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EYSERHEIDE

A MAGDALENIAN OPEN-AIR SITE IN THE LOESS AREA OF
THE NETHERLANDS AND ITS ARCHAEOLOGICAL CONTEXT



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3.1 INTRODUCTION

In this chapter the methods and techniques of field research are discussed that were used at the site and in its immediate surroundings in 1990 and 1991. Point of departure of the fieldwork was the information of Mr Blezer regarding the location and distribution of the flint artefacts. This distribution measured c. 35×15 m and was situated in the central part of a long, narrow field at most at 100 m from the margin of the plateau.

3.2 MEASURING SYSTEM AND BORINGS

In preparation of the excavation in 1990, on 27th October 1989 five grid lines were marked out and six borings carried out. With the aid of a theodolite and surveying rods the first grid line was marked out from the Eyserbosweg, perpendicular to the road and towards the field in a southeasterly direction, with a length of almost 120 m (A-D, fig. 3.1). At the spot where this line intersected the western boundary of the plot of land to be investigated, a second grid line was

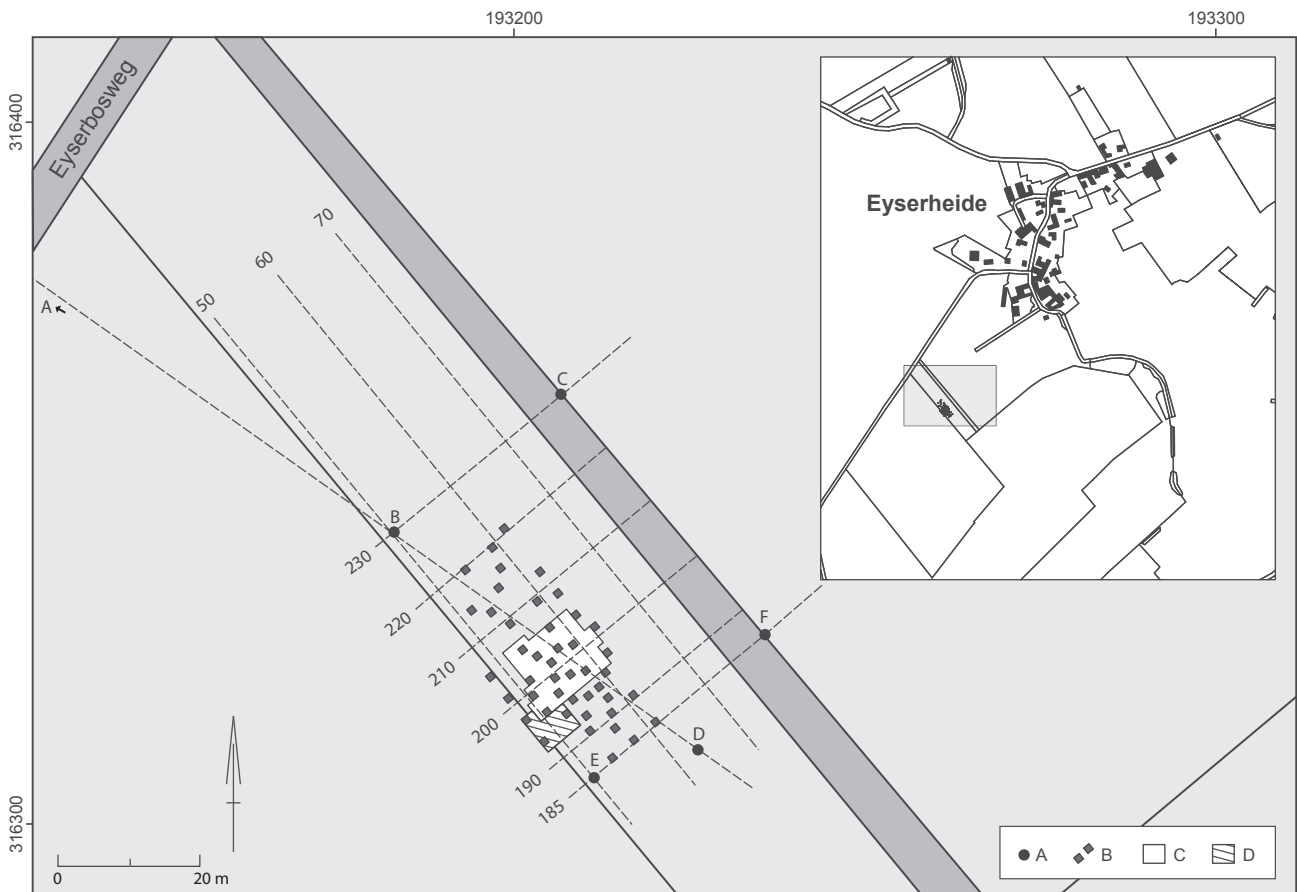


Figure 3.1 Position of the investigated plot of land and excavation with important co-ordinate lines and measuring-points in the grid system. Grid co-ordinates are at 5-metre (185 to 190) and 10-metre (190 to 200, etc.) intervals. For an explanation of the grid system, see text.

marked out parallel to the boundary of the plot. This grid line with a length of 45 m started at measuring point 50/230 (B) and finished at measuring point 50/185 (E). From these measuring points, two lines (B-C and E-F) of more than 35 m length were marked out, perpendicular to the two principal grid lines, and extending to the eastern margin of the plot of land. The latter two grid lines subsequently served as reference for the marking out, with a theodolite, of 42 trial squares in April 1990. From measuring point 50/230 (B) the NAP height was determined at 193.87 m. With the a small wooden stake this and other measuring points were marked in the field.

