

Urban development of the European monastic city through the conventual system in Aachen

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Abstract: The urban development of European cities is linked to the emergence of monasteries. During the Middle Ages, religious orders spread occupying not only the territory, but especially the city. In central Europe, in what is now Germany, monasteries developed significantly. Cities such as Cologne or Aachen had more than 60 and 30 monastic buildings, respectively. Aachen stands out as not only the second monastery town in North Rhine-Westphalia but also as other important facts. It was the capital of the Carolingian Empire, one of the points on the Pilgrim's Way to Santiago de Compostela, and later as a border town of the Holy Roman Empire. The monasteries in the city are not only religious facilities, but also educational, health and even inns. The centrality of Aachen, together with the general lack of a public school, hospital, or hospice system, meant that these functions were taken over by the religious orders in the monastic buildings. The main objective is the morphological study of the city of Aachen through its monastic buildings. The GIS has been used as the main methodological tool, allowing the graphical representation of data and georeferencing of the buildings in the city. Among the main results, the conventual surface represent the 9% of the urban area. Furthermore, a differentiation has been made between buildings inside and outside of the walls, which is key to urban development. The importance of religion lies not only in faith and prayer, but also in its capacity to generate new buildings and typologies for the city, which favour its urban development. Monasteries and convents are not only a reflection of urban importance, but also mark future urban growth. The city of Aachen is shown to be a remarkable example of monastic development in the European city.

Keywords: Aachen, Europe, Monastic cities, Morphological studies, Urban development.

Introduction

Monasteries and convents were not only important in the Christian and religious sphere. These buildings were hierarchically organised by different religious orders that acted in parallel to the Church. The beginning of the European monastery is strongly linked to the countryside and nature. However, this type of building became gradually embedded both in the territory and in the urban environment. This had a decisive influence on the new growth of cities. In the absence of a public or private system of urban facilities, monasteries and convents were not only places of prayer, but also real urban facilities such as schools, hospitals, and lodgings. Depending on the type of religious order, the use of the monastery changed, complementing the already religious use linked to the church.

The shaping of the European city as we know it originated during the Middle Ages. A city marked by political and social influence based on the nobility and the Church. In fact, any manifestation of urban life is to a greater or lesser degree related to religious establishment, with the presence of the Church as a spiritual and ideological power¹. Although there was widespread ruralisation during the medieval period, the city gradually regained its prominence on the continent. The once medieval settlements were consolidated as centres of importance not only politically but also economically and socially². In this development, the Church, through the Christian religion, played a crucial role in the shaping of the European city. Although the beginning of European Christianity occurred during the Roman period, it reached its peak during the Middle Ages. It is mainly concentrated in the western and southern areas of the continent. However, the influence of Christianity in the urban sphere is not characteristic until the mid-medieval period. The configuration of the Church as a centre of power and faith in Europe led not only to the appearance of cathedrals or churches in the cities but also to the creation of convents and monasteries.

Within the complexity of the European continent, it is worth highlighting its central territorial area. The area that approximately occupies today's Germany has been key in the urban and continental development of Europe. In the 8th century, with Charlemagne and the Carolingian Empire, the first signs of unification of the central territory appeared. The reference point was its capital, the city of Aachen. In this city, Charlemagne established his residence and built a cathedral, which was later used as a place of coronation for future European emperors. The formation of the Holy Roman Empire in the 10th century would last for more than a millennium, shaping the future development of Europe³. The empire was divided into small states and city-states that could belong either to the nobility or to the clergy, under the figure of the bishop. As a free imperial city, Aachen was politically independent of the empire⁴. The spread of

¹ MITRE FERNÁNDEZ, Emilio – **La ciudad cristiana del occidente medieval**. Madrid: Editorial Actas s.l., 2010, p. 54.

² JANSSEN, Wilhelm. – Klöster und Stifte. BEHR, Hans Joachim and HEYEN, Franz Josef – **Geschichte in Karten. Historische Ansichten aus den Rheinlanden und Westfalen**. Düsseldorf: Schwann, 1985, p. 138.

³ WILSON, Peter H. – **The Holy Roman Empire**. London: Penguin Books Ltd, 2020, p. 1.

⁴ BRECHER, August – **Die Kirliche Reform in Stadt und Reich Aachen von der Mitte des 16. Bis zum Anfang des 18. Jahrhunderts**. Münster: Aschendorfsche Verlagsbuchhandlung, 1956, p. 2.

