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DEFENDED COMMUNITIES OF THE 8TH–10TH CENTURIES

Edited by

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Timber and Earth in the Architecture of Italian Early Medieval Fortified Sites (8th–10th Centuries AD)

Vittorio Fronza

Earthen and Timber Buildings in Early Medieval Italy: A Research Theme

The study of earthen and timber buildings is a relatively recent, but still poorly developed, field of research in Italian Medieval Archaeology, especially if compared to studies on fortified sites of the period. This failing is magnified by the fact – now widely accepted within the scientific community – that timber and other perishable materials were the predominant building medium in early medieval Italy, in both rural areas and urban contexts. Quantitatively and qualitatively the growing archaeological evidence supports this statement. Despite this, and in direct contrast with what has happened with studies of masonry buildings – namely the development of an independent discipline of ‘archeologia dell’architettura’ (‘buildings archaeology’; see Brogiolo and Cagnana 2012) – the investigation of timber and earthen buildings has seen minimal take-up in Italian archaeological research in general or in early medieval archaeology specifically, except for a few exceptions (discussed in Fronza 2006, 539). Indeed, as a result of insufficient focused research, there has been no coherent effort to address issues in the data and the nature of the material evidence or to question the types and meanings of the architecture in earth and timber evident in Italy across the 4th–10th centuries AD.

However, some effort has gone into the study of residential buildings (‘edilizia residenziale’) – a subject stimulated by G. P. Brogiolo in the 1980s, given more academic emphasis at a conference held in 1993 (Brogiolo ed. 1994), and developed in several recent essays (e.g. Brogiolo 2008); furthermore, early medieval residential architecture (in stone, *spolia*, timber) has been the subject of a valuable synthesis by Santangeli Valenzani (2011). Brogiolo’s approach developed

in parallel with studies on medieval housing conducted by Paola Galetti, mainly drawing on written sources but with special attention given to material evidence (Galetti 1985; 1997; 2001; 2004; 2006). These two period orientations came together a decade ago at a conference on *Residential Building between the 9th and 10th Century: History and Archeology* (Bologna, 2005) (Galetti 2010), providing a notable stimulus for further investigations.

Relevant are those works of synthesis that include perishable material buildings as one important functional marker of change, especially in relation to settlement studies (e.g. Brogiolo and Gelichi 1996; Brogiolo and Chavarria Arnau 2005; Francovich and Hodges 2003). Moreover, a recent conference has explored early medieval timber and earthen fortifications (Settia *et al.* 2013), although its emphasis overall lay with later, medieval examples (even though the 9th and 10th centuries are touched on in discussions).

Yet it is valid to claim that archaeologists who consider data on timber and earthen buildings as primary indicators for developing historiographical trends are few in number. A strong exception is formed by the Sienese research team (see observations in Valenti 2008b and the data sources for studying rural settlement trends in Tuscany in Valenti 2004), whose interest in ‘perishable material architectures’ is strongly demonstrated in the long-term research project named SREA (*Siti Rurali e Edilizia Altomedievale* – ‘Rural sites and early medieval buildings’; see Fronza 2011, 100–107 for details). SREA began almost 20 years ago (Fronza and Valenti 1996), pursuing two interrelated paths: the study of timber and earthen buildings and the generation of an analytical atlas of early medieval rural settlements. Following a neo-processualist cognitive approach (Valenti 2012), at its base is a large dataset of published late antique

1 Chiari (Brescia)	13 Rocca di Staggia (Poggibonsi, Siena)
2 Verona	14 Montarrenti (Sovicille, Siena)
3 Bovolone-Crosare (Verona)	15 Miranduolo (Chiusdino, Siena)
4 Nogara	16 Donoratico (Castagneto Carducci, Livorno)
5 Cascina Borio (Alseno, Piacenza)	17 Rocca di Campiglia Marittima (Livorno)
6 Castrum de Pontelongo (Sant'Agata Bolognese, Bologna)	18 Radicofani (Siena)
7 Comacchio (Ferrara)	19 Scarlino (Grosseto)
8 Sant'Antonino di Pertì (Finale Ligure, Savona)	20 Castellina (Scarlino, Grosseto)
9 Priamar Fortress, Savona	21 Colle San Giovanni (Atri, Teramo)
10 Castello della Brina (Sarzana, La Spezia)	22 Bominaco (Camporotondo, L'Aquila)
11 Pontito, Castello di Terrazzana (Pescia, Pistoia)	23 Santa Maria in Civita (Guardiafiera, Campobasso)
12 Monte Castellare (San Giuliano Terme, Pisa)	24 Castello del Monte (Montella, Avellino)

Figure 22.1. Map of Italy showing the key sites mentioned in the paper (Image by author).

and early medieval rural sites, managed within an elaborate database/GIS system (Fronza 2005; 2009). Currently the database has compiled publication data up to 2006; after that date only selected information has been added (however, a major updating is planned).

