

Building remains and accompanying finds, 6th-1st century BC

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Sector NGS is located near the northern border of the Lower City (Pl. 1). Prior to the excavations, the surface in this area sloped gradually upwards towards the west. The height of the terrain at this point is approximately 10-12 m above the level of the *liman* (the river delta). Over a course of 30-40 m to the west it reached a height of 16 m, from where the steeper slope of the terraced part of the town began (Pl. 2-3). To the east, the area is limited by the coastal cliff, which is significantly eroded. The sector is located within a landslide zone: to the north of Sector NGS (north of reference point no. 35) traces of landslide could be traced in a northeastern direction, in other places they could be seen with eastern and southeastern orientations. The rear edge of the landslide area is traceable for 20 along the 16 m contour line of the area of Sector NR. The cultural deposits within the area are embraced by the landslide layer.

The reason for conducting excavations here was determined, in particular, by the presence of these landslides, since, given the unfavourable climatic and tectonic conditions, further damage to the landscape could be foreseen, which would have resulted in further destruction of the cultural layers. Excavations were carried out over the entire area of the landslide zone, except for an area to the west only a few metres distance from the rear edge of the landslide. Continuation of the excavation further westwards was considered undesirable because of the danger of destroying the terraced part of Olbia. Therefore, the western parts of the houseblocks adjoining the foot of the terraced part of the town remain unexcavated.

In the course of these investigations, from 1985-2002, the excavation was extended for 90 m along the coastal cliff (Pl. 4.1-3). Here, numerous building remains, mostly of the Hellenistic period, were uncovered in an area of approximately one third of a hectare. Several walls, pavements and floors, dated for the most part to the 4th century BC and more rarely to the 5th century BC, were excavated under the floors of the rooms and basements of the Hellenistic period. Because the Hellenistic houses could not be demolished, due to their importance as architectural monuments, the layout of the earlier, more fragmentary structures, which does not always coincide with that of the Hellenistic ones, could not be reconstructed. In addition, the remains of three earth-dwellings, dated to the period not later than the beginning of the 5th century BC, were excavated. One of these was located under the southeastern basement of House IV-4 (Central Houseblock), the others in Houseblock V (Eastern Houseblock).

The building remains of the first centuries AD are scattered across the sector and differ fundamentally from those of the Classical and Hellenistic periods. These are mainly structures of unclear purpose, heaps of collapsed stone, small fragments of walls and pavements, remains of clay plaster from stoves, etc.⁸² Two kilns, presumably drying kilns, in the northern part of the sector are better preserved than the other structures of the post-Getic period. Thus, it is only for the Hellenistic period that we can formulate comprehensive ideas about the plans of the living quarters and houses in Sector NGS.

GENERAL STRATIGRAPHY OF SECTOR NGS

In Sector NGS, wherever possible,⁸³ excavations were carried out down to the level of the virgin soil. This allowed us to trace the comprehensive stratigraphic sequence of the area. Beginning from the modern surface it consisted of the following major layers.

⁸² These will be discussed in greater detail in the following chapter devoted to the first centuries AD.

⁸³ Because of the relatively good state of preservation of the building remains of the Hellenistic period, these were preserved for exhibition, and, consequently, excavations reached virgin soil only in those areas where no representative architectural remains were present, i.e. mainly in the basements.

Humus

A layer of humus covered the entire area. This was a dry, brownish-grey soil, occasionally constituting fine lumps of soil pierced by roots of modern vegetation. The thickness of the layer varied, on average, from 0.2-0.8 m. In this layer, isolated intrusive structures were traced: in the southwestern part of the excavation, remains of a trench of the Roman period; and in the eastern part, depressions caused by previous archaeological excavations (Sector NR) or by World War II activities.

The layer contained numerous collapsed heaps of rubble and worked limestone, the upper courses of walls of some of the rooms and the upper levels of some of the pavements. The soil was abounding in heavily-crushed, lime-covered pottery. Their chronological frame encompasses the entire period of occupation at Olbia, from the 6th century BC to the 4th century AD. Therefore, artefacts from the humus layer are generally uninformative, although certain finds are interesting in themselves. An inscription of Posideios⁸⁴ was, for example, found in the humus layer and beneath this a sculpture of a seated woman (Q-1).⁸⁵ Under the top layer of the humus, a layer of humus buried before the upper layer was formed was occasionally traceable. The character of this soil and the finds it contained were practically identical to the upper layer of humus. The beginning of the formation of the humus layer belongs to the period of the end of occupation at Olbia. It is the result of the natural development of undergrowth, drifts of dust, etc.

Grey clayey layers⁸⁶

Grey clayey soil usually underlay the humus. It was constituted of a sequence of layers representing a considerably more complex situation than is characteristic of the humus. The layers varied in thickness from some centimetres up to 1.80 m. The pattern of their distribution depended on the building remains lying within them. A variety of admixtures are usually found in this soil, such as yellow clayey, dark ashy, sandy etc.

Layers of this kind were recorded throughout practically the entire sector, often above the streets, the rooms of houses and in the fill of the above-ground rooms. They contained numerous wall and other building remains, and occasionally heaps of stone and tiles were found. Finds were plentiful in these layers.

The formation of the grey clayey layers differ in date, but, in general, they belong to antiquity, beginning in most of cases in the 3rd-2nd century BC. The formation of these layers and the appearance of the grey colour is mostly the result of anthropogenic activities (reconstruction, movement of middens, accumulation of ashy deposits etc.). The earlier layers were frequently darker, owing to a considerable addition of ash and organic remains.

Yellow clayey layers

The grey clayey layer was followed by a yellow clayey layer, but there were exceptions where the yellow clayey layer was the upper one. Most frequently, below the grey clayey soil, generally covering the building remains and in the upper levels of the fills of rooms there was a yellow clayey soil constituted of eroded mud bricks from the collapsed walls of houses. This was a dense, light-coloured soil, 0.4-0.5 m thick, but in some places up to 1.3 m thick. This layer covered the walls, and in some cases it could be traced above the streets (Northern Transversal Street). Occasionally it contained some quantities of the grey clayey, ashy soil with pottery and animal bones.

The formation of the yellow clayey layers started at the beginning of occupation at Olbia. However, they become especially widespread and thick in the 5th-3rd century BC. They were also found during excavation of later remains. The dating of these layers is determined mostly by the chronology of the objects found in them. The formation of the yellow clayey layers mainly relates to building activities, when walls, which had gone out of use, were employed for filling basements or for raising the level of the surface.

⁸⁴ Lejpuns'ka 1990.

⁸⁵ Lejpuns'ka & Samojlova 1997.

⁸⁶ Discrimination of the layers according to the colour of the soil was established during excavations at Olbia owing to the frequent repetition of their typical interpositions. Colour specifications enable us to trace the general chronological frames and peculiarities of the formation of the layers.

Ancient surface (*polevka*)

Beneath the cultural layers, the original humus surface, called *polevka* by the Olbian archaeologists, was preserved in certain areas of Sector NGS. However, in most cases it had been removed during ancient construction. The soil of the *polevka* in Sector NGS differs slightly from that in the Upper City, where it is a pure, soft, chocolate-coloured soil. Here the soil had a bright-yellow or greenish hue (Room 515, Basement 253, Room 410, isolated spots in Room 584).

Virgin soil

The virgin soil lies under the *polevka* or, if this had been removed, it lies immediately below the building remains, particularly the structures of the 5th century BC. The lower parts of later structures usually did not reach the virgin soil, as they covered older building remains.

The virgin soil is pure, yellow clay, occasionally with limy, reddish or greenish inclusions, without any traces of pottery, bones etc. Often the oldest structures, such as pits, earth-dwellings of the third quarter of the 6th to the beginning of the 5th century BC and basements of the 5th to the early 4th century were cut into this layer.

Stratigraphic features of individual parts of the sector, are, when necessary, described below under the individual structures.

BUILDING REMAINS AND ACCOMPANYING FINDS OF THE PRE-HELLENISTIC PERIOD

The late Archaic period (last quarter of the 6th to first quarter of the 5th century BC)

Remains of three earth-dwellings were uncovered in Sector NGS. Two of these were built successively in practically the same location. In addition, the lower parts of two pits were excavated. These were not preserved to their full depth. Note also that in the Central (House IV-1, IV-2, IV-3 & IV-4) and Southern Houseblocks (House VI-2 & VI-3) below the levels of the houses of the Classical and Hellenistic periods were found underlying layers without building remains, but with material of the 6th-first half of the 5th century BC (Contexts 140-142, 150-154, 159, 193, 285, 291, 299). Sometimes the filling below and between the floor levels of buildings of the second half of the 5th-4th century BC is also dated mostly to the Archaic period (Contexts 211-215, 268-270). In some cases it is difficult explain why the material between the floor levels of rooms of the Hellenistic period dates to the 6th-5th century BC (Contexts 225, 226, 282), but perhaps soil from earlier periods was used in their construction. In these cases, the date of the material is not related to the date of the structures.

Earth dwellings

The first of the earth-dwellings (445) revealed was situated in a zone disturbed by powerful natural forces. The soil layers had been washed down to the *liman* and partly eroded away, and the sequence of the layers was to some extent affected by the landslide process. A more or less similar situation was detectable in other areas of the coastal part of Olbia. This is the reason why so few dug-out structures of the late Archaic period were preserved in the Lower City. Earth-dwelling 445 is supplemented only by fragments of two more earth-dwellings, 730 and 730a, and Pit 737, revealed in 2004 in a limited area west of the Eastern Longitudinal Street.

Earth Dwelling 445

This was dug into the virgin soil east of the Eastern Longitudinal Street. It is nearly rectangular in plan (2.7 x 2.1 m) with slightly rounded corners. Its sides are vertical; no plastering was revealed. The floor is made of mud brick; two levels were traced. The lower level, lying on the virgin soil, is light-grey and slightly yellowish. It was formed during the functioning of the room. Over the lowest layer, a thin (1-3 cm) layer of sand was recorded underlying the second level of the floor. In the second level, several pieces of pottery and animal bones trampled down into the floor were found.

In the northwestern corner, a small "table" (1.05 x 0.65 m; height ca. 0.4 m) was built against the wall. The surface of the "table" was encircled with a vertical ridge along the perimeter. In antiquity, it was probably covered with an awning

since small holes for installing the supporting posts were preserved. The horizontal surface of the “table” was carefully smoothed. Slight traces of soot were discernible on it. The effects of fire were also detectable on the western wall of the room immediately above the “table”. It was surrounded by a partition dug into special grooves, 9 cm and 15 cm wide and 10 cm and 5 cm deep, made in the floor. All this suggests that the “table” served as a support for a brazier.

The earth-dwelling was covered with a yellow clayey soil with admixtures of sand. The material found inside was fairly poor. The finds were dated to the 6th to the first half of the 5th century BC and included the rim of a Chian bulging neck amphora and fragments of a black-glossed vessel of the first half of the 5th century BC. Below this layer, around the perimeter of the dugout to its entire preserved depth, the fill consisted of coarse-grained dark-brownish-orange sand, including thin, black, ashy lenses.

The lower layer of the fill of the dugout yielded relatively many pottery fragments.⁸⁷ Notable is the rarity of amphora fragments and household pottery, together with a total absence of cookingware. The assemblage included predominantly greyware table pottery – olpai, plates, cups and pitchers as well as fragments of black-glossed and East Greek pottery. The same layer yielded a large hearth tray and a “rhyton” (Contexts 238, 240). On the floor were found fragments of pottery of the late 6th and early 5th century BC (Context 239).

Judging from the presence of the partitioned “table” with traces of fire (possibly from ritual burnings), the absence of benches and of a hearth, and the character of its fill consisting predominantly of tableware, it is unlikely that this structure was a dwelling. It rather had a cultic or non-domestic function.

The earth-dwelling was destroyed not later than the mid-5th century, when Stove 443 was constructed.

Stove 443

The finds uncovered during cleaning of the stove are dated to the early Hellenistic period (Context 232). The material from the removal of the stove and below it are dated to the Archaic period (Contexts 233-236), which corresponds to the destruction layer.

Pit(?) 737

This pit antedated Earth-dwelling 730a. With a diameter of 3.5 m, its southwestern part was excavated to a depth of about 1.30 m. It was dug into the virgin soil. The walls were gradually rounded downwards to form the bottom, which sloped towards the centre. No firing or plaster was revealed on the walls. The fill was a dark-grey clayey soil with an admixture of ash. The pottery found includes fragments of amphoras (a Chian bulging neck amphora with a painted rim and a Lesbian amphora of the proto-Thasian type), Chian painted pottery and black-glossed pottery of the late 6th to the early 5th century BC. In addition, a small dolphin coin was recovered (04-266-04-270).

Earth Dwelling 730a

Only part of the southwestern corner of the structure, with a height of 0.20 m and cut into the dense virgin soil, was excavated. The walls were devoid of plaster and inclined slightly, touching the floor at an obtuse angle. The floor was even, although to the northeast it was somewhat sunken into Pit 737. In the floor, two circular holes for posts were preserved (diameter 12-17 cm; depth 10-13 cm).

In the fill of the earth-dwelling, fragments of early amphoras were found (Chian bulging neck, Corinthian and Lesbian of the proto-Thasian type). Among the tableware, East Greek pottery was found, including bowls of the late 6th century BC with wavy ornamentations and bands. The Attic pottery included fragments of a black-glossed kylix, a krater of the first quarter of the 5th century BC and black-figured vessels of the late 6th to the early 5th century BC. Judging by these finds, the fill of the dugout must be dated to the period no later than the first quarter of the 5th century BC (B-119, B-180, B-205, 04-210-04-218, 04-222-04-224).

⁸⁷ Since practically all the building remains of the late Archaic and Classical periods are represented only fragmentarily, predominantly in the form of isolated walls or their lower parts, it seems unnecessary to apply statistical analysis to this material.

Earth Dwelling 730

During construction of this structure, the remains of Earth-dwelling 730a were cut. Earth-dwelling 730 was revealed in the southwestern section of 730a. It is rectangular in plan with a fairly large area (the excavated part measures 3.6 x 2.6 m). The walls were preserved to a height of 0.30-0.35 m. It was cut in the virgin soil. The walls were vertical in the upper section, while in the lower part they were slightly inclined, touching the floor at an obtuse angle. They were neither burnt nor plastered. The floor was an even, dark, ashy surface sinking towards the northeast over the earlier remains.

In the southwestern corner, a dais with an even surface of rectangular plan (measuring 0.50-0.60 x 1.60 m; height 0.10-0.15 m) was uncovered. It was cut in the virgin soil adjoining the wall of the earth-dwelling. This dais was possibly used as a couch.

The finds from the fill of the earth-dwelling are rather few, dating to the end of the 6th to the first half of the 5th century BC. These are fragments of Lesbian, Chian bulging neck amphoras of the proto-Thasian type and a fragment of an East Greek bowl. The black-glossed pottery is represented by fragments of kylikes, in particular by a fragment of a kylix with an incurved rim of the end of the first to the beginning of the second quarter of the 5th century BC (B-180, B-225, 04-253-04-260, 04-263-04-265).

Pits

Besides the above-mentioned pit of unclear purpose, two other household pits were excavated in the area of the southern part of House VI-2. The upper sections of the pits were cut-off during later construction. The two pits were both dug in the virgin soil. Stratigraphically the pits are arranged identically.

Pit 595

In plan, this pit has the form of an elongated oval, narrowing for approximately half of its length. The southern part is of a slightly smaller diameter than the northern one. The diameter of the northern part is 0.8 m; the southern 0.5 m; depth 0.25 m.

The fill consisted of a soft, dark-grey, almost black, ashy soil with inclusions of small lumps of the virgin soil. Among the finds from the fill, in addition to artefacts of the late 6th to the early 5th century, there are single finds of the 4th century BC, but these have probably slipped down from a later layer.

Pit 596

Pit 596 is rectangular and continues under the baulk delimiting the excavation. The dimensions of the excavated part are 1.3 x 0.6 m; depth 0.3 m. The fill is dark-grey, ashy with small inclusions of the virgin soil. The finds are dated to the late 6th to the early 5th century. Noteworthy are fragments of black-figured kylikes of the second half of the 6th century, with incision and purple representing a wing and a medallion with a Gorgoneion as well as fragments of Chian bulging neck (toe of a Chios type 1) and Lesbian amphoras.

CLASSICAL PERIOD (SECOND HALF OF THE 5TH AND 4TH CENTURY)

Fragmentary structures of the Classical period were uncovered mostly below the floors of Hellenistic basements in some of the houses. It must be noted that the date of these building remains rests mainly on their stratigraphic relation to the later structures, as accompanying finds were seldom preserved *in situ* since the constructions of the Hellenistic period disturbed their structure considerably and, as a result, they contain later artefacts.

HOUSEBLOCK II (NORTHERN HOUSEBLOCK)

HOUSE II-3

Pre-Hellenistic remains were uncovered during the final investigations of Basements 92 and 89 located in the western part of the house.

Basement 92

Below the bases of the walls of the Hellenistic period, a cultural layer with finds of the 4th century BC was recorded. This layer consisted of irregularly deposited, yellow clayey and ashy soil. Beneath this layer, remains of three rooms partly covering each other were found. Of the latest room, only a stone wall oriented north-south and a small section of an adobe floor were revealed.

Room 707 of the preceding building period measures 2.6 x 2.1 m. Three mud brick walls of the room were preserved to a height of up to 0.5 m and two levels of floors were revealed. On the upper level of the floor, remains of burnt posts were found. In the southern part of the room a fragment of a partition constructed of mud bricks (0.6 x 0.7 m) was uncovered, and in the northwestern corner a stone partition was coated on the outside with grey, limy clay plaster. The area of the floor adjacent to the partition was covered with the same plaster.

The oldest room discovered was constituted of small fragments of three mud brick walls. In the western part of the room there were remains of a fireplace in the form of a scorched spot and isolated pieces of hearth clay.

In the fill of the mud brick rooms were found sherds of amphoras from Herakleia, Thasos, fragments of East Greek pottery, a black-figured lekythos with a representation of a Satyr, black-glossed pottery including sherds with graffiti, coins, a lead *bucranium*, a fragment of a lead playing die, a glass bead, a bone comb, etc. (B-35, Re-86, 03-263-03-273a, 03-277-03-281, 03-295-03-300, 03-311-03-316d, 03-348-03-354, 03-356, 03-358-03-360, 03-376-03-380, 03-433-03-439, 03-440-03-442, 03-455-03-457).

The use of these rooms is dated to the late 5th to the 4th century BC.

Basement 89

During investigation of Basement 89, below the level of its floor a very thick cultural layer, consisting of irregularly lying grey clayey, yellow clayey and ashy admixtures with pieces of hearth clay and animal bones, was excavated. No corresponding structures were found.

The finds found are represented by sherds of amphoras of the 6th-4th century BC, including a fragment of the neck of an amphora of the proto-Thasian type in which the skull of a small animal was preserved. Finds of greyware pottery and black-glossed pottery of various forms were fairly numerous, including fragmentary kylikes, lekythoi, bolsals, small thin-walled bowls and salt-cellars of the 5th-4th century BC. Finds of the 5th century BC predominate, while the latest dates not later than the first half of the 4th century BC (B-145, B-223, 04-308-04-313, 04-315-04-319; Context 13). This conforms well with the fact that Basement 89 was probably constructed as early as the 4th century BC.

HOUSE II-5

In this house, earlier remains were uncovered under the floors of Basements 390 and 20. Basement 390 was a living room, the largest in the entire sector. Basement 20 was a small room probably of domestic purpose.

Basement 390

Below the floor of Basement 390 a cultural layer with finds of the 4th century BC covered the remains of the older Room 451 measuring 3.9 x 3 m. Its southern and eastern stone walls were excavated. Two levels of floors were revealed. In the upper of the floors, three small pits were preserved, two cone-shaped in section for the installation of vessels and one for a post. Of the lower level of the floor, 0.6 m lower and immediately on the virgin soil, only a small section was preserved.

The fill of Room 451, down to the level of the upper floor, was a grey clayey soil with ashy inclusions. Finds obtained during clearing of the upper floor are few and date to the 4th century BC (Context 41). The finds from the layer lying between the upper and lower levels of the floor are dated to the late 6th to the first quarter of the 3rd century BC (Context 42). The artefacts found below the level of the lower floor are dated to the 5th to the early 3rd century BC (Context 43). The room in general seems to be dated to the 4th to the early 3rd century BC. In the northern part of Room 390, the oldest structure (464) within the limits of the room was uncovered lying on the virgin soil. It was a stone installation of rectangular plan and section measuring 0.70 x 0.55 x 0.15 m and constructed of well-cut slabs and blocks of limestone. All of its sides had carefully worked surfaces. Some of the stones showed traces of burning. In the upper plane there was

a large slab with a low ridge (4 x 2 cm) along the northern edge, and one of the blocks had a mortise measuring 17 x 6 cm; depth 3 cm). No artefacts were found here, but the shape of the structure, the presence of holes and traces of fire suggest that it was an altar or part of an altar.

Basement 20

Below the bases of the walls of this basement, a grey clayey layer containing burnt rubbish covered the remains of two parallel walls (746 and 747) with their rear sides at a distance of 0.90 m from each other.⁸⁸ The soil covering the walls yielded finds of the 5th-4th century BC: amphoras of Chios, Lesbos and Herakleia (the latest), black-glossed pottery of the 5th-4th century BC and a fragmentary red-figured vessel of the second quarter of the 5th century. In the fill between the walls was yellow clayey soil with artefacts of the 5th-4th century, including a bronze coin of 330-300 BC and black-glossed pottery of the first half of the 5th century BC including a skyphos with a graffito (**B-127, B-128, B-207, B-231, B-252, C-171, S-27, S-38, S-49, S-70, 04-299-04-307, 04-358-04-359, 04-361, 04-363-04-364, 04-401, 04-406-04-408, 04-410-04-412, 04-417-04-419**). Thus, we may conclude that prior to the construction of House II-5, there existed earlier dwelling rooms, possibly with an altar.

HOUSE II-6

During the construction of the Hellenistic Basement 186, earlier structures were removed leaving only two foundation pits. In one of them, small holes for posts were revealed. In one of these, a coin with the legend of Eminakos was found.⁸⁹

HOUSEBLOCK III (WESTERN HOUSEBLOCK)

HOUSE III-2

Under the floors of all the rooms remains of earlier construction unrelated to the Hellenistic house were revealed.

Room 52

Under the floors of this room, remains of the adjacent Basements 742 and 743 were uncovered. Their walls stood upon the virgin soil. In the western basement, excavated over an area of 2.7 x 1.7 m, segments of the joining northern and eastern walls were preserved. In the eastern wall was an opening, which was subsequently blocked. Of the eastern basement, only the western wall was excavated. The uncovered area of the basement was 1.8 x 1.5 m. The walls of the basements were preserved to a height of up to 2 m. They were laid in a similar way: ordinary walls of well-dressed slabs and blocks of limestone.

