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## **Norwegian Stone Cathedrals of the End of the 11<sup>th</sup> – mid. 14<sup>th</sup> Centuries: Regional Features and European Context**

Norwegian stone architecture of the end of the 11<sup>th</sup> — mid. 14<sup>th</sup> centuries, closely connected with the rest of Christian world, went along a special development path. The remoteness of Scandinavia from European art centers played a significant role in Norwegian art. It preserved local traditions and defined the specific features of Norwegian art. Despite the extensive historiography on Norwegian stone architecture, there are not so many studies which are devoted to the specific features of Norwegian cathedrals. The main group of issues represented in this article is connected with the definition of architectural schools of medieval Europe that influenced the appearance of Norwegian cathedrals of the same period. The appearance of the stone architecture in Norway is directly connected with the European construction practice and cannot be considered separately from it. As in the case of the process of artistic form-making, it is obvious that the experience of the visiting masters from England, Scandinavia and Germany was actively used. The foreign influences are generally well known, but issues related to the originality of the Norwegian stone cathedrals were not a subject of a special study. Therefore, the examination of the characteristics of Norwegian cathedral architecture takes on a special topicality. The main task of our research is revealing specific character of Norwegian cathedrals of the 11<sup>th</sup> — mid. 14<sup>th</sup> centuries based on the study of the experience of masters from Central and Western Europe.

The paper studies five cathedrals of Norwegian medieval Bishopricks — St. Olav in Trondheim, the Cathedral of Christ in Bergen, St. Swithun in Stavanger, St. Hallvard in Oslo, and the Cathedral of Christ in Hamar. The choice of these monuments was determined by their high status among the rest of church buildings in Norway at this period. A comprehensive method allows us to carry out this research. It includes the study of technical and planning parameters, the historical context and a comparative analysis of Norwegian cathedrals with monuments of different European architectural schools.

An external influence has been repeatedly noted in the studies on medieval Norwegian architecture [9, p. 17]: churches were built by foreign masons who brought their own building methods [1, p. 13]. In eastern and southern Norway they came from Denmark and Germany; in western Norway and Trøndelag — from England and Normandy [12, p. 35]. As a result, there was a variety of styles and building techniques. This division of Norway should be taken conditionally because Norwegian architecture unites features of various architectural schools, including those of the neighboring countries, due to the free movement of artisan bands.

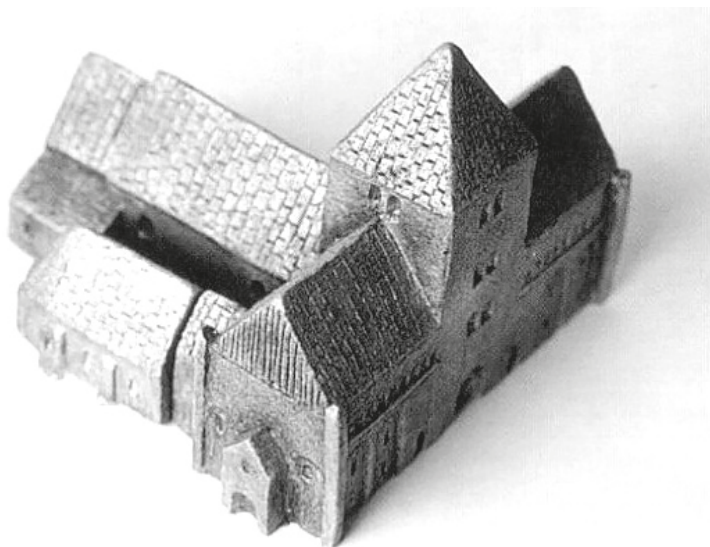


Fig. 1. St. Olav cathedral in Trondheim. Second part of the 12<sup>th</sup> century. Reproduced from [4, p. 14]

