

This collective monograph presents the current state of research regarding contemporary methods of dealing with historic timber structures in Scandinavia, the United Kingdom, Central Europe and Northwest Russia. The chapters are dedicated to the main aspects of the research and deal with archaeological evidence, written sources, the extant buildings themselves as evidence, as well as repair and maintenance. Researchers from four countries examine centuries-old timber structures that include churches, bell towers and dwellings in Europe and Russia. Based on the conclusions of these studies, they demonstrate various methods of archaeological, archival and empirical research and discuss appropriate measures of restoring and maintaining wooden structures. Historical and contemporary photographs along with new drawings richly document the buildings.

ISBN 978-3-0356-0566-2



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Historic Wooden Architecture in Europe and Russia



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Evidence, study and
restoration

Edited by
Evgeny Khodakovsky
and Siri Skjold Lexau



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WOOD IN THE ARCHITECTURE OF EUROPE AND RUSSIA:
NATIONAL SPECIFICS AND INTERNATIONAL RESEARCH /
Evgeny Khodakovsky



INTRODUCTION

WOOD IN THE ARCHITECTURE OF EUROPE AND RUSSIA: NATIONAL SPECIFICS

AND INTERNATIONAL RESEARCH

Evgeny Khodakovsky

In the centuries-long history of art in Europe and Russia, wooden architecture occupies a special place. The extensive areas in southern Norway and the Russian North and those places in the Czech Republic, Poland and England where masterpieces of timber construction still survive are today regarded as unique architectural reserves. Some wooden churches, such as the Urnes Stave Church and the Church of the Transfiguration at Kizhi, are included in the UNESCO list of World Heritage Sites.

For a long time, however, against the background of a magnificent panorama of masonry architectural monuments, the role of wooden buildings was not rated very highly and their significance was not properly appreciated. To a large extent this bias was due to a deep-rooted perception going back to Antiquity of timber construction as an indicator of the low level of material and spiritual development of barbarian societies. Back in the first century AD, Tacitus, describing the world of the Germanic tribes that lay beyond the northern boundaries of Roman territory, observed that: ‘They are unacquainted with the use of mortar and tiles; and for every purpose employ rude unshapen timber, fashioned with no regard to pleasing the eye.’^{1: 16 (97)} Nevertheless, the decline of masonry construction that followed the demise of the Western Roman Empire in the year 476 increased the significance of wood as a building material in the subsequent history of construction in Europe.

Against this background a certain symbolism would seem to attach to the mention of the earliest recorded wooden church in the Roman outpost of Quintanis (present-day Künzing) on the Danube. The early Christian *Life of St. Severinus* reports: ‘The inhabitants of this place had built outside the walls a wooden church which overhung the water, and was supported by posts driven into the riverbed and by forked props. In place of a flooring it had a slippery platform of boards, which were covered by the overflowing water whenever it rose above the banks.’^{2: XV (60)} By its very location on the banks of the river forming the border, the church in Quintanis connected in a way the Roman and Germanic worlds, just as the period in which it is recorded – the 470s – connected departing Antiquity with the coming Middle Ages, when amid the marble ruins the role of wood in architecture grew considerably.

After the previous dominance of the ‘Mediterranean vector’ in the development of culture ceased to be unconditional, the forests of central Europe and the character of their usage became an important ‘factor in architecture’ because in the Middle Ages ‘relations between humans and the forest changed’.^{3: 109} We would be to a large extent correct in picturing medieval construction as almost

Fig. 1: Urnes Stave Church in Sogn, Norway. After 1130. Photo, 2012

Fig. 2: Kizhi Pogost (1694–1874), Republic of Karelia, Russia. Photo, 2007



entirely wooden, although today that is hard to believe in view of the almost complete loss of structures made from that relatively short-lived material. A host of mentions of extensive construction in wood have come down to us from the Middle Ages. The collected data from various sources inform us of the existence across Europe and Russia of several hundred wooden churches created at various times.⁴ And that is far from a complete picture.