In this phase of research by SREA, it is possible to highlight diverse thematic issues, such as those explored in this article. At present, the database has a total of 1015 records of Italian sites/structures built in perishable materials, datable between the 4th–12th centuries AD, and referring to over 450 urban and rural archaeological sites; in total, this amounts to a minimum number of over 1400 single recorded structures. Recent statistical evaluations have confirmed the validity of our sample (Fronza 2011, 107–113) for analytical purposes: importantly the sample does not seem particularly affected by issues related to the uneven distribution of archaeological research on the Italian Early Middle Ages, both chronologically (with higher concentrations at the two ends of the time-period) and spatially (with a predominance of quantitative and qualitative data for some regions, these almost exclusively located in the centre and the north of the peninsula).

A Numerical Overview

The recording and interpretive methods adopted for the SREA project rely heavily on the use of digital tools biased towards the production of statistical and spatial analysis. Before outlining some elementary numerical processing on timber fortifications, it should be specified that the quantitative elaborations, although important in the analytical phase, do not represent an exclusive (or even primary) research interest of our approach. Rather, they are to be understood as a source of basic information that, if applied rigorously but without over-reliance, can aid the interpretation of complex and composite datasets.

The sample under consideration here comprises 97 records, including cases of fencing used as property limits (*clausurae*), which, although their function is quite different and they are not strictly classifiable as fortifications, arguably have a close resemblance (in building techniques) with defensive palisades. If our sample is limited only to fortification works, then the total consists of 54 known occurrences; the majority of these relate to rural sites (the map in Figure 22.1 represents the main sites cited in this paper).

While some authors do not always provide a full description of their evidence, on the whole, information presented appears to be sufficiently reliable and, at least for a few key sites, quite detailed. Dating of these structures is mostly based on contextualised finds (primarily pottery, but also metals and glass). Radiocarbon analysis has been carried out in some cases but, in my opinion, C14 data can create problems in early medieval Italian contexts,

especially since the calibrated results often give very large chronological forks (the higher confidence intervals are almost always greater than a century, and occasionally up to two); in addition, the organic material of timber structures is not always perfectly reliable, mostly due to the heavy post-depositional processes, which are typical of these pluristratified sites. One way to obtain reliable information would be to have several radiocarbon samples relating to the same phases of a site, in order to statistically balance any inconsistencies; but such rarely happens. Fortunately, data for and dating of early medieval Italian ceramics are now strong and I am convinced that ceramic seriations are statistically still the best grounded chronological indicator. But this would be a long (and interesting) methodological discussion, which diverts us away from the subject of this paper.

Some descriptive statistical processing has been carried out on this dataset and is discussed below. As noted, these analyses offer fairly broad results and not solid conclusions. Nonetheless, the macro-data help to give a chronological distributive framework and to delineate the major trends involved, thereby providing a valuable starting point for assessing and understanding this type of early medieval fortification.

Figure 22.2 displays a straight diachronic distribution of all evidence types classified as fortifications and *clausurae* on a 50-year chronological interval basis. Though basic, it yields useful information on our sample: non-stone fortifications show a clear growth trend across the Early Middle Ages; the curve becomes steep (showing high growth) around the mid-8th century, when the start of the highest frequency chronological interval begins, coinciding neatly with the period under study here. A peak comes around *c.* AD 950, after which comes a steady then rapid decrease; by AD 1150 it has dropped to the same low numbers as the 5th century. The explanation of these trends lies in the historical processes, as will be seen.

With the second chart (Fig. 22.3), a correlation is established between all known perishable material features and the ones interpreted as fortifications. The core question here is: can we trace similarities or differences in the diachronic distribution of the two sets? In other words, is the diachronic trend of timber and earthen fortifications directly influenced by that of all perishable material buildings (prefiguring a construction-technique dependent distribution) or does it follow its own rules, while tied to more general historical processes (an independent or, more likely, a settlement dynamics-dependent distribution)? In order to answer these questions I have charted the numerical difference (subtraction) between the fortifications frequency and that of all buildings, expressed as a percentage on the respective total occurrences in order to present comparable data. For example, looking at the graph, the value of approximately -10% attested for the first half of the

Figure 22.2. Diachronic distribution of perishable material fortifications in Italy (AD 400–1150).

4th century AD signifies that at this period the percentage of fortifications then active (calculated on the total number of fortifications) is 10 points less than the percentage of all kind of buildings (calculated on the total number of all perishable material built structures). If the values of every time interval would be 0, the two curves would be identical while, crudely speaking, values lower than 0 indicate a smaller incidence of fortifications compared to the general trend of perishable material buildings and values higher than 0 indicate a larger incidence (each value is clearly related to a single 50-year interval).

The curve generated is interesting, in that it confirms that the concentration in the use of timber and earthen fortifications lies between *c.* AD 750–1050. Two peaks can be recognised: the early 9th century and the mid-10th. As explored below, these data in fact have convincing explanations in the settlement history of this period.

