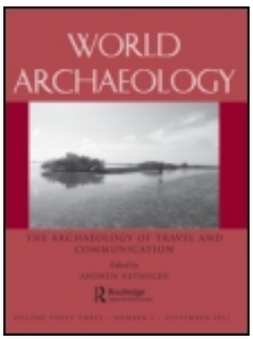

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Architecture of the pre-pottery neolithic settlement in Nemrik, Iraq

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Introduction

This article brings a preliminary presentation of architecture discovered in 1986–8 in Nemrik, northern Iraq, by the Archaeological Mission of Warsaw University. Up to now the site has yielded remains of nineteen structures dating to the pre-pottery neolithic, the period when the first agricultural societies were developing in the Middle East.

Nemrik lies 55km northwest of Mosul, halfway between the outlying ridges of the Kurdish mountains and the Tigris valley. It extends over a large area (upwards of 2 hectares) and comprises several archaeological layers. It lies atop a Pleistocene terrace which is cut by numerous gullies leading down to the Tigris. Nemrik village, one of the oldest in the world, was established over ten thousand years ago on one of the peninsular projections of this terrace, flanked by two wadis, today almost dry.

Preliminary studies of the environment of our village reveal that at the time of its existence it was surrounded by steppe parkland with tree clusters (ash, walnut, tamarisk, pistachio) and numerous antelopes and gazelles. The Kurdish mountain slopes, visible from the site only several kilometres away, were covered by mixed oak forests and inhabited by typically forest fauna (red deer, roe deer, wild boar, aurochs, among others). The higher reaches of the mountains outlined against the horizon were inhabited by ibex and chamois.

The village inhabitants based their subsistence largely on hunting steppe and forest game and also on gathering seeds of plants growing in the vicinity of their settlement (e.g. vetch, lentils, pea, wild cereals) as well as land and water molluscs (*Helix salomonica, Unio tigridis*). There is very scant evidence of fishing, which could mean that the Tigris, flowing 2km away, was not a particularly attractive source of food for the Nemrikians. In addition to hunter-gatherer activities, the villagers also practised some agriculture, at least in Nemrik's youngest phase. In the seventh millennium levels and possibly earlier we have found small quantities of domesticated animals (sheep, goat, pig, cattle). Thus we have here a repetition of a pattern already observed elsewhere; a settled mode of life marked by permanent village architecture preceding the emergence of a productive economy.

We are uncertain whether plants were cultivated at Nemrik. We have found very few sickle blades carrying the characteristic silica gloss, and the botanical analyses are still being carried out. However, the established facts about the environment and its

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exploitation give the impression that Nemrik was occupied by an affluent, well organized and stable village community. This community was, of course, very much a local one, relying on the local raw materials and resources, although it did have contacts with the outside world, importing certain lithic raw materials (rare obsidian and 'chocolate' flint) from distant areas and undertaking expeditions over distances of several dozen kilometres, the latter indicated by bones of alpine fauna discovered on the site. It seems to us that these early peasants exercised authority over a territory of their own to which they laid claim and which they defended against aggressive strangers (arrowheads in graves). This covetousness of their neighbours led to armed clashes and even to the destruction of the entire village by fire. After each calamity, however, the village was rebuilt, and the Nemrikians always returned to the same spot.

One naturally wishes to know about the appearance of such an early village, about the number of houses and inhabitants. Up to now no confident answers to such questions could be expected. The investigations of similar settlements such as Jericho and Mureybet extended over large areas, and conclusions drawn from surface examinations and the density of architecture in excavated areas have often led to gross exaggeration, for example the estimate envisaging 3,000 inhabitants in 3 hectare Jericho. We succeeded in uncovering virtually the entire built-up area of Nemriks's youngest phase, dating to the first half of the seventh millennium bc. We found that the village was urban in concept, featuring built-up zones together with areas devoid of structures and intended for open-air economic activities, and that not more than four or five houses were inhabited at any given time, each providing shelter for a maximum of eight to ten people judging by the available sleeping places We also know that the ground between the semi-subterranean subrectangular houses was paved with broken river pebbles, and that numerous mortars and querns were set into this pavement. There was also a vast communal refuse pit and a cemetery on the southern edge of the village. It thus appears that the 2.5 hectare village was inhabited by about 30–50 people occupying only 4–5 houses. Such is the evidence, belying many of the more fanciful hypotheses that have previously been advanced.

Stratigraphy

Our excavations revealed the following stratigraphy:

1. Sunk into virgin soil are round habitation structures of the oldest phase (nos 1B and 9A) which may be dated generally to the ninth millennium bc (uncalibrated radiocarbon years).

2. On the natural surface, covering a large area of the site, rests cultural layer K1, with abundant flint tools and also a considerable number of stone as well as less plentiful bone and clay artifacts. This level also yielded stone sculptures and fairly numerous animal bones and mollusc shells. In places the level is up to 30cm thick.

3. Above this is layer KL, unbroken only in the northern part of the site and partly eroded in the central and southern sectors. This is a clay layer, devoid of artifacts, sometimes mixed with small pebbles; it is man-made, a hardened ground surface constituting the building level of the settlement's middle phase. Connected with this phase, which is dated

by numerous radiocarbon determinations to the eighth millennium bc, are round houses 1A, 2A, 3, 7, 8A, 9, 10 and possibly also 11 and 12. There are reasons to believe that not all of these houses were contemporary.