Gradually, though, wooden structures were rebuilt in masonry, which – in an era of constant wars, raids, fires and destruction – was valued above all for its durability. Stone and brick edifices, orientated on some authoritative prototype, performed representational functions and then, as constructional methods and techniques advanced, they acquired ever greater aesthetic value. This process can already be observed in the Carolingian period. Adam of Bremen, for example, mentions that Bishop Willerich, who lived in the first third of the ninth century, ‘erected churches in appropriate places; three, indeed, in Bremen, the first of which, that is to say the Cathedral of Saint Peter, he made over from wood into stone’.^{5: 24} The British Isles, which in the ninth and tenth centuries experienced incessant, devastating blows from the Scandinavians, also displayed a strong upsurge in masonry construction in this period, which despite its very plain forms proved more in demand and more financially practical than inexpensive, but highly flammable wooden churches. Two Irish edifices can serve as examples – St. Columba’s House at Kells (circa 800) and ‘St. Kevin’s Kitchen’ at Glendalough (mid-ninth century).

Nevertheless, the seemingly irreversible process that saw the gradual replacement of dilapidated wooden churches by masonry buildings proceeded at slow pace in some parts of Europe and Russia: a number of regions in Scandinavia, the British Isles, the Novgorodian Republic, Bohemia and Silesia. The specific character of the development of these historical areas has determined the geographical boundaries of the questions addressed in this monograph, reflecting specialist research into the wooden architecture of Norway, England, Russia and the Czech Republic.

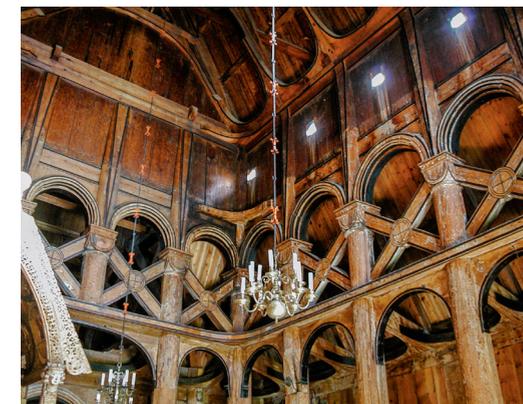
The great attention devoted in the book to Norwegian wooden architecture in particular is entirely explicable. Norwegian stave churches of the twelfth to fourteenth centuries are a group of very early wooden buildings that have survived down to the present. The exceptional nature of this phenomenon can be attributed to a wide range of factors. While the rest of the barbarian world (Gaul, Germany, Britain) had long ago been drawn into the sphere of influence of the Roman Empire and then the Church of Rome, Scandinavia – due to its geographical remoteness and peculiarities of social development – right up to the late eighth century took no active part in the formation of the cultural and political landscape of the early Middle Ages. It is only natural that in Norway – situated on the periphery of Europe and separated from the main territories of the continent by the North Sea and Skagerrak – art from the outset assumed a special local ‘endemic’ character. Isolation from the Roman legacy and the developed infrastructures of towns and roads associated with it, the complete absence of masonry construction with its elaborate techniques – the use of concrete, arches and vaults – also determined the distinctive character of the development of Norwegian architecture, which, drawing mainly on its own internal creative resources, preserved its uniqueness for centuries. This was also favoured by the natural conditions of northern Europe, where the abundance of forests preordained the use of timber as the main (and at times only) building material.

Fig. 3: Hopperstad Stave Church in Sogn, Norway. Mid-12th century. Photo, 2013



The preservation of wooden church architecture of the twelfth to fifteenth centuries in southern and central Norway, where the largest number of examples are located, is also due to the fact that until very recently Norway remained a country with a patriarchal agricultural way of life practically untouched by urbanisation and industrialisation. Norwegian geography – huge areas intersected by mountains, numerous fjords and passes that are closed in winter – favoured the conservation of many aspects of cultural life, the formation of local cultural traditions in different regions and the development of dialects of the language.