Christianity and the papacy's territorial hierarchisation of Catholic territories led to the division of ecclesiastical provinces. In this sense, convents and monasteries are protagonists in this region of Europe. The main monastic foundations in the German cities of the 14th and 15th centuries were studied by Planitz in *Die Deutsche Stadt im Mittelalter. Von der Römerzeit bis zu den Zunftkämpfen*.

The historical territorial configuration marked by the Rhine River, followed by its transformation into the Duchy of Lower-Lotaringia, led to the appearance of a multitude of convents and monasteries in the present-day German Land of North Rhine-Westphalia⁵. Its capital is the well-known city of Cologne, which was home to one of the largest populations in the Middle Ages, almost 40,000 inhabitants. It was also the seat and capital of the bishopric of Cologne from its earliest days to the present day. In addition to the capital, there are other cities of not only territorial but also conventual importance, such as Münster and Aachen, the heads of ecclesiastical provinces. In fact, the latter is the second most important convent town in North Rhine-Westphalia.

1. Objectives

The main objective of the research is the morphological study of the city of Aachen through its historical layers and its monastic buildings. The city is a European focal point for monasteries, which should be studied not only from the artistic and architectural point of view, but also from the urban planning point of view. To carry out the work, the GIS programme was used as a methodological tool to graphically represent and georeference the conventual buildings in the city. This makes it possible to superimpose different layers such as those of the city itself, historical layers, and the new layer of the monastery system. In addition, a first overview of monasticism from a European perspective is provided. The location of enclaves of some of the most characteristic orders allows us to observe the influence of the monasteries on the territory in addition to the city itself. Important territorial connections are analysed, such as the Way of St. James, a key to the development of monasticism in central-western Europe.

2. The monastic system in Central Europe

The territory of the European continent is the germ of the expansion of Christian monasticism. Convents and monasteries built by religious orders were not specific to one country or culture. They constitute a continental and globalising phenomenon, spreading throughout Europe during the Middle Ages. To speak of the monastic phenomenon in Europe, two scales must be considered: territorial and the urban. The territorial scale gives an overview of the continental centre where the influence and repercussion of the monasteries at the territorial level can be observed. In fact, the constitution of the first monasteries is more related to the landscape and territorial keys than to the cities. Understanding conventual implantation as an urban system, not as an isolated fact, was first proposed years ago in Seville, the main conventual city of

⁵ GROTEN, Manfred [et. Al.] – **Nordrheinisches Klosterbuch. Lexion der Stifte und Klöster bis 1815. Teil 1: Aachen Bis Düren.** Siegburg: Verlag Franz Schmitt, 2009, p. 14.

southern Europe with more than 100 foundations in its urban perimeter⁶. The search for strategic positions was decisive, as was the case with the Cistercians, seeking high ground or close to aquatic elements such as rivers or streams⁷. On the other hand, the Dominicans relied on the measurement of feet, whose length varied between 30 and 38 cm, the wing of the monastery could have a height of 6 to 7.50 m, and the church between 9 and 11.50 m⁸. Although the appearance of the monastery on the urban scale came later, it was a determining factor in the configuration of European cities. Even with the passage of time, the monastic development in the city would become more important than the rural development.

If there are some references to the appearance of a first convent or a first religious order in Europe, they are Cluny and the Cistercians⁹. The passage from the memoirs of the monk Raul Glaber describes the real building fever that shook Europe after the year 1000. This landscape coincided with the emergence of the Romanesque, the first great authentically European artistic expression, and a monastic religiosity essentially represented by Cluny¹⁰. On a territorial level, the expansion of the Cistercians is a paradigmatic example. In the 11th century they covered 0.8% of Europe, while a century later they occupied 42% of Europe¹¹. Unlike the aforementioned orders, both monastic, Dominican, and Franciscan orders are mendicant. They are linked to urban life rather than seclusion and isolation. The Dominicans had their first foundation in Toulouse (France), and the Franciscans in Assisi (Italy), where a century later they would occupy practically the whole continent¹². This is even more relevant if one takes into consideration the scarce development of rapid transport infrastructures or communication networks.