4. Above layer KL, and sometimes situated directly on top of level K1, lies cultural layer K2, incorporating occupation debris of the middle phase. The artifactual content of this layer is very similar to that in K1, with the lithic industry being perhaps slightly richer. In this phase of settlement the dead were buried beneath house floors (with mass burials beneath houses 1A and 2A) or inside abandoned buildings (house 10).

5. Layer K2 is overlain over an area of several acres by layer KM, which may be further stratigraphically subdivided in the central part of the site. This level represents the site's youngest phases dated by numerous radiocarbon determinations to the end of the eighth and first half of the seventh millennia bc. It consists of enormous numbers of worked pebbles which form a hard surface containing vast quantities of artifacts very similar to those recovered from layers K1 and K2. Sunk into layer KM are houses belonging to at least two subphases: the older group are circular with pillars (nos 1, 4, 8) while the slightly later ones are subrectangular, also with pillars (nos 2, 5, 13? and 14). Also connected with the younger subphase are a large oval refuse pit (PT) and an inhumation cemetery in the southern part of the site. In the older subphase, to which the circular houses with pillars belong, individual graves were sunk into layer KM.

Thus, at least three major settlement phases may be distinguished at Nemrik:

1. the oldest (ninth millennium bc);

2. the middle (eighth millennium bc); and

3. the youngest (end of the eighth and first half of the seventh millennium bc), divided into two subphases.

With this sequence in mind, we now provide a brief description of Nemrik's material culture, before turning to the architecture. As can be seen from the evidence cited above, the Nemrik settlement existed in exactly the same spot for at least 1,500–1,700 years, if not longer. Moreover, it seems that this existence was not uninterrupted, the Nemrikians moving away at times for various reasons. This 'interrupted continuity' as it may be called, is confirmed by the portable finds, very numerous at Nemrik, as well as by the permanent features. The former change very little if at all throughout the occupation of the settlement, while the latter (houses, graves) undergo some evolution.

Important elements of material culture

The portable finds remain largely unchanged throughout Nemrik's existence. This is especially true of the extremely rich flint industry, and slightly less so with regard to the stone industry and bone and clay artifacts. The flint industry is based on single-platform blade cores. At first the blades were struck off with the aid of a punch; later (from the middle phase onwards) they were produced by the pressure technique. The resulting blanks, often intentionally sectioned, were used to make tanged points (including

characteristic Nemrik-type rhomboid forms), microliths, end scrapers, retouched truncated blades and numerous borers. The blades were also retouched in a variety of ways; these implements form the largest tool group. In general this part of the Nemrikian industry conforms closely, both typologically and technologically, to the standard Middle Eastern early neolithic (e.g. Jarmo, Mureybet, Jericho).

Flake tool categories are also well represented in Nemrik. Flakes were used to make side-scrapers, denticulated pieces, raclettes and end scrapers. These forms too fit well within the standard Middle Eastern repertoire for the period. Our inventory of the lithic industries is completed by the addition of macrolithic picks, the equivalents of which (unpolished axes and adzes) always occur in the pre-pottery neolithic of the region.

Aside from its clear local characteristics (e.g. Nemrik type tanged points, delicate backed pieces, infrequent Khiam points, picks), the Nemrikian industry is peculiar in its survival in unchanged form for over 2,000 years. It is still in evidence at the ceramic sites Telul eth-Thalathat and Ginnig (the latter site near Tell al Hawa is being excavated by a British mission). Over this entire period the tool morphology does not evolve, by contrast with the classical Sultanian-Tahunian sequence known from the Levant. There are, moreover, no changes in the basic statistical indices. This would suggest that we have to do here with an autochthonous population, firmly established in northern Iraq, with its own rhythm of cultural development yet influenced in some respects (architecture, graves, economy) by the more general cultural trends current over the entire region.

The flint industry is accompanied at Nemrik by numerous stone artifacts such as querns, mortars, elongated polishing plates, and also, but less frequently, vessels, grinders, pestles, polishers, polished axes, and stone balls (probably so-called bolas). The excavations in Nemrik yielded also a small number of bone artifacts (awls, points, needles), some stone jewellery, and small clay 'tokens', interpreted by some as counting pieces.

Special mention must be made of the notable Nemrikian art, which has already achieved deserved fame. We recovered close to twenty stone sculptures, from all three occupation phases. These are well-made, stylistically homogeneous and represent the heads, and in some cases complete bodies, of animals and humans. The heads are set on long stone shafts with circular cross section. All the sculptures were made from local river pebbles, first by pecking followed by polishing and the execution of fine detail with precision flint tools. The completed figurines were polished. The anthropomorphic representations include a figurine of a woman and a phallus-shaped male head with tattooed cheeks. Most of the zoomorphic figurines represent bird heads (including those of a bustard and a vulture); there is also a lion and a snake.

There are strong grounds for believing that these sculptures represent domestic deities: we discovered one *in situ* on the floor of house 2A. Also noteworthy is the astonishing continuity of the 'Nemrikian school of sculpture' which suggests also a similar continuity of settlement and demographic tradition in this part of Iraq from the ninth to the seventh millennia bc. Another conclusion that can be drawn from these finds is that the Nemrikians lived in relative isolation: similar sculptures of comparable date are virtually unknown in other parts of the Middle East. The only analogies, rather distant at that, belong to the Levantine Natufian culture of the ninth millennium bc.

