

Nature or Culture? Constructional variation in Scandinavian medieval urban timber buildings

Johan Anund

Domestic buildings; timber buildings; building techniques; cultural/social differences

In general, the nature of secular medieval building in Scandinavian towns is poorly understood. Stone buildings aside, the material is commonly perceived either as a conglomeration of timber building types, or else as being completely homogeneous. Subtle distributional distinctions, both geographical and chronological (with the exception of the very early medieval period), are absent. This problem has afflicted amateur and professional archaeology alike. In the case of the latter there are two principal reasons. First, very few large-scale studies have been published. Second, comparative archaeological building analysis has not been prioritised during recent decades. Current work is based largely on older research, which includes a greater element of ethnography than archaeology. Archaeologists themselves have often been confused in their definitions. Timber buildings have been categorised as, for example, post-and-plank, stave walled, wattle walled, corner-jointed, cellared, commercial, post-built, or furnished with an external gallery. An important objection here is that these definitions are founded on overlapping parameters: certain types being based on walling technique, others on function, the absence or presence of a cellar, or on foundation type. Moreover, attention is often focused on purely technical aspects. Important factors seldom discussed include production processes, labour organisation, and the craftsmen's traditions and ways of thinking represented in these often technologically relatively advanced medieval timber buildings (cf. Høgseth 1999).

The aim of this paper is twofold: to try to identify broad differences in secular, urban building techniques in medieval Scandinavia; and,

if such exist, to analyse their underlying reasons, weighing natural against cultural factors.

Source Criticism

A study of Uppsala, the central Swedish episcopal see, found 366 medieval timber buildings to have been analysed using modern techniques. In 21% of cases the principal timber type could not be identified; walling technique was unknown in 68% of cases; floor and foundation type could not be determined in 55% and 61% of cases respectively. Many uncertainties therefore exist, and it must be accepted that certain building types may be underrepresented (Fig. 1). Even if we take this source criticism into account, the material can still be looked at statistically, as its very size eliminates certain methodological deficiencies (Anund 2001).

Technique and Design in Scandinavia – a common timber-building culture?

Scandinavian medieval building culture as a whole differed greatly to that found over much of the Continent. But to what extent did a uniform Scandinavian building culture exist? The nature of the raw materials was, of course, one factor: was there access to easily quarried stone; was coniferous or broadleaf timber available? In terms of timber, a broad dividing line extended across southern Sweden. To the north, building techniques were characterised by the use of pine; to the south and in Denmark, this timber was rarely used (for example,

Hinz 1989). However, the question is whether the north-Scandinavian towns shared a common building tradition. In certain ways they did: stone and half-timbered structures were both relatively uncommon, except in Stockholm. But this aside, how similar was Scandinavian timber architecture? It is of interest here to compare certain distribution patterns:

Internal roof-bearing posts

This prehistoric technique, employing free-standing posts within the building, is known in many forms in medieval rural contexts (Skov 1994; Åqvist 1998; Göthberg 2000). Its prevalence in urban contexts is unknown, although there are examples from the 11th and 12th centuries in southern Sweden, and one as late as the 14th century in Halmstad in western Sweden (Nilsson 1986; Augustsson 1995, 1992b). Few urban examples are known from elsewhere in Scandinavia.

Wattle

Oslo appears to have abandoned this walling technique c. AD 1100 (Fett 1989, 50); the same is true for southern and central Sweden (Nilsson 1976; Pettersson 1992; Anund 2001). Wattle walling appears to have gone out of use in Halmstad some time after the 14th century (Augustsson 1992b).

Stave walling

In both Denmark and Sweden, stave walling was prevalent in urban contexts during the early medieval period, up to c. 1250 (Schmidt 1994; Fett 1989, 50; Carlsson 1998, 74–85;

Ekre 1986). Bergen and Halmstad, on the other hand, were still using the technique in the 14th century (Reimers 1976, 2001; Herteig 1990/1991; Augustsson 1992b). Stave walling predominated in early medieval Bergen, and appears to have been a defining characteristic of the town’s architecture.

Post-and-plank

This was another common technique in Denmark, Sweden and Norway during the early medieval period, up to c. 1300 (Schmidt 1994; Henriksson 1996; Augustsson 1992a, 1995; Ekre 1986; Pettersson 1992; Carlsson 1998, 74–85; Anund 2001). Post-and-plank buildings were found in Halmstad during the 15th and 16th centuries (Augustsson 1992b). Oslo seems to have used the technique only during the 12th century (Fett 1989). Post-and-plank buildings heavily dominated Uppsala between 1100 and 1300 (Anund 2001).