The main territorial infrastructures on which the monasteries relied were the pilgrimage routes. Rome and Santiago de Compostela should be mentioned as the main pilgrim sites that enjoyed the privileged status granted to them by the Church. On these routes, medieval monasteries provided the necessary infrastructure¹³. They are supported by a complex network with starting points from different cities and kingdoms connecting them to the point of destination. They cross borders and complex geographical features in order to be able to worship and complete the pilgrim's journey. The importance of these roads can be found in the structure of convents and monasteries. In this case, in

⁶ PÉREZ CANO, María Teresa – **Patrimonio y ciudad. El sistema de los conventos de clausura en el Centro Histórico de Sevilla**. Sevilla: Universidad de Sevilla, 1996, p. 59-60.

⁷ BRAUNFELS, Wolfgang – **Abendländischer Klosterbaukunst**. Ostfildern: Du Mont Verlag, 1980, p. 131.

⁸ SCHENKLUHN, Wolfgang – **Architektur der Bettelorden. Die Baukunst der Dominikaner und Franziskaner in Europa**. Darmstadt: Wissenschaftliche Buchgesellschaft Darmstadt., 2000, p. 27.

⁹ Both are French-founded, in monasteries in the west of the kingdom of France.

¹⁰ MITRE FERNÁNDEZ, Emilio – **La ciudad cristiana del occidente medieval**. Madrid: Editorial Actas s.l., 2010, p. 151.

¹¹ OSTOS PRIETO, Francisco Javier [et. Al.] – Identity construction of the European medium-sized city through the monasticism repercussions in Écija. **IOP Conference Series: Materials Science and Engineering**. Prague: 603, 022053, (2019), 1-11, p. 3. DOI: <https://iopscience.iop.org/article/10.1088/1757-899X/603/2/022053>

¹² KRÜGER, Kristina – **Orden und Klöster 2000 Jahre christliche Kunst und Kultur**. Königswinter: H.f.ullmann., 2007, p. 298.

¹³ KRÜGER, Kristina. Op. Cit. p. 112-113.

addition to their religious function, they are considered to have a tertiary use for accommodation and overnight stays¹⁴. They constitute basic and backbone elements where pilgrims can rest, resupply or be attended to in order to continue their journey through the territory.



Figure 1. Way of St. James according to Küinig's guide in 1495. Own elaboration.

Among these pilgrimage routes, the Via Francigena connects the cities of London and Rome, the latter being the place of pilgrimage. However, the best-known route globally is the Way of St. James. It starts at various points in modern-day Spain, France and Germany and leads to Santiago de Compostela. Its importance was such that even in the Middle Ages many monks made recommendations or guides to follow the journey to Santiago. Among these manuals, the guidebook of 1495 by the German monk Hermann Küinig, a member of the Order of the Servants of Mary, stands out. The itinerary not only points out the route, but is also a detailed description of places of lodging, currency, places of provisioning, distances, etc. In addition, Küinig sets out two possible starting points (Figure 1), one in Einsiedeln (Switzerland) and the other from Aachen (Germany)¹⁵. On both routes, the route crosses at least five different kingdoms and borders, assuming a distance of approximately 2,000 km in both cases.

The choice of Aachen as the starting point for Küinig's route is not by chance. In Central Europe, in what is now German territory, an important monastic development took place. During the Middle Ages, Charlemagne is credited with founding 27 cathedrals and 232 monasteries and abbeys. This activity created a new religious landscape in Germany¹⁶. In regions such as North Rhine-Westphalia, cities such as Cologne and Aachen were home to more than 60 and 30 monastic buildings, respectively. Their

¹⁴ OSTOS PRIETO, Francisco Javier [et. Al.] – Identity construction of the European medium-sized city through the monasticism repercussions in Écija. **IOP Conference Series: Materials Science and Engineering**. Prague: 603, 022053, (2019), 1-11, p. 4. DOI: <https://iopscience.iop.org/article/10.1088/1757-899X/603/2/022053>

¹⁵ HERBERS, Klaus – **Jakobsweg: Geschichte und Kultur einer Pilgerfahrt**. München: C.H. Beck, 2011, p. 62-64.

