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The Netherlands

## **Longhouses in unsettled settlements settlements in Beaker period and Bronze Age**

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THE  
PREHISTORY  
OF THE  
NETHERLANDS

VOLUME 1

Edited by

J.P. Louwe Kooijmans



# The Prehistory of the Netherlands

Volume I

Edited by

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### **Note on the dates used in this book**

Dates before 50,000 are based on various physical dating techniques, other than radiocarbon, and expressed as 'years ago'.

Dates in the period 50,000-10,000 years ago are based on uncalibrated radiocarbon dates and expressed as 'years ago' or 'years BP' (= Before Present).

Dates in the last 10,000 years are based on calibrated radiocarbon dates and expressed as 'years BC'. Only these dates can be equated with calendar or solar years.

See chapter 1, section 'periods and dates' for the principles of radiocarbon dating.

## 18 Longhouses in unsettled settlements Settlements in Beaker period and Bronze Age

Harry Fokkens

2900-1100 BC

As far as we know, the structure of settlements changed very little in the Late Neolithic. What did change was the subsistence system of the occupants of these settlements: innovations in farming practices that had been introduced in the Middle Neolithic, such as the use of ards and wagons, were commonly accepted in the Late Neolithic. From 3000 BC onwards the economy became increasingly dependent on cereal cultivation and stock keeping, although hunting and fishing remained important. In the course of the Bronze Age mixed farming became well-established all over the Netherlands. The appearance of farms with stall partitions in the Middle Bronze Age shows that cattle was the main stock. These farms formed parts of permanent settlements comprising one or more houses and outbuildings.

### BEAKER SETTLEMENTS

#### *The Single Grave culture*

Our knowledge of the settlements of the Single Grave culture is still rather limited. A few settlements of this culture have been investigated in Westfrisia. They are all situated on clay deposited during the Calais IV transgression (Aartswoud, Hoogwoud, Kolhorn). In addition, the remains of a number of settlements have been found on the coastal barriers of the western Netherlands (Voorschoten, Zandwerven) and on the sandy soils of the northern Netherlands (Anloo, Bornwird, Steenendam). One group of barrows of the Single Grave culture has been identified to the south of the great rivers but no settlements associated with this culture have so far been discovered in this area.

The representatives of the Single Grave culture hence built their settlements in all types of landscape, with the exception of peat. This was a new development. In the Middle Neolithic there had been a clear distinction between the settlements of the Funnel Beaker culture, which were built exclusively on sandy soils, and those of the Vlaardingen group, which were concentrated in the coastal area and along the great rivers. In the past it was always assumed that the wide distribution area of the Single Grave culture was the result of migration. It may, however, be more correct to relate this change in distribution pattern to a change in farming practices, resulting from the large-scale use of ploughs. Plough agriculture, which could be practised in all types of landscape, marks the transition to integrated mixed farming. Beaker assemblages can be seen as symbols of these innovations in the economy and the related changes in social organisation.

Most of our knowledge of the settlements of the Single Grave culture is based on information obtained from the salt marshes in the western Netherlands. The reason for this is that the occupation remains of virtually all of the sites in this sedimentary environment are contained in archaeologically visible culture horizons. Culture horizons are layers of humic clays mixed with charcoal, remains of plants and seeds, bones and other settlement debris; they vary in thickness from a few

to several dozen centimetres (fig. 16.4, plate 23A). The culture horizons of North Holland also contain large amounts of mussel and oyster shells. Culture horizons hence consist of layers of refuse formed during periods of occupation, which have been preserved by the clay that was deposited on top of them when the sea level rose and the peat that was later formed on top of this clay. The culture horizons contain large numbers of postholes but their diameters are usually too small to allow any reconstruction of house plans.<sup>1</sup> The general impression is that these settlements were occupied on a semi-permanent basis and that they comprised fairly insubstantial structures. However, as we know that houses were already being built in the Middle Neolithic it is not inconceivable that permanently occupied settlements comprising proper houses of the Single Grave culture will come to light in the future.

The settlement sites from this period, unlike those from later periods, contain few pits. At the settlement of Hoogwoud one pit was found, which contained a large amount of carbonised barley indicating that it may have been a storage pit. One of the most remarkable discoveries made at Kolhorn was a well that had been dug to 80 centimetres below the former water table. It is the oldest well that has so far been found in the Netherlands.<sup>2</sup>

The agrarian character of the settlements of this period is hence less apparent from the remains of dwellings than from the cereal remains and the bones of cattle, sheep, goats and pigs found in the occupation layers. At Kolhorn the clay subsoil moreover contained many impressions of hoofs of cattle (plate 23B). The layers of shells and bones of birds, fish and large game show that hunting and fishing were also important. The subsistence base of the occupants of these settlements hence comprised a wide range of activities. This kind of economy is also known as a broad-spectrum economy.<sup>3</sup>

As organic remains are not well preserved in sandy soils we know much less about the food economy of the settlements that were built on those soils. What we do have in these areas are plough marks. The best-known are the *ard* furrows found near Bornwird in Friesland.<sup>4</sup> Plough marks are also often found in the dunes of North Holland, but most of those are of a slightly later date (figs. 16.5, 22.5). The *ard* marks of Bornwird have been preserved so well because they were entirely covered by a layer of peat already around 2100 BC. Separate ploughing phases were distinguishable. The marks of most of these ploughing phases crossed one other perpendicularly, though in some cases all furrows were oriented in the same direction. The fact that separate ploughing phases were distinguishable probably indicates that the land was left fallow after periods of cultivation so as to allow it to regain fertility. These fallow periods were probably shorter than in the Middle Neolithic to avoid the risk of difficulties in ploughing caused by recovering roots and young trees growing on the untilled land; it is most likely that the land was left fallow for a few years only.<sup>5</sup>

The average distance between the furrows was 30 cm. *Ards* did not turn the turfs over and it is therefore assumed that they were used mainly to create furrows in which grain could be sowed in rows. The *ard* marks of Bornwird covered an area of at least 50 x 50 m; the limits of the field could not be determined.

Sherds of both funnel-beaker pottery (late Havelte phase) and protruding-foot-beaker pottery (Single Grave culture) were found in this field. They indicate continuity of use and this site hence plays an important part in the debate regarding the transition from the Funnel Beaker culture to the Single Grave culture.<sup>6</sup> The question is: how did these sherds end up in this field? There are no indications suggesting that the field was laid out on a former settlement site or that a settlement was later built on top of it. One of the hypotheses is that the sherds made

their way onto the field mixed with manure: we know that household refuse was often dumped on manure heaps. However, we have no direct evidence that manure was indeed being collected in this period.

Another well-known settlement site was excavated at Anloo in 1958.<sup>7</sup> At first the palisade or fence of thick posts discovered at this site was interpreted as the remains of a cattle pen of the Single Grave culture, an interpretation that agreed extremely well with the then commonly accepted opinion that the representatives of this culture were groups of cattle herders without fixed settlements. However, it is now assumed that the fence was built by representatives of the Funnel Beaker culture, of which many finds were found at this site. The excavation brought to light no postholes or pits from the Late Neolithic but many stray finds and a few graves from the late phase of the Single Grave culture.

#### The Bell Beaker and Barbed Wire Beaker cultures

The amount of information available on the settlements of the Late Neolithic period B (c. 2500-2000 BC), the period of the Bell Beaker culture, is even smaller than that available for the Late Neolithic period A. In fact, virtually all of our information on the settlements of this period comes from one site: Molenaarsgraaf in the Alblasserwaard district (fig. 18.1, plate 32A).<sup>8</sup> Here, in a peat marsh, a silted up gully known as the Schoonrewoerd stream ridge was situated. On the highest parts of the ridge the remains of a number of occupation sites ranging in date from 2200 to 1800 BC were found. On either side of this ridge were clay deposits. The settlements were only small, measuring no more than 0.25 ha, and had been built at regular intervals across 6 km of the 30-km long and approximately 100-m wide ridge. Some of the settlements were probably occupied at the same time. At one of these settlements the plans of two two-aisled longhouses were found. The houses

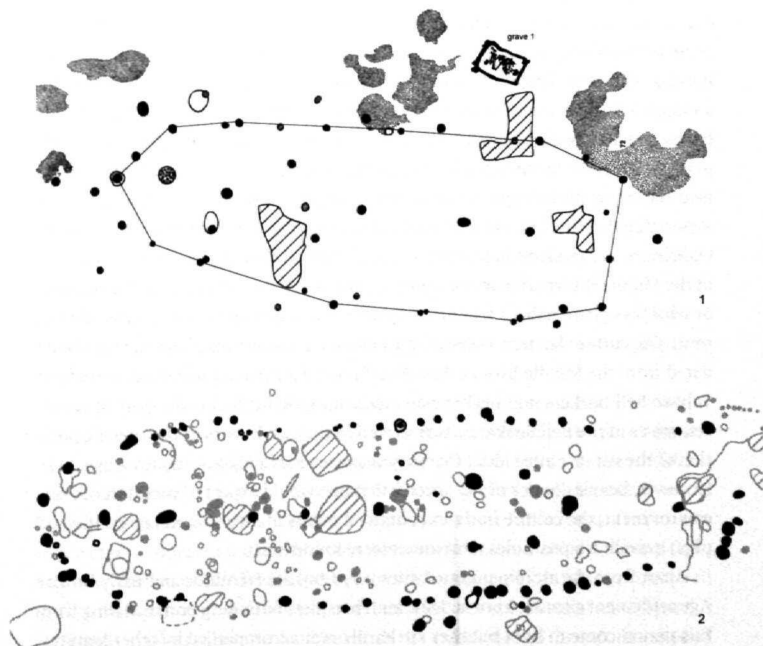


fig. 18.1

Two-aisled houses from the end of the Late Neolithic or the Early Bronze Age. The plan of Noordwijk has been published in several versions. The illustrated plan is the most recent version. Scale 1:200.

