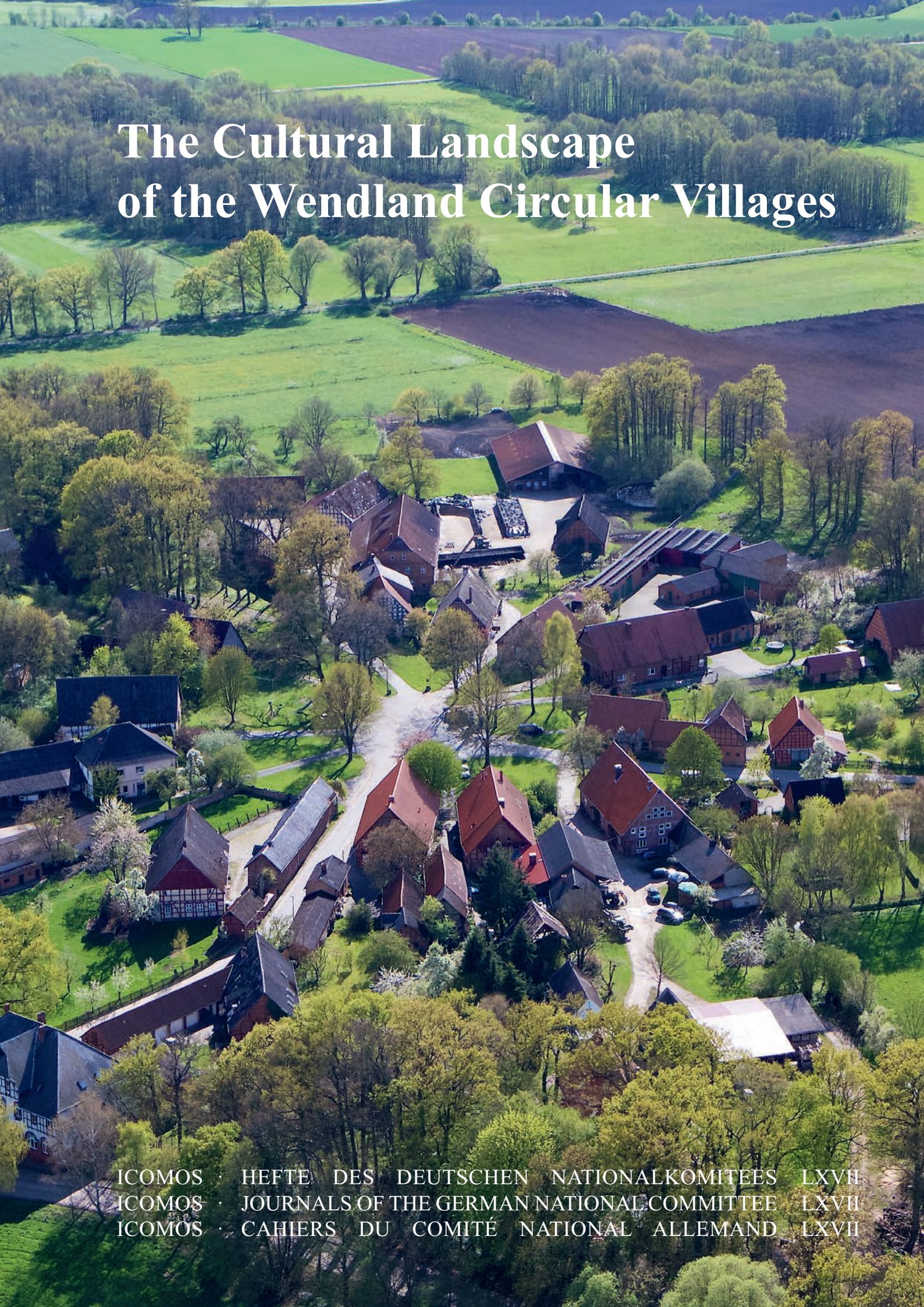
The Cultural Landscape of the Wendland Circular Villages



ICOMOS · HEFTE DES DEUTSCHEN NATIONALKOMITEES LXVII
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INTERNATIONAL COUNCIL ON MONUMENTS AND SITES
CONSEIL INTERNATIONAL DES MONUMENTS ET DES SITES
CONSEJO INTERNACIONAL DE MONUMENTOS Y SITIOS
МЕЖДУНАРОДНЫЙ СОВЕТ ПО ВОПРОСАМ ПАМЯТНИКОВ И ДОСТОПРИМЕЧАТЕЛЬНЫХ МЕСТ

Conservation and Rehabilitation of Vernacular Heritage:

The Cultural Landscape of the Wendland Circular Villages

International conference and annual meeting of the ICOMOS International Scientific Committee on Vernacular Architecture (CIAV)

organised with ICOMOS Germany, the State Office for Monument Conservation and Archaeology of Lower Saxony, and the Samtgemeinde of Lüchow-Wendland

Lübeln, September 28 – October 2, 2016

Edited by Christoph Machat

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Impressum

ICOMOS Hefte des Deutschen Nationalkomitees
Herausgegeben vom Nationalkomitee der Bundesrepublik Deutschland
Präsident: Prof. Dr. Jörg Haspel
Vizepräsident: Dr. Christoph Machat
Generalsekretärin: Prof. Dr. Sigrid Brandt
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Die Beauftragte der Bundesregierung
für Kultur und Medien

Gedruckt mit freundlicher Unterstützung durch die
Beauftragte der Bundesregierung für Kultur und Medien aufgrund eines
Beschlusses des Deutschen Bundestages

Redaktion: Christoph Machat, John Ziesemer
Englisches Lektorat: John Ziesemer
Umschlagvorderseite: Luftbild Schreyahn (Foto Alexander Tetsch, © Samtgemeinde Lüchow)
Umschlagrückseite: Dali Village, Detail (siehe auch S. 72)
Abb. S. 4: Luftbild Klennow (Foto Alexander Tetsch, © Samtgemeinde Lüchow)

1. Auflage 2018

Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie;
detaillierte bibliografische Daten sind im Internet unter http://dnb.d-nb.de abrufbar.

Gesamtherstellung:
Geymüller | Verlag für Architektur, Aachen – Berlin
www.geymueller.de

ISBN 978-3-943164-46-6

Content

Introduction

This publication contains most of the contributions to the international conference "Conservation and Rehabilitation of Vernacular Heritage: the Cultural Landscape of the Wendland Circular Villages", Lübeln, September 28 – October 2, 2016, which was combined with the annual meeting 2016 of the International Scientific Committee on Vernacular Architecture (CIAV) of ICOMOS. It was the second meeting of CIAV in Germany after 1992, hosted at that time by the Heritage Conservation Office of the Rhineland (Rheinisches Amt für Denkmalpflege) and ICOMOS Germany in the framework of a joint scientific conference on cultural landscapes, with an expert group of the Council of Europe. The results were published in 1993 under the title *Historische Kulturlandschaften* as volume XI of the series *ICOMOS Journals of the German National Committee*.

Hosted in 2016 by the joint municipality (Samtgemeinde) of Lüchow-Wendland and organised by the Heritage Conservation Office of Lower Saxony (Niedersächsisches Landesamt für Denkmalpflege), CIAV and ICOMOS Germany, the conference focused on the circular villages of the Wendland and on the preparations for a UNESCO World Heritage nomination. A first preparatory workshop concerning the World Heritage compatibility of the circular villages had been organised in 2014; it included an investigation of the potential of the villages' Outstanding Universal Value (OUV) and the comparative analysis (demanded by the UNESCO Operational Guidelines). Unfortunately, the Kultusministerkonferenz (Conference of the Ministers of Culture in Germany) at that time was not convinced of the World Heritage potential and therefore did not include the Wendland villages in the German Tentative List.

For this reason, the Lübeln conference started with presentations of the scientific research on the colonisation and settlement patterns of the villages (*M. Hardt*), the analysis of the characteristic half-timber hall houses (*D. Wübbenhorst*) and concluded with the final research on the OUV and the criteria for inscription on the World Heritage List (*M. Schmidt et al*) and with the final comparative analysis (*Rudolff et al*). In between, an excursion day to the villages took place.

It should be mentioned that for many years members of CIAV have been involved in the evaluation and preparatory work on nominations of vernacular heritage sites for the World Heritage List, e.g. with regard to the village of Holasovice (Czech Republic) and the villages with fortified churches in Transylvania/Romania, but also in the "Filling the Gaps" (on the World Heritage List) initiative of ICOMOS International (Monuments and Sites, vol. XII, Munich 2005).

As a consequence, some of the contributions from CIAV focus on the circular villages (*M. Čerňanský*) and the settlement patterns of vernacular settlements (*C. Machat*). Other contributions of course reflect the scientific work of CIAV members, like the interesting analysis of the relation between the cultural landscape of an area and the vernacular traditions, including the tangible and intangible heritage (*G. Torres, text in Spanish with English summary*); research problems regarding the typology of wooden vernacular structures in Norway (*G. Jakhelln*) and in Northeast Karelia *(R. Sjølie*), or specific "technical" problems related to the protection and conservation of the built vernacular heritage. This includes alternative energy problems in Egypt (*M. Dabaieh*) or risk preparedness and fire protection in vernacular wooden settlements in China (*Fei Du / Kenji Okazaki*). For the protection of vernacular built heritage threatened by armed conflicts especially in the Middle East an ICOMOS-CIAV task force was proposed *(H. Mahdy*).

All these individual contributions also reflect the different traditions of scientific work and presentation worldwide. Bibliographies and quotations have therefore not been adjusted.

Instead of conclusions, the final *Recommendations* adopted by the conference participants strongly endorse the World Heritage nomination initiative and request the German state and national authorities to include the Wendland Rundlinge on the National Tentative List.

Christoph Machat

The Beginning of Colonisation in Eastern Central Europe in the High Middle Ages

Matthias Hardt

The circular villages on the lower Geest in the Hanoverian Wendland were established in the early phases of European settlement expansion, a process which was to change Eastern Central Europe fundamentally over the course of the High Middle Ages. In what follows, I will describe the beginnings of these changes in the cultural landscape and illustrate the implications of settlement expansion, using the example of the settlement and plot layouts which were in use, especially in the Bremen Weser Marshes and in the Hanoverian Wendland. When looking for the beginnings of these developments, one is drawn to the area south of Leipzig, where Wiprecht II of Groitzsch ruled at the beginning of the 12th century.

Wiprecht of Groitzsch and settlement expansion between the Mulde, Wiera and Schnauder

The annals of the abbey of Pegau for the year 1104 tell us that Wiprecht ordered new land to be ploughed (*exarari*) in the diocese of Merseburg. To this end, *coloni* were brought over (*transtulit*) from Franconia, where his mother Sigena was married. On Wiprecht's order, these colonists had *silva funditus exstirpata*, i.e. completely cleared the forest, in order to be allowed to settle this region in the future and to hold hereditary rights (*hereditario iure*) to it. Between the rivers Mulde, Wiera and Schnauder, numerous settlements (*villae*) were founded and finally even an abbey subservient to Pegau was established at *Luzeke* (Lausigk) to function as parish church. In 1105, Bishop Albuin of Merseburg, following Wiprecht's wishes, asserted in writing that the tithe payments of named settlements and those to be established in future were to go to the monastery of St James in Pegau. The annalist found it amusing (*ridiculosus*) that every person was to name after himself (*ex suo nomine nuncupare*) the property he had established with his own labour and that of his family. Indeed, among the settlement names listed in the charters of the Bishop of Merseburg are a whole host of patronymic place names paired with the root word –dorf: amongst others Saslausdorf, Ottendorf, Ballendorf, Milansdorf, and even an Etzoldshain.[1]

The initiator of this process of settlement[2] in the marches east of the Saale was Wiprecht II of Groitzsch, a colourful personality with far-flung contacts amongst others to the Salian emperors Henry IV and Henry V and the Bohemian prince Vratislav II of the Přemyslid dynasty, whose daughter Judith became Wiprecht's wife.[3] Wiprecht had grown up at the court of the Margrave of the North Marches, Udo of Stade, who from 1068 onwards also administered the March of Zeitz and who gave Wiprecht the castle of Groitzsch. It is certainly no coincidence that settlement expansion involving colonists from faraway regions also took place in the surroundings of Udo II's sphere of activity.

Dutch settlements along the lower Weser

In 1106, or more likely in 1113, Frederick Archbishop of Bremen and Hamburg sealed a treaty (*pactio*) with named persons from the left banks of the lower Rhine, who are referred to as Dutchmen and were led by a priest named Henry. They allegedly had come to him asking for unploughed and swampy land, *terra...nostris indigenis superfluam*, i.e. of no use to its own inhabitants, in order to render it usable (*ad excolendam*). After extensive consultation, he decided not to turn down these wishes, but instead to enter into a written agreement with this group, spelling out the conditions under which they were to be granted this land. Every year, a denarius was to be paid for each manse obtained. Its extent was to be 720 *regales virgae*, or king's rods, long and 30 wide, including the small rivers (*rivuli*) flowing therein.

The Dutchmen apparently agreed to pay tithes according to the archbishop's regulations. In order not to be under the jurisdiction of a worldly court, the Dutchmen agreed to pay two silver marks a year per 100 manses to be able to settle their own disputes. In very grave situations, the archbishop was to join them and receive one third of the court fees, the Dutchmen retaining two thirds. They were allowed to build churches in places of their own choosing. To support them, Frederick granted them the tenth part of the tithe of the established parish churches; each one was to be equipped with hides for the priests. These were to be under the control of the already mentioned priest (*sacerdos*) Henry for as long as he lived. Finally, Archbishop Frederick left the land they had asked for to the laymen Helkin, Arnold, Hiko, Fordolt and Referik, who accompanied the priest, and to their heirs *se-*

cundum seculi leges et prefata conventionem, according to worldly laws and the written charter.[4]

The charter of Archbishop Frederick is not preserved in the original, but only as a copy. It does not contain any information as to where the Dutchmen and their priest Henry wanted to settle. Following much critical discussion, it now seems clear[5] that the treaty was not drawn up with regard to the Altes Land along the lower Elbe near Stade[6], but instead for the parishes Wasserhorst and Horn immediately north and north-east of Bremen, where Dutch hides are recorded as early as AD 1187.[7]

The Dutchmen[8] began by establishing a hide marsh-plot either side of a dam called Sietwenje, north of the long settled ridge of the Bremen dune and between the two small rivers of the lesser Wümme and Wümme. Each farm received a roughly equal-sized share of this marsh-plot in the form of a strip plot with an area of 47.5 hectares, immediately adjacent to their farmyard and crossing the entire meadow. These strips were separated from each other by drainage ditches running straight down to the lesser Wümme. On the side further away from the settlement, they ended on the so-called aft dyke, which was built to prevent flooding by water from further inland. The lesser Wümme, probably already straightened, also fulfilled the function of an outlet channel. The marsh-plots were further subdivided by dykes or canals running parallel to the aft dykes and outlets, that is to say by further ditches which ensured drainage from the low-lying plots.[9]

The farms were built on terps raised for this purpose, as it was at first impossible to completely surround all the marsh plots with dykes. Only the fields immediately adjacent to the farms were enclosed by polders and hence protected from smaller floods. Pasture for the herds was located beyond that. Via the rivers and ditches, the farms could be reached by boat and any future surplus produce could be transported to market in this way, just as supplies were brought in.[10]

Establishing a settlement of this kind makes great demands, initially in terms of measuring out the plots, later regarding the construction and maintenance of ditches, dams and dykes.[11] The Dutch were, however, experienced in these matters, as river marsh-plots of this kind had been established in the Bishopric of Utrecht and in the counties of Flanders and Holland since the middle of the 11th century.[12] After the hides had been measured out, the terps for the farms were built and only later were they connected by a front dyke. However, there was still some way to go before the typical look of a modern *Marschhufendorf* (or marsh-plot village) with its multitude of very narrow parcels of land was achieved: the narrow strips were only created by dividing the estate amongst several heirs. This in turn was made possible by the specific legal form which Archbishop Frederick of Bremen-Hamburg had granted to the new settlers in 1106 or 1113: the Dutchmen‘s law allowed the settlers to freely pass their farms and hides on to their descendants. Alongside the settlement and plot forms oriented towards the growing of cereals, this right of free emphyteusis, which originally came from the Netherlands but was then also established at the mouths of the rivers Weser and Elbe, finally found its way into East Central Europe.[13]

Settlement expansion east of the Elbe and Saale

Word that this area was suitable for settlement expansion started to spread at the beginning of the 12th century. Partly, this was down to a proclamation signed by Wiprecht of Groitzsch, which was read in the churches of Thuringia and Saxony at more or less the same time as the Franks settled between the Elster and Wiera and the Dutch began to build their marsh-plot settlements along the Weser:

“Proclaim this in the churches, hallow a fast, call together the congregation, gather the people, declare this and let it be heard to all borders of your jurisdiction, hallow the strife, awaken the strong, put on your belts you strong sons, and come all you warriors ... The heathens are wicked, but their land is rich with meat, honey, poultry and flour and, if it is farmed, full of the riches of the harvests of the land, so that no other compares to it. So say those who know it. Hence, you Saxons and Franks, you men of Lorraine and Flanders, you famous conquerors of the world, here you can save your souls and, if you so wish, win the best land to settle. He whose strong arm helped the French, who came from the furthest west, to triumph over their foes in the furthest east, may he give you the will and the power to subdue these neighbours and so inhuman heathens, and may everything go well for you”.[14]

This call to a crusade by Saxon ecclesiastical and worldly leaders dates to the year 1108. It does not incite to a military expedition to Palestine, as would have been usual at the time, but to conquer and settle in the marches east of the Elbe. This shows which aims the church and the nobility at the north-eastern edge of the freshly consolidated Germany of the High Middle Ages had been following since the beginning of the 12th century.[15] This and similar calls which were to follow were successful, and that the settlers from the west really did come is shown by a large number of settlement and locational charters[16] and historiographic reports,[17] but in particular by place names[18] and material remains investigated archaeologically.[19] This process involved the military subjugation of the Slavic dominions east of the Elbe and Saale, the immigration of Frankish, Flemish, Rhenish and Saxon groups of people, their settlement between the Slavic inhabitants of the conquered territories or in the territories of the lords who had recruited them, and finally the gradual but fundamental transformation of the cultural and natural landscape they found. Today, we are far from seeing this as one of the “great deeds of the German people”,[20] as was the case up to the middle of the last century, or even from pointing to the ”fateful imperial crown” which let the emperor ”lose sight of the German area and its necessities for survival”, as it is phrased in the sketch maps for German history of 1938, while Henry I and Henry the Lion were said to have expanded ”German *Lebensraum* to the east”.[21] Similarly, interpretation of these events within the framework of a generally aggressive “feudal German expansion to the east”[22] has become rare. Rather, a consensus seems to have been established that the “German medieval settlement in the east [should be seen] as a European problem”. Today, following Klaus Zernack, Eastern colonisation is interpreted as ”a process of universal history

proceeding from west to east, which led to the acculturation and westernisation of the eastern half of Europe“[23]. As Christian Lübke claims, ”in a view aiming at the analysis of structures”, a ”German, national component of medieval settlement in the east” has „irretrievably lost its traditional pre-eminence“.[24]

In summary, at the moment the *communis opinio* is that from the 12th century, and due to changing economic and social conditions in the western areas of the empire, pressure to emigrate was building up,[25] and in areas east of the Elbe this was coupled with conditions that made successful settlement possible.[26] From the beginning of the 12th century, there is increasing evidence for settlement expansion achieved with the aid of new settlers. Two instances have already been briefly introduced in this essay. In contrast, a process of settlement expansion apparently wholly carried by the autochthonous population was implemented further to the north-east.

Settlement expansion with circular villages in the Hanoverian Wendland

Traces of early settlement expansion into the Slavic areas still visible today, although they have been reshaped to an extent, are the circular villages in the lower Geest in the Hanoverian Wendland, located west of the Jeetzel and west of Lüchow in the district of Lüchow-Dannenberg.[27] The closed layout of these villages, so impressive today, is not their original appearance; instead, this is due to modern changes. At the time of their foundation, these villages probably consisted of only a few farmsteads arranged in sectors around an open space. The agricultural land of these villages was divided into what Wolfgang Meibeyer introduced as so-called “Riegenschläge”, subdivided into as many strip plots as there were full hides, i.e. possible farmsteads in the settlement. Villages and plots thus show a planned arrangement, making it very likely that all circular villages on the lower and probably also on the higher Geest, which was later much more strongly affected by desertification processes, were established at the same time and in one episode of expansion.[28]

Given that almost all circular villages in the Hanoverian Wendland have Slavic place names, it is almost certain that this process of settlement expansion was carried out by a Slavic population. Earlier settlement geographic research was certainly content to interpret the circular villages as Slavic settlements allegedly belonging to the earliest settlement horizon of the region.[29] However, this is contradicted by the results of the very actively pursued archaeological investigation of the region. It could show that, beginning with the Slavic immigration of the 8th century, the lower-lying areas of the Wendland along the Elbe, Jeetzel and Aland did indeed form a Slavic settlement community. However, in the area of the lower Geest, where the circular villages are located, only very little Slavic pottery has so far been found in the surroundings of existing villages.[30] This proves that the circular villages west of Lüchow were built with the participation of Slavic settlers, but that this could only have happened at a time when Slavic pottery had already gone out of use and had been superseded by “German” pottery forms. This cannot have been the case before the second half of the 12th century.[31] The period after the Wendish crusade of 1147 is also the time when political power in the former area of the Linones[32] and across in Drawehn finally passed into the hands of immigrant ruling families; in the latter case these were the counts of Lüchow and those of Dannenberg.[33] It was most likely they who initiated the planned settlement expansion onto the hitherto unsettled Geest, supervised it and ensured that it resulted in a kind of village form that perhaps corresponded to the habits and preferences of the Slavic population.[34]

But where did the Slavs come from who, in one unified event, covered the lower Geest with planned settlements? Wolfgang Meibeyer still felt the need to invoke prisoners of war from the areas east of the Elbe.[35] Of course, the settlement of prisoners did play an important role in the High Middle Ages in East Central Europe,[36] but over the last few decades, archaeological research in the Wendland suggests another possibility. Due to the rising water levels of the Elbe and the Jeetzel, the late Slavic settlements near water were becoming progressively uninhabitable in the 12th century;[37] in the area south-west of Lüchow too, several Slavic settlements were abandoned before the 12th/13th century.[38] Here as elsewhere in Germania Slavica, the building of dykes, forest clearance and the reduction of forest cover in the upper and middle reaches of the rivers resulted in an increase in the ground water table, forcing the Slavic population to change their economic strategy, oriented towards animal husbandry, fishing and beekeeping,[39] and to partly abandon the settlements on the water’s edge. Their inhabitants had to find a new home, and given that new agricultural technologies in the form of the reversible plough had made its soils easy to work, the lower Geest offered a welcome opportunity for the new rulers to find a settlement option for the Slavs driven from their traditional settlement locations in the lowlands. In the circular villages built in the newly settled areas far from the lowlands, and perhaps partly because of the familiar village structures, the Dravenopolabians of the Wendland then had the opportunity to preserve their language and regional peculiarities for much longer than other Slavic communities, namely well into the modern period. Relics of a Polabian language were recorded in the area around Lüchow as late as 1700.[40]

However, circular villages do not just exist in the Hanoverian Wendland, but in an area extending from the Kieler Förde to Bohemia.[41] From this fact, the Göttingen geographer Hans-Jürgen Nitz has concluded that circular villages were a settlement form of Frankish state colonisation at the east edge of the Carolingian Empire. He argued in favour of such an early date, because some of the sites with this kind of village form and landscape organisation had already been mentioned in sources of the 8th or 9th centuries.[42] However, it is much more likely that the settlements mentioned so early did at that point not yet have such an elaborate plot structure and were only transformed and reshaped accordingly in the 12th century. After all, neither have these sites yielded archaeological finds which would suggest the establishment of planned settlements in the Frankish period, nor has the theory of Frankish ”state settlement” been tenable.[43] Nevertheless, the

circular villages have shown themselves to be capable of development.[44] In the lower mountain ranges, circular villages could be turned into radial *Waldhufendörfer* (or forest hide villages). This is for instance shown in Wosant/Bažantov at the border between Bohemia and the Franconian Forest, a village which was only finally abandoned in 1945. The only visible trace indicating the location of the site is the hollow of the former village pond in the central square. The site was abandoned in the course of the relocation or deportation of its inhabitants from Czechoslovakia. Recently, this has made possible the archaeological excavation by the west Bohemian University of Pilsen, which has brought to light evidence of the establishment of the village in the 13th century.[45]

In summary, it can be stated that from the first decade of the 12th century onwards, and following the example of predecessors in the area of the Rhine delta, Dutch immigrants established marsh-plot villages in the river marshes of the Weser and the Elbe, aiming to increase agricultural production and especially the growing of cereals. The initiators were hoping for more income in the form of money and other goods, while the so-called Dutchmen's law meant that the immigrants received better legal conditions than in their area of origin. This particularly concerns the right of emphyteusis with the possibility to pass down the established farms. Such settlement expansion was also initiated further inland, for example by Wiprecht of Groitzsch between the Elbe and the Mulde, where immigrants from Franconia and Sorbs living in the region established settlements subject to new laws. After the Wendish crusade of 1147, settlement expansion driven exclusively by the Slavic population began west of the Jeetzel in the Hanoverian Wendland. Here, no river-marsh plots were established. Instead, the strip plots were laid out radially as "Riegenschläge" adapted to a circular village shape. This type of layout is only a short step away from the villages built around a green and with open-field oxgang plots adapted to three-field crop rotation, such as were recorded in the 13th century in the March of Brandenburg, as for example the village of Schönfeld in the Brandenburgian landscape of Barnim. In terms of agricultural food production therefore, north-eastern Europe from the 12th century onwards was at the threshold of a new age. Successful settlement expansion led away from the subsistence economy that had hitherto characterised the Slavic river landscape with its waterside settlements. Alongside steady growth, this enabled the population to produce cereals for a larger market, paving the way for new urban and monetary conditions.[46] Although today we should no longer hark back to the contrast between the "fateful imperial crown" and the eastward expansion as a "great deed of the German people"[47], we can still appreciate the new legal and economic quality caused by the process of European settlement expansion. Only in the Hanoverian Wendland the circular villages of the lower Geest form a coherent area, reminding us of this period of European step-change.

Notes

1 Annales Pegavienses ad a. 1104, MGH SS XVI, ed. by Georg Heinrich Pertz, Hannover 1859, p. 247; Urkunden und erzählende Quellen zur deutschen Ostsiedlung im Mittelalter. Collected and ed. by Herbert Helbig and Lorenz Weinrich. First volume: Mittel- und Norddeutschland, Ostseeküste (Ausgewählte Quellen zur deutschen Geschichte des Mittelalters; Freiherr vom Stein-Gedächtnisausgabe XXVIa), Darmstadt 1968, no. II, 37, pp. 168–171.

2 Walter Heinich, Wiprecht von Groitzsch und seine Siedlungen (Mitteldeutsche Heimat 8), Dresden 1932. Repr. in: Zur Siedlungsgeschichte des Leipziger Raumes. Eine Sammlung wissenschaftlicher Arbeiten aus den Jahren 1914 bis 1937. Ed. by Lutz Heydick and Uwe Schirmer (Leipziger Land – Jahrbuch für Historische Landeskunde und Kulturraumforschung 1), Beucha 1998, pp. 169–199; Siegfried Hoyer, Wiprecht von Groitzsch und der Beginn des Landesausbaus im Mulde-Elster-Gebiet, in: Probleme des frühen Mittelalters in archäologischer und historischer Sicht. Editorial office Heinz A. Knorr (Deutsche Historiker-Gesellschaft), Berlin 1966, pp. 119–129, here pp. 126–129; Susanne Baudisch, Lokaler Adel in Nordwestsachsen. Siedlungs- und Herrschaftsstrukturen vom späten 11. bis zum 14. Jahrhundert (Geschichte und Politik in Sachsen 10), Köln, Weimar, Wien 1999, p. 73f.

3 Hans Patze, Die Pegauer Annalen, die Königserhebung Wratislaws von Böhmen und die Anfänge der Stadt Pegau, in: Jahrbuch für die Geschichte Mittel- und Ostdeutschlands 12, 1963, pp. 1–62, here esp. pp. 7–28; Helmut Hentschel, Wiprecht und seine Beziehungen zum böhmischen Herrscherhaus, in: Wiprecht: Beiträge zur Geschichte des Osterlandes im Hochmittelalter, Beucha 1998, pp. 51–75.

4 Bremisches Urkundenbuch I, ed. on behalf of the senate of the Freie Hansestadt Bremen by Diedrich Rudolf Ehmck and Wilhelm von Bippen, Bremen 1873, no. 27, pp. 28–30; Urkunden und erzählende Quellen zur deutschen Ostsiedlung im Mittelalter (as note 1), no. I, 1, pp. 42–45; Franz Petri, Entstehung und Verbreitung der niederländischen Marschenkolonisation in Europa (mit Ausnahme der Ostsiedlung), in: Die deutsche Ostsiedlung als Problem der europäischen Geschichte. Reichenau-Vorträge 1970–1972, ed. by Walter Schlesinger (Vorträge und Forschungen 18), Sigmaringen 1975, pp. 695–754, here pp. 727–729; Enno Bünz, Die Rolle der Niederländer in der Ostsiedlung, in: Ostsiedlung und Landesausbau in Sachsen. Die Kühreners Urkunde von 1154 und ihr historisches Umfeld, ed. by Enno Bünz (Schriften zur sächsischen Geschichte

und Volkskunde Bd. 23), Leipzig 2008, pp. 95–142, esp. pp. 105–108.

5 Dietrich Fliedner, Die Kulturlandschaft der Hamme-Wümme-Niederung. Gestalt und Entwicklung des Siedlungsraumes nördlich von Bremen (Göttinger Geographische Abhandlungen, Heft 55), Göttingen 1970, pp. 60f.; Richard Drögereit, Der Stader Raum und die Niederlande, in: Stader Jahrbuch 1971, pp. 7–49, here p. 15; Karl Reinecke, Die Holländerurkunde Erzbischof Friedrichs I. von Hamburg-Bremen und die Kolonisation des Kirchspiels Horn, in: Bremisches Jahrbuch 52, 1972, pp. 5–20.

6 Erich Weise, Begann die Holländersiedlung von 1106 an der Weser oder an der Elbe? in: Stader Jahrbuch 1960, pp. 168–172; Adolf E. Hofmeister, Besiedlung und Verfassung der Stader Elbmarschen im Mittelalter, Volume 2: Die Hollerkolonisation und die Landgemeinden Land Kehdingen und Altes Land (Veröffentlichungen des Instituts für Historische Landesforschung der Universität Göttingen 14), Hildesheim 1981, pp. 6–9 and 78; Enno Bünz, Die Rolle der Niederländer in der Ostsiedlung (as note 4), pp. 108–110.

7 Bremisches Urkundenbuch I (as note 4), no. 66, pp. 73–77, esp. p. 74.

8 About Dutch people in the process of colonisation see Franz Petri, Entstehung und Verbreitung der niederländischen Marschenkolonisation in Europa (as note 4); Enno Bünz, Die Rolle der Niederländer in der Ostsiedlung (as note 4).

9 Dietrich Fliedner, Die Kulturlandschaft der Hamme-Wümme-Niederung (as note 5), pp. 27–30, 38–40, 42–47, 50–52.

10 Dietrich Fliedner, Die Kulturlandschaft der Hamme-Wümme-Niederung (as note 5), pp. 32–37, 40–42, 52f.

11 Martin Specht, Untersuchungen über den technischen und rechtlichen Inhalt der Holländerurkunde des Erzbischofs Friedrich I., in: Jahrbuch der Wittheit zu Bremen 21, 1977, pp. 179–199.

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Jabel (Lüchow), radial arrangement of gable-ended hall houses and farm buildings (photo: Kerstin Duncker)

Hall Houses of the *Rundling* Villages in the Wendland

Dirk Wübbenhorst[1]

Summary

Hall houses were built in most parts of North Germany, but it is only in the Wendland that these impressive buildings can be found in *Rundling* villages. Seen from the green in the middle of such a *Rundling*, the houses show a wealth of decoration reflecting pride and relative prosperity. There are about 1300 of these traditional half-timbered hall houses from former centuries left in the Wendland. They always had a working and a living area under the same roof. Although a lot of rebuilding took place, it is still possible to see the past changes in the current buildings. This article shows how the ground plans and constructions changed and how these houses were used for living by the farmers from around 1600 to 1900.

Hall houses in general

We find hall houses all across the north of Germany, from the west to the northeast. In Fig. 1 I have marked the Wendland with its circular *Rundling* villages. There are about 1300 hall houses that have survived until now in the Wendland, far more than in other regions of North Germany. This provides us with a lot of material to investigate the details of these houses and how people lived there in former centuries.

Fig. 1 Area of northern Germany where hall houses can be found today

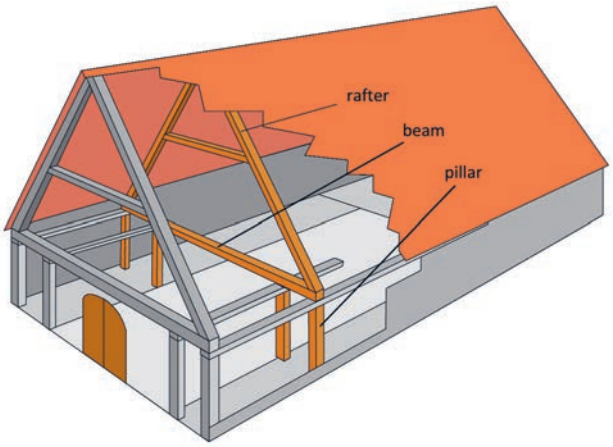


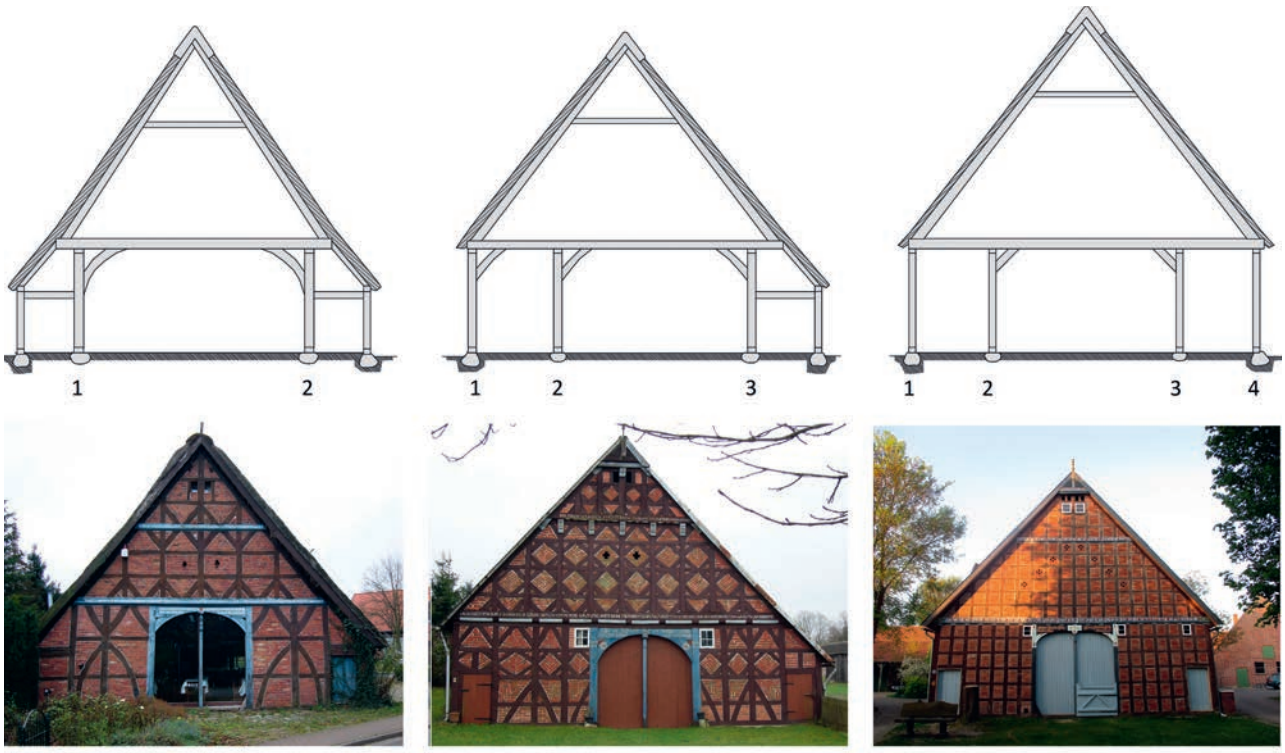
Fig. 2 Basic construction of a hall house

At the front of a hall house we see a big barn door. In the Wendland, it always faces the village green. The door leads to the hall, a working area called "Diele" in German. The livestock in the stables on both sides of the hall were fed here, the harvest was brought in to be stored under the roof and the threshing also took place here. This working area covers more than half of the length of the house.

The framework is made of wooden elements called "Gebinde", consisting of beams, rafters and pillars (Fig. 2). The older houses usually have 7 to 9 of these elements while in the more recent ones there is less distance between them so that we find 12 to 16 beams in houses of the same length (usually about 18 to 24 metres).

If two pillars carry each beam, we call it a two-pillar house. Four pillars under one beam make a four-pillar house, and in the Wendland we also find the three-pillar house (Fig. 3). This is a strange construction, half two-pillar, half four-pillar, and is rare in North Germany. In the Wendland, we have all three kinds of hall houses.

Some regional variations are obvious: In the area near the river Elbe in the north, houses tend to have a hipped gable while in the southern area we find vertical gables (Fig. 4). The houses also differ somewhat in their inner structure.



Jameln 1681 *Dünsche 1734* *Groß Sachau 1849*

Fig. 3 Three different kinds of hall houses: two-, three- and four-pillar-house

We will now take a closer look at the houses in the Lower Drawehn between Clenze and Lüchow in the southern area where the best-preserved *Rundling* villages are to be found. The dominant type today in these villages is the four-pillar house. Most were built in the middle of the 19th century. In these years of relative prosperity, many older buildings were replaced. Smaller numbers of two- and three-pillar houses have survived from the 17th and 18th centuries (Fig. 5).

Decorated front gables

The houses from the different centuries show typical half-timbering styles. The examples from the 17th century shown in Fig. 6a belong to the oldest front gables in the Wendland. The half-timbering was made of oak wood. The style was not a matter of stability but rather of decoration. The more wood one used the wealthier one was.

In the 18th century, the carpenters used diamond shapes (Fig. 6b). These gables needed much more wood and were more complicated to design. Compared to these rich front gables the half-timbering of the other walls is simpler. Later in the 19th century, pinewood was used for the beams and rafters. Also the decoration was concentrated more on the beams themselves, using inscriptions, ornaments and strong colours (Fig. 6c).

Altogether we find about 1800 inscriptions on the farm houses in the Wendland (Fig 7). About 75 percent are quotations from hymn books and 25 percent are poems, proverbs and quotations from the Bible. There are only very few inscriptions showing individuality.

Especially in the 19th century many of the circular villages burned down. Fires could start from an unguarded kitchen fire

Fig. 4 Hall houses with vertical and hipped gable in the Wendland

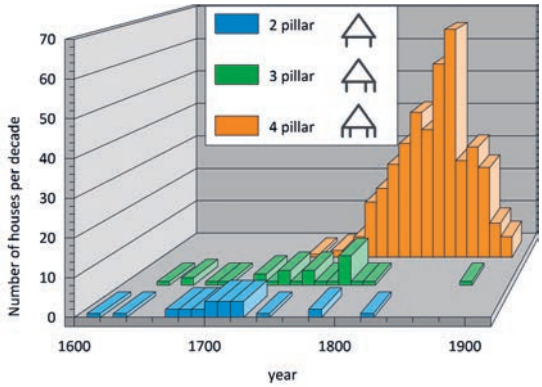


Fig 5. Hall houses from the last centuries in the Wendland

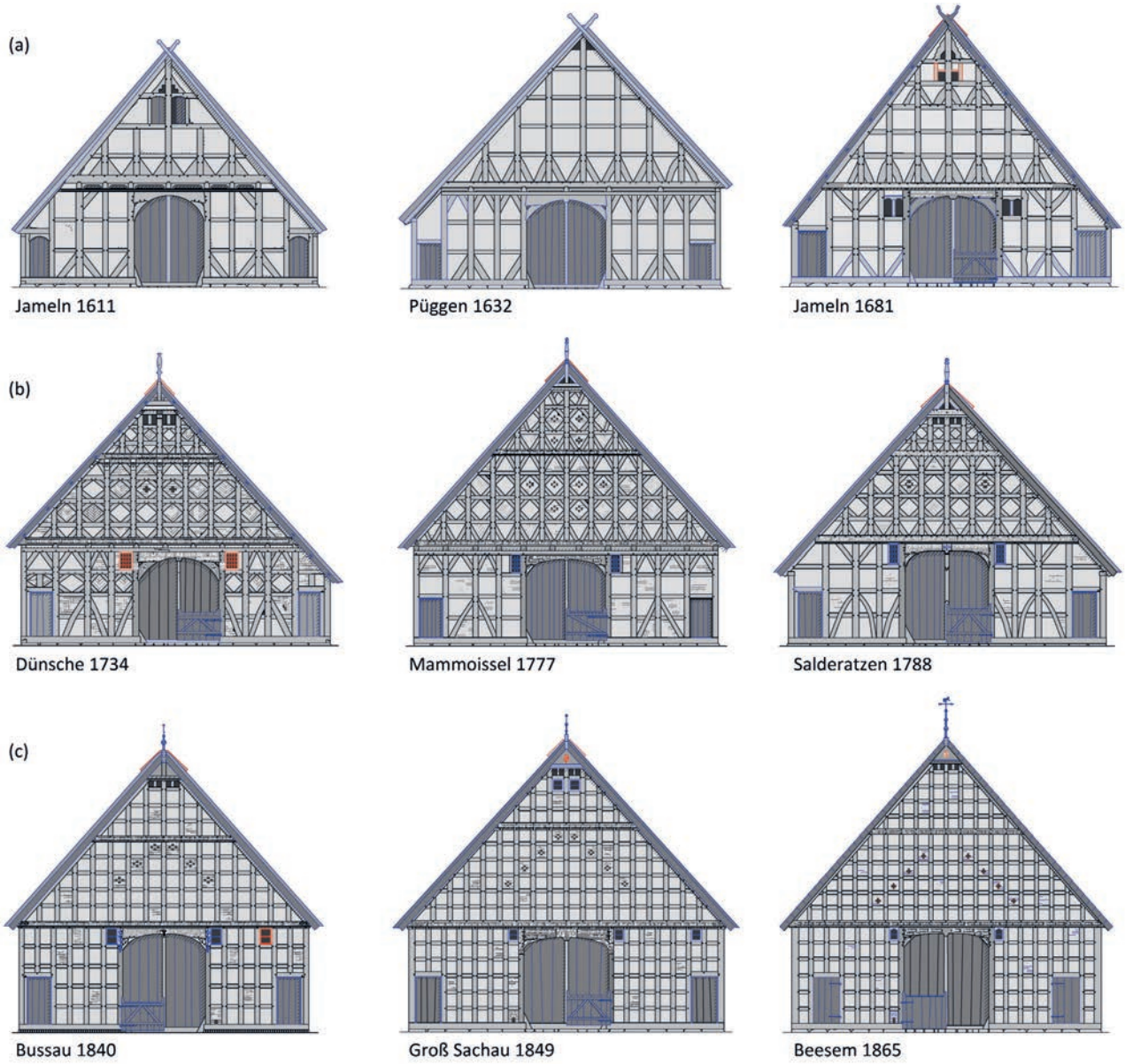


Fig. 6 Half timbering of vertical gables between 1600 and 1900

or by a stroke of lightning, the wind carrying the fire from one thatched roof to another. About one third of the inscriptions on the newly built houses refer to such fires. Although for sure it was a tragedy for each house owner, it should be mentioned that fire insurances were established at the end of the 18th century and the new houses were always better than the old ones. On the front gable near the door, there are ornaments often using the wild orange fire lily (*Lilium bulbiferum*) which in the past was a common and eye-catching flower in the cornfields in the Wendland. It still grows in some places here. Local carpenters used their own specific ornaments.