‘Perishable Material Fortifications’

The label ‘timber and earthen architectures of fortified sites’, reflected also in the title of this paper, refers to structures of clear defensive purpose – either for a whole site or for a specific part of the settlement – in which wood and/or earth (mostly clay matrix soils, more rarely

tufaceous soils) are the exclusive, or characteristic, building material. We exclude here defences that are artificial modifications of the morphology of the ground, such as ditches or embankments.

Fortification works in Italy between the 8th and 10th century AD can effectively be divided into two large macro-typological groups or families, based on construction techniques: palisades or other structures made of posts planted directly in the ground (i) and circuits with timber or earthen walls set on masonry bases (ii).

The first macro-type comprises robust vertical poles set within postholes. We can distinguish various sub-typologies, mainly based around the layout of the posts and the mode/style of construction of the elevation. The simplest ones adopt the *Stabbau* technique: i.e. poles set tightly against each other to form a solid and very durable wall line. But construction methods can differ: thus, one category is represented by palisades with large posts arranged at a more or less regular distance (usually under 1.0 m apart, although occasionally spacing is wider); between them would have been set either horizontal wooden planks, wattle and daub walls or earthen (clay) walls. Sites with very marked defensive needs might feature palisades with doubled posts: i.e. posts are arranged in pairs (or as two approximately parallel rows), giving a greater

Figure 22.3. Diachronic distribution of the numerical differences between fortifications and all types of perishable materials buildings known in Italy (AD 400–1150), expressed in percentage of occurrences per time interval on the total.

thickness and stability to the fortification work. Spaces between these rows will have been filled by wattle and daub and/or earthen walls and perhaps in some cases with wood planking or boxing.

The second ‘family’ is defined by fortifications with a masonry base, usually *c.* 0.5–1.0 m high, and a superstructure (e.g. palisade, rampart) in perishable materials. Architecturally, different types can again be recognised, essentially based on the combination of two primary criteria: the construction details of the stone footings and the building techniques of the superstructure. The footings/foundations are usually directly built on the ground surface (this often cleared down to bedrock), without any foundation trench. Walls are predominantly dry-set or earth- or clay-bonded, their stones either unworked or only roughly hewn, and their setting usually rather irregular; only rarely are there coherent horizontal or sub-horizontal courses with a more or less regular height, while small stones are frequently used to plug gaps between the irregular larger ones. The ‘perishable’ superstructure or elevation can be divided into two main categories: palisades of single-post form (the best represented on Italian sites); and earthen banks/walls without evident posts.

(i) Palisades

For the early medieval period, the numerically most conspicuous and best preserved instances of palisaded fortifications are all in central Italy and especially in Tuscany where, in recent decades, there have been a number of important open-area research excavations on medieval rural hilltop sites (almost always identifiable as castles). Prominent is the evidence from the 1980s excavations at the castle of Montarrenti (Sovicille – prov. Siena; Cantini 2003), where several palisades enclosed the village, commencing in the 7th century. However, as will be seen, the available data on timber fortifications are often not particularly detailed and, for some sites, their presence is hypothesised on the basis of limited evidence, as for Radicofani (Avetta 1998), Monte Castellare at San Giuliano Terme (in the province of Pisa) (Manfredini *et al.* 1994) and the Rocca di Campiglia Marittima (prov. Livorno) (Bianchi 2003, 183 and fig. 21) (Fig. 22.4).

One issue relates to the conviction of archaeologists that such sites were defended in this period, as supported in the development of a strong settlement model for early medieval hilltop sites, based around a variety of important investigations (see examples below). But while we can now identify a clear trend, in terms of a growing

Figure 22.4. Campiglia Marittima (prov. Livorno). Reconstruction drawing of the 10th-century settlement enclosed by a palisade (Image from Bianchi 2003, 181, fig. 21).

concentration of power and of economic resources as well as a marked social hierarchisation from at least the 8th century AD, finding its apex during the 9th and 10th centuries and usually culminating with the *incastellamento* of these villages-estates (see Valenti, this volume), we should not assume that every upland site was fortified. Nonetheless, we can claim high confidence, on the basis of the extensive set of collected data, for the widespread use of timber fortifications. The evidence is sufficient to give insights into construction techniques and so to draw a sort of identikit of fortified settlements between the 8th and 10th centuries.

We can commence with a major type-site, the castle of Miranduolo (Chiusdino – prov. Siena), under extensive excavation since 2001 and especially important for its exceptionally well preserved stratigraphic deposits, with many sealed beneath burnt layers marking the end of almost every settlement phase between the 8th and 10th/early 11th centuries. Miranduolo in fact has the highest number of perishable material contexts in Italy (at present more than 100 structures) (syntheses are in Valenti 2008a, 2008b, 2010b, 2013b and this volume; Fronza 2012a. Website with all excavation databases: <http://archeologiamedievale.unisi.it/miranduolo>).