Architecture

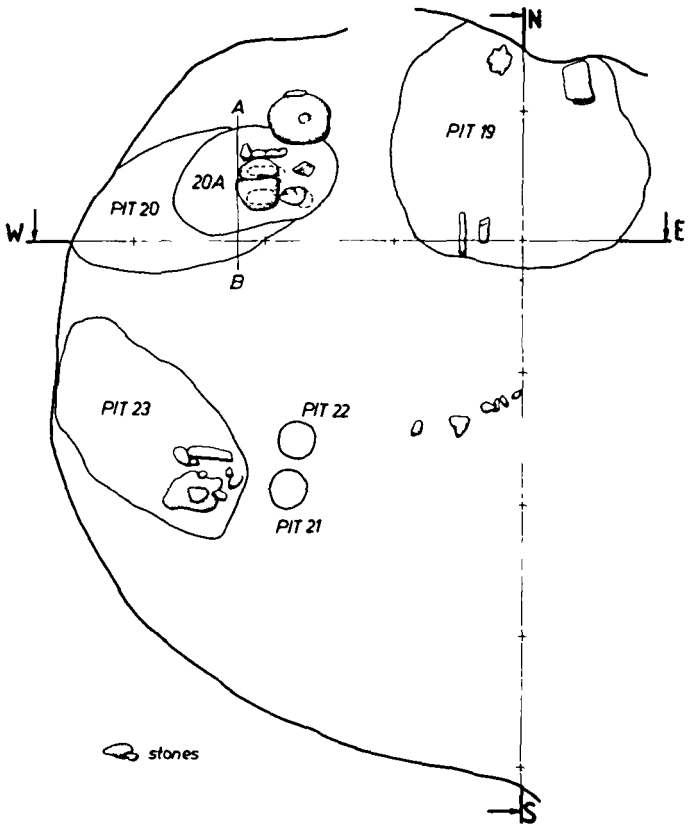
Unlike the part of Nemrik's material culture which survived in the form of portable finds, the relics of architecture reflect a clear course of development and change in all of their observable aspects: construction technique, architectural form, roof support system and conception of permanent interior fixtures. Arranged in a chronological sequence, as far as is possible at the present stage of research, the building remains give a logical and already fairly detailed picture of evolutionary adaptive changes accompanying the increasingly advanced technical skills of the builders. This developmental process was to some extent experimental but it also maintained certain traditions and made good use of previous experience.

As already mentioned, there were several (two ?) breaks in the occupation of Nemrik. The evolution of Nemrikian architecture must, accordingly, have been discontinuous, since part of the process took place elsewhere. This fact, however, does nothing to obscure the general direction and speed of change which can be observed in the art of building at Nemrik.

1. The oldest of the three principal settlement phases discernible at Nemrik is represented by the smallest number of structures. We include three houses in this phase: 1B, 6 and 9A; the latter is still being explored. All stood on virgin soil or were sunk into it. Their remains are buried beneath the remains of younger houses.

These oldest houses represent two types: a) hut-like structures (?), and b) *tauf*-walled houses (*tauf* being packed clay or *pisé*). Only one house, 1B (Fig. 1), belongs to type A. Its projected floor plan is circular, about 5.6m in diameter, the floor consisting of natural clay, not reinforced with any added material. This level lay about 60–75cm below the top of the natural clay layer surrounding the structure, which means that house 1B was sunk into the ground to this depth. The occupation floor was not horizontal: the central part formed a depression, the outer edges rising about 15cm higher. The interior of the house was thus basin-like. A sizeable portion of floor space was taken up by three large pits (Fig. 1: 19, 20, 23) sunk along the building's northern and eastern edges. There are no traces of roof supports or of walls. For this reason it is assumed that the upper part of house 1B was light and not durable, and that the structure was of the hut type.

The other two houses in this oldest level are classified as belonging to type B. The ground plan of house 9A is circular, some 5m in diameter. The house was sunk into the natural clay to a depth that is still to be determined but certainly deeper than 50cm. The walls were made of variously sized *tauf* blocks, 20cm thick on average. Patches of thin clay plaster survived in some places on the inner faces of the walls. So far no trace of any roof supporting structure has been discovered. The ground plan of house 6 (Fig. 2) was oval, with the longer axis oriented northwest–southeast; its interior was roughly 3.0 by 2.0m. Only the lowest parts of the *tauf* walls survived. These were about 30cm thick and were erected directly on ground surface. Although a trace of one post survived in the western part of the building, nothing certain may be said about the roof-supporting system employed here. Two burials were discovered within the confines of house 6, one in the northern and one in the southern part.



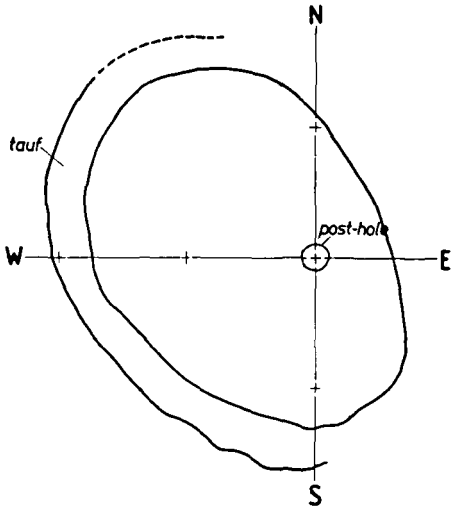


Figure 2 House 6, earliest phase (type B).

Figure 1 House 1B, earliest phase (type A).

2. The largest number of houses dates to the middle phase of settlement. Stratigraphic evidence places at least seven structures in this phase, and it is likely that two others (11 and 12) also belong here.