Another typical element is the decorated pole on top of the gable. These wooden poles did not survive the centuries so we don't know much about their earliest appearance. During the 19th century different types of them were designed (Fig. 8). The oldest types we know about were made of carved and turned oak (a). They are about two metres long and often topped by lily blossoms. The next type was built only for a short period. These poles were much bigger and they looked like a vase and had a metal weather vane at the top (b). All of these have now disappeared. Maybe they were just too big and heavy to cope with the wind and weather. The most recent ones were made of wood encased in tin (c). Most of them consist of two or three bowls with a small weather vane or a flower on top and some original ones can still be seen on the old houses.

The kitchen fire

Usually the fire place in a hall house was located at the end of the working area. But in the Wendland and especially in the lower Drawehn it was located at the back of the house where the farmer and his family lived. In the big kitchen the ceiling was about 4.5 m high to cope with the smoke. Since there was no chimney the smoke escaped through the back gable and under the roof to the front side (Fig. 9a).

Not until the second half of the 18th century smoke-free livingrooms were built. The kitchen became smaller as the living room was located next to the kitchen (Fig. 9b). These rooms

Fig. 7 Inscriptions and ornaments above the barn doors of two hall houses from 1849 and 1721

were heated with a stove filled with wood from the kitchen side of the wall. The smoke returned to the kitchen.
The livingroom was used for spinning flax, weaving and making linen. The people spent the winter evenings here working together. It is likely that there was no need for a room like this before trading linen became important for farmers in the Wendland.
Still there was no chimney in the kitchen. Sausages and meat were cured in the smoke under the ceiling. This changed around 1820 when farmhouses started to have chimneys with a chimney hood and a smokehouse above the kitchen (Fig. 10a). Some of these smokehouses were used until the second half of the 20th century. About 50 years later, around 1870, the newly built houses had chimneys without a hood. The open fire was replaced by a kitchen stove (Fig. 10b).

Living in a hall house

It may be hard to believe, but the houses of the 17th and early 18th centuries did not have a heated and smoke-free living room. The farming family lived in the big smoky kitchen. In these oldest houses, the big kitchen was in the middle of the living area between the rows of pillars. On both sides were small rooms for sleeping (Fig. 11a). Later the size of the kitchen was reduced and one of the small rooms for sleeping vanished. There were always small rooms next to the stables and this was where the farmhands probably slept (Fig. 11b).
Cellars or half-cellars began to be built around 1800. Their depth depended on the level of the ground water. The first cellars were built at the back of the house next to the

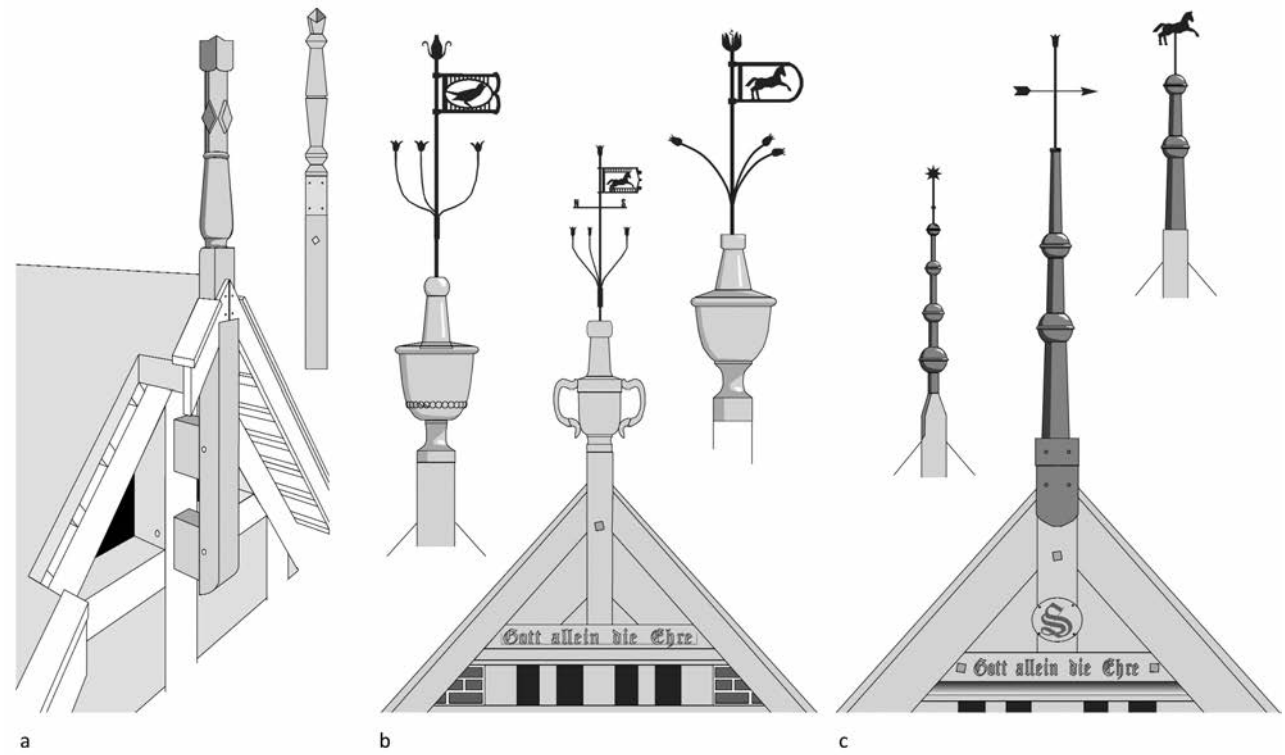


Fig. 8 Typical decorated poles on hall houses with vertical gables in the Wendland

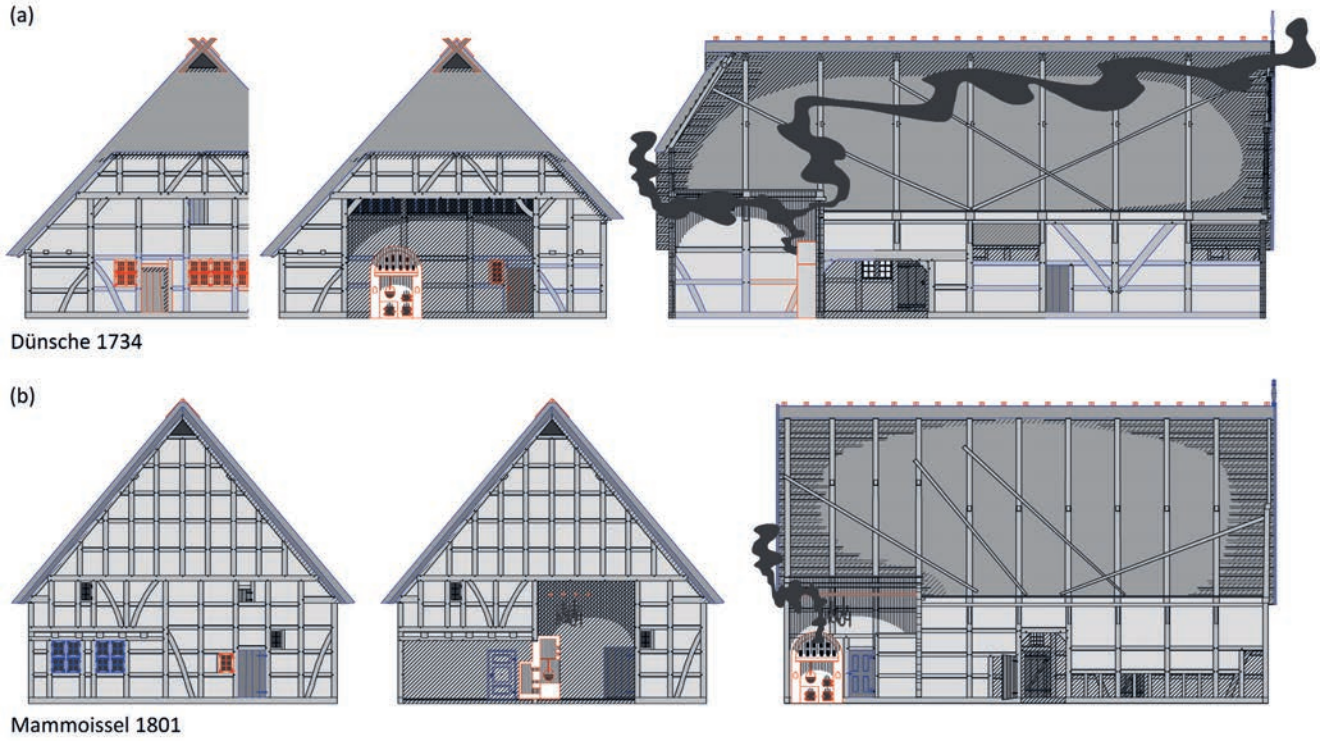


Fig. 9 Kitchen fire from the first half of the 18th century and around 1800

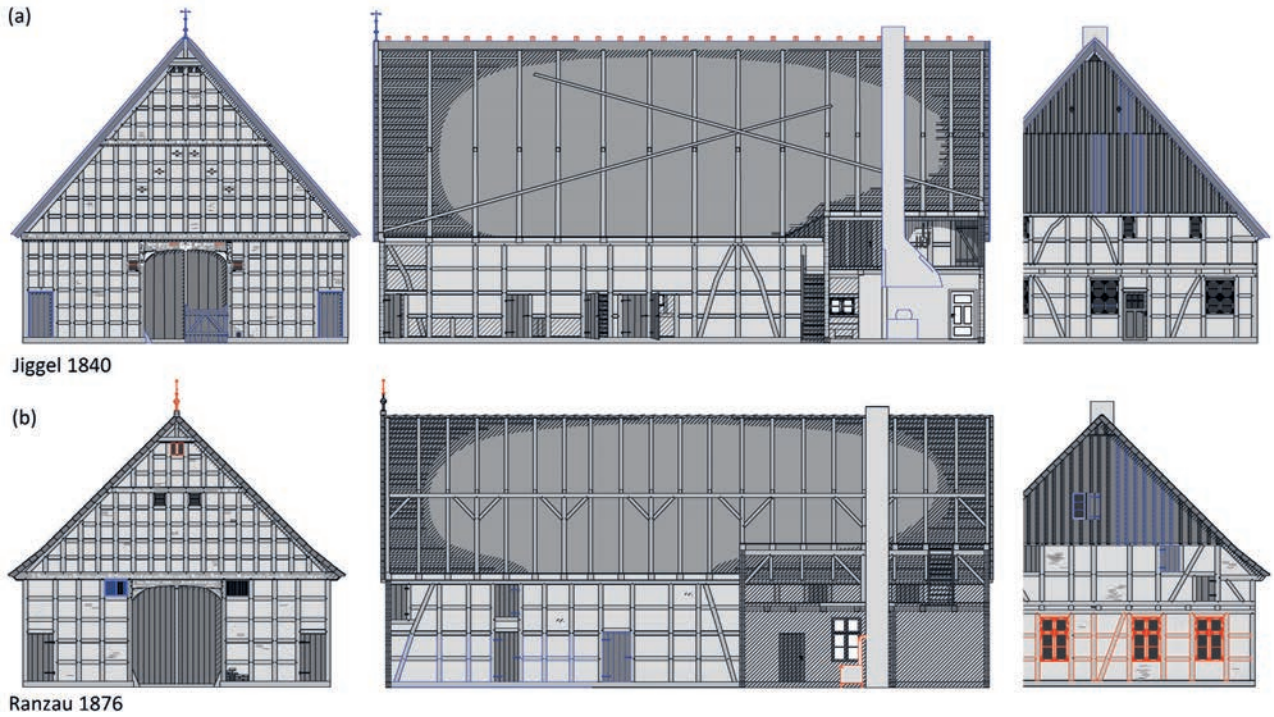


Fig. 10 Chimneys in hall houses of the 19th century

kitchen (Fig. 12). They were used for the storage of milk and vegetables.

In these houses we find more small rooms next to the working area. I believe that some of them were also used for sleeping by members of the farmer's family. For the farmer himself and for his wife there was always an alcove between the kitchen and the living room as a small but warm place for sleeping. The children and the older generation probably slept in the living room, especially in the winter. Privacy was less important than warmth.

Around 1850 we find an unheated livingroom next to the heated one (Fig. 13a). Reports from these years tell us that these rooms were used for guests. They had wallpaper and the best furniture was put in there. There is another un-

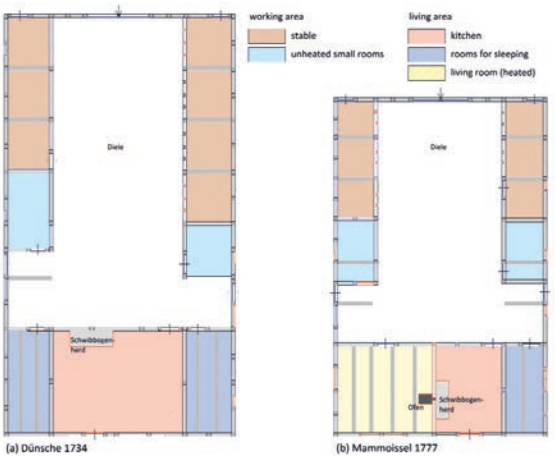


Fig. 11 Ground plan of a house without a living room compared to one with a heated living room

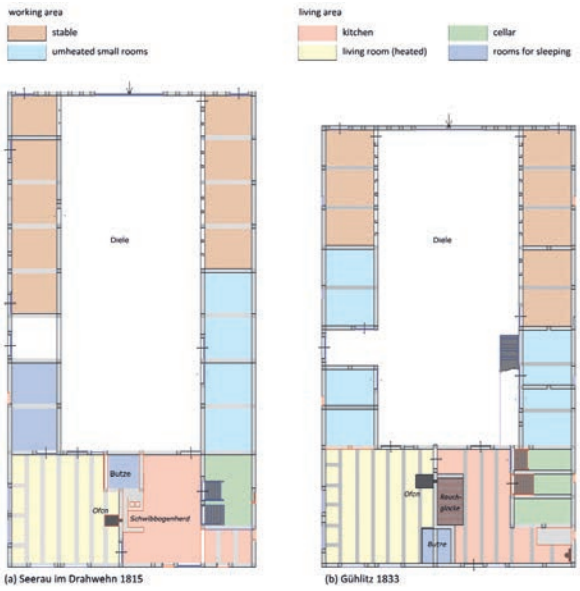


Fig. 12 Ground plans of two houses with cellars: the one from Seerau had a high kitchen. A few years later the house in Gühlitz was built with a chimney hood.

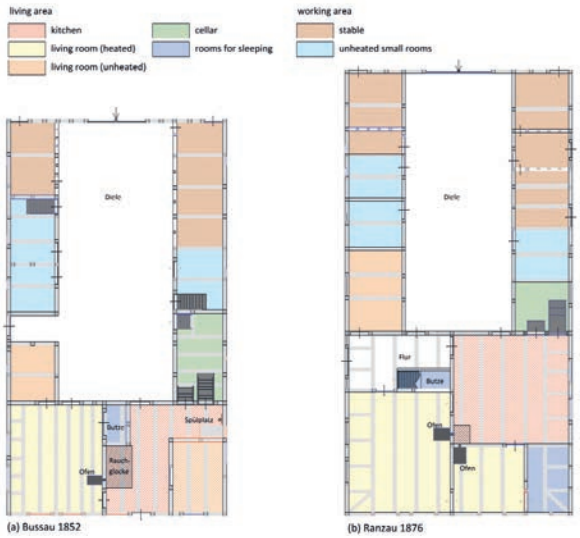


Fig. 13 Ground plans of houses from the middle and the second half of the 19th century. These houses had more space for living than the older ones

Fig. 14 Ground plans of the first and second floors from one of the last hall houses built in the Wendland

heated livingroom in these houses and it is likely that this was used by the older generation. Due to the expansion of the space for living the cellar moved more to the front of the house.

In the second half of the 19th century, this additional livingroom was expanded and could also be heated with a stove (Fig. 13b). Being old became more comfortable and cosy.

Around 1900 the last hall houses were built in the Wendland. Here, the proportions between the living and working areas changed in favour of the living area (Fig. 14). These houses have a corridor and there were a couple of smaller rooms next to the kitchen and living room. At that time, the farmers still kept the tradition of having a small sleeping alcove next to the stove. Some houses had two floors for the different generations of the farmer's family. Seen from the village green, these houses look very similar to those built a hundred years earlier, but inside they were modern and much more comfortable, resembling houses in the towns. Today a family can live in such a house without converting the former working area into living space.

Modifying and rebuilding

Of course, the owners of older houses have had to modify their homes to gain modern comforts. To have enough space for two living areas for two generations, the kitchen fire was moved from the living to the working area of the house and in some cases there are two ovens (Fig. 15). This new situation has often been misinterpreted as being original, but a closer look at the old beams often shows an older construction.

Other outbuildings

From the green in the middle of the *Rundling*, we see the hall houses with their decorated gables and big barn doors. Behind these houses, however, are a series of other farm buildings (Fig. 16). Although the hall houses included space for the livestock and the storage of the harvest, there were always barns, pigsties and other outhouses belonging to a *Rundling* farmstead. They can still be found in their typical variations. There are a lot of farmsteads left that still illustrate the architecture of the 19th or early 20th centuries.

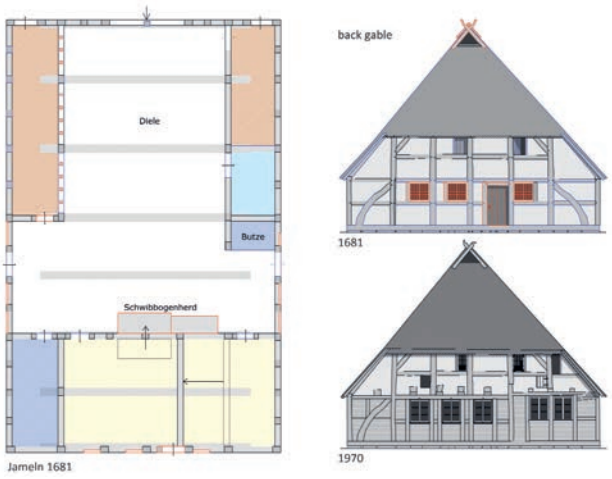


Fig. 15 In the older houses, the former high kitchens were often converted into heated living rooms and therefore the kitchen fire moved to the former working area.

[1] IGB Wendland.

Fig. 16 Ground plan of a typical Rundling village with hall houses, pigsties, barns and other outbuildings

Circular, Semi-circular and Oval Villages in the Czech Republic

Martin Čerňanský

1. Introduction

Throughout today's Czech Republic there are large numbers of rural settlements characterised by their different sizes and plan view types. These diverse homesteads, hamlets and villages also have different plot arrangements, i.e. the division of cultivated land around them. In Czech, the noun "plužina" is used, which was derived from the word "plough". There was a close connection between the settlement layout and how the land was used. This depended, and still depends, on many conditions which may be described as external or internal, tangible or intangible. Some of them are easy to describe, even now, whereas others are not. Sometimes it is not even possible to describe those conditions in detailed historical research, because there are several centuries of interval. Natural conditions are among the most significant conditions, and they are represented by landform, including water bodies and climate. Apart from the locality itself, the time of origin was also very important for the resulting form, if one excludes later developments. Social circumstances cannot be left out either, with a majority of them not being verified in fieldwork or archives. Nevertheless, considerable social differences are easy to observe even now.

2. Scope and method: appellation, cadastral maps, land register and photos

Even though all the outline conditions are related, only village typology will be emphasised, including the point of view of time which, especially in the case of the oldest settlements, can be just indicative. The classification was carried out with respect to a set structure which was stabilised during the 20th century thanks to many theoretical works. These works were carried out by research workers from various professions (within the domain of heritage preservation and sustainable development: conservationists, art historians, archaeologists, architects, town/village planners; the domain of social sciences: anthropologists/ethnographers/ethnologists, historians; and the domain of natural sciences: climatologists, geographers, geologists, hydrogeologists, etc) and show heterogeneity. For this reason, and taking into account the scope, only the representative characteristics will be described with a focus on circular, oval, and semi-circular villages.[1][2][3][4][5][6][7]

2.1 Definition

First of all, it is important to mention the term *rundling*, the definition of which is not always unambiguous. In most cases, this is encyclopaedically described as a primitive form of the circular village, mainly in Germany, typical of settlements in the Germanic-Slav contact zone in the early medieval period.[1] They were archaeologically uncovered primarily in the Polabian Slavs area.[2] They have also been known as Elbe Slavs or Wends. These circular villages "were founded in the 12th century, on land that had not been previously cultivated (...) in the form of a half circle or a horseshoe shape, with the wide entrance to the central village green opening out to the fields."[3] Furthermore, the *rundling* is characterised by a more or less regular circle plan view of the village green and one access track at first.[8][9] The German term *rundling* is sometimes directly used in English as a rundling, which resembles the non-existent English word "roundling" (round + l + ing form). By extension, some older researchers[4] have also included the other plan views in rounded villages on condition that they have, or used to have, the central arrangement with the possibility of the radial division. Except for the circle, another regular or irregular shape also belongs to this broad group. Curved or polygon geometric figures may be primarily mentioned, such as the ellipse, the oval, the star, or even the square or rectangle with similar sides having more or less rounded vertexes. The shapes derived or reshaped from a circle naturally belong to the rounded villages or circular villages in the narrower meaning, like the semi-circular, pear-like or horseshoe-like shape. Each group consisting of identical shapes may be understood as a subset of the set which is generally known as rounded, or more frequently, circular villages.

2.2 Terminology

In relation to the terminology, it may be observed that a morphology true to form term was used to express the circumference. Examples include a circular village, circolare villaggio, village circulaire – Rundling, Runddorf, Rundlingsdorf, rond – kulowc, okolnica, wies okragla, okrougla vas,

Fig. 1: Okrouhlice Village, originally Wokrauhlitz (Benešov District, Central Bohemian Region, Central Bohemia), map of the 2nd Military Survey between 1842 and 1852 [© Austrian State Archive, www.mapy.cz]

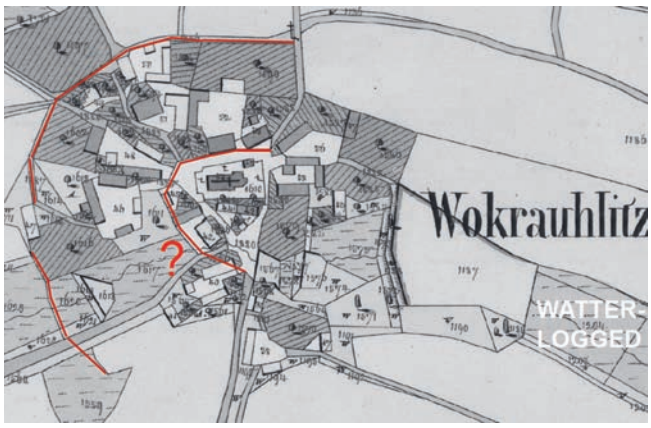


Fig. 2 Okrouhlice Village, Stable Cadastre of 1841 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]. The first written record was in 1352; the elevation is 410 metres.

and okrouhlice.[5] Although the elementary form is always rounded, there are many differences in terms of placement, arrangement, and area of individual fields. In relation to this, there are also differences between the size and position of the outbuildings and farm rooms in the house.

The above-mentioned terms also appear among place names, i.e. toponyms derived from a topographical shape or feature. Therefore, this appellation can be found in the names of some villages, although their original layout no longer exists. In the Czech Republic, there are several villages as well as hills or ponds named Okrouhlice, which is the Czech word of feminine grammatical gender meaning a rounded or circular village. This word was derived from the adjective "okrouhlý", i.e. rounded, by adding a suffix, as in Okrouhlá, Okrouhlé, Okrouhlík (the masculine gender), or Okrouhlo (the neuter gender).[10] To be complete, Okrouhlík is also an elevated geomorphologic formation, specifically the rocky core of a meander which was left after a watercourse was straightened.

2.3 Maps

The basic method used was research into easily accessible historical maps, especially maps of the 2nd Military Survey[6] [Franziszeische Landesaufnahme] and Stable Cadastre[7] [Franziszeischer Kataster], including the land registers. These maps were largely made during the first half of the 19th century. Because of this, they preceded the overwhelming majority of the irreversible changes associated with the Industrial Revolution, previously commenced and proceeding in the rural areas as well. These maps also came before the war and the post-war events of the 20th century. The reason for using these maps is self-evident, since older or accurate and applicable maps are usually not available, particularly for villages. Aside from this, it is generally known that these maps often preserved the medieval arrangement of the villages, although not necessarily the oldest arrangement, i.e. the one corresponding to the date of the original founding. The buildings themselves are of course more recent. Even more substantial changes can be observed in the surrounding cultivated land, including the fundamental arrangement.

Aerial and satellite photographs were also indispensable for a better understanding of the plan view arrangement and were therefore extensively used, both older black and white photos[8] as well as recent colour orthophotos merged to orthophotomaps[9].

2.4 Field research

The above-mentioned extrinsic sources were accompanied by studies of hypothetical archaeological reconstructions and field research. The research, however, brought maps into focus on the grounds of credible illustrations which displayed a coherent form, thus enabling conclusions to be drawn despite the lingering lack of clarity.

3. Analogy and broad relations: round forms

3.1 Early Middle Ages – fortified settlements

Although the oldest settlements are unknown in detail, the absence of villages in today's definition is generally associated in the Czech Republic with the 10th century. Nevertheless, there is much evidence about elevated or low fortified settlements that served, besides many other things, as refuges from the prehistoric period up to the Early Middle Ages. In our context, it is important to mention the *gord*, a medieval West Slavic fortified settlement also known as a Slavic *burgwall*.[10] There is a relation to the Germanic word *gard* and *graft* and a connection to the Proto-Slavic word *gordъ* which meant town, later differentiated into *grad*, *gard*, *gorod.* Furthermore, in Czech there is a guard (garda), a fortified settlement (g>h, *hradiště*), a castle (*hrad*) and a fenced area (*ohrada*), including a garden (*zahrada*).[1] Although there is no direct connection to the later villages, many of these fortified settlements were ring-shaped. This natural form could be conditioned by a hill, a man-made mound, or a promontory as well as a watercourse. According to this, the fortification was also char-

acterised by a round, oval or polygonal plan view. This could have been a palisade, a rampart, or a moat, or alternatively a combination of any of these. Inside this fortification, a group of wooden houses would have been built, either in rows or in circles. Just as a matter of interest, the leading theory by Meibeyer believes that circular villages in the Wendland "were developed by the then Germanic nobility as suitable for small groups of mainly Slavic farm-settlers...A continuation of Slavic settlement perhaps in a new Germanic form remains therefore a possibility".[12] This would be indicated by the small size of the villages. Either way, the Slavs were likely used to this layout plan, since it was historically close to them.

In the cases of large tribe fortified settlements, there is also evidence of an inside delimited court belonging to the ruler, high nobleman, or church dignitary after the adoption of Christianity.

Apart from these, some enclosed small fortified settlements emerged outside, related by lineage and farming activity. Nearby there were fences for livestock, still kept under the open sky. In the surrounding areas of small settlements, there were small irregular fields, pastures, and especially deep forests. Slavic family settlements also had a round or oval form, not only for defensive reasons, which can sometimes be perceptible or expected from plot boundaries, and paths go around them to the present day. Although these family settlements terminated with the start of the feudal system, some of them became the foundation for the earliest villages. Despite the ground plan divisions, they are still identifiable in today's plan view and are evident in the patronymic name of the site.[13] The polygonal arrangement of gardens and buildings may be particularly noticeable, although significantly more recent. These buildings may border the original circumference from the outside or inside. Except for this, it was possible to document the small family settlements through archaeological sites at the locations of the manors that followed later.

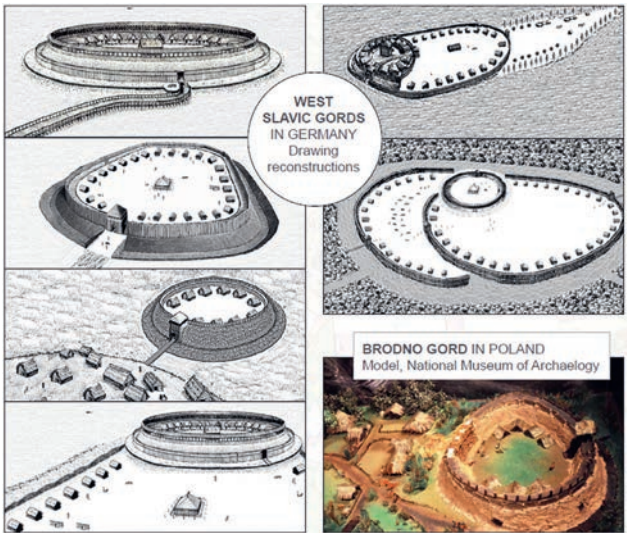


Fig. 3 Left: Burgwallinsel Hanfwerder Neubrandenburg, mittelslawische Burg, Burgwall englischer Garten/Penzin Mecklenburg Vorpommern, right: Burgwall Ravensburg, Burgwallinsel Peterow, below right: Brodno Gord Poland [© National Museum of Archaeology in Warsaw, www.en.wikipedia.org/wiki/Polabian_Slavs] [https://cs.wikipedia.org/wiki/Polabští_Slované]

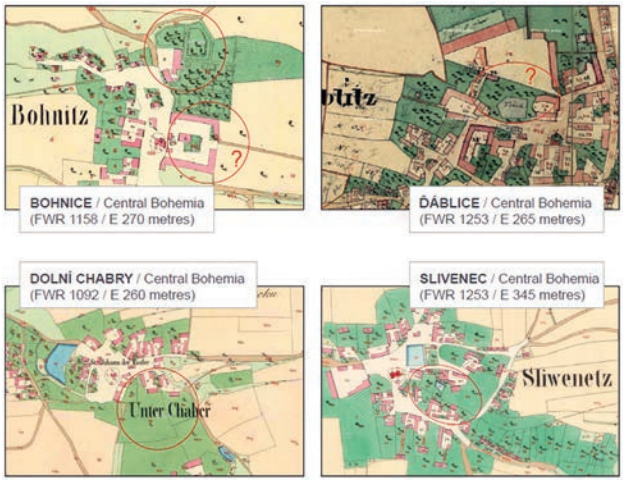


Fig. 4 Stable Cadastre maps show villages of early mediaeval origin where there was evidence of a Slavic family settlement. Near these settlements, having a rounded ground plan, Romanesque or Early Gothic churches were usually built later. From the top left Bohnice, Ďáblice, Dolní Chabry and Slivenec [© State Administration of Land Surveying and Cadastre, www.cuzk.cz] The first written records are in the same order 1158, 1253, 1092 and 1253, the elevations are 270, 265, 260 and 345 metres.

3.2 High Middle Ages – castles, fortified houses, towns and villages

There are also castles and fortified houses dating back to the High Middle Ages which are documented and sometimes even preserved. Fortified houses are representative of a manor house and can be understood as a small rural stronghold built by the lower nobility. There are several types, for instance some older ones with no tower and where small buildings were placed along the circumferential wall with a round ground plan.[14] Fortified houses were inseparable from the rural areas and land tenure.

Religious, social, and agricultural changes were characterised by a fundamental transformation of the settlement arrangement from the layout point of view and quite often even from the location point of view. Aside from the total restructuring of the early medieval villages, new ones were founded in sparsely inhabited or uninhabited areas with a higher elevation. This was usually related to slash-and-burn or cut and stump treatment of the forests outside the old tribal areas settled since prehistoric times. In a very simplified way, after the "internal" colonisation which took place during the 11th and 12th centuries, it was mainly the "external" or "great" or "German" (in the case of Central Europe) colonisation during the 13th and first half of the 14th centuries, in some places even earlier. Except for farming colonisation (derived from the Latin word "colonus", meaning peasant), mining colonisation was also known. Monasteries played an important role

Fig. 5 Martinice Village (Benešov District, Central Bohemian Region, Central Bohemia). Today's photo shows uncovered ruins of the fortified settlement dating back to the 13th century [© Seznam, www.mapy.cz, Dasyk, 2005]

Fig. 6 Orthophoto of the medieval stronghold in Kestřany (Písek District, South Bohemian Region) dating back to the second half of the 13th century [© Seznam, www.mapy.cz]

Fig. 7 Nepomyšl Village (Louny District, Ústí nad Labem Region, North-western Bohemia). Renaissance palace that emerged from Gothic fortified houses, condition in 2012 [© Martin Čerňanský, www.lidova-architektura.cz]

before and during both colonisations. However, a new way was used by employing locators. Some settlers began to settle under the German code of law – the *ius teutonicum (emfyteusis)*.[15] [16] The new villages, later with the added attribute "villages of colonisation", were named after the founder or derived from a topographical shape or feature. Sometimes, the adjective "new" was directly used in connection with the word describing the settlement of colonisation, such as a castle, village, or meyerhof *(see captions – New Castle – Neuburg, New Village – Neudorf, New Farm – Neuhof etc).* It seems interesting to compare this type of new villages and the towns which were founded by King Ottokar II of Bohemia (or his brother). In the case of the newly founded towns, the round ground plan with radial arrangement was not used at all, although it was well-known in what was then Western Europe (France, northern Italy). Only fortifications had a round form, often corresponding with a hill or river instead of a town square or block of houses. There is the sporadic exception, such as the town of Nymburk *(Nimburg or Neuenburg an der Elbe)* characterised by its fan-shaped plan view. This top view remotely resembles western urban plans.[17]

Fig. 8 A scene from the "Saxon Mirror" (Survey of Saxon Law) shows a locator in a hat during the German East settling around 1300. In the upper part, the locator is receiving the foundation charter from the landlord, then the settlers clear the forest and build houses. In the lower part, the locator acts as the village judge [© Eike von Repgow, Heidelberger Sachsenspiegel, Cod. Pal. Germ. 164, https://en.wikipedia.org/wiki/Ostsiedlung, http://digi.ub.uni-heidelberg.de/diglit/cpg164]

4. Core: circular, semi-circular and oval villages

After the indispensable familiarisation with the oldest history of rural settlements and broad relationships, the paper will focus mainly on circular, oval, and semi-circular villages. It will describe the villages of the High Middle Ages and of modern times which were usually founded on flat terrain in new clearings. Because of the ideal geometrical shape, characterised by an equal distance from the centre, the building sites and plots were quite easily measured out. The reality, however, was much more complicated. Even though all these villages have the same type of plan view, they show some significant differences on a number of counts.

4.1 Mediaeval circular villages with irregular and regular plan view

Circular villages belong to the greater category of villages with a village green. Their designation is derived from the top view, alternatively from the village green's circumference which has a regular or irregular shape. This form was created by initially arranging buildings around an open space. The actual size of the village green depended on the number of settlers; more precisely on the specific setting and the number of homesteads, taking into account their social and economic status. These were converted to the width of the delimited building sites, including a possible side garden or a space for an access track or driveway. We must not forget the then unit of measurement nor survey systems. In some circular settlements, there was just one access road which would enclose the village green, as will be shown later. The closure could be helpful for the pastureland and for leaving the livestock outside overnight. It also fulfilled a defence function, at least against wild animals, also enhanced by the "fortification" of barns and high enclosing walls. Some wooden barns, however, were built further in the back garden, separately due to

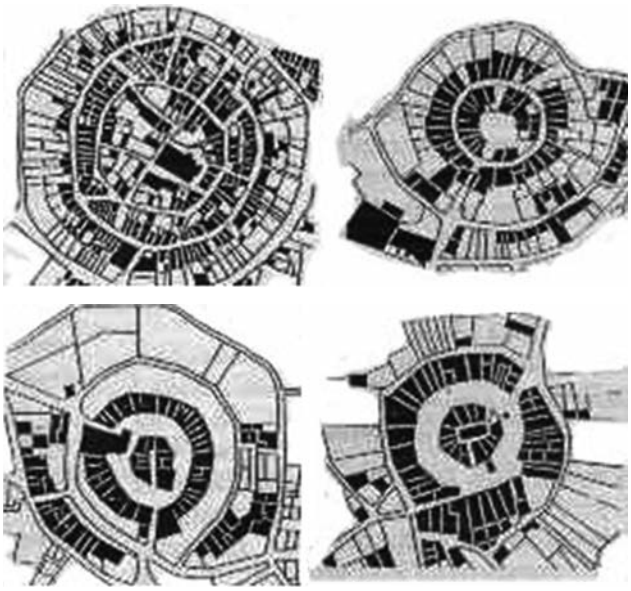


Fig. 9 Examples of small towns and villages in France, now called circulades [© http://www.midi-france.info/030600_circulades.htm]

anti-fire measures; a defensive function cannot be supposed here. This role was probably fulfilled by the strength of the buildings themselves, namely granaries and especially older churches built on a raised hillock in the case of early medi-

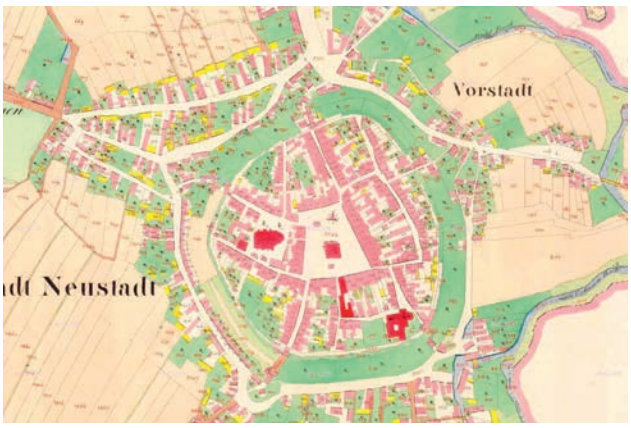


Fig. 10 Uničov Town, in German Mährisch Neustadt (Olomouc District, Olomouc Region, Central Moravia), Stable Cadastre of 1833 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]. The first written record was in 1213 on the site of Slavic settlement which could be a part of water fortified settlements from the period of Great Moravia.

Fig. 11 Uničov Town, in German Mährisch Neustadt (Olomouc District, Olomouc Region, Central Moravia), today's orthophoto [© Seznam, www.mapy.cz].

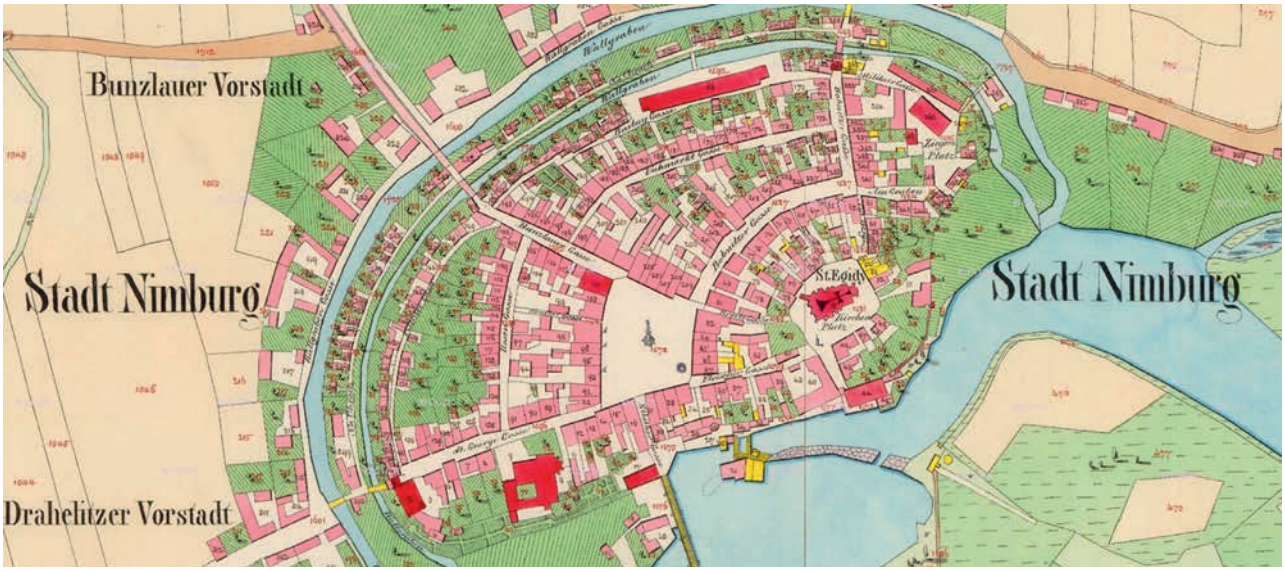


Fig. 12 Nymburk Town, in German Nimburg or Neuenburg an der Elbe (Nymburk District, Central Bohemian Region, central Bohemia), Stable Cadastre map of 1843 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]. The first written record was in 1275.