Corner-jointing

Corner-jointed, log-built structures were clearly common in medieval Oslo and Trondheim from the 11th century onwards at the latest (Fett 1989, 50; Christophersen 1994). The technique predominated in Uppsala as early as 1250, and during the later medieval period very few other types of structure were built in the town (Anund 2001). Corner-jointing is known from Söderköping and Tönsberg from the mid-12th century at the latest (Tesch 1987; Fett 1986); in Lödöse and Kungahälla it is unknown before c. 1250 and 1300 respectively at the earliest. The technique was rare in Halmstad and Skara before the 15th and 16th

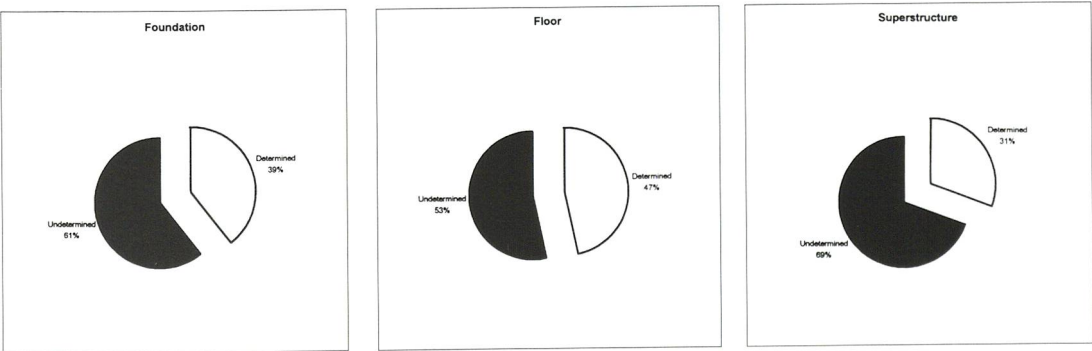


Fig. 1: It is worth remembering that little is known about certain basic characteristics of medieval buildings. In the majority of cases, how the foundations, superstructure and floor were constructed is unknown. However, see Figure 2.

	Uppsala c. 1050–1700: all type- determined buildings	Uppsala c. 1050–1700: type- determined timber buildings	Oslo c. 1025–1625	Trondheim c. 900–1600
Percentage Determined	30%	–	36%	70%
Corner-jointing	44%	64%	90%	96%
Post-and-plank	2%	31%	5%	1.3%
Stave walling	4%	3%	7%	0.7%
Wattle	2%	3%	3%	–
Composite Techniques	3%	4%	4%	1.3%
Brick	28%	–	–	–

Tab. 1: Comparison between constructional techniques in Uppsala, Oslo and Trondheim. The Uppsala figures represent the entire town's studied buildings, whereas those for Oslo and Trondheim derive from selected town quarters (Fett 1989; Christophersen 1994; Anund 2001).

century respectively (Augustsson 1992, 1995; Carlsson 1998, 74–85; Carlsson 1992), and appears to have been virtually unknown in southern Scandinavian towns such as Lund (Nilsson 1986).

Half-timbering

It is far from clear how, why and when the technique of half-timbering was introduced to various parts of Sweden. An almost nature-deterministic explanation is that it was adopted due to a shortage of timber. The technique became common in Lund and Skara during the 13th century (Nilsson 1986; Carelli 1996; Gardelin 2000; Augustsson 1995). Introduced to Halmstad during the 15th century for the construction of outhouses etc., it probably became predominant in the town during the 16th century (Augustsson 1992b). Uppsala, on the other hand, has yielded the remains of only one half-timbered building (Anund 2001). If, as has been suggested, the technique was an urban development, a timber shortage seems unlikely to be the underlying reason: there would also have been a corresponding lack of timber in the countryside – where the majority and largest of this type of building were found. The problem is that the towns were also situated in the countryside. Almost everything else was brought into the towns – why should it have been so difficult to import timber? Another, probably more socially related answer must be sought.