For a first understanding of the soil structure, six borings were carried out with a 7 cm auger on grid line A-D from 70 to 95 m. The distance between two consecutive boring points was 5 m. The results of the borings were as follows. Underneath the plough zone (Ap), there is locally a 25-30 cm thick layer with loose clay-poor sediment which was interpreted as E horizon. The thickness of this horizon varies from 25 to 60 cm. Underneath there is a horizon rich in clay that carries on to the maximum boring depth of 1.2 m (borings 1, 4-6). It concerns a well-developed Bt horizon. In borings 2 and 3 the C horizon was possibly struck between 1 and 1.2 m below ground level (bgl). The results point to a relatively intact profile of a Holocene loess soil, of which only the top was incorporated into the plough zone. The bored-out sediments of borings 1-6 were kept and sieved with water on a 1 mm sieve. On sorting of the residue no flint chips or other artefacts were recovered.

3.3 RESEARCH OF APRIL 1990

From 17th to 27th April 1990 trial pits were dug with a small team with the aim of locating the concentration(s) of flint artefacts and of gaining insight into the scale and degree of disturbance of the site. The focus was on the central part of the field where most finds had been collected on the surface. Based on information from Mr Blezer, 42 trial squares of 1 × 1 m were marked out in an area of 35 × 15 m (surface area of more than 500 m², fig. 3.4, F). Point of departure for marking out the trial squares were the principal grid lines that had been marked out with wooden stakes in October 1989 (see paragraph 3.2). The x-co-ordinates of the trial squares varied from 47 to 63, and the y-co-ordinates from 185 to 221.

Prior to the excavation of the trial squares, first the NAP height of the surface level was determined with a theodolite. Subsequently, every square was excavated with a trowel to a depth of 30 cm under the base of the plough zone (fig. 3.2). Finds from the plough zone were collected per square of 1 × 1 m, and those from the underlying sediment were



Figure 3.2 Digging of trial squares of 1 x 1 m during the preliminary investigation in April 1990.

measured three-dimensionally. A theodolite, three wooden measuring staffs and a plumb line were used for this measuring. Of all measured-in finds the numbers of the square, and the x-, y- and z-co-ordinates were recorded on a form. In addition, the contours of artefacts and unworked stones larger than 5 cm were drawn on a ground plan. After the square was trowelled to the desired depth, the final height of the plane was determined. And finally, the excavated sediment was dumped back into the square concerned, this with a view to sieving the sediment in the summer of 1990.