Figs. 13 and 14 Slatina Village (Litoměřice District, Ústí nad Labem Region, north Bohemia), Stable Cadastre of 1843 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz] and today's colour orthophoto [© Seznam, www.mapy.cz]. The first written record was in 1057, but was founded anew during the 13th century. The church of St. John of Nepomuk was built in 1384, its tower in 1595, then rebuilt in 1746. The elevation is 180 metres.

aeval villages. All of the villages researched had no such church, however, or this church was built on the flat village green at a later time.

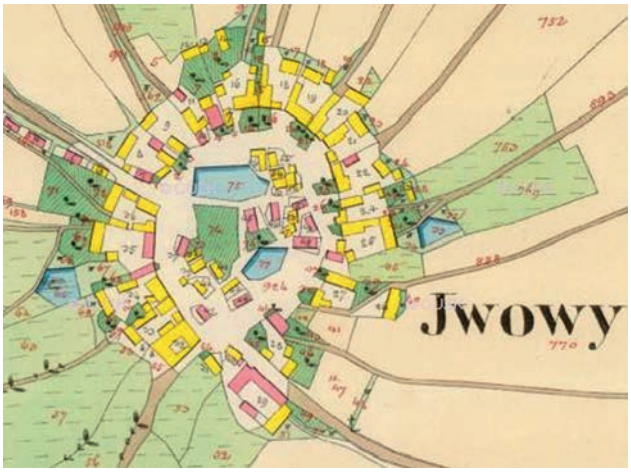
4.2 Built-up area and buildings

A comparison of early medieval settlements with high mediaeval villages shows many differences, not only regarding the location, size, organisation, and proximity of the Romanesque church. The fundamental building site and farming unit is the farmstead. This farmstead consists of a farmhouse and outbuildings, where the farm buildings surround a more or less regular courtyard. It seems that the shortened L- or U-shaped ground plan became predominant. In this respect, the round villages were no exception. Because the high mediaeval buildings have not been preserved, with a few exceptions, the current state of affairs will be described. Nevertheless, it is beyond doubt that there is a connection between the former and present layout, although there are exceptions in certain individual buildings. As a general rule, the farmhouse is close to the village green and sometimes includes a more recent front garden. If there is adequate width, there may also be a granary at the front as another important farm building. The farmhouse and granary usually take up a gable position to the village green, connected by a front wall with a gate and door. This position can change to a side orientation or as a result of roofing over the courtyard entry. Behind the house and granary, just farm rooms or separate farm buildings such as storerooms, stables, etc are attached. At the back of the farm yard or garden, alternatively in the middle, there is a barn built crosswise. The built-up area was sometimes surrounded by fruit gardens or by an unpaved ring roadway.

4.3 Cultivated land and plots

In comparison with early medieval villages, there are also many differences regarding the field arrangement. This was related to the poorer soil fertility owing to the higher elevation. Thus the necessity of economical farming led to a new organisation. In contradistinction to the small and irregular fields called “blocks”, the new high medieval villages of the colonisation period have large regular fields called “tracks of land or large/vast field”. The way they were arranged was also absolutely new and consisted in the periodical arranging of vast fields, usually separated by boundary ridges (linear cairns, baulks) and unpaved roads. Whenever the buildings held round or segmental positions, the fields were wedge-shaped with a fan-shaped arrangement; otherwise, they were parallel. The field lanes[18] or strips were laid out directly behind the farmsteads and therefore had the same number and a similar size (except the property of the reeve as the mayor of a village). Lesser differences could also depend on the fertility of the soil. These large fields were narrow and very long, because it was difficult to turn the animal-powered plough. Each farmer’s field could have its own piece of forest behind it which was used for foraging, firewood, or building material despite the distance. They often extended to the cadastre boundary line, comprised natural barriers or borders such as watercourses, forests, etc. At this end, the tracks of the field were widest, while the narrowest were towards the

Fig. 15 Slatina Village (Litoměřice District, Ústí nad Labem Region, north Bohemia), photo showing the state in 2005 [© Martin Čerňanský, www.lidova-architektura.cz]



Figs. 16 Jívoví Village, in German Iwowy (Žďár nad Sázavou District, Vysočina Region, Bohemian-Moravian Highlands), Stable Cadastre map of 1835 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]. The first written record was in 1200, at that time in the possession of the Cistercian monastery in Žďár nad Sázavou. The elevation is 550 metres.

Figs. 17 Jívoví Village, in German Iwowy, today´s colour orthophoto [© Seznam, www.mapy.cz]

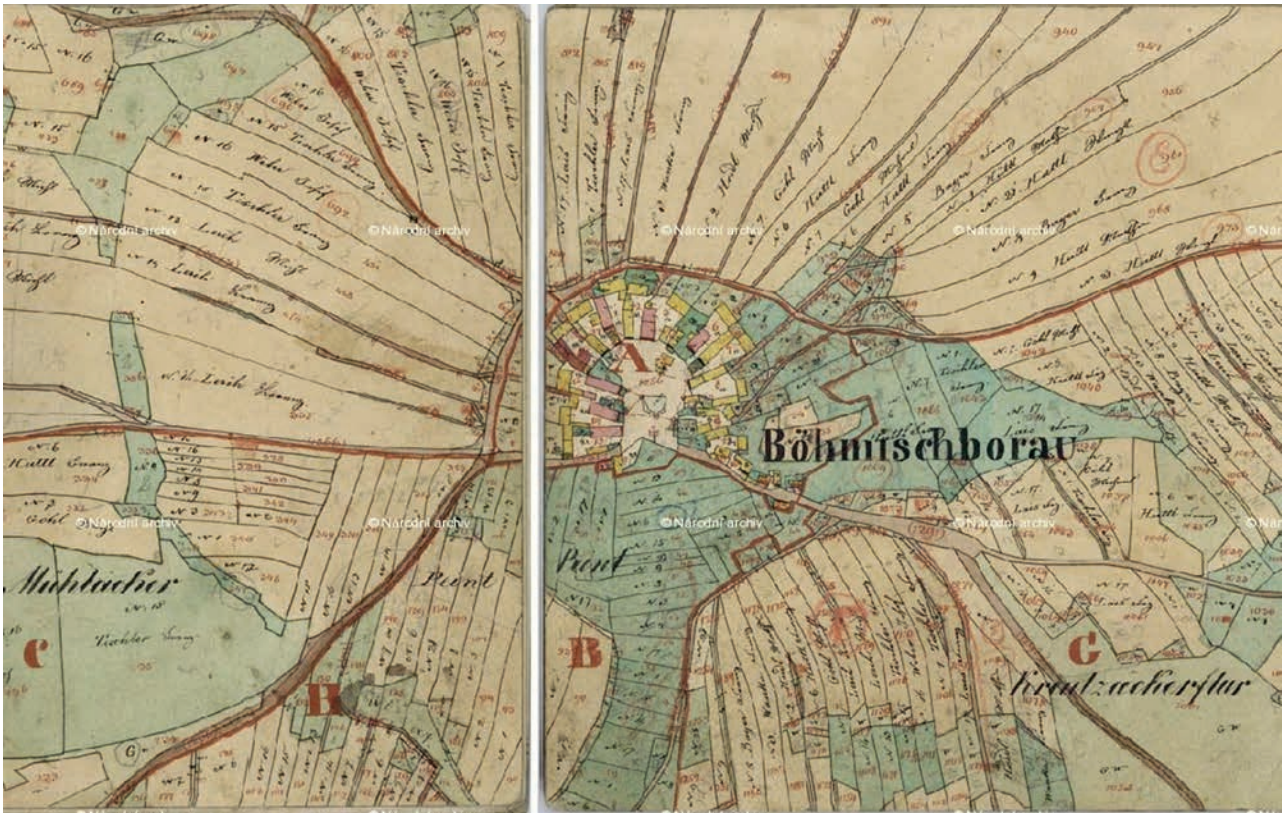


Fig. 18 Beranov Village, originally Böhmisch Borau, Česky Boranow (Cheb District, Karlovy Vary Region, West Bohemia), Stable Cadastre maps [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]. The first written records were in 1233, at that time in the possession of the Cistercian monastery in Teplá.

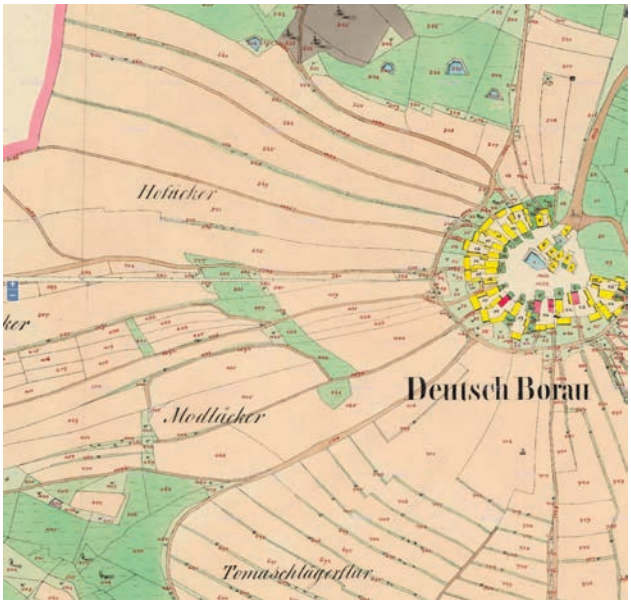


Fig. 19 Beranovka Village, originally Deutsch Borau, Německy Boranow (Cheb District, Karlovy Vary Region, West Bohemia), the Imperial Imprint of Stable Cadastre map of 1839 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]

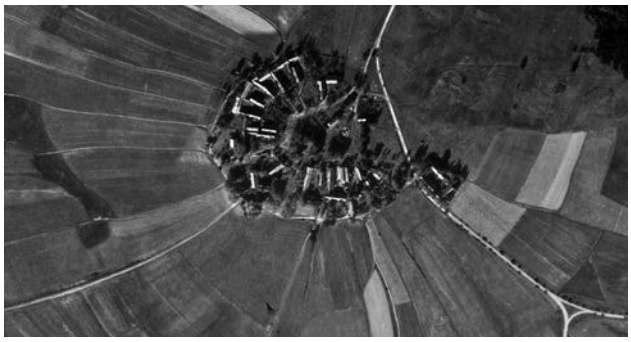
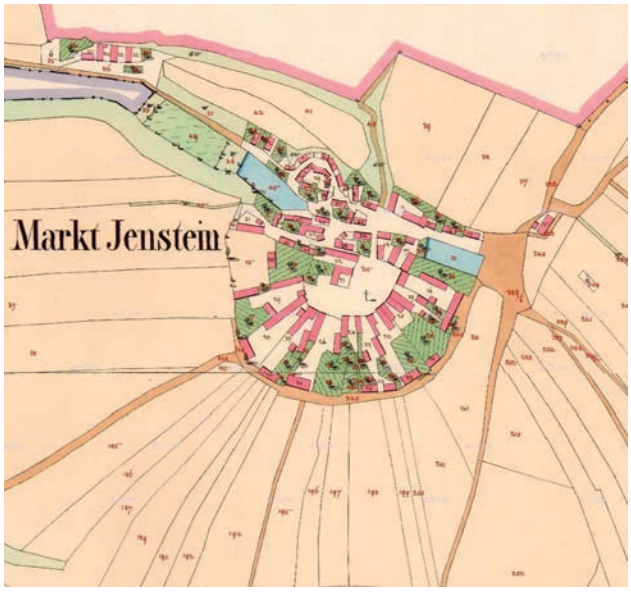


Fig. 20 Beranovka Village (Cheb District, Karlovy Vary Region, West Bohemia), black and white orthophoto from 1956/57 [© Military Geographical and Hydrometeorogical Institute Dobruška, www.kontaminace.cenia.cz]

Fig. 21 Beranov Village (Cheb District, Karlovy Vary Region, West Bohemia), today's colour orthophoto [© Seznam, www.mapy.cz]



Figs. 22 and 23 Jenštejn Village, in German Jenstein, Jenssteyn (Praha-východ District, Central Bohemian Region, Central Bohemia), Stable Cadastre of 1841 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz] and today's colour orthophoto [© Seznam, www.mapy.cz]. The first written record was in 1368 as a settlement around the water castle (1341) in possession of Jenčík of Janovice, a court officer. The elevation is 230 metres.

village. For that reason, a longitudinal division of this field into halves was often not possible in the event of a property change, either. After all, there were no free building sites among the existing farmsteads. The original arrangement could remain in existence, provided that the boundary ridge and unpaved roads were not ploughed over during the socialist period of collective farming.

4.4 Village green

A village green was and is the centre of the entire settlement up to the present, although its function has changed over time. In the past, the village green was mainly for farming use. It was used as pastureland for livestock and thus was common property. Later there were utility gardens of individual farmers and were surrounded by fences on all sides. These gardens almost ceased to exist once in contrast to the late gardens which were founded right below the front facade of almost every house. The front gardens, also called ornamental gardens, were and still are covered by culinary or medicinal herbs and flowers planted beneath the windows facing the village green. Until today, a large public grass plot can be found here, often with trees like fruit trees, lindens, or chestnuts. These trees grew around a pond whose water could be used by the settlers, for livestock and in the case of fire. The risk of fire was higher for the older wooden buildings, especially those with an open fireplace. The combustible buildings were marked in yellow in the Stable Cadastre maps.

4.5 Development inside and outside the village green

In addition to the above-mentioned natural objects, a sacral building was rarely built in the village square, albeit at a later time. It could be a small church or chapel, or merely a statue and crucifix. After the First and Second World Wars, monuments to the fallen were added. Aside from this, the village square was often used as a site for new public buildings such as schools or pubs and very often for small houses. These small houses were built for newly independent family members or for newcomers. Apart from the building site inside the public village square, the authority or the father would also detach a piece of arable land. In comparison with peasants, their initial landed property was small, sometimes just a small garden. Among others, the division of farmsteads was allowed by the letters patent. Given the insufficient area of the village green, these small houses were also built along the road at the margin of the old village centre. An important piece of information about the development may be given by the house numbering, provided it was not changed later.

4.6 Extinction or transformation

While centuries of development within the village green and along the roadway have not changed the basic historical arrangement, unfortunately, some other events have – these were particularly natural or human disasters during which some of the villages were completely or partly destroyed or abandoned. Historically speaking, the Hussite Wars (1419–1434) and the Thirty Years' War (1618–1648] were the most tragic. In the event of partial destruction, a large aristocratic farm (manor farm estate, *meyerhof*) may have been built at this place. During the 20th century, World War I (1914–1918) and World War II (1939–1945) brought about many ruins. Factually, the villages were destroyed by unintentional or intentional fires and by floods during their existence as well. A

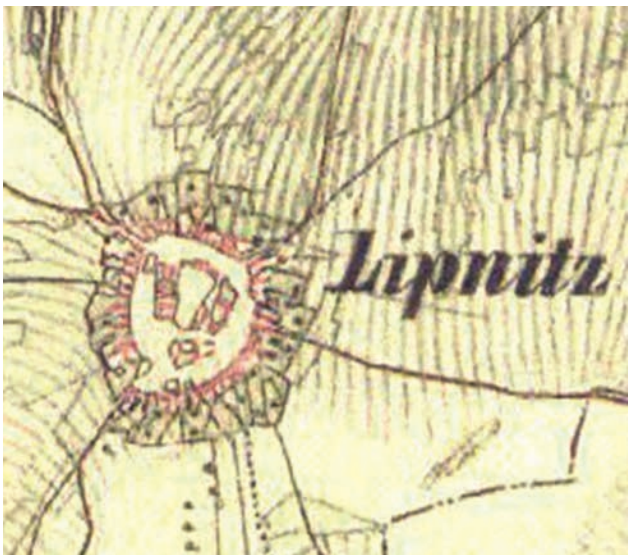
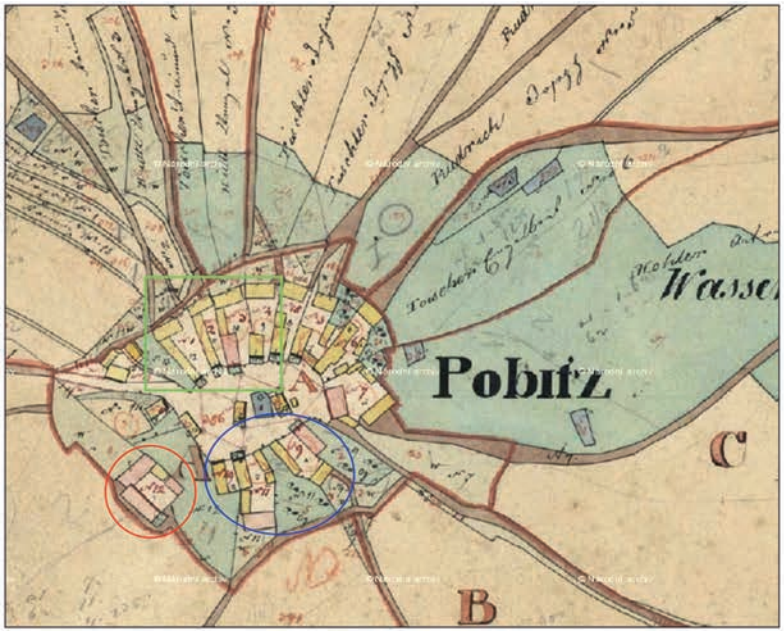


Fig. 24 Lipnice Village, in German Lipnitz (Plzeň-jih District, Plzeň Region, South-west Bohemia), Map of the 2nd Military Survey between 1842-1852 [© Austrian State Archive, www.mapy.cz]. The first written record was in 1391 as Nová Ves nad Poříčím Village, which was renamed later. The elevation is 495 metres.

Fig. 25 Lipnice Village (Plzeň-jih District, Plzeň Region, South-west Bohemia),today's colour orthophoto [© Seznam, www.mapy.cz]



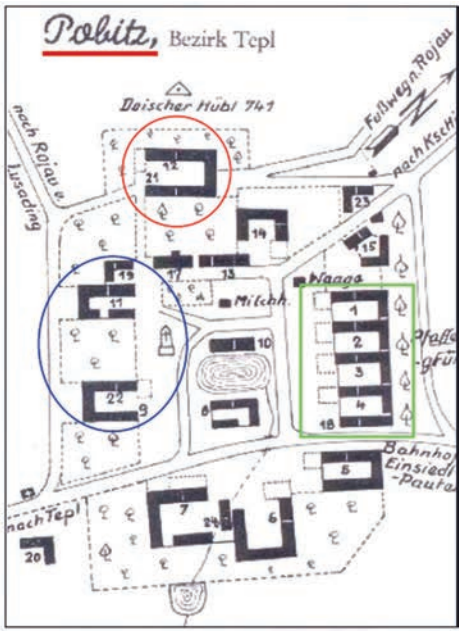


Fig. 26 Babice Village, originally Pobitz (Cheb District, Karlovy Vary Region, West Bohemia), indication draft of Stable Cadastre map of 1839 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz] and schematic drawing from memory [© Anton Punzet, http://www.hamelika.cz/?cz_babice%2C414]. The first written record was in 1273; the elevation is 710 metres.

Fig. 27 Babice Village (Cheb District, Karlovy Vary Region, West Bohemia), today's colour orthophoto [© Seznam, www.mapy.cz]

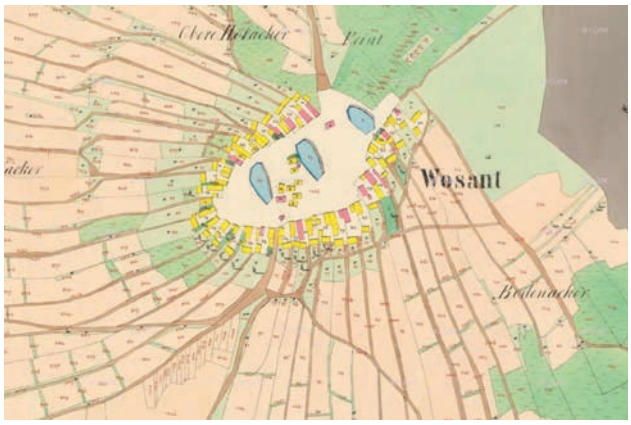


Fig. 28 Bažantov Village, originally Wosant (Tachov District, Plzeň Region, West Bohemia), indication draft of Stable Cadastre map of 1838 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]. The first written record was in 1357; the elevation is 675 metres.

Fig. 29 Bažantov Village (Tachov District, Plzeň Region, West Bohemia), today's colour orthophoto [© Seznam, www.mapy.cz].

lack of renewal or a reconstruction of the buildings themselves are also an associated factor. Many historical buildings or entire villages were left without maintenance as a consequence of resident displacement, in particular of the German populace and national minorities from the borderlands or language enclaves from the inlands.

A great number of these abandoned buildings, as well as many more, were torn down as a result of the post-war zone along the national borders, military training areas, and coal mining in northern Bohemia and Silesia. Many buildings fell victim to new dams or the construction of new houses on the same building site. All these cases led to irreversible changes of the historical arrangement, sometimes beyond recognition. Not even the hypothetical reconstruction of the situation corresponding with the time of origin is possible, although there are older maps and land registers. The problem is that these documents are not old enough for this purpose. Except for this, there was a whole range of villages with a village green often mixed with other types. A comparison with other villages of the same type can be helpful in general terms.

4.7 Inception of circular villages with regular plan view of modern times

New villages from the modern age were usually founded on a very regular layout in terms of the buildings themselves and the division of land. The plots had a small area; therefore the farm buildings were also small. Technical drawings drawn by trained planners came usually before the survey *in situ*. Baroque compositions became particularly expressive and were characterised by an axial symmetry. Based on one or more axes of symmetry, most of the buildings took up their position as did the palace or hospital premises. The main axis usually corresponded with the access road. The small fruit gardens could also be subordinated to this symmetry, while the surrounding landscape was subordinated to an intentional aesthetic organisation, albeit to a somewhat lesser extent. Except for the round plan view, the polygonal layout could be used, e.g. hexagon or octagon.

5. Conclusion: protection and urban planning

Circular, semi-circular and oval villages provide inseparable evidence of the historical colonisation in the present-day Czech Republic. They also represent a striking type of settlement layout plan which merits due diligence. For that reason, the protection of the plan view arrangement and historical buildings is important from the perspective of historic preservation and spatial planning. Despite the long history of organised heritage care and protection in today's Czech Republic, the protection and conservation of the villages have remained outside the general interest for a long time. The legal protection of monuments of vernacular architecture, at first only individually, came only in relation to the adoption of the long-prepared Act No. 22/1958 Coll. on cultural monuments. Under this act, three of the above-mentioned circular villages (Byšičky, Lipnice, and Vápensko) were declared immovable monuments, although this was not about individual buildings but the plan view with the village green. These villages are now listed in the premises category. The passing of the new Conservation Act No. 20/1987 Coll. on national heritage preservation meant important organisational and legislative changes, but not for the villages. More important were the changes brought about by the Velvet Revolution in 1989 which signified a turning point in the attitude of the official authorities to rural settlements and to vernacular architecture in general. Following the model of historic town centres, well-preserved villages started to be declared protected areas from 1990. Protected areas include conservation areas and zones with collections of vernacular architecture including possible buffer zones. [11] Some of these are the above-mentioned circular villages, namely Beranov, Lipnice (this time as a zone), Nová Ves (Jindřichův Hradec District), and Slatina.

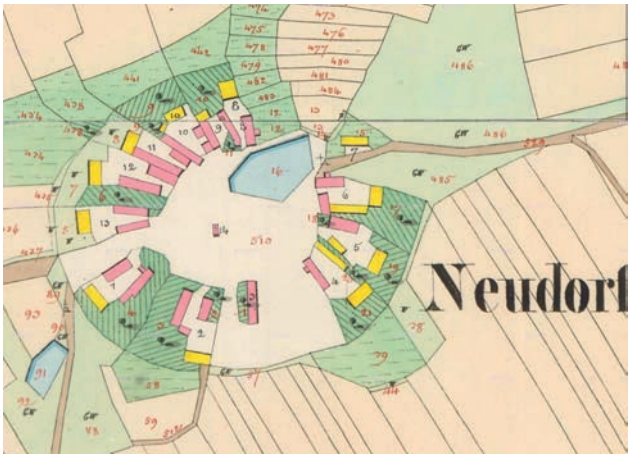
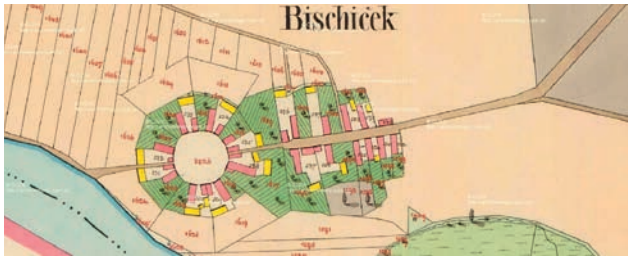
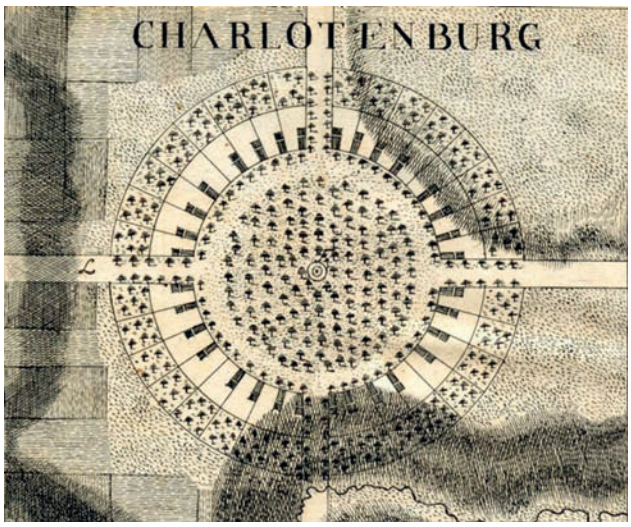


Fig. 30 Nová ves Village, originally Neudorf, Nowawes (Plzeň-jih District, Plzeň Region, west Bohemia), indication draft of Stable Cadastre map of 1838 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]. The first written record was in 1591 (sometimes stated 1652), at that time in the possession of the Premonstratensian monastery in Chotěšov. The St. John's chapel was built in the middle of the village in the first half of the 19th century. The elevation is 350 metres.

Fig. 34 Vápensko Village (Nymburk District, Central Bohemian Region), today's colour orthophoto [© Seznam, www.mapy.cz]. The first written record was in 1720; the elevation is around 200 metres.
Fig. 35 Nová Ves Village (Jindřichův Hradec District, South Bohemian Region), the Imperial Imprint of Stable Cadastre map of 1828 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz]. The first written record was in 1804; the elevation is 525 metres.



Figs. 31–33 Byšičky Village (Nymburk District, Central Bohemian Region), indication draft of Stable Cadastre map of 1838 [© State Administration of Land Surveying and Cadastre, www.cuzk.cz], today's colour orthophoto [© Seznam, www.mapy.cz] and photo from 2005 [© Martin Čerňanský, www.lidova-architektura.cz]. The first written record was in 1546, but it related to the old village. The new village was founded in 1717 by Count Franz Anton von Sporck. The pseudo-Gothic St. Wenceslas' chapel was built in the middle of the village in 1888, surrounded by four legacy trees. The elevation is 175 metres.



Figs. 36 and 37 Şarlota Village, Charlottenburg (Timiş County, Banat, ROMANIA), drawing of the plan [© http://www.pressalert.ro/2015/04/charlottenburg-satul-unic-din-romania-vezi-istoria-completa-a-locurilor/] and aerial photo [© http://viziteaza-romania.com]. The village was founded in 1771. There is a church in the village square.

In the case of unprotected villages, public interest in cultural heritage preservation is significantly represented in Act No. 183/2006 Coll. on spatial planning and building regulations. One of the stated national priorities is "to protect and develop natural, civilisation and cultural values of areas including urbanistic, architectonic and archaeological heritage in the public interest". As always, the reality is much more complicated and the requirement of sustainable settlement development in the form of buildings at locations and of architectural forms without conflict is difficult to follow through.

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[5] Compare also in Czech kruh, in English ring, circle, round, in German Kreis, Zirkel, Ring, in French cercle, rond etc.

[6] Austrian State Archive, http://www.mapy.cz.

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[14] The round ground plan is also known in the case of individual buildings such as rotundas.

[15] https://en.wikipedia.org/wiki/Kingdom_of_Bohemia.

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[18] In Czech a similar term is used: polní lán.

Settlement Patterns of the German Colonisation in Transylvania / Romania

Christoph Machat

The German colonisation in Transylvania goes back to the mid-12th century: In the framework of territorial expansion to the East, i.e. to Transylvania, Hungarian King Geza II (1141–1161) invited settlers from German territories to stabilise this Eastern border region permanently, for both economic and defense reasons. Based on the offering of land and freedom, the first groups of colonists may have arrived around 1150 and settled in the area of Sibiu (German: Hermannstadt). Early documents mention the groups of "priores Flandrenses", later also "Teutonicii", "Latini", "Saxones", and finally the royal Hungarian chancellery used "Saxones" as a collective designation for the Transylvanian Germans (of all tribes).[1] The first independent provostship of the new settlers was founded in 1189–90 and confirmed in 1191 by Pope Celestine III. The "Andreanum" given by King Andrew II in 1224 represents the basic document of territorial and personal statute jurisdiction for the Transylvanian Saxons up to the end of the 19th century.[2] In 1211, King Andrew II invited the Order of Teutonic Knights to settle in the eastern part, called Burzenland (Romanian: Ţara Bârsei), but in 1225 the order had to leave.[3]

After the severe devastations produced by the Mongolian invasion of 1241–42 in Transylvania,[4] again groups of settlers were invited and at the end of the 13th century the colonisation of Transylvania is considered to have been accomplished. In the central region of Transylvania 247 settlements of the "Saxons" have been preserved to this day – mostly villages, a few market towns and 7 towns. The settlement patterns are almost the same: rows of narrow and deep plots with houses whose gables face the street, attached to each other and aligned along one or both sides of the public spaces – the streets and/or the settlement square (Fig. 1). The plots are closed on the rear side by barns and followed by orchards (fig. 2). Differences from village to village are related only to the specific topography of the surrounding landscape, and similar patterns are preserved also in the market towns and in the suburbs of towns (like Schäßburg/Sighişoara, Fig. 3). If one tries to find out about the origins of these patterns, one will discover that no scientific research on Transylvania is available. However, in recent publications on the church fortifications of the Saxons the territorial organisation of the villages is mentioned "with Flemish plots".[5] Again we have to go back to the 12th century and find the village of Flemmingen near Naumburg, which bears witness to the peaceful merging of the former Slavic – circular – village of Tribun and the medieval new settlers invited from Flanders by the bishop of Naumburg.[6] As in Transylvania the new settlers had to secure the border region by clearing woodland and stabilising the region permanently – and the settlement patterns are the same, preserved until today. Considering that the "priores Flandrenses" were among the first groups of colonists, they may have brought with them the settlement pattern system – usually under the leadership of locators from the lower nobility, but with experience in clearing

Fig. 1 Câlnic (Kelling), World Heritage site, aerial view of the settlement [G. Gerster]

Fig. 2 Câlnic (Kelling), rows of plots with farmsteads [G. Gerster]

Fig. 3 Sighişoara (Schäßburg), World Heritage site, aerial view from southwest [G. Gerster]

Fig. 4 Holašovice, Czech Republic, World Heritage site, aerial view of the settlement [mapy.cz]

Fig. 5 Rimetea (Eisenburg), main street [C. Machat]

woodland and territorial organisation. At a certain moment, this type of settlement pattern may have become common for the settlements of German colonisation. We find similar patterns preserved e.g. in Southern Bohemia/Czech Republic in the village of Holašovice (German: Holschowitz) near Ceske Budezovice (Fig. 4), or in settlements outside the Saxon colonisation of Transylvania, like the iron mining village of Rimetea (German: Eisenburg) in the Western Carpathian Mountains in Romania (Fig. 5), founded by German miners.[7]

Unfortunately, we have no documents concerning the first groups of settlers in Transylvania, but many location documents[8] from the Naumburg or Meißen area in Germany mention the free choice of the church location: In Transylvania all the settlements of the Saxons have the church in the centre of the village (or settlement; even in towns); for defence reasons it is located on a hill or in marshland, in the event of enemy attacks offering short refuge distances for all families (Figs. 6 and 7). Presumably, the locators also brought with them the knowledge of church fortifications from their homelands, where due to repeated medieval territorial conflicts the numerous "vernacular" church fortifications followed the model of the feudal knights' castles. In Transylvania, the first church

Fig. 6 Saschiz (Keisd), World Heritage site, aerial view of the settlement [G. Gerster]

Fig. 8 Toarcla (Tarteln), aerial view of the settlement [G. Gerster]

Fig. 9 Toarcla (Tarteln), view of the village structure from the church tower [C. Machat]

Fig. 7 Prejmer (Tartlau), World Heritage site, aerial view of the settlement [G. Gerster]

fortification works may have started immediately after the Mongolian invasion (1242), and perhaps the fortified seats of the locators' families – like that in Câlnic (German: Kelling) (Fig. 1), documented in 1269[9] – had served as models. The fortification works continued especially after the first Ottoman invasion of Transylvania in 1395 and were completed around 1500 (including the large fortification works of the cities).
Today about 150 church fortifications have been preserved, because after the loss of any strategic or defence function in 1711, when the last armed conflict in Transylvania – the rebellion of the "Kuruz" fighters[10] – had ended, they were included in the yearly course of events in the public life of the community, i.e. for storage (food, goods of the families) and education (classrooms).
Since 1990 especially the villages have been threatened by the emigration of the Saxon population to Germany, and many of them have already been abandoned (Figs. 8 and 9). For this reason, between 1991 and 1998 the exhaustive recording and scientific inventory of all the 247 Saxon settlements became a very urgent duty: Based on a scientific method proved in Germany since 1980 and financed by the German Federal Government, the inventory was implemented with Romanian specialists within the framework of a cooperation agreement between ICOMOS Germany, ICOMOS Romania and the Romanian National Commission for Historical Monuments.[11] On the maps at a scale of 1:5000, all the buildings of heritage value have been marked (Fig. 10), and the geomorphological characteristics of the surrounding cultural landscape and of the settlement patterns are indicated, documented also by aerial photographs and followed by index-cards with detailed descriptions of all the buildings.[12] The results have been published in the bilingual (German-Romanian) series *Topography of Monuments in Transylvania*; a first volume including 10 villages in the Braşov County was already introduced during the ongoing project work in 1994, and until 2016 four more volumes followed.[1]
Based on the project results, in 1999 Romania succeeded in convincing the World Heritage Committee of UNESCO to add to the World Heritage site of Biertan (German Birthälm)

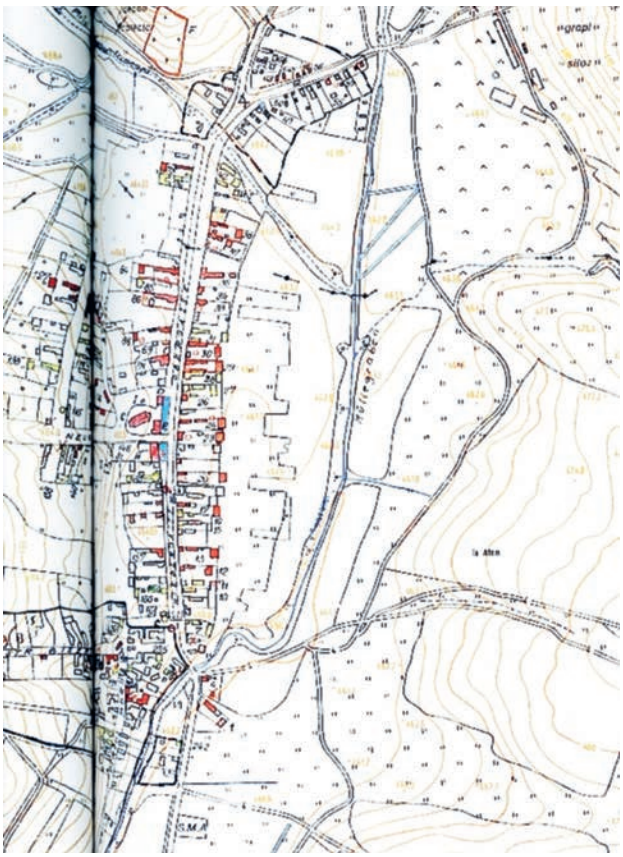

Fig. 10 Toarcla (Tarteln), topography of monuments, map with documentation [C. Machat]

Fig. 11 Biertan (Birthälm), World Heritage site, aerial view of the church fortification [G. Gerster]

Fig. 12 Valea Viilor (Wurmloch), World Heritage site, aerial view of the settlement [G. Gerster]

Fig. 13 Biertan (Birthälm), World Heritage site, aerial view of the entire settlement [G. Gerster]

Fig. 14 Viscri (Deutschweißkirch), aerial view of the settlement [G. Gerster]

(Fig. 11), inscribed on the World Heritage List in 1993, five more Saxon villages with fortified churches, thus representing the different historical regions of German settlements in Transylvania: the village of Câlnic (Kelling) in the Western settlement area; the village of Valea Viilor (Wurmloch) (Fig. 12) in the central part; the entire village of Biertan (Birthälm) (Fig. 13); the village of Saschiz (Keisd) with the church fortification in the centre (Fig. 6); but also a peasants' refuge fortification on a hill; the village of Viscri (Deutschweißkirch) (Fig. 14) and the village of Prejmer (Tartlau) (Fig. 7) in the Burzenland (Țara Bârsei), i.e. in the south-eastern region. The fortified church in Dârjiu (Hungarian name Ders) (Fig. 15) as a representative of the small group of Transylvanian church fortifications of the Székely (Hungarian) population was also included in the position "Villages with church fortifications of Transylvania" on the World Heritage List.[14]

Instead of a conclusion, a few words about the "vernacular architecture" of the Transylvanian Saxons: In early times, most of the houses of the farmsteads had been built in half-timber or in log-house construction, but due to repeated damages caused by fire especially in the 17th and early 18th centuries

Fig. 15 Dârjiu (Ders), World Heritage site, the fortified church of the Szekely population [C. Machat]

Fig. 16 Richiş (Reichesdorf), main street, row of houses of the Romanian peasants [C. Machat]

Fig. 17 Codlea (Zeiden), former Saxon houses [G. Lambescu]

(both in the inner cities and the villages), the administration of the Austrian Empire (especially after 1780, when Joseph II became emperor) forced the communities to rebuild their farmsteads in masonry.[15] This is reflected in the type of late 18th century "vernacular" architecture with the typical houses with gables facing the street and with hip-roofs. This type of house became very common and was built all over Transylvania during the entire 19th century (also by Romanian peasants) (Fig. 16) and up to World War I. Today many of these houses are empty, abandoned or have been sold as weekend houses to Romanians from the big cities (Braşov/Kronstadt, Sibiu/Hermannstadt) (Fig. 17) – have a look at the results.

Notes

1 Christoph Machat, Wehrkirchen und Kirchenburgen in Siebenbürgen. In: Denkmäler in Rumänien/Monuments en Roumanie, ICOMOS Journals of the German National Committee XIV, München 1995, p. 61.

2 Quellen zur Geschichte der Siebenbürger Sachsen 1191–1975, gesammelt und bearbeitet von Ernst Wagner, Köln / Wien 1976, the provostship p. 9, the Andreanum pp. 15–20.

3 Quellen 1976 (see note 2), pp. 13–15.

4 Quellen (see note 2), pp. 20–23.

5 Hermann und Alida Fabini, Kirchenburgen in Siebenbürgen, Wien / Köln / Graz 1986, p. 11.

6 Hans-Dietrich Kahl, Vom Wendenkreuzzug nach Siebenbürgen? In: Zur Rechts- und Siedlungsgeschichte der Siebenbürger Sachsen, Siebenbürgisches Archiv Bd. 8, Köln / Wien 1971, pp. 164, 166 and note 19. See also Matthias Hardt, The Beginning of Colonisation in Eastern Central Europe in the High Middle Ages in this publication, p. 6f and note 16.

7 Quellen 1976 (see note 2), pp. 32–34.

8 Hardt (see note 6), p. 6 and note 4.

9 Quellen 1976 (note 2), p. 27f. Regarding the locators and their position in Transylvania see also Fabini 1986 (note 5), p. 13f.

10 Harald Roth, Kleine Geschichte Siebenbürgens, Köln / Weimar / Wien 1996, p. 66f.

11 The project was also included in the working plan of ICOMOS-CIAV. See Christoph Machat, Conservation Management of the Vernacular Heritage. In: Conservation and Revitalization of Vernacular Architecture and ICOMOS-CIAV Annual Meeting 1997, Bangkok 1997, pp. 98–104.

12 Christoph Machat, Die Dokumentation des siebenbürgisch-sächsischen Kulturgutes (1991–1998) und ihre Ergebnisse. Weltkulturdenkmäler und Denkmaltopographie. Marius Porumb zum 70. Geburtstag. In: Ars Transilvaniae, Bucuresti 2013, pp. 17–30.

13 Christoph Machat (ed.), Denkmaltopographie Siebenbürgen / Topografia Monumentelor din Transilvania:, vol. 3.3. Braşov County, Innsbruck 1994, followed by 5.1.1. Sibiu (Hermannstadt), Inner City, Köln 1999, 4.1. City of Sighişoara (Schäßburg), Köln 2002, 3.4.Braşov County, Heidelberg 2002, 5.7.1. City of Mediaş (Mediasch), Gundelsheim/Neckar 2011 (CD-ROM), Sibiu-Bonn 2015 (printed version).