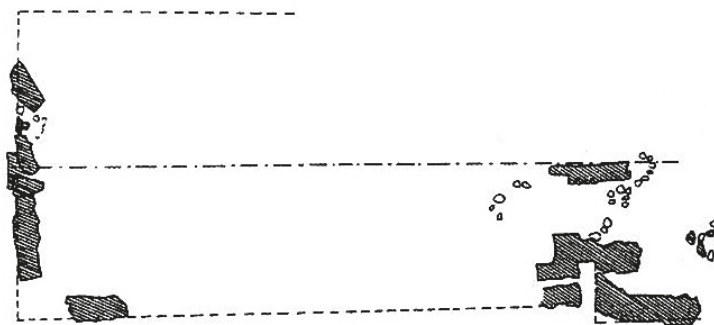


Fig. 2. Plan of Christ church in Bergen. Reproduced from [2]

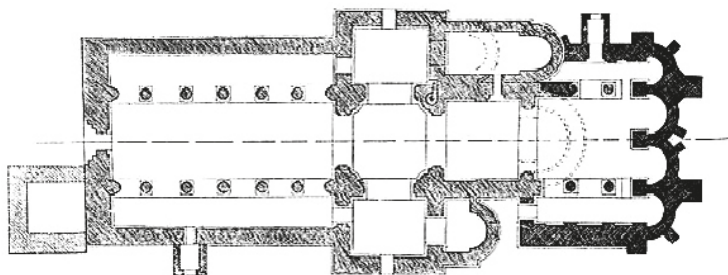


Fig. 3. Peter Blix. Plan of St. Hallvard cathedral in the 14<sup>th</sup> century. 1865. Reproduced from [20, p. 57]

The cathedrals in Trondheim (Fig. 1) and Bergen (Fig. 2) were founded by Norwegian monarchs at the end of the 11<sup>th</sup> century. Unlike the church they had much more financial resources. Their relation with the English royal court largely determined the similarity of the first Norwegian cathedrals with Anglo-Saxon architecture. The Christ church in Trondheim was a single-aisle building with a square choir and a square western tower. The Cathedral in Bergen was originally planned as a three-nave basilica. The proximity to Anglo-Saxon architecture can be traced in the technique of masonry: 'opus spicatum' was used in the Church of Christ in Trondheim (future St. Olav's Cathedral) [21]. In our opinion, St. Hallvard's Cathedral in Oslo (Fig. 3) was founded along with the previous cathedrals at the end of the 11<sup>th</sup> century, which can be proved by the 'opus spicatum' masonry preserved there. The earlier dating of the construction of the cathedral is confirmed by political and historical prerequisites. As is known, the diocese in Oslo was established along with the bishoprics in Trondheim and Selje (later it was moved to Bergen). It is difficult to imagine that after the appearance of the diocese there was no plan to build the cathedral in Oslo, the only religious center in eastern Norway. In addition, at the time of the establishment of the diocese, Oslo already had the relics of St. Hallvard and it was logical to bury them in the cathedral as it was in Trondheim and on Selje (it served as the cathedral in the first half of the 12<sup>th</sup> century).

From the end of the first third to the middle of the 12<sup>th</sup> century, bishops began to play a great role in the history of Norwegian cathedrals. They defined a construction progress and created projects based on their own artistic viewpoint. The planning (three-aisled basilica with an elevated central nave separated by an arcade with round pillars and square chancel) and the system of decoration in Trondheim, Bergen and Stavanger (Fig. 4) decisively testify to the connection with Anglo-Norman architecture. The interaction with Anglo-Norman art can be traced in decorative elements, such as chevron (Fig. 5), scalloped capitals, and animal sculptures on the projections of cornices. The reconstruction of Norwegian cathedrals at the end of the 12<sup>th</sup>–13<sup>th</sup> centuries was performed with the focus on English samples showing the original development of the Gothic thought. The cathedrals in Canterbury, Lincoln, Winchester and some monastic complexes (Castle Acre Priory, Norfolk) were of special importance for Norwegian architecture in Romanesque and Gothic periods. Further we can see the elements of Rhein-Lombard style in Norwegian architecture used in the cathedrals of Rhineland and southern Scandinavia (Lund, Viborg and Ribe). This style is distinguished by the high quality of masonry, gentle elaboration of details, and the abundance of decorative elements including