House 1A (Fig. 3) is a typical representative of the building category we denote as type C. Its floor plan is irregularly circular in shape, measuring about 7.0 by 8.0m. This building was erected over house 1B, but it was larger and only the eastern edges of the two structures more or less coincide; the northern, southern and western walls of the new house are all about a metre beyond the corresponding edges of house 1B. The walls of house 1A consisted of a single thickness of cigar-shaped sun-dried mud-bricks, measuring $51 \times 12 \times 6$cm on average, and closely resembling bricks known from much later Mesopotamian sites such as Choga Mami and 'Oueili (cf. Pl. 1). On the inside the walls were covered with a 1–3cm layer of clay plaster. Clay was also used to cover the floor of the house as well as the surface of all its permanent interior fixtures, the result being a smooth and tidy appearance over the whole of the inside of the house. In all places not occupied by the fixtures, the floor was almost perfectly horizontal; local departures from the mean level did not exceed a few centimetres.

An important characteristic of the interior of houses of this phase is a specific repertoire of permanent installations which includes sizeable bipartite platforms raised about 12cm

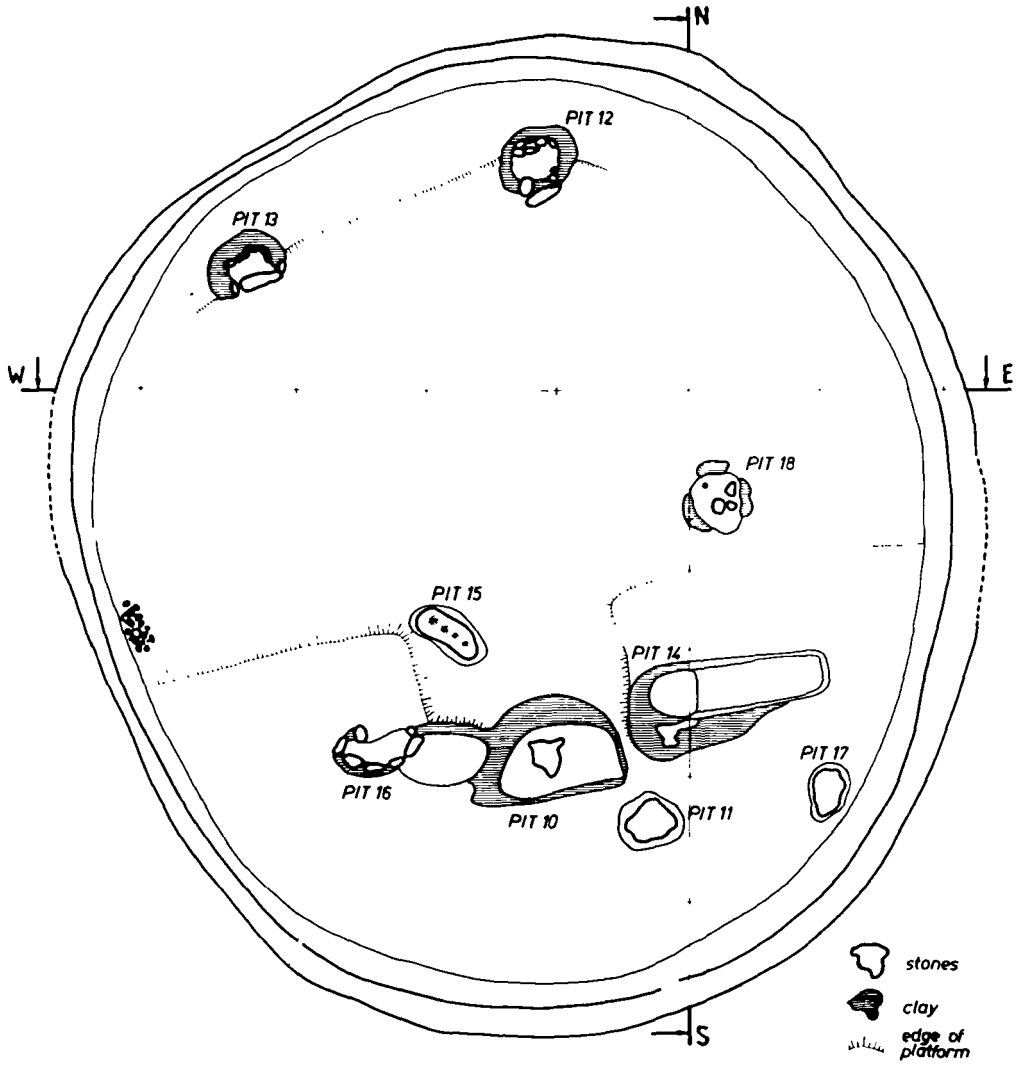


Figure 3 House 1A, middle phase (type C).

above floor level in the southern part of the house and smaller undivided platforms against the northern wall. The shape and dimensions of the northern platforms are suggestive of a sleeping place for one person, a single bed c. 0.7 by 1.8m. The southern platforms are more complicated. We can usually distinguish beds (eastern and western) adjoined by a large undifferentiated space together with single additional fixtures near the sleeping places, possibly places for sitting – a 'bench' on the eastern side (next to pit 14) and a 'stool' to the west (adjacent to pit 16). Incorporated in this system of platforms were roof-supporting posts. In addition to their primary function, these posts also served to divide the interior. It is possible that fabrics or hides were suspended between them, acting as prototypes of the permanent partition walls known from the latest constructional phase at Nemrik. It appears that various economic chores were performed in the southern parts of the middle