The fills of the basements differed slightly. In the western one, a heap of collapsed tiles was uncovered, including one stamp (04-297), pertaining probably to the lower horizons of the Hellenistic fill. Amphoras are represented by sherds of Herakleian and Thasian ones with the cap-like toes of the 4th century BC and further Thasian examples with mushroom rims of the 4th century BC. In addition, there was a fair amount of redware pottery, a greyware pitcher and over 180 nails (04-294-04-298, 04-467-04-472, 04-514-04-516).

In the eastern basement, the pottery fragments were considerably less numerous, but two coins were found, one dated to 330-300 BC (04-281-04-293).

These basements were buried in the late 4th century BC and all subsequent construction had no relation to them.

⁸⁸ These walls have not been investigated to completion since they continue under the edge of the excavation pit to a considerable depth.

⁸⁹ Lejpuns'ka & Nazarčuk 1993, 115-120.

Basement 164

Below the foundations of the walls of the Hellenistic basement, a loose, dark-yellow clayey layer and a grey clayey layer were found. In these layers, fragmentary stone walls, seemingly unrelated to each other, were revealed. In one of the walls (694) the remains of a doorway were distinguishable. Amongst the accompanying finds, artefacts of the 4th century BC predominate (Re-105, 03-255-03-259, 03-306, 03-528).

Room 255

Under the foundations of the walls of this room, the remains of Basements 388 and 744 were revealed. The eastern and northern walls of Basements 388 and 744, bonded by interlacing courses of masonry, were re-used for construction of the Hellenistic room. The floor could not be traced. In the fill of the room were found numerous small fragments of cookingware, jugs, handmade pots and an open handmade lamp. The finds are dated mostly to the 4th century BC (04-388-04-399; Context 86).

To the east of Basements 388 and 744 were the very fragmentary remains of Basement 389. Wall 275 was their common wall. The fill of the basement was composed of a layer of grey clayey soil with yellow clayey inclusions. The finds from its upper part are dated mostly to the last quarter of the 5th-3rd century BC (Context 87), while those from the lower part date to the last quarter of the 5th-4th century BC (Context 88).

HOUSE III-3**Basement 368**

Deeper than the bases of the walls of Basement 368 were scarce remains of an earlier building period: Wall 399 and, at a lower level, a depression of amorphous plan in the southwestern corner of the room filled with a rubbish-like dark soil mixed with sand and three roughly-worked polygonal slabs. The accompanying artefacts are dated from the 6th to the 2nd century BC (Contexts 109-110).

Room 359

At the level below the foundations of the northern and southern walls of the room, a second and older horizon of the floor was found. The accompanying finds are dated mostly to the late 5th and 4th century BC (Contexts 122-125).

HOUSEBLOCK IV (CENTRAL HOUSEBLOCK)**HOUSE IV-I**

Building remains and a cultural layer rich in finds of the 5th-4th century BC were discovered beneath the floors of the Hellenistic Basements 253, 257 and 315.

Basement 253

Below the floor were several horizons of floors with remains of fireplaces and fragmentary walls. In the northeastern corner of the basement were found the remains of a room represented by two walls (292, 293) and a partition between them, semicircular in plan.

The upper level of the floor was a dense, dark adobe surface over which there was a grey clayey soil with lumps of yellow clay, pieces of charcoal, ash and finds of the 5th-2nd century BC (Contexts 146-147). Below, there was yet another floor with evidence of a fireplace on the surface partly covered by the wall of Basement 253. Above the floor there was a grey clayey soil with ash and finds of the 5th-4th century BC, including a few coins (Context 152). In the western part of the basement yet another level of the floor was revealed in the form of a dense adobe surface upon which was lying a complete plump-necked Chian amphora of type 1 (late 6th to the early 5th century BC). The amphora has a painted rim,

a circle on the neck and streaks of red paint on the body (L-11). The floor was resting on a cultural layer with artefacts of the last quarter of the 6th-4th century BC (Contexts 150-154). Below this cultural layer, virgin soil was reached.

Basement 257

Below the floor, a cultural layer of the late 6th-4th century was revealed with isolated later finds related to the construction of Basement 257 (Contexts 158-159). The layer contained fragments of two basement walls (270 and 271) left from the corner of the room. The foundations of the walls rested on the ancient surface (*polevka*).

Basement 315

Under the floor was found a dark-grey clayey layer with a greenish hue containing fairly numerous artefacts predominantly dating to the late 6th and 5th century BC (Contexts 140-142).

HOUSE IV-2

East of Basement 257 (House IV-1) there was another basement (287). On its floor were the remains of a fireplace. The finds from the fill of the room are dated mostly to the period from the late 6th-4th century BC (Contexts 170-172).

Basement 280

Below Basement 280, the remains of three walls of the earlier Basement 307 were extant. Its fill was composed of a grey ashy soil containing artefacts of the first half of the 4th century BC (Chian cap-like toe amphoras (L-30-L-31)). The floor of the room was lying on the virgin soil. In the northeastern corner, a Γ-shaped stone partition was constructed. In the southwestern corner an amphora with a conical toe of the second quarter of the 4th century BC was standing dug into the floor; in the northeastern corner was the lower body of a amphora from the Sporades Islands from around 400 BC (L-42); in the northwestern corner was a hole for a supporting post and to the east of it a fireplace. The finds found are dated mostly to the 5th-4th century BC (Contexts 167-168). In the same place, however, fragments of a vessel from Klazomenai of the third quarter of the 6th century BC of the Enmann class were uncovered.

Possibly, yet another room is dated to the period of the existence of Basement 307. Part of a wall of this room was well preserved as the lower course of Wall 283 (Hellenistic Rooms 301 and 302).

Below Basement 307, remains of circular Pit 337, with a flat bottom, were traced in the virgin soil. The fill of the pit consisted of a dark ashy soil with small sand lenses and pieces of burnt mud brick containing artefacts of the late 6th and 5th century BC (Context 169).

Basement 302

In some places beneath the floors of the basement, a layer with finds of the late 6th and first quarter of the 5th century BC was traced (Contexts 192-193).

HOUSE IV-3

In this house, the most ancient layers were investigated in only one room.

Basement 343

Below the floor of the Hellenistic basement, another four levels of adobe floors with ashy surfaces were revealed. Between the first and second floors there was a cultural layer, about 10 cm thick. The finds from the layers between the first and third floors included artefacts dated to the 6th to 2nd century BC (Contexts 207-208). On the third floor down, remains of a stove and a fireplace were preserved. The stove saw several repairs and was used for household purposes. Originally,

it was an open hearth, but later mud brick walls and a lower platform made of amphora walls were constructed. South of the stove, a depression was dug for the collection of ash. In the northwestern corner, a fireplace was revealed, covered with a heap of collapsed rubble continuing under the northern wall of the basement. On the floor, the remains of a fireplace were preserved. The accompanying finds are dated mostly to the late 6th-5th century BC (Contexts 209-213). Under this third floor were found no less than 116 sherds of greyware pottery, a rhyton-lamp and a terracotta. Below the fourth floor lay a grey clayey layer with yellow clayey inclusions, continuing down to the level of the virgin soil. The finds from this layer mostly belong to the 5th century BC (Contexts 214-215).

HOUSE IV-4

The most ancient layers were investigated only under Basement 351.

Basement 351

Beneath the floor of the basement, the lower part of the earlier Basement 392 was revealed. The preserved height of the remains of the walls was 60-70 cm. The adobe floor was lying partly upon a cultural layer and on the virgin soil. On the floor of the southeastern corner, an arch-like partition was constructed. In the northeastern part of the room, on the floor, there was an accumulation of fragments of amphoras, keramides (flat tiles) and handmade vessels. Three round pits in the floor were intended for installations of amphoras, and in two of the pits the lower bodies of amphoras of the 4th century BC with a cap-like toe were preserved. In the upper part of the fill, pottery fragments dated to the 2nd century BC were encountered. They intruded into this level during the destruction of the Hellenistic Basement 351 (the eastern and southern walls of this basement have not survived). Noteworthy among the finds from the fill are a large number of fishing-net weights made from walls of amphoras and tiles (44 examples), 23 coins and a fragment of an iron saw (Context 221).

HOUSEBLOCK VI (SOUTHERN HOUSEBLOCK)

HOUSE VI-2

Remains of the earliest rooms, not incorporated into the basements and unrelated to the plan of the later house, were revealed under the floors of two Hellenistic basements.

Basement 395

In the layer immediately beneath the floor were found finds of the early 5th and 4th century BC (Context 267).

Under the floor of the southern section of Basement 395, the northeastern corner of Room 430 was revealed. The fill of the room was partly preserved in the form of alternating layers of grey clayey and lumpy ashy soil with large amounts of pottery of the 6th-5th century BC (Context 268). No traces of the floor were distinguished inside the room.

In the northern section of Basement 395, under its floor, a fragment of another room was revealed (Room 431). Its northern wall was incorporated into a Hellenistic wall. From the room, two fragmentary walls and an adobe floor partly covered with gravel were preserved. On the floor, traces of fire were discernible in places. The fill of the room contained fragments of pottery of the late 6th to the first half of the 4th century BC (Contexts 269-270).

Basement 410

Below the floor of Basement 410, in its western section, was a cultural layer divided into two major horizons; a dark-grey clayey layer and a light-grey clayey layer. The finds from the lower horizon are dated mainly to the early Hellenistic period (Contexts 256, 258).

Under the floor in the northern part of Basement 410, the southeastern section of Basement 455 was revealed. The floor was constituted of the unplastered virgin soil, having a grey surface as a result of its use. In the western part of the room, the lower body of an amphora was dug in. The fill of the room consisted of grey clayey soil with yellow clayey

inclusions and a slight admixture of small pieces of charcoal and ash. The finds include fragmentary pottery of the 6th-5th century BC (Context 257). Thus, Room 455 may be dated to the 5th century BC.

HOUSE VI-3

Within the area of House VI-3, below the level of the Hellenistic layers, small isolated fragments of a cultural layer and parts of walls of the 5th to the first half of the 4th century BC were recovered. These, however, were extremely fragmentary, even compared with the remains described above and give us no idea as to the character of the building of that period.

Fragments of the cultural layer of the period preceding the construction of the Hellenistic house were recorded in a number of the later rooms. In Room 477, below the floor, there was grey clayey soil with finds of the second half of the 6th and the first half of the 5th century BC lying on the ancient ground surface (Context 279). In Room 474, below the floor, were found finds of the second half of the 6th and the first quarter of the 5th century BC, lying on the ancient ground surface (Context 291). In Basement 489, in its western part and below the levels of the floors, remains of part of an earlier structure were revealed. Here a fragment of the lower part of a stone quern was found. Most of the finds are dated to the 5th century BC (Context 296). Below these layers, the virgin soil was reached.

The results obtained in the course of the investigation of the earliest layers allow us to state with confidence that construction in this area began as early as the third quarter of the 6th century BC, when, as in other parts of Olbia, earth-dwellings first appeared. Later, these were replaced by the usual stone and mud brick buildings constructed upon the virgin soil and, in some places, on the ancient surface (*polevka*). Due to their fragmentary state of preservation, it is practically impossible to reconstruct the layout of the most ancient houses. However, there are reasons to believe that the formation of the grid of streets here began not later than the 5th century BC.

BUILDING REMAINS AND ACCOMPANYING FINDS OF THE HELLENISTIC PERIOD

Living quarters and streets

Six houseblocks with dwelling houses of the Hellenistic period were excavated in Sector NGS between 1985 and 2002 (Pl. 5). Only the Central (IV) and Northern (II) Houseblocks were excavated to completion. Their outer perimeters are defined by streets.⁹⁰ The northern third of the Northern Houseblock had been partly demolished by a landslide and partly by the erosion of the coastal cliff. On this side of the Northern Houseblock, a fragment of the pavement of the Eastern Longitudinal Street was preserved only in the southeastern corner of the block. The Southern Houseblock (VI), continuing under the western baulk of the excavation where the sharp rise of the terraced part of the town almost immediately begins, was practically completely excavated. Two of the blocks, the Northwestern (I) and the Western (III) were only partly excavated. The Eastern Houseblock (V) was almost entirely demolished as a result of the erosion of the coastal cliff. Only a few, poorly-preserved, isolated building remains were found in a narrow stretch along the Eastern Longitudinal Street. These were fragmentary walls and floors of basements of the Hellenistic period which offered no possibility to reconstruct the layout of the buildings. We were not even able to determine whether this area included a single block or several separate ones, since no remains of transversal streets were recorded.

⁹⁰ The longitudinal streets deviate approximately 30° to the east from a strictly northerly orientation. Correspondingly, the transversal streets deviate at a nearly similar value to the south from an easterly orientation. In order to make the account simpler, specifications of the sides of blocks and houses, the orientation of entrances, etc. will be given as general directions: north, south, east and west.

Houseblock	Dimensions, m		Area, m ²
	East-west	North-south	
I	14.4 (+?)	25.4 (+?)	365 (+?)
II	30.1	39.4 (+?)	1186 (+?)
III	15 (+?)	23.5-24.8	362 (+?)
IV	21-23.4	22.5-24.5	522
V	?	?	-
VI	29 (+?)	17.2-18.8	522 (+?)

Table 1.

As shown in Table 1, Houseblocks IV and VI cover the same area, each being almost half the size of the Northern Houseblock (II). However, no system can be traced in the dimensions. Generally, even though they aim at being rectangular, the layout of the houseblocks is fairly irregular, with numerous variations such as shifts and slight turns of the grid plan. No traces of the original layouts of the houseblocks were revealed; the excavated evidence belongs exclusively to the Hellenistic period, in particular to the 3rd century BC. The Hellenistic walls show very limited displacement in relation to the building remains of the 5th-4th century BC, which were investigated predominantly under the floors of the basements. The latter, however, often bear no relation to later rooms. This gives us grounds to suggest that the layout goes back to the Classical period but later underwent numerous reconstructions and shifts from the original plan.

Three transversal (west–east) and two longitudinal (north–south) streets were revealed. One of them, the Western Longitudinal Street, has a break in its course. Its southern section, limited by the Western and Central Houseblocks, is shifted approximately 7 m to the east, corresponding to the eastern section between the Northwestern and Northern Houseblocks. The widths of the streets (Table 2) vary along their length. The pavements are made of broken tiles, occasionally with the addition of rubble and gravel (Pl. 6.1-2, 7.1). The longitudinal streets run parallel to the foot of the eastern slope of the terraced part of the town with the azimuth mainly within the interval of 25-30° N-E. Thus, the grid layout of Sector NGS was oriented approximately the same way as the living quarters of the southern part of the Lower City, and the longitudinal streets within Sectors NGF and NG were similarly oriented along a north–south axis.

Streets	Total length, m	Width, m	Paving	Presence of gutters
Western Longitudinal Street, between Houseblocks I and II	At least 32	~ 1.5 – 2	Broken pottery, rubble	Two gutters
Western Longitudinal Street, between Houseblocks III and IV	24.8	~ 1.6 – 2		
Eastern Longitudinal Street	At least 60 preserved	~ 2 – 2.7	Broken pottery	?
Northern Transversal Street	At least 35	~ 1.9 – 2.5	Broken pottery, rubble, polygonal slabs	One gutter
Central Transversal Street	At least 35	~ 0.8 – 3.6 ⁹¹	Broken pottery, rubble, polygonal slabs	One gutter
Southern Transversal Street	At least 25	~ 1.3 – 1.5	Broken pottery, rubble, polygonal slabs	One gutter

Table 2.

⁹¹ The width of 0.8 m is probably the result of landslide processes.

As is shown in Table 2, the widths of the streets were not only irregular over the length of one and the same street, but they were also narrower than the streets of the Upper City. We must, however, take into account that, in a number of cases, this irregularity was caused by the effects of the landslide. At the same time, it must be stressed that the streets in Sector NGS, both in terms of their narrow widths and their variation, did not differ much from streets in other Greek towns of the Mediterranean devoid of any regular rectangular plan. For instance, on Delos the width of the Theatre Street, lined with numerous shops, varied between 1.45 and 2.6 m,⁹² whereas the street lying on the opposite, maritime, side of the trade block narrowed in places from the usual 3.5 m to 1.5 m.⁹³ The widths of the streets in Thasos vary from 1.35 to 4.6 m, but most commonly they measure 2.5-3 m.⁹⁴ Naturally, in cities with an orthogonal plan, the streets tended to be wider and the widths of individual streets remained constant. Thus, for instance, in Priene the streets were a constant 3.2-5.5 m wide.⁹⁵

The sector's amelioration

The amelioration of this suburban district of Olbia was fairly modest. In the narrow and irregular streets, or rather lanes, two people were not able to pass by each other without difficulty. The street in another suburban district of Olbia, namely Sector I in the Upper City, was of a similar character.⁹⁶ In some places, solid coverings of the surfaces of the streets were absent, particularly in the eastern half of Sector NGS. As a result, scours occurred leading to the destruction of the houses. This is probably what caused the destruction of the external wall of the courtyard of House I-1.

No water-supply facilities or wells, like those in Sector NGF, were discovered in Sector NGS. There were also no cisterns for storing water, as existed in the Upper City.⁹⁷

At the same time, great attention was paid to the construction of gutters. Their remains were uncovered in all of the streets (the most significant of them are listed in Table 3), new channels having been constructed in one and the same place at different depths with the rise of the surface level. The relatively large number of gutters and their open construction suggest that they served as storm drains. The importance of these facilities was determined by the fact that Sector NGS was situated at the foot of the terraced town, which had a large area of water collection. During heavy rainfall, the living quarters of NGS must have been fairly violently flooded. In this connection, it is of note that the storm drains of the northern section of the Western Longitudinal Street between Houseblocks I and II and of the southern section between Houseblocks III and IV are inclined counter-wise towards the Northern Transversal Street from which the water ran to the estuary.

The channels were of rectangular section and consisted of a stone bed and walls made mostly from unworked slabs (Pl. 7.2). Earthen bottoms also occurred, as, for instance, in Gutters 100 and 575. No remains of channel roofing were revealed. Except for the special drainage facility (27), the others had a cross-section of ca. 0.1-0.15 m² and differed only in the details of their construction. It is important to note that the routes of the channels were often curvilinear in plan (Gutters 100, 334 and 358), while the size of the cross-section sometimes varied within a single segment. All this suggests that these gutters were undoubtedly the result of the private initiative of the owners of the houses, rather than any purposeful planning for the entire district carried out by the polis administration.

⁹² Chamonard 1906, 563.

⁹³ Jardé 1906, pl. XII.

⁹⁴ Grandjean 1988, 424-425.

⁹⁵ Wiegand & Schrader 1904, 45.

⁹⁶ Kryžickij 1971b, fig. 6.2.

⁹⁷ Kryžickij 1971b, 128-129.

Gutter no.	Length investigated, m	Inner cross-section of the channel, m	Location
153	9	0.3 x 0.3	Eastern end of the Northern Transversal Street
100	15	0.3 x 0.5	Northern section of the Western Longitudinal Street
27	6.3		Western Longitudinal Street, near Houses I-1 and I-3
334	6.5	0.2-0.3 x 0.3	Southern section of the Western Longitudinal Street, near House III-3
610	10,5	0.25-0.3 x 0.3	Northern Transversal Street
358	6,7	0.37 x 0.39	Between the Western and Southern Houseblocks
358 (continuation)	6	0.24-0.4 x 0.39	Between the Western and Central Houseblocks
575	1.45	0.3 x 0.15	Southern Transversal Street

Table 3.

Drain 27 was a special drainage facility intended to protect the northeastern corner of House I-1, which projected into the street 0.7 m from the eastern wall of House I-3 annexed to it, against the downpour of waters. Here, a breakwater enclosure of semi-elliptical plan was constructed from upright slabs to deflect the stream of rain-water from the corner of the house and redirect it to the south into a continuation of a gutter of the usual rectangular cross-section (Pl. 7.3). The bottom of the water-receiver was paved with slabs laid over a dense clayey soil. Each courtyard was also provided with drainage channels, which led rain-water to the streets.

The principles of reconstructing the house plans

Like other historical reconstructions, the reconstruction of the plans of houses is in most cases not absolutely reliable. This is due not only to lacunas in our knowledge, but also to the prejudices of individual researchers. Nevertheless, reconstructions are widely used by different historical disciplines, but they have rarely been applied in the case of ordinary houses.

Naturally, where information is plentiful and non-arbitrary it can be utilized by researchers in full. However, in those cases where, in view of the poor preservation of the remains, the evidence is insufficient for establishing, in particular, the boundaries of single houses and courtyards or defining the relations between the rooms no attempts, as a rule, are made at an analysis of the plan. As a result, the reader of a publication of the results of an excavation seldom finds argumentation for the limits of a house or the components of its layout. Nonetheless, there are a number of approaches which allow us to propose reconstructions that to some degree are reliable. Therefore, in this section the fundamental principles for reconstructing the living quarters of Sector NGS will be presented.

The reconstruction of the layout of the living quarters of Olbia is fairly difficult due to the absence of a regular city plan,⁹⁸ the poor state of preservation of the architectural remains, as well as the multi-layered and complicated character of the stratigraphy. As a rule, no reliable restoration of the house plans could be made immediately after each excavation season. Therefore, the discrimination of particular houses during excavation was of an arbitrary character. A more or less reliable division into single houses and a reconstruction of their plans could be made only after the completion of the excavation of a given houseblock.

The building remains of the Hellenistic period, the walls, floors, pavings of rooms, as well as basements, are preserved to a different extent in Sector NGS to the rest of Olbia. Best preserved are the Northwestern (I) and Western (III) Houseblocks, where the height of the above-ground walls sometimes amounted to 1.5 m (House I-1); slightly poorer preserved is the Northern Houseblock (II), where, in its eastern third, only fragments of basements were extant. In the Central (IV) and Southern (VI) Houseblocks, the state of preservation state is very poor with only basements preserved. In the Eastern Houseblock (V) only insignificant fragments of underground rooms may be traced with difficulty, as over 90%

⁹⁸ Kryžickij 1971b, 98-102.

of its area was disturbed by the waters of the estuary, small gullies and trenches from World War II. These disturbances intensify towards the southeast and they are also explained by the character of the relief itself, because the entire area, prior to the excavations, had a considerable inclination to the east and a slighter inclination to the south. Moreover, since the western side of the excavation reaches the terraced part of Olbia, the downwash of soil from the latter favoured better conservation of the building remains in the western part of the excavation.

Thus, one of the main sources for reconstructing the plans is the remains of the walls, predominantly those of basements. The above-ground stone walls are mostly fragmentarily preserved. Remains of the doorways have likewise rarely survived intact. This makes it difficult to distinguish particular houses in a block.

Of especial importance for reconstructing the house plans is the arrangement of the basements. The basements are a peculiarity of the northern Black Sea region in general and of Olbia in particular.⁹⁹ Their functional purpose may have differed from case to case. The function can be determined on the basis of their physical dimensions, the presence of certain household facilities (e.g., stationary hearths) and the artefacts found in them. Thus, for instance, basements of less than human height may have been used mainly for the storage of food, implements, etc. Basements of a standing height (in Olbia, up to 2-2.2 m) served both for household and for domestic purposes as suggested by finds of braziers, imported tableware, etc.