The earliest stable occupation on the hill of Miranduolo dates to the 7th century, by when the territory was in Lombard control, marked by a productive context

specialising in mining and in the reduction of iron ore (Fronza *et al.* 2012; La Salvia 2012). During the 8th century, the settlement underwent a radical transformation into a village based on an agricultural economy, in which two nuclei of power are evident, together with a first important social articulation in a pyramidal form (Nardini 2012; Valenti 2013b). Both of these power foci were enclosed by palisades and contained extensive areas dedicated to storage of foodstuffs. By the 9th century a clear re-definition in the village's morphology occurs, signifying a new balance of power: the site was converted into a fortified village serving as the head of a manorial estate (*curtis*). Defences defined the lord's quarters on the hilltop and another set enclosed most of the elevation. The settlement continued also on the lower slopes of the hill and, at its apex, we can estimate a demographical potential of about 300–400 inhabitants (Valenti 2011, 3–4). The lordly control on labour force and on production means appears to be very strong in this period, on the site itself as well as on the surrounding agricultural and silvopastoral land. The manorial village was transformed into a timber-built castle towards the late 10th century (the first mention comes in AD 1004, when the site belonged to the Gherardeschi family). Finally, during the second half of the 11th century, the stone castle was erected, although this was destroyed in the wake of struggles between the

Figure 22.5. Miranduolo (Chiusdino – prov. Siena). Reconstruction drawing of the building with 9th-/10th-century palisade (Image by Studio InkLink – Florence, Italy).

Gherardeschi and the bishop of Volterra, between the late 1120s and early 1130s. Miranduolo then began a slow but inexorable decline, falling into abandonment in the first half of the 14th century.

For the 9th-/10th-century village/manorial estate, two separate palisades existed: one, only partially identified, completely surrounded the terraced slopes of the upper part of the hill, enclosing what can be considered as the *pars dominica* of the *curtis*; the second defensive curtain, girded by two deep ditches, fortified the highest part of the hill, to be read as the *casa dominica*. The well-preserved stratigraphy at the latter enabled detailed analysis of the construction technique (Fig. 22.5): this palisade comprised a considerable number of posts (over 210 have been dug), mostly of elm or oak, usually stripped of bark and only rarely squared; technically and qualitatively, this work surpasses the construction work on the terraced slopes below (Fronza 2008). A sequence of very robust poles (average diameter of postholes: 0.4–0.5 m, but with some up to 0.7 m) lay close together, sometimes contiguous, but usually spaced 20–60 cm apart. The best preserved portions of the fortification show a frequent transversal doubling of the

posts – a feature observed discontinuously over the whole perimeter, but more regular on the better explored southern and western sides (Fig. 22.6). The spaces between the double posts featured wattle and daub walls with a consistent clay plaster coating. Along the southern side, several carbonised structural elements have been examined, identifying remains of elm posts around which was a framework of intertwined branches (mainly of ash wood). Some powder layers sealed the wood charcoal macro-remains and these can be interpreted as detached remains of a lime coating applied to the posts and wattling.

One notable finding lay on the inner part of the fortification's south-eastern corner, where two quadrangular structures were recognised. Modest in size and located on both sides of a wide area free of posts, these can probably be interpreted as the main entrance onto the hilltop area, protected by two small wooden towers or elevated platforms embedded in the palisade – a type of fortification almost unknown to Italy (but central and northern European comparisons are cited in Valenti 2010a, 8; see also other papers in the present volume). This defended entrance configures a component of monumentality which

is reinforced by the presence of the very large and deep double ditches noted above. Potentially this design mirrors the image that the landlord wanted to convey of himself, besides representing a wider context of insecurity and the need for elites to protect themselves, their goods and their main production means.

At the Rocca di Staggia (Poggibonsi – prov. Siena), where the investigated area is much smaller, the sequence of early medieval defence essentially follows that for Montarrenti

and Miranduolo, but differs in having an early masonry circuit wall that co-exists for a long time with wooden and mixed materials fortification elements (Fronza and Valenti 2006; Causarano *et al.* 2007; Francovich and Valenti 2007). The earliest settlement phase, from the first half of the 8th century to the late 9th, features a strong palisade delimiting the higher, presumably privileged part of the village; horizontal wooden planks or earthen walls likely ran between the vertical posts. A second, less substantial

Figure 22.6. Miranduolo (Chiusdino – prov. Siena). Doubled posts building technique of the 9th-/10th-century palisade: example from the western side of the hilltop (Image: author).

palisade, more fence-like, extended perpendicular to this main one, internally dividing the hilltop plateau. Around c. AD 900 the main palisade was replaced by a strong masonry wall that remained in use until the late 13th century; and around the mid-10th century, there is a wider shift to a construction technique combining stone and timber elements.