An analysis of Scandinavia thus reveals a variety of constructional techniques. One can, in part, suspect regional differences, but clearly local patterns also emerge. Our next step is therefore to examine some of the towns with numerous published data, in order then to discuss the reasons for these differences. Uppsala, Oslo and Trondheim represent three central-Scandinavian geographical and cultural spheres. All three were founded during the early medieval period, and all are episcopal sees. Environmental differences, together with variations in terms of cultural contacts, ought to have influenced each town's respective building culture. Table 1 summarises the relative frequency of the constructional techniques found in the three urban centres.

Similarities and Differences – regional characteristics and social groupings among Scandinavian timber buildings

Of the three towns, post-and-plank was typical for early and high medieval Uppsala. Corner-jointing was similarly distinctive in Oslo and Trondheim, as was stave walling in Bergen (Reimers 2001). These variations in building culture in four Scandinavian towns pre c. 1300 should be noted with interest, as should the fact that corner-jointing came to completely dominate all four during the late medieval period.

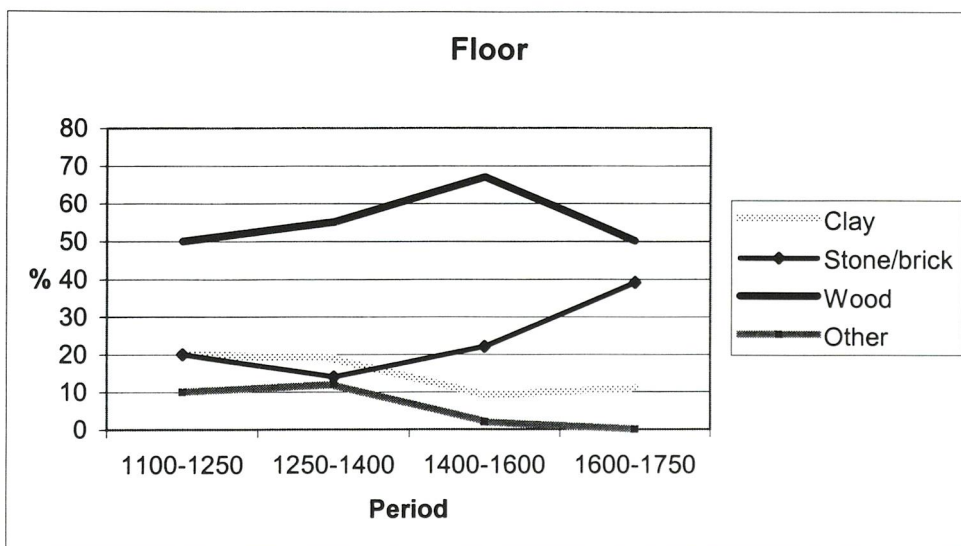
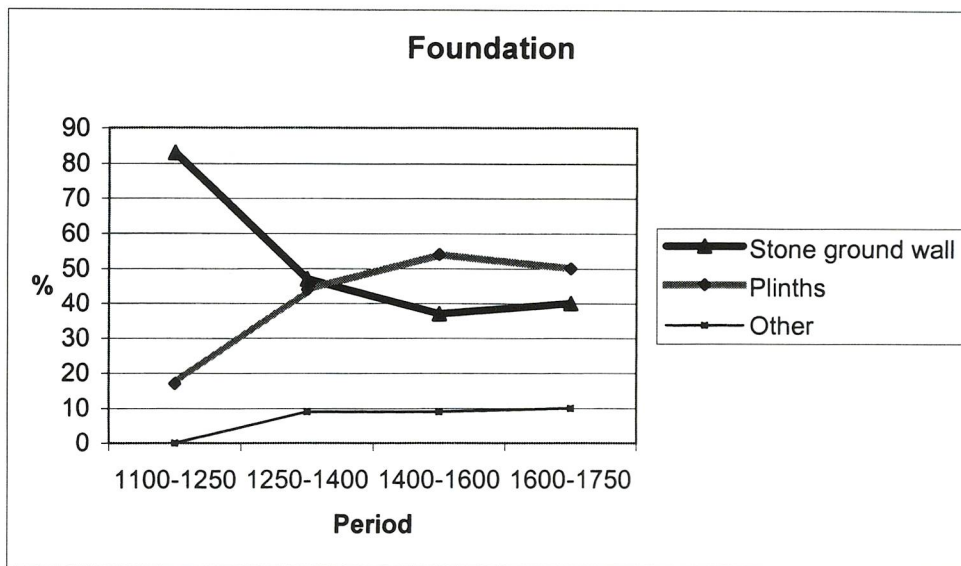
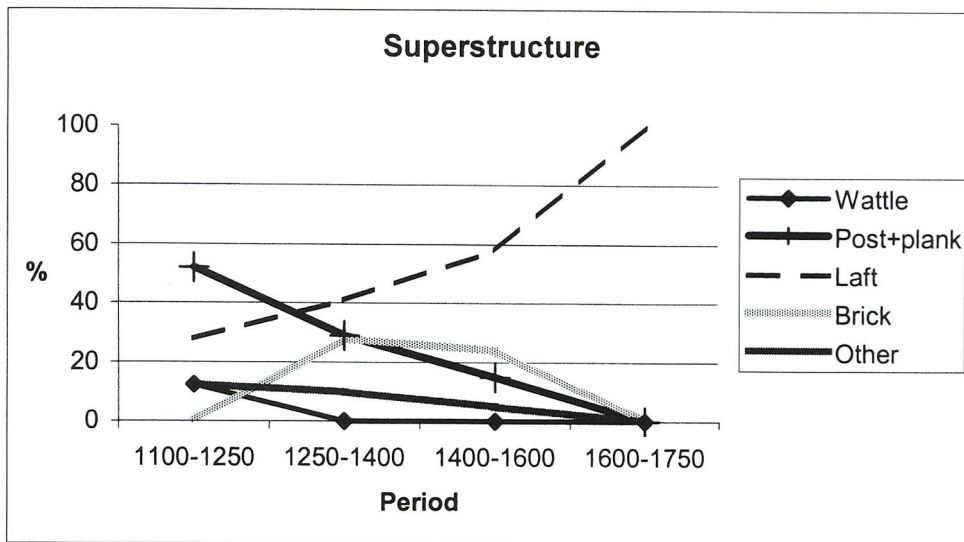