14 Christoph Machat (ed.), Denkmäler in Rumänien / Monuments en Roumanie, ICOMOS Journals of the German National Committee XIV, München 1995, pp. 61–73. See also Christoph Machat, Attempts to Safeguard the Transylvanian Saxons' Architectural Heritage – The Project "Fortresses, Rediscovered Treasures", in: Heritage at Risk, ICOMOS World Report 2008–2010 on Monuments and Sites in Danger, Berlin 2010, pp. 145–147.

15 Roswith Capesius, Das siebenbürgisch-sächsische Bauernhaus. Wohnkultur. Bukarest 1977, pp. 24–28.

Arquitectura vernácula y el paisaje cultural en Puebla, Mexico

Gerardo Torres Zárate[1]

Introducción

Xochitlán de Vicente Suárez es un municipio cuyo escudo presenta una flor sobre una roca (Rivera 2005). El significado se interpreta como "lugar entre flores" (Secretaría de Gobernación 1998:1094), "lugar y abundancia de flores" (Rivera 2005), "lugar florido" (H. Ayuntamiento 1992:11), "lugar de flores" y "lugar donde abundan las flores" (Juárez 1999:15). Como sea que se tome el significado es cierto que el clima y la vegetación, hacen de Xochitlán un lugar donde la variedad de flores es abundante. De acuerdo a datos del INEGI (Instistuto Nacional de Estadistica y Geografia) 2010 la población total es de 12,249 habitantes, donde 9,348 personas hablan alguna lengua indígena.

Al estar ubicado en la sierra norte de puebla se observan ejemplos de patrimonio natural. El asentamiento se encuentra en medio de bellos bosques y montañas. Los atractivos que se han distinguido por el reconocimiento de la comunidad son una serie miradores encima de cañones formados por el rio Zempoala, también existen varias grutas y cascadas. En torno al patrimonio intangible, son diversos los elementos que lo caracterizan, el huapango, la gastronomía, las danzas, la música, las artesanías, los ritos y rituales en las fiestas religiosas.

La fundación de Xochitlán ocurrió en el siglo XVI. El municipio debe el nombre en memoria a que nació allí el Cadete Vicente Suarez, que murió en la batalla de la toma del castillo de Chapultepec de 1847, durante la invación Norteamericana. La batalla del cinco de mayo de 1862, contra la invasión francesa, es otro de los hechos históricos nacionales. Según la historia un factor determinante fue la convocatoria de pueblos mexicanos, para hacer la defensa de Puebla. A ese llamado acudieron los zacapoaxtlas, varios pobladores de Xochitlán recuerdan esa batalla, pues afirman que al llamado nacional, también acudieron varias comunidades del alrededor y del mismo Xochitlán (Juárez 1999:28).

Economia local

La altura y ubicación geográfica, son propicias para el cultivo de café. En Xochitlán la producción del café es una actividad que data desde sus orígenes. Así desde mediados del siglo XIX la gente de Xochitlan se dedicó de manera masiva al cultivo y proceso del café. El café fue un producto muy importante para la economía de Xochitlán. Se negociaba café a gran escala desde 1930 y llegaba de toda la sierra, de lugares lejanos como Osorno. Los arrieros fueron parte muy importante

Fig.1–2 El asentamiento se encuentra en medio de bellos bosques y montañas

The settlement lies in the middle of beautiful forests and mountains (photos Gerardo Torres)

Fig. 3–4 Las ruinas de la finca Santa Elena.
The ruins of the coffee farm of Saint Helen (photos Gerardo Torres)

en el acarreo de café. De 1970 hasta 1975 se incrementaron los plantíos en torno a Xochitlán. Llegando a tener fincas cafetaleras de importancia a mediados del siglo XX Un ejemplo son las ruinas de la finca santa Elena.

Los restos de lo que fue una finca cafetalera en la primera década del siglo XX se refiere el trabajo del café que tradicionalmente se ha desarrollado en la región. Las ruinas de Santa Elena fue utilizado como un beneficio húmedo, casa habitación y planta hidroeléctrica. Al estar ubicada junto la gruta de Santa Elena, se aprovechó la corriente del rio para la colocación de una planta generadora, que dotaba de luz a algunas zonas del pueblo. De acuerdo a las narraciones de los habitantes, funciono como un beneficio húmedo desde principios del siglo XX hasta 1965.

La edificación estaba asentada en terreno de forma irregular, con superficie aproximada de 1,860 metros cuadrados y área construida de 1,296 metros cuadrados; actualmente se encuentra descubierta y en estado ruinoso. Tiene un acceso con escalinatas de piedra. Se organiza en tres naves, ordenadas longitudinalmente. El conjunto está conformado por dos salas, un salón y un patio frontal; todos ellos ya no poseen la cubierta. La fachada sureste tiene contrafuertes arqueados; los vanos son rematados con arcos ojivales.

El gobierno generó un programa de apoyo a la producción de café, pero los estándares de calidad y cantidades de producción que pedían, no eran acordes a los de la población. Desafortunadamente como ha ocurrido en México la corrupción de los funcionarios públicos, no permitió que el dinero de apoyo llegara realmente a los pequeños productores. Lo cual genero el abandono del programa y que la producción de la población decayera. En varias casas vernáculas se encontraron aun los espacios arquitectónicos propios del trabajo del café, como son las áreas de despulpe y secado.

La migración hacia las ciudades también influyo al abandono de la producción del café. Actualmente las familias no abandonan esa actividad, pues la consideran parte de sus tradiciones. La producción es baja y generalmente se vende la cosecha de manera directa. Sin embargo el 80 % de las familias sigue cultivando y procesando el café para consumo propio y para venta en menudeo. La producción se hace de manera artesanal, realizando todas las tareas en casa; el despulpado, beneficio húmedo, beneficio seco. El tostado se hace en cazuelas o comales de barro y el molido es en molinos manuales.

Fig. 5–6 La producción se hace de manera artesanal, realizando todas las tareas en casa
The coffee production is done in a traditional way, the entire process being carried out at home (photos Gerardo Torres)

Fig. 7–8 Huapangueros

Musicians playing the huapango (photos Gerardo Torres)

Patrimonio intangible

Xochitlán posee una serie de atractivos naturales. La importancia del paisaje natural y sus elementos, tienen una interacción directa con los pobladores. Esto se refleja en la producción artesanal de adornos y bordados de manteles, blusas y servilletas, que hacen referencia a la amplia variedad de flores, sobre todo de orquídeas. Asi mismo los adornos en la fiestas patronales son en base a las flores y plantas de la región.

Los elementos culturales patrimoniales en Xochitlán son diversos y se relacionan en varias manifestaciones. Dichos factores son parte fundamental de la cultura popular, que "es un complejo sistema de símbolos de identidad que el pueblo preserva y recrea" (Colombres et al. 1982:7). El *huapango* o son *huasteco*, en Xochitlán es el elemento cultural más significativo de la comunidad, pues en él se conjugan diversos valores.

El son es un género musical que según D' León (2004), es de los más usuales y representativos en ambas costas del país. Se sabe que la región huasteca abarca los estados de Hidalgo, San Luis Potosí, Hidalgo, Veracruz, Tamaulipas y Puebla. El son huasteco es también conocido con el nombre regional de huapango. Afirma D' León (2004) que el huapango posee riqueza y variedad que ofrece, "al aspecto casi puro español y la manera popular en con que se ha difundido."

La gente de Xochitlán refiere que en su origen era "música de pobladores de la región de la Huasteca, los cuales, escuchando los instrumentos de los españoles, empezaron a fabricar los suyos. Para los indígenas era prohibido desde la manufactura hasta la entonación de éstos, lo cual los llevo a tocar clandestinamente, de esa manera surgió el huapango."[2]

Una Huapangueda en Xochitlán reúne a tríos de las cinco huastecas. La fecha más importante es el 24 de agosto, la fiesta del santo patrono, en que el huapango inicia en la tarde y se extiende hasta las cinco o seis de la mañana del día siguiente. Todas las personas, sin distinguir su origen, comparten el tablado. La mayoría de la población se reconoce en el encuentro del huapango y lo consideran como parte de su identidad.

Cada familia o pareja que asiste, selecciona sus mejores prendas, se estrena ropa especial para el evento. Resulta impresionante escuchar el retumbar del zapateado de decenas de parejas. El suelo se cimbra al compás de los sones y la gente se entrega a la música. Los huapangueros hacen gala de su destreza haciendo decimas espontaneas, se canta al lugar, a la naturaleza, a la política. Se versa sobre la alegría, la tristeza, el amor, la conquista y claro al desamor. El ingenio de los músicos combina todos los elementos sociales con los sagrados y los naturales. Todo ello en un espacio público que es la calle frente al edificio del ayuntamiento y que ese día se trasforma en el teatro del pueblo. Se aprovecha la escalinata para usarse como foro en el día de la fiesta,

Las danzas

El eje de las tradiciones en Xochitlán, son las fiestas patronales de cada barrio. Las danzas son parte trascendente de los elementos culturales de la región. La fiesta patronal reúne todo género de elementos culturales tangibles e intangibles.

Las fiestas patronales en México constituyen un elemento trascendente para la población. Paz (1985) reflexiona en torno a las celebraciones comunales, es el único lujo que se pueden dar los mexicanos de bajos recursos. Es también la ocasión para el mexicano de abrirse al exterior, de mostrarse, de revelarse y dialogar con las divinidades, la patria, los parientes y los amigos. "La fiesta es ante todo el advenimiento de lo insólito. La rigen reglas especiales, privativas, que la aíslan y hacen día de excepción (…) se introduce una lógica, una moral y hasta una economía que frecuentemente contradicen las de todos los días" (Paz 1985:45).

En Xochitlán se celebran 21 fiestas religiosas durante el año (Juárez 1999:54). Esas celebraciones son la expresión cultural del sincretismo indígena y el cristianismo. "EL ciclo de festividades de Xochitlán congrega a todos los miembros del municipio y a aquellos parientes que residen fuera de él" (Juárez 1999:14). Los arreglos de la fiesta se realizan con meses de antelación. Los ensayos se inician en el palacio municipal y se continúan en la casa del mayordomo. Cada danza

Fig. 9–10 Procesiones y ornamentos florales en la fiestas religiosas

Religious processions and ornaments with flowers in the village festivals (photos Gerardo Torres)

tiene su propia vestimenta, y los participantes elaboran sus propios trajes, o encargan a personas que tienen la experiencia en el asunto. La organización incluye la alimentación de los participantes, las ceras, los juegos pirotécnicos, los músicos, la bebida, las flores y la vestimenta.

La tradición de las danzas en Xochitlán, sigue un ciclo litúrgico complejo.[3] Al igual que en la mayor parte del país, los pasos de la celebración forman un circulo en que se relaciona el espacio público con el privado, a través del altar del templo y el altar de la casa. Se relaciona el orden divino con el humano. Los recorridos de las procesiones van de la casa a la calle, al atrio, al templo, al atar del templo y nuevamente al atrio, en donde se ejecutan las danzas. Para después repetir el recorrido a la inversa (Torres 2009:153, 154).

La tradición se ha preservado, no ha muerto porque el sistema de retransmisión es muy importante y efectivo. Siempre existe la participación de niños y adolescentes que van aprendiendo todos los pasos y parlamentos de la danza que se trate. Durante cuatro días sucede algo que establece también un sello particular a Xochitlán. Las nueve danzas se reúnen en un mismo escenario que es el atrio del templo. Las danzas son: Los Migueles, Santiagos, Voladores, Matarachines, Toreros, Moros, Españoles, Tocotines y Negritos. Resulta extraño por la cantidad de danzantes, músicos y acompañantes, como todo en la organización, hay un orden.

Las nueve representaciones tienen su lugar definido. El acomodo se ha establecido y no se rompe, no hay equivocaciones, todos ejecutan sus pasos y sus sones sin interferir con los demás. Los movimientos definen su tiempo y su espacio. Los desplazamientos establecen las dimensiones y las proporciones. Si el número de participantes ya es alto, hay que sumar los escenarios y elementos de cada ejecución. El trapiche de los negritos, la escenografía del infierno para los migueles, la cárcel de Cuauhtémoc, las imágenes de las cofradías, el área de juegos pirotécnicos, la garrocha de los torreros, el asta y telón de los matarachines y el poste de los voladores. Definidamente el espacio no es suficiente, sin embargo, es la fiesta del santo patrono y ocurre el milagro, todo y todos entran, todo cabe en ese espacio que se agiganta con la devoción de los participantes. Horas de danzar, de sudar y cansancio que se suceden sin que nada se detenga, sin que nadie renuncie, al fin y al cabo se recibirá la bendición de San Bartolomé. Termina el día, la oscuridad se adueña del paisaje, solo falta el último son, el último paso, el último parlamento y después solo hay que entrar a agradecer al santo patrono. Aún más tarde el ciclo se cerrará en la casa de mayordomo. Los pies están hinchados, el cuerpo cansado, los rostros sudados pero la esperanza se ha renovado. Los ciclos se cumplieron y el universo está en equilibrio, las tradiciones se mantienen y la gente se ha sobrepuesto a todo, en un complicado y largo, pero amoroso acto de fe.

La cocina tradicional

La comida tradicional mexicana quedo inscrita en la lista de patrimonio cultural inmaterial de la UNESCO el 16 de noviembre de 2010. Siendo la primera que se registra con tal distinción. La comida de nuestro país representa también aspectos culturales es “riqueza gastronómica que no debe subestimarse, y que unida a la infinita diversidad de las cocinas tradicionales de los indígenas, siempre basadas en productos autóctonos, configura a la gastronomía mexicana como una de las más complejas del mundo” (De Orellana 2012:52).

Considerar la gastronomía como parte de la cultura, permite conocer acerca de las costumbres y formas de vida. Xochitlán forma parte de la herencia culinaria que distingue a Puebla. La región serrana tiene sus propias comidas y formas de prepararlas. La relación entre el alimento y los aspectos físicos como el clima, genera el uso de plantas hierbas y especias propias de la región. Los platillos tradicionales de Xochitlán son el chilponzontle, mole poblano, tamales, tlayoyos, enchiladas, enmoladas, caldo de cozoles o acamayas. Dulces y pan de dulce, pan de yema, ojaldra y marquesote. El café, licores como el yolixpa, y licor de café. Promover y mantener esos platillos es importante porque “donde se mantienen los saberes tradicionales y la economía de pequeña escala y de subsistencia, se practica una gastronomía sustentable que se halla

Fig.11–12 La arquitectura vernácula es adaptada a topografía variante

Vernacular architecture is adapted to the characteristics of the terrain (photo Gerardo Torres)

en estrecha armonía con el contexto natural y cultural" (De Orellana 2012:50).

La celebración de los días de muertos de México, quedo inscrito en la lista de patrimonio cultural intangible del mundo, desde el año 2003. En Xochitlán también se preserva dicha tradición. Como en todo México, se colocan los altares en las casas, se adornas tumbas en el cementerio, se hacen misas y rezos, pero hay algunos elementos propios.

Las ceras es una muestra de trabajo extraordinario pues en él se mezcla una técnica tradicional, con esmero y la devoción. Las ceras se preparan previo a la festividad del santo patrono. Cada año se funden las ceras para formar flores que se cubren con papel metálico de colores sobre una estructura de madera y alambre. Dichas ceras sirven para adornar y escoltar a la imagen durante las procesiones por las calles del pueblo hacia el templo y hacia la casa del mayordomo. Uno de los productos artesanales más esplendidos a la vista y que representa magníficamente al lugar de las flores son los xochihuapal. Consisten en estructuras en forma arcos, columnas, y portadas de los templos, que se adornan con flores y frutas del lugar. En las casas adornan los nichos de los santos familiares y ofrendas de día de muertos. Se elaboran varios tipos de adorno pero todos con flores cultivadas y con flores silvestres de la gran diversidad existente originaria de Xochitlán.

Patrimonio vernáculo construido

El concepto que establece López (1993) afirma que la arquitectura vernácula en México, es producto del proceso histórico y sincrético de nuestro país, en que se combinan y fusionan elementos culturales de España y el México prehispánico. Por otra parte Prieto (1982 y 1994) distingue los elementos de influencia española y la influencia indígena.

El caso de Xochitlán de Vicente Suarez además de las características propias de la arquitectura vernácula que definió el CIAV, presenta también las influencias mencionadas. Así se puede observar que la arquitectura tradicional de España se refleja en sus tejados a dos aguas y en los elementos formales de los vanos en fachadas. EL sistema constructivo de la cu-

Fig. 13–14 Muros de piedra, cubiertas con tejados a dos y hasta cuatro aguas

Stone walls, saddleback and hip-roofs covered with tiles (photos Gerardo Torres)

bierta es netamente producto de la influencia de la colonia. La historia del asentamiento se remonta a finales del siglo XVI y principios del XVII, fue fundado durante la colonia.

Xochitlán aún conserva la imagen tradicional, ese aire de pueblo que se ha perdido ya en muchos lugares de la provincia mexicana. Esta realizada con materiales de la región y el conocimiento de los sistemas constructivos son producto de la trasmisión generacional. Sus calles empedradas han resistido el embate de la nueva costumbre de cambiarlas por concreto o asfalto. Lo cual le otorga un valor visual y tradicional más. Las formas, dimensiones y proporciones son netamente vernáculas. Se puede observar que la longitud de los volados de las cubiertas, corresponde a la protección de las frecuentes e intensas lluvias de la sierra. Así mismo existe dicha relación entre la altura e inclinación de las cubiertas con sus tejados.

Es así como la arquitectura vernácula de la región serrana de Puebla tiene una imagen tradicional propia. La variante topografía genera diversos niveles en los que algunas construcciones se van acomodando a manera escalonada. También se generan edificaciones en que el nivel de calle presenta un cuerpo de altura, pero al ingresar, se tiene que son dos o tres cuerpos hacia abajo.

El fenómeno de modificación, alteración y finalmente destrucción de la arquitectura tradicional es común en el mundo, pero en nuestro país se acrecienta de manera acelerada. La gente piensa que el concreto armado es mejor que los materiales tradicionales y se ha comenzado a cambiar algunos elementos como por ejemplo, se sustituyen las vigas de madera y entablado, por una losa de concreto armado en los entrepisos. En los niveles superiores quitan el zarzo y se hacen trabes de concreto armado. Las modificaciones han llegado a transformar completamente fachadas, en las que con concreto se simula todos los elementos tradicionales, cayendo en la falsedad arquitectónica.

La traza urbana del municipio es irregular, pues se ajusta a las curvas de nivel del terreno. De allí que los terrenos varíen mucho en sus formas y dimensiones. La mayor parte de edificios vernáculos se ubican en la parte céntrica del asentamiento. En términos generales, se pueden observar tres tipologías y diversos géneros de edificios. Al centro de la traza están los edificios de dos y tres niveles con mayor número de metros cuadrados, así como varias habitaciones y de uso mixto. En un segundo círculo en torno al centro están las viviendas de un nivel, con dos o tres aposentos. La tercera tipología se establece en los niveles socioeconómicos más bajos y son viviendas de un solo nivel y un aposento más cocina.

Las construcciones ubicadas en el centro de la cabecera municipal y que presentan una marcada influencia española. Se trata de construcciones con elementos arquitectónicos eclécticos como son arcos de medio punto, columnas de fustes dóricos y jónicos, óculos, arcos rebajados y arcos ojivales. Dichos elementos eclécticos llevan a definir que son edificios del siglo XIX. Esos edificios son principalmente de uso mixto, habitacional con comercio y servicios.

Los edificios en torno al centro, generalmente son de un nivel, sin embargo hay algunos de dos niveles. En los elementos formales se pueden observar arcos rebajados y adintelados. Son edificios de menores dimensiones que lo del centro y son de uso habitacional, aunque excepcionalmente hay algunos de servicios y comercios.

Las viviendas que se ubican en las orillas de la traza, son sin elementos formales que las distingan, como se observa en el centro. Únicamente los vanos de las paredes presentan arcos adintelados en su mayoría. Son viviendas sin pretensiones formales y con dimensiones menores a las de la parte central. Los muros de piedra generalmente son de 45 a 60 centímetros de espesor, con algunas excepciones, como el caso del templo dedicado a San Bartolomé Apóstol, que tienen un espesor de un metro. Las plantas son rectangulares, en los inmuebles habitacionales son pocas las divisiones, al contrario que edificios de servicio y comercio, donde hay tantas divisiones como locales se quieren lograr.

Las cubiertas son a dos tres y hasta cuatro aguas, aunque la más común es a dos aguas. El espacio interior se limita de manera horizontal por el zarzo, quedando un espacio de altura considerable del nivel de piso del zarzo al punto más alto de la cubierta. Con ello las inclinaciones de las cubiertas van desde los 35 hasta los 50 grados de pendiente. Las estructuras de los techos son de madera con una cubierta de teja de barro de media caña.

Los vanos en puertas y ventanas tienen diversas variantes formales, sin embargo existe una clara tendencia del dominio del macizo sobre el vano. El material original en ventanas y puertas es la madera, aunque ya hay una marcada tendencia a sustituir por aluminio y fierro. Los pisos originales eran de piedra, actualmente la mayoría se ha sustituido por firmes de concreto.

Los géneros de edificios vernáculos en Xochitlán es variado, afortunadamente el nivel de conservación de las construcciones tradicionales, ha permitido que sean diversos los usos de dichos edificios. Se tiene el el culto religioso, con el templo de san Bartolomé Apóstol, y la capilla del Calvario, también se tienen templos en los barrios. El palacio municipal representa el género de administración. Los edificios de comercio son diversos abarrotes, farmacia y carnicería entre otros. Edificios de educación como la primaria Vicente Suarez.

Al observar las imágenes de Xochitlán se distinguen alturas heterogéneas, se funden y confunden cubiertas de teja lo cual rompe monotonía. Además de estar integrado al contexto natural, se percibe una arquitectura caprichosa en la serranía, que se acomoda de acuerdo a las circunstancias. Las cubiertas en la región refiere Colle (1994:70), pueden observarse en Zacapoaxtla o Cuetzalan, al igual que en Xochitlán, con aleros prolongados que protegen de la lluvia.

Tanto cimentación como muros, se junteaban con arcilla. Comentan los albañiles ancianos del lugar que al "no conocer ni la cal ni el cemento, siempre se construyó con lodo, con tierra del lugar. Se pegaba muy bien con tierra que se sabía muy bien dónde encontrar la buena, la más chiclosa"[4] Las estructuras del techo son a base de viguería de madera, con tirantes y entablado. Ésta apoyada sobre una viga perimetral que se denomina plancha, la cual a su vez se apoya sobre los muros de piedra. Formando con ello el piso del zarzo y a la vez el plafón del aposento. La cubierta a dos aguas se estructura con vigas de madera que en su punto más alto, se apoyan en una viga cumbrera al centro llamada caballete, y en los

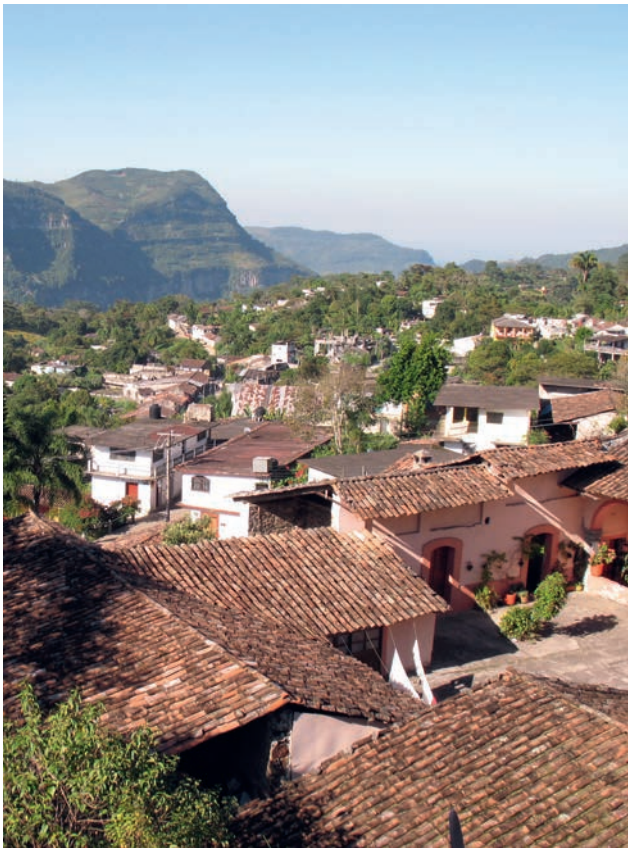

Fig. 15–18 La traza urbana del municipio es irregular, pues se ajusta a las curvas de nivel del terreno

The settlement design is irregular, since it adjusts to the level curves of the area (photos Gerardo Torres)

extremos se apoyan sobre una viga llamada alfarda, que transmite la carga hacia los muros. Sobre la viguería de la cubierta se colocan transversalmente las cintas denominadas alfajillas, sobre las cuales de apoyan las tejas de barro de media caña.

Conclusión

La comunidad de Xóchitlan de Vicente Suarez en Puebla, México, es un ejemplo importante de conservación de patrimonio vernáculo, tanto material como inmaterial. En ella se conjugan todas las tradiciones con el medio ambiente y con la arquitectura. Sin embargo no es fácil conservar de manera integral todas las manifestaciones culturales, ya que como en todo México sucede, las influencias externas están modificando algunos patrones tradicionales.
La tradición constructiva se está perdiendo, la mayoría de los constructores tradicionales han muerto o son muy ancianos, sumado esto al fenómeno de trasformación y destrucción por los propietarios, pone en riesgo un patrimonio vernáculo, que se sustenta físicamente en lo intangible de sus tradiciones.

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Notas

1 Instituto Politécnico Nacional ESIA Tecamachalco. CIAV member. gtorresz@ipn.mx
2 Sr Ernesto Tirado, entrevista en sitio.
3 Para comprender ampliamente el desarrollo de las danzas, así como los antecedentes de orden simbólico, prehispánico y sincrético de las mismas, se puede consultar el trabajo realizado por Juárez (1999), en el que se desarrolla un análisis formal y serio de todos los factores que configuran esa tradición en Xochitlán.
4 Sr Vicente Reyes, albañil Xochitleco de 83 años, Entrevista en lengua náhuatl, traducción del Sr. Ernesto Tirado.

English Summary

Introduction
The study concerns a Mexican traditional community where the vernacular architecture is integrated into the natural landscape. It is the town of Xochitlán de Vicente Suarez, located in the northern mountains of Puebla, in the middle of beautiful forests (Figs. 1, 2), and founded in the 16th century. All the economic and cultural activities of the community are linked to the natural landscape, expressed in the tangible (vernacular architecture) – and the rich intangible heritage, like huapango, the gastronomy, the dances, the music, the crafts, the rites and rituals during the religious feasts.

Local economy
Height and geographical location are crucial for the cultivation of coffee, the production of which started in Xochitlán in the mid-19th century. Coffee became very important for the economy. The ruins of the coffee farm of Saint Helen (Figs. 3, 4) from the first decade of the 20th century give an idea how coffee was traditionally cultivated in the region. Unfortunately, after 1965, due to a government programme the contribution of the Yochiltán area was abandoned. Nevertheless, 80 percent of the families continue to cultivate and process the coffee. The production is still done in a traditional way, the entire process being carried out at home (Figs. 5, 6).

Intangible heritage

The most significant cultural element of the community is the *Huapango*, the regional name of Huasteco, the music of the Huasteca region, going back to Spanish music and interpreted and developed by the local population in a popular way. The most important celebration of the huapango is always on August 24, the holiday of the principal saint, with musicians from five regions (Figs. 7, 8), people dancing the whole night in their traditional costumes in the public space opposite the town hall. Dances are a transcendent part of the regional cultural traditions, included in all the celebrations of the 21 religious patronage holidays over the year and following a complex liturgical cycle. Food and the traditional gastronomy is part of the culture, and Xochitlán is part of the culinary heritage that dinstinguishes Puebla – inscribed on the list of intangible cultural heritage of UNESCO in 2010. The flowers are important elements for the religious processions and ornaments with flowers in the village festivals (Figs. 9, 10), reflecting the great variety of flowers in the region, especially orchids, used also in the handmade production of the textile ornaments and embroideries of Xochitlán. Waxes are an extraordinary work prepared especially for the celebration of the "days of the dead" in Mexico – since 2003 on the list of intangible cultural heritage of UNESCO. Very special is the "Xochihuapal", a wooden structure in the shape of arches, columns and temple gables with a wax decoration of flowers and local fruits.

Built vernacular heritage

Xochitlán still preserves the traditional image in its architecture, already lost in many parts of the Mexican provinces. It shows Spanish and pre-Hispanic influences. Made with regional materials, the knowledge of the building system has been transmitted from generation to generation. In the Puebla mountainous region with topographical variations the houses are adapted, outside showing one level, but inside there are two or three levels leading downwards (Figs. 11, 12). The urban design of the municipality is irregular, since it adjusts to the level curves of the area (Figs. 15–18). The houses have stone walls, a roof structure made of wood, the common shape being a saddleback with gable, covered by tiles or pantiles (Figs. 13, 14). Windows and doors are also made of wood, but today there is a pronounced tendency to substitute this by aluminium and iron.

Conclusions

The community of Xochitlán de Vicente Suarez is an important example of conserving vernacular heritage, both tangible and intangible. Nevertheless, it is not easy to preserve in an integral way all the cultural elements and events, since as everywhere in Mexico external influences are modifying traditional patterns. The building tradition disappears and most of the traditional builders have died or are very old. Adding this to the phenomenon of transformation and destruction by the owners, it puts at risk a vernacular heritage which is physically sustained in the intangible of its tradition.

The Stave Churches of Northern Norway – Interpretation and Reconstruction of a Stave Church at Trondenes Museum, Harstad

Gisle Jakhelln

Abstract

Reconstructions are erected either 1) of a known structure, damaged or destroyed, or 2) of a structure not known, but of which there are fragments, archaeological finds or written sources. One aspect of reconstruction works is studying and understanding the past heritage and understanding the development of an earlier culture.
A piece of architecture cannot be fully understood through drawings and small-scale models. Only through full-scale models/reconstructions is it possible to grasp the architectural quality of the structure. And only through full scale work is it possible to study the building methods and craftsmanship from times past.

Stave churches were built from the 11th to the 17th centuries. Today there are 28 stave churches in Norway, all of them in Southern Norway. We know from written sources and from archaeological finds that there were stave churches in Northern Norway as well. There are two main types of stave churches: the Borgund type and the Möre type. Most of the Norwegian stave churches are of the Borgund type, a stave church with raised central room. A different type, of which there are only three churches remaining are all in the Möre og Romsdal County. What kind of stave church was built in Northern Norway? Some evidence shows it may have been the Möre type.
Research is based on studies of written sources and archaeological finds and on comparing them with built structures in the region.
This paper presents the hypotheses that the Möre type found on the northwest coast of Norway indicates the southernmost part of a much larger area for this type of stave church, i.e. Northern Norway. In addition to the difference in plan layout, the specific structural elements of the Möre type are presented to be different from the Borgund type, i.e. without internal bracing elements. The paper describes the development from the long house to the stave church. A reconstruction of this type of stave church built in Northern Norway will strengthen the consciousness of the particular historical identity of Northern Norway.

Background

The museum of Trondenes at Harstad, Northern Norway, is planning to establish a group of buildings showing the life of the community in the Middle Ages, i.e. 1200 AD, called *Almenningr*.

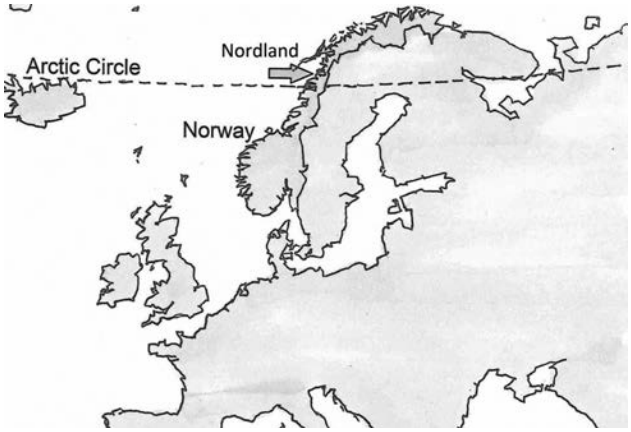


Fig.1 Norway and Nordland County in Northern Norway

Fig.2 Trondenes Church, 1440 (photo Gisle Jakhelln, January 2016)

Fig. 3 Urnes stave church, 1150, drawing of 1837, World Heritage Site since 1979 (from Anker 2005, p. 116)

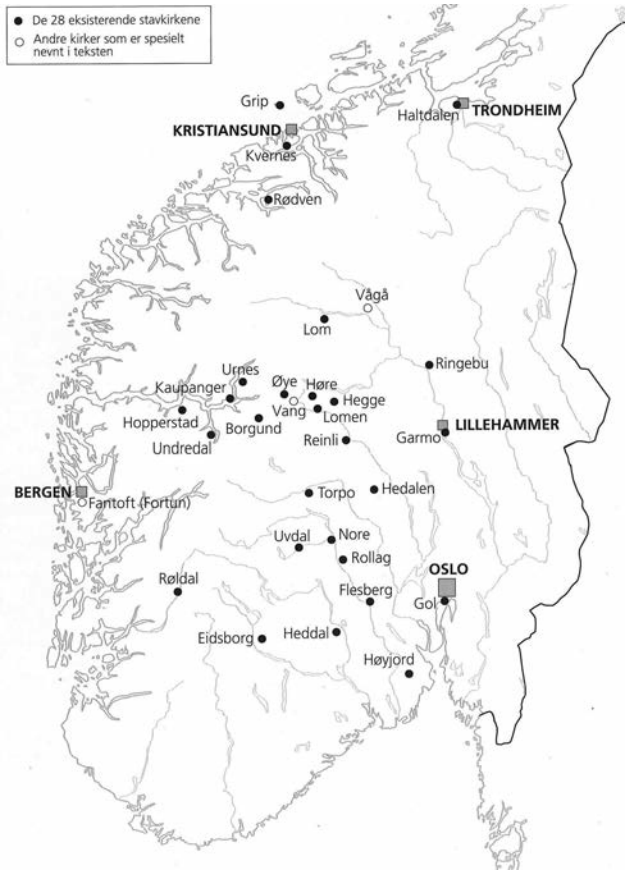


Fig. 4 The 28 existing stave churches in Norway, the three Möre-type churches being near Kristiansund

The stone church now standing at Trondenes was built in 1440. There were most probably stave churches on this site earlier. As part of the *Almenningr* project a stave church will be built in 2017 within the grounds of the museum.

Reconstructions

Reconstructions are erected either 1) of a known structure, damaged or destroyed, or 2) of a structure unknown, but of which there are fragments, archaeological finds or information from written sources. One aspect of reconstruction work is studying and understanding past heritage and understanding the development of an earlier culture.
A piece of architecture cannot be fully understood through drawings and small-scale models. Only through full-scale models/reconstructions is it possible to grasp the architectural quality of the structure. And only through full-scale work is it possible to study and appreciate the building methods and craftsmanship from times past.

Stave churches

Stave churches were built from the 11th to the 17th centuries. Urnes stave church (Fig. 3) is the oldest still standing in Norway; it was built in 1150. Urnes was inscribed on the World Heritage List in 1979. This present church is actually the third on the site.
Today, there are 28 stave churches remaining in Norway, all of them in Southern Norway. However, written sources and archaeological evidence confirm that there were stave churches in Northern Norway as well. Based on written records, I have located ten churches.[1] Only the two northernmost sites have been excavated.
Borgund (Figs. 6 and 7) is an example of the spectacular stave churches of Southern Norway. This is different from the Möre-type, as I will explain.

Fig. 5 Evidence of stave churches in Northern Norway; Mjölvik is far north

Fig. 6 Borgund, 1150–1200 (photo around 1900)

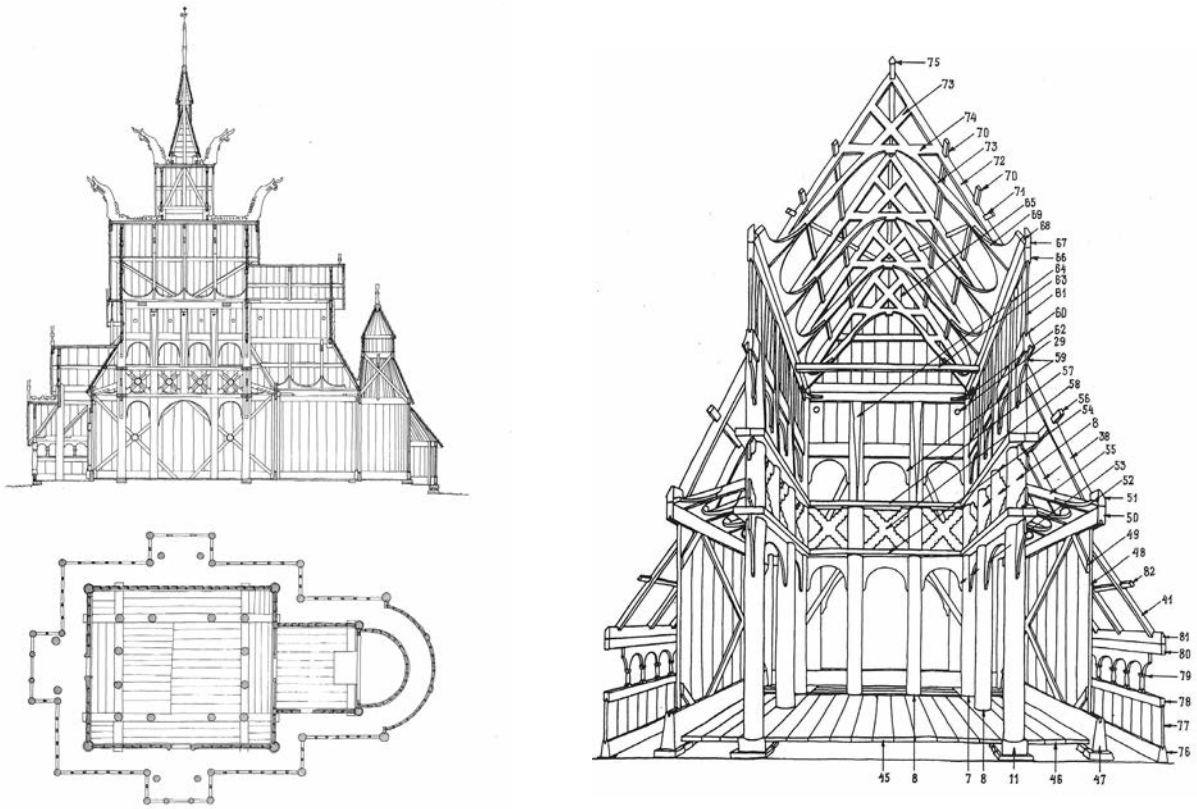


Fig. 7 Stave church with vertical central room: Borgund (drawing by Håkon Christie; from Anker 2005, p. 341)

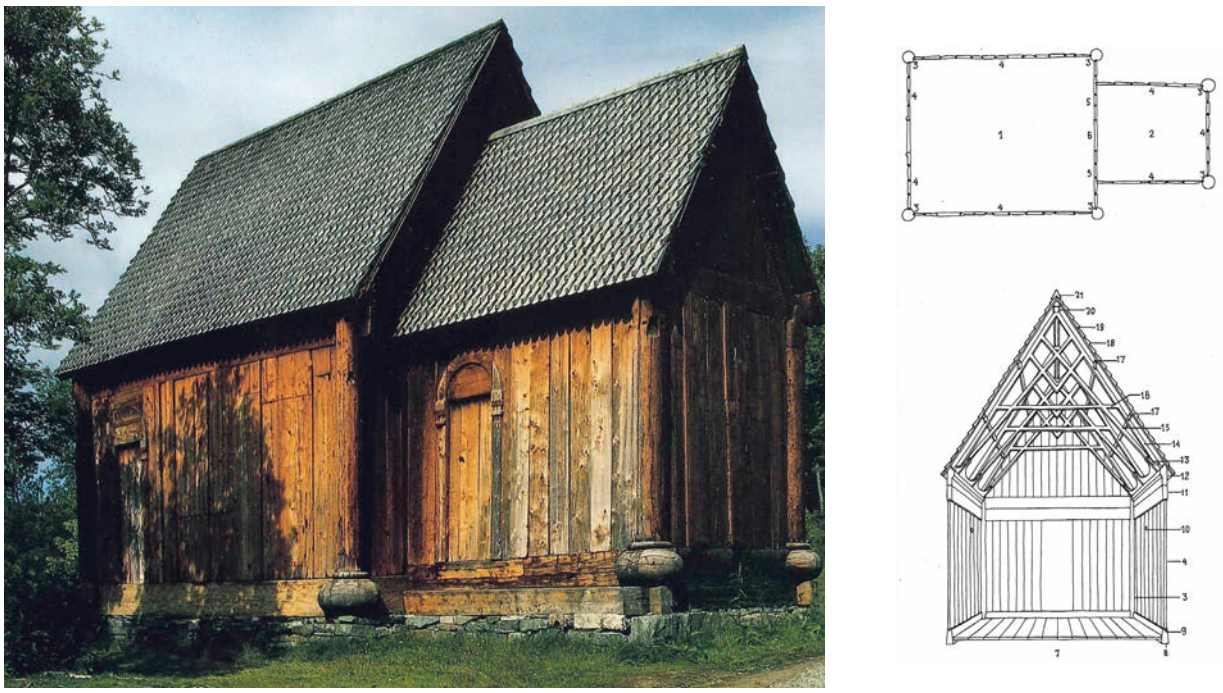


Fig. 8 Stave church without internal vertical central room: Haltdalen, 1150–1200 (drawing by Håkon Christie; from Anker 2005, p. 338)

"Stave churches derive their name from the principal load-bearing posts, also called staves (from *stav*, the Norwegian word for this particular kind of post). As opposed to the "ordinary" kind of post-borne construction, in which the posts' bases are anchored in the ground, stave-built structures stand on stone foundations. This meant, however, that some way of holding the staves in place had to be found, and the method that was developed was to join them top and bottom with horizontal members, thus forming a relatively rigid framework. The bases of the staves are jointed into, or ride on top of, the ground sills, while the crowns are fastened to top sills. This is, of course, a very simplified description."[2]

The structure is made stable by an elaborate system of bracing: quadrant brackets and crossed diagonal braces. The details vary from church to church. Borgund is an example of a church with a central space extended vertically.