The settlement trend so far delineated for the Sienese excavations is applicable to several other sites in the region. Effectively this has led to the drafting of the so-called 'Tuscan model', now universally recognised by the international scientific community and characterised by a long and complex formation process of the early medieval village, that often (but not always) culminates in the transformation of hilltop sites into castles towards the end of the Early Middle Ages (Valenti 2004; 2009; 2013a; a step-by-step explanation of how the 'Tuscan model' developed over the last 25 years is offered in Valenti 2014).

Several other sites seem to fit to this model, among them the castle of Scarlino (prov. Grosseto; see Farinelli and Francovich 2000, 45–60; Marasco 2002–03; Valenti 2004, 56–59) with rather uncertain evidence of a palisade (Francovich *et al.* 1997, 98) and the castle of Donoratico (Castagneto Carducci – prov. Livorno; see Bianchi 2004 and Bianchi *et al.* 2011) where a limited stretch of a double-rowed palisade dating from the mid-8th century was identified (Pistolesi 2004).

In northern Italy, data on non-masonry fortifications show up several peculiarities, albeit maintaining trends in common with the contexts of central Italy. However, some notable sites in the lowlands of the inner and eastern Po valley present closely comparable features and can be considered as a distinctive settlement type, a sort of a counterpoint to the central Italian hilltop sites. One of the main characteristic traits of these northern sites is their location in areas of navigable rivers and/or swamplands. Among these, the *castrum Ponte Longi* in Sant'Agata Bolognese, mentioned in a document of AD 992 (Gelichi *et al.* 2014), has substantial remains of an early medieval settlement, whose first occupation phase dates to the 9th century and comprises an unfortified village-manorial estate with timber buildings. Its next phase corresponds to the imposition of a 10th-century castle, with the settlement girded by a palisade of massive oak posts, protected by a ditch and embankment. The settlement's centre of power, probably linked to the monastery of Nonantola, was set outside these fortifications and resembled a motte.

In the lowlands south of Verona there are two fortified sites that have yielded some of the currently richest data on settlement dynamics of this period in northern Italy. At Bovolone-Crosare, large-scale investigation (over a hectare in extent) identified a substantial settlement founded during the 9th century (Saggioro *et al.* 2004). By c. AD 900 comes a development phase in which the fortified area occupied

6–7 (loosely settled) hectares. A palisade, perhaps integrated in some stretches with a stone wall, at least part-enclosed the settlement and created a fortified space containing residential buildings, auxiliary structures and productive features (especially related to metallurgical activities).

The castle of Nogara was founded in the early 10th century as a result of an imperial concession (Saggioro *et al.* 2001; Saggioro 2011). In this the *castrum* is presented as endowed with ditches and embankments defended by wooden structures, such as small forts (*bertische*) and other unspecified features (*propugnacula*). Although not expressly mentioned by the written sources and not identified archaeologically, we should expect a palisade existed, given the mention of battlements (perhaps wattle screens crowning the defences?). Elsewhere we can cite Chiari (prov. Brescia; Venturini 2013), featuring a 9th-century palisade of substantial stakes (the main postholes are of constant diameter c. 0.5 m) alternating with smaller ones; and Cascina Borio of Chiaravalle (Alseno – prov. Piacenza; see Miari 2008, 196–197) with the corner of its palisade traced.

Traces of palisades also occur south and west, in areas of Byzantine tradition, before and after the Lombard conquest under King Rothari in AD 643. Perhaps the best known case is the *castrum Pertice* at Sant'Antonino di Pertì (Finale Ligure – prov. Savona), dated to between the second half of the 6th century and the 7th (Mannoni and Murialdo 2001). This is an important example of a planned fortification, clearly part of the Ligurian defensive system during the Byzantine period. The oldest settlement phase features a palisade that precedes the walls of the late 6th or early 7th century.

Other, later Ligurian sites can be noted. Between the end of the 8th and 10th centuries, for example, after a temporary abandonment of the area following Rothari's conquests, on the Priamar hill in Savona a *castrum* was built, re-occupying the pre-Roman settlement focus (Varaldo 1992 and 2000). The archaeological evidence indicates buildings on stone foundations (earth-/clay-bonded), together with a high number of postholes: these relate to an early medieval village, directly obliterating a mid-4th- to mid-7th-century burial ground. A small bedrock-cut trench has been interpreted as evidence of a wooden palisade belonging to a first fortification of the early medieval *castrum*, which was replaced during the second half of the 10th century, likely during the Saracen incursions, by a massive stone circuit wall. Different is the case of *castrum Brinae* (castle of Brina, Sarzana – prov. La Spezia) which recalls the settlement trends of the Tuscan sites rather than those of northern Italy: after a first phase starting in the late 7th century, during the 9th century the site becomes a manorial centre fortified by a palisade of coupled posts. Around c. AD 900 a second and inner palisade was built to enclose the small hilltop spaces probably to be identified as the centre

of power (Baldassarri *et al.* 2008; Baldassarri and Parodi 2011). The timber fortifications are replaced by a stone wall only during the 11th century.