The basements were a continuation of the idea of the underground building. This was a concept which the original Greek settlers in the northern Black Sea littoral had adopted by living in the earth-dwellings¹⁰⁰ which have now been revealed in the majority of ancient cities and smaller settlements in the northern Black Sea region.¹⁰¹ Investigations in recent years have confirmed that the period during which dugouts were constructed was rather long, lasting at least half a century¹⁰² or even up to 70-80 years.¹⁰³ The convenience of using basements in the northern Black Sea area was probably determined in the first place by local climatic conditions: cool in summer and relatively warm in winter.

The importance of the basements for the reconstruction of the plans of houses is particularly high in those cases where the walls of the above-ground rooms are altogether absent, so that the basements are the only source from which the plans of the ground floor can be reconstructed.

Firstly, taking into account that clay and stone were the main materials used in Olbia for the construction of walls, the erection of walls over the basements was excluded. This supposition is indirectly confirmed by the fact that even in large basements with covered spans of about half a dozen metres, no bases or pits for the installation of supporting pillars have ever been found during excavation. At the same time, the usual wooden-joist ceiling, without supporting pillars, would not be able to bear the weight of a stone or mud brick wall. This implies that the above-ground walls were installed either immediately upon the wall of the basement or outside the limit of the basement. Based on the fairly small dimensions of the above-ground rooms in the houses of Sector NGS, there are grounds to exclude also the possibility of constructing more than one basement under a single above-ground room. At any rate, there are no such examples found in the northern Black Sea region. Based on the above consideration, in the case of the presence of several basements, including adjacent ones, in a single house, we reconstruct the same number of above-ground rooms over them. It must be noted that the term "basement" implies the presence of an above-ground room constructed above it.

Secondly, a peculiarity of the layout of some Olbian basements is the carelessness of their arrangement – the absence of any strictly rectangular plan or alignment with the walls of the above-ground rooms. This situation is aggravated by later distortions when the basement walls became bulging, inclined and acquired vertical cracks. As a result, during subsequent movements of the ground, the very configuration of the plan may have changed to some extent. Such distortions were traced in almost all of the basements. Especially indicative are Basement 390 in House II-5 (Northern Houseblock) and Basement 343 in House IV-3 (Central Houseblock). In the first, the total width of the vertical cracks in the southern Wall 318 amounted to about 0.4 m for 7 m of its horizontal length (Pl. 15.2). In the northern wall of Basement 343, the total

⁹⁹ Kryžickij 1971b, 109-110; Kryžickij 1982, 20-21, 27-28, 74-75.

¹⁰⁰ Kryžickij 1982, 11-15.

¹⁰¹ Besides Olbia and Berezan', dugouts were excavated in Nikonion (Sekerskaja 1989, 22), in Bosporos, particularly in Pantikapaion (Tolstikov 1992, 59-61), Myrmekion, Nymphaion, Tyrambe, Gerojevka, at rural settlements of the Taman' Peninsula (Butjagin 1999, 112), in Phanagoreia and Sindikos Limen (Vinogradov 1995, 157-158), as well as in Chersonesos (Zolotarev 1998, 70-78) and Kerkinitis (Kutajsov 1990, 63).

¹⁰² Vinogradov & Rogov 1997.

¹⁰³ Vinogradov 1999, 107.

width of the vertical cracks amounted to 0.3-0.35 m for only 3.5 m of the horizontal length. Surely, these cracks were formed not only in basements but also in the cultural layer between the basements. This implies that the total length of deformation within the area may be considerable in a west-east direction. Thus, for instance, in the Central Houseblock it may reach at least 1-2 m from west to east,¹⁰⁴ i.e. originally this block was 1-2 m smaller.

Thus, we must bear in mind that in the reconstruction of the plan of a house, the walls of the above-ground rooms will not necessarily coincide with the walls of the basements located beneath them. If the basements are not adjacent or they are separated by a slight distance, then, in the case of the lack of availability of additional data on the location of the above-ground walls, their particular arrangement in the plan may be somewhat arbitrary. Nevertheless, the number of the rooms of the ground floor and their relative positions will be defined quite reliably.

Thirdly, the construction of the Hellenistic houses in Sector NGS was not carried out on vacant land. Almost everywhere there are building remains of the 4th century BC or earlier under the houses of the Hellenistic period. It is important to note that in the majority of cases we see continuity in the arrangement of basements of different building periods and even different chronological phases within a single space. Only a few of the earlier structures were investigated because of the need to preserve the later building remains.

Thus, the houses of the 3rd-2nd century BC were built (or rebuilt) to an already existing layout. During the period under consideration, not all of them were under construction simultaneously, as suggested by the displacements of the layout as well as by the character of the junctions between the masonry of the walls. It cannot be ruled out either that an area adjoining a house under reconstruction was an abandoned plot, as was the case in the Western Houseblock during construction of House III-2 (the so-called "Shopping Row"). House III-1 situated to the west of it was lying in ruins during the period in which House III-2 was constructed. Hence, slight changes were unavoidable in the configuration of the plans of houses. The appearance of these changes is explained also by the fact that the walls separating different houses and plots could consist of non-uniform (in terms both of their thickness and masonry technique) segments and form small projections. In addition, adjacent plots usually had only a single shared separating wall, as was common for Greek house-building and followed also in Olbia. An exception to this rule is the spaces of 1.2-1.5 m between houseblocks in Olynthos or Kassope.¹⁰⁵ However, there too, houses in particular blocks of such quarters were separated by single walls.

In order to distinguish separate houses reliably, two indirect elements must be noted. These are the proportions of the plan of the house and the effect of the deformation of the building remains as mentioned above. In Olbian houses of the Hellenistic period, the ratio between the sides of the plans falls within the limits of 1 to 1.7. Most commonly, this ratio is close to 1:1. In this connection we may note that elongated proportions are characteristic predominantly of buildings with a hierarchic principle to the layout, in particular *prostas* houses. This is demonstrated most clearly by the houses in Priene.¹⁰⁶ However, in Olbia, no examples of the *prostas* type of house have been found.¹⁰⁷ The same is true in other ancient cities of the northern Black Sea littoral.¹⁰⁸ In discriminating separate houses one should, in addition, take into consideration the character of the bonds between the walls and their relative arrangement, the presence/absence of turns and replacements of layout grids, the extent of the accuracy of the plans and the similarity of the construction techniques in separate parts of the buildings, the presence/absence of a functional relation between particular rooms, the difference in the depths of foundations, floors etc.

The second indication to be kept in mind is the numerous and fairly strong deformations and cracks in the northern and southern walls of basements throughout the entire area. It is important that the cracks are generally ranged in a north-south direction, indicating movement in an eastward direction towards the estuary. This direction is additionally confirmed by the deviation from the vertical line (predominantly in a westward direction) of the walls of Basements 89 and 92 in House II-3 and Room 116 in House II-5. This fact, in turn, suggests that the western edge of the Northern Houseblock sunk in the course of the landslide by at least 0.1-0.2 m below the level of the eastern edge of the Northwestern Houseblock. On the other hand, the previously mentioned rear edge of the landslide, lying west of the Northwestern

¹⁰⁴ Proceeding from the fact that, judging by the northern and southern walls of the basements, for every 3-4 m of horizontal distance there are, on average, two or three vertical cracks each at least 0.1 m wide, the total deformation per 21 m (the shortest length of the central block in the west-east direction) will vary within the range of 1.05-2.1 m (this limit is the minimum).

¹⁰⁵ Hoepfner & Schwandner 1986, figs. 32, 110.

¹⁰⁶ Hoepfner & Schwandner 1986, fig. 147.

¹⁰⁷ Kryžickij 1971b, 107.

¹⁰⁸ Kryžickij 1993, 152.

Houseblock, has a width of approximately 0.3-0.4 m. This indicates that the Northwestern Houseblock must have moved to the east over the same distance (if not more) as a result of the landslide. This circumstance explains the fact that the width of the Western Longitudinal Street between the Northwestern and Northern Houseblocks near House I-1 is presently under 1 m. Also the irregular sagging of the ground is accounted for by the development of the landslide. Thus, judging, for instance, by the outline of Gutter 350 in the western part of the Middle Transversal Street, the gutter must have been turning to the Western Longitudinal Street. However, the modern height marks of its continuation in the longitudinal street show the inverse inclination, i.e. towards the Middle Transversal Street. Naturally, this can have resulted only from sagging of the ground in the bend of the drainage channel.

We must thus take into consideration that the plans drawn during excavations, as well as the height marks of the architectural remains, reflect the already distorted picture of the layouts of quarters and houses. Two conclusions follow from this statement. Firstly, during the reconstruction of plans, certain deviations from the drawings based on measurements are in a number of cases unavoidable. Secondly, the dimensions of the blocks, houses and occasionally of single rooms presented below naturally cannot pretend to correspond to the situation in antiquity with absolute precision. Given the scale of the blocks, the deviations may reach a value of up to 1.5 m or more. Correspondingly, within particular houses this value of deviation is considerably smaller. It is clear that this circumstance makes precise metric analysis impossible, but our evidence is quite sufficient for comparative studies.

It is also worth noting that the thickness of the stone walls at the moment of excavation normally amounted to 50-60 cm (\pm 5-10 cm). At the same time, the thickness of one and the same wall may have varied across its length. These deviations are explained by the choice of non-standardized building materials (most commonly polygonal slabs and blocks without any strictly rectangular dressing), the use of clay as the bonding agent and the long-term exposure of these structures to the open air and the effects of the above-mentioned landslide. Keeping this in mind, we have adopted in our reconstructions an arbitrary standard thickness of stone walls (0.5 m).

Taking all that is stated above into consideration and starting with an analysis of the layout of Greek houses during the Hellenistic period (from Delos, Priene and other cities), the plans of which are reconstructed on the basis of direct archaeological evidence, it seems that the main criteria for discriminating single houses and the boundaries separating them are as follows: (a) the presence of "long" walls dividing entire blocks (these walls sometimes consist not of a single wall but of several walls); (b) the general principle that adjacent houses in the first building period were separated along a straight line rather than along a broken one; (c) the presence of uniform planning modules of the same orientation (for instance in Priene a *prostas* or in Olbia two joined basements located at the northern part of a presumed building plot);¹⁰⁹ and (d) the number of the internal courtyards (generally we are dealing with a single courtyard, but there are exceptions, e.g. the House of Masks on Delos). In order to define the locations of the rooms we have based our argumentation predominantly on the arrangement of the inner courtyard and the basements. Naturally, primary attention was focused on the character of the bonds between the walls and their relative positions, the presence or absence of turns and displacements in the layout, the degree of the strictness of the plan and the similarity of the construction technique of the particular parts of the structures, the presence/absence of functional ties between the rooms and the difference in the depth of floor levels and pavements. The latter factor is of considerable importance in discriminating building periods within the limits of a single block.¹¹⁰

In defining the place of internal courtyards, not only were the presence of a stone or pottery pavement and the artefacts found considered, but also the character of the inclusion of the presumed courtyard into the plan of the house, its immediate connection with the *protothyron* or the street, the presence of drainage and, finally, the hypothetical number and degree of the inclinations of the roof, which in certain cases depended on the surrounding buildings. For comparison

¹⁰⁹ These may have been rooms with similar functions, presumably household purposes.

¹¹⁰ In this connection, and in order to avoid possible confusion, it is necessary to define clearly what is meant by the term "building period". It should be taken into consideration that this term may be concerned with objects at different levels of a single hierarchic system. It may pertain to a particular structure, room, house, block, district of a town or the town as a whole. For a building period of a house, we imply a set of reconstruction taking place within its limits (the construction of a new above-ground or basement room, rebuilding of walls, etc.). It is clear that building periods of this type in neighbouring houses can differ both in terms of their chronology and number. Where a house has expanded beyond its former limits, we consider this to be not a another building period of the house itself but of the block where it is situated. The same is true concerning quarters and the district as a whole.

of the possible variants of the arrangement and dimensions of a courtyard, the percentage of the area of the courtyard in relation to the area of the whole house was also taken into consideration.

The detailed analysis of the excavated building remains carried out on the basis of the above criteria has allowed us to obtain more exact data on the quantity of individual houses and building plots within the area of the common boundary of the former Houses NGS-1, 3, 6, 8, 9, 10, designated in the course of excavations. Therefore, a new unified numeration of the houses was introduced in which the first number indicates the number of the houseblock and the second the number of the individual house within the houseblock.

The problem of interpreting artefacts from the fills in Olbian houses

The excavations of houses and separate rooms yielded numerous finds of various categories. Of importance is the condition of their discovery, on which the degree of reliability of the conclusions and possibilities of interpretation depend. Two categories of provenance are discriminated – “closed” and “open” contexts. A position between the two is held by finds uncovered *in situ*, i.e. objects which proved to be in the rooms at the moment of their destruction.¹¹¹ The information potential of finds from closed contexts and those found *in situ* is generally acknowledged and widely used. As to the open contexts, they often do not receive due attention. Meanwhile, although the information value of the finds from open contexts is poorer than that of finds from closed contexts, they should not be neglected.

In particular, the importance of the study of such finds must be stressed in our case. The ruins of the houses in Sector NGS were affected by robbers for four centuries from as early as the Roman period and by disturbances during later times. As a result, the absolute majority of finds from this area derive from open contexts. Therefore, it seems appropriate to dwell in some detail on the problem of their interpretative potential.

Usually, in order to characterize a particular room or a house in general, there are two main goals for the analysis of the artefacts found, namely to pin-point the period of occupation and to elucidate the function of the space. There is no problem using the finds to achieve these goals when dealing with closed contexts or finds found *in situ*, i.e. unambiguously related with the given room prior to its destruction. Questions arise, however, when there is no relation between the finds in the fill of a room and the room proper. Exactly the latter situation is typical of Olbia in general and of Sector NGS in particular.

Let us first consider the issue of fill accumulated after a room was deserted. The following considerations, it seems, must be taken into account here.

As shown by the experience of excavations in Olbia, the fills of houses consist of alternating yellow clayey and grey clayey layers, often with rubbish and inclusions of burnt remains, fragments of fireplace clay, broken pottery vessels and tiles, and various objects of everyday use. Pure clayey or sandy fills are encountered extremely rarely, suggesting that clay or sand mined from pure layers in areas outside the limits of the city walls were not used as deliberate fill. Neither does it seem possible that rubbish from streets, dumps or waste grounds was used as filling material. Therefore, it is logical to conclude that the fills were composed of finds from the houses themselves, where, due to everyday activities and frequent reconstructions, considerable amounts of building and household wastes were accumulated (stones of different sizes and variously worked, remains of the floors, wall plaster, pottery sherds, fireplace clay etc.). Moreover, the preservation of objects that had served their time in the household was very typical of the ancient domestic, cultural and religious traditions, as is indirectly confirmed by the *bothroi* in *temenoi*, the fills of which contain a large amount of objects formerly used in religious ceremonies.

Thus, we have grounds to suppose that the artefacts from the fills of the basements and above-ground rooms of houses are tied to that house and hence may indicate, albeit with certain restrictions, both the date of the components of a building and some of their functions at various stages in the life of the building. The seemingly fortuitous finds are thus related to the house in which they were uncovered. For instance, if in the fill of the rooms of one house are found fragments of Milesian, Thasian and Herakleian amphoras we are justified in concluding that the owners of the house acquired goods from Miletos in the Archaic period and from Thasos and Herakleia Pontike during the Classical and Hellenistic periods.¹¹² The same is true concerning tools (loom-weights and fishing-net weights), domestic objects (cookingware or painted

¹¹¹ For details, see Kameneckij 1970; Avdusin 1972; Kameneckij, Maršak & Šer 1975; Krapivina 2002.

¹¹² However, to our knowledge no such comparative analyses of finds from open contexts were conducted. This is a task for the future.

tableware), religious objects, etc. It must be stressed, however, that these artefacts do not necessarily exactly characterize the particular room in which they were found but possibly another one located within the same house. Although these finds come from a room unknown to us, a courtyard or some other part of the house, possibly from the closest section of the street, they allow us to form a general idea about the life of those living in the house. Moreover, we obtain a notion about that life over a chronological span, the lower and upper limits of which are dated by the finds from the fill. Thus it is important to analyze finds from open contexts.

In light of these considerations, the quantity of finds and the ratio between different find categories from open contexts are of interest. Of importance here are the percentages of different groups of finds not only within a single sample (for example from the fill of a room) but also their comparison with the fills of different rooms. Thus, for instance, if in one sample the percentage of cookingware is higher than in another, this fact gives us reliable grounds to suppose that in the former sample a cooking function predominated. It is exactly comparison between samples that allows us to record the quantitative ratio of not only archaeologically complete vessels but also of their fragments without consideration of the extent of fragmentation in any pottery group. Such analysis is, of course, fairly arbitrary, but given the high number of data obtained by the statistic treatment of the complete evidence of finds from excavations of a given area, block or even a whole house, it deserves attention.

Open contexts are in most cases are the main and often practically the single source enabling us to date the Olbian houses and to elucidate the activities of their inhabitants. Without examination of this material, the chronological, historical and cultural characterization of the ancient city would be uncomprehensive and unsatisfactory.

HOUSEBLOCK I (NORTHWESTERN HOUSEBLOCK)

Remains of four houses were uncovered in this houseblock pertaining to three different building periods (Pl. 8). Only House I-1 functioned throughout the entire period. Contemporaneously with it, House I-2 (Rooms 119 and 150) was erected. The depths of the floor levels coincide approximately in both houses. However, their layout grids deviate ca. 10° relative to each other. House I-3 (Rooms 46 and 49) is related to the second building period of this houseblock. The walls of its rooms are very close to the northern Wall 44 of House I-1. The depths of the floor levels differ (in House I-3 the floors are almost half a metre higher than in House I-2). The orientation of House I-3 corresponds to that of House I-1. In the third building period, House I-4 was built, of which the remains of only a single room (Room 125a) are preserved. The level of its floor is over a metre higher than the floor of House I-3. Remains of a pavement were preserved in the room, suggesting that we are, in fact, dealing with a courtyard.

The first building period of the block is dated to the 3rd century BC, the second to the late 3rd to the early 2nd century BC and the third to the 2nd to the beginning of the 1st century BC. From among the building remains, only the layout of House I-1 can be partially reconstructed.

The state of preservation of the structures in this houseblock is so poor that it is practically impossible to determine the purpose and peculiarities of particular rooms, and especially of entire houses.

HOUSE I-1 (ORIGINAL DESIGNATION NGS-2)

Layout

The house is situated at the intersection of the Western Longitudinal and Northern Transversal Streets. The excavated area includes the above-ground eastern part of the house with the internal Courtyard 9 and Rooms 10, 36 and 98 (Pl. 9.1). The southern and eastern external boundaries of the house were defined by the streets, the northern street running over Wall 44. Two roofed rooms, slightly sunk below ground, were situated north of the internal courtyard which was paved with unworked stones (Pl. 9.2). The entrance to the eastern room was in the courtyard. The two rooms were connected. In the southeastern corner of the courtyard was a small additional structure (97) with an area of about 2 m² – possibly for keeping an animal. In the first building period, the entrance leading to the courtyard was in the southern wall of the house, where a blocked doorway (Pl. 10.1) was revealed. In the second building period of the house, the entrance to the courtyard was to the east, leading from the Western Longitudinal Street. To the west of Room 10, Room 98 continues under the baulk of the excavation.

Based on the general proportions of Olbian Hellenistic houses, there are grounds to suppose that this house extended west for at least a third of its length more along the alignment of its northern wall (Wall 44) (Pl. 10.2-3). The area of the house, considering the supposed full length of its northern wall, was at least 89 m², the courtyard occupying about 23% of the ground.

The building was an ordinary dwelling house owned by a not very prosperous proprietor, as suggested by the relatively modest area of the house, the small size of the rooms and the absence of basements.

Fills of the rooms and accompanying finds¹¹³

The finds are chronologically homogeneous throughout the entire area of the house, spanning from the 3rd to the mid-2nd century BC (Contexts 1-3). The fills of the contemporary Rooms 36 and 10 were similar; the boundary between them was indiscernible in the upper layers. The contents of the cultural layer over the courtyard and Room 97 also resembled that of the fill of the rooms.

Room 10

This room was covered with a yellow clayey soil mixed with pieces of mud brick. In the lower parts, a thin, grey clayey admixture appeared in the soil. Here, richer artefacts were recorded – about 60% of all the fragments of pottery were recovered from this layer. Still lower, it was followed by a slightly dark-yellow clayey layer, beneath which was a layer of dark-grey clayey soil with admixtures of ash covering the floor. On the floor, no remains were found.

The finds are chronologically homogeneous, the latest dating from the mid-2nd century BC. The mass finds include Chian, Herakleian, Sinopean, Peparetean and Rhodian amphoras (Context 1).

Finds from the layers above the floor and immediately lying on it did not differ chronologically from those of the higher layers. The room was not investigated below the floor.

Room 36

In the upper layers of the fill, the soil was yellow and clayey with a dark hue, near the floor it seemed to contain rubbish, being a dark-grey clayey soil with inclusions of dark-yellow clayey soil with ash and pieces of charcoal. This layer was chronologically homogeneous; the finds predominantly date from the period not later than the mid-2nd century BC.

The level of the floor coincides with that in Room 10. In the northwestern corner of the room, on the floor, was a semicircular stone partition. The layers below have not been investigated.

Judging by the partition, the room seems to have had a domestic purpose. The same is evidenced by the high proportion of cookingware – about 33% of the whole ceramic assemblage from the room (here and below, see Appendix 2 for the percentages of different categories of pottery).

In the fill of the room (Context 2) there were small, inexpressive fragments of ordinary finds which were considerably (five times) more scarce than in the neighbouring Room 10. These fragments represented mostly tableware and cookingware. The percentage of plain tableware exceeds that in the neighbouring room (possibly because of the small amount of finds). Glossed wares are considerably rarer, while cookingware is practically evenly distributed between the two rooms at 33-35%.

Courtyard 9

The pavement is made of limestone slabs of various sizes. In the southern part of the pavement there was an open gutter in the form of a shallow groove running along the southern wall. In the northeastern section was a stone staircase leading to the northern rooms. The courtyard was covered with yellow clayey soil containing fragments of mud brick.

¹¹³ The descriptions of the finds from the fills of the rooms present the artefacts taken into the museum collection for permanent storage and included in the inventory lists. More detailed descriptions of the finds are presented in the catalogues below. The statistical treatment uses the complete data of all the finds recorded in the find lists.

The fill of the layer above the courtyard contained a fairly high percentage of tiles, over a quarter of all finds, and a relatively small portion of amphoras, about half of all the pottery. Among the contents of the layer, noteworthy is the presence of fragments of Herakleian, Thasian, Sinopean and Rhodian amphoras and Megarian bowls, the latest specimens dating from the mid-2nd century BC (Context 3).