1 Molenaarsgraaf

2 Noordwijk

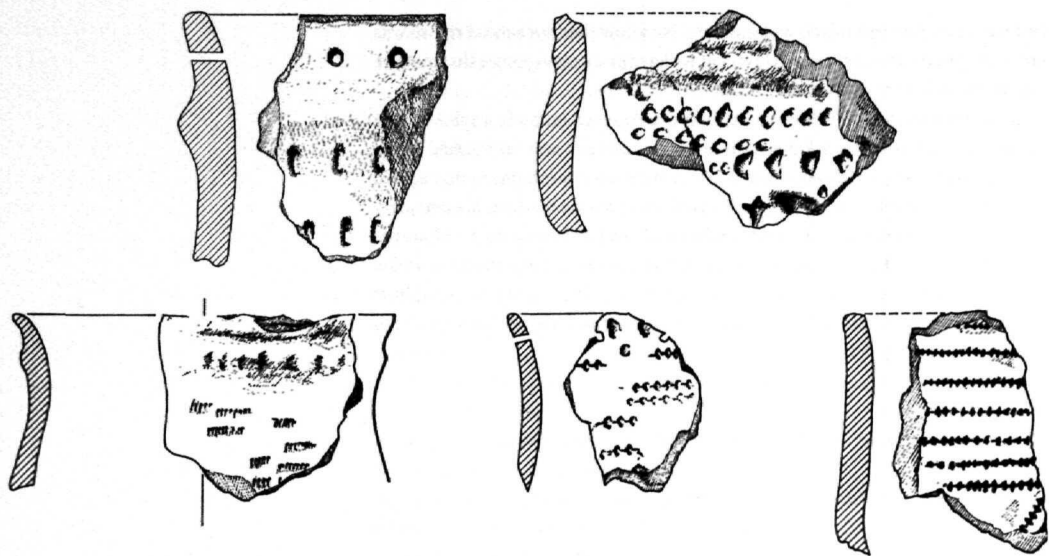


fig. 18.2  
Settlement pottery from the Late Neolithic / Early Bronze Age transition from Molenaarsgraaf. Top row: rusticated Bell beakers, lower part: fragments of Barbed Wire Beaker pots. Scale 1:2.

had measured about 20 x 6 m.<sup>9</sup> It was not possible to identify separate residential and stalling areas. The excavator dated one of the plans to the Late Neolithic period B and the other to the Early Bronze Age, though it is more likely that both plans date from the Early Bronze Age.<sup>10</sup> Several postholes at this settlement were found to date from the Late Neolithic, but it was not possible to reconstruct any house plans from them. Besides these house plans a number of pits were found at this site. Four of these pits turned out to be graves; three contained human remains and one the remains of a young bovine.

The range of bones found at these settlements indicates that in addition to cattle, which was the main stock, the occupants kept pigs, sheep and goats and an occasional horse. Few remains of game were found. The specific location of the settlements, along the bank of a small gully, suggests that fishing was also important. Direct evidence for fishing was found in one of the graves, in which an adult male had been buried accompanied by three bone fish hooks, a pair of flint flakes and a large hook made of red deer antler, which was possibly used to lift nets (fig. 19.1). In another grave a 2-cm long piece of the bone of a pike was found near the larynx of the approximately fifteen-year-old boy who was buried there. It is possible that this fish bone was the cause of his death.<sup>11</sup> Research carried out at Oldeboorn in Friesland has shown that fishing and hunting were still important in the Middle Bronze Age in the sandy region, too.<sup>12</sup> Near the Boorne the remains of what was presumably a fishing camp were found on a river dune surrounded by peat. The culture horizon consisting of charcoal, pottery and fragments of bone dated from the Middle Bronze Age. But the site also yielded numerous sherds of Veluwe bell beakers and beaker pots, indicating that it had been used by representatives of the Bell Beaker culture as well (fig. 17.4). In view of the specific position of the site it is most likely that they also used it as a fishing and fowling camp. However, besides bones of the species that one would expect to encounter in this environment, the culture horizon contained bones of large mammals (cattle and pigs) as well. No postholes whatsoever were found here.

Apart from the aforementioned sites very few Late Neolithic and Early Bronze Age settlement sites are known. Now and then pits containing pottery dating from this period come to light but they are hardly ever accompanied by other features,

such as postholes. The house plans of Molenaarsgraaf discussed above are the only evidence for dwellings from this period that has so far been found.<sup>13</sup>

The scarcity of house plans from the Late Neolithic and the Early Bronze Age is not a specifically Dutch problem: likewise, in the countries surrounding the Netherlands very few house plans from this period have been found. In England the remains of only a few round structures associated with the Bell Beaker culture have come to light. And in Denmark only recently house plans datable to before the Early Bronze Age have been found. The Danish Late Neolithic and Early Bronze Age house plans are in many respects comparable with the house plans of Molenaarsgraaf and Noordwijk.<sup>14</sup>

## MIDDLE BRONZE AGE SETTLEMENTS

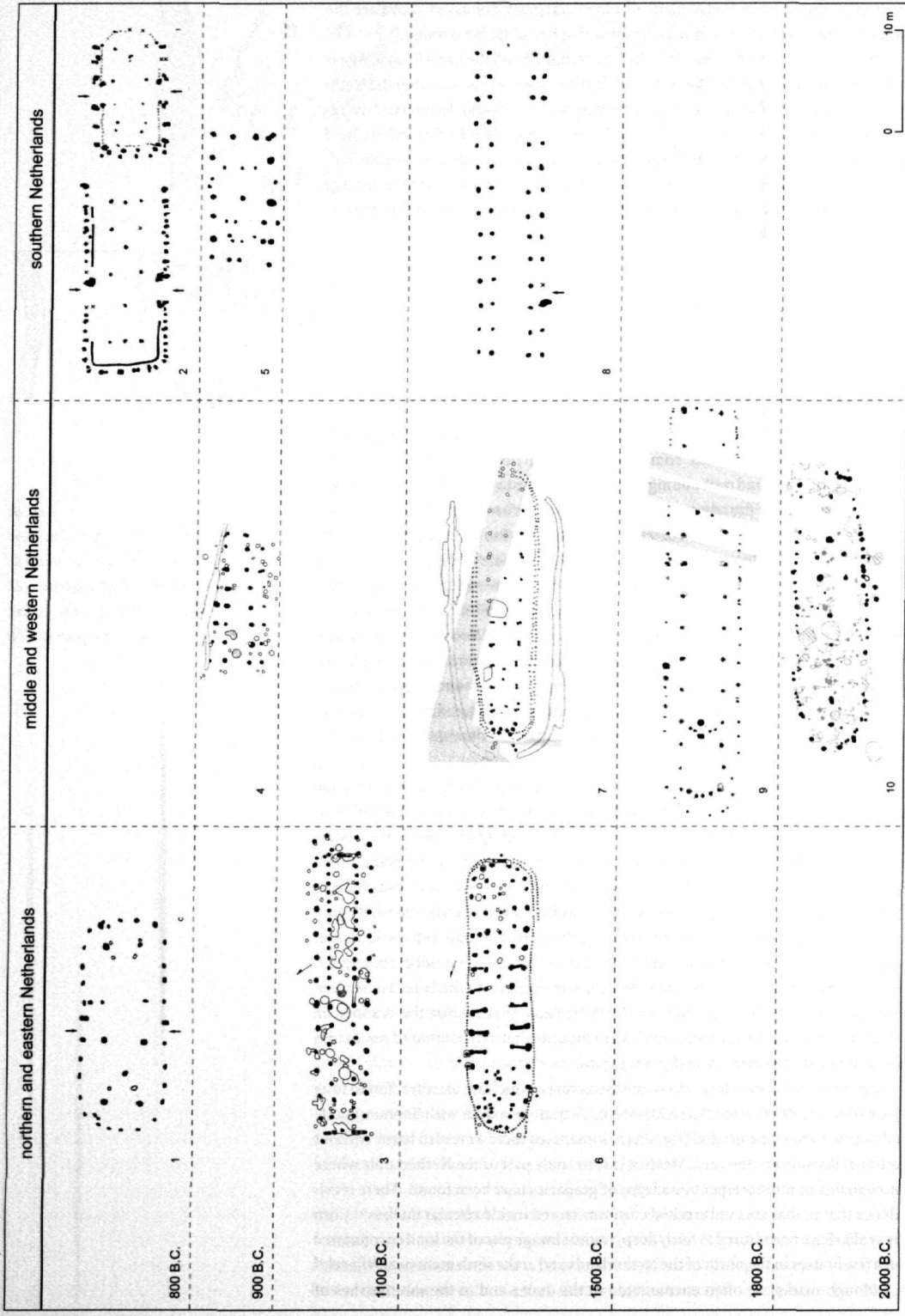
### General characteristics

Our knowledge of the settlements of the Middle Bronze Age, from c. 1800 BC onwards, contrasts sharply with that of the settlements of the preceding periods. Large parts of settlement sites, some covering several hectares, including pits and the plans of houses and outbuildings, have been excavated in different parts of the Netherlands. One of the reasons why we are so well informed about this period is the large-scale research that is currently being done on Bronze Age settlements in the Netherlands. In this research much use is being made of digging machines, with which very large areas can be excavated. Such large-scale excavation methods cannot be used for the culture horizons of Late Neolithic settlements. The wealth of information that has thus been obtained in the Netherlands is unique in Northwest Europe. There are only very few examples of Bronze Age settlements that have been investigated in large-scale excavations in the countries surrounding the Netherlands. A number of house plans have been investigated in Denmark and Germany,<sup>15</sup> but the quantity and quality of the information obtained in the Netherlands is so far unequalled.

