Blessed are the poor in spirit,
for theirs is the Kingdom of Heaven.

⁴Blessed are those who mourn,
for they will be comforted.

⁵Blessed are the meek,
for they will inherit the Earth.

⁶Blessed are those who hunger and thirst for righteousness,
for they will be satisfied.

⁷Blessed are the merciful,
for they will be shown mercy.

⁸Blessed are the pure in heart,
for they will see God.

⁹Blessed are the peacemakers,
for they will be called the Sons of God.

¹⁰Blessed are those who are persecuted because of righteousness,
for theirs is the Kingdom of Heaven.

¹¹Blessed are you when people insult you, persecute you and falsely
say all kinds of evil against you because of me.

¹²Rejoice and be glad, because great is your reward in heaven, for in
the same way they persecuted the prophets who were before you.

Number Symbolism:

1. Symbolic of unity (Deuteronomy 6:4). God is one, Jesus and the Father are one, etc.
2. Symbolic of a witness (Exodus 25:22; Matthew 26:60; Luke 10:1). Christ sent his disciples out two by two, and wherever two are gathered in His name He is present, etc. Also the two Testaments of the Bible or the two natures of Christ.
3. Symbolic of perfection and completion (John 2:19; Matthew 12:40; Luke 13:7). The three Persons of the Holy Trinity is the best example of this. Three is a popular number of the ancient world, and the Greek philosopher and mathematician Pythagoras (known for his "Pythagorean theorem") saw three as a number of completion. It is found throughout the Bible, such as the Trinity, the number of apostles who witnessed Jesus' transfiguration, the three hours of darkness at Jesus' crucifixion, and the three days Jesus spent in the tomb.
4. Symbolic of the Earth (Daniel 7:3; Matthew 13: Isaiah 11:12). Four directions, four seasons and the four evangelists.
5. Symbolic of grace (Leviticus 1-5; Genesis 43:34; Matthew 14:17). Five types of offering in Leviticus, the Book of Psalms is divided into five sections, five books of the Law. The Tabernacle contained five curtains, five pillars, five sockets, five bars, and the altar was five cubits by five cubits, etc. Also refers to the five wounds of Christ, from which all grace flows.
6. Symbolic of humanity and human weakness (Genesis 1:31; Revelation 13:15-18). Man was created on the sixth day, man labors six days, slaves served only for six years, etc. Adam and Eve were created on the sixth day of creation. Six also represents evil and a trio of six is the number of the Beast in the book of Revelation.
7. Symbolic of spiritual perfection (Genesis 2:2; Psalm 12:6; Matthew 18:22). Thus, we see seven churches, seven spirits, seven gifts of the Holy Spirit, etc. similar to the number three, is often used to represent completion or perfection. There are countless examples in the Bible, such as the seven days of creation, and many others throughout Christian teaching (seven joys and seven sorrows of Mary, seven deadly sins).
8. Symbolic of a new beginning (Genesis 17:2; Mark 16:9-11; Genesis 7:13). Christ appeared eight times after His resurrection, God saved eight people from the Flood, newborns were circumcised on the eighth day. Eight is most closely associated with the Resurrection and the new creation. Jesus rose on the eighth day. Jewish boys were circumcised on the eighth day and St. Paul explained to his communities how "True circumcision is not outward, in the flesh. Rather, one is a Jew inwardly, and circumcision is of the heart" (Romans 2:28-29). Baptismal fonts are often designed in an octagonal shape to represent this new life and "circumcision of the heart."
9. Nine is usually seen as an angelic number as the Bible mentions the nine choirs of angels.
10. Symbolizes earthly government (Ruth 4:2; Exodus 20:1-17; 1 Kings 11:31-35). Ten lost tribes, ten commandments, and a tithe being a tenth of our earnings. Ten is also seen as a perfect number, usually referring to the Ten Commandments.
12. symbolizes spiritual authority (Matthew 10:2-4; Revelation 7; 10:2-4). Twelve tribes, twelve apostles, Jacob had twelve sons, God ordered that twelve loaves of unleavened bread be present in the temple each week, etc. Twelve is a common number in Christianity and the Bible and often refers to a foundation. Israel is composed of 12 tribes and Jesus chose 12 apostles. The New Jerusalem in the book of Revelation has 12 gates.
13. Thirteen, similar to the number six, represents betrayal and rebellion. This is most clearly seen at the Last Supper where the 13th person at the table, Judas, left and betrayed Jesus.
30. symbolizes dedication to a calling (Numbers 4:3; Luke 3:23; 2 Samuel 5:4). Aaronic priests were initially dedicated at 30 years old. Christ began His public ministry at 30 years of age, David was 30 years old when he began his reign over Israel.
40. Symbolic of trials (Genesis 7:4; Exodus 24:18; Numbers 14:33; Matthew 4:2). Moses lived 40 years in the desert, 40 years in Egypt, and was on Mount Sinai for 40 days, Jonah preached in Nineveh for 40 days, Ezekiel slept on his right side for 40 days, the rain of the great flood lasted 40 days and 40 nights, Jesus was led into the wilderness for 40 days before starting his public ministry, Lent is a period of 40 days. etc.
70. Symbolic of judgment (Numbers 11:16; Ezekiel 8:11; Jeremiah 29:10). God provided 70 priests for Moses in passing judgment. For seventy years, the Israelites were kept in Babylonian captivity.
666. Associated with the Anti-Christ, The Church Fathers noted several other instances wherein the number six featured prominently.