Room 97

This is a very small room on the southern side of the courtyard. It was covered by a heap of rubble, roughly worked by chipping, under which was a grey clayey layer containing pieces of stone and fragmentary tiles. It was impossible to trace the floor here.

The fill of the room contained extremely scarce pottery – only 193 finds. At the same time, the percentage of fragmentary tiles was high here, amounting to about one quarter of all the tiles found in the house. Among the amphoras, fragments of Rhodian ones predominate; also, one fragment of a vessel of the West-Slope type was found here. The other fragments are insignificant.

HOUSE I-2 (ORIGINAL DESIGNATION NGS-2)

Layout

Only two rooms (119 and 150) were preserved in House I-2. It has not been possible to reconstruct its plan.

Fills of the rooms and accompanying finds

A few Hellenistic artefacts were found in the area devoid of rooms (C-102, Db-371, 87-114-87-126, 87-128, 87-130-87-149).

Room 119

The upper part of the fill of the room consisted of a grey clayey soil, in the middle of a dark-yellow clayey soil with traces of scorching by fire; above the floor, a dark-grey clayey soil was traceable. The surface of the floor was covered with yellow clayey plaster, in places calcined; in the northern part of the floor, there was a depression filled with ash. A hearth was probably located here, i.e. the room was a dwelling room (C-79, Rd-9, S-35, S-67, 87-152, 87-154-87-155, 87-228, 87-230, 87-232-87-234, 87-663-87-667).

In the fill of the room, there were numerous tile fragments, 11%. The finds were considerably more numerous here than in Room 150; over 2,500 pieces against 190. Besides amphoras, tableware predominated – about 60% (together with the glossed wares); the amount of cookingware was almost half as much (Appendix 2). Of interest is a fairly rare find of a fragmentary iron saw. In the layer above the floor material of the Hellenistic period was found.

Room 150

The fill of the room consisted of yellow clayey soil; the floor was not discriminated. The accompanying finds were very scanty – about 190 undiagnostic fragments of pottery – as a result of the poor state of preservation of the room and the incompleteness of the finds.

HOUSE I-3 (ORIGINAL DESIGNATION NGS-2)

Layout

Only Rooms 46 and 49 were preserved in House I-3. It has not been possible to reconstruct its plan.

Fills of the rooms and accompanying finds

Room 46

In the upper level of the fill was dark-yellow clayey soil containing scanty finds. Below, it was followed by a dark-yellow clayey soil occasionally with grey clayey and ashy admixtures. In the lowest layers, under the foundations of the masonry, there was a similar soil. The floor was traced only as a denser level of soil. In general, the finds are undiagnostic (86-407-86-410, 86-962-86-971).

Room 49

The upper part of the fill was a grey clayey soil, below it was a yellow clayey layer with grey clayey and ashy inclusions. The lowest section consisted of a grey clayey, ashy soil. The level of the floor was slightly higher than in Room 46. The character of the fill and the pottery found in it are similar to Room 46 (86-254-86-262; Contexts 4-5).

The fill contained numerous animal bones – about 1,000 in total. The quantitative distribution of pottery in both rooms is similar, although there is some difference in tableware (in Room 46 there is 10% more than in Room 49) and cookingware (the difference is 6-7%). The quantity of wheelmade cookingware exceeds by almost four times that of the handmade (Appendix 2).

The data obtained is insufficient to identify the function of the rooms.

HOUSEBLOCK II (NORTHERN HOUSEBLOCK)

Building remains of three Hellenistic building periods were uncovered here (Pl. 8). Judging by the arrangement of internal courtyards and the “long” walls shared by adjacent houses, the block was divided into three: the southern (House NGS-1 according to the original designation) with a width of 13-16 m (north–south), the central (House NGS-3 according to the original designation) about 13 m wide and the northern (House NGS-4 according to the original designation) in which the building remains were preserved within a zone up to 11 m wide (the northern edge of the block having been demolished by a landslide).

The remains of pavements and walls of the Hellenistic period uncovered in the northern third of the block pertained to the third building period of the block. Only Walls 122 and 143 were related to the first period (the western boundary of the block), however, these walls continued in use in later times too. The extremely fragmentary state of the building remains (Room 214, Pavement 166, Walls 167, 168, 193, 194 and others) and the small area (about 100 m²) they occupy do not permit any sort of reconstruction of the layout of the houses. We are only able to suppose that in the northern third of the block there may have been two houses (II-1 and II-2), similar in dimension to the other houses of the area.

Walls 122, 172 and 161 constitute the boundary between the northern and the central parts of the block (Pl. 1.2). The difference in the depth of the stone pavements located to the south (Pavement 78) and the north (Pavement 166) of that boundary is about 0.4 m. The building remains excavated in the central part of the block existed throughout the three building periods of the block. Here, two houses were discriminated, Houses II-3 and II-4. From the southern third of the block, the western and eastern halves of the central part are separated by the line of Walls 114, 102, 91 and 65. The presence of the boundary between the houses here is confirmed also by the fact that Rooms 53, 58 and 67 have doorways leading to the north, i.e. to the courtyard of House II-3.

In the southern third of the Northern Houseblock, the architectural remains of the Hellenistic period also belong to all three building periods of the houseblock. The alterations which took place during this chronological span were fairly fundamental, suggesting a lack of continuity in plan. Thus, for instance, beneath House II-7 of the latest period no building remains of the first or second building periods were preserved in its southwestern corner. In other words, there may formerly have been an unbuilt space here. In the place of Basement 390 of House II-5 from the first building period of the block, a large courtyard of House II-7 with stone Pavement 1 was later constructed. At the same time, the layout of the eastern part of the latter house differed radically in its layout from its antecedent, House II-6. This is all untypical of Olbian house construction and gives us substantial grounds to suppose that we are dealing in this case not with reconstruction of one and the same house but, rather, with the building of separate houses. In this connection, the difference from the central part of the block is notable – there, houses of a single (the third) building period of the houseblock as a whole were preserved.

At the same time, it proved possible to locate houses of all three building periods in the southern third of the block, where the deep extent of the ruination of the latest building remains allowed us to investigate more ancient layers throughout a relatively extended area. However, only partial reconstruction of the boundaries and internal layouts of the discovered buildings was possible. The first and the earliest building period was related to House II-5. House II-6 was chronologically later, judging by the levels of the floors and pavements. It is possible that II-6 coexisted for some period with the more ancient House II-5. The latest building was House II-7, covering the remains of the two preceding houses. The difference between the height of the altar area of House II-5, as well as the floor of its above-ground Room 294, and the level of the pavement of the courtyard of House II-7 is about 0.8 m. An intermediate position between these two levels is occupied by the ancient ground surface of House II-6.

Houses II-1 and II-2 are not considered here because of their poor and fragmentary state, and because only part of their area was excavated. Nevertheless, it is of note that the accompanying finds from Room 156 of House II-1 are dated to the late 6th to the first half of the 2nd century BC, with the earlier material prevailing (Contexts 6-7).

The accompanying finds from Basement 248 in House II-2 are more numerous and dated mostly to the 3rd-2nd century BC (Contexts 8-9).

HOUSE II-3 (ORIGINAL DESIGNATION NGS-3, WESTERN PART)

Layout

The southern boundary of the house is represented by Walls 114, 102, 91 and 65 (Pl. 11.1). This house faced the Western Longitudinal Street, from which there was access to the internal courtyard via a small staircase through the *prothyron*. Later, probably when the house had already ceased to exist, isolated structures appeared on its ruins, its doorway and the northern Wall 122 being covered with a block of stones (Pl. 12.1). The western part of the house sank under the effect of landslide processes with an inclination to the west, as is clearly traceable in Basements 89 and 92, the walls of which inclined westwards. To the east, the house adjoined the neighbouring House II-4. Walls 130 and 184 constituted the boundary between the houses.

The northern boundary of the house was Wall 141. This supposition is suggested by the remains of the lower part of Channel 162 and Gutter 215 revealed near Wall 161 (located in alignment with Wall 122 parallel to Wall 141) separating House II-2 from House II-4. The gutter ran under Wall 161 drawing water off from House II-1 towards the channel. The arrangement of these structures suggests that between Houses II-1, II-2 and II-3, II-4, similarly to the houses of Olynthos, there may have been a narrow gap for draining rain-water. This hypothesis is indirectly confirmed by the following: Gutter 215 draining water into this gap from houses in the northern area of the block; a row of slabs (162) resembling the bed of a channel which continued in the direction of Gutter 215; the close proximity of the northern Wall 241 (belonging to the first period of the existence of Basement 243) with the wall separating House II-4 and House II-2 (the distance between these walls is not fit for the construction of an additional room but is quite sufficient for a water run-off and the northern wall of House II-4).

Wall 141 is preserved only for the length of the *prothyron*. Its remains were not found within the limits of House II-4. Nevertheless, the supposition that it did stand here in antiquity is confirmed, in addition to the observations above, by the fact that throughout the entire length of Wall 161 (ca. 10 m) remains of masonry reaching it from the south were absent. In other words, the eastern continuation of Wall 141 was totally demolished together with the remains contemporary with it. The zone of the demolishment, occasionally up to 4 m wide, expanded over the northern part of House II-4. The availability of such a sanitation gap between the houses of the northern and central areas of the houseblock is, in addition, indirectly confirmed by analysis of the orientation of the inclinations of the roofs of the neighbouring houses.

Reconstruction of the main elements determining the outer appearance of the houses

Courtyard 78, paved with stone, was almost in the centre of the building. To the west and southwest of it were the rooms constructed above Basements 89 and 92 (Pl. 12.2). To the south were Rooms 58, 59 and 67. Initially, Rooms 58 and 67 were separated, but later they were united into a single unit. Their floors were approximately 0.3 m below the surface of the courtyard. Each had an independent exit to the courtyard. To the east, the courtyard was bounded by Room 129 and by one or two further rooms located to the north. These rooms, contemporary with Room 129, are not preserved

but their existence is suggested by the remains of Wall 109 located in alignment with the western wall of Room 129 and Room 144 which replaced them in the third building period. Of the latter room, the remains of two extant walls (Walls 90 and 110) were arranged so that they provided an exit to the courtyard from Room 129.

It is not quite clear what exactly was located on the north side of the courtyard. The pavement of Courtyard 78 did not continue to the north outside the limits of the alignment with the southern wall of *prothyron* 131. In the space between Pavement 78 and the northern wall of the house, which ran in alignment with Walls 122 and 161, there were no building remains either. This fact seems to suggest that a roofed room or a portico with an adobe floor may have been constructed here. The elongated proportions of such a hypothetical structure and especially its narrow width (ca. 2.5 m) support such a proposal. The position of a portico north of the courtyard seems quite logical and agrees well with Greek building traditions, particularly if one takes into consideration the absence of an ordinary dwelling room on that side. It must be remembered though, that the term “portico” is somewhat arbitrary in our case, since it is unlikely that it had the common Greek realization with an architectural order. No architectural parts were here found (throughout the entire sector only six such finds were recorded). We are dealing here rather with a shed open to the south towards the courtyard and supported by wooden posts.

Construction and reconstruction of the rooms of the house took place during different building periods. Related to the earliest phase are Basement 89, Staircase 142, the northern (141, 122) and the southern (91, 65) external walls of the house. The second building period comprises Basement 92, the southern and eastern walls (114, 54) of Basement 92, Walls 74 and 109. As already noted above, two building periods were traced in Room 58 and 67, which during the first period was separated into two by Wall 66 and in the second period were combined into one. The third period is related to the other building remains shown in the plan, in particular Room 144.¹¹⁴ However, all these reconstructions respected a certain sense of continuity – the older walls, or parts of them, continued in use in later periods. This fact, taking into account the dating of the accompanying finds, gives us grounds to suggest a simultaneous functioning of all the elements enumerated above for a limited time-span.

Direct indications of the functional interrelation of particular rooms (i.e remains of doorways) were preserved only in Rooms 59 and 58 and 67. The fact that the western wall of Room 59 and the eastern wall of Room 58-67 were preserved to a height of 0.5 m suggests that the room over Basement 92 was connected with the courtyard via Room 89, while Room 129 opened immediately to the courtyard.

House	Total building area, m ²	Area of the courtyard, m ²	Ratio of courtyard area to the total building area, %	Number of rooms	Number of basements
I-1	9(?) x 10.5 = 94	6(?) x 4.7 = 28	30(?)	3	-
II-3	13 x 15.5 = 201 12.3 x 15.5 = 190	6.5 x 6 = 39 ¹¹⁵	19 20	7 + 1(?)	2
II-4	14(?) x 13(?) = 182 14(?) x 11.7 = 164	6.5(?) x 4.8 = 31	17 19	5 + 2(?)	1
II-5	17(?) x 16 = 272	11(?) x 7 ¹¹⁶ = 77	9	4 + (?)	3
II-6	13 x 12.5 = 162	6.8 x 8(?) = 54 (54-15 = 39)	33 24	5 + 1(?)	4
II-7	18(?) x 15.5 = 279	13 x 3.7-4.2 = 51	18	7 + ?	1

Table 4.¹¹⁷

¹¹⁴ Within the area of this house, building remains later than Room 144 were found. These were the poorly fragmented Walls 95 and 79 constructed on Pavement 78 and a collapsed wall over the eastern ends of Walls 122 and 141. However, the absolute lack of correspondence in their layout (including the orientation of the grid) with that of the earlier structures and a higher stratigraphical position suggest that they belong to the first centuries AD. No certain interpretation of them is possible.

¹¹⁵ The area of the courtyard minus the presumed portico.

¹¹⁶ The building area of the room with Pavement 104, which was probably a *prothyron*.

¹¹⁷ The results are rounded to integers.

In the house considered above, the arrangement of the main group of dwelling rooms (Rooms 89 and 92) is somewhat peculiar – they are located west of the courtyard. To the north of the latter, as noted above, there was hypothetically a portico. Due to its small dimensions, it seems unlikely that an ordinary dwelling room may have been constructed here. Nevertheless, in terms of all its other characteristics, the house sits well in the category of small houses devoid of an architectural order with a typical symmetrical layout (Pl. 11.2).

Fills of the rooms and accompanying finds

Basement 89

Over the basement were found limited extant remains of a surface room filled with lumpy, yellow clayey soil containing pieces of scorched clay, rare and undiagnostic pottery, bones of animals and fish, and seashells (Dc-273, 86-980-86-983).

A dark-grey clayey layer with numerous traces of fire was the richest in finds – over 6,100 fairly diverse artefacts were found here (Rc-40, S-74, 87-256-87-268; Contexts 10). Among the amphora material, noteworthy is a large quantity of amphoras of the 4th century BC from Herakleia, Thasos and Peparetos. Generally, the finds are dated to the 4th-3rd century BC. In the same layer, a sacrificial burial of a puppy was uncovered – its skull was placed in the lower body of a Thasian amphora which was set upright.

Above the floor was a heap of collapsed tiles lying in a soil with admixtures of yellow clay (remains of mud brick?) covering the floor of the basement (Contexts 11-12). On the floor was a small pavement or a partition constructed of three large limestone slabs. In the northeastern corner were found the remains of a fireplace in the form of a rectangular area surrounded by a low ridge of fired clay. In the centre of the fireplace was a collapsed heap of burnt red clay (the vault?). Nearby was a small wall perpendicular to the northern wall forming a partition in front of the fireplace. The accompanying finds are dated mostly to the 5th to the first half of the 3rd century BC.

Statistical analysis of the finds allows us to establish certain peculiarities of the complex. The high proportion of tiles – over 1,200 fragments (12%) – suggests the existence of a tiled roof. The amount of greyware pottery is considerable and practically equal to the amount of all other tableware (about 800 fragments). Moreover, the tableware as a whole is at least 11% more numerous here than in other rooms of the house, while the glossed wares are 4% less numerous. The percentage of cookingware is close to the norm – about 31% – but the ratio between the wheelmade and handmade cookingware is quite uncommon. The portion of the handmade ware is fairly high, being only 1.5 times less numerous than the wheelmade pottery (usually it is at least 3-7 times less numerous and occasionally more so) (Appendix 2).

Basement 89 cannot have functioned for domestic purposes only, as is suggested by the partition and the fireplace on its floor. The sacrifice of a puppy and the large quantity of ceremonious, imported pottery, graffiti and the numerous metal objects possibly for use in the construction of a wooden structure allow us to distinguish the room from the more ordinary household ones. It is, of course, impossible to define exactly the functions of the room, but we may cautiously suggest that some ritual activities or feasts may have taken place here. The pottery gives us grounds to date the construction of the basement to the 4th century BC. The finds from the trench below the floor of the basement (Context 13) are dated to the Classical period.

Surface room over Basement 92

The surface room over Basement 92 was buried in a yellow clayey soil and a collapse of stones. The floor was burnt on the surface. On the floor, a low stone enclosure was constructed, separating off the northwestern corner of the room. Artefacts found in the fill of the room and enclosure do not differ, the latest dates to the 3rd to the mid-2nd century BC, the earlier ones being rare.

The number of finds is small (about 1,000), a proportion of them came from a trench sunk below the above-ground room. Fragments of amphoras are the predominant finds (ca. 80%). The dating material includes Rhodian and Koan amphoras, and plates with a flat edge of the 2nd century BC (86-944-86-960).

In the fill of Room 92, fragments of amphoras predominated while finds of the other categories of pottery were few in number – in total, about 220 fragments. Tableware amounts to almost 60% of the entire assemblage (excluding amphoras), which exceeds by 10% the average index. The cookingware constitutes 31% (Appendix 2).

Basement 92

Below the floor of the surface room, a collapse of burnt mud bricks could be traced. In the centre of the room was a heap of slabs covering the fill of the basement. Judging by the presence of the layer of burnt mud brick and the remains of the walls of the surface room sunk into the upper level of the basement, the rooms were affected by fire. In the middle section of the fill were yellow clayey layers with admixtures of mud brick, further below was a yellow clayey soil with admixtures of pieces of charcoal and ash. The floor of the basement was practically not preserved, only fragments were traceable at a depth close to the level of the underside of the northern wall of the basement. Above was a grey clayey soil with pieces of charcoal and ash.

The finds from the fill are chronologically uniform down to the level of the floor and are dated to the late 5th-2nd century BC. Among the amphoras, those from Herakleia, Thasos and Chios with cap-toes predominate, although fragments of Rhodian amphoras of the late 3rd and 2nd century BC were also encountered (Context 14). From the fill of the basement, a total of over 2,600 artefacts was recovered.

Tiles from the fill are relatively scarce (4.8%), whereas the amphoras amount to 70% of all finds. The other pottery classes are represented by scanty finds – black-glossed pottery makes up 4.5% of the common pottery, redware pottery is represented by scantier numbers than greyware pottery – 5.5% and 6.4% respectively (Appendix 2). Wheelmade cookingware is represented by 166 fragments constituting 6.3%. Within this group of pottery, bowls with an out-turned rim and a ledge for a lid (*lopes*) predominate. There are many fragments of frying-pans. The amount of handmade pottery recovered is small, 26 fragments (mostly wall fragments of pots) amounting to 1% of the pottery assemblage from the basement. The quantity of wheelmade cookingware exceeds the handmade by six times.

A consideration of the statistical data characterizing the functional purpose of different categories of pottery (not taking amphoras and tiles into account) suggests that the tablewares constitute half of our assemblage while the cookingwares represent almost one third. The index for the ceremonious ware is to some extent remarkable – it is almost 4% higher than the average, amounting to nearly 20% of the total assemblage. The amount of household pottery is as usual relatively low – about 1% (Appendix 2). However, notwithstanding the predominance of tableware and even ceremonious vessels, it seems there are no grounds to assume a ceremonious function for this room, since the basement is small and its walls are rather carelessly constructed. Of note also is the difference between the pottery assemblage of Basement 92 and that from the neighbouring Basement 89, where the tableware is more numerous and cooking utensils fewer. Room 92 was most probably used for household purposes.

Room 59

Room 59 is a surface room. The remains of its fill were covered with a yellow clayey soil with inclusions of eroded mud bricks, ashy spots with fragments of hearth clay and crumbling limestone. The floor, in addition to the usual compacted clayey and ashy layer, was paved with rubble and, somewhat later, with slabs. Lying on the floor were pieces of hearth clay and rare fragments of pottery, some of which were scorched by fire.

The finds from the fill are fairly diverse and chronologically non-uniform, the latest being fragments of Pergamene louteria and Rhodian amphoras. The earlier finds include single fragments of East Greek vessels, which came to be here probably by chance (86-223, 86-232-86-253, 86-403, 86-404, 86-834-86-841). The high percentage of tiles in the fill (ca. 16%) indicates the remains of a collapsed roof. Relatively high is the percentage of plain tableware (over 10% against the usual 5-8%) (Appendix 2).

In Room 59, tableware and cookingware prevailed; the tableware constituted half of the total amount of pottery (amphoras and tiles excluded), the cookingware one third. Finds of glossed wares are close to the average value of about 17%. The quantity of wheelmade kitchenware exceeds by almost five times that of the handmade pottery.

Seventy nine rare pottery fragments were found under the floor), which could be dated by a flat tile (*keramis*) with a stamp and a coin (86-404).

Room 58

Room 58 is a surface room covered by a collapse of mud bricks, underlain in turn by a dry, loose light-grey layer with considerable inclusions of rubble. Below was a layer of yellow clayey soil containing rubble and crumbled limestone. The floor coating included limestone chips with admixtures of ash.

Pottery of the 3rd-2nd century BC was found in the fill of the room, along with pieces of blue paint, light-yellow plaster and putty (P-65, P-118, Ra-1, Rc-39, 86-220-86-229, 86-264-86-271, 86-340-86-346, 86-349, 86-405, 86-406). The layer immediately above the floor in no way differed chronologically from the rest of the fill in the room.

A consideration of the statistical analysis of the pottery from Room 58 shows that the tableware here amounts to 44%, close to the average, whereas the cookingware is more numerous by 13-15%. Moreover, handmade ware is predominant among the latter, something which is only extremely rarely encountered within the sector. The fragments of handmade vessels found exceeded by 1.5 times the number of wheelmade cookingware. The percentage of ceremonious ware is lower than average throughout the house by 10% (Appendix 2). Thus Room 58 differs from all the others, in particular from the adjacent Room 59. We may suppose that these two rooms belonged to the kitchen area of the house. Room 59 may have been the kitchen itself (here an ashy spot and fragments of hearth clay, possibly from a fireplace, were revealed), whereas utensils were possibly stored in Room 58.

Room 67

The fill of this room was only partly distinguishable and the floor was not preserved. The foundations of the walls rested on a dense, yellow clayey soil covering still more ancient remains. The finds from the fill are dated to the 4th-2nd century BC (Db-564, 86-517-86-519, 86-521-86-528). Noteworthy is the high percentage of tiles (14.3%), resulting possibly from the collapse of the roof. The tableware constitutes half of all the pottery from the fill; glossed wares are considerably less numerous (9%). Cookingware amounts to about 40%. Household vessels and handmade pottery are practically absent (Appendix 2). This composition of the finds most probably derives from the poor state of preservation of the room.