Fig. 2: Changes in building technique in Uppsala. Note especially the large proportion of early medieval post-and-plank buildings, the transition to corner-jointing, and changes in foundation type.

Why was corner-jointing less common in Uppsala than in parts of Norway, and, moreover, why did it later come to dominate the town? Its raw material – pine – ought to have been readily available in the Uppsala area throughout the medieval period. Timber-framed, post-and-plank (probably oak) construction was a clearly established urban tradition in the area from the Viking Age onwards, and the technique survived until the 15th century. It has been claimed that a shortage of oak (and possibly the elite's demand for this material) gradually contributed to a change in building culture. A lack of timber is the classic explanation for changes of this kind, but this argument can be questioned, or at the very least tempered with other factors. The southern Norwegian towns ought to have had the same access to oak as Uppsala. Availability was perhaps even better in Oslo, yet Oslo's buildings were never constructed with this kind of timber (Molaug 2001). Even allowing for the fact that (pine) post-and-plank construction was somewhat more common in Oslo than in Trondheim, the contrast in the early and high medieval period with Uppsala is still great.

Practicalities relating to building techniques and timber availability can be discussed further (cf. Augustsson 1992b). Central Sweden had a plentiful supply of timber, traditionally a natural explanation for why corner-jointed buildings predominated in late medieval Uppsala. However, contemporary Stockholm, in the vicinity of Uppsala and better placed in terms of trade, had a great proportion of half-timbered buildings. The timber-saving characteristic of this technique should play no role in this context; we know that timber was transported over long distances, and, moreover, was readily available in the Stockholm/Uppsala area itself. Urban building techniques, in common with the internal organisation of tenement plots, were probably much influenced by social trends, prestige and tradition.

Ethnography has suggested post-and-plank construction during the medieval period to have been a southern Scandinavian phenomenon, and that it was introduced to central Sweden rather later. Archaeology, however, has demonstrated the technique in central-Swedish urban contexts during the period AD 800–1400. If post-and-plank spread via the earliest towns in Denmark and Sweden, then this would explain its use in Uppsala.

However, the evidence from rural excavations in the Uppsala area supports the theory that many Iron Age longhouses were post-and-plank built. If the technique developed in, and became a tradition of, Iron Age farmsteads, it would rather have been the building types and roof-support systems that evolved during the Viking Age – not simply the walling technique itself.