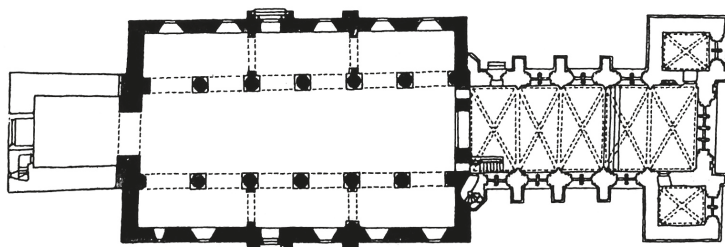


Fig. 4. Plan of St. Swithun cathedral in Stavanger of the 12<sup>th</sup>–14<sup>th</sup> centuries. Reproduced from [7]

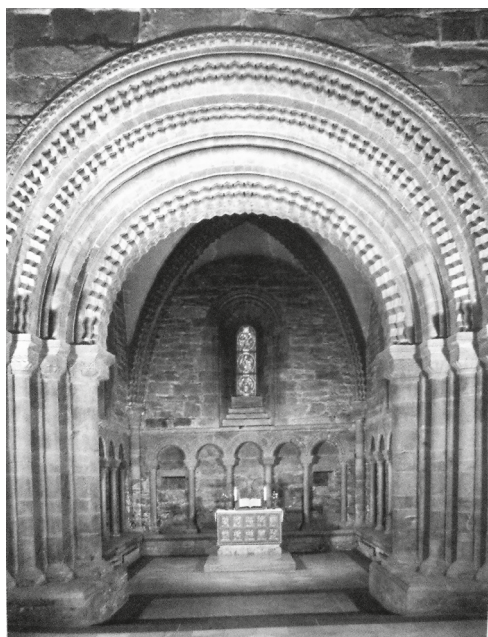


Fig. 5. Lektoriet / Norwegian Women's War Memorial Chapel, from around 1150–60, in the Northern transept. St. Olav cathedral in Trondheim. Reproduced from [5, p. 17]

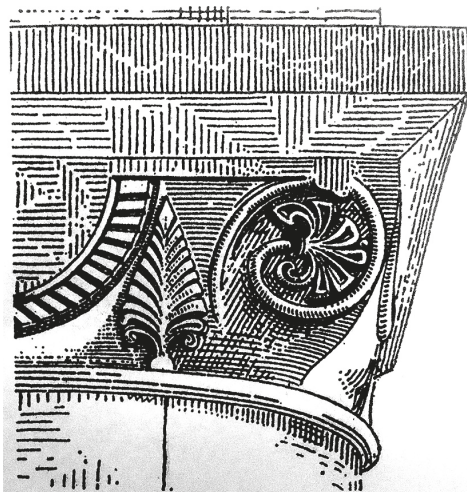


Fig. 6. Fragment of the capital in St. Swithun cathedral in Stavanger. Second half of the 12<sup>th</sup> century. Reproduced from [10, p. 114]

those in a form of palmettes (Fig. 6) and arcatures on cornices. In the cathedrals of western and central Norway these features often appear as elements of the decor rather than construction.

The cathedrals of Viken in eastern Norway — St. Hallvard in Oslo and Hamar Cathedral (Fig. 7) built in the 12<sup>th</sup> century — perhaps date back primarily to German samples. St. Hallvard's Cathedral is a key monument for the Hamar Cathedral construction, since then

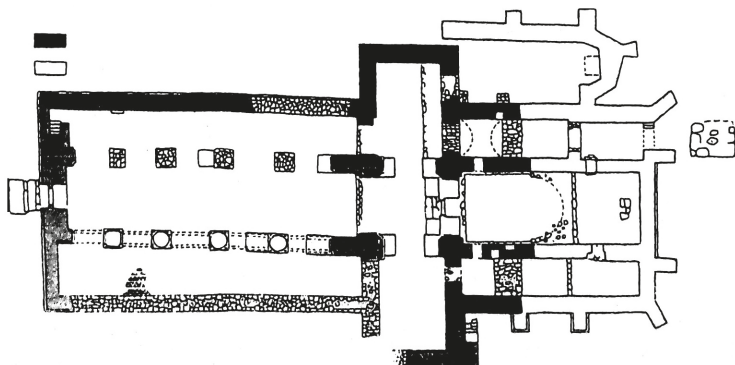


Fig. 7. Olav Nordhagen. Plan of Christ cathedral in Hamar of the 14<sup>th</sup> century. Reproduced from [2, p. 56]

basilica-shaped cathedrals began to spread in eastern Norway. The both monuments have similar dimensions and plans. It is logical to assume that the masters who worked in Oslo were sent to Hamar, the new religious center which arose in the neighborhood. In addition, Hamar had complied Oslo in both political and religious matters before the diocese was established. Researchers have repeatedly noted the influence of German regions on Norwegian architecture, but none of them went further by