The typical Middle Bronze Age house plan encountered all over the Netherlands is three-aisled, comprising four rows of regularly spaced postholes, the holes of the outside rows (closest to the wall) often corresponding to those of the inside rows (fig. 18.3).<sup>16</sup> Sometimes the roof was supported by a few extra posts at the middle of the house; these posts give the plans of these houses a four-aisled appearance (fig. 18.3: 6, 7, 9). In the sandy areas traces of the walls are rarely preserved but in the clay areas the thin twigs of the wattlework are often still visible (fig. 18.3: 6, 7). One of the short sides of the houses was often rounded; sometimes both were rounded. The short side contained an entrance to the byre. There were also entrances in the long sides. In North Holland in particular the outlines of stall partitions are sometimes found. They indicate that a maximum of 30-40 cattle could be stalled in the byre (fig. 18.3: 3, 6).

Out in the yards were four- or six-post structures, which are usually referred to as granaries, or *spiekers* in the Dutch literature. They are granaries with floors supported by posts above the ground (fig. 18.4). Sometimes there were also barns without internal divisions in the yard. Westfrisia is the only part of the Netherlands where no remains of the aforementioned type of granaries have been found. There is evidence that in that area unthreshed corn was stored inside circular ditches.<sup>17</sup> Corn may also have been stored in fairly deep, round storage pits of the kind encountered in a few houses in the north of the Netherlands and at the settlement near Nijnsel.<sup>18</sup>

Plough marks are often encountered in the dunes and in the salt marshes of



0 10 m

Westfrisia (fig. 16.5, 22.5). The range of bones found in these areas indicates that stock keeping concentrated on cattle. What we have here is the earliest evidence for what is known as integrated mixed farming. Cereal cultivation and stock keeping were integrated in one system: cattle were kept for their traction and for manure for the fields and this manure was mixed with cereal straw in the byres.

The layout of the houses and the settlement pattern were roughly the same all over the Netherlands and in the adjacent parts of neighbouring countries; slight regional differences appear to be essentially the results of adaptations to the local landscape. It is only the differences observable in pottery traditions and burial rites that distinguish the Elp culture in the northern and eastern parts of the Netherlands from the Hilversum culture in the central and southern parts.

#### *The sandy soils of the northern and eastern parts of the Netherlands*

The settlement of Elp, which was discovered in the northern part of the Netherlands during the excavation of a barrow in 1960, is still one of the finest examples of a settlement from the Middle and Late Bronze Age (fig. 18.4).<sup>19</sup> The settlement was located at the edge of a stream valley; over a period of about 700 years one or two farms and a number of outbuildings had stood at this site. The excavator is of the opinion that there was a period in which the settlement was temporarily not inhabited, during which a site some distance away was occupied. It was initially thought that the settlement had always comprised one large three-aisled building (25-40 m long and 5-6 m wide) and one smaller building (1-18 m long and 3.5-5 m wide) of the same layout. Now the excavator is of the opinion that there is a chronological difference between the two types of houses, the short houses being of Middle Bronze Age date and the larger ones of late Middle/early Late Bronze Age date.<sup>20</sup>

Fences of widely spaced posts enclosed some yards at Elp, measuring c. 500 m<sup>2</sup>. In these oval yards the features of four-post granaries were visible; they may have been used for storing crops. In addition, some of the houses contained pits, which have been interpreted as storage pits. These pits and the ones that were found outside the houses yielded most of the finds. Like elsewhere in the Netherlands the postholes of the houses yielded virtually no finds. This – and the scarcity of pits – explains why it is so difficult to discover Bronze Age settlements in the sandy areas in field surveys.

The finest Middle Bronze Age house plans are probably those which were found at Angelslo-Emmerhout.<sup>21</sup> Unfortunately, only a brief preliminary report has so

fig. 18.3 (see p. 412)

Survey of the development of house plans in the Bronze Age and the Early Iron Age in the Netherlands.

- |    |                        |                                  |
|----|------------------------|----------------------------------|
| 1  | Peelo                  | Hijken transitional type         |
| 2  | Oss H112 and Oss H132  | Oss types 2 (left) and 3 (right) |
| 3  | Angelslo               | type Elp                         |
| 4  | Texel-Den Burg house J |                                  |
| 5  | Boxmeer                |                                  |
| 6  | Angelslo               | type Emmerhout                   |
| 7  | Zijderveld             | type Zijderveld                  |
| 8  | Oss                    | Oss 1 type                       |
| 9  | Voetakker house 28-1AH |                                  |
| 10 | Noordwijk              |                                  |

Elp



fig. 18.4 (see p. 414)

Plan of the barrow and settlement of Elp. An area of around 1 ha was excavated at this site. Scale 1:500

far been published on this site, which makes it impossible to discuss the structure of the settlement in any detail here. Figure 18.3: 6 shows the frequently published house plan, which is considered representative of the Emmerhout type. This is now assumed to be the oldest type of house plan in Drenthe, while the Elp type is dated to a later period, i.e. 1200-800 BC. The difference between the two types is that the postholes of the inside rows of the plan of Elp do not all correspond to those of the outside rows. Because of this the Elp type of plan looks less regular.<sup>22</sup> What is rather remarkable is that with the plans of the Emmerhout type encountered in Drenthe the byres are often positioned at the middle of the house, flanked by two parts without stall partitions. This tradition must have been restricted to the northern district, because plans of this type have rarely been found outside Drenthe.

The results of the excavation at Hijken are better known (fig. 18.5). At this site the plans of six Bronze Age longhouses were uncovered in an area of 2.5 ha.<sup>23</sup> The lengths of the houses varied from 14 to 27 m and their widths from 5 to 5.8 m; the

fig. 18.5

Late Neolithic flat graves (circular structures) and a Bronze Age settlement at Hijken; next to them is the plan of house 4, which has been dated to  $3125 \pm 65$  BP (1520-1210 cal BC). Scales 1:1000 and 1:200.

The excavator interpreted the semicircular ditch feature with a palisade on its eastern side as part of a cattle enclosure that originally measured 40 x 90 m. The hatched plans represent houses that may have succeeded one another or – as the excavator assumes – may all have been in use at the same time as the cattle pen.