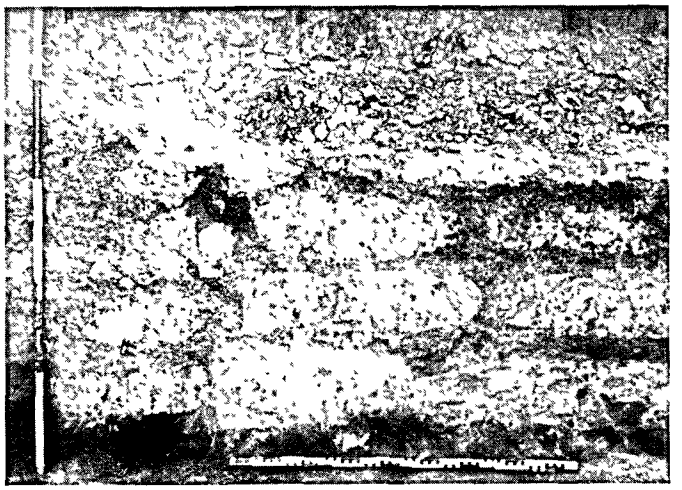


Plate 1 Nemrik 9: house 5. View of the brick wall.

phase houses, this being indicated by specialized tools set permanently in the floors and by concentrations of production refuse, none of which occur in the northern parts of the houses.

The walls of these houses were certainly little more than curtain walls, being too weak to support a roof. The supporting function was performed by the wooden posts, whose post holes, reinforced with stones, survived in the northern and southern parts of house 1A. There were four such posts in the house, arranged in northern and southern pairs, with an almost equal distance between the posts of each pair (about 2.0m; Fig. 3: pits 12, 13, 14, 16); the distance from east to west was roughly 4m. Judging by the diameter of the surviving post holes, the posts were just over 20cm thick. On the floors of houses 1A and 5 there was a layer of burnt material, consisting mainly of charred clay lumps from a collapsed roof. Many of these lumps carry well preserved impressions of the wooden parts of the roof structure which give some idea of what it was like. This evidence indicates that the roof was formed by a lattice of poles and branches with diameters ranging from 2–3 to 12cm. The lattice was probably covered with straw and then plastered with clay on the outside and inside. The total thickness of the roof, indicated by one complete surviving fragment, was at least 13cm. The roof was probably flat or sloping, of the type common in this part of Mesopotamia even today. It weighed perhaps nine or ten tons and could easily have been supported by four posts of roughly 25cm diameter and two to four beams.

We have no clues about the lighting of the interior or methods of entrance. Since there are no traces of permanent fixtures providing access to and from the houses, we assume that the inhabitants used light portable ladders.

In addition to the classical type C house described above, stratigraphic evidence suggests that two houses with type B features are also present in the middle phase, namely the irregularly circular houses 3 and 10, with *tauf* walls and internal diameters of 4.7 and 2.3m, respectively. No traces of supporting structures survived, so there are no grounds for reconstructing their upper parts, the roof in particular. The function of these buildings is also unclear. House no. 10 contained two or more burials, one of which was accompanied by a rich collection of grave goods in the form of flint and stone implements (querns,

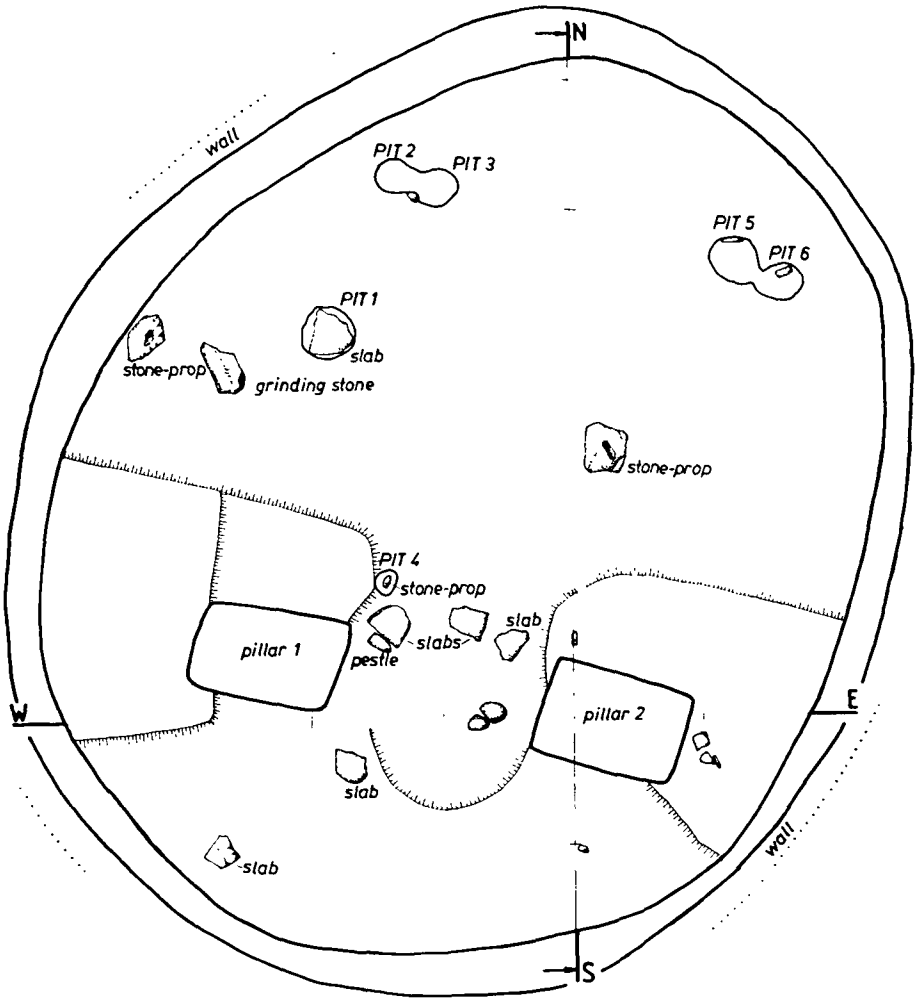


Figure 4 House 4, latest phase (type D_1).