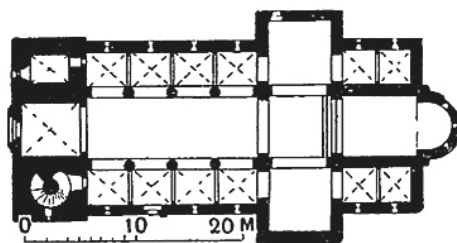


Fig. 8. Plan of St. Aurelius church in Hirsau Abbey, 11<sup>th</sup> century. Reproduced from [18]

stepping from the assumption to the theory, explaining and proving the link between Norway and Germany. In this paper the attempt of such study among researches of Norwegian cathedrals is carried out for the first time. The study of Benedictine architecture in Germany leads us to the conclusion that the planning of cathedrals in eastern Norway has some similarities with it [13, p. 28]. In that context, the main complex is the Hirsau Abbey in Swabia which was the center of the Cluny reform movement in Germany. In this area “a basilica with columns has been dominating for a long time” [18, p. 222]. This structure (a three-aisled basilica with a transept, apsidal chancel and square chapels in aisles) was used in the Church of St. Aurelius in Hirsau consecrated in 1071 (Fig. 8). Its western facade was flanked by two towers. The distinctive form of a Latin cross used in Hirsau is repeated in St. Hallvard’s Cathedral and later in Hamar. In addition, a similarity can be traced in the interior design — pillars in the east give way to cross-shaped supports that hold up the tower above the crossing. The Hirsau group also includes the following monuments: St. Paul and St. Peter church in Hirsau Abbey, the Monastery Church of Alpirsbach Abbey, the cathedral at All Saints Abbey in Schaffhausen and the church at Paulinzella Abbey in Thuringia. The churches of this school were one-side oriented and the main entrance was placed in the eastern facade as we can see in Oslo and Hamar. The architectural characters of the Norwegian cathedrals in Oslo and Hamar show the features inherent in the Hirsau group and some German buildings of the 11<sup>th</sup>–12<sup>th</sup> centuries: high-class workmanship of the elaboration of stone, the static nature of shapes, and the use of a flat wall as an artistic principle. These features created the image of a fortress. Many German buildings have a profiled basement that we find in the cathedrals of eastern Norway.

At first glance, Norwegian cathedrals have an imitative character; yet, we have marked some specific features of each cathedral and traced their interrelation in the stone cathedral architecture of Norway. Then again we emphasize that for the first time in this paper the regional specific of Norwegian cathedrals is considered in general, and not in certain monuments. First of all, the masters, despite being guided by foreign samples, created the original cathedrals that are quite different from their foreign counterparts. *The Norwegian cathedrals were not copied from European religious buildings.* The foreign masters were solving the issues that were different from those they had had in their own countries. “Foreign masons and sculptors were brought to Norway, for example, to the site of Trondheim, and they must have brought with them modern ideas that were taken up by Norwegian artists” [17, p. 28]. In this context, an opportunity the Norwegians had to study abroad is a key aspect. There is an opinion that “young craftsmen,

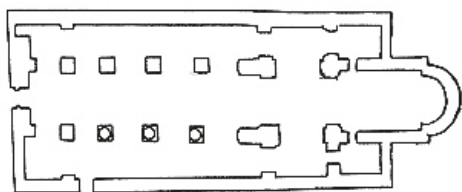


Fig. 9. Plan of Christ cathedral in Hamar of the 12<sup>th</sup> century. Reproduced from [20, p.61]