Cultural explanations for the transition to corner-jointing tone down or even replace nature-deterministic arguments. In reality, no proof supports the idea of the nobility or the Crown restricting the supply of oak building timber for the remaining population. Moreover, the high quality of medieval pine would have allowed its use in post-and-plank buildings, thus replacing oak. It seems more likely that corner-jointing was actually preferred, perhaps for the living environment it afforded – warm, draughtless buildings being easily constructed by this means. Nevertheless, another factor may have contributed to the transition. Increases both in population size and building-plot prices made it ever more important to construct multiple-story buildings. In Sweden, very few two-story, post-and-plank buildings were built (Henriksson 1996, 44). In all probability, corner-jointing's most prized characteristic was that it allowed multiple-storied, even galleried, buildings to be easily constructed. This factor most likely dictated the appearance of Uppsala's late medieval townscape.

Notably, archaeology in Uppsala has yielded evidence for only *one* half-timbered building. The technique was common in southern Sweden, but its prevalence in central Sweden is unclear (Augustsson 1992). In 1582, according to written sources, 50% of the timber buildings of Stockholm (which lies in the area of Uppsala) were half-timbered (Bengtsson 1981). There seems therefore to have been a significant difference in building culture between regal Stockholm – which was in addition an important trading town – and ecclesiastical Uppsala. The latter may have been unusually conservative in its building culture (Anund 2000, 272), which perhaps explains why half-timbering never caught on in the town. The development of half-timbering has been linked with sociological change brought about by the Renaissance – the rise of capitalism and the increasing role of the individual, for example



Fig. 3: Stone buildings are usually associated with high status, timber buildings with low status. But the medieval townscape included a significant, additional group – exclusive timber buildings – that scholars have largely ignored. The photograph shows a now-unique late medieval building in an urban environment – the Mayor's guest-house in Örebro, central Sweden (Photograph: Johan Anund).

(cf. Thomasson 1997). These currents were probably much more strongly felt in mercantile Stockholm than in aristocratic Uppsala. It may even be that the inhabitants of Uppsala declined the use of this new technique and its aesthetics in order to mark themselves apart from Stockholm.

Urban medieval culture may correctly be viewed as distinct from the rest of society. On the other hand, it is important to remember that many of the craftsmen and merchants of Swedish medieval towns were also rural land-owners or farmers. Within this social class during the early medieval period, archaeology now suggests that there were fewer differences between town and countryside in terms of building culture than has previously been supposed (Åqvist 1998), although other variations still remain intact. In terms of building culture, differences between *classes* were, however, greater. The situation is more complex than simply that those in power generally differentiated themselves by using buildings of a different type to the rest of society. Usually, stone- and brick-built structures are the principal defining factor when identifying high class in a socio-economic context. Although buildings of this kind were usually reserved for the agents of the Church or Crown, or the middle-class elite, a large proportion of the Scandinavian elite lived in timber buildings constructed along the same lines as those of much of the rest of society. The difference was that the timber buildings of the elite were larger, possessed a greater number of floors, and were

more lavish in their architectural detail and internal furnishings (Werne 1993, 198). It is a great challenge for archaeologists to identify the social distinction between these types of building. In Uppsala, the social divide between minor nobles and well-to-do merchants on the one hand, and the more successful craftsmen on the other has been shown to be surprisingly small (Ljung 1954; Ferm 1986b; Anund 1998). We must therefore identify the more exclusive timber buildings, as a complement to the stone structures, in order to facilitate social study.

Only a very few late medieval, high-status timber buildings have survived (Fig. 3). The best-quality timber was obviously reserved for these structures, which bear witness to great investment. In central and northern Scandinavia, stone- or brick-built dwellings were relatively inhospitable during the cold half of the year. A building of this type must therefore be seen as making a very special statement, as the majority of the elite lived in the more exclusive timber houses. This state of affairs lasted from prehistory until sometime during the 16th century, when the elite acquired a new, radically different building tradition (Werne 1993, 200).

Medieval buildings should be divided not into two social groups, one stone the other timber, but (at least) three – the timber buildings of the general populace; those of the elite; and the stone- or brick-built buildings of the elite. This should form the basis of future studies.