pestles, grinders, etc.). The other inhumations were discovered about one metre to the east of this house. It is thus possible that the structure was in fact a tomb. This theory is further supported by the small dimensions of the building and the absence of traces of other activities within it. The fact that there are numerous burials near it also suggests that it may have stood in or next to a cemetery. House no. 3 on the other hand is similar in size to the dwelling structures, but the artifacts it contained fail to give a clear functional picture.

3. As mentioned previously, the stratigraphy of the site justifies the division of its youngest phase into two subphases. The grounds for this subdivision are provided by the position of houses 4 (Fig. 4) and 14, with the latter overlying the former. There are also very clear typological differences between the two buildings.

In the older subphase we include houses nos. 1 (Fig. 5), 4 and 8, denoting them as type

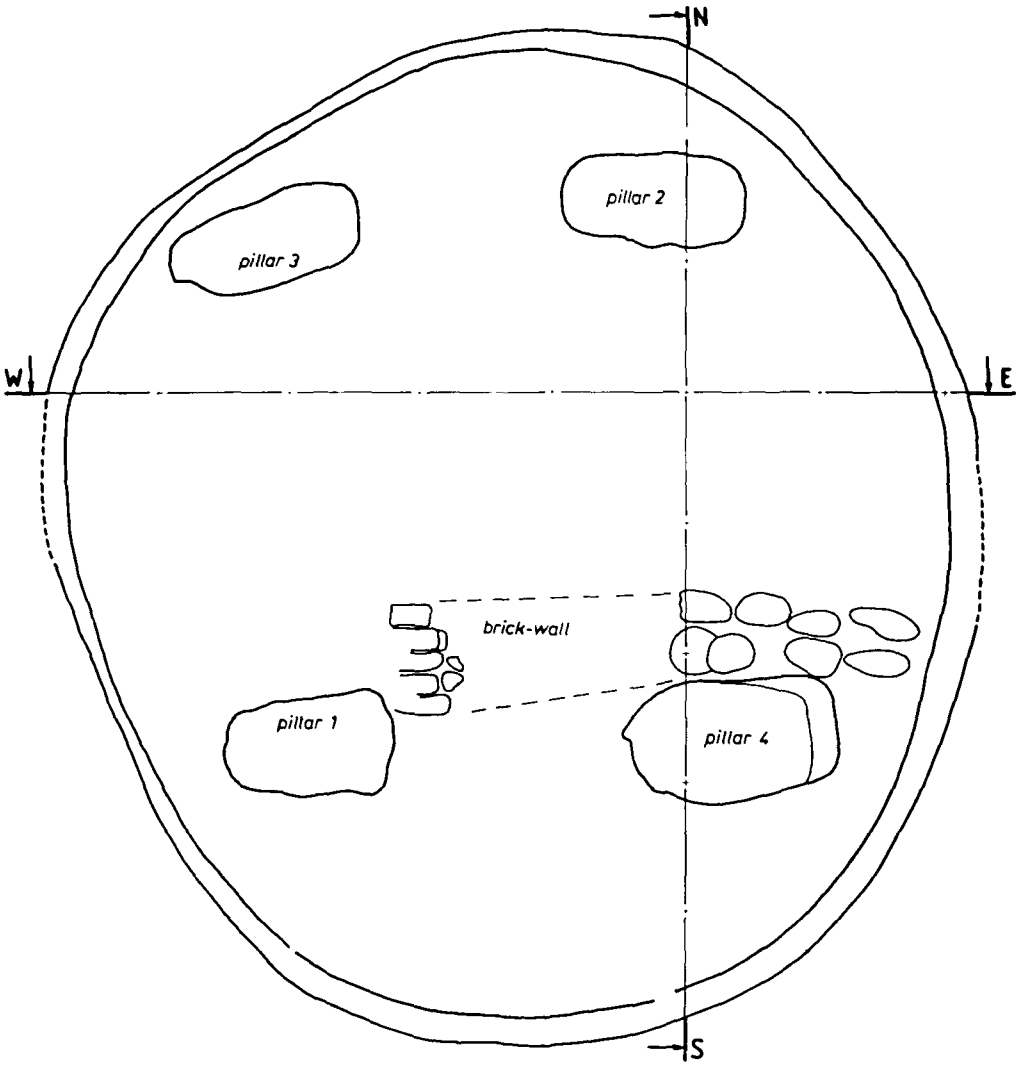


Figure 5 House 1, latest phase (type D_2).

D. All have circular ground plans and walls consisting entirely of sun-dried mud-bricks (cf. Pl. 1) or of a combination of bricks and packed clay (*tauf*), as for example in house 4. Two of the houses feature clay platforms arranged similarly to those in the type C buildings. However, in all three type D houses there appears a new structural feature, not observed previously, namely a supporting structure consisting of pillars made of compacted marl. In the type D houses these 'concrete'-like pillars either totally (houses 1 and 8) or partly (house 4) replace the wooden posts used previously as support for the roof. Given this difference, we distinguish two variants of the type D house: D_1 represented by house 4 in which one pair of supports (in this case, the northern) consists of the traditional wooden posts planted in post holes reinforced with clay and stones, and D_2 in which the roof rests on four pillars of marl composition (houses 1 and 8), the arrangement of these

pillars being identical with that of the earlier wooden posts. Indeed, when a type D house was erected directly over an older house (as is the case with houses 1 and 1A), the pillars stand directly over the post holes of the earlier structure. We assume that the differences between subtypes D_1 and D_2 reflect a gradual introduction of pillars to the art of building as well as an actual chronological sequence.