shows the absence of some important elements that are part of many European cultic buildings. St. Swithun Cathedral in Stavanger is among such examples. The cathedral was built with a focus on the European samples, but *it does not have a transept and a tower above the crossing* (Ill. 76). We do not see the transept in the ground-plan of Hamar cathedral as well (Fig. 9). It was extended in the middle of the 13<sup>th</sup> century [21]. The *structure of the western corner towers of Hamar cathedral* is also interesting. The towers have a built-in composition that occurs in Anglo-Norman buildings such as in Durham cathedral and Westminster cathedral of the end of the 11<sup>th</sup> — the middle of the 12<sup>th</sup> centuries. In these churches towers are incorporated with naves by large arches [15, p. 92]. In Norman buildings the western facade looks like a westwork where the towers are separated from the nave by a heavy wall; outside, the facade has three parts in vertical and horizontal directions [15, p. 91]. The built-in towers of Hamar cathedral occupy much of the space of the nave and reduce its length, which is not quite rational and even inconvenient.

We note *an unusual location of windows in clerestory in Hamar cathedral and St. Swithun cathedral* (Ill. 77). In Hamar Cathedral, three arch windows have been preserved: the central one is placed above the support while the side openings are located 60 cm from pillars. The layout of St. Swithun Cathedral is more symmetrical as the windows are above the pillars. In the European architectural practice windows are placed above arches but not above pillars. These three cathedrals are located in different Norwegian regions; however, this structure developed both in the east and in the west of the country.

The Romanesque nave of Stavanger Cathedral has some structural features which are worth noticing. *Diaphragm arches in the aisles* are among them (Ill. 78). It is quite difficult to find analogues in European architecture but similar examples still occur. Diaphragm arches are attested in the 9<sup>th</sup> century churches of St. Mary's, Reichenau, and St. Saviour, Werden [10, p. 109]. The Cathedral of Limerick of the late 12<sup>th</sup> century has the same structure. Nevertheless, the dating of a number of churches does not correspond to the time of Stavanger Cathedral construction (middle of the 12<sup>th</sup> century). Moreover, arches in Limerick Cathedral are narrower and more elegant than those of Stavanger Cathedral. We can find an analogy of diaphragm arches in Iona Abbey in Scotland [9, p. 16]. Similar arches could be found in Norwegian architecture in St. Alban's Church, Selje (Fig. 10). According to C. Hohler, "the central third of the nave is marked, in the aisle walls, by a set of rectangular responds, three each side which are backed by shallow rectangular buttresses and imply that each aisle was traversed at these points by three diaphragm arches" [10, p. 107]. In our opinion, the continuity of this structure was realized due to the belonging to the same monastic order: the first bishop of Stavanger, Reinhold, was

artists, builders, sculptors and painters were sent abroad and that they later returned home and expressed their modern international training in their work" [17, p. 28].

English and German architectural samples were the starting points for the Norwegian cathedrals, but a formal analysis shows some discrepancy with foreign buildings. The planning of the Norwegian cathedrals

Benedictine like the monks of Selje Abbey. Thus, the diaphragm arches in Norwegian architecture do not have exact analogies in any architectural school.

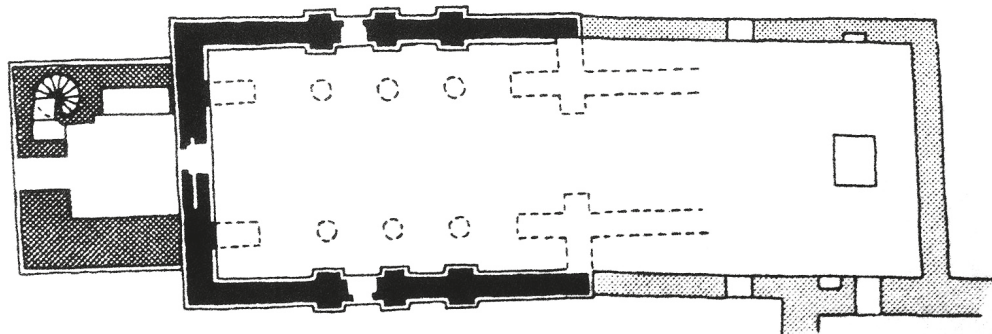


Fig. 10. Plan of the church of the Benedictine monastery St. Alban in Selje, the end of 11<sup>th</sup>—beginning 13<sup>th</sup> centuries. Reproduced from [14, p. 14]