Haltdalen (Fig. 8) is an example of the smallest type without the vertical central room. This church now stands in the open-air museum in Trondheim. A copy of Haltdalen was erected in Iceland in 2000.

The Möre-type stave churches[3]

Kvernes (Fig. 9) is one of three remaining churches of the Möre type. This type differs from the Borgund type in not having internal bracing. The bracing structure of these churches is provided by external buttresses.

The plans of the Möre type are based on a simple rectangle with corner posts and intermediate posts. Transversal tie-beams span the width of the building. (Early descriptions suggest that some of these churches also had transepts, thus forming cross-shaped plans.)

Grip (Fig. 10) is the smallest of the Möre-type churches standing on a small island far out in the sea, a settlement near the fishing grounds. The entrance is on the south wall. A chancel was added later. The roof has a lower pitch, perhaps in response to strong winds. There are no external buttresses at Grip.

Rödven (Figs. 11 and 17) represents a third variant of the existing Möre churches. There were entrances both on the south and on the north walls. Today's entrance on the west wall is a later addition. Here the builders employed external buttresses for the gable walls as well as for the long side walls.

The reconstruction of the longhouse at Borg[4]

The chieftain's longhouse at Borg on the Lofoten Islands was built around 800 AD. This is the largest of its kind ever found. My reconstruction (Figs. 12 and 13) is based on archaeological excavations in 1986–89.

The longhouse is a rectangular building with curved ends, posts and intermediate posts carrying the roof. If you take away the living quarter at one end and the byre at the other (marked as Room, Exhibition and Byre in Fig. 12) you are left with the hall, the most sacred part of the building. To my mind, this building type, the hall, was simply adopted as a church structure.

Based on archaeological finds, it is difficult to know the height of a building. In this case we discussed two alternatives: with turf or with shingles on the roof. We chose the steeper pitch – the taller building. (Fig. 14) We argued that the chieftain wanted to show off his social position.

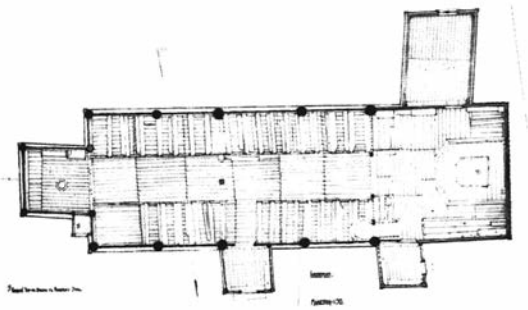
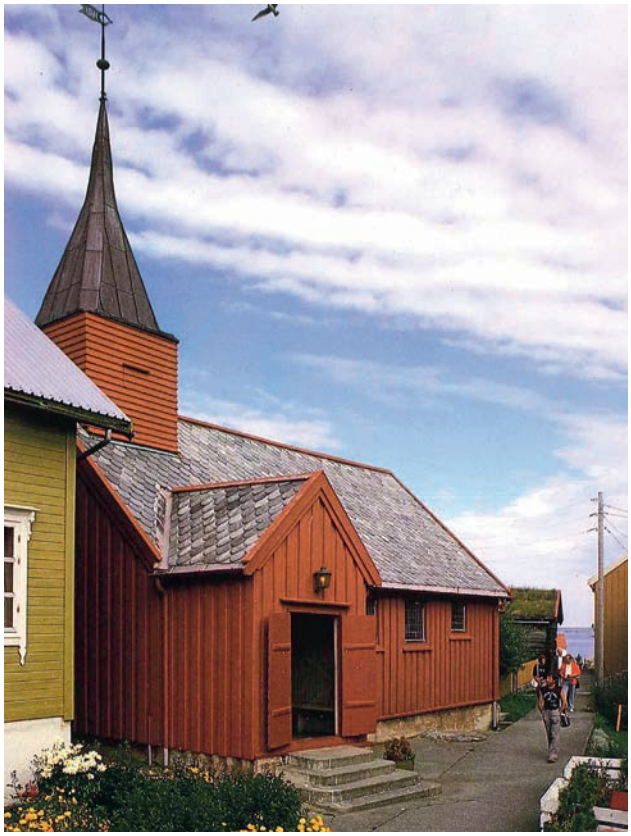
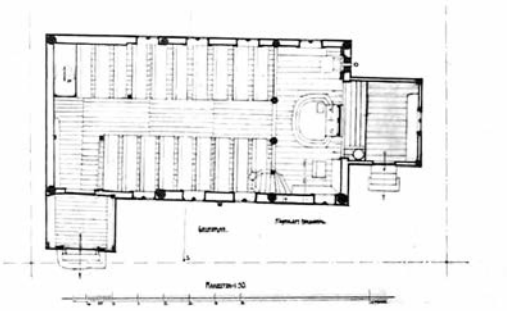


Fig. 9 a–b Kvernes, 1430 (?)–1630, drawing from 1900 (from Storsletten 1997, p. 48)





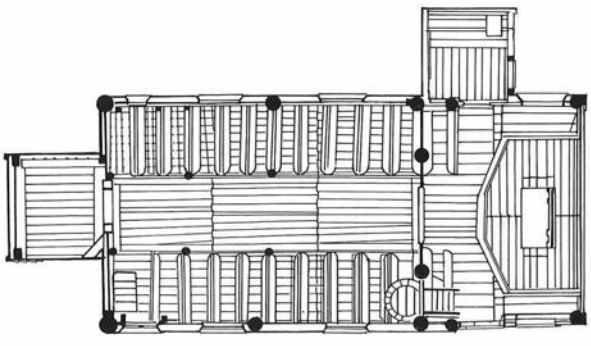
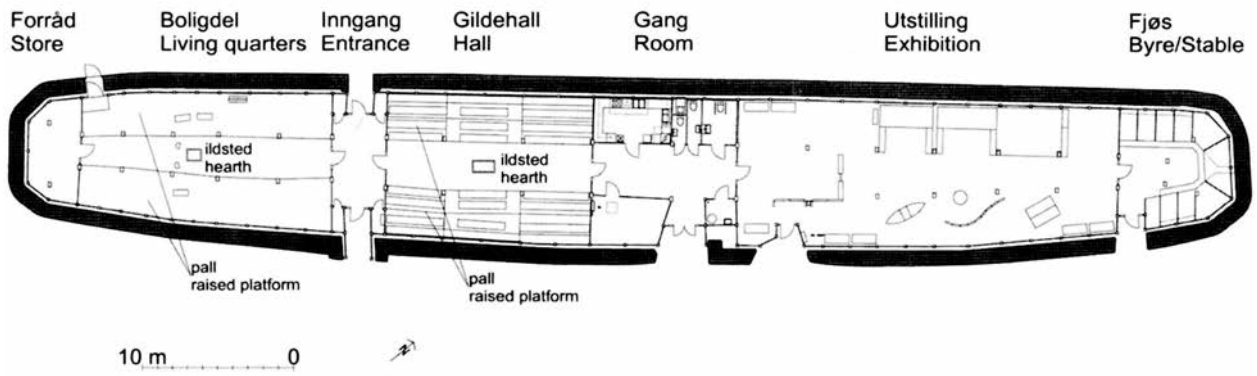


Fig. 10 a–b Grip, 17th century (photo from Storsletten 1997, p. 157), drawing from 1900 (from Anker 2005, p. 326)

Fig. 11 a–b Rödven, 1200 (photo Gisle Jakhelln 2008; plan drawing from Anker 2005, p. 330)



Figs. 12–13 Borg, chieftain's farm of 800 AD, reconstruction of 1995 by Gisle Jakhelln (drawing Gisle Jakhelln, photo Gisle Jakhelln 2004)

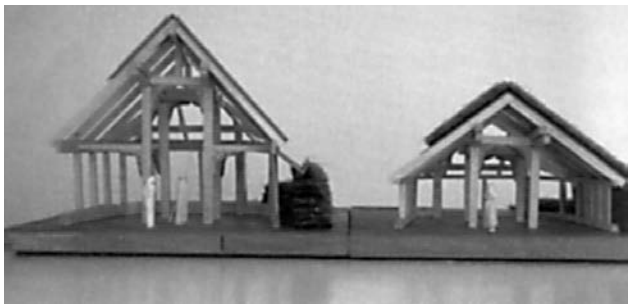
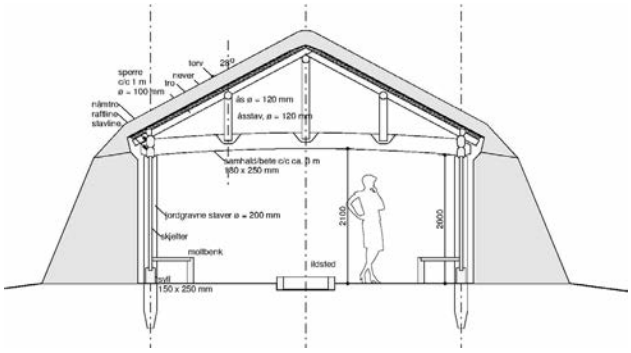


Fig. 14 Borg, high and low models, steep pitch with wood shingles, low pitch with turf

Fig. 15 Trondenes Almenningr, site plan of 2016, museum building in grey in the centre of this site plan, stave church in the southernmost part of the green area, the årestue to the left of the church (drawing architect Jim Myrstad)



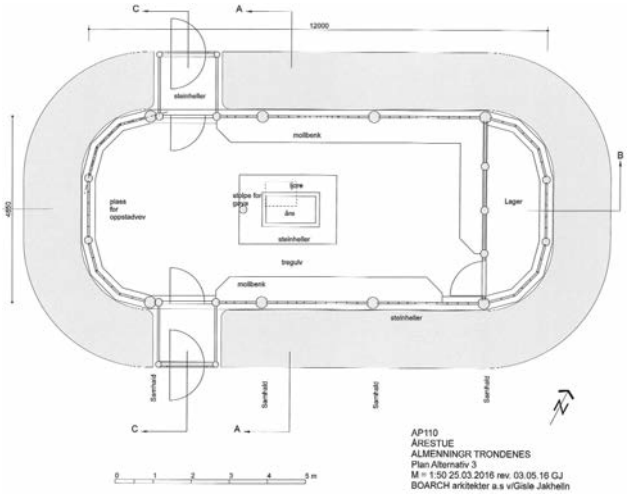


Fig. 16 a–b Reconstruction of an årestue of 1200 to be built at Trondenes Almenningr, section and plan (drawing Gisle Jakhelln 2016)

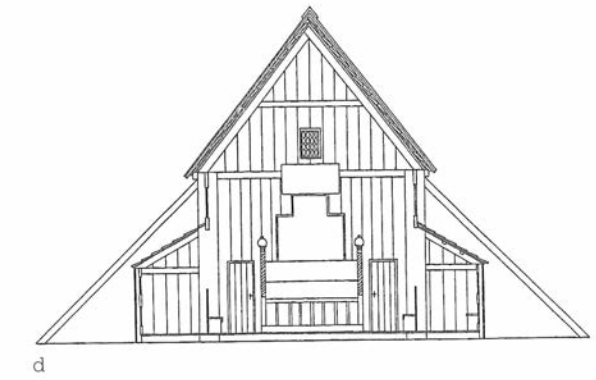


Fig. 17 Hólum Cathedral, Iceland, 1704, stave church (from Hördur Águstsson 1998, p. 203)

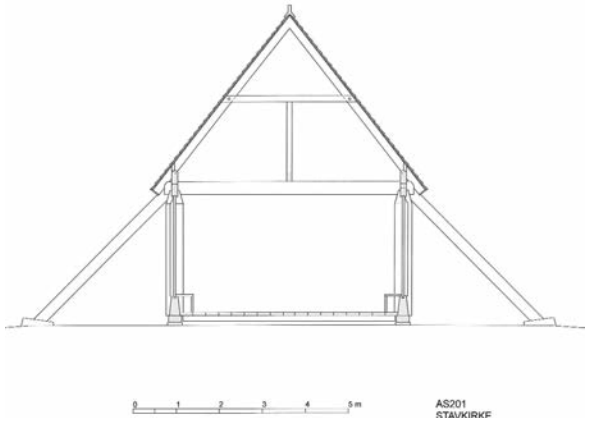


Fig. 18 Trondenes Almenningr, stave church reconstruction of 2016, cross section (drawing Gisle Jakhelln)

Reconstructions at Trondenes Museum

Trondenes Museum is now erecting the first of several buildings planned on the *Almenningr* site to show life in the Middle Ages, i.e. around 1200 (Fig. 15). A house with an open hearth is the first to be constructed. The next will be a stave church, to be built in 2017. The reconstruction of the open hearth building, *årestue*, is based on an excavation showing the posts secured in the ground. The building will have standing posts, turf walls and a turf roof (Fig. 16). The structural system is in many ways similar to the longhouse at Borg, but simpler. The principal members are the corner posts and the intermediate posts, the arcade plate on top of the posts and the tie beams. The roof is carried by rafters resting on purlins. There is no bracing. Stability relies on the sturdy joints and friction between the members. It must be said that the turf walls and the low roof pitch reduce the wind forces – i.e. the horizontal forces. The main construction is based on ancient Northern Norwegian constructions, the *stavline* (stave line).

Reconstruction of a North Norwegian stave church

The section of the Möre-type stave churches shows similar elements to those that I used in the Trondenes *årestue*, apart from a different roof structure. My proposal for a North Norwegian stave church is based on what has been found in the written sources. These indicate strongly that the buildings were of the Möre type with external buttresses. The basic structure of the Möre-type stave churches is the free corner posts, the intermediate posts and the transversal tie-beams. External buttresses are used for the gable walls and for the long walls. Hördur Águstsson has shown that there was a similar use of external buttresses in Iceland, at the Hólum Cathedral, erected in 1704 (Fig. 17).

My proposal for the reconstruction at Trondenes is based on the excavation at Mjölvik, on which I shall comment later. The church room is a small rectangle, 6.7 × 4.8 m. The principal structural elements are the corner posts and intermediate posts (Figs. 18, 19, 20, 21). Buttresses are used to brace the gable walls in the same way as we have seen at Rödven and Kvernes. The entrance is on the south wall.

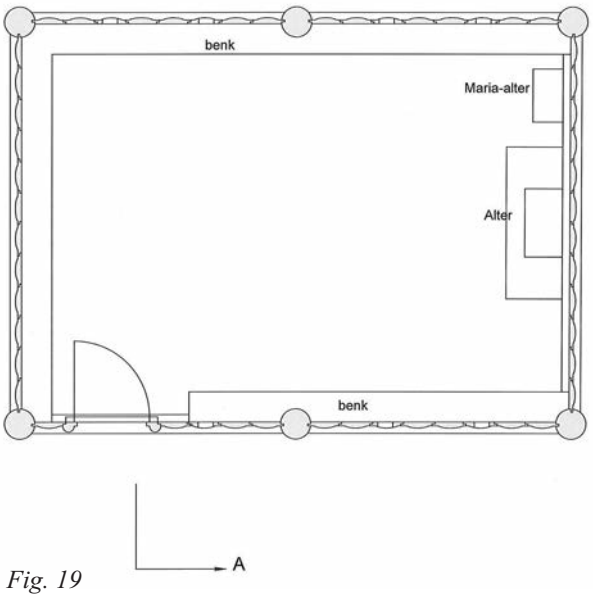


Fig. 19

We know that churches were built without a chancel and with a narrow chancel. I have chosen the alternative with added narrow chancel. The chancel added to the main structure braces the eastern gable (Fig. 22).

The two northernmost sites of medieval churches, Mjölvik and Loppa, (see Fig. 5) have been excavated. These two sites both show small churches which most probably had turf walls and possibly turf roofs. The excavation of 1951–53 at Mjölvik shows a small rectangular church with the altar in a single room, 6.7 × 4.8 m and an added porch of 1.9 × 2.2 m, internal dimensions. There were turf walls on the north and south sides, and a stone wall on the east side. Inside, the walls were of wood.

My alternative proposal for a North Norwegian stave church, if built with turf walls, has the same basic plan as the free standing, un-braced Möre-type church (Fig. 24). However,

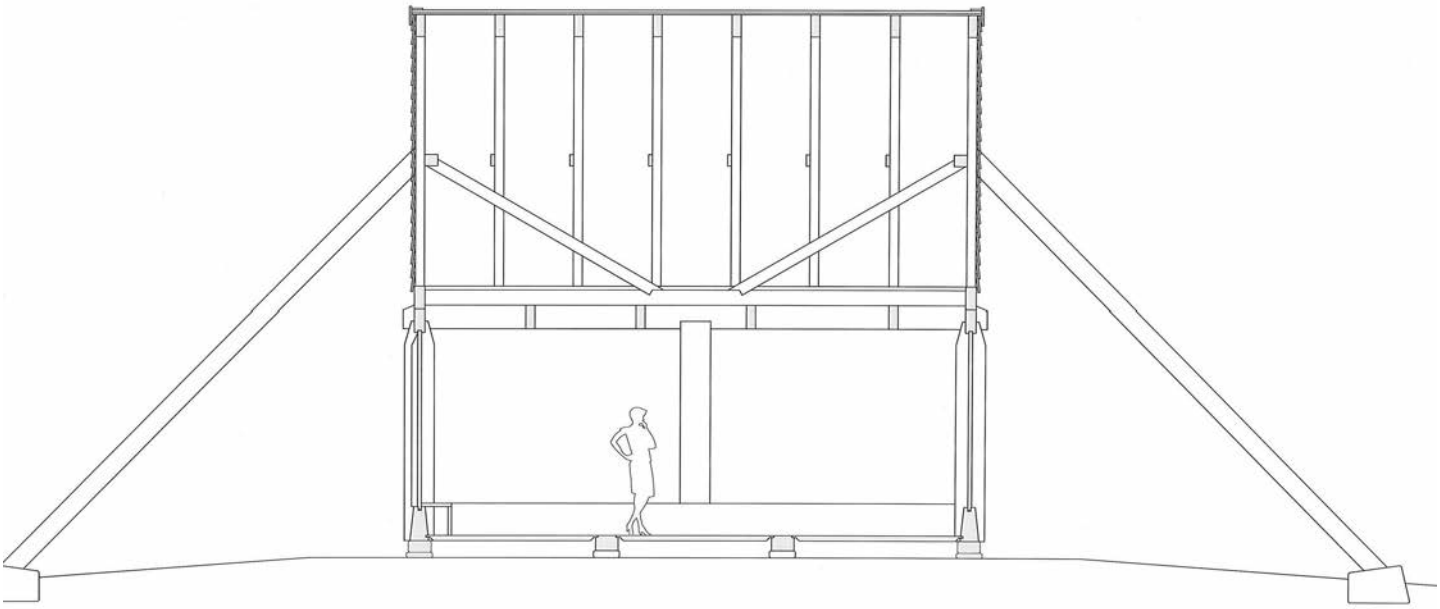


Fig. 20

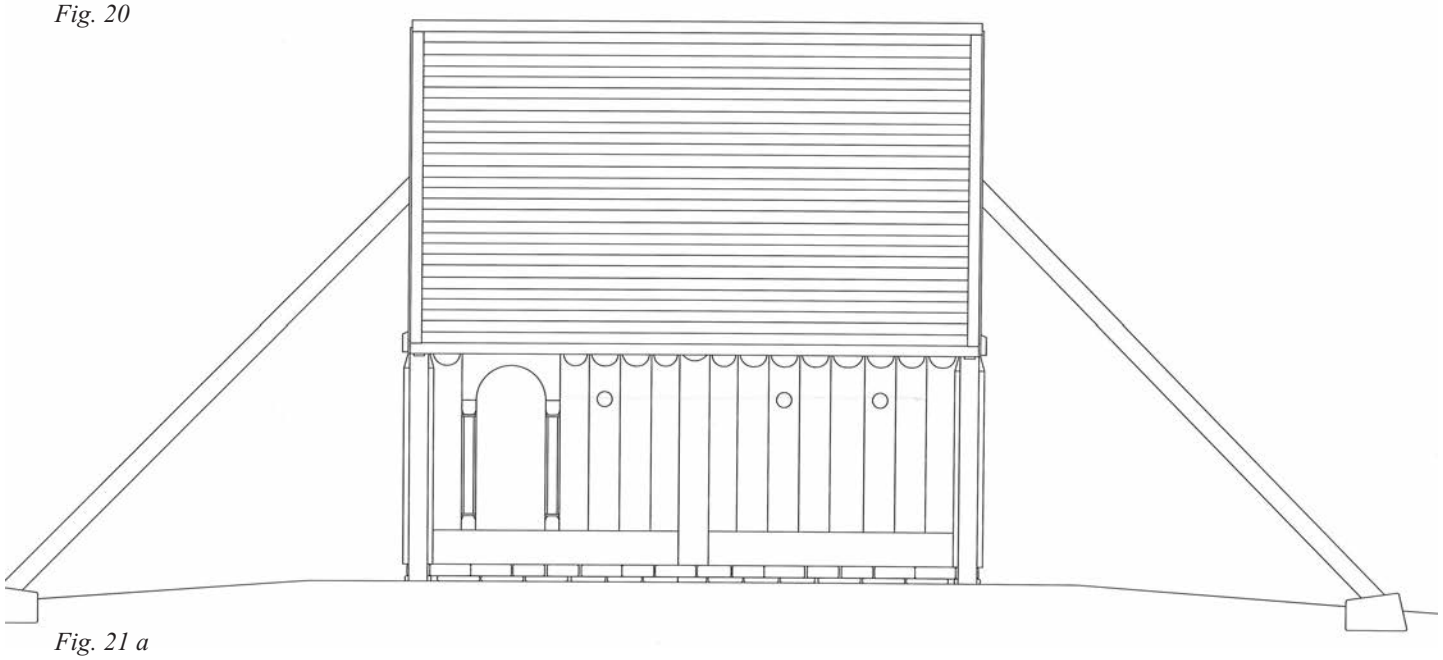


Fig. 21 a

in this alternative I have put the entrance door on the western wall, as in Mjölvik. The timber structure is the same as the stave church proposal (without turf walls). The roof construction is also the same, the roof pitch, however, is lowered to suit the turf covering.
Viðimyri church (Fig. 25) at Skagafjørður in Iceland shows the typical turf church in Iceland.

Three alternative churches

We now have three alternatives for the North Norwegian stave church. For Trondenes, as being part of the museum's presentation, I would recommend alternative 2, i.e. an exposed wooden structure with buttresses (without turf walls or turf roof covering) and with an added chancel.

Conclusion

A reconstruction of this type of stave church built in Northern Norway will improve our understanding of the particular historical identity of Northern Norway. The three remaining churches of the Möre type on the north-western coast of Western Norway represent the southernmost outpost of a much larger area for this type of stave churche, i.e. Northern Norway – and Iceland.
The reconstruction at Trondenes will be a contribution to the scientific discussion and understanding of stave churches in Denmark, Sweden, Norway and Iceland. The discussion shall also examine the importance of architectural expression within a bishopric – Northern Norway, Möre and Iceland all being part of the bishopric of Nidaros – or if the craftsmen had the upper hand in the design of churches.

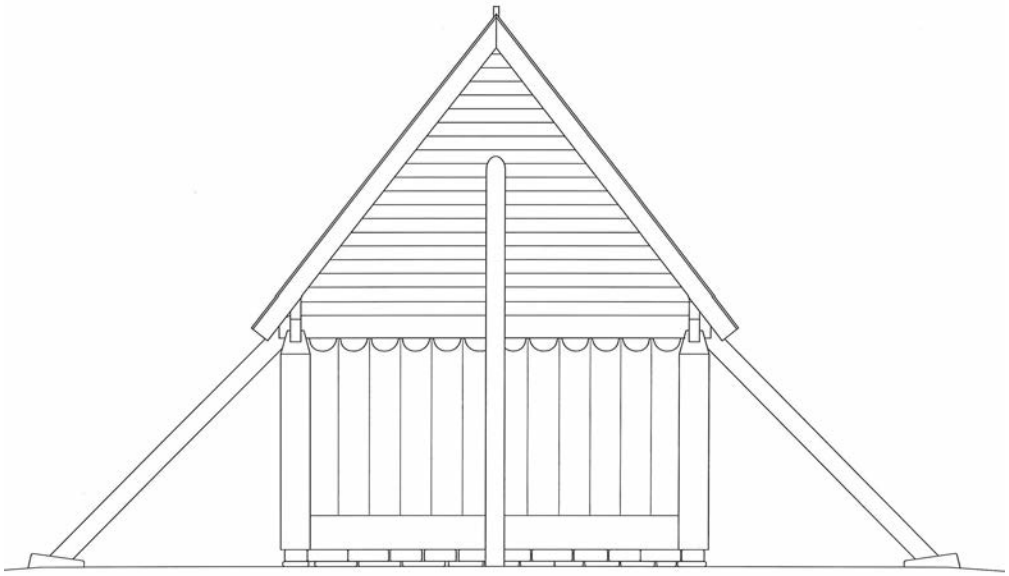


Fig. 21 b

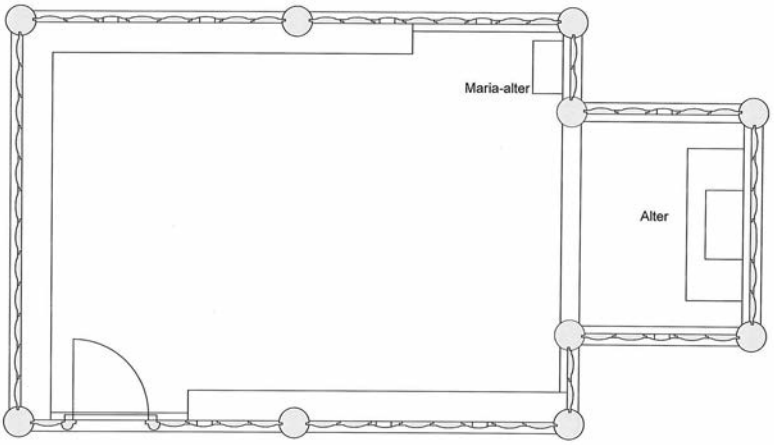


Fig. 22

Fig. 19 Trondenes Almenningr, stave church reconstruction, 2016 (drawing Gisle Jakhelln)
Fig. 20 Trondenes Almenningr, stave church reconstruction, longitudal section, 2016 (drawing Gisle Jakhelln)
Fig. 21 a–b Trondenes Almenningr, stave church reconstruction, elevations, 2016 (drawing Gisle Jakhelln)
Fig. 22 Trondenes Almenningr, stave church reconstruction, with chancel added, 2016 (drawing Gisle Jakhelln)

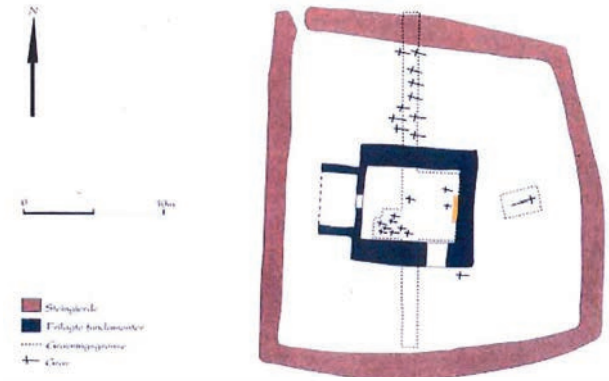


Fig. 23 Mjølvik, Kirkeværet, the church with turf walls, 1450–1475 (from Trædal 2008, p. 409)

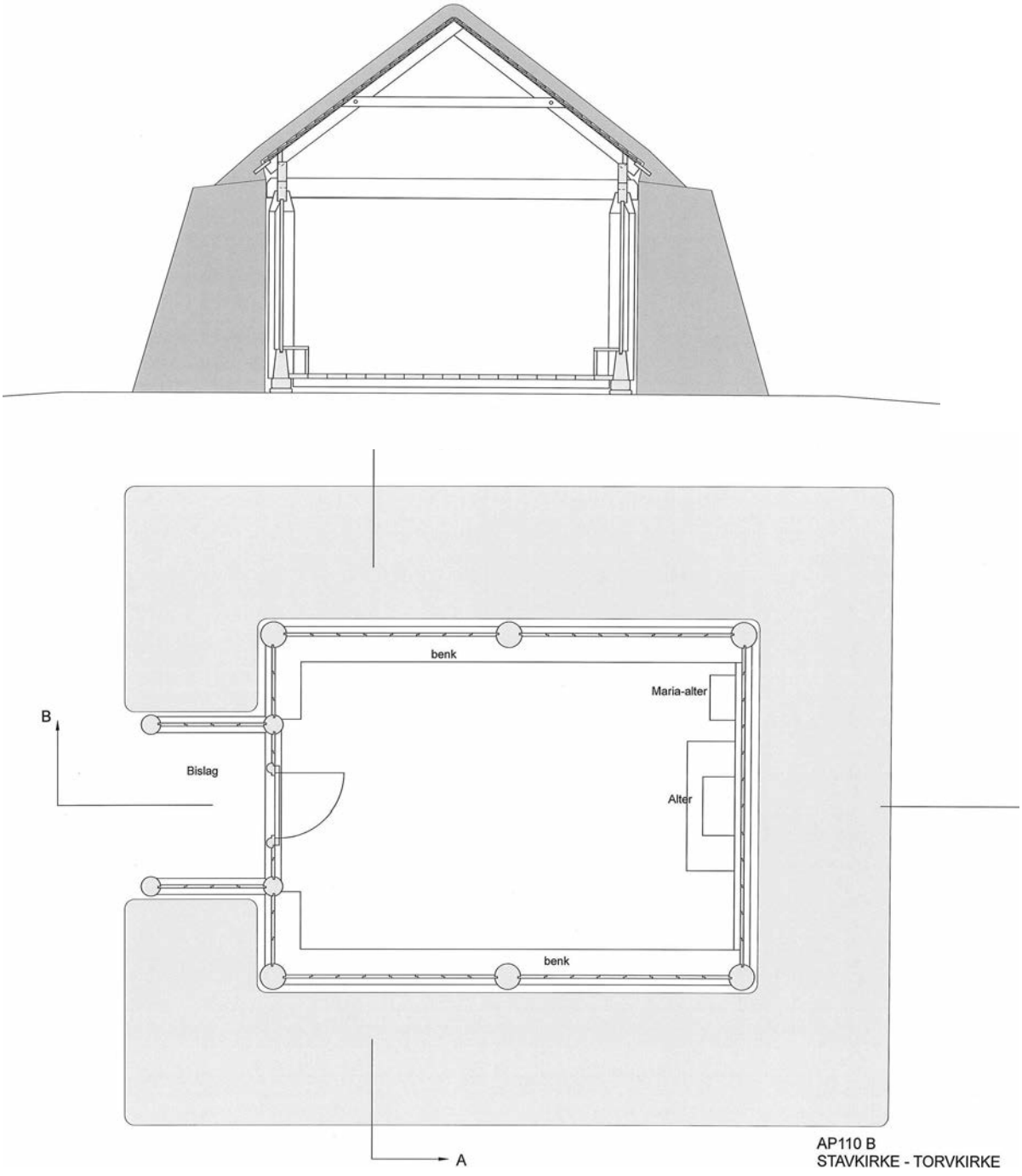


Fig. 24 a–b Trondenes Almenningr, stave church with turf walls, reconstruction, 2016 (Gisle Jakhelln)

Fig. 25 Vidimyri kirke, Skagafjördur, Iceland (photo: Edda)

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Notes

[1] Dietrichson 1988, Ekroll 1994, Ekroll 2012, Hutchinson 1997, Jacobsen 1994, Lind 2003, Simonsen 1980.

[2] Seip 2000, p. 38.

[3] Möre County is situated west of Trondheim, near the city of Kristiansund, see Fig. 4.

[4] Borg is situated on the Lofoten Islands, Nordland County, west of the city of Bodö, marked with arrow in Fig. 1.

The Building Tradition in Russian Karelia and in the East of Northern Norway

Randi Berit Sjølie[1]

Commercial contact and related building tradition across the border in the north

The old building tradition in Northern Norway, in the eastern part of the county of Finnmark, is closely related to the building tradition in Russian Karelia and to the villages around the White Sea. This applies both to village organisation and to the design of the individual houses. It is customary to argue that the reason for this conformity in building practice in the two neighbouring countries is the intensive trade relations between the two regions in the past. The so-called Pomor trade lasted from the 1700s until 1920, when the border was closed. Norway and Russia have a common borderline in the north, and the tradition here has been open borders.

The northern part of Norway was supplied with building materials, flour and other household necessities, while the Russians received fish in return. Many houses in the eastern part of the county of Finnmark are made of "Russian logs" and the roofs are thatched with Russian birch bark. This trade was extremely important for our ancestors in Northern Norway. This part of our country naturally has only small forest resources, while the Russian side in the White Sea and Karelia have huge areas covered with conifers. Major waterways from the south to the north in Russia also made it easier to supply Norway with goods one could not obtain otherwise. In the spring, when the ice in the White Sea and the rivers broke, the Russian merchants set out in their boats for the Norwegian coast. Some Norwegian merchants sent their sons to Arkhangelsk to learn business acumen and create contacts. Russian fishermen were also authorised by the Norwegian authorities to engage in fishing in some places on the coast of Northern Norway.

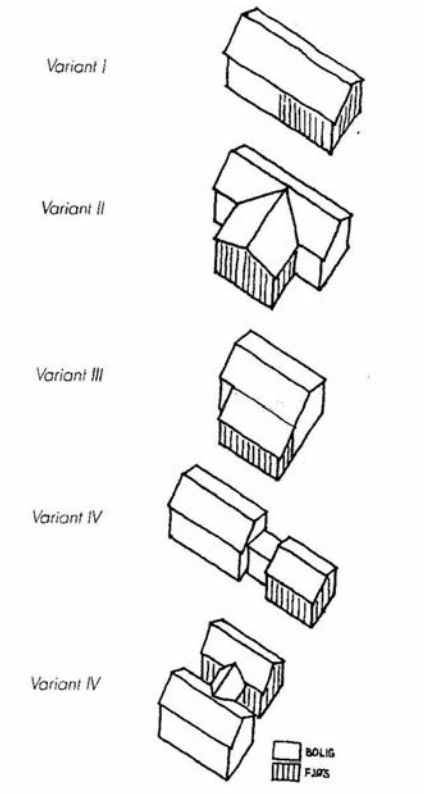
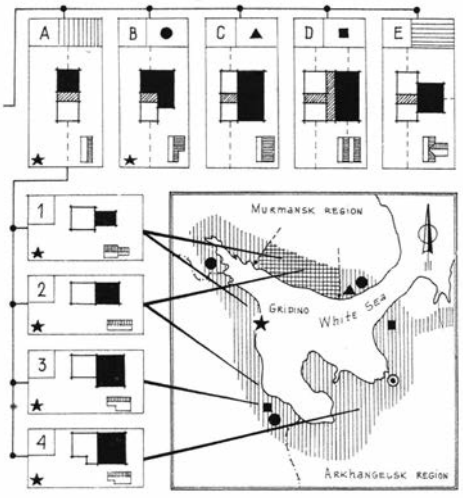


Fig. 1 Multifunction houses in Varanger, Norway (Bratrein 1980)

Fig. 2 Multifunction houses in the White Sea, Russia (Medvedjev, P. 1992)



Village patterns

The settlements were built in the form of villages. The villages consisted of family houses with barns, quays with boathouses and saunas, and common buildings like schools, church with churchyard, shops. There are two main types of village patterns in these areas: properties with their corresponding houses arranged in a row along the river, the seaside or the road; and the other with individual properties placed together in unorganised groups.

Multifunction houses

The old buildings are mostly small houses with one storey and built of logs.
This special type of individual houses is called multifunction houses, where the living space and the area for the livestock are in one building. This has given rise to the question why these buildings were designed like that. The harsh climate of the north has been cited as an important reason. People did not have to go outside to get to their livestock. When the border between Norway and Russia became more open again in the 1980s, we could visit colleagues and many villages in Russia and thus study the architecture there. We discovered that most of the villages in the northeast of Russia were based on the multifunction house architecture. Our Russian colleagues said their ancestors got their inspiration for this building type from further down south.
The multifunction house is known elsewhere in Europe, but in Norway this design has only been in use in the northeast of the country, close to the Russian border. The details of the design of the houses are different in Finnmark and in Karelia. Most striking perhaps is that the houses in Karelia are larger and more robust and are built of round timber. Details in the front design, the timber joint and the stove model are also different.

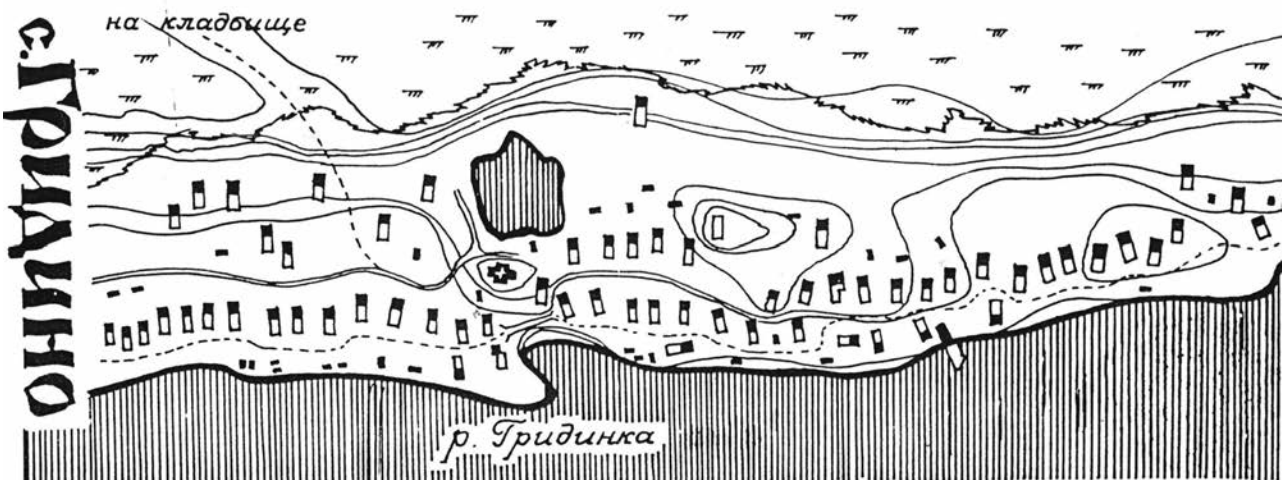
Norwegian multifunction houses
Norwegian scientists have done research on this topic and have found that the design of these old houses can be divided into four different models, I, II, III and IV. These models are connected to how the houses are oriented in the village and how they are assembled (Fig. 1). Model II is the most common in Norway. The living quarters of the houses are built according to the style or the financial resources of the builder, with two, three or four rooms (Fig. 2).

Russian multifunction houses
The most common way for these houses is model I. The drawings by the Russian researchers show how this model was varied in many different models. The living space of these houses has more rooms than those on the Norwegian side, perhaps four or five. The outside is designed to show the size of the interior. The design of the fireplaces is different; they consist of large stone volumes with more openings in the same furnace.

Fig. 3 Multifunction house in Varanger, Norway (Sjølie 2005), torn down in 2005 without permission
Fig. 4 Multifunction house in Varanger, built 1950 (Sjølie 1995); permission to demolish given in 2014, but the house is still standing.
Fig. 5 Multifunction house in Njutcha, White Sea, Russia (Sjølie 2014)

The building legacy is threatened

Both on the Norwegian and the Russian sides, we are facing major challenges in taking care of these historic building traditions. Due to the end of small-scale agriculture and the centralisation of the population on both sides of the border there is no need any longer for these multifunction houses.



On the Norwegian side, the barn part of most of these houses is converted into bathrooms or is torn down, or houses and whole villages are abandoned. Mass registration of the building heritage on the Norwegian side in the 1970s led to research on this heritage. The Museum of Varanger has now started preparing an exhibition on these houses.

The multifunction houses in the Karelian villages are still largely intact and inhabited all year or only in the summer, but owners usually have too little funds to take care of the houses. Russian researchers have done a huge job on this building heritage, but results are not available to us because of the language. It appears to us Norwegian researchers when we visit the Russian side that skilled craftsmen and building material suppliers are rare resources. It seems that the utilisation of the great forest resources in Karelia has stalled and that the economy is in a deadlock. The communities there face a major challenge in protecting the buildings and providing better housing standards for the villagers as well. Through a joint project between the EU, Finland and Russia the Karelian village of Paanajärvi received funds and the Europa Nostra Award in 2005. Other villages would like to take part in this contact and fundraising across the borders. Perhaps Norwegian partners could join in and help?

A joint research project in the 1990s between colleagues from Norway, Russia and Finland focused on the common architectural heritage in these northern areas, but the material has unfortunately not yet been published.

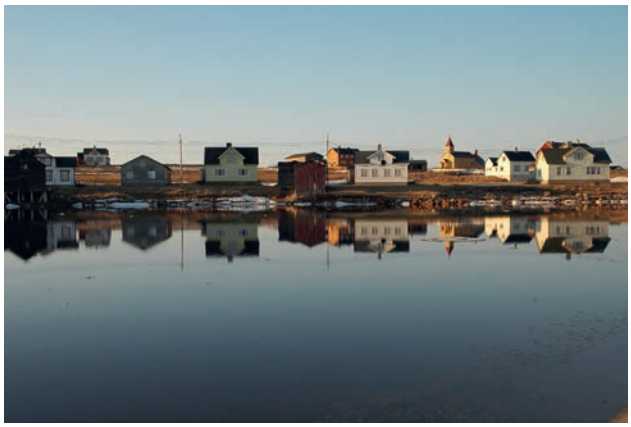


Fig. 6 Village of Gridino in the White Sea, Russia, 1992
Fig. 7 Multifunction houses in Gridino, White Sea, Russia (Sjølie 2014)
Fig. 8 Village of Skallelv in Varanger, Norway (Sjølie 2006)

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Own travels and studies in the area

[1] Retired senior advisor of the Sami Parliament of Norway.