Goldammer, K. M. A. (2020, November 12). Religious symbolism and iconography | Description, Meaning, Types, Influence, & Facts. Retrieved from <https://www.britannica.com/topic/religious-symbolism>

Mensching, G. (1998, July 20). *Saint - Saints in Western religions*. Encyclopedia Britannica. <https://www.britannica.com/topic/saint/Saints-in-Western-religions>

Pugin, A. W. (2019). *Glossary of Ecclesiastical Ornament and Costume, Compiled from Ancient Authorities and Examples*. Alpha Editions.

Stewart, I. (2005, September 9). *Number symbolism | History, Meaning, & Facts*. Encyclopedia Britannica. <https://www.britannica.com/topic/number-symbolism/7>

The Editors of Encyclopaedia Britannica. (2023, April 5). *Beatitude | Definition, Etymology, List, & Facts*. Encyclopedia Britannica. <https://www.britannica.com/topic/Beatitude-biblical-literature>

Reflection paper

The story lives on

Graduation studio Heritage & Architecture

Zero-Waste Church

Bas Nijenhuis, 4486269

Bas Nijenhuis
Student Nr.: 4486269

Studio:

Heritage & Architecture: Revitalizing Heritage, Zero-Waste Church.

Tutors:

Catherine Visser (Architecture)
Anèt Meijer (Building Technology)
Wido Quist (Research)

Title:

The story lives on, *Optimizing Narrative driven Design for a Zero-Waste conversion of ex churches.*

Location:

Culemborg, The Netherlands

Date:

May 2023

Introduction

This reflection was written to fill the graduation requirements for the master-track of Architecture at TU Delft. In this reflection the graduation process as a whole will be reflected upon and the various aspects and their effect or effectiveness will be discussed.

For the design studio Heritage & Architecture Revitalizing Heritage, Zero-Waste church, the aim was to find a church that was already vacant or soon to become vacant. Then the goal would become to find a suitable and fitting new purpose for this church through an architectural intervention that minimizes waste. This concept of waste would then not only apply to material waste created by the intervention, but also the cultural and historical waste of symbolism and storytelling that the building embodied during its time as a church. Many of these former churches are prominent eye-catchers in central parts of the city fabric, as well as often being recognized as some sort of important and or protected monument. In addition to a central and visible position these churches had a very public and community oriented function making them an extremely integral part of city life during their heyday. When the role of these buildings is changed this background should be kept in mind to make sure that when the building is converted it is not only a shadow of its former self, but still represents and tells its (former) story and role as well as being able to keep playing a public role so that it stays a community gathering place as it was always intended to.

In this graduation studio my main focus for the project was to keep our chosen historic church in Culemborg central to the surrounding community it used to cater to as a church. In doing so, the goal was to use both the new intended use as well as the architectural interventions to maintain the original story of the church as a community place, an educating place and a place built on community collaboration, donation, craftsmanship and charity. This would turn out to mean striking a complex balance between expanding to create new space for new uses, keeping the central space open and accessible and minimizing wasteful interventions while creating new features that highlight a history of craftsmanship and follow some of the Neogothic principles upon which the church was originally constructed. In the following chapters the implications and results of this approach will be described and reflected upon.