Room 129

The upper level of the fill of the room consisted of a yellow clayey soil underlain by a grey clayey soil with admixtures of ash. It was impossible to distinguish the floor since it was totally destroyed. In the southeastern corner of the room there was a stone pavement laid below the underside of the foundations of the wall. The pottery is dated to the 2nd century BC. Of interest are a Rhodian amphora, a lead labrys and an amulet made from a boar's tusk (P-117, 86-288-86-296, 86-890-86-892, 87-287-87-289, 87-889-87-898).

The finds recovered was mostly cookingware (53%), the wheelmade examples being almost eight times more numerous than the handmade. The tableware fragments were slightly less numerous than in other rooms (46%), but the percentage of ceremonial vessels was fairly high (about 26%) (Appendix 2).

Room 144

Room 144 was a surface room with the fill only scantily preserved and containing finds of the 3rd and 2nd century BC. The quantities of fragments of table and ceremonious vessels are close to the average values throughout the house. The percentage of cookingware is slightly higher than the average. The wheelmade cookingware approximately twice outnumbers the handmade pottery (Appendix 2).

The quantitative analysis of the mass of material from all of the rooms indicates that the tableware amounts to 38-55%, ceremonious ware to 9-17%, cookingware to 30-40% and occasionally ca. 50%, household pottery up to 2%. The ratios between the different categories of material from the fills of the basements differ slightly from those between the finds from other rooms. Here tableware makes up 50-57% and ceremonious 12-20%. The percentage of kitchen and household pottery is equal to that in the fill of the surface rooms (Appendix 2).

Excavation of House II-3 has yielded a number of objects unrelated to the fill of particular rooms, but interesting anyway in certain respects (87-309-87-317, 87-493-87-499, 87-768-87-769). The artefacts found within the area of House II-3 provide its dating and the chronology of the sequence of the construction of the basements and the alterations made in the house. During investigation of layers below the floor levels of Basements 89 and 92, more ancient remains were discovered, but these had no ties with House II-3. Judging by the finds from Basement 89, it was built in the 4th century BC prior to the adjacent Basement 92. The house in general existed at least until the end of the first quarter of the 2nd century or the middle of the century, since the latest artefacts found within its limits were dated to that period.

The house evidently belonged to a fairly prosperous owner. This is suggested by the relatively large area of the house – about 200 m² – the expansive courtyard with a portico and the considerable number of rooms, about ten including two basements. Moreover, these rooms had different functions within the household and one of the basements possibly served not only for domestic purposes but also for ritual feasts. The presence of relatively large amounts of imported ware, metal objects and coins is also an indication of prosperity.

HOUSE II-4 (ORIGINAL DESIGNATION NGS-3, EASTERN PART)

Layout

The eastern third of the house had been disturbed by coastal erosion and the building remains in neither its southern nor its central parts were preserved, having been destroyed by trenches of the World War II period and modern pits. Among the structures which are possibly related to this house are the remains of above-ground Rooms 176 and 220, Basement 243 (second period), courtyard Pavement 177, the western wall of the house (Wall 130) and the stone bed of Channel 162. Wall 182 belongs to an earlier period (the 4th century BC), while the remains of the semicircular Structure 189 and Wall 226 are later (Pl. 11.1-2).

Within the area where the remains of House II-4 are situated, a considerable number of cracks resulting from landslides can be traced, while deformations in the form of vertical fissures and stratification of the walls are characteristic. Nevertheless, the extant building remains allow us to define the external boundaries of the house and the location of the inner courtyard.

The western limit of the house followed Walls 130 and 184, the northern wall ran in alignment with Wall 141 (in House II-3) and along the southern edge of Channel 162 (for details, see the description of House II-3). To the east, the house was limited by the Eastern Longitudinal Street which in the area of the house had been demolished by coastal erosion. However, the western line of the street could be defined by alignment with the eastern wall (Wall 160) of Basements 195 and 202 belonging to House II-6, located to the south in the same block. East of these basements, the remains of the pavement of the Eastern Longitudinal Street were revealed. The fact that this street did not change direction north of the basements for the length of the Northern Houseblock finds indirect confirmation in the relative parallelism of the southern walls of practically all the houses of the block, including Room 176 and Basement 243 in House II-4. In the reconstructed plan of the house, Basement 243 is moved 0.4 m further to the west (relative to the position in the drawing made after measurements). This was done because of the presence of broad fissures caused by a landslide in the ground between the basement and Room 176.

The southern boundary of the house lay in the gap between Walls 145 and 145a belonging to the neighbouring House II-6 and probably in alignment with Walls 91 and 65. However, it is impossible to define its exact line since the building remains in the gap formed by the two boundary lines were totally destroyed by a war-time trench. Based on indirect evidence it seems likely that the southern limit of the house lay in alignment with Walls 91 and 65. This is suggested by the location of Pavement 104 belonging to the neighbouring House II-5. This pavement was contemporary with the southern wall of House II-4 (Wall 65) and was arranged at an angle to the western wall of House II-4 (Wall 130). In other words, the western wall of House II-4 can in no way have continued further to the south having been set against Pavement 104. Along the latter, the southern wall of House II-4 ran to the north. The dead-end side street, which accordingly must have been formed between Houses II-4 and II-6, evidently served as a direct passage to House II-5 (see below). Similar passages have been discovered elsewhere in Olbia, in particular in the Upper City in the Central Quarters near the Agora.¹¹⁸

The arrangement of Pavement 177, Rooms 176 and 220 and Basement 243 (only a fragment of the northern Wall 241, the foundation of the southern wall and the pit for the western wall having been preserved from the basement's second building period) give us grounds to suppose that the inner courtyard was located in the southeastern part of the house, while the roofed rooms were to the north and possibly to the east of the courtyard. In this connection, it should be noted that the southern wall of Basement 243 was constructed in alignment with the southern wall of Room 176 and

¹¹⁸ Kryžickij 1971b, fig. 30.

thus the northern group of rooms throughout the entire length of the house from west to east had an equal width. Taking into account the proportions and dimensions of dwelling rooms typical of Olbia, the rooms of the northern section must have been ranged in two rows. Such an arrangement has been found not only in other houses of Sector NGS (IV-2 and VI-3) but also in Olbian houses of the Upper City (A-2, 3, 10, ZK-2, E-2).¹¹⁹

From the north, the courtyard was confined by the southern Wall 175. Judging by the location of the eastern fragment of Pavement 177, the courtyard exceeded the boundaries of that room by at least 2 m eastwards,¹²⁰ continuing possibly also along the entire length of Room 220. In that case, the length of the courtyard amounted to at least 6.5 m. The entrance to the house was evidently to the south.

Fills of the rooms and accompanying finds

Only the finds from Room 176 and Basement 243 are considered here, because elsewhere only extremely disrupted fragments of the cultural layer were preserved, yielding no evidence as to the nature of their fills.

Basement 243

This basement was buried under a layer of grey clayey soil with pieces of mud brick traceable most clearly in the upper horizons of the fill. The floor was revealed 10-20 cm below the underside of the walls. Under the floor was dense yellow clayey soil lying on a compacted surface; further below was ashy soil and then the virgin soil.

The pottery from the fill was fairly uniform chronologically, being dated to the 5th-4th century BC (Contexts 17-19). Within the layer, the finds were distributed relatively regularly, only the upper horizon was richer in artefacts and 41% of all the finds were concentrated here. The amount of cookingware is relatively large, amounting to 6.6% of the total number of finds; the handmade pottery made up about 2% (Appendix 2) but it was represented by fragments of uncertain profile. Tableware and cookingware were predominant, found in the fill of the basement (52% and 34% respectively). These are usual ratios in terms of the functional purpose of the pottery found in the rooms of the houseblocks (Appendix 2).

Room 176

The fill of the room consisted of a dark-yellow clayey soil with finds of the 4th-2nd century BC (Da-506, 88-615-88-618; Contexts 15-16). The floor was not preserved. In the fill, of note is a fairly high percentage of tiles, 10.4%. The tableware exceeds almost by 10% the average proportion and is also 10% less numerous than the cookingware. The amount of wheelmade cookingware exceeds by six times that of the handmade cooking pottery (Appendix 2).

It is difficult to judge the purpose of the room, but it was probably an ordinary dwelling room.

Within the area of the house, diverse finds were found, including a fragment of a marble sculpture, the medallion of a brown-glossed vessel with a relief scene of the abduction of Persephone, etc. (88-347-88-351).

HOUSE II-5 (ORIGINAL DESIGNATION NGS-I, SOUTH PART)

Layout

The extant remains of this house included remains of Basement 116 and the two adjacent Basements 390 and 311, as well as surface Rooms 294 and 62 and Pavement 71, upon which was found an altar (Pl. 13.1). In addition, fragments of surface Walls 51, 80, 295, 91, 145 and 312 were uncovered. The northern limit of the house followed the line of Walls 114, 91 and 65, which separated it from the neighbouring House II-3. The southern boundary was along the northern side of the Northern Transversal Street (Walls 313 and 80). The location of the western limit was probably defined by the

¹¹⁹ Kryžickij 1971b, figs. 16, 30.

¹²⁰ The end of Wall 174 going south beyond the confines of Room 176 was destroyed during construction of the pavement of the courtyard.

western wall of Basement 116. No building remains contemporary with this house were preserved in its southwestern corner. An exception was a fragment of Wall 51, which in the third building period was cut by Basement 20 so that the western and southern borders of the house may be only hypothetically reconstructed. The supposition mentioned above is indirectly confirmed by the fact that in the contrary case the Northern Houseblock would have had the form of a rectangle having a rectangular cut-in in its southwestern corner. This would be untypical of ancient Greek town planning. The eastern limit of the house probably ran in alignment with Walls 295 (the eastern wall of Room 294) and 183 (the western wall of Basement 186). To the east of that line, no building remains contemporary with the first building period were revealed. However, these may have been destroyed during construction of Basements 186, 260, 195 and 202 which belong to the middle building period of the block.

The central part of the house consisted of a courtyard with an altar. South of the courtyard was the large Basement 390, measuring 4.8 x 7.2 m. Between Basement 390 and the Northern Transversal Street was Basement 311 and nearby Room 294. It is of note that in Room 294 building remains related to the second building period were revealed. Here, a stone pavement and a wall separating the room (which was fairly small, about 8 m²) into two parts were constructed, while in the corner of the eastern part a fragment of a water drainage channel (with a cross-section of 15-20 x 3-4 cm) was found crossing the southern Wall 80. This suggests the location of a sanitation facility here.

Of the altar, besides an anthropomorphic slab, only the altar platform (Structure 71) made of large, relatively rectangular stone blocks (Pl. 14.1) and Pavement 104 were preserved. On the altar there were three large pebbles and a stone bowl on a conical base with a concentric groove. The bowl was probably made from the drum of a small column; on its outer surface were traces of fluting (Pl. 14.2). Evidently, a small structure (Structure 62) located about 1 m to the west of the altar was related to it. A corner of the structure formed by the two Walls 61 and 63 and a stove were preserved, the fill of which contained large amounts of an ashy soil, pottery, metal objects, animal bones and fish scales. There can be no doubt as to the contemporaneity of the altar and the structure since they were located in such close proximity and the height difference between the altar platform and the bottom of the stove amounted to only a few centimetres. Considering the fairly thin walls of Structure 62 (0.35-0.40 m) we cannot rule out the possibility that it was simply a small light awning with dimensions that did not exceed its extant remains in plan.

The entrance to the house was from the eastern side street mentioned in the description of House II-4. Here, between the altar platform and the house's northern wall (Wall 91) there was a passage about 1 m wide with a massive slab preserved from Pavement 71a. Considering the position of the altar, we have grounds to suppose that this entrance was linked with some kind of religious ceremony and hence there must have been another entrance to the house from the western or southern side.

Notwithstanding the fact that the internal layout of the house may be only partially reconstructed, its uncommonness as a dwelling house is manifest (Pl. 13.2). This is explicitly evident from the fact that the roofed rooms were arranged in two rows south of the courtyard. At the same time, Rooms 311 and 294, adjoining the street, were evidently auxiliary, possibly related to some kind of service for Basement 390. By contrast, Basement 390 had unusually large dimensions (in Olbia until now no further basements of this size have been encountered) and the walls were carefully constructed partly from tightly adjusted slabs and blocks laid flat in a single row and partly according to the orthostatic system (Pl. 15.1). No hearth was revealed on the floor of the basement; braziers were probably used instead for heating. To the north of this basement, the altar described above was installed on the courtyard pavement.

All the information detailed above suggests an unusual dwelling function for this complex. The activities of the house's owners were probably connected with the performance of some cultic rituals. Judging by the fact that the altar could be approached not only from the area of the house itself but also from the street which limited the house to the east, it was probably not exclusively a domestic sanctuary, but served as a religious place beyond the scale of the household.¹²¹

¹²¹ Lejpunskaja 2005, 177-179.

Fills of the rooms and accompanying finds

Basement 311

The walls of this basement were covered with a grey clayey soil below which sat a yellow clayey layer with finds earlier than the 2nd century BC. Close to the floor was a dark-grey clayey layer with slightly earlier finds of the 4th-3rd century BC (Contexts 22-24). No remains were revealed on the floor. The finds from the fill are undiagnostic but abundant – over 5,000 pieces. Fairly numerous bones of animals and various fish (211 pieces) were found, including bones of horses, dogs and sturgeons.

The percentage of cookingware (37%) is relatively high as is that of table pottery (over 54%), among which the greyware constituted one fifth. Of interest is that the amount of wheelmade cookingware exceeds by almost 12 times that of the handmade pottery, which is extremely rare here. The ceremonious ware is also very scant – 9% against the usual 14-16% (Appendix 2). The basement probably had an auxiliary household purpose.

Room 294

This room was excavated to a depth of only 30-50 cm and its fill was only partly investigated. Two building periods were distinguished, their layers being separated by a pavement. In the fill of the later period finds of the late 4th-2nd century BC (90-293; Contexts 20-21) were found. Statistical analysis of the pottery shows that among the finds of the later building period tableware (36%) and cookingware (42%) predominate. At the same time, handmade pottery is practically absent here, being 20 times less numerous than wheelmade cookingware. The percentages of the ceremonious and household pottery are slightly higher than average (Appendix 2).

In the fill of the room, the content of tableware (48%) is slightly higher while that of the cookingware (30%) is lower; the handmade pottery is practically absent. The amount of the ceremonious ware is somewhat higher (Appendix 2).

Since the room has not been completely investigated, it is difficult to define its purpose. Nevertheless, it is evident that, like Basement 311, it had an auxiliary or partly dwelling function. The two rooms were both in some way related to Basement 390 and were possibly used to service it.

Basement 390

Basement 390 is peculiar, both in terms of its large dimensions and in the high quality of its masonry (see above). These facts distinguish it from all other structures in the area. The room was partly covered with Pavement 1 of the later building period. In the eastern part of the basement there was a large heap of collapsed stone walls of the basement, almost reaching its floor.

The fill of the basement was a loose yellow clayey soil occasionally with sand, pieces of mud brick, pottery and animal bones; in the lower layers it was darker, with grey clayey inclusions. Noteworthy is the relative purity of the soil as compared with the fills in other basements – here the contents of rubbish remains, animal bones and ash were less abundant. The floor had two levels, with heights differing by 10 cm; no remains of structures or disturbances were traceable in the two horizons (Da-340, 96-519; Contexts 25-40).

The concentration of finds decreased slightly from the upper to the lower layers of the fill. A total of about 14,000 finds was recovered, of which 80% were in the upper section of the fill which is dated to the late 4th to the mid-2nd century BC (Contexts 25-28). The finds from the surface of the upper level of the floor, from the layer between the floors and immediately above it are dated to the 5th to the first half of the 3rd century BC (Contexts 32-35, 38, 39).

The percentage ratios of the different categories of pottery differ little from those in other rooms. Tiles are fairly numerous at 11%. The amounts of plain tableware and cookingware are almost equal, at 42% and 43% respectively. The examples of wheelmade cookingware are five and a half times more numerous than those of handmade pottery. Imported vessels are relatively few at about 14% (Appendix 2). All these observations do not contradict the conclusion of an unusual purpose of the basement.

Room 62

This was a room with a stove. At a slight distance to the east of it was the above-mentioned altar with pebbles and the pavement both related to the later building period. Fragments of only two walls were preserved. Therefore, its fill was prac-

tically indistinguishable and thus the finds can only be related to the nearby area (O-72, 86-384-86-385, 86-387-86-390, 86-435-86-450).

The altar was a well-dressed stone slab of secondary use, which was laid down flat. In antiquity its northern part evidently abutted the slabs of the stone pavement (later they were located 10 cm away from it due to the general deformation of the area) and intruded into it. The shape of the altar slab was close to anthropomorphic, owing to cuts at the long sides forming a protrusion on the transversal side. However, this similarity to a human figure is of a chance character. Another similar slab probably constituted part of the altar complex; this was revealed slightly to the north near the northern edge of the pavement.

On the upper side of the slab, three large pebbles and a stone “bowl” on a conical base were arranged. The shape of the bowl resembles an hourglass. It was clearly made from a small column or perhaps the support for a louterion, since on its surface traces of vertical fluting are discernible. In the upper body of the bowl a depression was made, possibly intended for small-sized sacrifices (86-436).

Greek religion saw the use of pebbles as having a sacral purpose. Offerings of pebbles have been recorded in Olympia¹²² and in the Western Temenos of Olbia they were used for the construction of a primitive altar.¹²³ Instances of their use in burial and for cultic purposes are known.¹²⁴ However, the evidence from Room 62 does not allow us to suppose any connection with a specific cult.

The finds made near the altar were scanty and rather undiagnostic, and were constituted mostly of fragments of Hellenistic pottery and metal objects.

Within the area of the house, outside the rooms, fairly numerous quantities of animal bones were collected – about 600 pieces. A mould for casting a plaque with a representation of a lion and a graffito (Rb-30) is a unique find.

Comparison of the mass of material from the rooms of House II-5 suggests that the tableware constitutes about 50%, ceremonious ware 15%, cookingware 37% and household pottery about 1%. The ratios between the various categories of pottery from the basements is slightly different to those between the finds from the surface rooms. The tableware amounts here to 42-54%, ceremonious ware to 9-13%. The percentage of cookingware in the basements is close to the norm, while in the above-ground rooms it is higher than average (Appendix 2).

HOUSE II-6 (ORIGINAL DESIGNATION NGS-I, EASTERN HALF)

Layout

Remains of Basements 186, 186b (beneath which, minor remains of Basement 260 were preserved, although it proved impossible to reconstruct its layout), 202 and 195 were revealed (Pl. 15.3). Between Basements 202, 195 and 186b, the building remains of the Hellenistic period were considerably disturbed by a trench dug during World War II. Only Pavement 127 was partly preserved, as well as a stone accumulation (208) from the continuation of Wall 145a. The pavement is composed of three levels. Its upper horizon is related to the last building period of the block, while the lower one, lying 0.5 m deeper than the upper, may be connected with the second building period. The southern façade of the house faced the Northern Transversal Street, the eastern one faced the Eastern Longitudinal Street. The exact location of the southern boundary of the house was defined by Wall 201 of Basement 195; that of the eastern limit by Wall 160 of Basements 195 and 202. To the north, the house was bounded by Wall 145a of Basements 186 and 186b. This is suggested by the relatively considerable length of Walls 145 and 145a positioned in alignment with each other and the absence of any building remains north of them. The western boundary abutted House II-5 and lay in alignment with Wall 183 of Basement 186 (to the north) and Wall 295 of Room 294 in House II-5 (to the south). In this connection, it is worth noting that for a certain period, Houses II-5 and II-6 coexisted. As mentioned above, reconstructions in the second building period were traced in House II-5, Basement 311 and Room 294.

The roofed rooms above the basements were arranged in “T” form in relation to the internal courtyard, which was located in the southwestern part of the house. Of the courtyard, the lower horizon of Pavement 127 and the remains of

¹²² Guarducci 1974, 48-49.

¹²³ Rusjaeva 1992, 165.

¹²⁴ Rusjaeva 1992, 165.

Gutter 153, which drained rain-water into the transversal street, were preserved. Taking into consideration the relatively high percentage of the total area of the extant house taken up by the courtyard (33%), it seems likely that the house had yet another roofed room, possibly in the southwestern corner of the courtyard. Neither contemporary building remains nor a pavement in the courtyard were preserved. If the supposition above is true, the courtyard must have had a “I”-shaped plan, while its area in relation to the rest of the house would have been less by approximately one and a half metres (24% of the total area of the house).

Fills of the rooms and accompanying finds

Basement 186

The fill of the basement consisted of alternating mixed layers of grey clayey and yellow clayey soils containing artefacts of the 5th-2nd century BC, the earlier artefacts pertaining to the lower layers (Contexts 44-50). Two levels of the floor were revealed, differing by 5 cm. No remains of any structures were found upon the floor.

The finds include numerous animal bones, over 1,000 pieces. Statistical processing of the finds from the basement has shown that the percentages of all functional groups of pottery are close to the average of other rooms in the houseblock. Tableware amounts to 42%, glossed wares are slightly more abundant than in other rooms (19%), greyware examples are fairly numerous but half the quantity of the other table pottery and cookingware constitutes 37%. Handmade pottery is less numerous by a factor of five than wheelmade cookingware (Appendix 2).

It is difficult to decipher the purpose of the basement; it may have been used for dwelling or a household purposes.

Basement 186b

During the construction of Basement 186b, more ancient structures were removed, leaving only two pits. In one of these, a section of a floor and holes for posts were revealed. The post-holes may be the remains of a small structure for drying fishing-nets, etc. In one of these holes, a coin of Eminačkos (450-425 BC)¹²⁵ and a base fragment of a vessel with a grafito were found.

The fill contained very few artefacts, only 139 finds, dated mostly to the 5th-4th century (C-48, S-12, 89-777, 89-780-89-782, 89-988, 89-988a; Context 51). Given the poor condition of the room and the scanty finds, statistical treatment of the finds seems rather useless. It is of note, however, that tableware fragments are slightly less numerous here (35%) than in other rooms, glossed wares are slightly more numerous (30%) and cookingware is less common (Appendix 2). Nonetheless, this information is certainly insufficient for any conclusions about the purpose of the room to be proposed.

Basement 195

The fill of the upper levels of this basement consisted of a grey clayey, ashy soil. In the lower layers of the fill was a layer of yellow clay with fragments of tiles covering a thin layer, immediately above the floor, of a light-grey clayey soil with ash and pieces of charcoal. Two levels of an adobe floor, differing in height by 20 cm, were preserved, the lower horizon lying on the virgin soil.

In the fill, finds dated to the 4th to the first half of the 3rd century dominated (Contexts 52-56). The percentage of tiles (13.4%, 495 fragments), the fragments of which evidently derive from the collapsed roof, was relatively high. The other groups of finds were found in average or slightly lower than average quantities. Only the ceremonious ware is rather more abundant, at 22% against an average of 16%; whilst the amount of household pottery is slightly greater than the average. The greyware table pottery is less numerous by a factor of five than the other tableware (Appendix 2).