In 19 out of 42 trial squares one or more artefacts from the Magdalenian were measured in. In the richest square, 54/203, seventy-two artefacts were measured in, including a dihedral burin and an end scraper on blade, and fragments of stones (fig. 3.3). The position of most artefacts in this

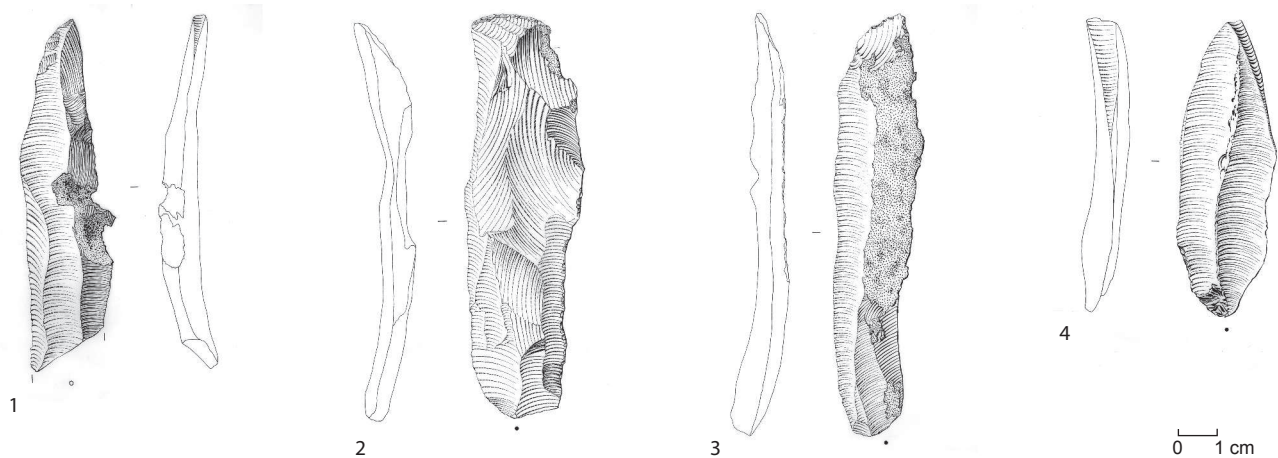


Figure 3.3 Retouched tools from trial square 54/203. 1 Lacan-burin, 2 end scraper on blade, 3 borer on blade and 4 dihedral burin (scale 1:2). Drawings: H. de Lorm.

square, between 5 and 20 cm under the base of the plough zone, seemed to indicate that in this part of the site the archaeological layer had not been seriously affected by ploughing activities. The number of finds in the other squares varied from 1 to 26. Squares with relatively large numbers of artefacts (between 17 and 26) were all situated at less than eight metres from square 54/203. Thus an indication was obtained of the exact position and the dimensions of the site, as well as the depth at which the archaeological material was lying in relation to the present-day surface level.

3.4 EXCAVATION OF JULY-SEPTEMBER 1990

Based on the results of the preliminary investigation in April 1990, an area of 10 × 10 metres was selected for excavation (fig. 3.4, A). Point of departure in the choice of this area was the richest trial square 54/203. The entire surface of 100 m² was excavated in July and August. The system of squares of 1 × 1 m and the working practice of April 1990 were thereby retained: measuring of the starting height, trowelling of the plough zone and collection of finds in squares of 1 m², trowelling of the sediment underneath the plough zone and three-dimensionally measuring of the finds, and determination of the final height (fig. 3.5). Squares without any finds were excavated to minimally 30 cm under the plough zone, while squares with finds were excavated to maximally 20 cm under the find with the deepest position. Discolourations in the plane and other indications of disturbances of the soil profile were drawn on a plan with a scale of 1:20. The contours of large artefacts and stones were again drawn. With a view to the investigation of micro-debitage, the sediment was collected and sieved of