Finally in this section, we can cite the few known southern Italian cases of perishable material defensive features. Generally, these regions witnessed a longer survival of the use of masonry building techniques from later classical times than in central and northern contexts. Hence, data on timber fortifications are quite rare. In part this could relate to the relatively limited number of specific investigations on early medieval contexts carried out in this part of the peninsula, but this cannot be the sole/main reason for their scarce diffusion. As a fairly recent statistical analysis was able to show, there is no straight geographical correlation in the ratio between the total number of known perishable material buildings and the total number of known sites of each region/province. In other words, if we take the average number of buildings per site on a regional basis as a comparable index, the use of perishable materials in constructions still appears to be generally less common in southern Italy (Fronza 2011, 107–111). Certainly on some sites there is relatively clear evidence of timber enclosures, as at the castle/monastery of Bominaco (Caporciano – prov. L'Aquila) where wooden buildings probably lay within a palisade (Staffa 1992; Pannuzi and Staffa 1994). And in the 9th century the long-term settlement of Santa Maria in Civita (Guardiafiera – prov. Campobasso; Barker *et al.* 1980; Barker 2001, 285–295; Bowes and Hodges 2002) can be viewed as an unusually large, centralised, fortified village, with evidence of a palisade on the hillside overlooking the valley; strong walls were traced on the opposite side, thus creating an interesting case of seeming co-existence of the two construction techniques. A slightly earlier context has been identified at the Castello del Monte near Montella (prov. Avellino; Rotili 2011; Ebanista 2012). Here, the 6th-/7th-century hilltop settlement, with timber buildings set on masonry footings, was probably defended by a double palisade: one enclosing the highest part of the settlement and the other the rest of the hilltop (see Rotili and Pratillo 2010, fig. 2 for a reconstruction). The timber fortification continued into the 8th-century phase, when the site is attested as a *curtis* in a text of Duke Arechis II dating to 762; it was replaced by a stone circuit as early as the 9th century.

(ii) 'Mixed materials' fortifications

Defensive elements combining stone and perishable building material – usually with a masonry base and elevations of wood and/or earth – and commonly called 'mixed material' construction, have already been mentioned. This building technique is not limited to fortifications (which, in fact, form a small percentage of all known cases), but has a widespread diffusion across the peninsula for all types of structures and especially for dwellings. It often marks a

transitional phase between constructions entirely made of perishable materials and those of masonry. Chronologically the building type spans the whole early medieval period, experiencing particular peaks in the 6th–7th centuries and in the 10th century.

The general trend of its chronological distribution is revealed in Figure 22.7 (the 'All buildings' line), where all mixed materials buildings in our database are diachronically compared to mixed materials fortifications (values are expressed in percentage of the single time interval occurrences on the total occurrences, in order to be comparable). The resulting curves allow a few considerations. First of all, there is again no coincidence between the two series, meaning that fortifications follow their own trend. In particular, they show a growing but relatively low incidence (which in our case signifies a lower presence of the fortified structures in relation to all mixed material buildings) until the 9th century. The peak can be placed in the 10th century, when the fortifications have a clearly higher statistical frequency, especially if compared to the general plot of the mixed materials building type. In fact, the curves cross already during the second half of the 8th century, but the greatest gap between the two occurs during the first half of the 10th century, signifying a higher incidence of fortifications within the mixed material building type in this period.

These trends are confirmed in well-investigated contexts. In fact, there are several known cases in the literature of mixed material fortifications, almost all of which relate to central Italy. Again the clearest evidence comes from Miranduolo: those walls enclosing only the hilltop during the first phase of *incastellamento* (from the final quarter of the 10th to first quarter of the 11th century), replacing the previous palisade destroyed by a fire, represent one of the best preserved structures of this type so far excavated (Valenti 2008a, 167–172; Fronza 2008). At a structural level, the posts were directly set in the masonry base, forming the framework of the higher parts of the fortification, which were covered with a thick layer of plaster. The construction technique is quite homogeneous (with some differences described below), while the foundations comprise roughly hewn limestone and rubble stone of medium and small size, fairly irregularly set. The key features occur on the northern and southern sides of the hilltop, in considerably different stratigraphic contexts.

On the northern side the best preserved portion serves as the foundation for the later, mid-11th-century circuit walls. This is the only segment of the mixed materials wall that appears to be lime mortar-bonded, although in several points the evidence is limited. On the southern side, the deposits show the more typical composition (Fig. 22.8); in particular, excellent stratigraphic conditions at the south-eastern corner of the circuit enabled close reading of the technical construction details and recognition of a probable secondary access (Fig. 22.9). The stone base was between 0.40 and

Figure 22.7. Diachronic distribution of 'mixed materials' architectures in Italy (AD 400–1150), with a comparison between fortifications and all 'mixed materials' buildings, expressed in percentage of occurrences per time interval on the total.