Research method and approach

The research started off by finding a suitable church to take on as a case study, for this I early set my sights on finding a church from the Dutch gothic revival. These churches are made to have a great presence in the city because of their high stature, spires, roofs and characteristic decoration. Personally reasoning that these churches were old and significant enough to carry deep and interesting stories, utilizing a style of architecture that is well established in the Netherlands as well as being highly characteristic which could provide guidance in approach for both function and the shaping of any newly added architecture for the conversion of the church. Additionally since this style-period took place around 1900 there is still a good amount of documentation and original drawings available to fully comprehend the historic building taken as a case-study. After choosing the RK Barbarakerk in Culemborg as our case-study, we started our general analysis of the building and its history. This is where I first got a view of the deep historical link between the church's features and the community it was for. This would gradually pull me into the symbolism that was spread throughout the church to try and understand what stories the building and all its features and furnishings tell on both surface level, and beyond. This storytelling would turn out to be a dominant and inherent feature of Neogothic architecture. For my own research this narrative design of neogothic architecture and its relation to our case study became the main focus. This would lead me to discover how the symbolic meaning of the gothic architecture for the Catholic faith when they reestablished themselves in the Netherlands after a period of being shunned. It would also point out how radical in a sense the main neogothic architects of the time were in upholding the gothic tradition. These architects would often advocate the use of historic features that the church itself already deemed outdated and archaic. Having learned about the fundamental principles of Gothicism, the societal representation and meaning and the interpretation of the contemporary neogothic architects provided a thorough view on the values held in the church and its features, as well as how those two were linked. This ended up providing a good foundation upon which the architectural decision making could be based and what a fitting new use for a former church could be according to its historic role. However aside from using this understanding of Gothicism as a guideline, it also created a situation where every small detail carried some sort of meaning or symbolism, where trying to maintain the entire existing narrative of the church would become a big constraint for any type of intervention. This would end up being the start of a design process of consistent compromise, where trying to use some of the gothic ideals would lead the decision making process.

Research and Design

Given that in the graduation studio I had to establish my own design exercise within the parameters of the studio, I initially had no clear view of which direction I wanted to go with the design. Only that because in this exercise I would be dealing with heritage, that the redesign needed to uphold, respect and perhaps even amplify the features and values that are represented and protected under its monumental status. Through conducting the research I would be gradually pointed in the way of a use that made sense on both historic and community levels. By combining the story of its origins with the story of its architecture and construction and finally its community role and relationship, this created a shortlist of possible uses that I could then create a program for the design exercise with.

Once a fitting program was established the challenge became to honor the spatial qualities of the neogothic architecture while properly fitting in the new uses. For this the research would once again be leading in providing the neogothic vision on architecture which could be translated to current time and building principles. This would also help ensure that the new modifications and additions wouldn't clash with the existing architecture. During the design process this theoretic background would need extra support from case studies to properly assess the applicability of gothic ideals in a redesign, and how this can be executed to a modern standard. These case studies would go back into the territory of research, but with a much more visual focus, where it shifts from the ideals and methodology, to execution and representation. For the studio focus of zero waste, material use and reuse was also a key factor. Given that gothic materials are long lasting but other than longevity, not particularly sustainably produced or demountable for future use, this would create a need for material substitution to otherwise maintain the gothic building principles. By diving back into the research on Gothicism and understanding the decision making process of the neogothic architects, a reasonable outlook on fitting, non-traditional materials could be argued. By in essence creating a neo-neogothic architecture, the research was fundamental for the decision making process in the design process. Where the design mostly functioned as a proof of concept of using the initial ideals and processes for the adaptation of obsolete heritage. As the design will not be realized the actual effect of the design cannot be fully observed, as predictions of use do not necessarily the adaptation of something by the community in real life. However it does serve as an illustration of what the implications of such an approach as used in this project for the integrality and unity of a modern design on an historic structure. Then by comparing the principles with similar projects that are executed, the effectiveness of the design can be approximated.