¹⁶ WILSON, Peter H. – **The Holy Roman Empire**. London: Penguin Books Ltd, 2020, p. 85.

central position on the continent, together with the backbone of the Rhine river, led to the foundation of prominent orders such as the Order of St. John in both cities (Figure 2). The order was born with the duty to protect devotees on pilgrimage to the Holy Land. The Hospitallers, founded in the Holy Roman Empire in 1099, were known as Johanniter. They established their first German house in the region of North Rhine-Westphalia, in the city of Duisburg in 1150¹⁷. In Europe, it had a wide development and involvement, the main focus of which was the care of the sick. Its monasteries constituted genuine urban hospitals, in addition to the religious canon of the Christian order. In fact, today, the heirs of St. John's are still alive and well in modern hospitals in Germany's major cities, continuing the work of caring for the sick.

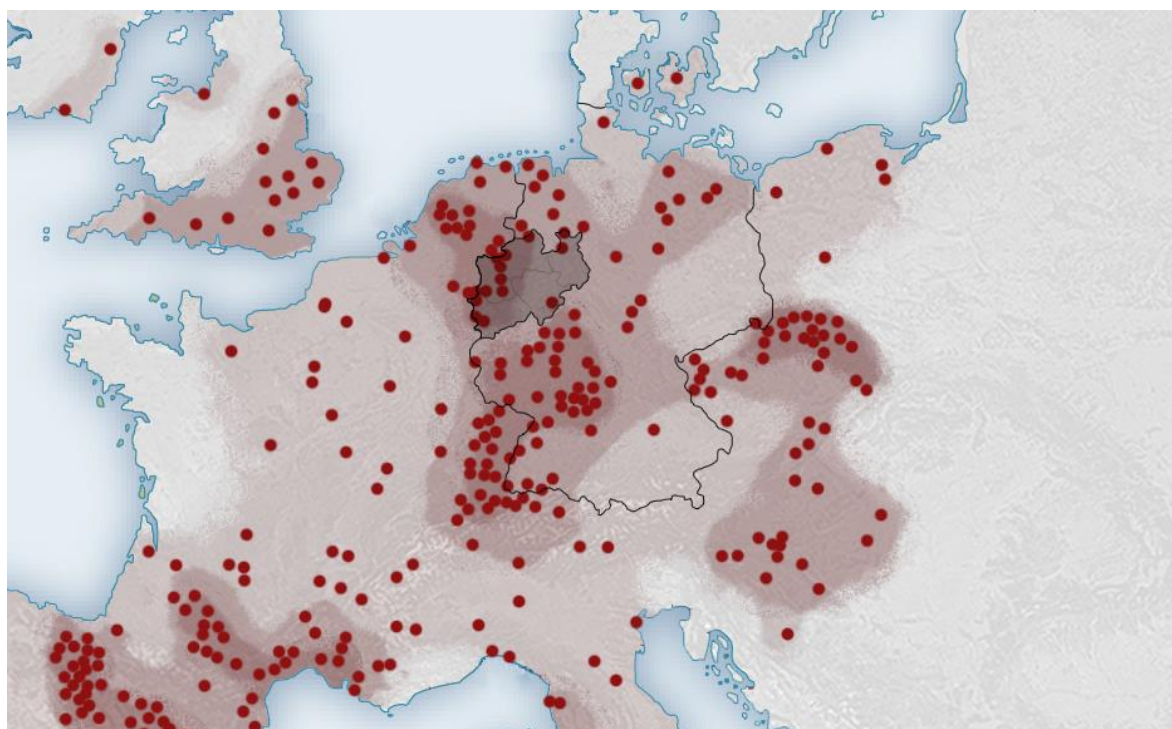


Figure 2. Expansion of the Order of St. John in Central Europe in the 14th century. The present-day delimitation of Germany and the Land of North Rhine-Westphalia is marked. Own elaboration.

Finally, according to Braunfels, the urban and convent typology generates two types of convent cities¹⁸. The first refers to the convent-city, where the convent creates the city. In general, a monastery is built on top of which a city is formed around it. The well-known case of Mont Saint-Michel, in France, whose urban origin is the monastery itself, stands out. The second type is the convent city, where convents are inserted into blocks of an existing city, forming an inner network, as is the case in Aachen. Alongside the overtly subversive urban religious dimension, there is another. It will happen in those royal cities or *civitates regias* erected as centres of a spiritual life often doubled in political life: Reims in France, Canterbury and Westminster in England, Pavia and Rome in Italy or Aachen in Germany¹⁹. In this context, the mendicant orders

¹⁷ WILSON, Peter H. Op. Cit. p. 95.