Starting from the middle of the 13<sup>th</sup> century, the Gothic style in Norway was widely spread, but the first example of early English Gothic architecture we can see in the octagon of St. Olav's Cathedral in Trondheim (at the end of the 1190s — beginning of the 1200s) [6]. Following the new concept of European architecture, mainly English, the planning of Norwegian cathedrals is endowed with originality. Order conditions influenced the appearance of forms and elements in cathedrals. The plan of the octagon of St. Olav's Cathedral with the ambulatory and the chapels corresponds to the internal diameter of the arcade in the Holy Sepulchre Church in Jerusalem [6, p. 355]. The focus on certain examples led to the erection of *rectangular chapels* rather than semicircular as it was common in the French type of deambulatory with chapels.

The traditions of European-wide architectural practice were reconsidered during the construction of Stavanger Cathedral *western facade* which had two towers with a lancet window and varied sculptural decoration between them (Ill. 79). The analysis of the architectural forms of Stavanger Cathedral western facade refers us to the western facade of Lincoln Cathedral as this part of the latter has a number of similarities with the Norwegian monument. However, the creative rethinking of existing ideas allowed them to create an original structure that does not have exact analogues abroad. Moreover, *the single-aisle Gothic choir* of St. Swithun's Cathedral does not repeat the established tradition of the divided by arcades three-aisled choir of Gothic churches, should it be in England or France, though the decorative design indicates a direct connection with English architecture.

At the end of the 13<sup>th</sup> — beginning of the 14<sup>th</sup> centuries, the eastern parts of the cathedrals in Oslo and Hamar were rebuilt using Gothic elements. The general design of the eastern parts of the cathedrals does not bear direct parallels with foreign monuments: the choirs are quite squat, thick side walls squeeze the space, although *the layout has an established tripartite structure but without separation by arcades*. The lateral chapels are rather narrow and they can be taken as aisles of the choir which corresponded to the European tradition [14, p. 84]. It appears that such a structure is *the example of a special understanding of the widespread design of the*

*three-aisle choir* common in European architecture, since architecture largely depends on the conditions of a contract, the level of craftsmanship, construction conditions, and local building materials.

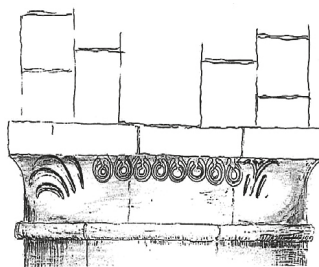
A thorough comparative analysis has revealed some original features that can be seen in decorative details. Norwegian architectural monuments of the Romanesque period combine both *pagan and Christian art traditions* which are mostly visible in *the decorative design of the capitals* of Stavanger and Trondheim cathedrals. The multi-figure capital of the central arcade of St. Swithun's Cathedral depicts the Scandinavian 'End of Days' scene, Ragnarök (Fig. 11). Some column bases of St. Olav's Cathedral are decorated with intertwined grapevines resembling the Ringerike style [17, p. 10], which flourished in the first half of the 11<sup>th</sup> century. A. Gurevich notes that Old Norse traditions are encountered in the art of the 12<sup>th</sup>–13<sup>th</sup> century: "In churches and cathedrals the Romanesque sculpture adjoins the carved images of dragons that once adorned the stems of Viking ships" [8, p. 153].



Fig. 11. Capital in St. Swithun cathedral in Stavanger depicting Ragnarök or the Fall of man, 12<sup>th</sup> century. Reproduced from [3, p. 177]



Fig. 12. Fragment of the capital in the transept of St. Olav cathedral in



Trondheim, 12<sup>th</sup> century. Reproduced from [11, p. 34]



Fig. 13. Christian Lindman. Capital in Christ cathedral in Hamar, 12<sup>th</sup> century.

Reproduced from [19, p. 85]

Due to various factors, certain elements found in European architecture were incorporated into Norwegian architecture with some changes. To begin with, attention should be paid to the design of capitals. In the Romanesque period cubic and scalloped capitals were widely used. The capitals of the transept of St. Olav's Cathedral in Trondheim differ from their English prototypes not in form but in character of relief; they are the so-called *wedge-scallop capitals*, framed by a roller and decorated with foliage in the form of intertwined shoots (Fig. 12). Another example of the transformation of the previously known forms are the capitals of the central arcade of Hamar Cathedral, which have small height due to a *low echinus* (Fig. 13). Such an echinus does not allow using complex decorative elements. In Europe, the echinus of a capital was usually quite high and included a variety of reliefs or was a flat surface with a semicircular lower part, that is, it was a typical cubic capital.