Translated by Aidan Allen

Bibliography

- Andersson/Redin 1980 H. Andersson/L. Redin, *Stadsarkeologi i Mellansverige. Läge, problem, möjligheter* (= Medeltidsstaden 19), Stockholm, 1980.
- Andrén 1984 A. Andrén, *Lund. Tomtindelning, ägostruktur, sockenbildning* (= Medeltidsstaden 56), Stockholm, 1984.
- Andrén 1987 A. Andrén, *Medeltida tegelhus i Lund – en kort översikt* (= Hikuin 13), 1987.
- Anund 1999 J. Anund, "Trade in Uppsala c 1100–1700", in: R. Dunckel/M. Gläser/U. Oltmans (eds.), *Lübecker Kolloquium zur Stadtarchäologie im Hanseraum II: Der Handel*, Lübeck, 1999.
- Anund 2000 J. Anund/R. Carlsson/M. Elfwendahl/K. Pettersson, *I skuggan av Domkyrkan*, (= UV Bergslagen Rapport 2000:5), Uppsala, 2000.
- Anund 2001 J. Anund, "The curses and possibilities of wooden architecture: Domestic buildings in medieval Uppsala", in: B. Dahmen/M. Gläser/U. Oltmans/S. Schindel (eds.), *Lübecker Kolloquium zur Stadtarchäologie im Hanseraum III: Der Hausbau*, Lübeck, 2001.
- Åqvist 1998 C. Åqvist, *Gården på landet – en spegling av staden, Forntid i ny dager – arkeologi i stockholmstrakten*, Vicenza, 1998.
- Augustsson 1992a J.-E. Augustsson, "Medeltida husbyggande i Sverige", in: *Bebyggelsehistorisk tidskrift* nr 23, 1992, 55–85.
- Augustsson 1992b J.-E. Augustsson, *Husbyggande i Halmstad under perioden 1300 – 1750. Medeltida husbyggande* (= Lund studies in medieval archaeology 9), Stockholm, 1992.
- Augustsson 1995 J.-E. Augustsson, "Medeltida byggnadsskick. Skara i medeltiden", in: A. Boqvist (ed.), *Skrifter från Skaraborgs länsmuseum. Nr 22*, Skara, 1995.
- Bengtsson 1981 L. Bengtsson, *Profan medeltida bebyggelse i Gamla Stan. Stockholm* (= Medeltidsstaden 17), Stockholm, 1981.
- Carelli 1996 P. Carelli, *På Kulturens bakgård* (= Arkeologiska rapporter från Lund, nr 18), Lund, 1996.
- Carlsson 1992 K. Carlsson, *Bebyggelselämningar i Kungahälla. Medeltida husbyggande* (= Lund studies in medieval archaeology 9), Lund, 1992.
- Carlsson 1998 K. Carlsson, *Tre kvarter i Gamla Lödöse – kronologi och funktion. Urbaniseringsprocesser i Västsverige* (= GOTARC Serie C. Arkeologiska skrifter no 19), Borås, 1998.
- Christophersen 1994 A. Christophersen, *Gård og grunn. I: Christophersen, A & Nordeide S W. Kaupangen ved Nidelva* (= Riksantikvarens skrifter nr 7), Trondheim, 1994.
- Ekre 1986 R. Ekre, *Lödöse och västra Sverige. Knuttimring i Norden*, Falun, 1986.
- Eriksson 1992 J. E. G. Eriksson, *Sten og torv, eller tre? Medeltida husbyggande. Symposium i Lund november 1989* (= Lund studies in medieval archaeology 9), Lund, 1992.
- Ferm 1986a O. Ferm, *Från Östra Aros till Uppsala. Uppsala under tidig medeltid. Från Östra Aros till Uppsala* (= Uppsala stads historia VII), Uppsala, 1986.
- Ferm 1986b O. Ferm, *Ägande och boende i Uppsala under medeltiden. Från Östra Aros till Uppsala* (= Uppsala stads historia VII), Uppsala, 1986.
- Fett 1986 T. M. Fett, *Trebebyggelse fra middelalderske byutgravninger i Norge. Knuttimring i Norden*, Falun, 1986.
- Fett 1989 T. M. Fett, "Bygninger og bygningsdetaljer", in: Schia, E (ed), *Hus og gjerder. De arkeologiske utgravninger i Gamlebyen*, Oslo, 1989.
- Gardelin 2000 G. Gardelin, *Kv. Apotekaren 7, Lund* (= Arkeologiska rapporter från Lund, nr 23) Lund, 2000.
- Göthberg 2000 H. Göthberg, *Bebyggelse i förändring. Uppland från slutet av yngre bronsålder till tidig medeltid* (= Occasional papers in archaeology 25), Uppsala, 2000.