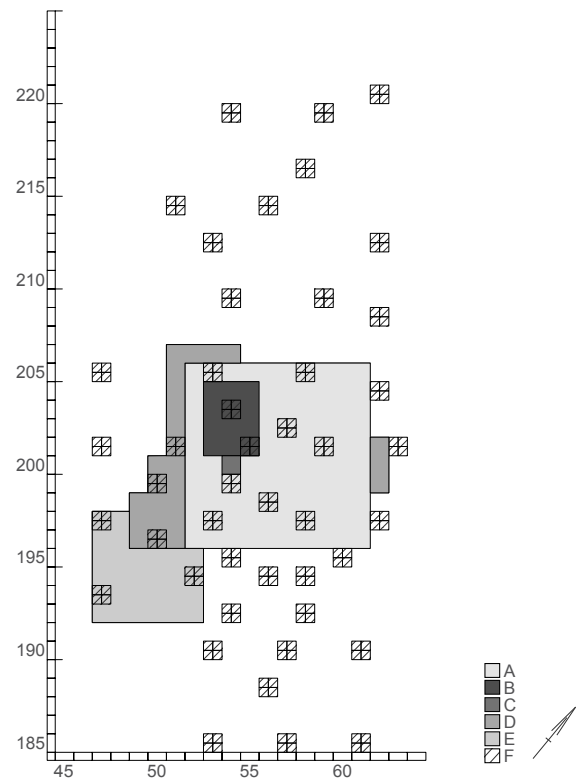


Figure 3.4 Position of area excavated in the summer of 1990 (A to D) and in the spring of 1991 (E) and of the trial squares in April 1990 (F). The letters B and C correspond with the area of clusters A and B, of which the sediment from underneath the plough zone was sieved. Grid co-ordinates are at metre intervals.



Figure 3.5 Manual, two-dimensional recording of artefacts with two measuring-staffs and a plumb line.



Figure 3.6 Sieving of sediment with a 4 mm sieve and water tank.

eleven squares in the most find-rich part of the excavation (fig. 3.4, B and C). A sieve with a 4 mm mesh was used for this. Through sieving an approximation was obtained of the number of finds that was missed in the trowelling of the sediment. In order to sieve the sediment, a slurry tank was used in the first weeks of the excavation, from which water was pumped up and piped to the sieve (fig. 3.6). Due to the hot and dry weather, especially in the second half of July and in August, the excavated sediment of many squares could be sieved dry. The aim of sieving was to gain insight into the occurrence of very small flint chips and to collect backed bladelets, burin spalls, broken-off tips of worked edges, etc.

After the area of 10 × 10 m was excavated, new squares were marked out along its edges and excavated (fig. 3.4, D). The plough zone of these extra squares was not trowelled but the sediment was sieved on a mesh of 1 cm. The sediment underneath the plough zone was examined with a trowel to maximally 30 cm underneath this zone. In this way the number of excavated squares increased considerably. A total of 159 squares of 1 m² was excavated.

For a proper assessment of the depth position and the pedological context of the finds and to determine the character and role of post-depositional processes of the find distributions, three contiguous soil profiles were drawn on a scale of 1:20. The position of these profiles is as follows (fig. 3.7):

Profile 1 (S1): southwest-northeast profile from measuring point 52/204 to measuring point 62/204 in the northern part of the excavated area (length 10 m);

Profile 2 (S2): southwest-northeast profile from measuring point 52/198 to measuring point 62/198 in the southern part of the excavated area (length 10 m);

Profile 3 (S3): southeast-northwest profile from measuring point 56/196 to measuring point 56/206 in the central part of the excavated area (length 10 m).

In places where pit backfills were visible in the plane and/or profile, two additional profiles were drawn:

Profile 5 (S5): southwest-northeast profile from measuring point 57/203 to measuring point 59/203 (length 2 m);

Profile 6 (S6): southeast-northwest profile from measuring point 55/203 to measuring point 55/204 (length 1 m).

Furthermore, planimetric drawings were made of several squares, scale 1:10. In these squares disturbances of the plane were visible which formed the reason for the making of drawings. It concerns squares west of the area with a high find density (squares 51/201, 51/202, 51/203, 52/203, 52/204, 53/202, 53/203), a few contiguous squares in the eastern part of the excavated area (squares 57/203, 58/201, 58/202, 58/203, 59/201, and 59/202), three adjacent squares south of the area with the high find density (squares 53/199, 54/197,