Renewable Energy Optimisation for Vernacular Settlements

Marwa Dabaieh

Abstract

Vernacular architecture is the outcome of accumulative efforts to sustain energy-efficient building traditions, using scarce resources in a strictly sustainable manner. Desert vernacular is not only an example of climatic building performance. It is a model for cost-efficient traditional building practice, intelligence in coping with material availability and for respecting local cultural traditions. This study analyses the energy performance of desert vernacular building and discusses several vernacular building traditions and construction techniques ending in a vernacular building form that is carbon neutral. The analysis also shows that vernacular retrofitting with renewable sources can be one way of preserving vernacular heritage from demolition for the sake of new modern facilities. Existing vernacular buildings still possess climatic solutions that can help move the energy performance of buildings towards a contemporary energy-efficient vernacular building model. The building performance of vernacular buildings can even out-perform the current agreed definitions for zero carbon buildings (ZCBs) when retrofitted with renewable energy sources for building operations.

1. Introduction

In recent years, in the face of the risk of global warming and climate change, reduction in energy consumption along with sustainable design and development have become a priority for many countries (Crawford, 2011). There has been a dependency on energy-consuming technology during the last decade in the form of heating, cooling, ventilation and lighting systems to achieve human comfort in buildings (Hootman, 2013). It is argued that the emerging world's energy and environmental crisis demands a substantial revolt in building design strategies, technologies and construction methods (Wines and Jodidio, 2000). As green building practices become more commonplace in the global building construction industry (Hootman, 2013), the goal of designing zero energy buildings (ZEBs) and zero carbon buildings (ZCBs), or buildings with zero energy consumption and zero carbon emissions annually, has emerged as the future cutting edge of building technology (Allan, 2013; Herring, 2012). Zero-energy designs are becoming more sensible to implement because of the rapid increase of non-renewable fuel prices and their harmful effect on the earth's ecological balance and climate (Heinberg and Lerch (red.), 2010). Many countries in the Middle East and North Africa (MENA) are in an energy crisis (Visser et al., 2013); so reducing energy use, especially during building operations, is becoming an increasingly important issue. Despite this fact, there is still a tendency to disregard energy-saving principles.

The majority of our contemporary buildings in Egypt depend on fossil fuel energy sources over the entire life of the building, due to a reliance on mechanical means to control the indoor comfort. We cannot reject what modern technology provides to ensure a better building climate, especially since we are experiencing a mounting increase in comfort standards. Ver-

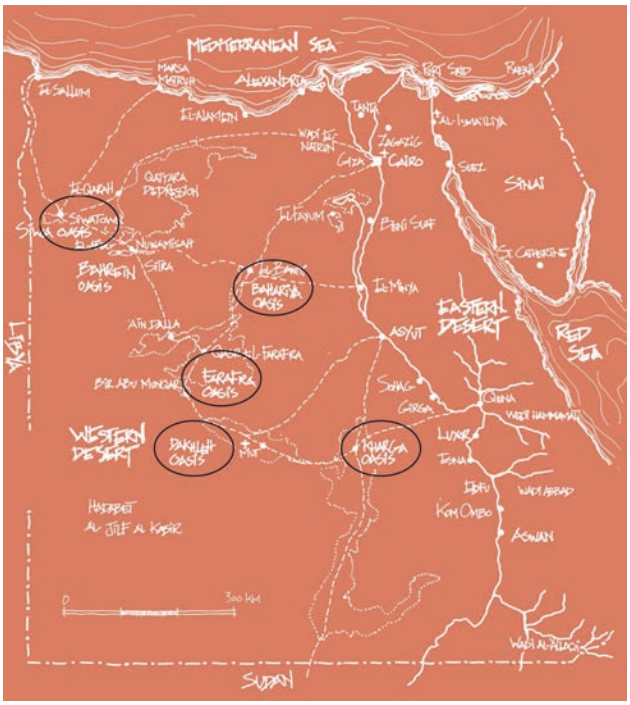

Fig. 1 Edited map showing the location of the five desert oases used as case locations for the purpose of this study

Fig. 2 An overview of earthen building typologies in the Western Desert

nacular architecture in Egypt succeeded in providing energy-efficient solutions by natural means for many hundreds of years (Fathy, 1986). Our understanding of vernacular architectural features to compensate for the current challenges and adverse climatic conditions is now being ignored and is thus in danger of being forgotten, as it is neither being employed nor developed (Dabaieh, 2013a). This has instigated the present study, which looks at a specific type of vernacular building, desert vernacular. It reviews how energy efficiency and thermal comfort were achieved in desert vernacular architecture of the Western Desert of Egypt. It examines how locals have adapted their dwellings to meet their need for comfort and respond to the given climate conditions, merging these elements into a minimalist energy-efficient architectural application. In addition, the study shows how the possibility of retrofitting vernacular buildings with renewable energy can help vernacular structures meet ZCB standards. Retrofitting could also help reduce the rate of abandonment and demolition of existing vernacular heritage buildings which are currently being replaced with ill-adapted industrial buildings.

1.1 Desert vernacular, a sustainable building practice

Desert vernacular architecture is known and recognised for its practical, effective, sustainable, and responsive building outcomes (Supic, 1982; Vefik Alp, 1991). In the past, locals had to depend on a number of creative indigenous techniques to optimise people's comfort in buildings' interior spaces for their desert climate (Vefik Alp, 1991). Desert vernacular architecture and construction designs are based on accumulative experience in responding to human needs within harsh climatic conditions (Al-Hinai et al., 1993). Over the years, desert vernacular architecture in Egypt passed through processes of trial, error, reflection and new trials that took climate, physical landscape and cultural practices into consideration (Fathy, 1986). Through these processes optimal solutions for a sustainable built environment were developed that achieved the lowest levels of energy consumption possible (Fathy, 1986). Dwellers in desert oasis communities could appear to outsiders to have no vision for their life in the future. It might seem that they only consider it important to respond to tradition or to their basic needs and their desire for self-sufficiency. Desert dwellers do in fact often respond to their current needs in traditional ways. However, they are also conscious about the future as they develop logical solutions, especially in regard to their comfort inside their dwellings (Dabaieh and Eybye, 2016).

Inhabitants designing and constructing desert vernacular buildings have for a long time tended to adapt their dwellings to the tough and harsh desert climate conditions. The sustainability of desert vernacular is mainly about managing the balance between preservation and use (Dabaieh, 2015). Desert vernacular dwellers show multiple layers of wisdom in their minimal use of limited local materials, reduced waste of such resources, and an ability to be inspired by forms from nature (Dabaieh, 2013b). In addition, from an economic point of view, such local building materials are almost cost-free, as locals use wood trees and palm trees growing on their farmlands, and cast mud bricks for which earth from their surroundings is used. People build their own dwellings, so there are almost no labour costs involved (Dabaieh, 2011; Schijns et al., 2008). Generally, almost no waste products are produced from the building construction process. Due to the shortage of natural resources and raw materials in the desert, inhabitants tend to appreciate opportunities to develop creative ideas and solutions that maximise the use of the scarce available resources. They tend to use any by-products

of building materials in their daily activities (Dabaieh and Eybye, 2016).

1.2 Carbon neutrality in vernacular practice

A net zero carbon or carbon-neutral building is a building that causes no increase in CO_2 emissions (La Roche, 2012). There are considerable carbon emissions involved in the extraction, manufacturing, and transportation of building materials, as well as in the physical construction of the building (Allan, 2013). Considerable amounts of carbon are also emitted during the operation of buildings itself. On the other hand, carbon-neutral buildings operate without fossil fuel GHG emitting energy (Allan, 2013). Building operations include heating, cooling and lighting. Vernacular buildings also used to perform without the use of fossil fuels. Without using electricity, vernacular buildings can be categorised as dark green buildings, meaning that they are self-sufficient buildings in terms of energy, if calculated over an annual cycle, as they are constructed without any harmful substances and there is no harmful waste going to a landfill after demolition. The strategies executed since ancient times to ensure comfortable living spaces in vernacular buildings were simple, affordable, and not fuel-dependant (Chiras, 2002).

Energy saving design strategies and applications in desert vernacular buildings are mainly dependant on passive cooling and heating techniques, together with non-energy-consuming strategies for ventilation and lighting (Fathy, 1986). These strategies consequently create numerous varieties of solutions for applying passive and low-energy sustainable applications. Some key passive strategies are proper solar orientation and thermal mass; e.g. thick mud brick walls, passive cooling through cross ventilation and compact urban structure to provide shade and reduce heat gain (Dabaieh, 2013a). Construction techniques using available local materials decrease the processing energy and transportation costs of building materials (Gado et al., 2010). Thus, the building outcomes are less energy-demanding and more environmentally friendly. In the Western Desert of Egypt some vernacular buildings are still inhabited and there are significant architectural and urban models of environmental lessons for ZCBs that they still can provide. For contemporary vernacular, such targets can be accomplished by implementing innovative sustainable design strategies and generating on-site renewable power for electricity.

2. Methodology

The five main desert oases in Egypt, Siwa, Dakhla, Kharga, Farafrah, and Baharia, were investigated in this research. The field work was carried out in sequence along several visits between 2010 and 2015. This study focused mainly on the cases selected from Siwa and Baharia due to their relevance to Photo Voltaic (PV) retrofitting. Two main procedures were applied: first, an in-situ survey for ten vernacular building samples in the Western Desert of Egypt, two in each oasis, and second, an analysis of the effect of retrofitting with renewable energy. Mainly a roof top PV system was researched in two of the case buildings, one in Siwa and one in Baharia. The aim of the methodology was to discover the underlying climate responsive and zero carbon strategies conceived in desert vernacular architecture and to analyse the building characteristics and environmental passive solutions applied. In addition, it aimed to look at vernacular passive solutions and how they can be combined with PV retrofitting to reach a better building performance for ZCB practice. A qualitative lab test was conducted for the thermal properties of the main earth building material (mud bricks). The outcome of the lab test was used in the analysis of the building performance.

3. Results and Discussion

3.1 Thermal performance and passive adaption in vernacular buildings

The climatic effectiveness of vernacular solutions has always been questioned, as it is also a reflection of cultural specificities (e.g. Givoni, 1994). Site investigations revealed that vernacular buildings show the application of three main climatic adaption strategies: thermal mass, solar radiation control and night ventilation. Such strategies are the key to improving energy efficiency in buildings. It is a fact that thick mud brick walls have thermal inertia; therefore, the building envelope is protected from external temperature peaks both during summer and winter. Lab tests of 30 cm thick brick samples show a low thermal conductivity (~0.5Wm-IK -1), but a high thermal storage capacity (cond. coeff< 0.69 W/InK). According to Al-Hinai et.al's (1993) study on mud brick for desert vernacular settlements in Oman, thick mud brick walls help reduce solar gains and nocturnal heat losses and so stabilise the temperatures within houses, despite the large diurnal-nocturnal temperature fluctuations to which they are exposed. In winter, thick mud brick walls store and transmit some of the solar energy from the day and release it during the night and in the early morning hours in order to heat the internal spaces. Al-Hinai et. al add that this desirable behaviour is due to the long thermal-signal time lag (~ 12 h) produced by the thick mud brick walls. However, this heat absorption phenomenon causes problems in summer. As explained by Givoni (1998) and Meier et al. (2004), the extreme thermal inertia of traditional architecture in hot-dry climates averts the nocturnal cooling of the houses and leads to indoor discomfort at night. From site investigations, it was also observed that dwellers tend to open north-facing windows to get rid of trapped heat that is transmitted and released by the walls to the interior of the house during evenings (see Fig. 3). This cross-ventilation method allows cool air to enter using the summer night flush cooling effect. Locals also use ingenious systems for air traps; for example, having a courtyard or a wind catcher, wind scoops and staircase shafts. Mingozzi et al. (2009) explained the phenomenon that in summer the building mass mitigates the sun-air impact during the hottest hours as it captures and stores heat, which can be dispelled at night using cross ventilation. From site surveys, it was also observed that desert vernacular architecture depends on vegetation to modify the micro-climate. As explained by Al-Hinai et al. (1993), the transpiration processes

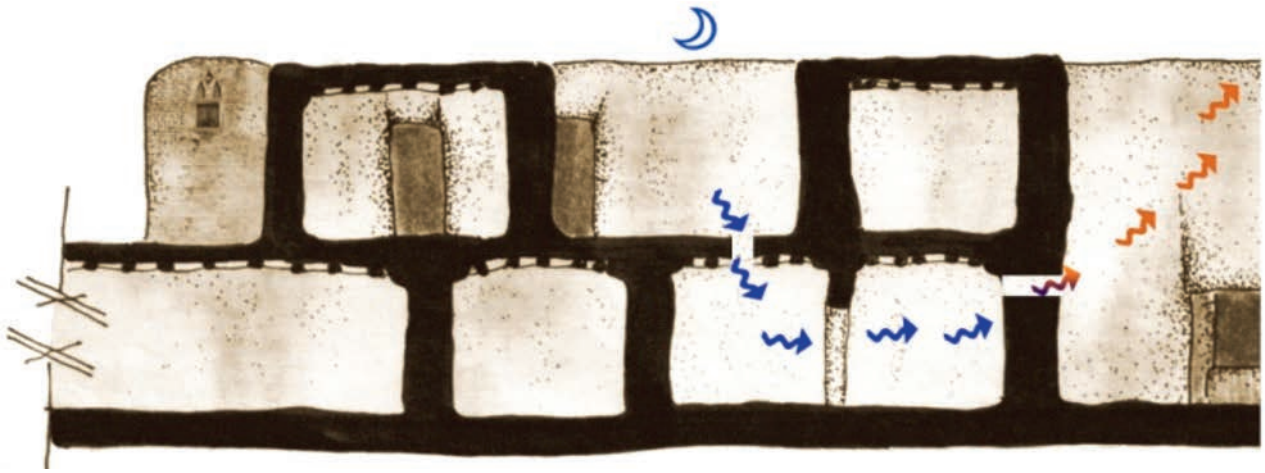

Fig. 3 Cross section of one of the houses explains night cooling using "night flush-out". Cool outdoor air is introduced into the building at night to allow the interior to pre-cool for the next day. Occupants have to open and close windows when needed. It is most effective as thermal mass helps store cool air for the next day.

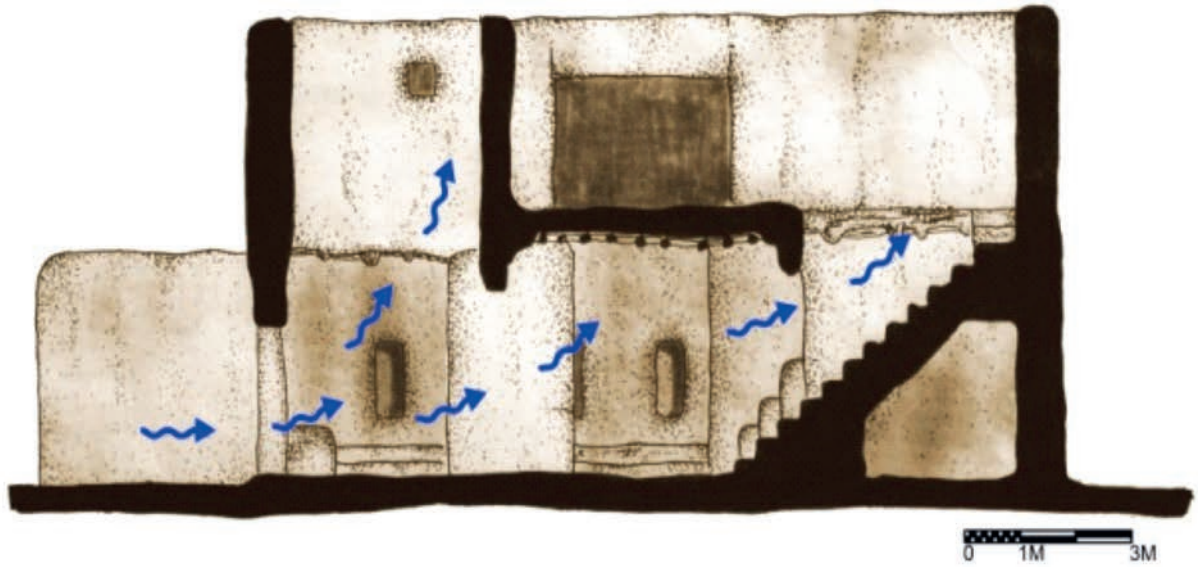

Fig. 4 Cross section explains cross ventilation using high and low openings on opposite facades overlooking courtyards. These openings create stack air flow and differences in air circulation speeds and air movement inside the spaces.

of plants help condition air streams by increasing the moisture content in the air before it reaches houses. Banana trees and palms are planted in small courtyard gardens in between clustered buildings, serving as channels for relatively cool air from the gardens to the houses. They provide shade and reduce the intensity of wind, especially during sandy seasonal windstorms (see Fig. 4).

The main skeleton of the buildings is earth, which is the main building material used in the oases. Inhabitants can recycle earth easily, either re-using old earth blocks as building material or returning them to the soil for use as planting medium. Fathy (1986, 1973) mentions that earth has the ability to conserve energy, provide thermal insulation, store heat, and stabilise indoor temperatures when used as building material. Bourdier and Trinh (2011) state that earthen walls can absorb excess humidity as well. Fathy (1986) explains that vernacular earthen interiors remain cool during the day and release warmth at night, the opposite of concrete, a material that unbearably traps and holds high temperatures in Egypt's hot climates. In a similar study on sun-dried brick used in desert vernacular buildings, mud bricks were shown to have a low heat conductivity and a high-energy storage capacity as they allow as much as 80% of the outside heat to be absorbed and only 20% transmitted inside (Vefik Alp 1991).

3.2 Vernacular buildings and low carbon building practices

In ancient times and even up until recently on a limited basis, animal manure and dry compost from toilets were shaped into pie-like forms and left to dry in the sun. They were used as bio fuel for ovens, for both cooking and heating in wintertime. This was one main source of energy production. To calculate the exact energy consumption, a two-floor 75 square metre sample house representing a typical average house size

Fig. 5 Al Gara village in Siwa after retrofitting one of its vernacular buildings with PV systems for electricity production (photo: Nahla Makhlouf)

in the Western Desert area was selected. Calculations are supported by household consumption recorded in monthly electrical bills. Average energy bills for 2014 and 2015 were used together with the equation below to calculate the total energy consumption and they were compared for accuracy.

(Wattage × Hours Used Per Day) ÷ 1000 = Daily Kilowatt-hour (kWh) consumption (1)

Equation (1) was used to calculate household energy consumption. The result of the calculations was that the house's average energy consumption was 77 kWh/m² per year, which is less than the passive house standard or low-energy house standard. This is due to the fact that the cooling and heating is mainly dependant on passive methods. The electricity needed is mainly for electric devices and for night lighting. Such a small amount of energy can be powered by roof-top domestic PV systems without occupying a large portion of the roof area, which is normally used for grain storage and chicken coops in vernacular buildings. One successful pilot project was implemented at El Gara in Siwa and El Heiz in Baharia. Both are off-grid villages where vernacular buildings were retrofitted with PV systems (see Fig. 5). The pilot trial project showed a direct impact on dwellers' satisfaction and appreciation of having access to electricity. Some of the village dwellers show an interest in leaving the village, especially younger generations. They tend to live in new houses with industrially fired bricks and cement due to a lack of access to electricity. PV retrofitting could be an important factor in reducing the number of deserted vernacular settlements. However, there is still widespread concern about the visual impact of PV panels, especially if applied on listed vernacular buildings, which is the case for the majority of vernacular towns and villages in the Western Desert. Smart interventions are needed to place the panels in discreet locations, for example by hiding them behind roof parapets.

4. Conclusion

The results of this study show that vernacular creative passive strategies combined with active retrofitting solutions using renewables for energy production can act beyond the common standards of zero carbon and passive buildings. Vernacular structures in their current state do not appeal to village dwellers; however, retrofitting old structures could reduce the rate of abandonment for modern facilities or demolition and sometimes vandalism of vernacular buildings. In order to avoid overestimated results, further quantitative research using energy monitoring is needed to verify the passive energy-efficient strategies and vernacular building performance outcomes explained in this study.

Acknowledgement

I would like to thank the Royal Physiographic Society of Lund for the travel fund to attend the CIAV 2016 conference and scientific committee annual meeting. This study is part of post-doc research sponsored by the Axel and Margaret Ax:son Johnson Foundation.

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Fire-resistance Improvement of Vernacular Timber Architecture in a Historical Dong Village in China: A Case Study in Dali

Fei Du[1] and Kenji Okazaki[2]

Abstract

The Dong villages represent villages in the cultural landscape of Chinese ethnic minorities. However, these Dong villages have timber buildings in a compact layout that is highly vulnerable to fire accidents. Thus, the aim of this study is to investigate the activities of the local people in Dali Village regarding the improvement of their buildings' fire-resistance. Without sufficient firefighting water resources and facilities, the village of Dali shows the typical vulnerabilities of Dong villages to fire accidents. Moreover, the traditional cooking space and old electrical wiring aggravate the fire risk.

The conclusions are as follows. Firstly, the local government replaced the aged electrical wiring and transformed the traditional ground oven into a brick oven, which reduced the fire risk from the local people's perspective. However, our investigation did not consider it to be fully effective. 84% of the households surveyed still use a ground oven because the brick oven is too big for the needs of most families. In addition, 36% still have timber walls surrounding the brick ovens. Secondly, 21% of the households have only replaced the first storeys of their timber buildings with brick or concrete; 79% have not conducted any fire-resistance improvement. From the perspective of the local people, the main reasons for their limited improvement activities can be attributed to insufficient financial capacity and lack of technical knowledge on fire-resistance building improvement. On the whole, the fire-resistance improvement activities in Dali Village are limited.

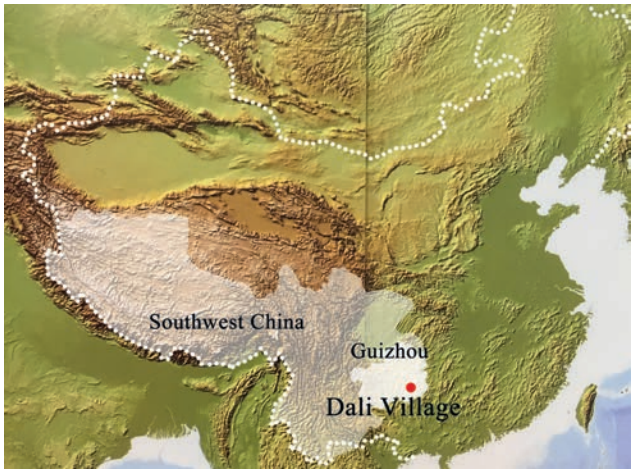

Fig. 1 (a) The location of Dali Dong village (The maps were redrawn with reference to [24])

1. Introduction

1.1 Research background

The Dong ethnic minority, which is the 12th largest ethnic minority in China in terms of population, lives mainly in the mountainous area of Southwest China. Twenty Dong villages encompassing the settlements with cultural traditions of the Dong ethnic minority have been included in the Tentative List of properties for consideration of being nominated to the World Heritage List because of their Outstanding Universal Value [1]. However, these Dong villages are extremely prone to fire due to the compact layout of their timber buildings. Among the 33 major fire accidents which occurred in historical villages in China during the last two decades, 25 fire accidents happened in Dong villages [2]. Moreover, one was in one of the Dong villages on the World Heritage Tentative List, while others were in registered Chinese historical villages. The fires caused not only the loss of cherished historical buildings and landscapes, but also considerably disrupted the communities' socio-cultural environment. Therefore, it can be said that fire-resistance improvement of vernacular timber architecture in a historical Dong village is an urgent topic.

1.2 Research purpose and objectives

The aim of this study is to clarify the activities of the local government and the local people regarding fire-resistance building improvement in the typical Dong village of Dali, which is one of 20 Dong villages on China's World Heritage Tentative List. The research aims to contribute to extracting specifically targeted countermeasures for fire-resistance enhancement.

1.3 Previous studies and positioning of this research

The fire protection of historical buildings is an established research topic [3, 4, 5, 6]. A number of studies focused on the enhancement of timber architecture fire-resistance, for

Fig. 1 (b) Dali Village

instance, the fire-retardant treatment on timber facades, pillars and beams; fire-resistant coating on roofs and eaves; and the section and structural node design and technique [7, 8, 9]. Some studies focused on fire protection facilities and the improvement of the equipment, for instance, the installation and maintenance of automatic fire alarm systems, automatic spray, firefighting hydrant, sprinkling fire extinguishing systems, etc [10, 11].

Researchers have also paid attention to the fire protection of the Miao and Dong villages. Some discussed indigenous knowledge of traditional firefighting water systems [18, 2, 17, 19, 20]. Other studies analysed the vulnerabilities, such as the remarkably low fire-resistant compact wooden buildings without fire compartmentalisation, the traditional use of firewood, the aged electrical wiring system, the insufficient firefighting water resources, the insufficient firefighting facilities, etc [2, 12, 13, 14, 18, 19, 21, 22]. Some studies proposed fire countermeasures, improving the infrastructure and firefighting facilities, and enhancing the fire resistance of traditional wooden buildings [12, 13, 14, 15, 16, 18, 19, 23].

Most of the previous studies focused on the general situation of facility improvement, since the facility utilisation in Dong villages represents limitations at the present stage. As previously stated, a study focusing on the fire-resistance of timber architecture in a specific historical Dong village is necessary.

1.4 Research Methods

In order to investigate the fire-resistance building improvement activities in Dali Village, this study conducted research activities as follows (Table 1). This research is based on literature review and on field surveys conducted in July 2015 and in February 2016, which included interview surveys, spatially uniform sampling questionnaire and measurement surveys.

2. Vernacular timber architecture and fire accidents in Dali Village

2.1 Location of Dali Village

Located in the southeast autonomous prefecture of Miao and Dong Minority in Southeast Guizhou (Fig. 1), Dali Village, which was built during the 1730s, has 309 households and 1,308 Dong ethnic minority residents at present. Most of the Dong people rely on traditional terrace agriculture.

2.2 Vernacular timber architecture and fire accidents in Dali Village

Residing close to the water is the most important settlement pattern of Dong Villages. The houses are distributed on mountain slopes along rivers [1]. Dali Village is situated in a mountain valley surrounded by woodland (Fig. 1(b); Fig. 3). The

Methods	Date	Object	Total sample size			Contents
Structured Interview	July 2015	Scholars	5			Village conservation planning and programme;
	Feb. 2016	Village leaders	2			Disaster history; fire protection countermeasures;
Questionnaire	July 2015	Villagers	Delivered	Collected	Valid	Disaster experience; disaster-resistant building improvement;
			115	115	115	
Measurement	July 2015	Residential houses	27			Materials, structure, layout, section of the houses; spatial usage
	Feb. 2016					Fire-resistance improvement; fire utilisation; water reserve

Table 1. Outline of Field Survey

Fig. 2 (a) Residential building
Fig.2 (c) Drum tower

Fig. 2 (b) One of the five shelter bridges
Fig.2 (d) One of the eight granaries

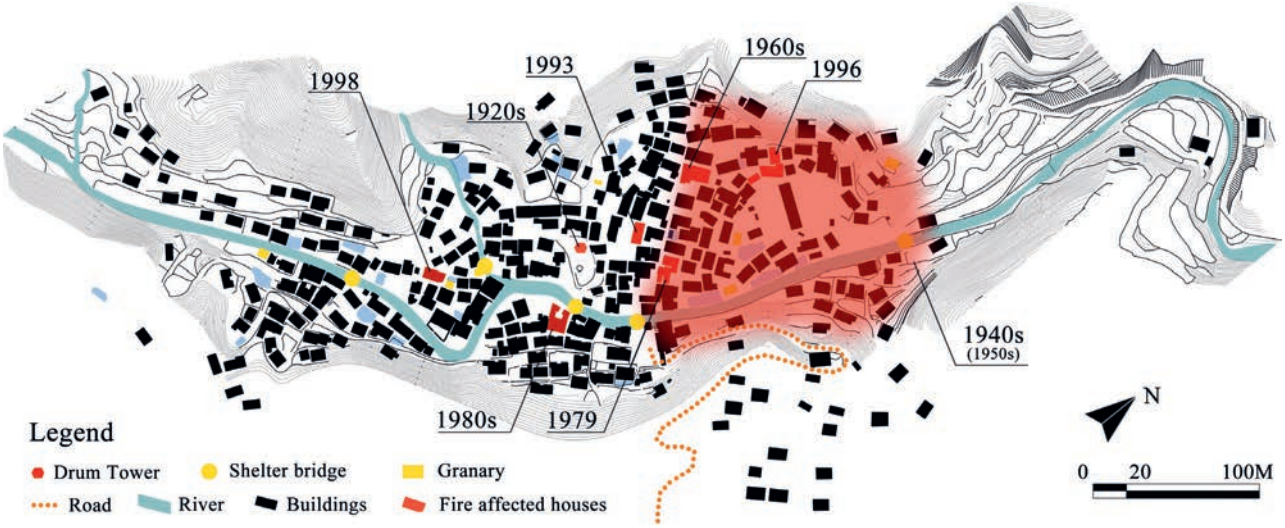

Fig. 3 Layout of Dali Village and fire accident spots (The basic topographic map data was provided by the Dali Conservation Program Office; There are two accounts about the year when the huge fire accident occurred, based on interviews: 1940s and 1950s.)

traditional architecture includes 300 residential buildings (Fig. 2(a)), and public buildings such as the drum tower (Fig. 2(b)), five shelter bridges (Fig. 2(c)), and eight granaries (Fig. 2(d)). The original traditional architecture is composed of tile-paved roofs and of timber structures, walls, floors and ceilings without fire-retardant coating interiorly and exteriorly. Without sufficient firefighting water resources and facilities, Dali Village exhibits the typical vulnerabilities of Dong villages to fire accidents. Moreover, the traditional cooking space with a ground oven surrounded by wooden walls and the aged electrical wiring aggravate the fire risk. Since the Dong ethnic minority had no written language until 1958 [25], Dali Village has no fire accident record, and limited information was collected in interviews based on the memory of the village's elder people. Within the last 100 years, Dali Village was affected by eight major fire accidents (Fig. 3). Nearly half of the village was burned by fire accidents in the 1940s and 1950s.

2.3 The fire protection regulations in Dali Village

Regarding the fire safety of these rural villages, there is no planning and building code that could be applied. Therefore, Guizhou provincial government issued "fire protection regulations" [26] in 2002 for these rural villages. The regulation encourages the local people to transform the wooden buildings with fire-resistant material. However, the regulation paid no attention to the heritage particularities and to the conservation of historical Dong villages. Consequently, in terms of practicality, no rules could be referred to on the community level during the fire-resistant building improvement.

Since interviews with scholars have confirmed that the public buildings, such as the drum tower, the shelter bridges, and the granaries are renewed by the local government without considering fire-resistance enhancement, this study will only focus on the 300 residential buildings.

Fig. 4 (a) The open-fire oven surrounded by wooden walls in the traditional cooking space

Fig. 4 (b) The transformed brick oven surrounded by brick walls

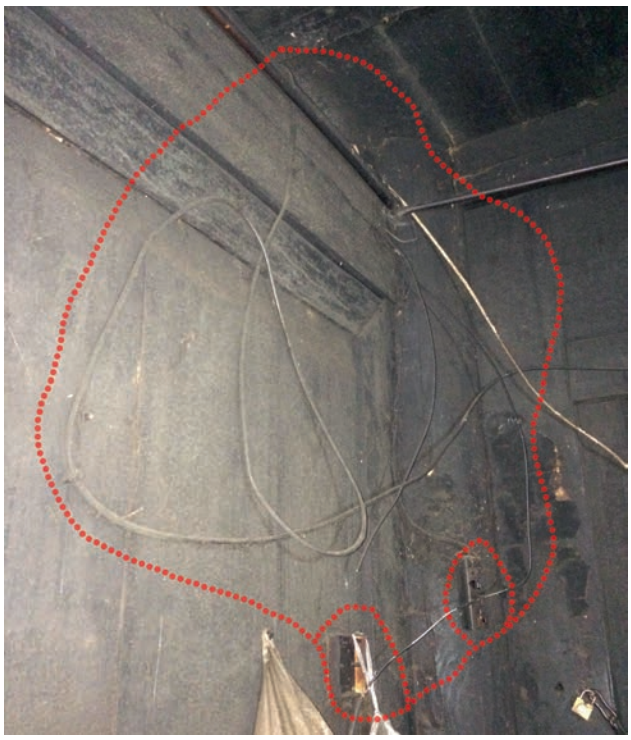

Fig. 4 (c) The meandering aged electrical wiring assembled during the 1980s

Fig. 4 (d) The improved electrical wiring

3. Fire-resistant cooking space and electricity wiring improvement by local governments

As the previous studies have pointed out, the traditional open fire ground oven and aged electricity wiring are two of the main causes for fire accidents in Dong villages. Targeting on these two specific causes, the local government is pressing ahead with fire-resistance building improvement projects in rural villages, by providing not only financial support but also materials and skilled workers. This section will investigate the improvements and their effects in Dali Village.

The transformation of the cooking oven was conducted in 2008. The original open-fire oven surrounded by wooden walls in the traditional cooking space (Fig. 4(a)) in each household was replaced by a brick oven surrounded by brick walls (Fig. 4(b)). In addition, the electrical wiring installed in the 1980s was already aged and meandering after modifications by the local people (Fig. 4(c)). Therefore, the local government implemented projects to replace the electrical wiring (Fig. 4(d)) in each household in 2008 and 2015. According to the interview in 24 households, all of them believe that the projects reduced the fire risk (Fig. 4(e)).

However, our investigation showed that the oven replacement was not considered to be fully effective.

84% of the households surveyed still use a ground oven (Fig. 5(a)), 44% use a gas oven instead of a brick oven (Fig. 5(b)), 32% use an induction cooker instead of a brick oven (Fig. 5(c)), because the brick oven is too big for the needs of most families, since the young members usually leave the village for work. In addition, while the walls surrounding the brick oven were rebuilt with brick in 64% of the households, 36% still have timber walls (Fig. 5(d)).

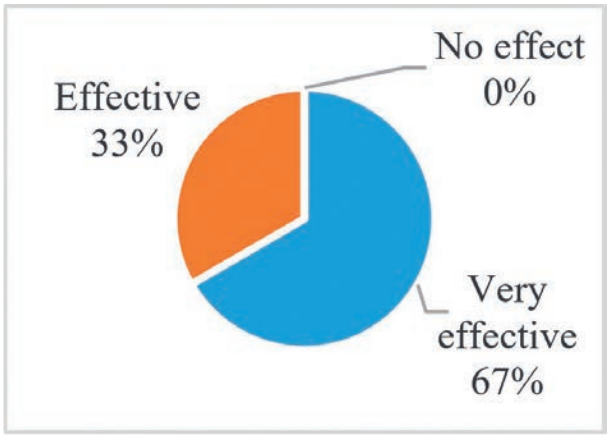

Fig. 4 (e) The local people's perspective of the effect of two projects

4. Fire-resistance building improvement by local people

4.1 Fire-resistant building transformation

Among the 269 buildings investigated in Dali Village, 21% were transformed, and 79% still keep the traditional styles (Table 2). Moreover, all transformed buildings retain the upper storeys in their original wooden materials and form, and have only transformed the first storeys using four different types (Fig. 6). In the buildings of type 1, the wooden pillars and beams remain,

Fig. 5 (a) Ground oven
Fig. 5 (c) Induction cooker

Fig. 5 (b) Gas oven
Fig. 5 (d) Timber walls

while the wooden walls were replaced by bricks (Fig. 6(a)). In the buildings of type 2, the pillars and walls were all rebuilt with bricks, while the wooden beams were not altered (Fig. 6(b)). This could be regarded as if the original wooden building was directly uplifted and put on a new brick structure. The buildings of type 3 have confined brick pillars, reinforced concrete ring beams, and brick walls (Fig. 6(c)). The structures of the buildings of type 4 are composed of reinforced concrete pillars, ring beams, and brick walls (Fig. 6(d)). The transformation may have enhanced the fire resistance of these buildings to some extent; nevertheless, it seriously affected the original architectural characteristics and appearance of this historic village.

4.2 Fire-resistant exterior coating

The fire-resistant exterior coating on a building's roof, eaves, and facade will slow down the speed of the spread of fire and

Types		Pillar	Beam	Wall	Abbreviation	Amount	Percentage
Buildings not transformed (original)		Wood	Wood	Wood	W-W-W	212	79%
Transformed buildings	Type 1	Wood	Wood	Brick	W-W-B	22	8%
	Type 2	Brick	Wood	Brick	B-W-B	25	9%
	Type 3	Brick	RC	Brick	B-RC-B	6	2%
	Type 4	RC	RC	Brick	RC-RC-B	4	1%

Table 2. Four types of first-story fire-resistant building material transformation (N=269)

will protect the building from being affected by fire from other buildings. All the residential buildings investigated in Dali Village were built with traditional wooden roof trusses covered with grey clay tiles (Table 3, Fig. 7 (a)), but the eaves are without fire-resistant coating (Table 3; Fig. 7 (b)). The facades of the traditional wooden buildings without transformation have no fire-resistant coating (Fig. 2(a)), while 27% of the transformed buildings have no coating on brick walls (Fig. 7(c)), and 73% have cement mortar or ceramic tile coating (Fig. 7(d), (e)). However, the upper storeys of all the transformed buildings still retain their wooden facade without fire-resistant coating.

4.3 Difficulty of implementing fire-resistant building improvement activities

To understand the reason for the local people's inactivity or limited activities, this study investigated the difficulty of im-

Fig. 6 (a) Type 1
Fig. 6 (b) Type 2
Fig. 6 (c) Type 3
Fig. 6 (d) Type 4

Types	Roof	Eave	Facades	
			First storey	Upper storeys
Buildings not transformed (212)	100% covered with gray clay tiles	0%	0%	0%
Transformed buildings (48)			73%	0%

Table 3. Fire-resistant exterior coating of buildings in Dali Village (N=260)

plementing fire-resistant building improvement through a questionnaire survey. It was found that 49% of the respondents were hampered by insufficient financial capacity and 20% claimed that they lacked knowledge of fire-resistant building technologies. Moreover, 25% believed that improvement activities are not necessary (Fig. 8) and they insisted that fire prevention awareness in combination with fire-utilisation behaviour in daily life is much more important and effective than building improvement. This suggests that their underestimation of the importance of building improvement is due to a lack of knowledge of the effect of fire-resistance building technology.

5. Conclusion

The purpose of this study is to investigate the fire-resistance building improvement activities of the local government and local people in Dali Village. The conclusions are as follows: Firstly, the local government replaced the aged electrical wiring and replaced the traditional ground oven by a brick oven, which reduced the fire risk according from the local people's perspective. However, our investigation came to the conclusion that the oven transformation was not fully effective. Almost all households surveyed still use a ground oven, a gas oven, or an induction cooker instead of the brick oven, because the brick oven is too big for most families' needs, since the young members usually leave the village for work. In addition, while the walls surrounding the brick oven were rebuilt with brick in 64% of the households, 36% still have timber walls. Secondly, without regulation and guidance, 21% of the households only replaced the first storeys of the timber buildings with brick or concrete. 79% did not conduct any fire-resistance improvement. From the perspective of the local people, the main reasons for their limited improvement activities can be attributed to insufficient financial capacities and a lack

Fig. 7 (a) Building roofs paved with gray clay tiles in entire Dali Village

Fig. 7 (b) Wooden roof trusses and eaves without fire-resistant coating in entire Dali Village
Fig. 7 (c) Transformed building with brick façade
Fig. 7 (d) Transformed building with brick façade and cement mortar coating
Fig. 7 (e) Transformed building with brick façade and ceramic tile coating

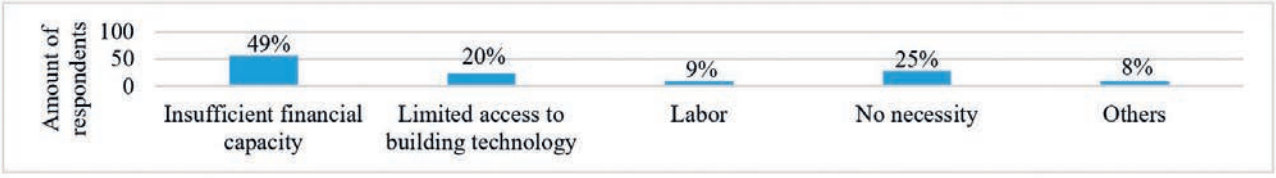

Fig. 8 The difficulties of the local people in implementing fire-resistant building improvement (N=114)

of technical knowledge of fire-resistance building improvement.

On the whole, the fire-resistance building improvement activities in Dali Village are limited. Regulations and technical support addressing not only fire-risk reduction but also local customs and heritage conservation are needed.

Acknowledgment

The authors acknowledge the support of the Conservation Project Office of Dali Village and of the Dali Village Committee for their tremendous advice and enthusiastic support throughout the study.

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ICOMOS-CIAV Taskforce for the Protection of Vernacular Built Heritage Threatened by Armed Conflicts

Hossam Mahdy

Context

More than ever before in its long history, the built heritage in the Middle East is endangered by armed conflicts. Since the so-called 'Arab Spring' in 2011, popular uprisings, revolutions, civil wars, terrorist attacks and aerial bombardments by NATO, Russia and other armies have been devastating the built heritage across the Middle East and West Africa.

The scale of damage is unprecedented, not only because of the depth and geographical wide spread of political, socio-economic, socio-cultural and religious problems, but also because of the destructive power that up-to-date technology is capable of, including drones, fighters without pilots and smart missiles.