¹⁸ BRAUNFELS, Wolfgang – **Abendländischer Klosterbaukunst**. Ostfildern: Du Mont Verlag, 1980, p. 214-216.

¹⁹ MITRE FERNÁNDEZ, Emilio – **La ciudad cristiana del occidente medieval**. Madrid: Editorial Actas s.l., 2010, p. 167-168.

settled in the urban space in search of the economic and social potential of cities. In general, the second type of convent-city mentioned is more common than the first in Central Europe as well as in other Christian territories.

3. Aachen, monastic city

Aachen is not only the second most important monastery town in North Rhine-Westphalia, but also the capital of the Carolingian Empire, one of the starting points of the Pilgrim's Way to Santiago de Compostela and an independent city of the Holy Roman Empire. In fact, it was known as *nova Roma* and *Roma secunda* before it even became the seat of Charlemagne's important palace in 765²⁰. The sum of these factors allowed for a high development of monasticism in the city. As mentioned, the religious orders selected those urban enclaves of political, social, and economic importance. Aachen was one of them. As a result, the city has had more than 30 different monastic settlements. The arrangement of this nucleus with its buildings makes the monastery town multifaceted and open²¹. Moreover, it is not only the number but also the ratio of the size of the monastery buildings to the size of the city that has been decisive for the future urban layout of the city.

The historical analysis of the urban morphology is carried out through the superposition of the different urban layers over the centuries. Although the city has Roman origins, it has a radiocentric urban configuration, inherited from medieval Christian urban planning²². From the main city square, important roads lead to Cologne, Maastricht or Liège. Although some watercourses can be distinguished, they are not important. They are streams, which are nowadays hidden by the urban layer. However, the most interesting thing about Aachen in relation to water is its status as a thermal-city. The city is situated on thermal springs that are still visible today in the Elisenbrunnen building.

Regarding the urban layout (Figure 3), in the centre there is a central part occupied by the cathedral and the old palace of Charlemagne. A first wall was built around it, which enclosed the city until the 12th and 13th centuries, when a second, larger walled enclosure was built²³. The purpose of this second wall was twofold: to absorb the new growth of the suburbs and to guarantee their defence. The growth of Burtscheid from the medieval period onward has been parallel to that of Aachen. Burtscheid is a district in the south of the city, linked to the monastery of St. Johannes Baptist. Although the beginnings of Burtscheid are more closely linked to the monastery than to the city, in the course of time it was absorbed into the urban fabric of Aachen as a whole. In the 16th century, as Aachen was in an area of constant conflict and war, the defence and fortification of the city was important with the construction of the second city wall. In fact, during this period, the development of the city's convent building was at its peak due to the influence of the Spanish religious orders from the Spanish Netherlands²⁴.

²⁰ WILSON, Peter H. – **The Holy Roman Empire**. London: Penguin Books Ltd, 2020, p. 35.

²¹ SCHENKLUHN, Wolfgang – **Architektur der Bettelorden. Die Baukunst der Dominikaner und Franziskaner in Europa**. Darmstadt: Wissenschaftliche Buchgesellschaft Darmstadt., 2000, p. 27.

²² WIETZOREK, Paul – **Das Historische Aachen**. Haldensleben: Michael Imhof, 2013, p. 22-26.

²³ CURDES, Gerhard. Op. Cit. p. 52-56.

²⁴ WIETZOREK, Paul – **Das Historische Aachen**. Haldensleben: Michael Imhof, 2013, p. 27-28.

Until the 19th century, urban growth always took place within the walled perimeter, although it was never filled in. New trends in urban development and the arrival of the railway led to the demolition of parts of the wall. This led to new areas of growth and the opening up of new roads, such as the southern connection to Burtscheid. Urban expansion led to the disappearance of the city walls, with some sections or elements such as the Ponttor or the Marschiertor still standing today. From this century onward, Aachen's urban growth was exponential due to the rise of the Ruhr mining area and the increasing industrialisation of the area. This is clearly reflected in the development of the town's census data. In 1812 the population of Aachen was around 30,000 and today it is more than 240,000 inhabitants²⁵. In a century and a half, the population has increased fivefold.