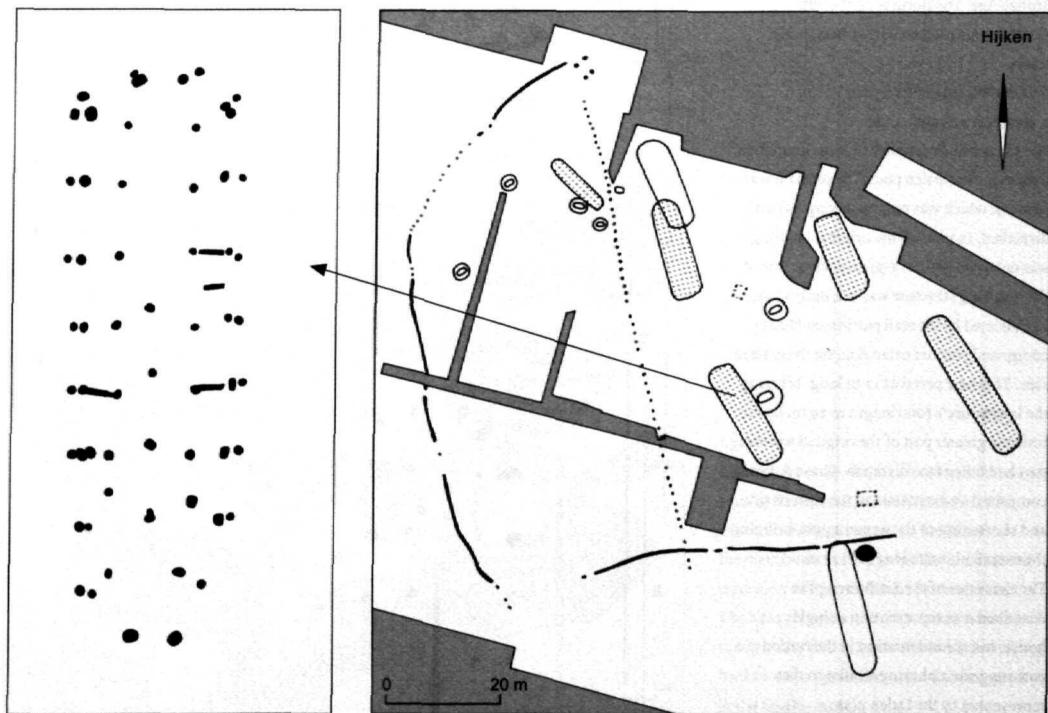


fig. 18.6

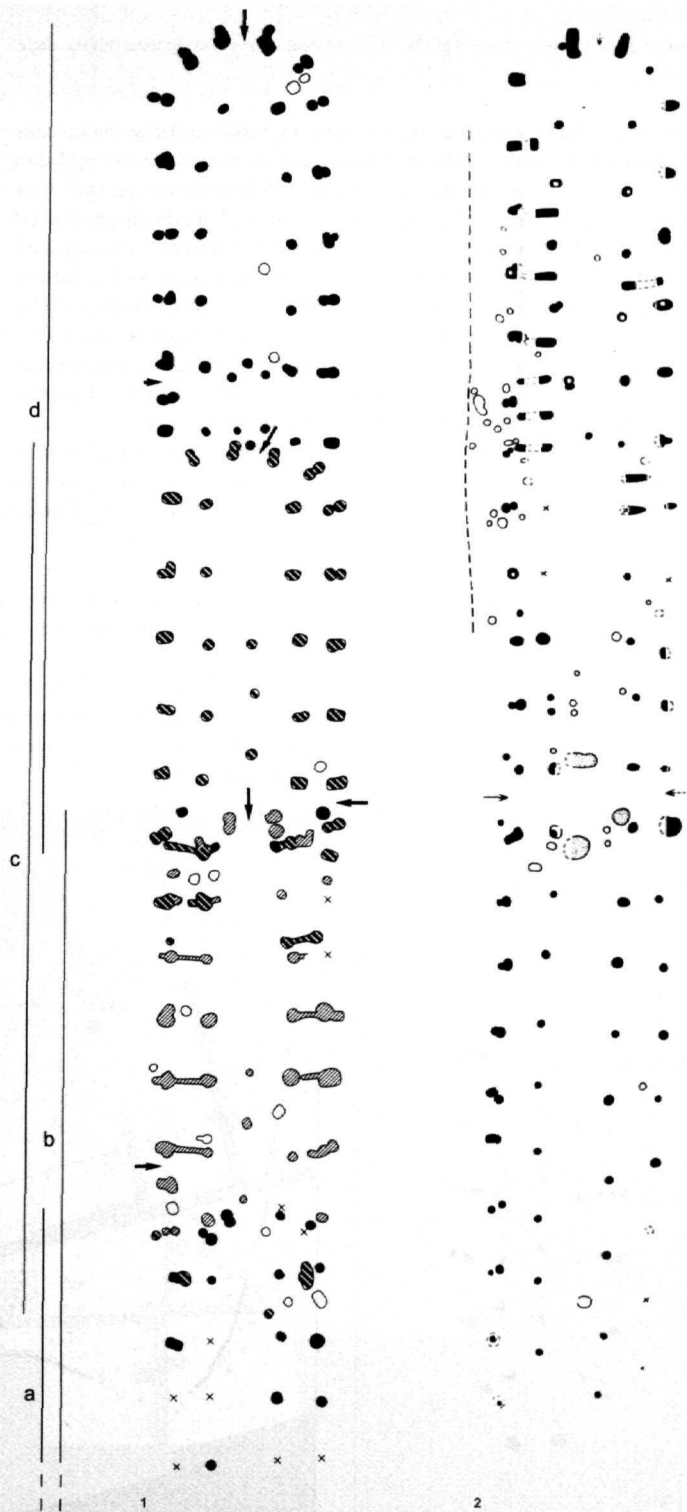
Two very long house plans from the Middle Bronze Age. The north is on the left; entrances are indicated by arrows. Scale 1:200.

1 Dalen IV, longer than 50 m

2 Rechteren, length 47 m

The excavator distinguished four occupation phases for the Dalen plan. The oldest house plan (a), which was only 10 m long, is partly disturbed. In phase b the original building was enlarged with a 13-m extension. Part of the resulting structure was evidently a byre, as indicated by the stall partitions. Phase c comprised another extension, on the eastern side. This new part was 12 m long, bringing the longhouse's total length to 29 m. By this time the greater part of the original western part had fallen into disrepair. Phase d, finally, comprised an extension on the eastern side and shortening of the western part, bringing the overall ultimate length to 27 m.

The excavator of the Rechteren plan described it as representing a single house, but the indentation in the central part suggests a phasing similar to that represented by the Dalen plan.



ends of the houses were rounded. A noteworthy element of the site at Hijken is the trapezoidal palisaded area, which the excavator interpreted as a cattle pen; it is probably of an earlier date than the house plans, though.<sup>24</sup>

Until fairly recently the presence of exceptionally long house plans was considered to be peculiar to the Middle Bronze Age settlements of the northern part of the Netherlands. Two such exceptionally long house plans were for example found on the Huidbergsveld near Dalen in 1990.<sup>25</sup> They were 51.5 and just over 50 m long (fig. 18.6: 1). The other two house plans found at this site had normal lengths of 20 and 25 m. Similar long house plans had previously been encountered at Elp and Emmerhout. Waterbolk is of the opinion that these long buildings had a special function. Harsema, however, has shown that the long plan found at Elp is probably the result of rebuilding.<sup>26</sup> Basing himself on the results of his research in Westfrisia, IJzereef had on an earlier occasion already argued that such long plans were the features of houses onto which extensions had been built.<sup>27</sup> At first this argument was met with scepticism. However, the evidence that has since then been obtained at Dalen leaves no room for doubt. Traces of the rounded original end of the house were still visible at the point where an extension had later been built onto the house. In the case of house plan III in particular it was quite clear that the house had been enlarged several times.

More and more settlements are coming to light in the eastern part of the Netherlands, where Middle Bronze Age settlement research started with the excavations at Deventer.<sup>28</sup> A very fine house plan has been unearthed at Rechteren (fig. 18.6: 2).<sup>29</sup> The length of about 46 m suggests that this plan is also the result of several building phases. There was clearly a byre at the eastern end of the house.

Between 1984 and 1986 the remains of four Middle Bronze Age longhouses were investigated on the Colmschater Es, near Deventer.<sup>30</sup> A noteworthy aspect of one of the house plans was the 2-m wide and 20-m long fenced cattle droveway leading up to the byre. Such droveways are often encountered in Westfrisia (e.g. at Bovenkarspel), only there they are flanked by ditches.

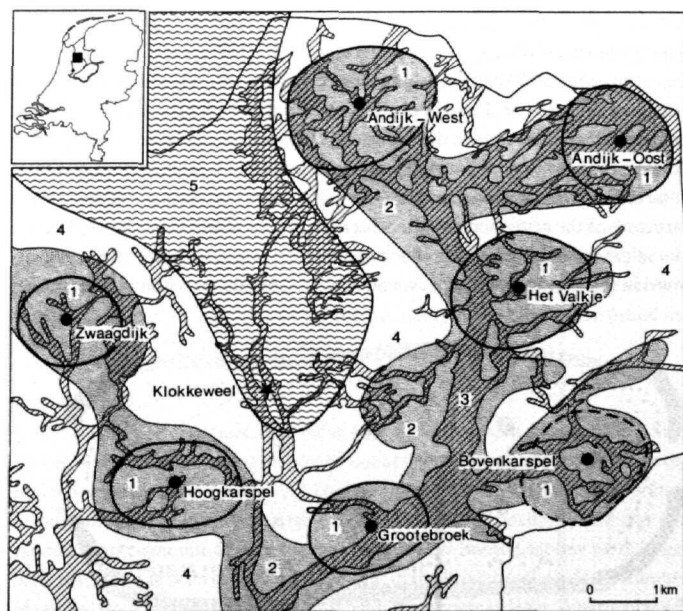


fig. 18.7  
Schematic survey of the presumed settlement sites in the eastern part of Westfrisia. The first colonisation centres (1) are based on the distribution of barrows. The subsequent extension of the inhabited area is marked (2). The sites all lay on low ridges, representing sandy gully fills (3), surrounded by low-lying backswamps (4) and adjacent to open water in the northwest (5).

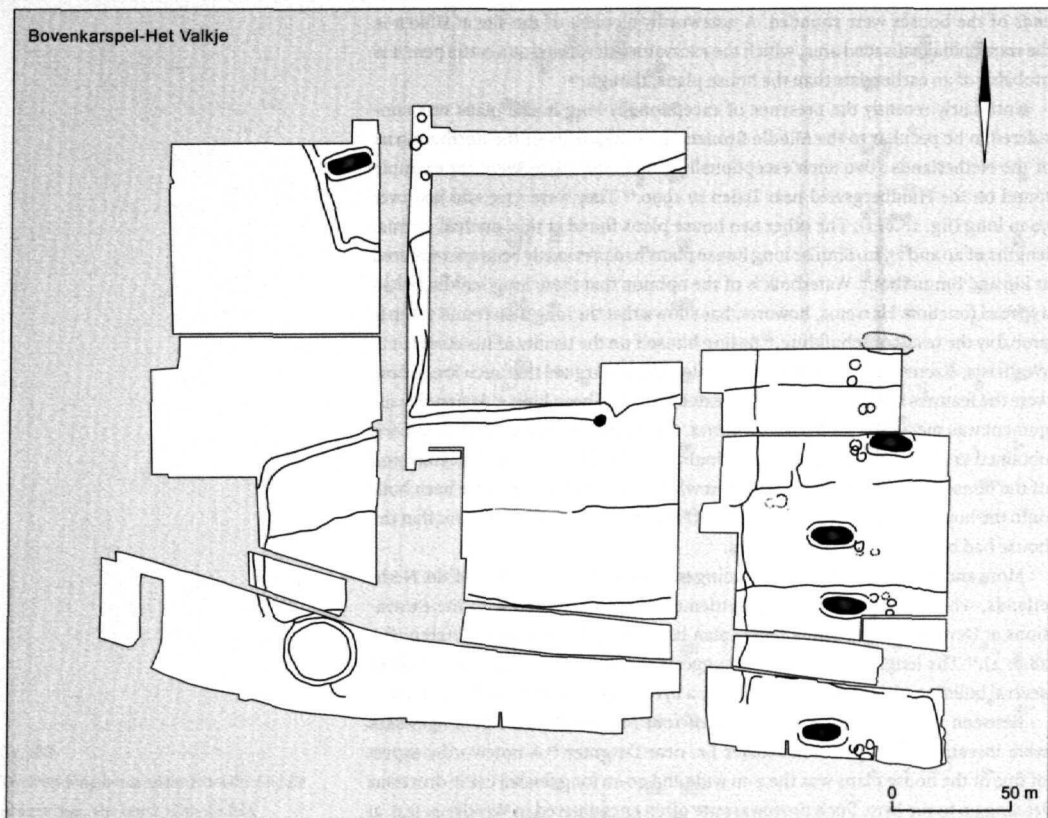


fig. 18.8

Part of the area excavated at Bovenkarspel-Het Valkje. Visible in the eastern part of this area are the plans of a number of contemporary farmsteads whose yards contain circular ditch enclosures and rings of postholes which are thought to represent granaries. To the west were the cultivation plots, separated by ditches, and beyond them lay a barrow from the settlement's earliest occupation phase. Scale 1:2500.