Fig. 4: Hopperstad Stave Church in Sogn, Norway. Mid-12th century. Nave. Photo, 2008



Another important circumstance is that as early as the late fourteenth century Norway lost its sovereignty and became dependent politically on Denmark and economically on the Hanseatic League. In the 1500s and 1600s, neighbouring Sweden became a wealthy state with imperial ambitions and financial capabilities

that allowed it to embark on large-scale masonry construction, not only in the capital and the larger towns, but even in the countryside. As a rule, the construction of a new masonry church in place of an old wooden predecessor was the consequence of the parish acquiring sufficient funds, which testifies to the financial prosperity of the society. Ageing tumble-down wooden churches in Sweden and Denmark were gradually replaced with masonry ones, which were more reliable and functional, but with every passing generation possessed fewer and fewer of the features that characterised earlier stages in the evolution of medieval architecture. In



Fig. 5: Eidsborg Stave Church in Telemark, Norway. Circa 1250–1300. Photo, 2014

Norway, for centuries the situation was completely the opposite. The land remained as before on the periphery of the political and economic development of the realms in the Kalmar Union and had no such capabilities. But it was precisely this fact that facilitated the long retention of old churches, the majority of which remained wooden. As a result even today the overwhelming majority of timber dwellings, service and church buildings are in the provinces, while the appearance of the artistically most interesting cities in Norway – Bergen and Trondheim – is primarily formed by large-scale wooden construction.

Works of wooden architecture, which easily catch fire and are more susceptible to atmospheric influences, are in a more vulnerable position compared with durable masonry structures. Despite active measures to preserve wooden churches in Norway, they now number some two and a half dozen objects, a mere three per cent of the total quantity of Norwegian churches in the Middle Ages.

The task of present-day researchers lies in devoting maximum attention to the surviving buildings as hands-on empirical material. It is essential to continue the research of them to expand the knowledge of this persisting building technology of the past, during which the current predominance of extant masonry edifices was not at all evident. The wooden architecture of Norway to some extent compensates for the lacunae created by the loss of so many timber buildings and substantially expands the history of construction in Europe in the twelfth to fourteenth centuries, its technologies and typological variety.

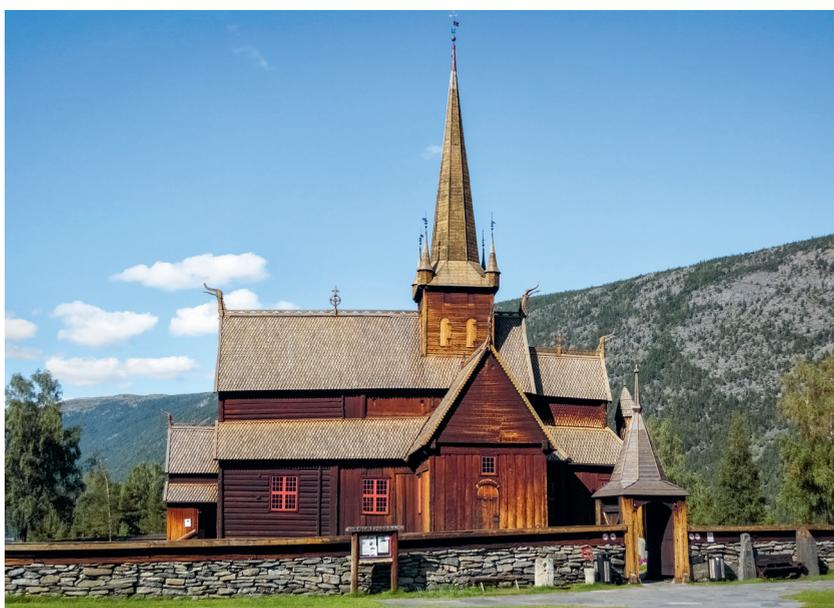


Fig. 6: Lom Stave Church, Oppland, Norway. After 1158; extended in 1634 and 1663. Photo, 2013



Fig. 7: Kvernes Stave Church, Møre og Romsdal, Norway. 14th–17th century. Photo, 2014



Fig. 8: St. Andrew's Church, Greensted, Essex, England. 11th century; extended 16th–19th centuries. Photo, 2011

The flourishing of wooden architecture in Norway would be the logical result not only of the long and varied use of wood in structures of material and spiritual culture in pagan Scandinavia. It is inseparable from the history of the development of timber construction in the British Isles – a region that played an extremely significant role in the Christianisation of Norway. For that reason buildings in Britain are allotted a special place in the monograph. They are examined both in the chapter devoted to methods of archaeologically reading wooden constructions, alongside an interpretation of Norwegian and Novgorodian material, as well as in the section on written sources as one of the most important research tools. Within the extensive archaeological array revealed in the course of excavations in the British Isles, particular value is attached to objects that lend themselves to at least minimal reconstruction. Of especially great worth, though, against that background is St. Andrew's Church in Greensted, Essex (not far from London).