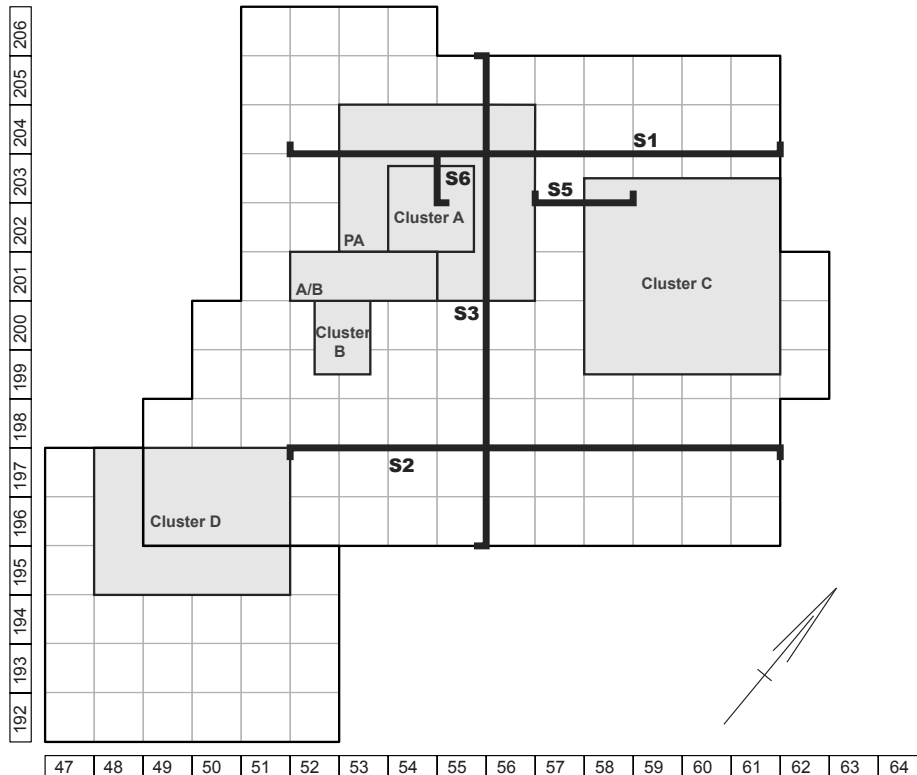


Figure 3.7 Position of drawn and described profiles (S1 to S3, S5 and S6) and of distinguished clusters (A to D), periphery of cluster A (PA) and zone A/B. Grid co-ordinates are at metre intervals.

and 54/198), and square 50/198. A part of these squares is contiguous with the above-mentioned profiles, thus enabling a good comparison of the drawings of profiles and plane. For these squares a good insight was obtained into the character and size of the disturbances. Square 57/202 was already excavated in April 1990 but was again excavated in the summer of 1990 to the level reached in April, after which a planimetric drawing was made. This square was later deepened, also with a view to the presence of a pit backfill in the north face of this plane (= profile 5).

3.5 RESEARCH OF APRIL 1991

In April 1991 the fieldwork was continued for another two weeks in the southern part of the site. The reason for this continuation was the discovery of a relatively high density of finds in square 49/196 at the end of the excavation campaign in 1990. In April 1991, 25 squares of 1 × 1 m were examined, in the same area where trial pits 47/193, 47/197 and 52/194 were excavated in April 1990 (fig. 3.4, E). The most westerly of these pits were lying on a level with the boundary of the plot which separated the field of

the excavation from the field (with maize) to the west of it. Of all 25 squares the plough zone and the underlying sediment were planed down with a trowel to 30 cm underneath the plough zone. During the field investigation in 1991 no additional profiles or planes were drawn.

3.6 PROCESSING OF FINDS

An important part of the find processing was carried out simultaneously with the fieldwork in a hut at the excavation. Daily activities were the washing, numbering and description of the finds. A code list was used for the description of the finds. After the excavation, the field and find data were entered in a computer at the Institute of Prehistory in Leiden.

Refitting of flint artefacts took place between October 1990 and April 1992 in the then auxiliary building of the Institute of Prehistory in Maastricht. The refitting was mainly carried out by A. Verpoorte (Leiden), in addition to whom A. Smit (Harderwijk) and P. Hennekens (Maastricht) spent quite some time on this activity. During the processing, the finds were weighed, raw materials units were distinguished, and typological and technological characteristics of the flint

artefacts were described. From September 2004 onward the author continued the processing of the find material of Eyserheide. Over a period of four years, the find lists were checked and where necessary corrected and expanded. Besides, all artefacts were weighed individually and compositions of fitting artefacts were described accurately.

An important contribution to the Eyserheide research was supplied by K. Sano, at that time attached to the University of Cologne. Sano examined a selection of tools, blades and flakes made of Orsbach flint on the presence of microwear traces. His findings have been included as chapter 5 in this monograph.