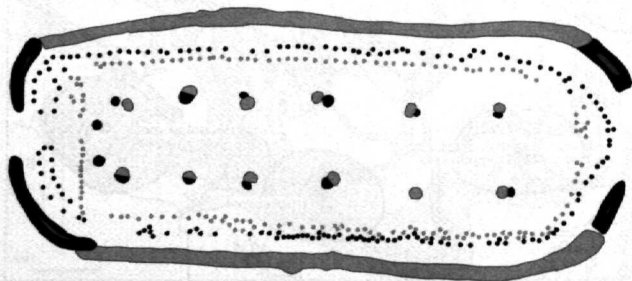
### The western Netherlands

#### The salt marshes of Westfrisia

For a long time Middle Bronze Age research in the western Netherlands focused on the eastern part of Westfrisia because of the rather exceptional evidence that came to light in that area. In the excavations that were carried out at Hoogkarspel from 1955 to 1973 and the investigations at Andijk and Bovenkarspel a wealth of information was obtained on the layouts of houses and their yards and on the structure of the settlements.<sup>31</sup> After this eastern part of Westfrisia had fallen dry, the salt marshes remained uninhabited for a long time. The first settlers, who arrived in this relatively wet area around 1500 BC, dug ditches around their houses

fig. 18.9

A house whose plan was found at Andijk-Noord. The house was at some time rebuilt and a small extension was added to it. Scale 1:200.



and their fields (fig. 18.7). These ditches now give us a very detailed picture of how the landscape was composed and how the land was used in the Bronze Age. They also show us how the yards, fields and pastureland were plotted out. At Hoogkarspel, for example, where a system of ditches covering a total area of some 20 ha was mapped, it was found that units of 4-6 ha had been split up into plots of usually 50 x 50 m, sometimes 80 x 80 m or 80 x 50 m.<sup>32</sup>

The information obtained at points at which the ditches intersected one another enabled more precise (relative) dating of the features. In this way a total of twenty-five occupation phases were distinguished for the earliest occupation period at Bovenkarspel (c. 1500-950 BC) and another six for the later period (c. 950-800 BC). This means that each phase, which comprised the period of occupation of a house and the time involved in rebuilding activities, lasted for about twenty-five years.

Instead of the remains of granaries, the yards contained circular ditches, which marked the outlines of corn- and haystacks, and circles of pits, which were in all probability dug around muck heaps (fig. 18.8, plate 32B).

At Andijk the parts of the Bronze Age features closest to the surface had been better preserved than at Bovenkarspel and the plans that were unearthed at this site hence yielded a good deal of information on the occupants' houses. For example, the plans clearly showed where the walls, which had consisted of fairly thin posts (7-10 cm thick), had been repaired and how the houses had been enlarged (fig. 18.9).

Close study of the features distinguishable at 78 house sites (constituting more than 200 individual plans) showed that at two-thirds of these sites more than one house had been built. No fewer than eleven different houses had been built at one of these sites. A remarkable aspect was that the size of the houses was found to decrease with time: the first plan had a length of more than 28 m whereas the last one, of a house that was built in the Late Bronze Age, probably more than 300 years after the first, had a length of only 12 m. The same trend has been observed at other house sites, where the overlapping ditches of successive house plans showed that the largest houses (with lengths of up to 32 m) dated back to the earliest period of occupation.<sup>33</sup>

Thanks to intensive field surveys and aerial photographs we are not only well informed about the structure of the settlements of the eastern part of Westfriesland, but also about the pattern of settlement of this area (fig. 18.7).<sup>34</sup> The first occupants built small settlements spaced some 3-4 km apart around an area with open water. These settlements are recognizable by the barrows in which, in the tradition of the sandy areas in this early period, the heads of the families or individuals with a comparable status were buried. The barrows were thrown up near the houses. Less important individuals were sometimes buried in flat graves. In later periods the dead were disposed of in a manner that is not archaeologically visible. Sometimes a human skeleton is found in a pit or a few stray human bones are encountered in ditches of house plans, but we do not really know exactly what burial rite was practised in Westfriesland after 1200 BC.

#### *The Older Dunes*

In the western Netherlands settlement sites have also been found in the Older Dunes. A small-scale excavation carried out at 'Het Geestje', near Monster, in the 1960s brought to light 5-6 horizons containing ard marks associated with pottery of the Hilversum culture.<sup>35</sup> At Vogelenzang a number of postholes and two pits yielded a large amount of pottery, bones and flint.<sup>36</sup> In the past few years large-scale research has been carried out at Velsen, in the Velsbroekpolder. A number of graves, overlapping house plans and fields have come to light. A particular ad-

fig. 18.10  
Schematic survey of the excavation of De Horden near Wijk bij Duurstede. Beneath the survey is a detailed plan of house 10. The plan is of the Zijderveld type, with invisible walls (the walls were made of wattle or sods). Scale 1:200.

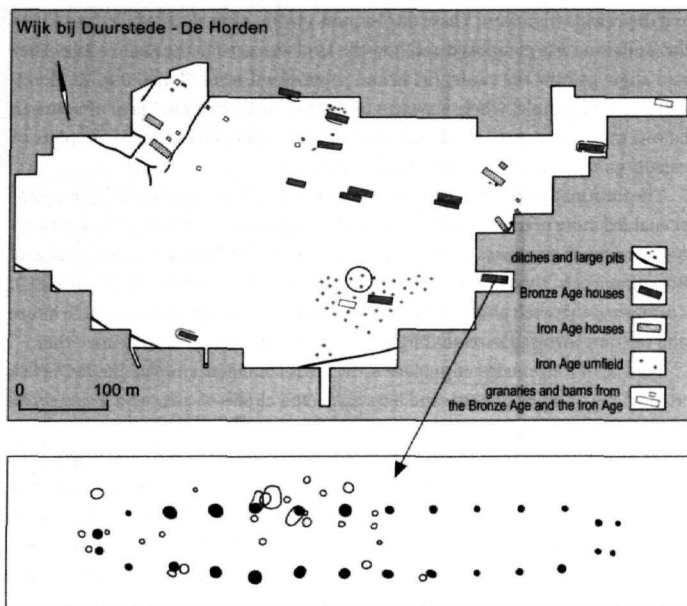
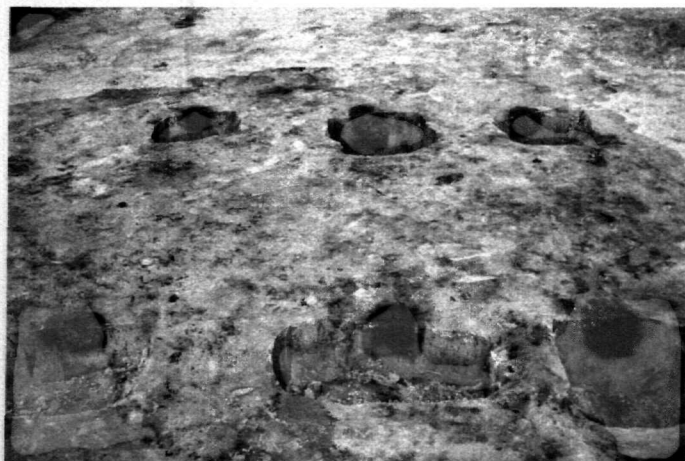


fig. 18.11  
On the left are the features of a six-post granary dating from the Bronze Age at Oss-Mikkeldonk (approx. 1 x 1.5 m), on the right is a reconstructed granary (model).



vantage in this area is the good state of conservation of the bones that are unearthed. These bones enable excavators to determine the functions of the various pits that were dug on the settlement sites.<sup>37</sup> It has now become clear that a much larger number of pits than initially assumed served some ritual function.

The settlements in the Older Dunes were all positioned near the salt marshes, where the occupants could pasture their cattle. The same holds for the site near Den Burg on the island of Texel, where several overlapping Middle Bronze Age house plans have been investigated. These house plans bear a close resemblance to those of the farms of Westfrisia, but they are less detailed than the latter because of the poor conservation conditions of the sandy soils. Many pits were found at this site, some of which may have been wells, others probably storage pits. The yards contained the features of one or more four- or six-post granaries.<sup>38</sup>