1.15 m in width, with 5–6 rows of fairly regular courses of roughly worked stones bonded by gray earth mixed with gravel. Several round and quadrangular postholes were detected on this. Almost 20 carbonised macro-remains of considerable size were recovered from a burnt layer and can be interpreted as structural elements of the defence's timber superstructure. Of particular interest is a large sample of wood belonging to a vertical post (Fig. 22.10): of dimensions 80 cm long, 20 cm wide and 10 cm thick, part of its pointed end survived, with fragments of a cork oak bark lining, probably as a protective waterproofing. The evidence, so far unique, indicates a refined construction technique and confirms intimate understanding by the villagers of local wood types, their uses and applications.

Proceeding westwards, a very similar stretch of E–W stone foundation was traced on a lower terrace, running parallel to the previously described foundation, forming a sort of 'corridor' c. 1.0 m wide: this delineates a transversal access to the castle, from S–N, through a passage that could be passed through only on foot (Fig. 22.9).

Earthen walls will have been set over the stone foundations and between the vertical posts. Some sections of these were still *in situ* or preserved directly on the masonry base. Interestingly, evidence of an external coating was

traced as collapse immediately outside the southern side of the wall: two large pieces of burnt lime plaster, 4–8 cm thick, covered an area of c. 2.0×0.80 m. The lime may have been generated by a small mortar machine, sited on the eastern part of the hilltop. As well as providing a strengthening to the walling, the lime plaster could also have acted as a visual marker to the defended zone.

Elsewhere, comparable examples include: the Castellaccio of Terrazzana (Pescia – prov. Pistoia), where the first phase of the small settlement, probably dating to the 9th–10th centuries, was enclosed by a palisade on a stone base (Quiros Castillo 1998, 183; 1999, 51–74; Milanese 1995); Scarlino (prov. Grosseto), where, during the 10th century, the palisade was replaced by a thick circuit wall of unworked stone bonded by earth, for which Valenti (2004, 45) has convincingly proposed a possible interpretation as a stone base with a perishable material upper part; and Castellina, located in the Maremma lowlands in the Scarlino district, occupying a slight elevation of land of diameter c. 70 m, where recent investigations (Marasco 2013) point to a settlement dating to between the 9th and 10th centuries, probably a lord's seat or *curtis* controlling both land and productive resources; it was enclosed by a circuit wall with stone and lime foundations, most likely completed by an

Figure 22.8. Miranduolo (Chiusdino – prov. Siena), southern side of the hilltop. Masonry bases belonging to the ‘mixed materials’ fortification (late 10th–early 11th century): a) general view of the eastern portion; b) detail of a posthole set in the eastern part of the stone foundation; c) general view of the south-eastern portion; d, e) details of the south-eastern portion; f, g) details of the south-western portion (Images: author).

Figure 22.9. Miranduolo (Chiusdino – prov. Siena), southern side of the hilltop. Secondary entrance through the ‘mixed materials’ defences (late 10th–early 11th century) (Image: author).

earthen wall elevation. Finally, at Colle San Giovanni (Atri – prov. Teramo), a palisade set on a stone foundation has been identified (Staffa 2000, 78–79; 2001, 165–167; 2005, 93–96); the feature, probably completed by an earthen wall set between the posts, is dated between the 7th–9th centuries.

Main Trends: Conclusions

It should first be stressed how fortifications largely built in perishable materials represent the absolutely dominant defensive form for Italian rural settlements between the 8th–10th centuries; stone-built fortification walls appear rare in the extreme unless a direct reuse of a late Roman defensive complex (*e.g.* Castelseprio). Second, and perhaps most notable, is the basic uniformity of the non-stone built defences – a homogeneity that has its roots deep in the historic processes of early medieval village formation and is reflected above all in the morphology of the fortified sites and in the expressions of building techniques.

Elements of this uniformity, from a settlement morphology perspective, are primarily the constant presence of palisades, often preceded by ditches, these sometimes of notable

proportions. *Aggeri* and embankments, on the other hand, are much less well attested (partly because, of course, many fortified settlements occupy hilltops). The important group of sites located in the Po plain deviates from this trend for obvious environmental reasons: here, the relationship with water and wetlands becomes central and besides the presence of embankments to create platforms on which to place the settlements (with a dual function of facilitating defence and protecting against floods), there are two elements that become crucial indicators for this settlement type, namely the digging of canals to regiment the floodlands and the proximity to waterways.

Rare elements in the archaeological record are supporting defensive structures: wooden towers are attested in very few cases and do not seem, at least in the current state of research, to be a common trait of fortified sites – though, as with recent finds of timber churches (see for example, Fronza 2012b for the case of Miranduolo), I am convinced that more exhaustive and large-scale excavations, particularly in correspondence to later masonry, fortified buildings, could be rewarding, given the evident functional continuity that often marks the use of these spaces.