The basement was most possibly intended as a dwelling, but may have been used also as a dining room.

Under the floor, below the level of the foundations, finds of the late 6th to the early 5th century BC (Context 58) were revealed. This is the period to which the majority of the pits are dated, the remains of which were traced in the virgin soil. One of the pits, however, contained coins of 330-300 BC (Context 57).

¹²⁵ Lejpuns'ka & Nazarčuk 1993.

Basement 202

The upper part of the fill of this basement contained considerable admixtures of gravel and small rubble, below it was a dense, lumpy, grey clayey soil with limy inclusions, below this was a yellow layer of clayey and ashy soil with admixtures of yellow clay, lime and pieces of charcoal. At the level of the underside of the walls there was a yellow clayey soil. The floor was not preserved.

The collection of pottery from the fill is composed of a set of common pottery (H-214, 88-528-88-529, 88-531-88-537, 88-620-88-640). The statistical treatment of the finds from the fill shows a slight excess of tablewares (46% and 45%), ceremonious ware (28% against an average of 16%) and household pottery against the average proportion, and a lower than average proportion of cookingware (28%). Within the category of tablewares, of note are the almost equal amounts of redware plus light ware, on the one hand, and greyware, on the other. Usually, the fragments of greyware pottery are considerably less numerous, generally by at least half (Appendix 2).

Basement 260

Basement 260 was traced in the form of the trenches left from the destroyed walls, the walls having not been preserved. The fill was practically non-existent, only a grey clayey soil with an admixture of ash was traced over the partly preserved adobe floor.

A total of 600 pottery fragments were found (Context 59). Finds of the second half of the 4th century BC were predominant in this layer, but artefacts of the 3rd to the mid-2nd century BC were also encountered. Notwithstanding the small amount of pottery, noteworthy are certain peculiarities in the quantitative characteristics. The percentage of cookingware is fairly high, half of the total pottery, at the same time handmade pottery is only half as numerous as wheelmade (Appendix 2). Very cautiously, we may suppose that this room was used as a kitchen.

During investigations of the house, outside the limits of the rooms, some particularly interesting objects were found, such as a graffito ΔΕΙ, a complete grey-polished jug and a fragmentary red-figured guttus on a high base (Context 60).

The house evidently belonged to an inhabitant of Olbia of slightly more than moderate means. This is suggested by the extensive courtyard, the presence of three or four basements and the fairly high percentage of glossed wares in the fill of the rooms.

HOUSE II-7 (ORIGINAL DESIGNATION NGS-I)**Layout**

Construction of this house pertains to the third building period of the houseblock, when the southern third of the block was completely rebuilt. The new house covered the ruins of more ancient houses. West of the earlier House II-5 there was a small space not occupied by buildings. Contrary to this, House II-7 certainly reached the western boundary of the Northern Houseblock.

The remains of the house were preserved in a very fragmentary state and then only in its central and western parts (Pl. 16.1). In the centre was the large Courtyard 1 measuring 13 x 3.7-4.2 m (at its western end the courtyard was 1 m wider) paved with stone slabs (Pl. 17.1-2). The four sides the courtyard were encircled by roofed rooms. The rooms located to the west of the courtyard were almost completely demolished so that it was practically impossible to define even their number. The only feature identifiable is their dimension in the north-south direction. Taking into consideration the position of Wall 73 this must have been about 4 m. This figure suggests that a roofed room and not a portico was located north of the courtyard, since such a span would be too wide for a portico in a small house. The northern boundary of House II-7 was formed by the southern walls of Houses II-3 and II-4.

On the west side of Courtyard 1, Basement 20 and surface Walls 15 and 30 were preserved, allowing us to reconstruct three rooms here. One was situated over Basement 116 of the second building period, the second above Basement 20, the third, the southwestern one, was located between Walls 15 and 30. The southwestern corner of this latter room had been destroyed, possibly by the sizeable drain leading from the Western Longitudinal Street in a southerly direction. The presence of strong torrents is suggested by the large Gutter 100 and, in particular, by the semi-elliptical Water-break 27, which protected the protrusion of House I-1 against the effects of torrents.

Room 116 should especially be noted. Both its eastern and western walls were completely removed. However, on the east side of the hypothetical location of the eastern wall were found stone platforms of rectangular plan faced with slabs

and separated by an interval of 0.8 m (Pl. 18.1). The northern platform measured 59 x 80 cm, the southern 76 x 78 cm. The platforms were constructed of well-dressed rectangular limestone slabs in secondary use. The thickness of the slabs was ca. 10 cm. They had no complicated profile. The position, shape and dimensions of the platforms suggest that they were intended for the construction of a flat portico framing the entrance to the room. This, in turn, is evidence of an extraordinary purpose for this room. It is unlikely that it was a *prothyron* since this room faced roofed rooms and not the courtyard. Besides, the accentuation of the entrance from the courtyard is not quite usual for *prothyrons*. Taking all this into account, the room most likely was connected with religious activities. In this case, there are grounds to suppose a functional continuity of House II-7 with respect to the preceding House II-5.

Almost no remains of rooms south of Courtyard 1 were preserved. Extant were only fragments of the northern Walls 23 and 11 facing the courtyard and the transversal Walls 30, 42 and 55 placed perpendicularly. Only one room (Room 32a) could be distinguished here. It was difficult to identify the number of rooms to the east of it. Taking into consideration the position of the fragment of the southern Wall 53 of Room 56, there were probably at least two or three rooms. The remains of a pavement and gutters of the Northern Transversal Street allow us to propose that the southern boundary of the house was approximately at the same place where the houseblock stopped earlier. However, we may not rule out the possibility that, at least in the western part, boundary may have receded by 1.5 or 2 m to the north. This supposition is indirectly confirmed by the fragment of Wall (?)147. The condition of this structure is so poor, however, that it may be identified only hypothetically as a wall.

The building remains of the third building period on the east side of the house do not allow us to trace its eastern boundary. It is clear that it could not have been located further to the west than the eastern side of Courtyard 1. It cannot be ruled out that the rooms limited by Walls 137, 154 and 147, as well as the upper horizon of Pavement 127 and the corner of Room 216, may have belonged to House II-7 since the layout of these remains is slightly turned and displaced relative to the earlier House II-6. However, there are no other serious arguments in favour of this proposal.

In terms of its ground plan, this house is outstanding among the other houses both in terms of its considerable dimensions and the proportions of the courtyard, as well in the shifts of its layout respective to that of the antecedent houses (Pl. 16.2). In addition, basements are practically absent from this house. The single small basement belonging to it must have been uninhabitable, by reason of its shallow depth, and probably served as a store. Like House II-5 antecedent to it, this house, in addition to its dwelling function (the accompanying finds from its fill are typical of domestic activities), had further functions.

The building remains discussed above allow us to propose a hypothetical three-dimensional reconstruction of the northern block of houses (Pl. 18.2).¹²⁶

Fills of the rooms and accompanying finds

Basement 20

This basement was covered with a dark yellow clayey soil containing collapsed rubble; in the lower layer there were ashy inclusions. A floor was not preserved.

The upper layer of the fill yielded the most finds (44%); below it, the finds were distributed fairly uniformly. The finds were identical in all of the layers, dating mostly from the late Hellenistic period (Contexts 61-63).

Statistical processing of the finds from the fill of the basement shows that the proportions of tableware and cookingware were close to the average, at 45% and 33% respectively; the proportion of ceremonious ware was slightly higher than usual, namely 22%. Of note is the insignificant amount of greyware pottery (only six fragments) and the practically equal quantities of wheelmade and handmade cookingwares (Appendix 2).

The basement most probably served household purposes. It was relatively small and was located close to the courtyard, and neither stoves nor hearths for heating the room were revealed.

¹²⁶ For the principles of the reconstructions, see below.

Room 56

The fill of this room consisted of a very loose, grey clayey soil with admixtures of ashy soil with yellow clayey lenses and pieces of charcoal. A floor was not preserved.

The pottery fragments are dated to the 4th-2nd century BC (86-273, 86-291-86-292, 86-1008-86-1012). The statistical data show the same ratios between the groups of pottery as in other rooms. Like in Basement 20, greyware pottery is uncommon here, it is nine times less numerous than the other tableware; fragments of handmade pottery are half as numerous as those of wheelmade cookingware (Appendix 2).

Room 116

This room was only partly preserved, but of interest is the fairly thick (up to 60 cm) layer of mud bricks possibly scorched by a fire. Below, this was followed by a dark-grey clayey layer. The floor was not preserved.

The finds from the fill are dated mostly to the 3rd-2nd century (Dc-232, O-48, Rc-27, 87-391, 87-393-87-394, 87-396-87-407, 87-782-87-785, 87-787). The quantitative parameters of the functional groups of pottery are close to those from other rooms. Fragments of greyware are slightly more numerous than usual, but only by 20 fragments, in relation to the other tablewares (Appendix 2).

As discussed above, the construction of a portico in front of the entrance to this room (two slabs near its eastern wall on the side of the courtyard) suggests some extraordinary, possibly ritual purpose of the room, but unfortunately no finds that could confirm this were found.

Outside the boundaries of rooms of this house, fairly numerous finds were revealed. However, due to the rather complicated stratigraphic picture and sequence of construction of House II-7, it was difficult to distinguish the fill here. Nevertheless a number of artefacts are of interest; these date mostly to the second half of the 3rd-2nd century BC (P-42, P-73, 86-64-86-68, 86-70-86-79, 86-81-86-87; Contexts 64-66). Thus, in a collapsed heap of stones above Pavement 1, an inscription of Posideios of the 2nd century BC was discovered (86-162).¹²⁷

HOUSEBLOCK III (WESTERN HOUSEBLOCK)

This block of houses was bounded by the Western Longitudinal and the Northern and Central Transversal Streets (Pl. 19). Its eastern section was excavated. Here, both basement and above-ground rooms of three houses were uncovered.

The boundary between House III-3 and Houses III-1 and III-2 is marked by Wall 256, dividing the excavated area of the block into two almost equal northern and southern halves. In the northern half of the block there were two houses, III-1 and III-2, separated by Wall 42. That this was indeed a boundary wall between the two houses is indicated by the fact that Wall 42, notwithstanding its fairly considerable preserved height (up to 1.5 m), had no doorway, i.e. Rooms 255, 164 and 52 of House III-2 had no functional ties with House III-1. Within the excavated area, two building periods were traced. Houses III-1 and III-3 pertain to the earliest. Later on, House III-1 ceased to exist. Its eastern third was covered by House III-2, while the other parts remained a vacant plot with some ruined structures. In the eastern third of House III-1, the remains of two basements separated by a wall with a doorway were revealed (Pl. 21.1). Simultaneously with the construction of House III-2, the eastern wall of House III-3 was reconstructed, being a continuation of the eastern wall of the newly built house (Wall 51).¹²⁸ The ground plan of House III-2 was turned at a slight angle relative to that of House III-1, while the rear Wall 42 ran across the earlier Basements 388 and 744.

¹²⁷ Lejpunskaja 1989; Lejpuns'ka 1990, 117-122.

¹²⁸ The external eastern walls of Room 278 of House III-3 and Room 255 of House III-2 actually presented a single structure bonded by interlacing courses with the transversal Walls 256 and 165. Also bonded by intertwining courses were the northern Wall 256 of House III-3 and the western wall of House III-2. This indicates that the two houses were built simultaneously and most probably belonged to a single owner.

HOUSE III-I (ORIGINAL DESIGNATION NGS-5, WESTERN HALF)

Layout

Only the central part of the house was excavated (Pl. 20.2). To the west, the house continues under the baulk of the excavation, to the east it is covered by House III-2. Wall 76 was the northern boundary of the house; the eastern one was evidently arranged along the same axis as the buildings of the Western Longitudinal Street and ran almost parallel to the eastern wall of Basements 388 and 744. The courtyard was located in the southern half of the excavated part of the house. The entrance to it was from the Northern Transversal Street via a *prothyron* paved with stones. To the north of the courtyard was the roofed Room 734. The total area of the house in the first period amounted to at least 150 m².

In the second building period, as mentioned above, on the site of this house there was an area of neglected ground to which a passage from the Northern Transversal Street led. Later on, this passage was blocked with Wall 75, while to the north of the courtyard Stove 329 was constructed over the remains of Room 734.

This stove was divided to the south and north by walls of which only heaps of collapsed stone remained. On some of these, traces of fire were discernible. Of the stove itself, only fragments of fired clay were preserved, deposited irregularly throughout an area of 3 x 3.5 m in a layer of very loose, grey, ashy soil with large quantities of fine fish bones, diffuse heaps of yellow clay and small pieces of rubble scorched by fire. Some fragments of the hearth clay retained the ridges of its edge. Close to the stove, a small pit of rectangular plan was dug. It was filled with a loose, grey, ashy soil. The stove under consideration was contemporary with Stove 372 in Room 278 (see below).

House	Area covered by construction, m ²	Area of courtyard, m ²	Ratio of courtyard area to the total building area, %	Number of rooms	Number of basements
III-1	15(?) x 180	4.5 x 5(?) = 22	12(?)	4(?)	3 + ?
III-2	5.5 x 13.7 = 75	-	-	3	2
III-3 ¹²⁹	11.5 x 11.5(?) = 132	3.2 x 4.7 = 15 3.7(?) x 3.3(?) = 12	20	4 + (?)	1

Table 5.¹³⁰

Fills of the rooms and accompanying finds

Room 734

This is an above-ground room which was investigated down to the three levels of its floor. The fill consisted of grey clayey and yellow clayey soil. Of the upper level of the floor, a layer of ashy soil, 5 cm thick and containing fine chips of limestone, was preserved. Below it was a layer of light-grey ashy soil, 15-20 cm thick. Two further levels of the floor were traced as isolated fragments of compacted grey clayey layers.

Here, fragments of pottery of the 5th-2nd century BC were found (04-320-04-325). The ratios between the different categories of pottery correspond, on the whole, to the average. Cookingware fragments are slightly more numerous than usual at over half of the total amount; tableware fragments are less numerous at about a quarter (Appendix 2). However, it seems there are no grounds to suppose that the room was a kitchen, since there were no remains of hearths or the like. The lower level of the fill corresponded to the third horizon of the floor (B-119, B-239, B-253, 04-473-04-479, 04-483-04-513).

¹²⁹ The western boundary of the house was assumed to be a line parallel to Wall 298 and branching southwards from the western end of Wall 256.

¹³⁰ The values presented are approximate, taking account of the displacements in the ground plan and deviations from the rectangular plan.

Stove 329¹³¹

This stove most probably existed after House III-1 was deserted, as the layer underlying its remains covers the remains of the walls of the rooms of the house. This layer is a grey clayey soil with ashy inclusions; it was very loose and contained numerous fish bones and fragments of fine pottery. The stove was much destroyed; only pieces of hearth clay, occasionally with a peripheral ridge, were preserved, scattered throughout an area of about 4 x 4 m. The vault of the stove may have been constructed of mud bricks, since in the soil there were fairly numerous eroded lumps of yellow clay. The stove (or several stoves?) functioned over a long period; this resulted in the accumulation of a thick layer of ash which covered an area of 9.2 x 5 m and contained considerable amounts of pottery, mostly of the late Hellenistic period.

Around the stove, in the layer above it, various finds of the 3rd-2nd century were recovered (Contexts 67-68). The stove was covered with a grey ashy soil with numerous fish bones and scales, considerable numbers of tiles (73 pieces) and about 600 amphora fragments. The pottery recovered from the layer beneath the stove¹³² confirms its date to the period not earlier than the 2nd century BC (Contexts 69-72).

Evidently, the stove served for cooking, since no traces of manufacture were revealed here. However, the distribution of the various groups of pottery found during its excavation shows practically equal amounts of tableware and cookingware. The same ratio is found also in the layers surrounding the stove. Ceremonious ware is quite rare in the first case, only 12%, but is slightly more common in the layers around the stove at up to 20% (Appendix 2).

The layer connected with House III-1 included finds distributed throughout the area to the west of Rooms 52 and 164 (House III-2) (A-133, C-66, E-32, F-49, H-50, H-171, P-9, P-29, P-144, P-148, P-164, Rb-4, 92-67-92-70, 92-126-92-138, 92-140-92-141, 92-169-92-172, 92-174, 92-176-92-178, 92-180-92-191, 92-193-92-204, 92-206-92-208, 92-210-92-215, 92-217, 92-219, 92-221-92-238, 92-325, 92-327-92-328, 92-590-92-593, 92-595-92-596, 92-598-92-608). Especially noteworthy is a marble sculpture of a seated woman (Q-1), which was brought here after the destruction of the house-block.¹³³ In addition, this layer contained fragments of metal objects, animal bones – over 500 pieces – fine bones and fish scales, and pieces of scorched clay from the stove.

A complete investigation of House III-1 could not be made due to the presence of a high baulk over the remains to the west. Therefore, it is not possible to reach conclusions about its functional characteristics or even the purpose of some of the rooms.

HOUSE III-2 (ORIGINAL DESIGNATION NGS-5, EASTERN PART)

Layout

This house was constituted of three roofed rooms arranged in a single row along the western street (Pl. 20.3, 21.2-3, 22.1). Taking into consideration the bonds of all the walls, the house was evidently a single-period construction. However, in a functional sense, it was divided into two parts, each having an independent exit to the street. The southern part had a single room (255) with stone stairs to the exit to the street (Pl. 22.2). The northern two-roomed part had one entrance from the street (near Wall 165) to Room 164. The presence of a basement below this room suggests that the staircase leading to the street was wooden rather than of stone as in Room 255. Rooms 164 and 52 were connected via a doorway in Wall 163.

Questions arise about the functional purpose of this structure. The absence of an internal courtyard and the entrances giving access immediately from the street indicate that this structure cannot be considered to have been a standard house. Indirectly, this supposition is confirmed by the casual character of the accompanying finds and the absence of hearths. In view of these facts, we have grounds to suppose that it this structure was intended for trading or providing some kind of service to the inhabitants of the area.¹³⁴ Similar structures are known in the Greek world, particularly in Priene where they are believed to have been shops.¹³⁵ A room of this type, installed in an otherwise standard dwelling house, was revealed

¹³¹ Possibly, it was located within the limits of the partially preserved Room 96.

¹³² Due to the destruction of the stove, these earlier layers were distinguishable predominantly by their depth. The bottom of the stove was not clearly discernible on the ground and took the form of irregular lumps with different inclinations.

¹³³ Lejpuns'ka & Samojlova 1997.

¹³⁴ Lejpunskaja 2005, 178-179.

¹³⁵ Hoepfner & Schwandner 1986, 180-181, fig. 147.

in Olbia in House A-3.¹³⁶ However, here too the particular purpose of the room is unknown. The presence of basements does not contradict the proposed trading purpose of House III-2. In Olbia, basements are known under the shops of the eastern and western trading buildings of the Agora,¹³⁷ as well as under a building with a probably administrative function near the southwestern corner of the Agora.¹³⁸

Fills of the rooms and accompanying finds

Room 52

Immediately above this room, irregular heaps of collapsed rubble and roughly-dressed stone were found. Below, in the northern part of the room, a layer of grey clayey soil was revealed which contained rubbish, pottery and animal bones, pieces of scorched clay and crushed limestone. Of the floor, three or four levels were distinguished. In the southern part of the room, fragments of hearth clay were encountered; possibly there was a fireplace here. In addition, remains of a hearth (hearth clay) were traceable at the lower level of the floor. Below the floor was a layer of grey clayey soil with rubbish.

The pottery from all of the layers is chronologically uniform, dating mostly from the 2nd century BC (C-47, Dc-415, G-115, 88-474-88-475, 89-372-89-374, 89-377-89-379; Contexts 73-75).

Tableware dominated the fill, at over 56%, or about 70% if counted together with the glossed wares. Cookingware was fairly rare as compared to the other rooms, at 24%. (Appendix 2). Evidently this room was a dwelling room.

Room 255

This is a surface room. It was excavated to the level of the floor. Part of the floor was made of dense compacted clay; the other part was paved with slabs and fragments of tiles. Three stone steps lead inside the room from the entrance from the street. The fill in its upper part was a grey clayey soil with heaps of small and medium-sized rubble throughout the entire area and at different levels. Below, there was a yellow clayey soil with inclusions of rubble and artefacts of the 3rd-2nd century BC.

The upper fill layer yielded 80.5% of all the finds (Contexts 83-85). Here, numerous fragments of tiles (395 pieces) were found, but these were irregularly distributed throughout the layer. The finds are dated to the 4th-2nd century BC with finds from the 3rd-2nd century BC predominating.

Statistical treatment of the finds shows a predominance of tableware over cookingware, while greyware was less numerous by a factor of almost six than the other types of plain tableware. Handmade pottery was twice as rare as wheelmade cookingware. Among the group of ceremonious ware, black-glossed and brown-glossed pottery was represented by practically equal amounts (Appendix 2).

Room 164

The fill of the room in its upper part was grey and clayey; below was a grey clayey layer with admixtures of yellow clayey soil, where a collapsed heap of dressed slabs and blocks covering a layer with dark-yellow clayey soil was revealed. The floor was preserved as only a small fragment. At least half of the finds were recovered from the upper fill. The pottery dates to the 4th-2nd century BC (Contexts 76-79). Statistical treatment of the finds shows the significant predominance of plain tableware, at about 63%, and small quantities of cookingware, at only 22%. Glossed wares were relatively few, at 14%, but taken together with plain tableware they make up about 80% of all the pottery from the room (Appendix 2).

Basement 164

This basement was excavated to the floor level. The fill was chronologically homogeneous differing only in the character of the soil. In the upper section, there was grey clayey soil; below, inclusions of charcoal, ash and lumps of yellow clay

¹³⁶ Kryžickij 1971b, 37.

¹³⁷ Levi 1956, 53.

¹³⁸ Slavin 1964, 208-209, Kryžickij 1985, 118-119.

occurred. A similar layer was distributed both throughout the lower above-ground section of the room and deeper down. The floor of the basement consisted of a dense, compacted grey clayey plaster. No finds were found *in situ* on the floor.

The majority of the pottery was recovered from the middle part of the fill, 52.3%. The finds from all layers of the fill date predominantly to the Hellenistic period, although there are few more ancient artefacts (89-552-89-553; Contexts 80-82). No finds indicating the functional purpose of the basement were found.

Statistical analysis of the pottery did not reveal any peculiarities in the character of the distribution of the different groups and the find composition is close to the norm (Appendix 2). We may suppose room was used for storage.

The hypothetical function of the house as a shop was mentioned above. The northern Room 52 may have been a living room, whereas the two southern ones were used for trading purposes.

In the house, practically all of the rooms were preserved; outside their limits very few artefacts were found.

HOUSE III-3 (ORIGINAL DESIGNATION NGS-7)

Layout

This house is limited to the south by the Central Transversal Street, to the east by the Western Longitudinal Street and to the north by Wall 256. The western part of the house continues under the baulk of the excavation (Pl. 20.1-3).