As in many European settlements, the development of monasteries and convents are linked to urban growth. Especially the city of Aachen stands out for its high number of monastic buildings with about 30 monastic buildings. In order to study the urban impact of the convent system and its relation to urban growth, GIS has been used as the main tool. The georeferencing of the buildings has allowed us to draw up a map reflecting the historical layers of the city and the centuries-old implantation by centuries (Figure 3). According to the distribution of centuries, the convent buildings of Aachen have been arranged (Table 1).

Centuries Monasteries and convents in Aachen

10th	1.Salvatorberg 2.St. Johannes Baptist (Burtscheid)
13th	3.St Nikolaus 4. Mathiashof 5.Stephanshof 6.Weißfrauen 7.Dominikanerkloster
14th	8.Christenserinnenkloster 9.Johanniterkloster 10.Webbegarden 11.Deutschordenskommende 12.Augustinerkloster St. Katharina 13. Karmeliterkloster 14.Heiligen Kreuz 15.Alexianerkloster
15th	16.St.Johannes Baptista 17.St. Leonard 18.Marienthal
16th	19.St. Anna und Joachim
17th	20. Jesuiten 21.Kapuzinerkloster 22.Klarissenkloster 23.St. Elisabeth 24.Pönitentenrekolektinnenkloster 25.Annuntiatinnen 26.Ursulinen 27.St Theresia 28.Marienbongard
19th	29. Kloster von Guten Hirten 30. Redemptoristenkloster 31. Kloster der Schwestern vorn armen Kinde Jesus (Burtscheid)

Table 1. Monastic and convent buildings in Aachen according to their location over the centuries. Own elaboration based on data from Groten et al. (2009).

The first monastic foundations were associated with Benedictine and Cistercian orders, which were more suited to buildings not linked to the urban environment. These are the Salvatorberg in what is now Lousberg Park and St. Johannes Baptist, the Burtscheid monastery. It was not until the 13th century, coinciding with the rise of the mendicant orders, that there was a real urban monastic establishment. In fact, in this century, all the foundations were located within the first ring, with the exception of Mathiashof. The

²⁵ CURDES, Gerhard. – **Die Entwicklung des Aachener Stadtreumes. Der Einfluß von Leitbildern und Innovationen auf die Form der Stadt.** Dortmund: Dortmund der Vertrieb für Bau und Planungsliteratur, 1999, p. 68.

building is located on the road that connects to Burtscheid, anticipating the axis of the city's expansion to the south. On the other hand, the Stephanshof convent is an important educational centre. Here the Beguines taught not only religion, but also reading, writing, and weaving²⁶. It is important to note the importance of the position inside the walls, not only for the urban relationship, but also for protection and security. In addition to this, there is the link to the main axes and urban connections.

A century later, the second city wall was built. The suburbs, once outside the walls, were now inserted as part of the defensive ring, facilitating the appearance of the new monasteries, always in an interior position. Given the greater availability of land between the two walls, this was the scene of convent development in later centuries. The construction of the second ring did not wait for the city to fill up, but rather was the opposite. It anticipated growth and allowed the new districts to enjoy the protection of the city. The 14th century was a rise in convent production compared to previous centuries. These were mainly located in the southern part of the town, again linked to the Burtscheid monastery. At the same time, there are notable urban developments to the east, in the direction of Cologne. However, there are no new foundations in this urban area until the 15th century, when the convent of St. Johannes Baptista appears.

The 15th and 16th centuries bring few foundations compared to the 14th century. Moreover, most of them are located on the southern axis, emphasising and strengthening the link with St. Johannes of Burtscheid. In this sense, St. Leonard near the Marschiertor gate can be highlighted, taking advantage of part of the city wall for its establishment. The 17th century is undoubtedly the period of the city's greatest monastic splendour, with the construction of nine new monasteries and convents. This is further reinforced by the fact that the 17th century was the century in which the most monasteries were founded in the North Rhine area²⁷. The people felt the spirit of renewal in the pastoral revitalisation of the professions, in preaching, catechesis and the introduction of new processions and pilgrimages, so that they were attracted to the new orders of the Franciscan Recollects, the Capuchins or the Jesuits²⁸. In fact, what is striking is not only the number, but also the position they occupied, this time within the walls. In order to consolidate an economic and political position linked to religious and urban power, the new orders sought spaces within the first walled enclosure. However, despite their position, they again opted for a preference for the southern sector of the city, and the link between the city centre and Burtscheid was definitively established. In this century, urban sectors linked to the Liège or Cologne roads continued to grow, but without any convent development. In this sense, it is worth reflecting that, despite the availability of land between the two walls, the orders opted for the more urban and central positions as they endowed them with greater power.