The damage to natural and built environments in Iraq, Syria, Yemen and Libya have brought these countries to an unliveable state, which has caused, among many other problems, a heartbreaking toll of human lives and suffering. Consequently, millions have been displaced in their countries, the neighbouring countries and beyond. Furthermore, as the influx of refugees is reaching Europe, the wisdom of Western military interventions in the Middle East is being questioned. In such a grim context, concerns about the built heritage seem an unaffordable luxury. Nevertheless, numerous admirable

Fig. 1 Traditional houses in 'Suq al-Malh', Sana'a, Yemen (the Old City of Sana'a was inscribed on the World Heritage List in 1986), a wealth of vernacular built heritage threatened by war (© Hossam Mahdy 2007)

initiatives, committees, task forces and projects have been started by UNESCO, ICOMOS, ICCROM, universities, and groups of academics and professionals to do whatever possible to monitor, protect, document and conserve the endangered built heritage. The most notable of these is the ICOMOS Working Group for the Safeguarding of Cultural Heritage in Syria and Iraq, chaired by CIAV expert member Samir Abdulac.

The vernacular built heritage

While the vernacular built heritage is included in different initiatives and schemes to monitor, protect, document and conserve the built heritage in war-torn countries, it requires more attention. The significance of the vernacular built heritage is not limited to its fabric. It is part of a wider cultural landscape and the pride of communities, their honest expression, identity and way of life.

Therefore, monitoring, documenting and protecting vernacular buildings may not actually conserve the integrity of the vernacular built heritage, should the communities be displaced, traditions lost and the landscape destroyed. Thus, there is a need to address the particular nature of vernacular architecture as part of the efforts to protect the built heritage threatened by war. This can be broken up into simpler questions:

- What are the specific characteristics of the vernacular built heritage that require special attention with regard to war threats?
- Before war, what can be done to prevent or reduce threat to the vernacular built heritage?
- During war, what can be done to protect the vernacular built heritage?
- After war, what can be done to restore, reconstruct and/or revitalise the vernacular built heritage?
- Does post-war reconstruction impact the authenticity and integrity of vernacular built heritage in the same way that it does for other heritage categories?
- How is the safeguarding of the vernacular built heritage affected by the mass displacement of the communities that used to live in these heritage sites? What can be done about this?
- When vernacular historic houses are bombed during wars and their inhabitants need to rebuild them quickly to live in them once again, how can this be done without the loss of authenticity?
- What can CIAV do?

A proposal for creating a taskforce

The proposed taskforce aims to focus on the specific needs for the protection of vernacular heritage before, during, and after armed conflicts. Furthermore, the taskforce aims to compliment the valuable efforts already made by ICOMOS and others as well as to fill gaps pertaining to vernacular architecture and not to duplicate already established initiatives and projects.

While the taskforce is based on the theoretical and philosophical understanding of the specificity of the vernacular heritage and its significance and conservation requirements, it aims to contribute to the protection and conservation of the vernacular heritage in war-torn regions at present, such as Syria, Iraq, Yemen, and Libya.

The proposed taskforce is a CIAV group; thus no steps will be taken without the approval of the CIAV bureau. Any interested CIAV member is most welcome to join the taskforce by writing to the coordinator at the following e-mail address: hossammahdy1960@yahoo.co.uk

In Search of OUV: A Methodology for Attribute Mapping in the Circular Villages of the Wendland

Michael Schmidt, Kerstin Duncker, Britta Rudolff and Michelle Heese

1. The circular villages (Rundlinge) in the Wendland: a historic settlement landscape

In the Hanoverian Wendland, located in the district of Lüchow-Dannenberg in Lower Saxony, a distinctive village typology of axially arranged circular villages (*Rundlinge*) has been preserved, which forms a settlement landscape of high cultural importance and of potential Outstanding Universal Value. The authentic remains of a settlement landscape of rural character and a characteristic village typology, represent a significant cultural property of the region, which is predestined for a recognition on the UNESCO World Heritage List. These circular villages of the Hanoverian Wendland form the largest concentration of continuously occupied, radially designed settlements within Central and Eastern Europe. Exclusively preserved in this area, the *Rundling* villages are outstanding examples of a historic settlement landscape of axially arranged planned settlements and of the specific typology of a coherent and homogenous cohesive axial disposition scheme with centralised alignment of the village. In the authors' view, these characteristics can be considered an outstanding example of a traditional form of settlement.
Around a central open village square, all constitutive elements are arranged pointing towards the centre, such as the gabled, half-timbered farmhouses, the farmsteads and the meadows and forests describing the outer extension of the villages. The homogenous architecture of the vernacular architectural ensemble illustrates a time of economic prosperity in the mid-19th century while also preserving significant earlier elements of the 17th and 18th centuries. As a result, the circular villages of the Hanoverian Wendland constitute a representative settlement structure and village typology, which to-

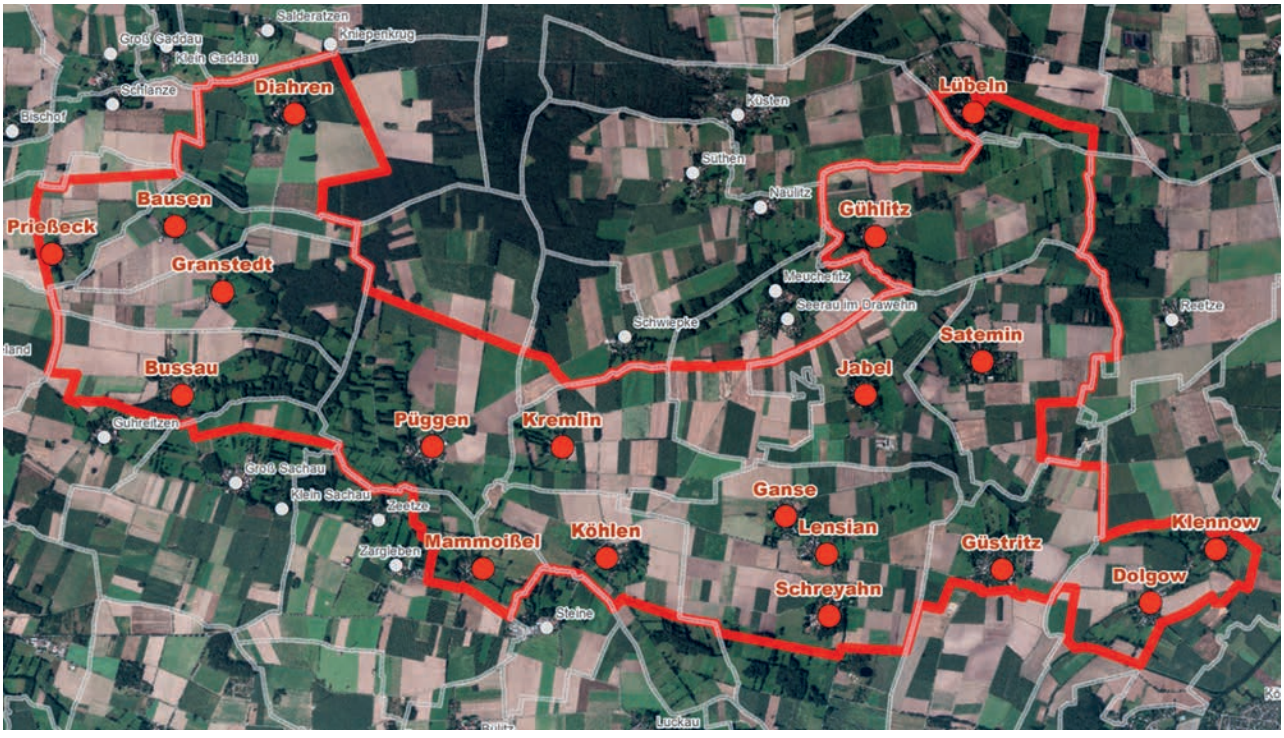

Fig. 1.1 Property boundaries of 19 villages in the World Heritage nomination initiative (Source: Rudolff et al. 2014)

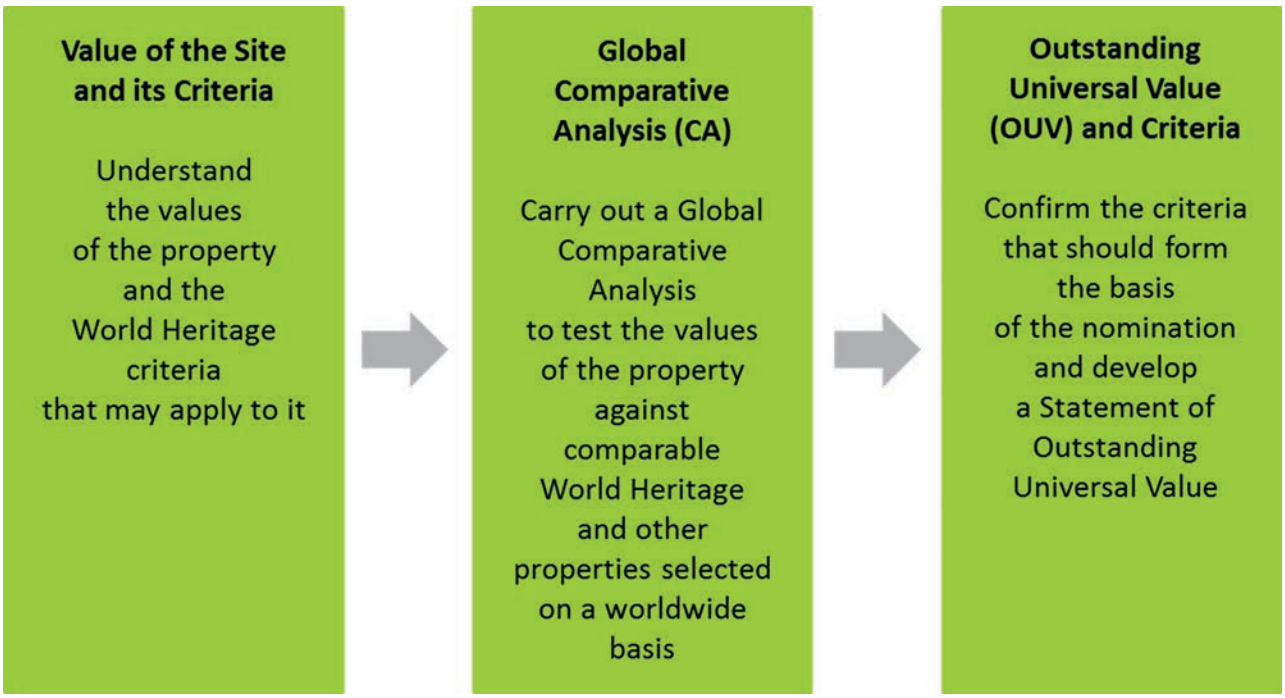

Fig. 1.2 Working Process for a World Heritage nomination (based on: UNESCO 2011. Preparing World Heritage Nominations, 2nd edition, p. 56)

gether convey a uniquely composed rural landscape of specific atmosphere.

The realisation of this exceptionality marked the starting point of the present World Heritage initiative "The Wendland Circular Villages (*Rundlinge*)", driven by the joint municipality of Lüchow-Wendland. As part of this initiative, preparations for a nomination of the circular villages for the UNESCO World Heritage List have commenced on different levels. Based on value analysis and attribute definition, circular villages of the larger district were studied and compared at length and a group of 19 villages was finally identified. Within the Hanoverian Wendland, they represent a landscape exclusively composed of circular villages, with a high conservation status and an impressive density of settlements. This area, considered as the potential candidate property for World Heritage recognition, is composed of 19 villages, which are Lübeln, Gühlitz, Satemin, Jabel, Klennow, Dolgow, Güstritz, Ganse, Lensian, Schreyahn, Köhlen, Kremlin, Mammoißel, Plüggen, Bussau, Granstedt, Bausen, Diahren and Prießeck. Through further studies of the historic parish boundaries, the physical landscape features, and the distribution of attributes, a potential property boundary has been defined and is illustrated in Fig. 1.1.

The rationale behind the present nomination initiative of the *Rundlinge* in the Wendland is to contribute to a more balanced representation of heritage categories, in particular when seen in a Central European context. Vernacular architecture and rural settlements have been recognised as gaps and currently underrepresented categories on the UNESCO World Heritage List, both internationally by ICOMOS in its 2004 Gap Report (ICOMOS 2004) as well as on a national level by the Advisory Board for the revision of the German Tentative List, established by the Standing Conference of the Ministers of Education and Cultural Affairs (KMK 2014, p. 35). The Advisory Board further recognised in its final report that "the 15 circular villages of the Wendland are distinguished by their largely preserved settlement structure" (KMK 2014, p. 35), which allows them to stand out among other settlement structures within the German context. However, the Board did not recommend immediate inclusion on the German Tentative List, as there were concerns that the authenticity of some villages has been impaired by modernisation measures and that "in addition, the medium- and long-term preservation of the villages is seen as problematic" (KMK 2014, p. 35). Moreover, they questioned the basis for the justification of Outstanding Universal Value, arguing that "there are many regions all over the world with similarly well-preserved historic villages" (KMK 2014, p. 35).

This paper has been prepared to respond to these concerns, assuring that authenticity and integrity as well as the long-term conservation of the villages can be confirmed, and to demonstrate the property's Outstanding Universal Value. A second paper in this volume presents a preliminary comparative analysis, demonstrating the ways in which the *Rundling* villages stand out among other historic settlements on a global and wider regional basis. The values and attributes identified and presented below compose the basis of this comparative analysis. This paper will therefore describe the process of attribute identification and mapping applied to systematically name and locate the attributes supporting the value of the property as an outstanding village typology and settlement landscape.

Fig. 1.3 The pillars of OUV (based on: UNESCO 2011. Preparing World Heritage Nominations, 2nd edition, p. 58)

2. In search of Outstanding Universal Value

World Heritage status is not easily awarded as its review and evaluation processes are complex and require a high level of scrutiny. It is hence important that World Heritage nominations are focused on those sites that illustrate the highest potential for Outstanding Universal Value. Defining and understanding the property in depth is a crucial step in the nomination process of a World Heritage site. Fig. 1.2 illustrates the working process for the identification of potential Outstanding Universal Value.

First and foremost, the value of a potential World Heritage property needs to be fully understood as this value should reflect its global exceptionality, which is the precondition for UNESCO recognition (UNESCO 2011, p. 56). The proper identification of the potential Outstanding Universal Value in terms of its value basis is also essential for the selection of the criteria (ibid). In addition, attributes illustrating these values need to be identified to allow for judgement of the property's authenticity and integrity and to determine to what extent the existing attributes can completely and credibly convey the values identified (UNESCO 2015 par. 79–95). Subsequently, a comparative analysis, as described above, was conducted on a global level to confirm the uniqueness and exceptionality of the ways in which the identified values are demonstrated through the preserved attributes (see Fig. 1.2). While Outstanding Universal Value becomes one conglomerate statement at the end of the process, it is important to understand that the above elements need to be identified in a certain sequence to allow for relevant judgements. Within the UNESCO World Heritage context, Outstanding Universal Value is said to be composed of three pillars, which are usually presented in a specific, logical order for identification and confirmation. Although values and attributes are not named within the respective figures, they are essential components for identifying the applicability of criteria and provide benchmarks for the judgement of the qualifying conditions of integrity and authenticity as well as management and protection.

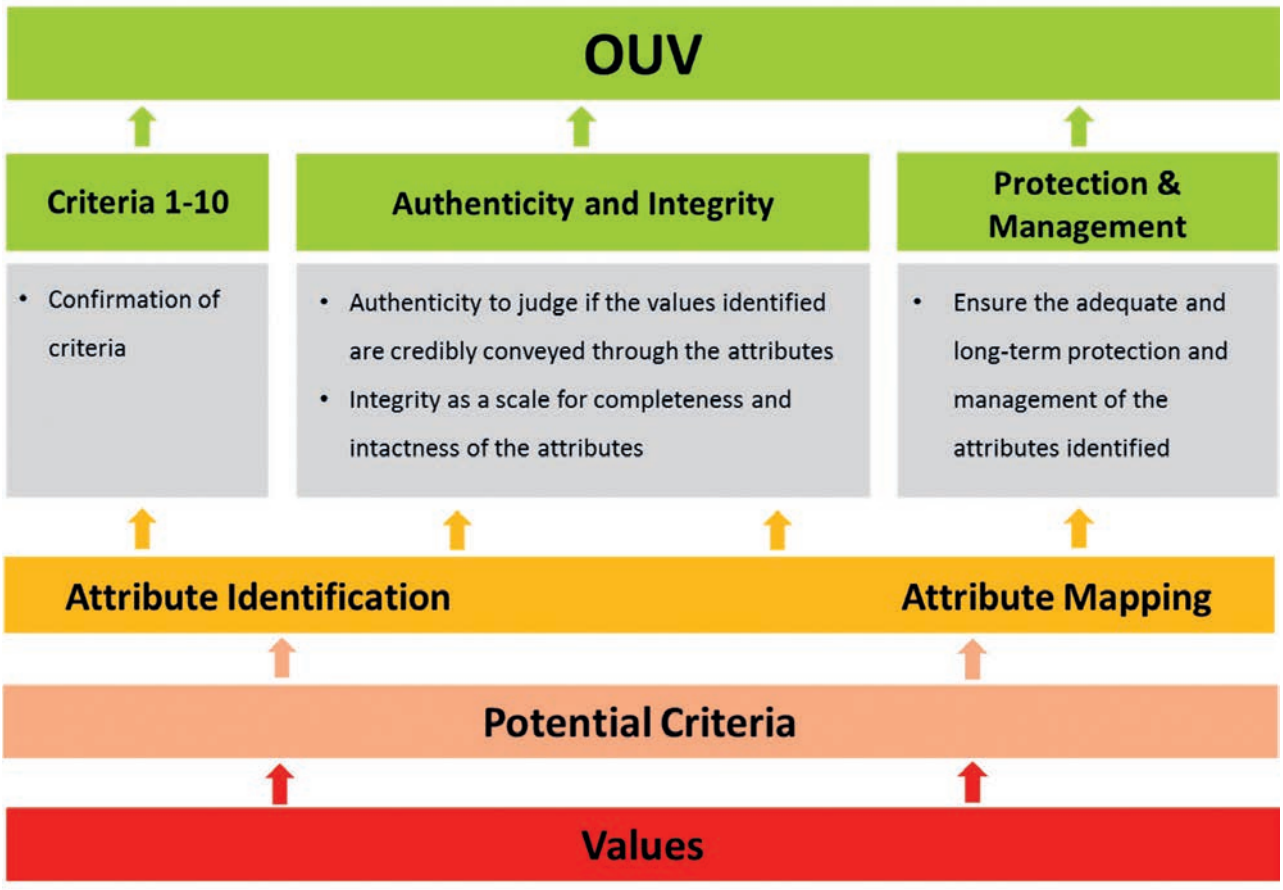

Fig. 1.4 Attribute identification and mapping process (based on: UNESCO 2011. Preparing World Heritage Nominations, 2nd edition)

The qualifying conditions of authenticity and integrity are illustrated in the second pillar of Fig. 1.3. While the assessment of integrity is a requirement for all properties nominated for the World Heritage List, authenticity, at present, only needs to be proven for cultural sites (UNESCO 2011, p. 61ff.). Integrity can be understood as the completeness of a property, while authenticity can be seen as its credibility and truthfulness (UNESCO 2015, paras. 80 and 88).
The last pillar of Outstanding Universal Value demands the confirmation of adequate long-term protection and management of the property. It is crucial that legal protection of the site is provided and an exhaustive management system established prior to a World Heritage candidacy (ICOMOS 2008b, p. 45).
Since the values of a potential World Heritage site need to be understood in their entirety and the three aforementioned pillars act as a pertinent tool for the assessment of these values, they have become a requirement for the preparation of any World Heritage nomination. This is particularly important, as nominations are frequently rejected due to unconvincing proof of a property's Outstanding Universal Value (ICOMOS 2008b, p. 46). The methodical approach for Attribute Identification and Attribute Mapping as described below can sufficiently contribute to this process.
Fig. 1.4 describes the working model as it has been used for the identification and mapping of attributes of the *Rundlinge* in the Wendland. Based on a more general identification of values of the *Rundlinge*, their potential World Heritage criteria were considered. The values identified were then used as reference for Attribute Identification and Mapping in order to verify the property's capacity to be exceptional.
Once the key attributes are identified and listed, one must demonstrate to which degree these attributes meet the qualifying condition of authenticity (UNESCO 2015, para. 85). Likewise, integrity must be proven in order to justify the feasibility of a World Heritage nomination. Integrity can be understood as "the wholeness and intactness of the natural and/or cultural heritage as expressed by it preserved attributes" (UNESCO 2015, para. 88). In order to be understood as complete, all necessary attributes conveying the Outstanding Universal Value need to be included within the property boundaries (UNESCO 2015, para. 88). The documentation of all significant attributes within a potential property area can also assist in validating the criteria to be selected as well as selecting the boundaries of the property based on the presence and current condition of the attributes.

3. Values identified in the Rundlinge in the Wendland

Based on a detailed analysis of the suggested project area "The Wendland circular villages (*Rundlinge*)", the following research findings can be summarised:
The main area of distribution of the circular village typology is located in the lower Middle Elbe region due to the medieval German eastward expansion (*Ostkolonisation*). The circular village is a systematic, radially arranged, small-sized village, initially emerging from a prior horseshoe-shaped layout, consisting of farmsteads around a central village square.
The position of the circular villages had been fixed, with a long-term colonisation since the Middle Ages.
The chronological link between the systematically organised circular villages (*Rundlinge*) and the structurally planned surrounding land parcels is not quite certain.
There are no existing settlement systems in this area prior to the medieval German eastward expansion.
The development of closed circular villages (*Rundlinge*) and the preservation of Lower-German hall houses (*Niederdeutsche Hallenhäuser*) occurred during their golden age in the 19th century. This settlement structure has been preserved until today.

This section will explain these findings in more depth and draw some initial conclusions about possible criteria that could be used for the planned World Heritage site as well as for its OUV.
While the exact chronological classification of the individual elements of the circular villages in the Wendland is not clearly known via current research, it is known that their systematically arranged radial settlement form had its starting point during the general structural changes of the medieval country expansion (eastward expansion) (Meibeyer in press; Hardt in press). The circular villages, or *Rundlinge*, are characterised by a coherent development scheme and the division of the landscape corridor, adapting seamlessly to the structures within the village (Meibeyer in press; Klammt in press; Hardt in press). These divisions had been designed as a strict system of a nearly consistent distribution of ownership, in which a so-called "Hufe" was assigned to each farmstead in the circular village (Jürris 2008, p. 308).
The initial shape of these villages had previously been an open horseshoe-shape, but density increased over time, – mainly due to intensive farm and land divisions and the settlement of small-scale farmers (so-called Kossatern, Brinksitzern, or cultivators) at the village entrances and along the settlement access. This resulted in a more closed settlement, accessible only via a narrow village lane (Meibeyer in press; Jürris 2008, p.306f.).
Due to the specific location of all circular villages in the landscape, as well as to the coherent building development and settlement structure, it can be assumed that a well thought-out, consistent planning scheme with recurring general characteristics was applied in this settlement landscape. This systematic development was applied most likely to induce a positive impact on the residents and their economy (Meibeyer in press; Klammt in press; Hardt in press). Nevertheless, the circular shape of the villages as a preferred settlement form was only prominent for a short period of time and was soon replaced by the construction of other village typologies, such as the ribbon-built village (Hardt 2006, p. 9; Jürris 2008, p. 309). Despite this, the villages of the Wendland have been preserved in their locality and permanently settled up to the present day. In contrast to other villages built in the course of the medieval development expansion, the Wendland was not affected by any form of development transformation, or by atypical and divergent additions afterwards, which means that the overall settlement planning concept, which was developed in the 12th century, can still be seen today. All village settlements of the planned core zone of the

Attributes of criterion (iv)
Radial arrangement of gable-ended hall houses and farm buildings
Radial arrangement of farmsteads
Horseshoe-shaped arrangement of farm woodlands
Radial arrangement of farm meadows
Hedges marking the radial border structure
Village with only one entry point
Alignment of the gables of dwelling houses and farm buildings towards the central village square
Farmyards and buildings (architectural floor plan) aligned towards the central village square

Table 1.1: Criterion (iv) and attributes

Attributes of criterion (v)
Vernacular timber-framed architecture with a predominance of hall houses conveys a homogenous picture of the villages
High density of circular villages *(Rundlinge)* in the settlement structure
Exceptional settlement structure comprising exclusively circular villages *(Rundlinge)*
Hall houses in predominantly traditional timber-framed construction type
Smallholder farmsteads
Position of the villages (geotope border)
Farm woodlands shaped by tall trees with large canopy

Table 1.2: Criterion (v) and attributes

potential World Heritage site are part of this timeframe and are still largely preserved, only slightly affected by later expansions of the villages (Jürris 2008, p. 312). The circular layout of the villages, which can be seen today, reveals a striking silhouette with a particular character. Due to additional authentic aspects and attributes, the ensemble of these villages can also be understood as a potential World Heritage site.

The World Heritage nomination criteria which are most applicable to the circular villages in Wendland are criterion (iv) "an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history" (UNESCO 2011, p. 37ff.), and criterion (v) "an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment, especially when it has become vulnerable under the impact of irreversible change" (UNESCO 2011, p. 37ff.).

Criterion (iv) is applicable because the circular villages of the Wendland represent an outstanding example of a radially arranged settlement plan. With its consistent structure, this specific typology of a coherent and homogenous radial disposition scheme and centralised alignment represents a functional rural ensemble of a historic settlement landscape. Its pattern of circular layout is taken up by all elements, including the gabled farms, the farmsteads and auxiliary structures, and the village green of the farm meadows and forests. They all underline this typology of settlement around an open central village square and historical *cul-de-sac* disposition.

Criterion (v) is considered appropriate because of the property's settlement density and the exclusive area occurrence of the village structure within the property. The circular villages of the Wendland are an outstanding testimony of a unique vernacular architectural style and exceptional settlement landscape. The coherent settlement structure with its homogenous village typology illustrates an integrated plan based on the functional and efficient adaption of the local topography and environment. The landscape's specific vernacular housing and the architectural ensembles are representative of an exceptional settlement character with aesthetic and functional patterns relating to its peak in the 18th and 19th centuries. The historic landscape setting and traditional community use of the village elements and green spaces further illustrate an efficient interaction of man with his surrounding environment and exemplify the cultural influences of the builders.

4. Attribute identification and mapping of the Rundlinge in the Wendland

Based on the systematics described earlier, the attributes that can be found in the circular villages are illustrated in Table 1.1 and Table 1.2. They have been grouped according to the value they convey to each of the potential criteria for a World Heritage site and will be explained in detail in the following section. Table 1.1 lists all those attributes that conform with the requirements of criterion (iv) and Table 1.2 names all attributes applying to criterion (v).

Radial arrangement of gable-ended hall houses and farm buildings (Fig. 1.5)

The Low-German hall houses, specifically the orientation of the buildings and their gables, represent a visual extension of the radial arrangement of the settlement. The half-timbered houses were optimally integrated into the settlement land-

Fig. 1.5 Jabel (Lüchow), radial arrangement of gable-ended hall houses and farm buildings (photo by Kerstin Duncker)

Fig. 1.6 Köhlen, radial arrangement of farmsteads (photo by Geobasisdaten der Niedersächsischen Vermessungs- und Katasterverwaltung)

Fig. 1.7 Köhlen, horseshoe-shaped arrangement of farm woodlands (photo by Kerstin Duncker)

scape. The characteristic radial arrangement of the circular villages was further developed through the buildings' representative gable-sided fronts, thus visually framing the village square (Meibeyer in press). In addition, the houses demonstrate the positive economic conditions of the settlements (Meibeyer in press).

Radial arrangement of farmsteads (Fig. 1.6)

The most important and predominant attribute of the settlement form of the circular villages is the ideal radial distribution of the individual settlement sections of the villages. This radial arrangement can be found both in the dwelling houses and farm buildings as well as in the courtyard areas, the village forests and the village meadows and planting. The historic settlement landscape is still an authentic and well-known testimony of this continually radially planned village typology. The current structure of the circular villages goes back to the 12th century when a restructuring of the originally horseshoe-shaped village structures to a closed circle was undertaken (Hardt in press; Meibeyer in press). This consistent division of the farmsteads was outstanding at the time of its origin, and still bears witness to the special function that the circular villages occupy in settlement history (Meibeyer in press). Although the initially-open structure changed over the centuries after its formation, the distinctive settlement pattern is still original and undeveloped and is visually supported by all existing elements (Meibeyer in press; Hardt in press; Jürris 2008, p. 306). The radial structure can also be seen in the oldest barns of the village, while the more recent ones were built in a slightly different fashion.

Horseshoe-shaped arrangement of farm woodlands (Fig. 1.7)

The planting of the oaks in the individual parcels also underlines the idea of a coherent settlement planning. The landscape element of the green belt of trees around the villages possesses a variety of usage-related characteristics. Firstly, the hedges and greenery within the villages supplied the settlements sufficiently with fuel and construction timber as well as with fodder for the animals; they also helped to protect the settlement against wind. They additionally protected the settlements and their inhabitants against for example lightning striking the endangered wooden houses.

Fig. 1.8 Kremlin (Luckau), radial arrangement of farm meadows (photo by Kerstin Duncker)

Fig. 1.9 Kremlin (Luckau), hedges marking the radial border structure (photo by Kerstin Duncker)

Fig. 1.10 Mammoißel, alignment of the gables of dwelling houses and farm buildings towards the central village square (photo by Kerstin Duncker)

Fig. 1.11 Schreyahn, vernacular timber-framed architecture; the predominance of hall houses conveys a homogenous picture of the village (photo by Kerstin Duncker)

Radial arrangement of farm meadows (Fig. 1.8)
The adjoining fields and meadow plots of the settlement follow the schematically designed system of the circular villages and can be seen in the division of the agricultural corridors, which allowed a privileged cultivation of the area (Meibeyer 2016, p. 9ff.; Klammt 2016, p. 12ff.). The exclusively agricultural use of the areas between the villages and the undeveloped fields of the surrounding landscape are an essential core feature of the settlement landscape. The village meadows belonged to the commons until the coupling of village spaces and were only added to the individual farms in the course of this development. The radial structure of the meadows is thus a result of the coupling and together with the German hall houses illustrates a preserved condition from the 19th century.

Hedges marking the radial border structure (Fig. 1.9)
The hedges and roes of trees also visually support the radial shape of the settlement structure with its divided parcels. The radial orientation of the settlement and residential buildings continues into the landscape by this external arrangement. Furthermore, these attributes also had a number of important functional features. Not only could they be used for heating systems and fire pits as well as for construction works, but because of the systematic planting of the trees for structural integrity also served as shading source for the livestock. The traditional location and usage of all green areas in the circular settlement underline the character of these elements for the village structure.

Alignment of the gables of dwelling houses and farm buildings towards the central village square (Fig. 1.10)
The village square as another typical feature of the circular villages played an exceptional role in the village settlement (Jürris 2008, p. 306). This central square, shared by all inhabitants, was left completely undeveloped and represents the social and cultural center of the village, with every individual courtyard parcel of the village directly adjoining it. The residential and economic buildings are also circularly arranged around the village square, which is thus the core of the radial layout and which was designed to be jointly used by the inhabitants and their livestock.

Fig. 1.12 Jabel (Lüchow), hall houses of the predominantly traditional timber-framed construction type (photo by Kerstin Duncker)

Fig. 1.13 Gühlitz, hedges marking the radial border structure (photo by Kerstin Duncker)

Vernacular timber-framed architecture with a predominance of hall houses conveys a homogenous picture of the villages (Fig. 1.11)

The circular villages as found today with their predominately traditional farmhouse architecture of the Lower German hall house convey a homogenous picture of the historic circular villages.

High density of circular villages (Rundlinge) in the settlement structure

The 19 villages that can be found in the area which had been proposed as World Heritage core zone represent an outstanding settlement landscape because of the way in which they are distributed in the area. While this construction design of a circular village can be found almost everywhere in the area of the early eastern colonisation, nowhere else there is such coherence and density as in the Wendland (Meibeyer in press).

Exceptional settlement structure comprised exclusively of circular villages (Rundlinge)

In the proposed area, only villages of the described typology are included. The occurrence of the circular villages within this area is thus an excellent example of a planned settlement process (Hardt in press; Meibeyer in press). This applies, in particular, to the selected core zone of the potential World Heritage site whose settlement and landscape structure shows a unique and coherent overall picture (Hardt 2006, p. 90f.). Originally there were around 200 of these circular villages in the whole administrative district of the Wendland, around 100 of which can still be found in the area. While an extensive comparative analysis of the Wendland's circular villages with international settlements and village structures will allow an even more detailed evaluation, one can nevertheless conclude that this form of settlement construction can be regarded as unique in Central Europe (Meibeyer in press).

Hall houses of the predominantly traditional timber-framed construction type (Fig. 1.12)

The traditional farmhouse type of the Lower German hall house, with its specific construction of the half-timbered framework, represents another well preserved attribute of the heritage site (Meibeyer in press). The setup of the multi-storey houses with their robust wooden stand construction made it possible to carry out all agricultural and everyday operations from a central location (Jürris 2008, p. 182). They represent a specific architectural language from the 17th to the 19th centuries and due to their outstanding vernacular architecture, they are part of an extraordinary settlement landscape.

Position of the villages (geotope border) (Fig. 1.13)

The coherent appearance of the circular settlement is embedded in a repetitive topographical situation of the circular villages in the landscape (Meibeyer in press; Klammt in press; Hardt in press). The villages are distributed between the geotope borders of the wet grass-lowlands, the dry sandy-loamy field geest, and the watercourses of the landscape (Klammt in press). The circular villages are oriented toward the agricultural land, while the horseshoe-shaped courtyard parcels, with their extended rear sides and grass gardens turn to the lower meadow valleys (Meibeyer in press; Jürris 2008 S.308). This optimal topographic location is the product of an economically-based planning process which strongly supported the agriculture and water supply (through in-house wells) of the settlements in order to economically optimise the earning capacity of the land. The distribution of the circular villages in the landscape is, therefore, representative of an ideal adapted rural settlement structure.

4.1 Completeness of attributes – case study Köhlen

As explained earlier in this paper, the qualifying condition of integrity is assessed through an analysis of the completeness of attributes in a potential property. For the *Rundlinge* in the Wendland, the condition of intactness and completeness was identified for each individual village as well as the settlement landscape at large. An Attribute Listing of the attributes described earlier was conducted for the village of Köhlen. Table 1.3 presents the attributes that potentially convey criteria (iv) and (v) present in the village of Köhlen. In the case of criterion (v), several attributes can only be illustrated by the settlement landscape at large and are hence not confirmed using merely the example of one single village.

	Attributes	Present	Cannot be assessed on village level
Criterion (iv)	Radial arrangement of gable-ended hall houses and farm buildings	x	
	Radial arrangement of farmsteads	x	
	Horseshoe-shaped arrangement of farm woodlands	x	
	Radial arrangement of farm meadows	x	
	Hedges marking the radial border structure	x	
	Village with only one entry point	x	
	Alignment of the gables of dwelling houses and farm buildings towards the central village square	x	
	Farmyards and buildings (architectural floor plan) aligned towards the central village square	x	
Criterion (v)	Vernacular timber-framed architecture with predominance of hall houses conveys a homogenous picture of the villages		x
	High density of circular villages *(Rundlinge)* in the settlement structure		x
	Exceptional settlement structure comprised exclusively of circular villages *(Rundlinge)*	x	
	Hall houses in predominantly traditional timber-framed construction type	x	
	Smallholder farmsteads	x	
	Position of the villages (geotope border)	x	
	Farm woodlands shaped by tall trees with large canopy	x	

Table 1.3: Criterion (v) and attributes

As can be seen from Table 1.3, Köhlen still has most of the attributes conveying the Outstanding Universal Value of the potential World Heritage site. The attributes not identified during the attribute identification and mapping process of Köhlen are those that – as illustrated above – cannot be assessed at a village level and need to be reviewed within the overall settlement landscape to reach a final conclusion.

4.2 Credibility of attributes – case study Köhlen

Following the identification and mapping of attributes as well as the demonstration of the qualifying condition of integrity, the assessment of the site demands a demonstration of authenticity. Confirming authenticity is more complex as the information sources for authenticity need to be carefully defined in relation to the individual attributes at hand. Accordingly, each attribute category needs to be analysed in terms of the information sources that credibly and truthfully convey the values through the attributes.

This shall be illustrated by using the example of the attribute of the circular footprint of the settlement arrangement in the case of the village of Köhlen. The circular footprint is characteristic of the village typology and must be legible both from within the *Rundling* as well as based on aerial photographs to maintain full authenticity. In the village of Köhlen, the formerly perfect circular shape was slightly altered following a fire, which necessitated the reconstruction of the eastern part of the village. However, the circular plan remains highly legible and corresponds closely to the settlement arrangement in historic sources. The following four maps and aerial images (Figs. 1.14–1.17) illustrate the continuity of the settlement form over centuries and prove that the village typology of Köhlen remains authentic in terms of form, location, and setting.

5 Conclusion

Following the guidance provided by international standards for the identification of properties with potential Outstanding Universal Value, this paper suggests a multi-step approach towards the review of the World Heritage compatibility of the *Rundlinge* in the Wendland, a settlement landscape with circular villages. The paper illustrates that a sequential approach allows for a value identification, which can subsequently be demonstrated by means of attributes. Attributes identified and mapped within the villages have guided the definition of potential nomination criteria. This process allowed investigators to scrutinise the choice and make sound judgements on the feasibility of a World Heritage nomination.

The paper further illustrates that based on the attribute lists related to each of the potential criteria, integrity and authen-

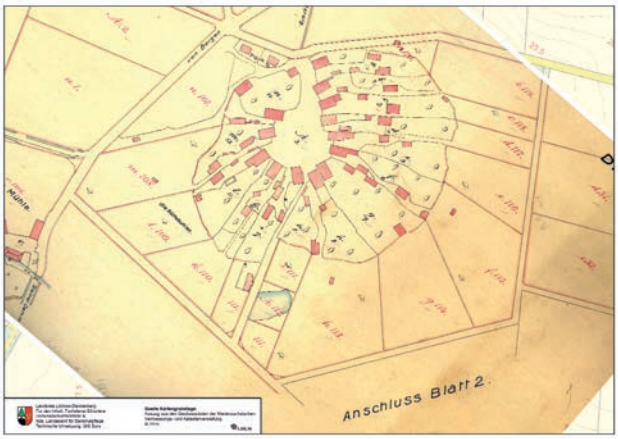

Fig. 1.14 Köhlen (based on Auszug aus den Geobasisdaten des Nds. Vermessungs- und Katasterverwaltung, Landkreis Lüchow-Dannenberg, Fachdienst 63/Untere Denkmalschutzbehörde, techn. Umsetzung: GIS-Büro)
Fig. 1.16 Aerial view of Köhlen (based on Auszug aus den Geobasisdaten des Nds. Vermessungs- und Katasterverwaltung, Landkreis Lüchow-Dannenberg, Fachdienst 63/Untere Denkmalschutzbehörde, techn. Umsetzung: GIS-Büro)

Fig. 1.15 Verkopplungskarte Köhlen (based on Auszug aus den Geobasisdaten des Nds. Vermessungs- und Katasterverwaltung, Landkreis Lüchow-Dannenberg, Fachdienst 63/Untere Denkmalschutzbehörde, techn. Umsetzung: GIS-Büro)
Fig. 1.17 Radial structure und village square in Köhlen (based on Auszug aus den Geobasisdaten des Nds. Vermessungs- und Katasterverwaltung, Landkreis Lüchow-Dannenberg, Fachdienst 63/Untere Denkmalschutzbehörde, techn. Umsetzung: GIS-Büro)

ticity of the property can be assessed both at a village level as well as for the wider landscape of 19 villages. The example of the village of Köhlen is used to highlight the completeness check for the qualifying condition of integrity and subsequent confirmation of completeness and intactness. The example selected, however, cannot conclusively confirm the integrity of all attributes identified, since a small number of attributes can be considered as being complete only if they occur in the entire settlement landscape. Likewise, the paper has given a glimpse of the assessment of authenticity based on the attribute matrix developed. For the village of Köhlen, the authenticity of village typology, a key attribute in relation to criterion (iv), has been illustrated by means of comparing historic maps and contemporary aerial photographs. The example has illustrated that Köhlen shows authenticity in relation to village typology in form, location and setting.
The anticipated following step would be to apply this attribute identification and mapping to other villages and the wider settlement landscape. This analysis will be guided by the above-described approach and will allow the confirmation of all attributes in relation to criteria (iv) and (v) as well as their qualifying conditions of integrity, authenticity, and management. Once this process has been completed, it will also be possible to identify all implications for management and protection and to finalise the formulation of the three pillars of Outstanding Universal Value.

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Circular Villages: Reflections Based on a Global Comparative Analysis

Britta Rudolff, Eva Battis and Michael Schmidt

1 Introduction

This paper summarises the findings of a comparative analysis undertaken with a view towards a World Heritage nomination of the so-called *Rundling* villages in the Wendland, Germany. Compared with other similar rural settlement typologies these are characterised by equally approaching a round ground plan. The identified Outstanding Universal Value of the Wendland *Rundlinge* (see previous paper by Schmidt et al.) selected for World Heritage nomination derives from their settlement landscape and village typology. The typology developed over the centuries and today features a unique village footprint approaching a regular circular shape which extends radially into the surrounding agricultural landscape with fan-shaped farmsteads. The villages' ground plan and harmonious appearance is significantly characterised by a small number of detached-standing vernacular hall houses, predominantly of the 18th and 19th centuries, whose decorated timber-frame gables are directed towards the open central village space. The site selected for nomination is composed exclusively of *Rundling* villages embedded in cultured farmland.[1]

Given that the settlement landscape and village typology were found to be the most outstanding features of the Wendland *Rundlinge*, a typological analysis is the centre piece of the comparative study and is synthesised in this paper. This study focuses on villages of more or less comparable settle-

Fig. 2.1 The Rundling village Satemin (©IHM, photographer: Eva Battis)

Fig. 2.2 The Rundling villages Schreyahn, Lensian and Ganse (©IHM, photographer: Eva Battis)

ment typologies. Architecture and rural surroundings are only touched upon for their share in defining the villages' appearance and setting. However, neither vernacular building types nor historic land parcel forms are discussed in detail. The authors acknowledge that this paper therefore reflects merely a section, although the central section, of a more holistic comparative analysis which was undertaken but cannot be fully reflected in the brevity of this paper.