Project in relation to the studio

The studio of the Zero-Waste church provided an interesting and complex challenge. This specific focus on zero-waste would turn out to be a particular challenge when dealing with a building that is partially deteriorated, uses many difficult to repurpose materials and furnishings, and has a layout that is very specifically suited for one purpose, namely church services. Because of a specific interest in the historical background and integrated symbolism in church buildings I chose to interpret the zero-waste to also include its historic character, its community oriented nature and its symbolic storytelling as things that had to be maintained after the conversion as to not create immaterial or cultural historic waste. This in combination with an already naturally conservative approach to modifying the existing building would lead to a very constrained starting point of what was possible with the existing church. As a result of personally enjoying historical buildings as a window into a former time and culture, I tend to like keeping as much original and reversible as possible, so that the building may live on intact as an artifact of a former time. During the design process this was partially inhibiting from making hard choices where interventions had significant impact on spatial organization and visual qualities of the existing architecture. These interventions, though impactful in some detrimental ways, were however necessary to ensure optimal integration of the program.

For the material component of the zero-waste portion of the graduation studio, an additional focus was put on the reuse of removed, and sustainable sourcing of new materials. In trying to comply with this it sometimes became a contradiction with a mostly aesthetic based architecture that reflected the gothic art and craftsmanship that I employed for the redesign. For me the design part of the studio became a true exercise of compromise, where the balance was continuously struck between visuals, functionality and material use. To allow myself to use more materials create a representative and principally gothic addition, the focus was put on creating a structure that could be mostly disassembled and reused. For this standard dimensions of building materials would be stacked and tied so that these materials would remain intact when they are disassembled, giving them an infinite range of possibilities for reuse.

Whether its possible to truly execute a conversion of a former church with Zero-Waste is unlikely, given that the building is old and partially deteriorated. In the case of our case-study parts of the roof were rotten and decayed. This wood could potentially be trimmed down to good parts, but the rotten wood is still waste with no other possibility of an actual use. When it comes to the history portrayed in the symbols and artifacts of the church, when religion is removed from

these objects their story becomes purely anecdotal and very hard to relate to anything other than religion. For many of these artifacts the only logical future is to become museum pieces. Since most of these artifacts are created simultaneously with the construction of the church as part of a complete package, their primary value is connected with their original church, where some of this value is lost when these items are transferred to other churches or stored in a depot. However since these monuments are already specifically appreciated for its representation of specific cultural or historic sentiment and heritage values, it makes sense that these buildings will always at least in part serve a role as a museum. This museum part then naturally gives place to icons and symbols that have little significance when no longer in use as a religious object. This than being the most effective approach to minimize the cultural and or historic waste after the conversion of a church.

Relationship between the project and the wider social and professional context

The research and design exercise carried out in this graduation studio made me attempt to fully comprehend the origins and story behind the neogothic church. It made me reflect on for whom we create architecture. The historic churches were built on public funds by donations of the community, being a contemporary form of crowdsourcing architecture. This meant that the architecture was not only establishing presence to the people by showing its grandeur, it was truly public for the community by creating an interior square and meeting place where people came for help, guidance, education and reflection. For many of the churches that become vacant and get converted, the new use is commercialized by turning it in to hotels, apartments, offices or event spaces. But since these buildings are often monuments because of the cultural and historic value they embody, and because of being built on public funds, perhaps it should be more of a focus to keep these buildings public. Whether this is feasible is more difficult question however, since these old and often deteriorating buildings require high maintenance and running costs. Because of this a more commercial use is often chosen since this can create enough revenue to pay for upkeep of the building. Where community driven conversion projects of churches (notably de Petrus in Vught) have proven successful in the past, perhaps it can also be the role of the architect to advise to keep historically public buildings public. Then likely by maintaining the principle of public donation, perhaps now in the form of crowdfunding, these buildings can remain open and part of the community keeping them an integral and valuable part of the city fabric.

The role of the architect is that of an educated designer, providing a professional and experienced view on creating functional buildings. In the case of heritage where the starting point is an existing and often in some way significant building. The architect should do everything in his power to ensure that any intervention done makes sense in the broader context of the building and of its place in the cityscape. Since architecture is a profession that creates public goods that creates objects in open view, it also remains the role of the architect to make sure communities identify with their surroundings, engaging with the relevant communities in the design process to ensure the full integration of a building.

On a personal level this project made me question my own biases and conservative stance when dealing with heritage. The project was an invaluable test of compromise where different conflicting requirements needed a solution somewhere in the middle. In addition to this it keeps being important to discuss and review these type of projects with others, both in the same profession as well as outside, to help see through personal biases and potential tunnel vision. This will keep being the most reliable way to create a well rounded and integrated design that is not just catering to a specific demographic, but that can be universally appreciated.