The extant remains of doorways allow us to reconstruct the functional ties of the rooms. The house was separated into two halves, an eastern and a western. The eastern half included the inner Courtyard 332 and two roofed rooms located to the north (Room 278) and south (Room 359) (Pl. 23.1-2). Under the northern room was Basement 368 (Pl. 24.1). The entrance to the courtyard, of which several steps were preserved, opened from the Western Longitudinal Street.

This part of the house is of interest primarily because it included an *andron* (Room 359) (Pl. 24.2, 25.1). Here, along the eastern, southern and western walls, were found slightly elevated (0.15 m) platforms, 0.9-1 m wide, set over the central part of the floor for the installation of couches. The outer edges of the platforms were strengthened with stone. The platforms themselves as well as the floor were of mud brick. In contrast to the *androne*s in the richer Olbian houses (such as the houses excavated near the Zeus Kurgan and in Sector NGF of the Lower City¹³⁹), in Sector NGS no pebble mosaic floors were found. Room 359 did not employ straight angles in the planning of the room or the platforms.

The western part of the house was only partly excavated. In its centre was Courtyard 331. To the north of it were Rooms 328 and 362. Room 328 was connected directly with the courtyard via a doorway in Wall 330. South of the courtyard, no building remains contemporary with the period of its existence were preserved. Taking into consideration all that is stated below, there are grounds to suppose that the western half of the house had an independent exit to the Central Transversal Street, in particular in the second building period.

The two parts of the house were connected with a door in Wall 298 linking Room 278 and Room 328. It is possible that a functional relation existed between the two Courtyards 331 and 332. Part of Wall 298 separating these courtyards came very close to the northern Wall 340 of the *andron*. It is possible that renovations closed-off a linking doorway (if one actually existed here).

We may conclude that the western and eastern parts of the house were functionally linked, constituting a single house through the presence of doorways connecting Rooms 278 and 328 as well as Courtyards 331 and 332. However, taking into consideration the presence of an *andron* in the eastern half of the house and the distinct separation between the two parts of it, there are grounds to suppose that the house was divided into two halves – a male one (with the *andron*) and a female one. This layout belonged to the first building period of the house and the entire block, and it corresponded to the period of the existence of the neighbouring House III-1. During the second building period, the doorway in Wall 298 was blocked, thus stopping the functional relation between Rooms 278 and 328; the external eastern Wall 51 of the house, linking it with House III-2, was reconstructed; Courtyards 331 and 332 were separated by Wall 298 (in which no remains of a doorway were revealed in Courtyard 332). Thus, the two parts of the house which were functionally related in the first period, became functionally independent in the second period. Thus, in the eastern part of the Western Houseblock

¹³⁹ Farmakovskij 1906, 43-44; Farmakovskij 1913, 67; Kryžickij 1971b, 55-56, 85; Kryžickij 1993, fig. 111.

during the second building period there were two structures, one of which was a dwelling while the other probably had a trading purpose (Pl. 25.2).

House	Structure no.	Date, century BC	Area, m ²	Depth, m ¹⁴⁰	Surface room above the basement ¹⁴¹	Date of surface room, century BC	The presence of earlier rooms or layers beneath the basement	Date of earlier remains, century BC
III-1	388 + 744	Late 4th-3rd			?	?	-	-
III-1	742							
III-1	743							
III-3	368	3rd	14.8	2	278	3th-2nd	Yes	4th

Table 6.

The fills of the rooms and accompanying finds

Room 278

Within the limits of Room 278 the much destroyed Hearth 372, pertaining to the last building period of the house, was found. The hearth stood on a yellow clayey foundation laid upon a dense adobe floor.

During excavation of the stove, immediately beneath it, finds dated to the 3rd-2nd century BC (Context 99) were recovered. Noteworthy is the considerable number of animal bones and especially fish bones (169 and 100 respectively).

The upper part of the fill of the room was constituted of irregularly deposited grey clayey and yellow clayey layers. In the western part of the room, an ashy layer and a small depression containing ash could be traced in the yellow clayey layer. In the southeastern corner, at approximately the same depth, were remains of an stove in the form of two upright standing fragments of hearth clay and traces of fired plaster on the eastern wall of the room. On the plaster it was possible to discriminate the imprint of a partition dividing the stove vertically, so the stove apparently had two chambers. The lower part of the stove was not preserved. The lower part of the fill consisted of an ashy, grey and yellow clayey layer with finds also dated to the 3rd-2nd century BC. The coating of the floor could not be traced. The walls were plastered; fragments of plaster were revealed in the fill.

The distribution of artefacts throughout the fill was practically uniform, although pottery was slightly more abundant in the upper layers. The finds date mostly to the 3rd-2nd century BC (Contexts 89-98, 100, 101).

The ratios between the main groups of pottery in Room 278 were close to the average, though tableware prevailed; cookingware made up about 40% (Appendix 2). These data are not sufficient to identify the purpose of the room.

Basement 368

This basement is located under Room 278. The upper level of the fill was a yellow clayey soil with remains of plaster, green clay, ash, etc. In the southeastern part of the room, a very dark burnt layer with admixtures of fired ochre containing bright clay was revealed; this layer contained pieces of hearth clay and fragments of, possibly, a brazier. Among the finds, especially remarkable are a terracotta of Aphrodite on a rock (P-56) and a marble statuette of Kybele (Q-2). In general, the finds date to the 2nd to the early 1st century BC (Context 102). Above the floor, the soil has the character of rubbish.

¹⁴⁰ The height of the walls.

¹⁴¹ Implied is the time after the functional period of the basement.

Three floors levels were preserved. The upper floor was constituted of a dense, almost dark, adobe coating with three polygonal limestone slabs in the southern part. The accompanying finds date predominantly to the 2nd century BC (Context 104). The second horizon of the floor was covered with dark soil with ashy inclusions and abundant pottery; upon this horizon there was a collapsed stove (Contexts 105-106). The accompanying finds date to the 3rd-2nd century BC, although there are small numbers of more ancient and later artefacts. The finds from beneath the stove date to the late Hellenistic period (Context 103).

The third and oldest floor is attributed to the time of the construction of the basement. This floor was covered with a rubbish-filled soil rich in pottery, the majority of which dates to the 3rd-2nd century BC (Context 107). The floor was represented by a dense compacted surface. Upon it, a pavement consisting of crushed limestone, rubble and coarsely-dressed limestone slabs was preserved. The pavement was limited by a single-course wall and an arc-shaped stone partition paved on top with small slabs, small pieces of rubble and tile fragments. The finds from the divided area do not differ from those in the fill in general. From the compartment, two fragments of terracottas were recovered. The partition probably served some kind of household purpose, as it was the case in other basements.

The layers above the second floor and under it proved to be especially rich in finds. From here, the largest quantities of fragments of all categories of pottery were recovered: 5,500 pottery fragments or 81% of all the finds from the fill. The percent ratios between the different kinds of pottery in this assemblage are the same as in other layers (Appendix 2).

The finds from the lower level of the floor, as well as those from below it in the northwestern corner (Context 108), also date to the late Hellenistic period, like those from the rest of the fill. Statistical analysis of the finds from the entire fill of the basement shows similar proportions of tableware and cookingware, 36% and 40% respectively. However, if one takes into account glossed wares, the proportion of tableware increases to 60%. The proportion of wheelmade cookingware to handmade is 1:2; greyware fragments are almost six times less numerous than plain tableware sherds.

Judging by the structures preserved *in situ* on the floor of the basement, the partitions, pavements, hearths and stoves, the basement probably served general domestic purposes.

Room 359

This room was in the northwest covered with a single layer of small broken slabs and medium-sized rubble mixed with eroded mud brick. In the upper layers, the fill was a grey clayey soil with ashy inclusions. Below, it was a yellow clayey soil with grey clayey inclusions, and still lower another heap of eroded mud brick was encountered. The finds from these levels are rather scanty and contemporary, dating mostly from the 3rd-2nd century BC (Contexts 113-117). Two levels of the floor were revealed with a height difference of 22-27 cm. The upper horizon of the floor was covered with a mixed layer of grey and yellow clayey soil. This floor was repaired at least six to eight times. In the northwestern corner of the room, the very poorly preserved remains of a brazier(?) were revealed.

On three sides (eastern, southern and western) the upper floor had platforms raised 0.15 m and 0.85-1 m wide. The edges of the platforms were separated from the central area of the floor with a single-row wall of small pieces of rubble. As previously mentioned, such constructions resemble the platforms of *androns*. In the layer covering this floor, about 1,200 artefacts were found. Clearing the floor yielded 62% of all finds from the fill. The majority of the finds date to the 4th-2nd century BC, although, after removing the floor, more ancient finds were also recovered (Contexts 118-121).

The ratios between the various groups of pottery did not differ, on the whole, from those in other rooms (Appendix 2). In terms of chronology, the entire fill of the room may be considered as homogeneous – the lowest layers yielded fragments of Rhodian amphoras of the late 3rd-2nd century BC. The second horizon of the floor pertained to an earlier period than the house itself.

Room 328

This room was only partly preserved. Similarly to the western part of the neighbouring Room 331, its western part was covered with a layer of eroded mud brick washed out from the walls. From within the clay layer distributed across the two rooms, late Hellenistic finds were recovered. In the yellow clayey layer with grey clayey inclusions, a small compacted area with fragments of hearth clay was traced. Below this was a grey clayey layer with yellow clayey inclusions. The accompanying finds date to the late Hellenistic period (Contexts 111-112).

Courtyard 331

This courtyard was only partly preserved and hence only partly excavated. It was covered with a yellow clayey soil, the result of the destruction of the eastern mud brick wall. In the northern part of the courtyard there was a single-layered stone pavement, almost reaching the northern wall near an opening. The fill consisted of successive layers of grey clayey soil with yellow clayey inclusions and a yellow clayey soil containing artefacts predominantly of the 3rd-2nd century BC (Contexts 126-129).

Courtyard 332

The pavement of this courtyard was covered with yellow clayey soil with small grey clayey inclusions. Among the stones of the pavement there was a fragment of a stone mortar. The finds date to the 4th-2nd century BC (Contexts 130-132).

House III-3 is unique in Olbia. It was a house with two courtyards. It was divided into a men's quarter and women's quarter; in the men's half, an *andron* was installed. Although it is unlikely that this house belonged to a very rich citizen (in contrast to other houses with *androne*s), nevertheless, its construction differs from that of the other houses in the houseblock under consideration.

On the whole, even though incompletely excavated because its west side is under the baulk of the excavation, the Western Houseblock has nevertheless yielded finds that are very interesting for the interpretation of the houses. In the eastern part of the houseblock was a row of shops while in the southeastern area there was a house with fairly prosperous owners which was divided into men's quarters and women's quarters.

HOUSEBLOCK IV (CENTRAL HOUSEBLOCK)

In contrast to the living quarters considered above, for Houseblock IV mostly remains of basements were preserved. The surface structures, fragmentary walls and pavements, were fairly scarce and indicative of little (Pl. 19).

Post-excavation analyses of the characters and relative positions of the building remains, as well as of the accompanying finds, have given us grounds to suppose that four houses were situated in the Central Houseblock. This supposition is indirectly confirmed primarily by the presence of clearly distinguishable separate blocks of basements and, in particular, by their arrangement. Basements are most commonly located in the northern sectors of the houses. This layout is found in the majority of Hellenistic houses in Olbia, such as Houses A-2, A-3, A-10, E-1, E-2, NGF-1, NGF-2.¹⁴² Another important issue is the displacement and turn of the layout of one house in relation to another. Thus, for example, Basements 280 and 302 are displaced approximately 3 m to the south relative to Basements 253 and 257; Basements 353, 351 are displaced 1.5 m to the east relative to the western wall of Basement 280; and Basement 343 is displaced approximately 2 m to the south of Basement 353. The absence of a functional tie of Basements 353 and 351 with the courtyard north of them is confirmed by the fact that the entrance to these basements was from the south. Here, in Basement 353, the remains of a staircase were revealed. Therefore, in our opinion, there is proof that the houseblock under consideration consisted of four houses with similar dimensions.

HOUSE IV-I (ORIGINAL DESIGNATION NGS-6, WESTERN HALF)

Layout

The structures pertained predominantly to two building periods (Pl. 26.1-2). During the first period, Basements 315 and 253 were built. In the second period, the area of Basement 253 was slightly reduced, Basement 315 was buried and over it only the surface Room 290 with a stone altar(?) near the southern wall remained. The altar was a small platform 0.24 m high, square in plan, with sides of 0.9 m. In the house, the additional small Basement 257 was constructed. Judging

¹⁴² Kryžickij 1971b, 32-48, 62-87.

by the accompanying finds, all of the basements had a domestic purpose. Thus, in Basement 315, a stone mortar was found on the floor; in Basement 257 loom weights were found. In Basement 253, a pithos was dug into the floor and a pit was dug with its orifice faced with stone; amphoras stood along the wall (Pl. 27.1-2, 28.1-3). In Basements 253 and 257, numerous fish bones and scales were found.

In addition, small isolated fragments of structures pertaining to the third period were preserved. In the southeast, the remains of the house are covered with the upper layer of the multi-layered Pavement 285 which had a water drain directed towards Basement 257. It was impossible to reconstruct the ground plan of these later building remains. However, we may state that, as in the Northern Houseblock, their layout was turned at an angle of approximately 30° relative to House IV-1.

To the west, the house faced the Western Longitudinal Street, to the north the Northern Transversal Street. The eastern boundary of the house, separating it from House IV-2, ran between Basements 257 and 280. This was made up by the above-ground Wall 285b, the southern end of which was in alignment with the rear façades of Wall 265 (of Basement 257) and Wall 276 (of Basement 280). Wall 336 constituted the southern limit of the house.

An internal courtyard was located in the southeastern part of the house. Roofed rooms were arranged west and east of the courtyard. The western part of the courtyard was in the interval between the western edge of Pavement 285a and the eastern wall of Basement 315. The northern boundary of the courtyard may have been located in the interval between the southern wall of the *prothyron* (Wall 262) (the preserved part of the pavement of the courtyard reaches this place) and the southern wall of Basement 257. Taking into consideration that, in Greek homes, *prothyrons* usually opened directly on to the courtyard, the northern limit of the courtyard was probably in alignment with the northern wall of *prothyron* 238. Indirectly, this is confirmed by the fact that otherwise the percentage of the area occupied by the courtyard would have been unusually small, constituting only 11% of the area of the structure. This would be too small for Olbian houses of the type without an architectural order. Thus, for example, in House I-1 the courtyard occupied 19% of the total area and in House I-2 it was 14-17%, in House I-3 it was 19-28% and in House I-4 23%, while on average and in the majority of cases it was 15-20%.¹⁴³

The entrance to the house was from the Western Longitudinal Street. Judging by the direction and inclination of the gutter in the late Pavement 285, rain-water from the courtyard was drained into the Northern Transversal Street.

The roofed rooms were arranged in a “Γ” shape in relation to the internal courtyard and were oriented southwards and eastwards. The total area of the house was 116 m² of which the courtyard occupied 11-19% (Table 8). Summing up, House IV-1 was a typical small house without an architectural order.

¹⁴³ Kryžickij 1971b, 12, 20, 22, 25, 106.

House	Structure no.	Date of basement, century BC	Area, m ²	Depth, m ¹⁴⁴	Presence of a surface room above the basement ¹⁴⁵	Date of surface rooms, century BC	Presence of earlier rooms or layers under the basement	Date of the earlier remains, century BC
IV-1	315	3rd-mid 2nd	13.5	1.8	290	2nd-early 1st ¹⁴⁶	Yes	5th
IV-1	253	early 3rd-second half of 2nd	18.5 14.1	2-2.3	No	-	Yes	5th-4th
IV-1	257	early 3rd-mid 2nd	7.4	1.8	No	-	Yes	5th-4th
IV-2	280	early 3rd-late 2nd	13.2	2.1	No	-	307	4th
IV-2	302	3rd	15.3	2	Yes	late 3rd; ¹⁴⁷ 2nd ¹⁴⁸	421	5th-4th
IV-2	301	early 3rd-early 2nd	11(?)	At least 1.8	No	-	Yes	4th
IV-3	343	early 3rd-2nd	11.8	2	No	-	Yes	5th-4th
IV-4	353	early 3rd-2nd	8.7	2.16	No	-	No	-
IV-4	351	early 3rd-2nd	10.9	2	No	-	392, 405	4th(?)
IV-4	498-a	early 3rd-2nd	16(?)	2(?)	No	-	Earth-dwelling 730	5th

Table 7.

The fills of the rooms and accompanying finds

Basement 253

This basement was covered with a large heap of collapsed stones. It had two building periods; during the latest its area was reduced due to the installation of another southern wall. The second building period is dated to the 2nd century BC on the basis of amphoras found *in situ* near the wall of the basement and in its fill.

About 1,000 finds were recovered from the fill between the two southern walls. They were strongly crushed and un-diagnostic (Rc-15, 91-38-91-42). This part of the fill dates no later than the 3rd century BC.

The fill of the upper part of the basement of the later building period consisted of grey clayey and yellow clayey soil in which fragments of scorched mud bricks were distinguishable. The accompanying finds date to the 2nd century BC (90-569-90-570; Contexts 143-144). The character of the fill in the northeastern part of the basement was slightly different. Here, loose, ashy soil continued down to the level of the basement floor. In this layer, two almost complete Rhodian amphoras were revealed, as well as numerous fish bones (perch, sander, sturgeon). The lower part of the fill consisted of a dark ashy soil, also with rich contents of fish bones and scales (H-87, 89-900-89-904; Contexts 145-146). Several artefacts seem to be related to the lower level of the fill (Dc-136, H-88, Ra-10, 90-63, 90-65, 90-67-90-74, 90-76).¹⁴⁹

¹⁴⁴ The height of the walls.

¹⁴⁵ Implied is the time after the functional period of the basement.

¹⁴⁶ The remains of an adobe floor and a stone altar were uncovered.

¹⁴⁷ The remains of a stove were excavated.

¹⁴⁸ Three levels of adobe floors and a stone altar were revealed.

¹⁴⁹ These finds came from a robber's trench and belong to the lower fill of the basement.

Two floor levels were distinguished. The lower body of a pithos with lead repair clamps was dug into the floor of the later building period. Inside the pithos were fish bones and scales. In the centre of the room was a square pit (0.48 x 0.50 m, depth 0.65 m) (possibly for drainage or the storage of water) with a stone-faced orifice and walls on which a green coating was clearly distinguishable. There was a drain in the orifice and one of its slabs was worn. In the fill of the pithos, late Hellenistic artefacts were found (Context 148). In the pit and at the level of its orifice, in addition to the pottery, fragments of metal objects and coins were also found (Contexts 149, 151). The pit was dug into the earlier layer; this explains the finds of Archaic pottery here. On the floor of the northwestern section of the basement, a burnt spot left by a hearth was preserved. The level of this floor was slightly deeper than expected because of the displacement of the ground. Near the wall, two Greco-Italic amphoras were standing *in situ*.¹⁵⁰ Fairly few artefacts were recovered in the course of clearing the floor.

Judging by the remains preserved *in situ* upon the floor of the basement, it seems the rooms served both household and manufacturing purposes – possibly the processing and storing of fish, as suggested by the large quantity of fish remains in the pithos, the presence of the pit for storing the water which would have been necessary in the process, and the amphoras which may also have been used for the storage of fish.

The composition of the pottery and the ratios between the different groups show no differences from other complexes. Of note is the fairly high proportion of greyware – it is half that of plain cookingware. Cookingware and tableware pottery (glossed wares excluded) are present in almost equal proportions – about 40%. Glossed tablewares are fairly abundant, at ca. 20% (Appendix 2).

Basement 257

This basement was contemporary with Basement 253. The upper part of the fill consisted of a loose, dark-grey clayey soil with elements of rubbish and containing pieces of scorched mud brick with charcoal, ash and pottery of the 3rd-2nd century BC. The lower part of the fill consisted of a very moist yellow clayey soil with fired pieces of mud brick, ash, pieces of charcoal and numerous fish bones. The floor was a dense adobe surface devoid of any remains. Below the floor was a cultural layer antecedent to the construction of Basement 257; this layer contained no remains down to the virgin soil.

Among the mass of material, finds of various periods dating from the 4th-2nd century BC were recovered (Contexts 155-157). In the fill, tableware and cookingware predominate; at the same time, glossed wares are quite rare – about 10% (against the usual 14-16%) (Appendix 2).

Taking into consideration the relatively small dimensions of the room and the absence of any structures upon the floor, we may suppose that this was an auxiliary room rather than a dwelling room, most probably intended for storage, perhaps of fish given the numerous fish bones in the layer above the floor.

Room 290

This room was situated above Basement 315. It was much disturbed. In the upper part, it was to a certain extent covered by a heap of collapsed stones, possibly the remainder of the room's northern wall.

The fill of the upper part was a yellow clayey soil with small heaps of rubble and finds of the 3rd-2nd century BC (Contexts 133-134). Here, several fragments of red-glossed pottery related to the disturbed later Roman layers were retrieved. In this layer, a pocket of ashy soil was detected. The floor was not found.

A small stone altar of square plan (90 x 90 cm) and about 25 cm high survived in the centre of the room. The altar consisted of two courses of masonry constructed of fairly large, uneven, coarsely-dressed polygonal slabs. The platform was formed by slabs with the gaps between them filled with smaller slabs and rubble. The altar was constructed during the latest building period. Its underside was set higher than the walls of Room 290, coinciding with the level of Pavement 285 of the latest building period. No finds which would be indicative of the purpose of the altar were revealed (Context 136).

In the fill of the room, tableware dominated at 49%, cookingware constituted 31%, with fragments of handmade pottery almost five times less numerous than those of wheelmade. Among the glossed wares, black-glossed and brown-

¹⁵⁰ Lejpuns'ka 1994; Lejpuns'ka 1999.

glossed vessels were represented in almost equal proportions. This quantity of brown-glossed pottery was chronologically determined, since the room was late Hellenistic (Appendix 2).

The room was a living room; its function could not be determined more precisely.

Basement 315

The remains of this basement were preserved beneath the above-ground Room 290. The western wall of the basement had collapsed and the resulting heap of rubble continued to the floor level. The fill was a grey clayey soil with yellow clayey inclusions and admixtures of stones from the collapsed wall (Contexts 135, 137). The floor was made of adobe; it had cracks and in places imprints of woven mats were discernible. In the eastern part of the room, a stone mortar was lying upon the floor. The finds date to the 3rd-2nd century BC (Contexts 138-139).

The fill contained over 23% glossed tablewares; fragments of brown-glossed pottery are twice more numerous than those of black-glossed; the amounts of plain tableware and cookingware are relatively equal (Appendix 2).

The relatively large dimensions of the room, the presence of imprints of mats and the finds of a support for a hearth and pieces of fired hearth clay (no other signs of a hearth were revealed) suggest a domestic function. Judging by the find of the stone mortar, grain may have been processed here.