The global examples of villages from prehistory to modern times serve to introduce the topic and to prove that more or less circular settlement forms are a global and timeless phenomenon in human history. The paper's main part then compares in more detail the Wendland *Rundlinge* with other preserved round villages in the medieval contact zone of Germans and Slavs in Central Europe, in so-called *Germania Slavica*.[2] The study thus encompasses a regional-chronological analysis, although the comparison to non-circular village types employed in the medieval colonisation processes in the German-Slavonic contact zone is left aside in this paper. Beyond their significance as a unique settlement and village typology, the Wendland *Rundlinge* are evidence of the medieval colonisation processes in Europe as much as they constitute Slavonic heritage. However, neither of these themes is comprehensively represented by the *Rundling* villages alone. Hence, a thematic comparison – the third framework employed in assessing the representativeness of the World Heritage List by ICOMOS (ICOMOS 2005) – is of marginal importance and also excluded from this paper.

In undertaking the typological comparative analysis, the authors studied specialised literature and scholarly works in order to identify historical distribution areas of circular villages. Contemporary satellite images of those areas were essential for the identification of settlements that until today display a somewhat circular form or fragments thereof. Lastly, photo material and/or site visits additionally served to judge the appearance and overall state of conservation of villages that were compared.

2 Prehistoric settlements and villages of non-industrialised peoples

Among several examples of prehistoric settlements with a more or less circular ground plan the villages of the Tripillian culture are the oldest. The Tripillian people practiced agriculture and settled in the area of today's Ukraine during the New Stone Age. Similar to the Wendland *Rundlinge*, the Tripillian villages featured a circular ground plan, which was created by detached-standing longhouses with their gables directed to the settlement's open central space (Niemeier 1977, p. 44). However, while this settlement form is still thriving in the Wendland *Rundlinge*, prehistoric settlements

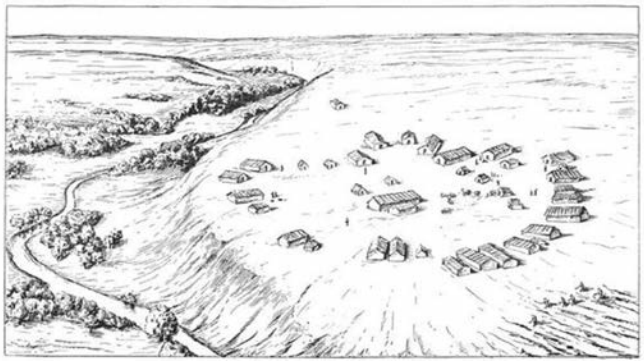

Fig. 2.3 Visualisation of Kolomischina (Source: T. S. Passek [1949] The Periodization of Tripolije Settlements [3rd and 2nd millennia BCE], Fig. 71)
Fig. 2.4 Massai village in Ngorongoro, Tanzania, Africa (Source: Wikimedia Commons, photographer: David Berkowitz)
Fig. 2.5 The "Circulade" Aigne (© Eva Battis)
Fig. 2.6 The Baroque village Byšičky in Bohemia (Source: Wikimedia Commons, photographer: Petr Vilgus)

of circular or oval forms around the globe have only been archaeologically preserved.
The protective function, a matter of controversial discussion regarding the origins of the Wendland *Rundlinge*, is considered the prime reason for choosing a circular ground plan in the case of prehistoric villages. A surrounding palisade protecting against predators and human aggressors is for example archaeologically evidenced in the round villages of the Fort Ancient and Monongahela cultures, whose indigenous people settled in North America in the second millennium (Pauketat 2012, p. 300). Also most contemporary villages of non-industrialised peoples, particularly of Nomadic tribes like the African Massai, feature some sort of enclosure that at the same time serves to contain the villagers' livestock overnight. In addition, the circular ground plan often fulfils social and spiritual functions, such as representing social hierarchies, family membership and cosmological beliefs. For example, such is the case in the villages of the South Brazilian Bororo, where the semicircles of the village are inhabited by members of two different tribes and the centre serves as a place for religious cults (Means 2007, p. 47). Cultic practices are historically documented also for the central space of the Wendland *Rundlinge* (Nitz 2004), while the highly communicative and integrating effect of the villages' ground plan is still valued by their inhabitants today.
Unlike the preserved *Rundlinge* in Central Europe, however, villages of non-industrialised peoples – both contemporary and prehistoric – are usually only temporally occupied and therefore mostly display a simple, hut-like architecture. The varying architectural features and differences in the historic and cultural as well as the geographic contexts cause the significant distinction in typology and appearance of this type of villages from the *Rundlinge*.

3 Circular settlements of the medieval and modern eras

Circular typologies also occur in various permanent settlements dating from the Middle Ages to modern times. Prominent examples are the so-called *Circulades* in Southern France. The term is a neologism from the 1990s suggesting that the several dozens of such villages in the Longuedoc Roussillon represent one typology of settlement (Pawlowski 1992). However, the hypothesis of a common genesis dating back to Gallo-Roman origins appears to be scientifically supported only for some of the villages (Baudreu 2003). A recurrent feature of the villages in question is a roundish settlement plan usually formed by concentric rings of dwellings, of which the outer one takes up the function of an enclosing wall. The attached masonry buildings hence create a defensive character. Curved alleyways usually lead to an enclosed central space which is either void or occupied by a church or chateau-fort. All these features clearly differentiate the *Circulades* from the Wendland *Rundlinge*.
Geographically and typologically closer, yet also distinct are circular terp mound villages (*Rundwarftendörfer*) in Northern Germany. Built on artificial mounds protecting against floods,

these settlements are believed to date back to the rise of the sea level around 300 BC. The most famous example is Rysum located with a diameter of 400 metres at six metres height from the surrounding landscape (Quistorp 2009). The larger settlement plan which is more densely built up and holds a central church as well as the settlement's elevated position in the landscape and the different local architecture are all distinctive features.[3]

A small village that could in form and appearance be confounded with medieval villages of *Germania Slavica* despite a very different origin is Byšičky in the Czech Republic. However, Byšičky was only planned and founded in 1717 by Count Frantisek Antonin Spork and is one of the best preserved Czech Baroque villages. Other examples of Baroque villages, which rulers across Europe laid out and constructed in a perfectly circular shape, are the Polish Paproć Duża, founded by German settlers in 1800 under the name Königshuld, and Charlottenburg (also Șarlota and Saroltavár), equally of German origin from 1771 in the historic landscape of Banat in today's Romania. The latter two Baroque examples do not only differ in origin and architectural features from the Wendland *Rundlinge*, but also in their ground plans. While the fan-shaped farmsteads radiating into the landscape in the case of Charlottenburg exceed those in the Wendland, in both cases the circle of buildings accompanying a ring road is of such diameter that one can hardly sense the circular space on the ground.

Comparable in its shape to the Baroque villages and less to the Wendland *Rundlinge* is the Moshaw Nahalal in Israel. Inspired from Ebenezer Howard's Garden City concept and founded in 1921, it is one example of modern planned communal settlements with roundish ground plan. Here again, the wide oval ring road and wedge-shaped land parcels extending far into the landscape are mainly perceivable in aerial views of the settlement. The moshaw is on Israel's Tentative List for World Heritage, together with other early Kibbuzim. The only somewhat circular settlements currently on the World Heritage List are some of the Chinese Fujian Tulou, which in fact represent a large type of vernacular courtyard house rather than a village, and the horseshoe-shaped *Hufeisensiedlung* of the Berlin Modernism Housing Estates. Neither site is comparable to the Wendland *Rundlinge*.

4 Circular settlements of Germania Slavica

The *Rundling* villages in the Wendland as well as related village types approaching a circular ground plan within *Germania Slavica* are considered a typical early settlement form of the medieval colonisation processes. Rulers across Central Europe urbanised little or unpopulated areas by founding villages and towns often with settlers invited from other overpopulated areas. The colonisation processes differed from region to region. However, wherever German and Slavonic tribes met or mingled, small circular or rather originally horseshoe-shaped villages were common.[4] By far the majority of the circular villages and hamlets carried names of Slavonic origin. This still applies to almost all preserved roundish villages or fragments thereof that were identified when the comparative analysis for the Wendland *Rundlinge* was carried out. The dark yellow areas in Fig. 2.7 indicate areas where such contemporary settlement traces were found in higher density. The lighter yellow parts mark areas where roundish settlement remains occur widely dispersed or isolated.

Scholars agree that the *Rundlinge* in the Wendland (marked in red in the second map) are the most perfectly shaped, best preserved and most impressive circular villages in *Germania Slavica*. The purpose of presenting the following small selection of settlements that were compared to the Wendland *Rundlinge* is to illustrate this fact.

The *Rundling* relicts most relevant for comparison are those located closest to the Wendland, given that the local landscape and the cultural-historical context play an important role in shaping the settlements' characteristics. For example, local variants of the lower German hallhouse (*Niederdeutsches Hallenhaus*) comparable to those characterising the Wendland *Rundlinge* would be the typical vernacular building tradition in many villages of adjacent distribution areas of circular settlements.

The relict areas in Lower Saxony extend westwards from the Wendland, however, in decreasing density of former *Rundling* settlements, as well as eastwards into western parts of Brandenburg. Dispersed examples can be found in areas reaching up north to Lübeck in Schleswig-Holstein and southwards to

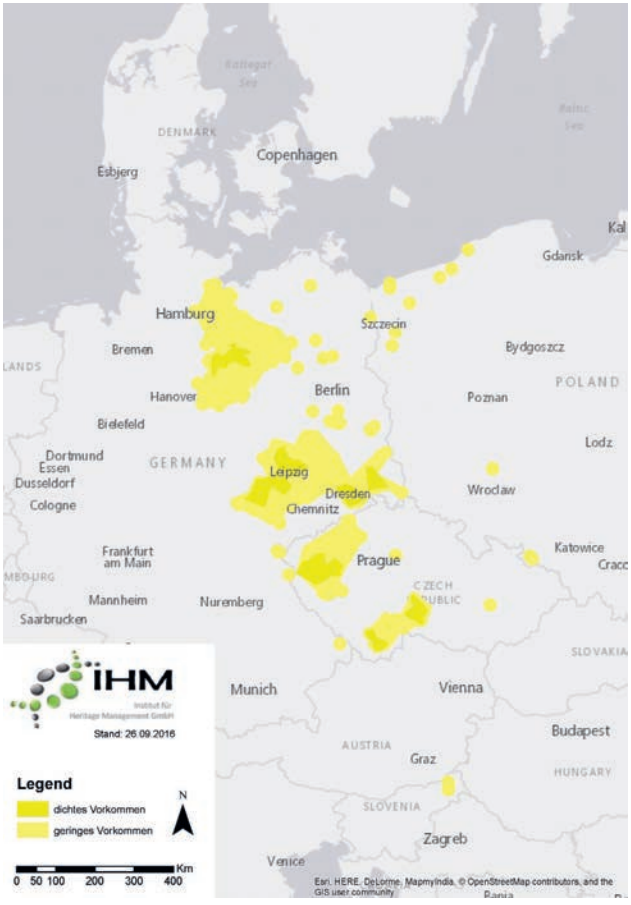

Fig. 2.7 Relict areas of circular settlements in Germania Slavica (© IHM)

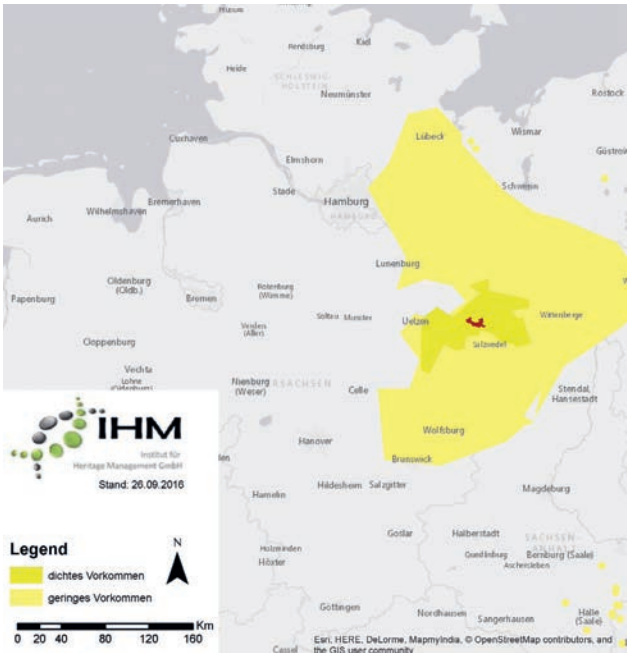

Fig. 2.8 The Hanoverian Wendland (red) and adjacent relict areas of circular settlements (© IHM)

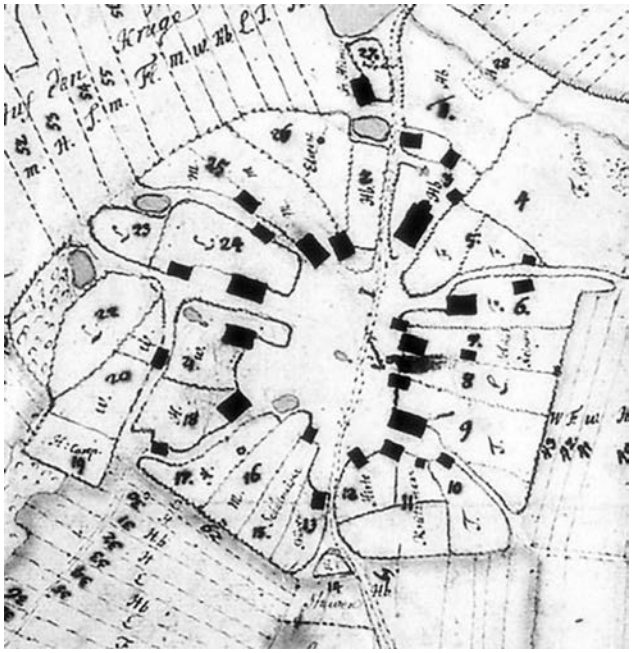

Fig. 2.9 Historic land register map of Kankelau, 1751 (Source: http://www.amt-schwarzenbek-land.de)

Braunschweig. The majority of these villages are significantly modified. Bockholt (52°53'11.42"N, 10°47'12.04"E) is a better example in the county of Uelzen, adjacent to Lüchow-Dannenberg. It has preserved a circular settlement shape despite architectural modifications. Hohenbostel (53° 9'9.51"N, 10°28'40.65"E), on the contrary, is one of the few remains of an early distribution area of *Rundlinge* near Lüneburg. Like many other *Rundlinge*, it has been significantly extended. In the city of Wolfsburg, the remains of the *Rundling* villages Brackstedt (52°28'34.59"N, 10°45'55.31"E) and Rühen (52°29'2.09"N, 10°53'4.19"E) have merged with the larger urban area. Very little has been preserved in the adjacent historic distribution areas formerly reaching up north to the sea. Located adjacent to the Wendland, the area called Mecklenburgische Jabelheide was equally inhabited by Slavic Wends for a long time (Hardt, 2004, p. 74). According to Krenzlin, the processes in which *Rundlinge* came into being in the 12th century in the Jabelheide are comparable to those in the Wendland as well as in the so-called Prignitz in the state of Brandenburg (Krenzlin 1983, p. 17). However, both in Mecklenburg-Western Pomerania and in Brandenburg few traces thereof are found today.

The best example in Schleswig-Holstein is Kankelau (53°32'58.44"N, 10°34'4.08"E), which has preserved its historic ground plan but maintained only two vernacular hall houses. The selected Wendland *Rundlinge,* on the contrary, consist predominantly if not exclusively of historic vernacular buildings. Hence, no area in Lower Saxony or in neighbouring regions was identified that features such well-preserved *Rundlinge* and certainly not in such density as in the Wendland. After Lower Saxony, most villages approaching a circular form were identified in the federal state of Saxony. Villages of this kind were predominant in the former Slavonic settlement areas of Saxony and have in considerable number been

Fig. 2.10 Seegel (© IHM, photographer: Eva Battis)

Fig. 2.11 Muschlena (© IHM, photographer: Eva Battis)

preserved in areas extending from the Vogtland via Leipzig to Upper Lusatia.[5] However, few of these villages are well preserved. In addition, they differ significantly in typology from the *Rundlinge* in the Wendland as the following selection of examples illustrates. Karlheinz Blaschke categorised the Saxonian villages in 1957 and divided those that are related to the Wendland *Rundlinge* for the polar arrangement of their farmsteads into various typologies. He differentiated between the small roundish *Sackgassendörfer*, the *Gassendörfer* of rather rectangular ground plan and the larger, more regular *Rundangerdörfer*. None of these villages are as regularly shaped as the Wendland villages – a fact that H.-J. Nitz explains with their supposed older Slavonic origin (Nitz 2004).

The four villages of Löben (Pegau) (51°12'42.34"N, 12°14'21.79"E), Scheidens (51°12'27.08"N, 12°14'41.27"E), Peißen (51°12'17.97"N, 12°14'26.04"E) and Seegel (51°12'8.94"N, 12°14'25.99"E), located in close vicinity to each other in an agricultural area south of Leipzig, were affiliated to the town and monastery of Pegau and belonged to the realm of Wiprecht of Groitzsch – Margrave of Meißen and the Saxon Ostmark from 1123. The cluster of villages looks promising from an aerial view as heritage of this era, but is rather disappointing on the ground. The villages show quite a poor state of conservation in terms of architectural quality and homogeneity, as the image of Seegel illustrates, while in Peißen it is impossible to even sense a circular arrangement on the ground.

The case is similar in the agglomeration of roundish villages identified north of Leipzig. The local vernacular building stock, which differs fundamentally from that in the Wendland, has largely disappeared or was found in a state of advanced deterioration, as in the case of Mutschlena (51°26'18.20"N, 12°29'39.44"E). Adjacent Gottscheina (51°25'35.01"N, 12°28'53.53"E) is an example where remains of a historic mud wall have been preserved, which used to surround the village and accompany a water mound and which constitutes another distinctive feature of the Wendland *Rundlinge*.

Better preserved villages with a polar arrangement of farmsteads and historic masonry or timber-frame farmhouses are found in the city and surroundings of Dresden. Some are designated ensembles and charming in a way. However, the villages can neither compete in spatial and architectural quality nor in quantity per area with the selected *Rundlinge* in the Wendland.

The most circular groundplan was identified in a former Slavonic fishing village, now called Am Kreis (51° 5'48.04"N, 13°40'26.11"E). A map from the 19th century shows this *Rundplatzdorf* (Blaschke 1957) with a clear horseshoe-shape opening to the banks of the river Elbe. This arrangement has been well preserved, although the historic village today blends into the urban area of the city of Radebeul. The majority of buildings are front-gabled and of the local vernacular type. Nevertheless, the village hardly competes with the selected Wendland *Rundlinge* in terms of its state of conservation and aesthetic and spatial quality.

In comparison, Altzitschewig (51° 7'5.88"N, 13°36'14.59"E), which is also located in the urban area of Radebeul, is an architecturally pleasant village with many well-kept vernacular two-sided farm-buildings from the 19th century and featuring a single access street to its central square. The situation is similar in Altmickten (51° 4'25.81"N, 13°42'1.81"E) which is located in the urban area of Dresden and today has two access streets. However, both villages are *Platzdörfer* with a self-contained rectangular rather than a circular central open space and ground plan.

Fig. 2.12 a–b Historic land register map of 1893 (Source: Detail from the sächsische Äquidistantenkarte of 1893, Blatt 66, Section Dresden) and contemporary photo of the village core Am Kreis (Radebeul) (© IHM, photographer: Eva Battis)

Fig. 2.13 Contemporary aerial view of Altzitschewig (Radebeul) (Source: Google Maps, under principles of "fair use")

Fig. 2.14 Borthen (© IHM, photographer: Eva Battis)
Fig. 2.15 a–b Historic settlement plan (Source: Jacobi, 1845, Fig. 2) and contemporary aerial view of Zagkwitz (Source: Google Maps, under principles of "fair use")

Most villages in distribution areas located south of the Wendland that have preserved vernacular architecture consist of two-, three-, or four-sided farmhouses, which define the settlements' clear inner and outer spatial borders. The farmhouses are usually built attached to each other and the farmyards are walled off from the village square. Hence, a self-contained inner village space is created. The Wendland *Rundlinge*, on the contrary, consist of detached hall-houses and auxiliary buildings positioned individually in the outer parts of the farmsteads. In consequence, a permeable ring of detached farmhouses defines the circular village space of the *Rundlinge,* thus maintaining spatial continuity and visual connectivity to the surrounding landscape.

An enclosed, yet irregularly shaped central space and ground plan are found in several smaller hamlets in agricultural plains surrounding the city of Dresden. Brabschütz (51° 4'12.40"N, 13°37'16.14"E), Merbitz (51° 4'3.23"N, 13°38'24.26"E) and Altmobschatz (51° 4'33.07"N, 13°38'36.92"E) for example have ground plans of irregular roundish, oval or horseshoe shape, which are more or less perceivable on the ground.

A typical feature found in many circular villages is a central fire-fighting pond. That is also the case in several *Radialhufendöfer* – villages with radial hides created by forest clearance – in an area close to Pirna, where throughout history dependency shifted between the margraves of Meißen and the kings of Bohemia. Six villages, historically affiliated to the medieval city of Dohna, were studied in greater detail in this area. One of the most pleasant examples is Borthen (50°58'12.91"N, 13°48'9.13"E), which has however been extended beyond its oval historic core (see Figure 2.14). In Dohma-Goes (50°55'42.21"N, 13°56'44.00"E), originally in an open horseshoe shape, the central pond is of such size that it dominates the village.

Central ponds are also typical in the southern distribution areas extending to Saxony-Anhalt and Thuringia. Many villages here were founded in valley heads holding a spring – a topographical feature clearly different from the Wendland *Rundlinge*. One of the most impressive examples in Saxony-Anhalt is Großwilsdorf (51°10'55.39"N, 11°45'6.16"E). The gables of the tear-shaped village are all directed towards the settlement's entrance. In Külso (51°52'4.00"N, 12°46'55.82"E), like in several other relict circular villages east of Lutherstadt Wittenberg, the four-sided farmsteads do not face the centre with their gables, but with their eaves. This creates a settlement-scape that differs more significantly from the *Rundlinge* in the Wendland. This is partly also the case in the much larger village of Tiefengruben (50°53'50.84"N, 11°13'53.42"E), which has the reputation of being the most impressive *Platzdorf* in Thuringia. Here, the attached-built farmsteads create a defensive settlement character, although the outer gardens are reminiscent of those in the Wendland. The large central village space in Tiefengruben, like in many compared villages, is not empty but holds a church and several other buildings. The Wendland *Rundlinge*, on the contrary, do not typically feature any churches, unless added on the outskirts during the late Christianisation process of this area (Meibeyer 2004, p. 89).

Yet another typology, which was considered for comparison in the study despite its irregular plan, are hamlets composed of few freestanding four-sided farmsteads arranged around one centre. Out of 13 preserved examples in Eastern Thuringia (Schmidt 2004), Reinsdorf (50°40'49.28"N, 11°50'53.30"E) (Saale-Orla Kreis) and Zagkwitz (50°53'37.47"N, 12°17'45.27"E) (Altenburger Land) can serve as examples with seven farmsteads each. Despite continuous change, the village plan of Zagkwitz is still similar to its form documented by V. Jacobi in the 19th century (Jacobi 1845, p. 9; see Fig. 2.15). The occurrence of circular villages decreases further south. Some comparable small villages of irregular yet polar

Fig. 2.16 a–b Photo (Source: Aktron / Wikimedia Commons) and contemporary aerial view of Kojšovice (Source: Google Maps, under principles of "fair use")

composition are found in the Franconian part of Northern Bavaria, which supposedly originate from Slavonic hamlets (Nitz, 1991, p. 129). An illustrative example is Dobrigau (49°56'9.31"N, 12°17'20.33"E). Of more circular shape are a few *Radialhufendörfer* dispersed in Bavaria, such as Matzersreuth (49°52'28.78"N, 12°22'46.00"E). More impressive than the villages in the cases of such *Radialhufendörfer* are the radial land parcels differing typologically from the linear historic land parcels of the Wendland (Meibeyer, 1964).
In the most southern tip of the study area, on the border between Austria and Slovenia, in historic Lower Styria (Untersteiermark) no more than three relict circular villages were found. The transformation of the historic ground plan seems further advanced in the Slovenian village of Dragotinci (46°34'57.54"N, 16° 1'55.56"E) than in the Austrian examples of Zelting (46°42'23.67"N, 16° 1'30.97"E) and Sicheldorf (46°40'42.44"N , 16° 1'55.72"E).
According to the studies of Bogdan Zaborski, Halina Szulc, Franz Engel und Herbert Schlenger, the distribution area of circular villages historically reached eastwards up to Pomerania and Silesia in Poland. Hardly any remains of former circular villages studied by these scholars were identified. Two exceptions are Księże Pole (50° 6'32.33"N, 17°57'55.30"E) and Domanowice (51°24'33.77"N, 17° 3'1.80"E) where, however, the fan-shaped land parcels are better preserved than the historic villages.

Lastly, the Czech Repbulic, more specifically Bohemia, has a much richer heritage in circular villages. Several areas with a rather high density of villages of this kind testify to the inner colonisation under the dynasty of the Přemyslides in the 9th and 10th centuries and to later settlement extensions, including western settlers under the Bohemian kings. However, most Czech villages, like the Saxon examples, are typologically distinct from the *Rundlinge* in the Wendland and generally less preserved. Kojšovice (50° 4'55.30"N, 13° 0'28.09"E) is one of the more attractive examples within a rather dense distribution area in the surroundings of the monastery of Tepla. Like most circular villages in the Czech Republic, it belongs to the typology of *Radialhufendörfer* created by forest clearance. While Kojšovice has lost its radial forest heads, it has preserved its lens-shaped ground plan holding a central lake and chapel. In other places, only the radial forest heads indicate the former existence of villages in their centre. They have entirely disappeared (e.g. 48°55'52.05"N, 14° 4'44.00"E and 48°58'58.93"N, 13°53'2.89"E).
Platzdörfer with a central square are numerous in Bohemia. However, many have a rectangular rather than a circular form. A good example of an oval form is Plešovice (48°51'48.25"N, 14°21'11.29"E) north-east of Cesky Krumlov. A horseshoe-shaped example is Mažice (49°12'46.67"N, 14°36'39.00"E), which is characterised by vernacular southern Bohemian folk Baroque architecture.
The most attractive and best preserved Czech *Platzdorf* with this kind of architecture from the 18th and 19th centuries is already on the World Heritage List: Holašovice (48°58'8.86"N, 14°16'21.19"E). It was inscribed on the basis of criteria (ii) and (iv) for its vernacular buildings and as an excellently preserved traditional rural settlement in Central Europe. With 210 x 70 metres, the rectangular central square is particularly large. It is surrounded by three-sided farmsteads built attached to each other. The centre is empty apart from a small pond and three buildings, including a chapel (Czech Republic 1997). Among all World Heritage sites, Holašovice is most comparable to the *Rundlinge* in the Wendland, because it is a rural settlement of the German-Slavonic contact zone with a central square. However, with its large, clearly rectangular shape and closed spatial configuration it clearly represents a different settlement typology than the *Rundlinge* in the Wendland.

Fig. 2.17 Holašovice in Bohemia (Source: Sgbeer/ Wikimedia Commons)

5 Conclusion

The *Rundlinge* in the Wendland constitute a unique typology of circular villages that emerged in the medieval German-Slavonic contact zone and developed its characteristics until the 19th century. Villages of related typologies, yet with different local spatial and architectural features, are at times well preserved individually or in groups in other places throughout *Germania Slavica*. However, the Wendland displays an incomparable quantity, density and exclusiveness of circular villages which have preserved their extraordinary spatial and architectural qualities to date. No rural settlement area of circular villages comparable to the Wendland is inscribed on the World Heritage List or has been identified to exist in general.

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Notes

1. The complete comparative analysis encompasses a justification of the restriction to a nomination area composed of 19 *Rundling* villages in the Wendland. Explaining the selection lies beyond the scope of this paper.
2. The term was coined by the historian Wolfgang H. Fritze. Slavic scientists alternatively derived the term *Slavia Germanica* for the eastern areas of the contact zone.
3. In the Wendland, so-called *Wurtenrundlinge* are a special, though not representative type of *Rundlinge* founded on terp mounds in the flood plains of the rivers Jeetzel und Elbe, which were later drained (Schulz 1979).
4. Meibeyer traced in great detail the development of the Wendland *Rundlinge* from their original horseshoe-shaped ground plan to an almost perfect circular form over the centuries that followed their beginnings in the 12th century (Meibeyer 1964).
5. The term *Rundling* for circular village types of medieval origin along the *Limes Sorabicus* was coined in the 19th century by the agronomist Victor Jacobi (Jacobi 1845).
6. The area of Upper Lusatia in Saxony, which was already inhabited by Slavic tribes in the 9th and 10th centuries (Higounet 1986, p. 117), has preserved a strong Slavic minority – the Sorbs. While their living cultural heritage, particularly the Sorbic language, has survived to this day, few fragments of circular settlements can be found here. The case appears similar in Lower Lusatia in the federal state of Brandenburg.

Appendix

Recommendations of the ICOMOS CIAV International Conference

"Conservation and Rehabilitation of Vernacular Heritage:
the Cultural Landscape of Wendland Circular Villages"

29 September – 1 October 2016, Lübeln, Wendland, Germany

The 60 conference participants gathered at Lübeln, Wendland, originating from or living in a variety of countries, including Bahrain, Bulgaria, Canada, China, Czech Republic, Denmark, Egypt, Estonia, France, Germany, Hungary, India, Italy, Lebanon, Mexico, Norway, Romania, Sweden, Thailand, Turkey and the United Kingdom of Great Britain and Northern Ireland, expressed their wish to adopt the following recommendations:

Stressing the importance of conserving vernacular heritage, in particular in regions characterized by population density and urbanization such as Central Europe,

Admiring the uniqueness, the continued legibility of settlement typology and the level of conservation of the circular villages and landscape in Wendland and congratulating the concerned authorities for their strong efforts and commitment towards the protection of this exceptional heritage of circular, radial and centralized settlement typology (Rundlinge), its surrounding landscape and vernacular architecture,

The conference participants:

Wholeheartedly thank the conference organizers, in particular the Lower Saxony State Office for Heritage, the Ministry of Science and Culture of Lower Saxony, ICOMOS Germany and the Joint-Municipality of Wendland for generously hosting the ICOMOS CIAV 2016 annual conference;

Express gratitude to the Wendland Rundlinge local communities for their hospitality and the warm welcome offered;

Affirm that the Wendland Rundlinge constitute an exceptional example of European vernacular heritage, which needs to be preserved for future generations and encourage the responsible authorities at national, state, regional and municipal level to do their utmost for facilitating their authentic conservation;

Welcome the initiative to nominate the Wendland Rundlinge to the UNESCO World Heritage List and emphasize that such nomination would propose an example of vernacular heritage, which is an underrepresented category on the UNESCO World Heritage List;

Strongly endorse this World Heritage nomination initiative, noting that the Wendland Rundlinge represent a globally outstanding example of a village typology characterized by vernacular architectural heritage of global significance;

Consider that the Wendland Rundlinge have great potential to demonstrate Outstanding Universal Value as required by the World Heritage Convention and request the German state and national authorities to include the Wendland Rundlinge on the national Tentative List;

Welcome the state, regional and local heritage experts involved in the documentation, conservation and management of the Wendland Rundlinge to apply for ICOMOS membership, become active members of ICOMOS and contribute to the work of ICOMOS CIAV in sharing their experiences and knowledge in future conferences on the conservation of vernacular heritage.

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Internationale Fachtagung des Deutschen Nationalkomitees von ICOMOS in Zusammenarbeit mit dem Bayerischen Nationalmuseum, München, 11.–13. 11. 2005
Regensburg 2007, ISBN 978-3-7954-1946-2

XLV Ursula Schädler-Saub (Hrsg.)
Weltkulturerbe Deutschland –Präventive Konservierung und Erhaltungsperspektiven Internationale Fachtagung des Deutschen Nationalkomitees von ICOMOS, der Hochschule für angewandte Wissenschaft und Kunst Hildesheim / Holzminden / Göttingen und der Diözese Hildesheim in Zusammenarbeit mit der Evangelisch-Lutherischen Landeskirche Hannovers, Hildesheim, 23.–25. November 2006
Regensburg 2008, ISBN 978-3-7954-2136-6

XLVI Jörg Haspel / Michael Petzet / Christiane Schmückle-Mollard (Hrsg.)
Welterbestätten des 20. Jahrhunderts. Defizite und Risiken aus europäischer Sicht
Internationale Fachtagung des Deutschen Nationalkomitees von ICOMOS in Zusammenarbeit mit dem Landesdenkmalamt Berlin und dem ICOMOS International Scientific Committee on 20th Century Heritage, Berlin, 9.–12. 9. 2007
Petersberg 2008, ISBN 978-3-86568-393-9

XLVII Erwin Emmerling (Hrsg.)
Toccare – Non Toccare
Eine internationale Konferenz des Deutschen Nationalkomitees von ICOMOS in Zusammenarbeit mit dem Architekturmuseum und dem Lehrstuhl für Restaurierung, Kunsttechnologie und Konservierungswissenschaft der Fakultät für Architektur, TUM München, 7.–8. Dezember 2007
München 2009, ISBN 978-3-935643-46-7

XLVIII Jörg Haspel (Hrsg.)
Das architektonische Erbe der Avantgarde
Berlin 2010, ISBN 978-3-930388-58-5

XLIX Jörg Haspel (Hrsg.)
Welterbe weiterbauen – St. Petersburg und Berlin-Potsdam
Berlin 2010, ISBN 978-3-930388-57-8

L Jürgen Pursche (Hrsg.)
Stuck des 17. und 18. Jahrhunderts. Geschichte – Technik – Erhaltung
Internationale Tagung des Deutschen Nationalkomitees von ICOMOS in Zusammenarbeit mit der Bayerischen Verwaltung der staatlichen Schlösser, Gärten und Seen, Würzburg, 4.–6. Dezember 2008
Berlin 2010, ISBN 978-3-930388-30-1

LI Sigrid Brandt / Jörg Haspel / Michael Petzet (Hrsg.)
Weltkulturerbe und Europäisches Kulturerbe-Siegel in Deutschland – Potentiale und Nominierungsvorschläge
In Zusammenarbeit mit TICCIH Deutschland
Berlin 2011, ISBN 978-3-930388-26-4

LII Volkmar Eidloth (Hrsg.)
Europäische Kurstädte und Modebäder des 19. Jahrhunderts / European Health Resorts and Fashionable Spas of the 19th Century / Stations thermales et villes d'eaux européennes à la mode au 19ème siècle
Internationale Fachtagung des Deutschen Nationalkomitees von ICOMOS, des Landesamtes für Denkmalpflege Baden-Württemberg im Regierungspräsidium Stuttgart und der Stadt Baden-Baden, Baden-Baden, 25.–27. November 2010
Stuttgart 2012, ISBN 978-3-942227-07-0

LIII Jüdische Friedhöfe und Bestattungskultur in Europa / Jewish Cemeteries and Burial Culture in Europe
Internationale Fachtagung von ICOMOS Deutschland und Landesdenkmalamt Berlin in Zusammenarbeit mit der Jüdischen Gemeinde zu Berlin, Stiftung Neue Synagoge Berlin – Centrum Judaicum, Arbeitsgemeinschaft Friedhof und Denkmal e.V. – Stiftung Zentralinstitut und Museum für Sepulkralkultur, Kassel, Berlin-Weißensee, 3.-6. April 2011
Berlin 2011, ISBN 978-3-930388-25-7

LIV Frank Pieter Hesse (Hrsg.)
Stadtentwicklung zur Moderne: Entstehung grossstädtischer Hafen- und Bürohausquartiere / Urban Development towards Modernism: The birth of the Metropolitan Harbour and Commercial Districts
Internationale Fachtagung, veranstaltet von ICOMOS Deutschland und der Kulturbehörde Hamburg / Denkmalschutzamt in Zusammenarbeit mit der HafenCity Universität Hamburg und der Sutor-Stiftung, Hamburg, 13.-14. Oktober 2011
Berlin 2012, ISBN 978-3-930388-17-2

LV Weltkulturerbe Konstantinbasilika Trier – Wandmalereien in freier Bewitterung als konservatorische Herausforderung
Internationale Tagung des Deutschen Nationalkomitees von ICOMOS in Zusammenarbeit mit der HAWK Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzminden/Göttingen, der Generaldirektion Kulturelles Erbe Rheinland-Pfalz und dem Landesbetrieb Liegenschafts- und Baubetreuung LBB Trier, Kurfürstliches Palais, 7. bis 9. April 2011
Berlin 2012, ISBN 978-3-930388-24-0

LVI Thomas Danzl / Matthias Exner / Elisabeth Rüber-Schütte (Hrsg.)
Wandmalereien in Krypten, Grotten, Katakomben. Zur Konservierung gefasster Oberflächen in umweltgeschädigten Räumen / Wallpaintings in Crypts, Grottoes, Catacombs. Strategies for the Conservation of Coated Surfaces in Damp Environments
Internationale Tagung des Deutschen Nationalkomitees von ICOMOS in Zusammenarbeit mit dem Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt und der Hochschule für Bildenden Künste Dresden, Quedlinburg, 3. bis 6. November 2011
Petersberg 2013, ISBN 978-3-86568-984-9

LVII UNESCO-Welterbe in Deutschland und Mitteleuropa. Bilanz und Perspektiven
Internationale Fachtagung des Deutschen Nationalkomitees von ICOMOS in Zusammenarbeit mit der Bayerischen Verwaltung der staatlichen Schlösser, Gärten und Seen, München, 29. bis 30. November 2012
Berlin 2013, ISBN 978-3-930388-23-3

LVIII Sozialistischer Realismus und Sozialistische Moderne. Welterbevorschläge aus Mittel- und Osteuropa / Socialist Realism and Socialist Modernism. World Heritage Proposals from Central and Eastern Europe
Dokumentation des europäischen Expertentreffens von ICOMOS über Möglichkeiten einer internationalen seriellen Nominierung von Denkmalen und Stätten des 20. Jahrhunderts in postsozialistischen Ländern für die Welterbeliste der UNESCO, Warschau, 14. bis 15. April 2013
Berlin 2013, ISBN 978-3-930388-90-5

LIX Ursula Schädler-Saub / Angela Weyer (Hrsg.)
Geteilt – Vereint! Denkmalpflege in Mitteleuropa zur Zeit des Eisernen Vorhangs und heute
Internationale Tagung der HAWK und des Deutschen Nationalkomitees von ICOMOS in Kooperation mit dem Geisteswissenschaftlichen Zentrum Geschichte und Kultur Ostmitteleuropas an der Universität Leipzig (GWZO) und dem Arbeitskreis deutscher und polnischer Kunsthistoriker und Denkmalpfleger, Hildesheim, 25. bis 28. September 2013
Petersberg 2015, ISBN 978-3-7319-0157-0

LX Thomas Will, Heiko Lieske (Hrsg.)
Hochwasserschutz an historischen Orten. Integration denkmalpflegerischer Belange in wasserbauliche Schutzkonzepte / Flood Protection for Historic Sites. Integrating Heritage Conservation into Flood Control Concepts
Internationale Tagung des Deutschen Nationalkomitees von ICOMOS in Zusammenarbeit mit der Arbeitsgruppe Denkmalpflege und Hochwasserschutz an der Technischen Universität Dresden, Dresden, 13.-14. Juni 2014
Berlin 2015, ISBN 978-3-945880-05-0

LXI Stefan Winghart, Jörg Haspel (Hrsg.)
Vom Ende her denken?! Archäologie, Denkmalpflege, Planen und Bauen
Kolloquium des Deutschen Nationalkomitees von ICOMOS und des Deutschen Archäologischen Instituts in Kooperation mit der Bundesarchitektenkammer, dem Verband des Landesarchäologen in der Bundesrepublik Deutschland und dem Niedersächsischen Landesamt für Denkmalpflege, Leipzig, 7. November 2014
Hameln 2016, ISBN 978-3-8271-8046-9

LXII Industrielle Kulturlandschaften im Welterbe-Kontext
Internationale Tagung von ICOMOS Deutschland und TICCIH Deutschland in Zusammenarbeit mit der Stiftung Industriedenkmalpflege und Geschichtskultur und den Partnern im Welterbe-Projekt „Industrielle Kulturlandschaft Ruhrgebiet“, 26.–27. Februar 2015, Kokerei Hansa, Dortmund
Berlin 2016, ISBN 978-3-945880-11-1

LXIII Sigrid Brandt, Jörg Haspel (Hrsg.)
Denkmal–Bau–Kultur: Konservatoren und Architekten im Dialog. Kolloquium anlässlich des 50jährigen Jubiläums von ICOMOS Deutschland / Conservation–Construction–Culture: Conservationists and Architects in Dialogue. Colloquium on the Occasion of the 50th Anniversary of ICOMOS Germany
Berlin 2017, ISBN 978-3-945880-23-4

LXIV „Eine Stadt müssen wir erbauen, eine ganze Stadt!“ Die Künstlerkolonie Darmstadt auf der Mathildenhöhe / “A city, we need to build an entire city!” The Darmstadt Artists’ Colony on the Mathildenhöhe
Internationale Fachtagung, veranstaltet vom Landesamt für Denkmalpflege Hessen, der Wissenschaftsstadt Darmstadt und dem Deutschen Nationalkomitee von ICOMOS e.V., Darmstadt, 17.-19. April 2016
Wiesbaden 2017

LXV Sigrid Brandt (Hrsg.)
Im Schatten des Kalten Krieges. Dokumente und Materialien zur Geschichte von ICOMOS Deutschland
Berlin 2017, ISBN 978-3-945880-31-9

LXVI Rudolf Klein
Metropolitan Jewish Cemeteries of the 19th and 20th centuries in Central and Eastern Europe. A Comparative Study.
Petersberg 2018, ISBN 978-3-7319-0752-7