The different interpretation of decorative forms in the Norwegian cathedrals can also be traced back to the Gothic period. The desire of customers to use certain artistic and expressive means in local environment gave rise to something new. The use of a *purbeck effect* in the interior of St. Olav's Cathedral in Trondheim is among the examples. In the interior "... bright limestone contrasts with thin pilasters *en-délit*, window sills and capitals made of dark, shiny marble-like substance" [22, p. 121]. Such a combination can be found in the Trinity Chapel of Canterbury Cathedral erected shortly after the fire of 1174, in St. Hugh's Choir of the Lincoln Cathedral (1193–1194), in parts of the Salisbury Cathedral that were built after 1220. Achieving this effect was quite problematic in Norway, since there were no Purbeck marble deposits in the country; however, the masters tried to create something similar using local materials. As a result, the walls and arches of the octagon of St. Olav's Cathedral are lined with light green statite, and columns and pilasters are made of white marble. The use of various materials created a colorful image characteristic of the English models.

The significance of Norwegian architecture was emphasized as far back as in 1853 by the Prussian nobleman Alexander von Minutoli. In his book *Der Dom zu Drontheim und die Mittelalterliche Christliche Baukunst der Scandinavischen Normannen* [16] he claims that it is the cathedral in Trondheim that is the first example of Gothic architecture in Europe, which later appeared in other countries [6, p. 22]. This bold statement can no longer be maintained. Nevertheless, this work is of great importance for the popularization of Norwegian architecture in Europe, since the book was published in the German language.

Thus, creating a holistic picture of development of Norwegian cathedrals in the European architectural context, singling out the regional features of Norwegian cathedrals, and identifying of their regularities allow us to fill the gaps in the history of the study of Norwegian stone cathedrals of the end of the 11<sup>th</sup> — mid. 14<sup>th</sup> centuries and set the prospects for further investigation. This study shows that the medieval cathedrals in Norway represent their own *original way of the development of English and German medieval architectural traditions, including the Lombard one*. In our opinion, the cathedrals of south-eastern Norway show the link with the architectural school conditionally called 'Hirsau school' in Germany, while the cathedrals of Central and Western Norway follow the English tradition. We can quite confidently assert that the Norwegian cathedrals were not copied from English or German religious buildings. In our

opinion, their unique character lies in a different construction environment. Foreign masons had to solve new tasks creating a special architectural image that did not go beyond the frameworks of established traditions, but at the same time did not exactly copy the existing monuments of stone architecture. It should be noted that foreign architects worked in cooperation with local masters who took their training either locally or abroad and therefore managed to combine acquired professional skills with national specifics in their work [17, p. 28]. Moreover, they used local materials, which contributed certain individuality to the cathedrals. The architecture of Norwegian stone cathedrals had specific development path, regional features, and should be considered as an independent phenomenon. Unfortunately, the plague that broke out in the middle of the 14<sup>th</sup> century and caused the desolation of the cathedrals and their partial destruction abruptly interrupted the traditions of stone architecture. The resumption of stone architecture occurred at the beginning of the 15<sup>th</sup> century and was linked with the restoration of the cathedrals. However, it should be noted that the presence of repetitive elements in Norwegian cathedrals does not allow talking about the formation of architectural school that had an established set of distinctive features passed from one Norwegian architectural landmark to another.

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**Title.** Norwegian Stone Cathedrals of the End of the 11<sup>th</sup> — mid. 14<sup>th</sup> Centuries: Regional Features and European Context.