The implantation of the 19th century contrasts with the rest of the centuries, as the logic of implantation responds to a position of edge and availability of land on the periphery.

²⁶ BRECHER, August – **Die Kirliche Reform in Stadt und Reich Aachen von der Mitte des 16. Bis zum Anfang des 18. Jahrhunderts.** Münster: Aschendorfsche Verlagsbuchhandlung, 1956, p. 168.

²⁷ GROTEN, Manfred [et. Al.] – **Nordrheinisches Klosterbuch. Lexion der Stifte und Klöster bis 1815. Teil 1: Aachen Bis Düren.** Siegburg: Verlag Franz Schmitt, 2009, p. 17.

²⁸ BRECHER, August – **Die Kirliche Reform in Stadt und Reich Aachen von der Mitte des 16. Bis zum Anfang des 18. Jahrhunderts.** Münster: Aschendorfsche Verlagsbuchhandlung, 1956, p. 79.

The role played by the monastery was relegated to a second level in political and social life, and this is also reflected in the urban phenomenon. The events marked by the Napoleonic disentailments, such as the Kulturkampf, further accentuate the decline of religious power²⁹. Not only is there less monastic production, but four-fifths of the monastic buildings disappear during the 19th century³⁰. Only three foundations took place during this period, and the relocation of many of the existing religious orders was common. In this sense, many of the convents abandoned their central urban positions and moved to other buildings on the new urban perimeter. The processes of modernisation and industrialisation took precedence over the city's conventual past, responding to new demands linked to industry, commerce and business.