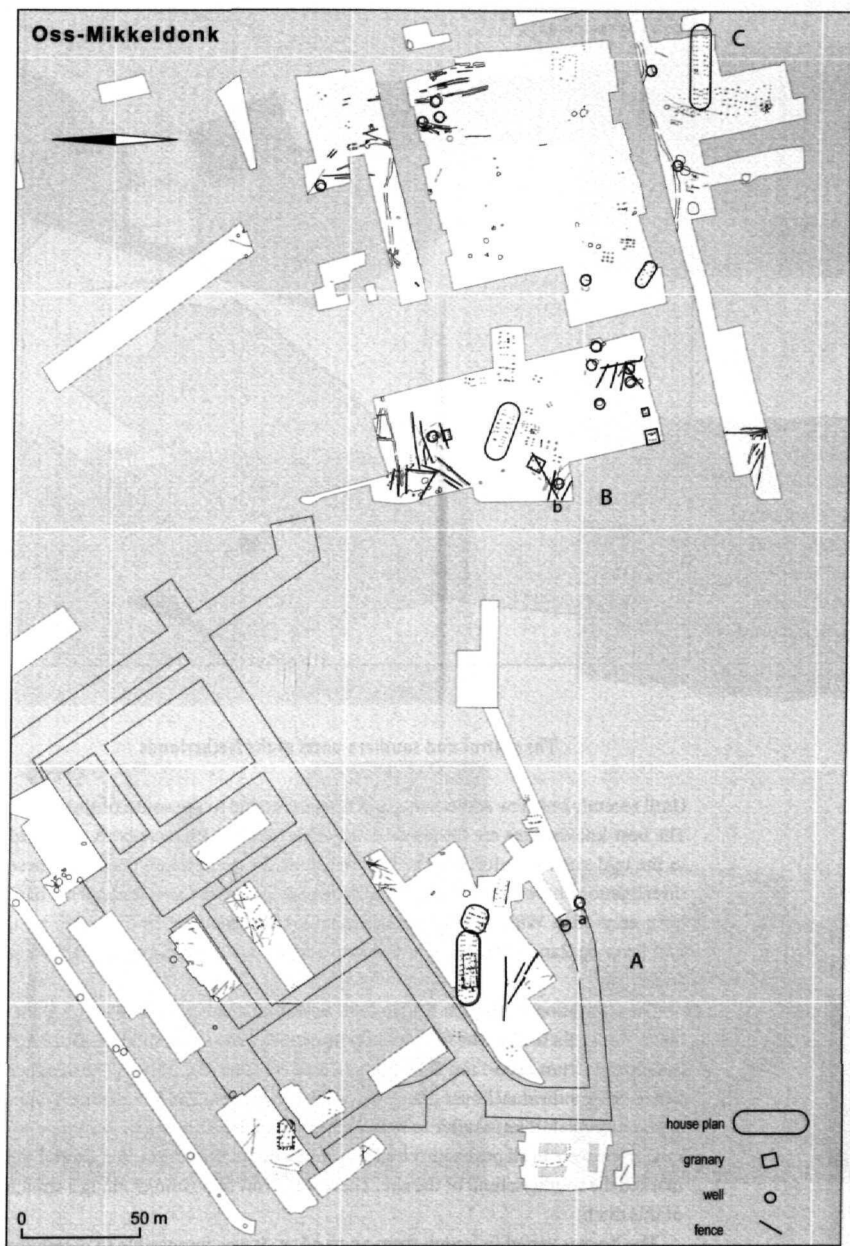
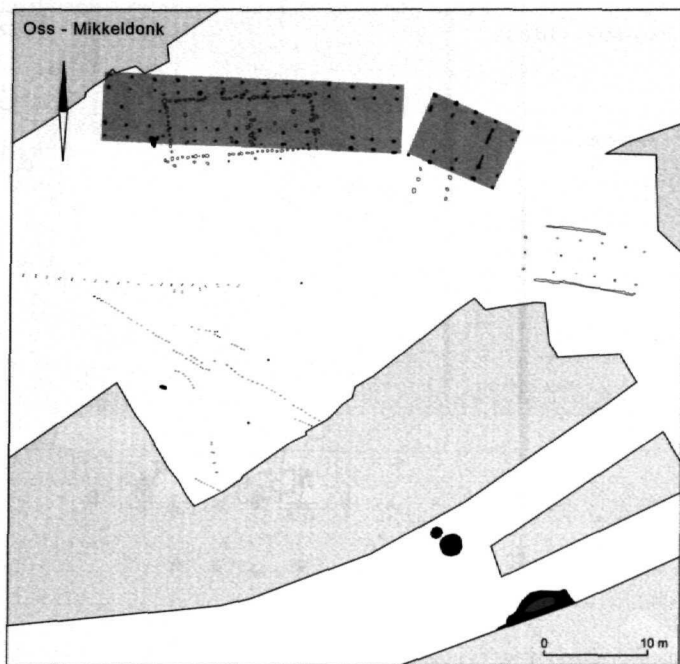


fig. 18.12

Part of the Oss-Mikkeldonk site to the northeast of the town of Oss which was excavated in the years 1986-1989. Clusters of features (including a house plan) that were discovered in this part, which measures approx. 18 ha, are indicated by the letters A, B and C. The features date from the Middle Bronze Age approx. 1800. A and B may have been contemporary, as the two wells lying in the vicinity of these two houses were lined with hollowed-out parts of the trunk of the same tree (a and b, see fig. 18.14). Cluster A is shown in greater detail in fig. 18.13. Scale 1:2500.

fig. 18.13

A Bronze Age farm and yard at Oss-Mikkeldonk that were reused in the Early Iron Age (fig. 18.12, cluster A). The plans of the Bronze Age house and an outhouse are indicated in grey. The other two house plans date from the Early Iron Age. Indicated in black are two wells which may be associated with this yard.

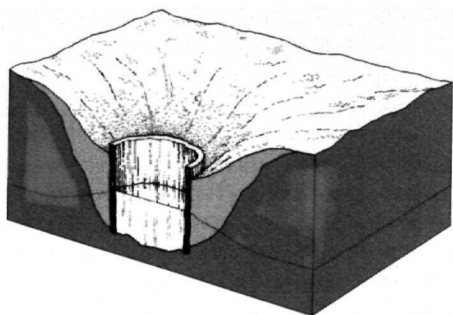


#### The central and southern parts of the Netherlands

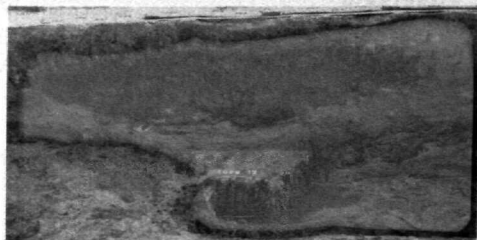
Until recently only few settlements had been excavated to the south of the Rhine. The best-known sites are Dodewaard and Zijderveld, which were both excavated in the mid-sixties. Unfortunately, however, only the preliminary results of these investigations have been published.<sup>39</sup> In the past few years more settlements have been excavated: Wijk bij Duurstede, Eigenblok and Meteren in the rivers area, and Loon op Zand, Oss, Blerick, Geldrop and Venray in the sandy areas further south.<sup>40</sup>

The excavation of the site De Horden, on Rhine deposits near Wijk bij Duurstede,<sup>41</sup> brought to light the features of between ten and twelve Middle Bronze Age longhouses from 1400-1200 BC within an area of 14 ha (fig. 18.10). The distance between the individual house plans was at least 60 metres. The lack of stratigraphic evidence made it impossible to say whether any of these houses were contemporary; some were in all probability built to replace earlier structures. A narrow ditch marked the southern limit of the site. There was a row of postholes along a stretch of this ditch.

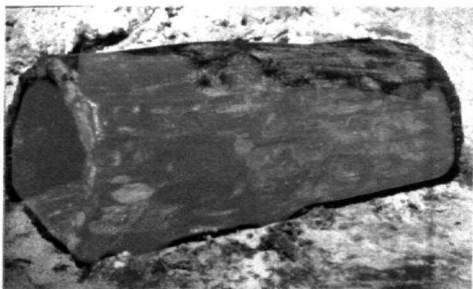
The houses varied in length from 20 to 26 m. It was impossible to determine the width of any of the houses because no traces whatsoever had been preserved of any of the walls or outer posts. All that had been preserved were the features of the paired inside posts and, in some cases, a few ditches which probably contained the posts that supported the edge of the roof. It is assumed that the houses were of the usual three-aisled type. Near each of the houses was the feature of a four- or six-post granary; a few of the yards contained patterns of postholes from which in some cases the plans of barns could be made out (fig. 18.11). Only one house plan was associated with pits; otherwise very few pits were found at this site. The number of finds recovered was also small. There were no wells whatsoever. The



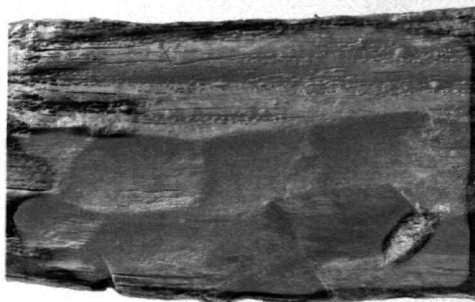
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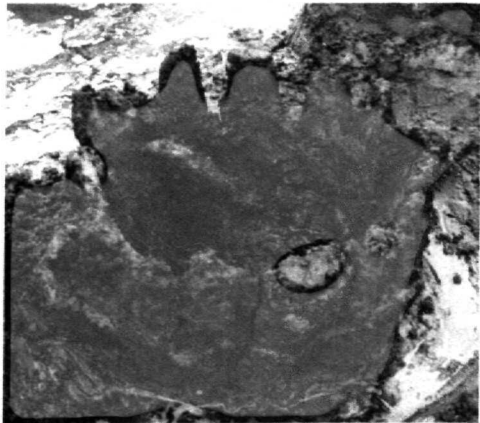
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5



6

fig. 18.14

- 1 Block diagram of a wide well with a lining at the bottom of the pit. The lining prevented the risk of the walls of the well collapsing under the influence of the water flowing into it.
- 2 Section of the fill of a wide well with at the bottom a hollowed-out tree-trunk lining; the tree-trunk indicates the original depth of the well relative to ground level (approx. 1.50 m).

- 3 Tree-trunk well lining placed on its side after its excavation. Another part of the trunk of the same tree was used to make a second lining, which was found in a well 200 m away (figs. 18.12 a and b).
- 4 Tool marks made with a bronze axe visible on the tree-trunk lining shown in no. 3.
- 5 Wide well with a lining made of cleft wooden posts arranged in a ring.
- 6 The cleft posts after excavation.