- Gustafsson 1986 J. H. Gustafsson, *Uppsala* (= Knuttimring i Norden. 40–42), Falun, 1986.
- Henriksson 1996 G. Henriksson, *Skiftesverk i Sverige. Ett tusenårigt byggnadssätt*, Stockholm, 1996.
- Herteig 1990/1991 A. E. Herteig, *The buildings at Bryggen. Their topographical and chronological development* (= The Bryggen papers. Main series. Vol 3, part 1/part 2), Drammen, 1990/1991.
- Hinz 1989 H. Hinz, "Ländlicher Hausbau in Skandinavien vom 6. bis 14. Jahrhundert", in: *Zeitschrift für Archäologie des Mittelalters*, Beiheft 5, 1989.
- Høgseth 1999 H. B. Høgseth, "Handlingsbasert kunnskap. Bygningslevninger som kilde til kunnskap i det arkeologiske materialet. Primitive tider", in: *Arkeologisk tidskrift*, 1999, 38–43.
- Larsson 1993 S. Larsson, *Kv. Myntet nr. 3, 4, 5. Lund* (= Rapport över arkeologisk undersökning, nr 3), Lund, 1993.
- Ljung 1954 S. Ljung, *Uppsala under yngre medeltid och vasatid* (= Uppsala stads historia II, Lundh), Uppsala, 1954.
- Magalotti 1674 L. Magalotti, *Relazione del Regno di Suezia del 1674 dal Conte L.M.*, 1674.
- Magnus 1555 O. Magnus, "A history of the Scandinavian people" (published in Latin), Rome, 1555.
- Molaug 2001 P. B. Molaug, "Medieval house building in Oslo", in: M. Dahmen/M. Gläser/U. Oltmans/S. Schindel (eds.) *Lübecker Kolloquium zur Stadtarchäologie im Hanseraum III: Der Hausbau*, Lübeck, 2001.
- Nilsson 1976 T. Nilsson, *Hus och huskonstruktioner. Uppgrävt förflutet för PKbanken i Lund. En investering i arkeologi* (= Archeologica Lundensia VII), Lund, 1976.
- Nilsson 1986 T. Nilsson, *Det tidigmedeltida Lund. Knuttimring i Norden*, Falun, 1986.
- Petré 1958 T. Petré, *Uppsala under merkantilismens och statskontrollens tidsskede. 1619–1789* (= Uppsala stads historia III, Lundh), Uppsala, 1958.
- Pettersson 1992 B. Pettersson, "Houses and townyards in late Viking age and early Medieval Sigtuna. Urbanism", in: *Medieval Europe 1992. Pre-printed papers*, Volume 1, York, 1992.
- Redin 1976 L. Redin, *Uppsala* (= Medeltidsstaden 3), Stockholm, 1976.
- Reimers 1976 E. Reimers, *Einige mittelalterliche Hauskonstruktionen in Bergen. Häuser und Höfe* (= Acta visbyensia V), Visby, 1976.
- Reimers 2001 E. Reimers, "Medieval domestic building in Bergen. A sample of the archaeological material. Der Hausbau", in: M. Dahmen/M. Gläser/U. Oltmans/S. Schindel (eds.) *Lübecker Kolloquium zur Stadtarchäologie im Hanseraum III*, Lübeck, 2001.
- Schia 1987 E. Schia, *Bygården, De arkeologiske utgravninger i Gamlebyen, Oslo. Bind 3. „Søndre felt“. Stratigrafi, bebyggelse rester og daterende funngrupper*, Øvre Ervik, 1987.
- Schmidt 1994 H. Schmidt, *Building customs in Viking age Denmark*, 1994.
- Skov 1994 H. Skov, *Hustyper i vikingetid og tidlig middelalder* (= Hikuin 21), 1994.
- Tesch 1987 S. Tesch, *Söderköping. 7000 år på 20 år. Arkeologiska undersökningar i Mellansverige*, Stockholm, 1987.
- Thomasson 1997 J. Thomasson, *Private life made public. Visions of the past. Trends and traditions in Swedish Medieval archaeology* (= Lund studies in medieval archaeology 19. Riksantikvarieämbetet Arkeologiska undersökningar. Skriftserie nr 24), 1997.
- Werne 1993 F. Werne, *Böndernas bygge*, Italy, 1993.

Address

Johan Anund
National Heritage Board (Riksantikvarieämbetet)
Instrumentvägen 19, S-126 53 Hägersten
johan.anund@raa.se