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**Abstract.** The architecture of Norwegian stone cathedrals of the end of the 11<sup>th</sup> — mid. 14<sup>th</sup> centuries is a unique page in the history of European architecture. Most of the studies devoted to the stone Norwegian cathedrals of that time rarely consider them as one phenomenon. This paper is the first research on the regional features of the Norwegian cathedrals of that period. The purpose of the local investigation is the analysis of the major monuments of stone cathedral architecture of medieval Norway. The task of our research is to identify the main regional features of the Norwegian cathedrals at the end of the 11<sup>th</sup> — mid. 14<sup>th</sup> centuries based on the study of the experience of masters from Central and Western Europe. The paper makes an attempt to conduct a careful analysis and comparison of South-Western Norwegian cathedrals with the monuments of the so-called 'Hirsau school'.

The paper studies five cathedrals of Norwegian medieval Bishoprics — St. Olav in Trondheim, cathedral of Christ in Bergen, St. Swithun in Stavanger, St. Hallvard in Oslo, and the Cathedral of Christ in Hamar. Their architecture shows the development of the ideas of the medieval building better than other monuments because they are the key monuments of stone architecture of Norway at that time. A comprehensive method allows us to carry out this research. It includes the study of the technical and planning parameters, the historical context and the comparative analysis of Norwegian cathedrals with monuments of different European architectural schools.

The medieval cathedrals of Norway represent their own original way of the development of English and German medieval architectural traditions, including the Lombard one. It is proper to speak about the specificity of the Norwegian cathedrals as far as they are not the copies of European buildings. In our opinion, their unique character lies in a different construction environment. The masters who had a huge experience in erecting stone cathedrals came to Norway and faced certain conditions related to the preferences of customers, local climate features, and national culture. The uniqueness of each cathedral proves that Norwegian church architecture is a special phenomenon in the history of art.

**Keywords:** Scandinavian art; stone architecture of Norway; medieval art; Cathedrals of Norway; regional features.

**Название статьи.** Каменное соборное зодчество Норвегии конца XI — середины XIV века: региональные особенности и общеевропейский контекст.

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**Аннотация.** Каменная архитектура соборов Норвегии конца XI — середины XIV вв. является уникальной страницей в истории всемирной архитектуры. Обширный корпус исследований, посвященный норвежским соборам этого времени, редко рассматривает их как единое явление. Эта статья является первой работой, ставящей целью анализ архитектуры и изучение региональных особенностей каменных соборов Норвегии конца XI — середины XIV вв. В статье впервые делается попытка тщательного анализа и сравнения соборов юго-восточной Норвегии с памятниками так называемой «школы Хирсау».

В круг исследуемых памятников вошли пять кафедральных соборов норвежских епархий — св. Олава в Тронхейме, Христа в Бергене, св. Свитуна в Ставангере, св. Халльварда в Осло и Христа в Ха-

маре. На примере этих ключевых памятников каменного зодчества Норвегии соборов рассматривается развитие идей средневековой строительной практики. Осуществить данное исследование позволяет комплексное рассмотрение каждого памятника, в который входят изучение его технических и планировочных параметров, исторического контекста, а также сравнительный анализ с постройками различных европейских архитектурных школ.

Соборы средневековой Норвегии выступают в качестве оригинальной линии развития английской и немецкой (преимущественно ломбардской) средневековой архитектуры. Кроме того, правомерно говорить о специфике норвежского зодчества. При общей ориентации на иностранные модели норвежские соборы не являются точной копией какой-либо европейской культовой постройки. Приглашенные мастера, за плечами которых был огромный опыт возведения каменных соборов, попадали в условия, созданные предпочтениями заказчиков, местными особенностями климата и самобытностью национальной культуры. Неповторимость архитектуры каждого храма доказывает, что зодчество соборов Норвегии является оригинальным явлением в истории европейского зодчества.

**Ключевые слова:** скандинавское искусство; каменная архитектура Норвегии; средневековое искусство; соборы Норвегии; региональные особенности.



Ill. 76. Cathedral St. Swithun in Stavanger, view from the southeast. Photo by E. Khodakovsky, 2012



Ill. 77. Southern arcade of Christ cathedral in Hamar. Photo by K. Chemezova, 2013.



Ill. 78. Diaphragm arch in the south aisle of St. Swithun cathedral in Stavanger. Photo by K. Chemezova, 2013.



Ill. 79. Eastern façade of St. Swithun cathedral in Stavanger. Photo by E. Khodakovsky, 2013