The pillars were quite large. They consist of blocks of marl with bases usually trapezoidal or subrectangular in shape and sides up to c. 1.2 by 0.7m. Their inner structure consists of fairly regular layers, about 20cm thick. This leads us to believe that they were made by compacting successive layers of water-soaked marl rubble, forming a material which in many respects resembles modern concrete. The very regular shape of the pillars and especially their almost precisely vertical sides indicate that some sort of 'form' must have been used. On one pillar from the younger subphase (house 2) we found an indistinct impression of what might have been wickerwork, perhaps indicating the type of form used in erecting the pillars. The pillars were plastered in a manner similar to the wall faces. We found two kinds of plaster: clay and lime. One of the D_2 structures, house 1, features another structural innovation, a solid mud-brick wall joining the southern pair of pillars (Fig. 5). This wall was surprisingly massive, about 50–60cm thick.

The later subphase of the youngest settlement at Nemrik is represented by type E houses characterized by a subrectangular floor plan, a roof supporting system consisting of compacted marl pillars, walls built of the same material in addition to mud-brick and the presence of a partition wall in the southern portion of the house. There are three such

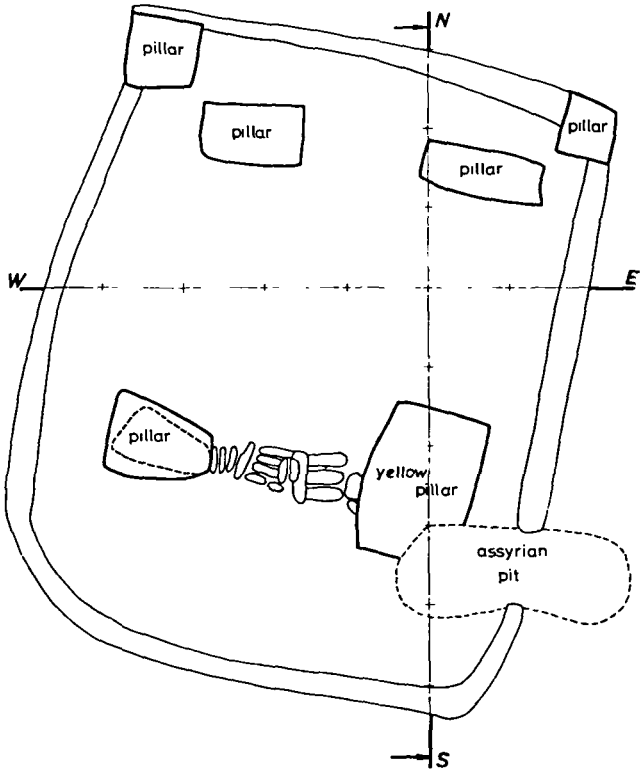


Figure 6 House 2, latest phase (type E).

houses: 2 (Fig. 6), 5 and 14, measuring 8 × 7, 7 × 6 and 6.5 × 5.5m, respectively, with the longer axis always oriented approximately north–south. A fourth house, no. 13, perhaps also belongs to this category, but its exploration has yet to be completed.

In type E houses the roof supporting system consisted of four pillars spaced more or less regularly in two pairs, northern and southern. In the best preserved houses, for example 2 and 5, the pillars survived to a considerable height, as much as 120cm, providing good evidence for their shape, dimensions and internal structure, which are basically identical with those in the type D houses. Partition walls discovered in houses 1, 2 and 5 were built of clay or marl bricks, or both, running west–east between the southern pair of pillars (houses 1 and 2) or from the house wall to the nearest pillar (house 5). In all cases small areas were walled off in the southern parts of the houses. Two of the walls, in houses 1 and 2, were relatively thick, while others were very thin, the thickness of a single brick only. In house 1 the walls were made of mud-bricks only, while in house 2 we identified wall fragments made of mud-bricks, others made of marl bricks and still others made of compacted marl. The walls of house 14 consisted of compacted marl only.

House 5 was the only type E house furnished with clay platforms. Houses 2 and 5 had well-constructed clay or marl floors, while house 1 seems to have lacked such a feature, its occupation floor having been only faintly visible as an area of trampled ground. The house 5 floor was painted red, traces of red paint having been discovered also in house 2. The walls of the two houses were also painted, at least near the floor, while in house 2 three colours were preserved, black, red and yellow. Traces of similar painting were also discovered on the plaster covering the pillars.

Conclusions

In the present state of research the typology of architectural forms and building techniques presented above appears to account for all the diversity observed. The five types of buildings that we have distinguished form a fairly logical evolutionary chain reflecting the development of architecture in the pre-pottery neolithic settlement at Nemrik. From the simplest hut-like forms (houses 1B and 6) through the larger *tauf* structures with roofs of unknown type (e.g. house 9A) and large, mud-brick houses, relatively richly furnished and with wooden roof supporting posts (houses 1A, 2A, 7, 8A, 9), to the very similar houses of type D, we are concerned with circular structures. It is only in the final stages of the Nemrik settlement that there appears a new architectural form, subrectangular houses dated to the beginning of the seventh millennium bc (uncalibrated radiocarbon). It is interesting to note, however, that the principal technological features of these youngest houses (type E) make their appearance much earlier, in type D buildings. The period embracing the existence of D and E type houses witnessed a gradual technological advancement, an advancement apparently marked by hesitation and caution (house 4 with a combination of pillars and wooden posts) but leading finally in the settlement's youngest phase to a complete, and up to now unique, restructuring of building technology.