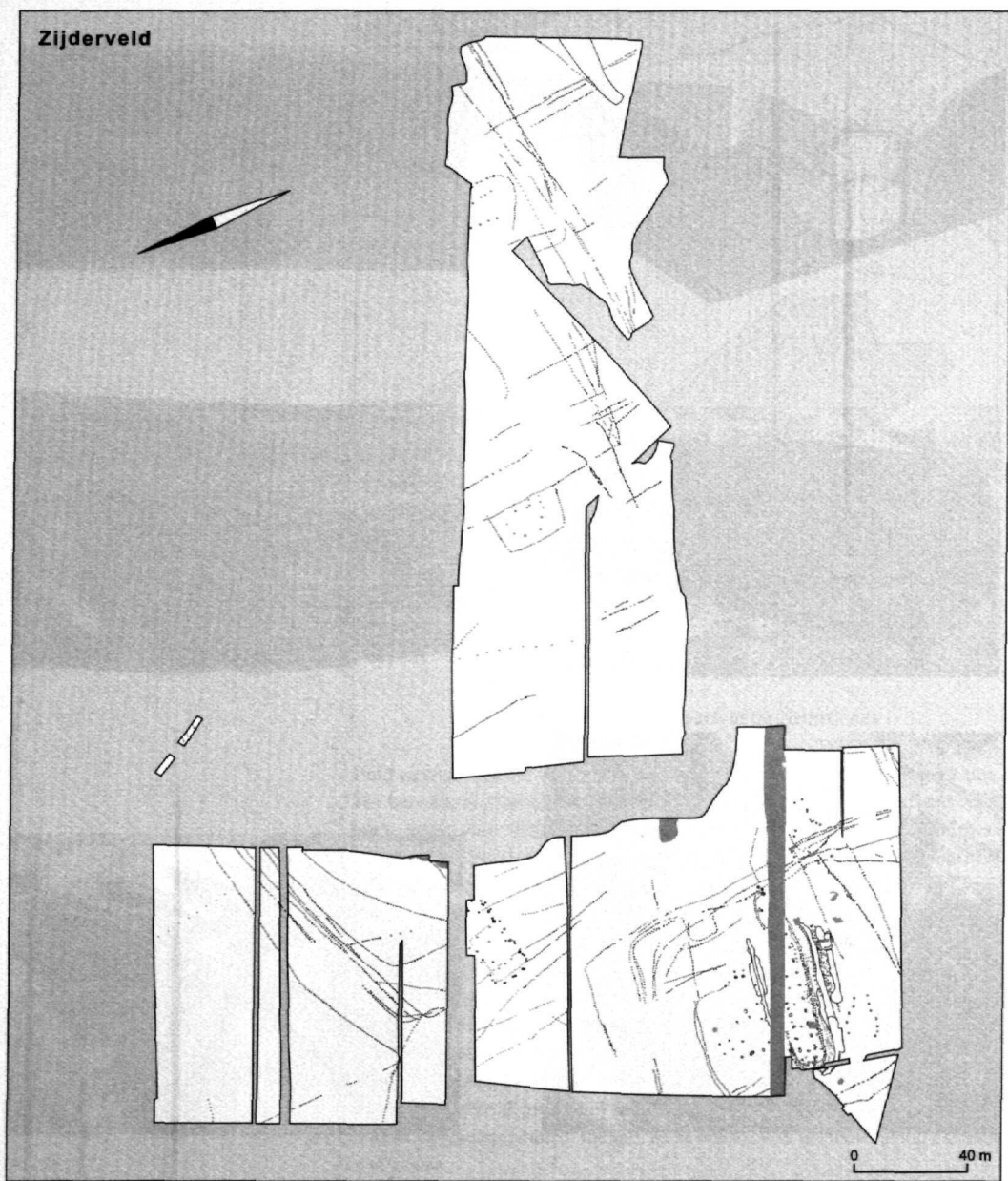


fig. 18.15 Survey of the features of houses and yard and field boundaries at the Middle Bronze Age settlement at Zijderveld. At the bottom right is a yard with a house plan and the features of granaries dating from the Bronze Age. Scale 1:2000.

fact that hardly any Middle Bronze Age finds were found outside an area with a radius of about twenty metres around the houses suggests that the yards were not larger than 50 x 50 m. As already mentioned above, it is not really possible to say how many of these house plans are contemporary. The excavators are of the opinion that the settlement probably comprised at most two or three houses at a time and that these houses stood some distance apart and were later replaced by houses built in a different part of the site.

The information obtained at De Horden is comparable with that obtained at the

site of Oss-Ussen (fig. 18.12).<sup>43</sup> The latter site yielded evidence for three different house sites spaced 100 to 150 m apart within an area of about 10 ha. The houses were over 30 m long (fig. 18.13). Traces of fences marking the limits of the yards were found here and there, but it was not possible to infer the size of the yards from them. The general impression is that the yards were not larger than 50 x 50 m.

Oss-Ussen is one of the very few sites at which the remains of a well have been found. Here the water table lay only about 1.5 m below ground level on the settlement site itself. Elsewhere in the Netherlands the wells were presumably sunk in depressions near the settlements but outside the excavated areas. At Oss it was found that an approximately 2-m deep pit had been dug to below the water table and that a hollowed tree-trunk or a ring of split thinner trunks or boards had then been placed at the centre of this pit (fig. 18.14). There were clear indications that the well had not been lined all the way up to ground level; the lining ended a few dozen centimetres above the floor of the well. The pit had not been backfilled with soil, but with sods. The well, which had a diameter of at most 40 cm, was hence lined with sods. Near several of the wells discovered so far were larger, unlined, pits, which may have served as watering places for the farm animals.

The finest example of a fenced yard surrounded by fields was found at Zijderveld (fig. 18.15).<sup>43</sup> Here a 28-m long three-aisled farmstead and a number of out-buildings were enclosed by a fence of closely set thin posts; the gaps between the posts had presumably been filled up with stacks of thin tree-trunks (fig. 18.16). Tracks, lined with fences, led to the fields, which were also enclosed by fences. The latter fences consisted of thin posts set about 50 cm apart, which were probably connected by wattlework.

The house plans that have been found in the central and southern parts of the Netherlands are all comparable, although they vary in length. The 20-m long plan that came to light at Loon op Zand is the shortest so far; the longest house plan, measuring 32 m, is that which was found at Oss-Ussen. Loon op Zand is the only site in this area where evidence for the stalling of cattle has been found (fig. 18.7).<sup>44</sup> A small part of the house plan found here contained the remains of stall partitions; this part of the house had been separated from the rest by a wall containing 'saloon doors'. Traces of such doorways have also been found at Oss-Ussen and Venray.

At some sites, for example Dodewaard, Wijk bij Duurstede and Zijderveld, extensions were found to have been built onto existing houses.

#### THE PROBLEM OF THE ROUND STRUCTURES

In excavations of Middle Bronze Age settlements carried out since the 1960s in the central and southern parts of the Netherlands, in particular the features of a

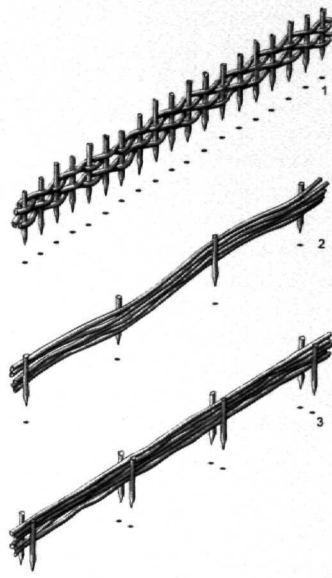
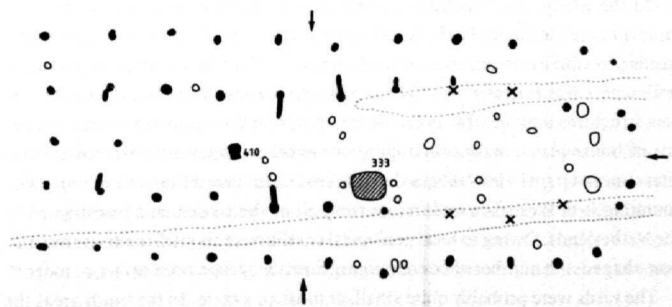


fig. 18.16

Features and reconstructions of three types of Bronze Age fences that have been encountered both in the rivers area and further south (at Oss).

- a wattlework
- b wattlework
- c billet wood

fig. 18.17

Middle Bronze Age house plan found at Loon-op-Zand. On the northern side of the right part are indications of cattle-stall partitions. The arrows indicate assumed entrances. Scale 1:200.

number of round structures have come to light (fig. 16.8). These round features have caused archaeologists many problems and they therefore deserve to be discussed in a separate section; that is also the reason why they have not yet been mentioned above. The first of these features were discovered at Nijnsel, Dodewaard and Zijderveld. Beex and Hulst interpreted them as the remains of round huts and as none of the settlements that had been discovered in the Low Countries until then had included such structures they took them to reflect influences from Britain, where round huts were common.<sup>45</sup> In the 1980s, however, this theory was abandoned and the original interpretation of the features started to be queried. The irregular outlines of the features and the fact that none of the published plans was complete increased the doubts.<sup>46</sup> In the 1990s more round features have been discovered, only now outside the distribution area of the Hilversum culture, the culture that was originally held responsible for the introduction of this foreign element. The most recent theory is that these features, which vary in date from the Middle Bronze Age to the Early Iron Age, are to be interpreted as the remains of cattle pens.<sup>47</sup> Many archaeologists reject this theory, too, because the newly discovered features show the same irregular outlines and are as incomplete as the first group. Moreover, the intervals between the postholes vary considerably. Phosphate analysis may be able to shed some light on the matter. The renewed analysis of the key sites Dodewaard and Zijderveld made clear that the interpretations of the 1960s no longer hold.<sup>48</sup>

#### SETTLEMENT PATTERN, ECONOMY AND SOCIAL ORGANISATION

It has already been pointed out above that the regional differences observable in settlement patterns are largely connected with differences in palaeogeographical conditions. These differences do not only concern soil conditions but also the surrounding landscape. The plateau of Friesland and Drenthe, for example, was split up into natural territories by the many streams that dissected it. In Westfrisia and the river area, on the other hand, the landscape features most suitable for habitation were the elongated stream ridges. In the case of some settlements, for example those of Elp and Bovenkarspel, overlapping features indicate that the sites in question remained occupied for a long time. This probably indicates that in that particular area only a relatively small amount of land was available or considered suitable for occupation. Elsewhere, for example at Oss and Angelslo, the centres of habitation were found to have moved laterally across fairly wide areas. In these cases the amount of land suitable for occupation was apparently less limited by environmental conditions. In view of these factors it would be unwise to make any general statements about what kind of sites were selected for occupation.