St. Andrew's was constructed in the eleventh century and is today the oldest surviving wooden church in the world. Thus, through a multifaceted approach to the study of archaeological evidence, written sources and a surviving object, albeit the only one, that is in itself a precious source and evidence, the monograph reveals and examines the strong and long-lived tradition of wooden church construction in Britain.

The section on the traditional wooden architecture of the Czech lands, examined in the context of a possible link with the bell towers of Sweden, is not only innovative, but also deeply symbolic as the Czech Republic, situated in the heart of Europe, provides a more than merely visual geographical link between the main regions featured in the book – Britain in the west, Norway in the north and Russia in the east. A detailed study of the processes that took place in the architectural history of central Europe after the Reformation points to a possible interaction, albeit limited, between the Scandinavian and Slavic traditions. While in the architecture of church buildings such a consonance would seem impossible on the grounds of confessional differences and the need to express ethnic and cultural identity, in a more practical functional sphere, where the ideological aspect is reduced to a minimum, it is possible to find points of

similarity in the construction of Bohemian and Swedish bell-towers of the 'triangular type'. Thus we have here a methodology that proposes an approach to an architectural construction itself as source and evidence. This makes it possible to take a fresh look at certain aspects of the history of construction in central and northern Europe in the early modern era, when in the course of the Thirty Years' War (1618–48) there was intensive movement and mixing not only of European armies, but also of ideas and technologies.

Russian wooden architecture is allotted a separate place in this book. In Russia, as in Norway, world-famous old timber churches still survive and both countries view wooden construction as one of the most important facets of their national culture.

Besides, geographical proximity, similar climatic conditions and an abundance of constructional timber meant that Norwegian and Russian builders would inevitably turn first of all to timber, which became the foundation of a very ancient building tradition. Of importance here too are the historical paths of Scandinavia and Rus', which constantly intersected over the centuries. The intensive contacts between Slavs and Scandinavians as far back as the pre-Christian period are generally known and confirmed by numerous written sources and archaeological finds in Staraja Ladoga, Novgorod and along the whole route

'from the Varangians to the Greeks'. The adoption and spread of Christianity in Norway and Kievan Rus' took place practically simultaneously over the course of the eleventh century. In 1251 and 1326 Novgorod concluded historically important treaties with Norway. The subsequent process of economic and ethno-cultural interaction continued in the sixteenth to nineteenth centuries due to the active use by Pomors and Russian merchants of the circuitous sea route from the White Sea to western Europe past the Kola Peninsula and the Norwegian coast.

The question of the mutual influence between the building traditions of the two countries would seem to raise itself, but long-standing efforts to find analogous buildings or at least evidence of indirect influences have so far not produced any convincingly proven results. The outstanding architect and restorer Vladimir Suslov undertook a major attempt to study this issue. As far back as 1886 he went off to Norway, 'to acquaint myself with the ancient art of our neighbouring country and to obtain a clear idea of how far it was related to our own Northern art'. He concluded, however, that, 'examining the ancient works of church architecture of the one country and the other, we will hardly see

Fig. 9: Church of the Nativity of the Virgin, Gimreka, Lake Onego area, Leningrad region. 1695. Photo, 2013



Fig. 10: Refectory Church of St. Nicholas in the Muezero Monastery, Republic of Karelia, Russia. 1602. Photo, 2013



even the slightest similarity'.^{6:6,9} This is entirely explicable as Russia and Norway have their own distinctive traditions that developed initially from Slavic and Scandinavian house construction and then under the jurisdiction of the Roman Catholic and Graeco-Byzantine Churches respectively. As a result, the study of the wooden architecture of the Russian North and Scandinavia makes it possible to see how, while employing one and the same material and exploiting its properties, these adjacent cultures produced buildings that are completely different in appearance.