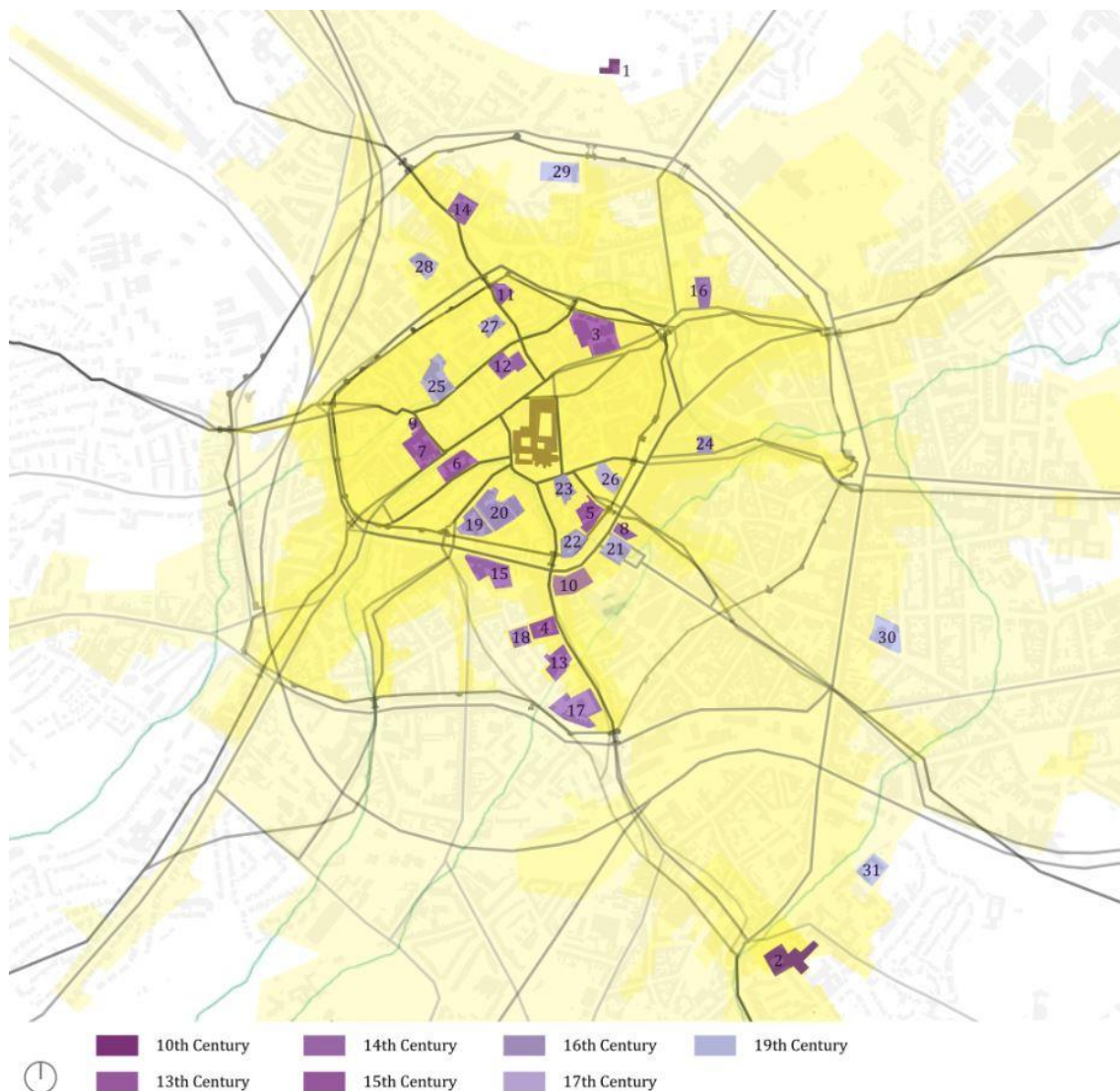


Figure 3. Urban growth of Aachen with convent and monastic settlements by centuries. Own elaboration.

²⁹ WIETZOREK, Paul – **Das Historische Aachen**. Haldensleben: Michael Imhof, 2013, p. 30-31.

³⁰ GROTEN, Manfred [et. Al.] – **Nordrheinisches Klosterbuch. Lexion der Stifte und Klöster bis 1815. Teil 1: Aachen Bis Düren**. Siegburg: Verlag Franz Schmitt, 2009, p. 18.

Conclusions

Aachen is one of the most important monastic-references in Central Europe. Not only from the point of view of urban monastic settlement, but also from a territorial perspective. The city is a starting point for important routes that structure the territory, such as the famous Pilgrim's Way to Santiago de Compostela. Added to these facts is the importance of the city itself, as the capital of the Carolingian Empire and a free city of the Holy Roman Empire. At the same time, other territorial conditioning factors stand out, such as its strategic position on the border with Belgium and the Netherlands.

A total of 30 buildings related to the urban area of Aachen's convent system were counted. As part of the main results, it was found that the convent area accounted for 9% of the urban area. A rather high proportion for the time. The study through GIS, the historical layers of the city and the main roads have been decisive in understanding the urban development of the city. For this purpose, the convent buildings were organised according to the centuries in which they were built. Among these, the 14th and 17th centuries stand out in terms of convent production compared to the others.

The understanding of the convent city, its growth, and morphology has been studied through roads, walls, and the relationship with the monastery of St. Johannes Baptist in Burtscheid. This last connection is decisive, since, thanks to the establishment of this monastery, both the city and future convent buildings have a greater preference and growth towards the south of the city. Other axes, such as the east-west axis, are less developed than the north-south axis. At the same time, the existence of two walls facilitates convent development in both the first and second rings, as the buildings are always protected by the urban defensive perimeter, which is key to urban development. The importance of religion lies not only in faith and prayer, but also in the capacity to generate new buildings and typologies for the city, which favour its urban development. Finally, the development of the convent in the 17th century foreshadowed the importance of urban centres, with religious orders preferring central urban positions related to power rather than urban vacuums on the periphery.

Monasteries and convents not only a reflection of urban significance, but also shape future urban growth. The study shows that the city of Aachen is a remarkable example of the monastic development of the European city. However, the city's conventual past is diluted in the time of industry. There are few remaining orders and even fewer buildings. Although there are still visible remnants of Aachen's monastic legacy in the cityscape, they represent practically one fifth of what it was in its heyday. The new urbanism linked to new building typologies and urban strategies, together with exponential population growth, have practically hidden the religious past of the city. Although at one time the monastic typology shaped the way of growth and urban expansion, today it is only evident in the remaining buildings still visible in the city. A city that was once the capital of the Carolingian Empire is still one of the conventual landmarks of North Rhine-Westphalia and Central Europe.

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