On the whole, the settlement pattern appears to have been more or less the same all over the Netherlands. Small settlements comprising two or three farmsteads probably exploited areas of 100 ha or more. The population density of these settlements was not very high. The farms were frequently rebuilt or replaced by new structures built nearby, as can be inferred from the complex patterns of dozens of house plans, many overlapping one another, which are observed at these sites. Bovenkarspel-Het Valkje is the only settlement that differed from those surrounding it in Westfrisia and in fact from all of the settlements investigated in the Netherlands. Owing to local geological conditions this settlement site was ribbon-shaped; the number of contemporary farms may have been twelve or more.<sup>49</sup>

The yards were probably quite small, at most 50 x 50 m. In the sandy areas the

yards contained four- or six-post granaries and sometimes barns without internal divisions. The latter structures, which comprised between eight and ten posts, were used for the storage of crops, tools, wagons, etc. It is virtually impossible to say how long the farms were inhabited. The results of detailed research in Westfrisia suggest periods of approximately 25-40 years. Granaries were probably repaired or rebuilt more often than the farms.

The dead were usually buried in barrows which were thrown up probably not far from the yards. In Westfrisia and Drenthe (Elp, Angelslo) it was found that when the centre of occupation shifted, new barrows were built at the new settlement site. At other sites, for example Toterfout-Halve Mijl, clusters of barrows in what could already be termed cemeteries reflect long periods of use.<sup>50</sup>

The economic base was the same all over the Netherlands. The large house plans, some including stall partitions, indicate that cattle farming was of major importance, possibly also for the production of manure. The specific locations of the settlements also point to an integrated system of mixed farming: many of the settlements were positioned so that the occupants could cultivate crops on the higher grounds and graze their cattle in the salt marshes or stream valleys which were to be found all over the Netherlands with the exception of the forested parts of the sandy areas. In the faunal samples percentages for cattle are always highest, followed by those for sheep, goats and pigs. Horses were also kept, but presumably only for riding. Hunting and fishing were practised, but they were both clearly of lesser importance. Different models for the relative importance of cereal cultivation and stock breeding suggest ratios of 1:3 for a farm with 30 cattle, which would have required 2-5 ha of land for cultivation and a much larger area for pasture.<sup>51</sup>

Ard marks show that fields were often under cultivation for long periods, sometimes with interruptions caused by fallowing or a temporary shift of the centre of occupation. In the dune region layers of drift sand between field layers often indicate interruptions in use. The general impression, however, is that from the Middle Bronze Age onwards manuring formed an integral part of farming, enabling continuous use of a plot of land over a long period of time.<sup>52</sup> Owing to the scarcity of well-preserved seeds we are not very well informed about the crops that were cultivated. What we do know is that emmer wheat and barley were the main cereals and that linseed was also cultivated.<sup>53</sup>

The settlements tell us little about the social organisation of the their occupants. The largest farms may have been inhabited by extended families comprising parents, children and their spouses, and grandchildren to a total of ten to fifteen persons. Most will have been inhabited by smaller groups, though. There is no evidence for hierarchy or social differentiation within the settlements. The distribution pattern of the barrows largely confirms this picture: the fact that the barrows were constructed near the yards, as best exemplified by the earliest settlements of Westfrisia, suggests that they were intended for the most important members of a family rather than for an elite.

#### NOTES

1 At Kolhorn several attempts were made to recognize patterns in the postholes using statistical and other methods, but they were all unsuccessful (Kielman 1986). The two features at Hoogwoud-Mienakker that Hogestijn has identified as the plans of houses are very small (measuring approximately 20 and 35 m<sup>2</sup>) and irregularly

shaped (Hogestijn/Van Haaff 1991). The interpretation as house plans can be disputed.

2 Hoogwoud: Hogestijn/Van Haaff 1991; Kolhorn: Van der Waals 1989.

3 Louwe Kooijmans 1993a.

- 4 Fokkens 1982.
- 5 Fokkens 1982, 1986.
- 6 For this debate see Fokkens 1982 and 1986; Van der Waals 1984.
- 7 Waterbolk 1960, 82.
- 8 Louwe Kooijmans 1974. A second site was recently excavated at Noordwijk, which yielded a good plan of a two-aisled house (Van Heeringen/Van de Velde/Van Amen 1999).
- 9 Louwe Kooijmans 1974.
- 10 Louwe Kooijmans 1993a.
- 11 Louwe Kooijmans 1974, 248.
- 12 Fokkens 1991a, 1998a.
- 13 Three plans found in Overijssel have been dated to the Late Neolithic or the Early Bronze Age but it is doubtful whether they have been correctly dated. Plan I at Vasse is comparable with the house plans of Molenaarsgraaf but no finds were recovered that could have yielded a date for the plan. Plan II is so irregularly shaped that it is very difficult to recognize a house plan in it. The feature of Zwolle-Ittersum, which has been described as a parallel of the house plans of Molenaarsgraaf, is too incomplete to be regarded as a house plan (Verlinde 1982, Clevis/Verlinde 1991). A well-documented settlement from the early Bronze Age is that at Noordwijk (Van Heeringen/Van der Velde/Van Amen 1998; Jongste/Meijlink/Van der Velde 2001). Jongste and Van der Velde also claim early houses at Rhenen-Remmerden and at Meteren-De Bogen. These are, however, less convincing (drawing board) reconstructions, than those of Noordwijk.
- 14 Jensen 1987a.
- 15 See Roymans/Fokkens 1991 for a survey.
- 16 Huijts 1992. This is Huijts' characterisation of the Emmerhout type of Drenthe, which resembles plans from the same period found in other parts of the Netherlands.
- 17 Buurman 1979, 1988.
- 18 Beex/Hulst 1968, fig. 6.
- 19 Waterbolk 1964, 1987.
- 20 Waterbolk 1987, 1989.
- 21 Van der Waals/Butler 1976, Harsema 1980.
- 22 Huijts 1992.
- 23 Harsema 1974, 1991.
- 24 Harsema 1991, 27. A sample from the bedding trench yielded a  $^{14}\text{C}$  date of  $3460 \pm 55$  BP (GrN-6642) but the excavator is nevertheless of the opinion that the palisade dates from the Middle Bronze Age. Also doubtful is his interpretation that five of the houses were contemporary.
- 25 Verlinde 1982, Kooi 1991.
- 26 Waterbolk 1985a; Harsema 1987, 109.
- 27 IJzereef/Van Regteren Altena 1991.
- 28 Modderman 1955.
- 29 Verlinde 1982.
- 30 Verlinde 1991.
- 31 Bakker et al. 1977; IJzereef 1981; IJzereef/Van Regteren Altena 1991. An import part of the data about Westfrisia was provided by G.F. IJzereef.
- 32 Bakker et al. 1977, 222.
- 33 IJzereef/Van Regteren Altena 1991.
- 34 IJzereef/Van Regteren Altena 1991.
- 35 Glasbergen/Addink-Samplonius 1965.
- 36 Groenman-van Waateringe 1966, Ten Anscher 1990.
- 37 Therkorn 1986, Therkorn/Van Londen 1990.
- 38 Woltering 1991.
- 39 Hulst 1973, 1991; Theunissen 1999.
- 40 Oss-Ussen: Fokkens 1986, 1991b. Wijk bij Duurstede: Hessing 1991. Loon op Zand: Roymans/Hiddink 1991. Nijnsel: Beex/Hulst 1968. See Theunissen 1999 for a survey of more recently excavated house plans (Venraij, Blerick, Geldrop).
- 41 Hessing 1991. The results of the excavation at Wijk bij Duurstede (De Horden) referred to in this chapter have not yet been published. They were kindly provided by W.A.M. Hessing and W.A. van Es (ROB).
- 42 Fokkens 1991b, Vasbinder/Fokkens 1987.
- 43 Hulst 1973, 1991; Theunissen 1999.
- 44 Roymans/Hiddink 1991.
- 45 Beex/Hulst 1968, Hulst 1973. The round feature of Nijnsel was not recognized in the field but on the drawing table (W. Beex, pers. com.). The features of Dodewaard and Zijdeveld were 'recognized' in the field; their contours were indicated with markers which were then connected with string so as to make them stand out better. The postholes had not yet been sectioned at this stage. None of the Dutch archaeologists who visited the site saw the exposed features without these suggestive markings. See Theunissen 1999 for an extensive discussion.
- 46 It should be noted that in every publication these plans are shown out of context, i.e. without any indications of how they were reconstructed from concentrations of postholes and without illustrations showing the sections of the relevant postholes.
- 47 More round features have recently been recognized at Spoolde (Van Beek 1988), Zwolle (Clevis/Verlinde 1991), Dalen (Kooi 1991) and Elp (Van Beek 1991). Van Beek's publication, however, cannot be taken seriously because he reinterpreted the published, greatly reduced site plan (Waterbolk 1964) without consulting the drawings made in the field.
- 48 Theunissen 1999; Theunissen/Hulst forthcoming.
- 49 IJzereef 1981, IJzereef/Van Regteren Altena 1991.
- 50 Glasbergen 1954.
- 51 Fokkens 1991a, 1998a; IJzereef 1981.
- 52 Fokkens 1991a, 1998a; IJzereef 1981. Outside the Netherlands, on the island of Archsum in the Waddenzee, there was even evidence of sod manuring or *Plaggen* culture in the Middle Bronze Age (Kroll 1981). Of course we are here dealing with a rather exceptional situation.
- 53 See chapter 22 for more detailed information.
- 54 Fokkens 1999, 2002.