Besides the geographical viewpoint that proposes viewing works of wooden architecture in several European countries and the northwestern region of Russia, the title of the book includes the key words 'evidence, study and restoration', implying the exposition of the main approaches to the general issues connected with wooden architecture. The traditional conception of archaeological evidence and the written (archival) document as primary sources for the history of lost buildings or individual parts of them is presented in the first three chapters. They formulate questions relating to the archaeological study of Norwegian, English and Early Russian (Novgorodian) material and give summarising descriptions of the written testimony about timber construction in medieval England, the Nordic countries (Norway and Iceland) and Russia. However, in view of the frequent insufficiency of archaeological and written data, as well as difficulties in interpreting them, the authors examine the surviving buildings themselves as 'silent' but highly informative pieces of evidence. The analysis of an architectural construction becomes analogous to the reading of a written document or the archaeological uncovering of material evidence. Study of structures, techniques and building methods carried out on location makes

Fig. 11: Church of the Presentation in the Temple, Zaostrov'e, Arkhangelsk region, Russia. 1688. Photo, 2014



it possible to draw conclusions about general patterns in the developmental history of wooden architecture in a particular period. Additionally a broad, comprehensive approach of this sort makes it possible to touch on adjacent topics, such as the use of wood in masonry architecture, or the specific character of the construction of bell-towers, which occupy an intermediate place between ecclesiastical and civil architecture.

The final chapter examines and compares various methods of restoration employed previously and currently in Norway and Russia. Emblematic in this respect is the active involvement of Norwegian specialists in the restoration of the Transfiguration Church in Kizhi. Despite the long-standing fundamental differences in the building traditions of the two countries, in this important

Fig. 12: The wooden Church of St. Demetrius of Salonica (1646; 1731) and the masonry Cathedral of St. George (1165). Staraja Ladoga (Old Ladoga), Leningrad region. Photo, 2005



project centuries of Russian and Norwegian experience is being brought together. At the same time a powerful motive force here is also the shared perception of wood as a living, organic material that not only possesses engineering and technical properties, but also reveals through its use in architecture a distinctive national perception of the world.

References

- 1 Tacitus, *The Germany and the Agricola of Tacitus*, Oxford translation revised with notes, with an introduction by Edward Brooks, Chicago: C. M. Barnes, 1897.
- 2 Eugippius, *The Life of Saint Severinus*, translated into English for the first time, with notes by George W. Robinson, Cambridge, MA: Harvard University Press, 1914.
- 3 Küster, H., *Geschichte des Waldes: von der Urzeit bis zur Gegenwart*, Munich: C. H. Beck, 2003.
- 4 Ahrens, C., *Die frühen Holzkirchen Europas*, Vol. I–II, Stuttgart: Konrad Theiss Verlag, 2001.
- 5 Adam of Bremen, *History of the Archbishops of Hamburg-Bremen*, translated with an introduction and notes by Francis J. Tschan; with a new introduction and bibliography by Timothy Reuter, New York: Columbia University Press, 2002.
- 6 Suslov, V., *Putevye zametki o severe Rossii i Norveгии* [Travel Notes on the Russian North and Norway], St. Petersburg: Tipografia A. F. Marksa, 1888.

All illustrations are by the author.

Copy editing Julia Dawson
Project management Alexander Felix, Lisa Schulze
Production Amelie Solbrig
Layout, cover design and typography Jenna Gesse
Typefaces Campton, Parable
Paper Munken Lynx, 130 g/m²
Printing DZA Druckerei zu Altenburg GmbH



The edition is sponsored by SIU – *Norwegian Centre for International Cooperation in Education* (project CPRU-2011/10073 University of Bergen – St. Petersburg University cooperation programme).

Library of Congress Cataloging-in-Publication data A CIP catalog record for this book has been applied for at the Library of Congress.

Bibliographic information published by the German National Library The German National Library lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at <http://dnb.dnb.de>.

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This publication is also available as an e-book (ISBN PDF 978-3-0356-0542-6; ISBN EPUB 978-3-0356-0550-1).

© 2015 Birkhäuser Verlag GmbH, Basel
P.O. Box 44, 4009 Basel, Switzerland
Part of Walter de Gruyter GmbH, Berlin/Boston

Printed on acid-free paper produced from chlorine-free pulp. TCF ∞

Printed in Germany

ISBN 978-3-0356-0566-2

9 8 7 6 5 4 3 2 1

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