Looking at this critical stage in the history of Nemrikian architecture one has to ask whether there is a connection between the refinement of technical skills and the drastic alteration of architectural form. At first glance it seems that this connection does not

necessarily have to be causal, that is to say the new technology did not necessarily have to be the main factor responsible for the emergence of the new architecture. The introduction of the new technology, whereby pillars were made of a new material closely resembling modern concrete and were erected with the use of wicker or wooden forms, took place within the old circular house architectural tradition. However, it seems possible that the application of the new technology in the erection of house walls (as was the case in houses 2, 5 and 14) might have involved practical difficulties, connected for instance with the reinforcing of forms with poles, i.e. more or less straight elements. If wickerwork made of branches had been used, this too would have been of limited elasticity and could not have been bent at will. In either case the technology was bound to be awkward when used to build the traditional curvilinear walls. A notable feature at Nemrik is that it lacks even a single circular house with walls made exclusively of marl. If the new building technology, replacing brick construction with a technique remarkably similar to present-day poured concrete, was more effective, simpler and less labour-consuming, then these advantages may have outweighed any attachment to the traditional circular form of house. In fact we believe it most probable that the greater effectiveness of the new technology, combined presumably with the greater strength of its constructions, prompted the abandonment of the circular ground plan in favour of the subrectangular one, and that, therefore, it was technological progress that was the cause of architectural transformations at the turn of the eighth and seventh millennia bc.[1]

Equally interesting changes were taking place in the structural forms of dwelling interiors. Change here was not fully continuous, however, and this hinders a comprehensive reconstruction of the process. The most striking discontinuity is the radical change in interior furnishings from those of house types A and B to those in type C buildings. One gets the impression that certain intermediate, transitory forms are missing, and that in this respect the type C houses are so radically different from those of A and B type that it is quite inconceivable that the former could have evolved directly from the latter relatively primitive buildings without some intermediate stages which are not attested at Nemrik. Indeed, the interior of an A or B type house compares with that of a type C dwelling as a medieval peasant's hut would compare with the residence of a feudal lord. The most significant differences lie in those spheres of everyday life which involve needs and preferences arising from the expression of spiritual culture, or culture of the mind: the need for tidiness, better satisfied if there is a floor that can easily be cleaned; the need for order which requires the distinction of functional space; perhaps the need for privacy which could be argued if our assumption is true that the sleeping places, especially those in the northern parts of houses, were screened off by some sort of material hung between the posts; and finally, the possible sense of family bonds, perhaps already ritualized, as might be deduced from the habit of burying the dead beneath the floors of houses and maintaining some sort of contact with them by specially dug grave entrances covered with flat stones (pits 11 and 17, Fig. 3). It can hardly be doubted that the Nemrikians, being the producers of a unique stone art and many attractive objects made from colourful stones, had aesthetic needs. Such spiritual richness is hardly evident from the interiors of houses of types A and B. Even if we were to regard the several pits sunk from the floor level of house 1B as a manifestation of spatial organization, we would still regard them as something resulting from rationalization of living space rather than from some more spiritual need.

But assuming there is a connection between the material and the spiritual spheres, the type A houses certainly indicate the initial stage of development of the spiritual life for which the interior of a house of type C provides evidence.

The next stage in the organization of living space is marked by the appearance in Type D houses of bipartite interiors with their permanent partition walls. It may be assumed that this novelty is just a visible architectural continuation of the existing tradition of dividing up the house interior with flimsy partitions, an idea arising from the need for privacy and introduced already in type C houses, or perhaps even earlier.

An unusual feature of the interior of Nemrikian houses is the absence of permanent facilities for fires. There are no ovens or even simple hearths. This means that the houses were not heated and the meals were not cooked inside them. Cooking must have been done outside the houses on the extensive stone pavements which covered the ground adjacent to them as well as larger communal areas serving the entire community. The general conclusion from the above sketchy presentation of the most characteristic features of Nemrikian architecture and of its development is that this development was probably indigenous, there being no evident traces of outside influences, although of course these cannot be excluded. Despite the breaks in settlement which obscure the details of this development, there is no doubt that this process was generally continuous and coherent.

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Note

1. A comparable functional explanation has also been offered for the evolution from circular to rectangular architecture at the pre-pottery neolithic site of Beidha (J. Friedman and M. Rowlands (1978) *The Evolution of Social Systems*, p. 465).

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Abstract

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Architecture of the pre-pottery neolithic settlement in Nemrik, Iraq

The excavations at the site of Nemrik in northern Iraq have revealed a unique series of pre-pottery neolithic settlements dating from the ninth to the first half of the seventh millennium bc. Especially notable is the evidence for house architecture, including interior fittings and the unusual pillar structures which seem to have been supports for the roof. The architecture displays a clear course of development in technique of construction, form, roof support system and the conception of interior fixtures, from the earliest simple hut-like structures to large, relatively richly furnished mud-brick houses with wooden and later, unique to Nemrik, compacted marl roof-supporting pillars. Technological progress is seen as the major factor in the architectural transformations of the eighth and seventh millennia bc.