Figure 22.10. Miranduolo (Chiusdino – prov. Siena), southern side of the hilltop. Well-preserved pointed end of an oak-wood post belonging to the ‘mixed materials’ defences (late 10th–early 11th century): a, b) general and detailed view of the context; c) corkwood bark fragments coating the tip of the post (Images: author).

From a technical viewpoint, the *Stabbau* with vertical posts adjacent to each other – perhaps the most widespread palisade type in Europe – is attested in Italy on a limited scale; cases in which an array of juxtaposed postholes is clearly recognised and interpreted as a continuous wall are quite rare, while spaced alignments of posts with various techniques forming the walls (wattle and daub, horizontal timber frames, earthen walls) are more frequent. Palisades with double posts forming two more or less regular lines leaving a small space between them appear a quite distinctive type. Despite being essentially a variant of the two main typologies, it features strongly in the hilltop sites of central Italy and especially of Tuscany; here it appears a fairly reliable indicator of a specific historical process.

In fact, for most of early medieval Tuscany, it seems clear that the presence of timber fortifications should be interpreted as a direct result of a general re-organisation of hilltop settlements under the direct pressure of a new landowning élite; in re-shaping the means and processes of agricultural production, we witness a centralisation of all strategic economic activities and of structures for storage and accumulation of foodstuffs. These efforts are almost always directed towards the formation of villages, in which we can at least in part identify expressions of the manorial system. This marks a key moment in the formation and establishment of aristocracies in the landscape and the fortification of upland settlement spaces is one of the most important indicators of this process.

And for northern and central Italy especially, these physical changes often represent a well structured step towards the formation of the castles. *Incastellamento* itself, in its many evident or subtle variations, is a process which is accomplished in most cases within the 10th century, often without changing significantly the élite's economic strategies nor, as a direct consequence, the village morphology including its defensive systems.

More widely, at a topographic-functional level all these early medieval fortifications (both palisades and 'mixed material' features) are related to a re-organisation of the settlement forms, marked by more pronounced planning and a progressive social hierarchisation aimed at imposing new or tighter economic and productive regimes. This is a major factor that distinguishes palisades of the timespan under scrutiny from those of earlier or later periods.

Also notable is the seemingly complete absence of perishable material fortifications in urban contexts. As noted recently (Cirelli 2013, 136), the form of urban defences remained substantially unmodified after the late Roman/antique period and only rarely have we clear evidence of early medieval works or changes. Exceptions include the noted Priamàr hill in Savona and Verona, where written sources referring to AD 837 mention a timber palisade

added to the city ditch (Brogiolo 2011, 99). One might also include the *emporium* of Comacchio in the province of Ferrara, a potential Byzantine new town/*castrum*, whose episcopal complex was girded by an embankment with palisade between the 9th and 11th centuries (Brogiolo 2011, 129–130; see Gelichi, this volume).

The uniformity of building fortifications that has so far been stressed breaks down on some levels during the final part of our chronological fork, when diverse types start appearing more frequently. But this transformation is valid not only for defensive structures but for all architectures. While we must be careful not to generalise, it is equally true that, from the north to the centre of the peninsula, new building types do characterise the final part of the Early Middle Ages. In particular, fortifications on stone foundations are key features of this transition phase. Indeed, while residential buildings on masonry substructures are widely attested more or less everywhere, fortifications with the same technique belong almost exclusively to hilltop sites of central and southern Tuscany. Here they become one of the indicators that guide scholars in further articulating the material transformations that mark the passage from villages serving as economic control centres (often in the form of manorial estates) to castles.

In the north of Italy, sill-beamed structures have a dominant place in residential architectures (as in the cited cases of Sant'Agata Bolognese, Bovolone, and Nogara, plus many other sites besides), but, curiously, the process traced in central Italy with stone foundation circuit walls does not happen here: the sill-beamed construction technique, at least from what is currently known, is never used for defensive structures. It is hard to say whether the reason is structural (e.g. reduced strength for features with a timber sill), related to resources, or if it is to be sought elsewhere. In any case it remains a striking feature yet to be explained.

A final observation concerns the relationship between building techniques and settlement dynamics: despite the changes discussed for the former, the 10th century does not witness a corresponding evolutionary process in the latter. Village morphology mostly remains close to that of the immediately preceding phases, thereby indicating a clear continuity in the socio-economic background. In Tuscany, this period corresponds often to the very early stages of *incastellamento*, as attested by documentary sources for many of the sites named above. But, as Valenti also shows (this volume), the transition between the village/manorial estate and the castle is primarily a juridical question that, at least in this early stage, does not seem to have had important reflections on the settlements' materiality. In this context, the same changes we witness in building techniques (for Tuscany, from palisades to mixed material enclosures) must be read simply as the replacement of one indicator of uniformity with another no less evident one.

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