A number of different objects were found in the area of the house (C-111, Dc-246, Dc-464, F-48, H-76, H-114, H-203, O-2, 89-626-89-627; 90-261, 90-263-90-264, 90-286-90-287, 90-289; 91-198-91-200, 91-203-91-206, 91-211-91-224, 91-296-91-297, 91-480).

Although House IV-1 was not large, we have grounds to suppose that it belonged to a fairly prosperous owner, possibly occupied, in particular, with the processing of fish. The presence of three basements of different purposes and the large quantities of diverse artefacts in the fills of the rooms indicate the relatively high status of the owner.

HOUSE IV-2 (INITIAL DESIGNATION NGS-6, EASTERN HALF)

Layout

The architectural remains pertain to three major building periods. In the first one, Basement 280 (Pl. 29.1) was constructed, in the second Basements 301 and 302 (Pl. 29.2, 30.1-2) and in the third Basement 302 was buried and over it the above-ground Room 302 (Pl. 31.1) with an altar (Pl. 31.2) was built. Simultaneously, Basement 301 probably also ceased to exist. Of Room 302, the western Wall 282, the northern Wall 283 and the eastern Wall 300 were partly preserved. The eastern Wall 300 protruded north of Wall 283, suggesting Room 301 had a width of at least 2.3 m if one takes into account Wall 319. In this connection, it must be stressed that, during the excavation of Rooms 301 and 302, a thick heap of the collapsed tiled roof was revealed consisting of pan-tiles and *kalypteres* with semicircular and faceted cross-sections. Another roofed room was situated north of Basement 280. In the beginning and middle of the 4th century BC, Basement 287 was below this room.

The previously mentioned Pavement 285, part of which belonged to the house under consideration, is also dated to its latest period. Further east of the pavement, the surface of the ground contemporary with the period of the existence of the basements was disturbed. Therefore we can only suppose that one or two roofed rooms could have been located here.

The basements were mostly used for household purposes. Thus, on the floor of Basement 302 amphoras or their lower bodies dug into the ground, a louterion and a hearth of an open type were found. Here also, the stock of a limestone anchor was revealed, an unexpected find, which may have been connected with the performance of a domestic ritual linked with the maritime occupation of the house's inhabitants.¹⁵¹ In Basement 280, a rectangular table, possibly an altar, was found *in situ* near the western wall.

Thus, in the northeastern corner of the Central Houseblock was a block consisting of four roofed rooms. The northern wall of Room 302 was preserved to such a height that we can be certain that it had no doorway connecting Rooms 302 and 301. Entry to Room 301 was only via Rooms 280 and 287.

¹⁵¹ Rusjaeva & Diatropov 1993, 106-107; Rusjaeva 2003, 105.

On the basis of the detail mentioned above, the external boundaries of the house may be defined as follows. To the west, it abutted House IV-1; to the north it was delimited by the pavement of the Northern Transversal Street and Wall 288 of an earlier Basement 287; to the east by the pavement of the Eastern Longitudinal Street and Wall 300 of Room 302; to the south, the limit was the above-ground Wall 350, arranged parallel to the northern walls of Basements 353 and 351, which belonged to the neighbouring House IV-4.

The limits of the house, the block of roofed rooms and the remains of Pavement 285 allow us to establish the location of three sides (southern, western and northern) of the internal courtyard. The fourth, the eastern boundary of the courtyard, was probably located near the eastern edge of Pavement 285. This we suggest because, firstly, if there was no roofed room to the east of the courtyard then it would have been too large, occupying 40% of the area of the house plot. Secondly, a layout in which roofed rooms were arranged along only one side of the courtyard would be untypical of a dwelling house. Therefore, between the courtyard and the eastern boundary of the house there would have been enough space to build another small roofed room and a *prothyron* in the southeastern part of the house; the width of this room and the *prothyron*, oriented west–east, would have amounted to 3 m. The entrance to the house may have been from the Eastern Longitudinal Street, as indicated by the fact that to the south and west of our house there are neighbouring houses while to the north its own roofed rooms are arranged in two rows and of these rooms none may be identified as a *prothyron*.

House	Area covered by construction, m ²	Area of courtyard, m ²	Ratio of courtyard area to the total building area, %	Number of rooms	Number of basements
IV-1	10 x 11.6 = 116	4 x 3.2 = 13; according to reconstruction – 4 x 5.5 = 22	11 19	4	3
IV-2	11.5 x 12.5 = 144	7.2 x 5.3 = 38	26	4 + 2(?)	3
IV-3	12.3 x 11 = 135	7(?) x 2.7 = 19	14	4 + 1(?)	1
IV-4	10 x 10.7 = 107	4.5-5.5 x 5 = 22-27	20-25	3 + 1(?)	3

Table 8.

The fill of the rooms and accompanying finds

Basement 280

Basement 280 was covered with two heaps of collapsed stones near the northern and western walls; in one of the heaps, an architectural detail of terracotta was found. At this level in the southwestern part of the room there was a layer of grey clayey soil with yellow clayey inclusions, in the rest of the room there was a grey clayey soil with ash. Below was an ashy layer, especially in the southeastern corner. The floor was sunk in the northern part. On the floor near the western wall was an altar or a small table in the form of a low stone structure, rectangular in plan (Structure 306). The finds from above the floor were undiagnostic; however, the presence of brown-glossed pottery enables us to date them to the 3rd-2nd century BC (Context 164).

The finds from the fill of the basement date mostly to the mid 4th-2nd century BC (Contexts 160-165). Tableware fragments dominate; greyware fragments are quite numerous yielding twice the quantity of plain tableware fragments. In the group of glossed wares, brown-glossed pottery predominates (Appendix 2).

The basement was probably used for dwelling and heated by portable braziers. The platform near the western wall may be interpreted as a table.

Beneath the floor, under a thin cultural layer (Context 166), the remains of the older Basement 307 were preserved.

Room 302

Above this room, a large collapse of tiles reaching Room 301 was revealed under a layer of humus and grey clayey soil.

The collapse covered the surface room which contained a stone altar, rectangular in plan and encircled by low stone walls. The altar, related to the latest building period, was constructed when the original function of the room had ceased. It covered the remains of a destroyed stove, constructed in the room slightly earlier than the altar and after the period of the functioning of the basement situated below. The lower part of the stove was on the floor covered with a thick layer of ash. Two floor levels were traced, differing in height by ca. 10 cm; both levels pertained to the period of the functioning of the stove. For the dating of the room and the construction of the stove we may refer to a fragment of a miniature brown-clay east Black Sea amphora of the 2nd-1st century BC. It was found above the floor over the collapsed mud bricks. The latest building phase of the room and the house is dated to the same period.

In the above-ground part of the room, about 5,000 fragments of pottery, dating from the 4th-2nd century BC, were found (Contexts 177-180, 182).

Tableware fragments are dominant in the collection of finds and greyware fragments are extremely rare, almost 12 times less numerous than those of other pottery types. Among the glossed wares, black-glossed and brown-glossed pottery is represented in approximately equal proportions (Appendix 2).

Basement 302

The lower level of the floor of the surface room covered the layer of collapsed pieces of mud brick and ash below which was the fill of the basement room proper. The fill consisted of irregular yellow clayey and grey clayey layers with isolated lenses of a pure yellow clay and an ashy soil. Three horizons of the floor of the basement were distinguished, with a height difference of 10-20 cm between them.

The upper horizon of the floor was a dense adobe layer upon which no traces of hearths or other structures were traced. The finds date to the period not later than the second half of the 2nd century BC (Context 188).

On the second horizon of the floor, the remains of a small hearth were uncovered in the northwestern corner of the room; the lower part of the hearth was preserved *in situ*. A well-dressed limestone slab of rectangular plan was lying nearby.

The third horizon of the floor rested partly on virgin soil; this was the floor of the period of construction of the basement room. The lower parts of three amphoras dug into it were preserved *in situ*; two of them had cap-like toes, enabling us to date this level of the floor to a period not later the first half of the 3rd century BC (Context 190).

Pit 419, with a dark, ashy fill, was also excavated here. The accompanying finds date from the third quarter of the 6th to the early 3rd century BC (Context 191).

From the fill of the basement, numerous finds dating from the period not later than the mid-2 century BC were retrieved¹⁵² (Contexts 183-187, 189, 192).

In the course of investigating the above-ground room and the basement, two test trenches were excavated. They yielded finds from the fills of the surface room and the basement, between which it proved difficult to discriminate (Contexts 179, 181).

Judging by the amphoras dug into the floor of the basement, the basement had a household function.

Basement 301

Above this basement was a layer of collapsed tiles covering also the neighbouring Room 302. The upper part of the fill was a sandy soil. Below it was a grey clayey layer in which several heaps of collapsed rubble, dressed stones and tiles were excavated. The floor was not identified. The finds from the fill date to the 5th to the late 2nd century BC (Contexts 173-176).

In the collection of finds from the fill, tableware fragments dominate significantly, whilst cookingware fragments are very scanty, at about 21%. Louteria, pithoi and lamps are slightly more numerous than usual, at ca. 2% (Appendix 2).

¹⁵² Due to disturbances of the layers, some finds from the fill of the basement were found below the levels of the floors, which have not been traced throughout the entire area of the basement.

Above Pavement 285 and nearby, about 1,500 fragments were found (Contexts 194-196). 80% of these are fragmentary amphoras; cookingware is represented by a scanty number of fragments (27 pieces including handmade); tableware is more abundant (Appendix 2).

House IV-2 occupied the largest area in the block (144 m²), its courtyard constituting about 26% of its total area. The house had at least three, possibly more, basements and at least six rooms covered with tiled roofs. The northern group of rooms was arranged in two rows. The basements served both household and dwelling purposes. This house evidently belonged to an owner who was richer than his western neighbour residing in House IV-1.

HOUSE IV-3 (INITIAL DESIGNATION NGS-8, WESTERN PART)

Layout

The preserved remains of this house included only two small fragments of pavements (Pavements 346 in the southwestern part of the house and 373 in its southeastern corner), Walls 356 (the southern wall of the house and its courtyard), 321 and 374 (the southern fragment of the eastern wall of the house) as well as Basement 343 (Walls 322, 342, 344 and 341) situated 1.6 m below Pavement 373 (Pl. 32.1). Judging by the height of the extant walls, the total height of the basement may have amounted to 2 m, i.e. the level of its ceiling rose 0.4 m above the level of Pavement 373. Owing to this fact, the basement may have been naturally illuminated, similarly to the basement of Olbian House A-2.¹⁵³ In three corners of the basement, there were semicircular partitions: two were constructed of stone and one of mud bricks. Above the latter partition, a small layer of ash was found. On the floor, lime plaster was revealed in some places and fish scales, bones and a fragment of a grinder were also found. Beneath the upper floor, yet other more ancient floors with remains of hearths were revealed. These earlier floors continued beyond the limits of Basement 343 and were antecedent to it. The basement had thus been built for domestic use and its functional continuity from the earlier structures can be noted. To the north of Basement 343, an adobe floor of an above-ground room was found.

The western limit of the house was defined by the eastern edge of the pavement of the Western Longitudinal Street, which lay approximately in alignment with the western boundary of House IV-1; the northern limit was in alignment with Wall 336. Of the eastern wall only a small fragment of its southern end (Wall 374) was preserved; further to the north this wall ran between Basements 343 and 353. The southern limit of the house was defined by the pavement of the Central Transversal Street, Wall 356 and the eastern edge of Pavement 373.

The fragment of Pavement 346 gives us grounds to suppose that the courtyard was in the southwestern part of the house. This is, furthermore, indirectly indicated by the fact that in the latest building period of the house, on this very spot but approximately 0.6-0.7 m higher there was a relatively large pavement (Pavement 339). Besides Pavement 339, no other architectural remains survived from the same period, but, for us, of significance here is the continuity of the functional use of this area. On the basis of the details outlined above, Wall 356 must have served as the southern limit of the courtyard. To the west, the courtyard was bounded by the western wall of the house. To the north, the courtyard reached Room 383. During the excavations, the southeastern corner of this room, with collapsed Walls 381 and 382, was uncovered. To the east, the courtyard did not extend further than the alignment with the western wall of Basement 343, since the latter crossed the northern boundary of the courtyard.

The function of Pavement 373 is not quite clear. Considering the presence of Wall 345 between this pavement and the courtyard, we have no grounds to assume that the pavement could have served as a continuation of the courtyard. Within the limits of the pavement there may have been a small (about 10 m²) courtyard exclusively used for household purposes. This supposition seems the more likely taking into consideration the household use of Basement 343. The location of the courtyard determined the location of the entrance to the house from the Western Longitudinal or Central Transversal Streets. A *prothyron* was not located.

Thus, the roofed rooms of the house were arranged in two rows to the north of the courtyard and in a single row to the east. In terms of its type, the house belongs to the class of houses of a small area devoid of an architectural order.

¹⁵³ Kryžickij 1971b, 96-97.

Fills of the rooms and accompanying finds

Basement 343

Above this basement there was a surface room, as indicated by the presence of the above-ground part of the northern wall of the basement. The fill of this room was not preserved, but we can hypothetically attribute to it the finds from the layers above the basement. Here, a small heap of collapsed stones was traced in a grey clayey soil; below it was a yellow clayey layer and an adobe floor. The layer contained quite numerous tiles forming a small collapse. The accompanying artefacts date from the late 5th to the early 1st century BC (Contexts 199-201).

In its upper part the basement was covered with a yellow clayey soil with remains of mud brick structures; below this was a soft grey clayey layer which filled the entire depth of the basement down to its floor. Below the upper level of the floor, a further three floor horizons were revealed, but those were related with more ancient, non-extant rooms. The lowest floor rested upon the virgin soil. The floor of the basement was covered with soil containing rubbish with bones of animals and fish and pieces of charcoal.

In three corners of the basement there was a partition, semicircular in plan; two of them were fenced with stone walls and the third with a mud brick wall. Inside the northwestern one there were roughly-dressed stone blocks. In addition, a pendant made of white metal was found here (92-667). The partition in the northeastern corner was coated with plaster as a smooth continuation of the floor plastering. Among the stonework of the partition was a fragment of a stone mortar, inside which four stones were lying. Inside the third compartment, separated by a mud brick construction, five coarsely worked slabs were lying. The fill of the compartment was peculiar in its significant contents of ash, and over it another layer of ash could be traced. An oval stone grinder was lying in the southeastern corner of the basement; near the western wall, a horizontal slab was installed, perhaps intended as a working table.

The entire structure of the basement indicates its dual domestic and manufacturing purposes.

The fill of the basement yielded fairly diverse finds of the 4th to the early 1st century BC (Contexts 202-206). Notable is the considerable number of animal bones, 453 pieces.

Room 383

This room was destroyed and covered with Pavements 346 and 339. Only a small part of the floor was revealed. Little of the fill was preserved; it included finds mostly of the 5th-4th century BC (Contexts 197-198).

Pavement 339

This pavement was found near Room 383. The artefacts found in the course of clearing the pavement date to the 3rd-2nd century BC (Contexts 216-217).

House IV-3 probably belonged to a moderately prosperous Olbian; the total area of the house (135 m²) and that of the courtyard were small, the layout was simple, the house had only one basement which was possibly used for household purposes, in particular for processing cereals (as evidenced by the grinder and the partitions). The roofed surface rooms were also few in number – four at the most.

HOUSE IV-4 (ORIGINAL DESIGNATION NGS-8, EASTERN PART)

Layout

This house had three basements (Basements 353, 351 and 498a), which were arranged along the northern and eastern sides of an internal courtyard. A similar plan is observed in House IV-1, but there the courtyard was located in the southwestern part of the plot. In the dwelling under consideration, Basement 353 was the best preserved (Pl. 32.2, 33.1). Basement 351 (Pl. 33.2) was far more disturbed, its southern and eastern walls having been torn down. Basement 351 may have consisted of two rooms since its northern wall had a small protrusion extending southwards 2 m from the western wall; the protrusion ended with a doorway (Pl. 34.1). Basements 353 and 351 were connected with a doorway. However, later on this doorway was blocked and each of the rooms continued to function independently. From Basement 353, a stone staircase, of which

five steps were preserved, led to the courtyard. Of Basement 498a, only part of the eastern Wall 503 and the southern Wall 498 survived. Its dimension can be only roughly estimated on the basis of the overall layout of the house. In Basements 353 and 498a,¹⁵⁴ no traces of reconstruction were preserved. Under Basement 351, remains of the more ancient Basements 392 and 405, dated hypothetically to as early as the 4th century BC, were traced. Judging by the accompanying finds, Basements 351, 353 and 498a can be dated to the Hellenistic period and existed contemporaneously. The fairly significant depths of Basements 351 and 353, which were actually semi-basements (see below) and the presence of doorways at their floor levels allow us to assume that they were used not only for household purposes but also as ordinary dwelling rooms.

The external limits of the house can be established quite reliably. The western boundary ran between Basement 353 of the house under consideration and Basement 343 of the neighbouring house. Here, as already mentioned, the southern end of Wall 374 was preserved. The northern limit was defined by the southern edge of the pavement of Courtyard 285 of House IV-2 and Wall 350. The eastern boundary was reconstructed by the extant Walls 402 and 503. The southern limit was established by the fragment of Wall 498 and the southern edge of Pavement 406.

The location of the courtyard was confirmed not only by the arrangement of the basements but also by the fragmentary Pavement 406. The level of the surface of this pavement coincides with that of the upper step of the staircase which led to Basement 353. The western and southern boundaries of the courtyard were formed by the external walls of the house. The northern boundary ran along the southern façade of Wall 355 of Basement 353. The western wall of the roofed room above Basement 498a served as the eastern boundary of the courtyard. However, as noted above, the actual location of this wall may be defined only hypothetically. It cannot have been located further to the east than the western end of Wall 498 of Basement 498a and it hardly protruded any further to the west than the alignment with Wall 387 of the early Basement 392. The entrance to the courtyard was from the Southern Transversal Street.

Two essential notes must be made. Firstly, the courtyard Pavement 406 was approximately 1 m below the pavements of the courtyards of the neighbouring Houses IV-3 (Pavement 373) and IV-2 (the eastern section of Pavement 285). This attests that the Eastern Longitudinal Street had a considerable inclination southwards while the Central Transversal Street inclined towards the east. Otherwise, a problem would have arisen with the drainage of rain-water from the courtyard of House IV-4. Secondly, Pavement 406 and the upper step of Staircase 385 are only 1 m or slightly more above the level of the floors of Basements 353 and 351. Here, we have reasons to suppose that in this house we are dealing with semi-basements rather than with basements proper. It is difficult to tell whether an above-ground storey existed over them. Such a storey may have been limited to part of the area of the rooms. For instance, it was possibly constructed only above the northern semi-basements (353 and 351).

In connection with the reconstruction of the layout of the houses in the Central Houseblock, we must note the uncertain character of the reconstruction of the joins between the southwestern corner of House IV-2, the northwestern corner of House IV-4 and the northeastern corner of House IV-3 (Pl. 34.2, 35.1-2). A small protrusion formed by the junction in the southwestern corner of the courtyard of House IV-2 is, in our opinion, the result of the deformation of the building remains and the cultural deposits due to landslide processes. These processes were mentioned at the beginning of the chapter. We are not able to calculate reliably the absolute value of these deformations since they developed irregularly in two directions – both eastwards and southwards. In addition, the number of reference points is insufficient for building a corresponding model. Nevertheless, it is necessary to take account of these deformations.

Fills of the rooms and accompanying finds

Room 353

The fill of the room in its upper part consisted of a yellow clayey soil with grey clayey inclusions and the remains of decayed vegetation; in the lower part it consisted of a yellow clayey soil with pieces of charcoal. The lower section of the fill, lying on the floor, was covered with a multi-layered collapse of stones and pieces of mud brick from the destruction of the southern wall.

Two floor levels, with a difference in height of about 15 cm, were revealed (Contexts 226). On the floor were “post-holes”, 3-5 cm in diameter, filled with sand and two conical depressions possibly for the installation of amphoras. The

¹⁵⁴ Under the floor of the latter, remains of an earth-dwelling of the early 5th century BC were revealed.

level of the floor was only partly preserved; in the eastern part of the room, the floor was laid over the virgin soil. Between the two floors, finds of the late 5th to the early 4th century BC were found (93-946-93-949).

The finds from the fill of the basement date from the end of the 6th to the beginning of the 1st century BC (Contexts 222-225, 227). The fill contained many fragments of tiles, almost 22% of the finds. Amongst the fragments of tableware, the number of greyware examples was fairly high, half that of the redware and light-clay pottery. Notable is the relatively small proportion of cookingware, 24%, and the practically equal quantity of glossed tablewares (Appendix 2).

The basement (or semi-basement) was probably used for household and storage purposes, but could also have served as a dwelling as suggested by the large quantity of tableware and the relatively comfortable entrance with a stone staircase. The finds from beneath Staircase 385 date from the 2nd to the early 1st century BC (Context 228).

Room 351

The fill of the upper part of this room was a yellow clayey soil with a large number of tiles (over 1,300 fragments or 24.6%; Appendix 2). The tiles were hardly found *in situ* after having collapsed, but, judging by their quantity, they were remains of the roof. Below them was a layer of pure yellow clayey soil and in the lower part of the room there was a layer of yellow clay mixed with a grey clayey soil with traces of decayed vegetation. Only a small part of the floor was preserved.

In the fill of the room were found objects of the 4th to the late 2nd century BC (Contexts 218-220).

The mass of material from the fill contained a fairly high percentage of greyware, half that of the other types of pottery; relatively numerous were the fragments of handmade pottery, which formed half the quantity of those of wheelmade cookingware. A great deal of glossed ware was found, at about 35%; cookingware was relatively scanty, at about 30% (Appendix 2). The find composition suggests that this was a dwelling room.

Room 498a¹⁵⁵

The fill of this room was only partly preserved, but relatively high quantities of black-glossed and relief pottery were found, which date to the 5th-2nd century BC (Context 219).

House IV-4 is evidently close in terms of its status to House IV-1. They have similar areas, layouts, and arrangements and dimensions of courtyards. House IV-4 was perhaps slightly more modest; it had fewer basements, its household function was not so markedly expressed and the rooms served diverse purposes.

HOUSEBLOCK V (EASTERN HOUSEBLOCK)

This houseblock situated east of the Eastern Longitudinal Street close to the *liman* was almost completely destroyed. Here, only two extremely poorly-preserved rooms, 465 and 469, were excavated (original designation House NGS-11).

Fill of the rooms and accompanying finds

Room 465

The fill of the room was partially preserved down to the floor level and consisted of a grey clayey soil with artefacts of the 4th-2nd century BC (Context 229). The finds from the layer below the floor level date to the 5th-3rd century BC (Context 230).

Room 469

The fill was partially preserved and consisted of a grey clayey soil containing finds of the 5th-3rd century BC (Context 231).

¹⁵⁵ Identified only by its eastern and southern walls.

HOUSEBLOCK VI (SOUTHERN HOUSEBLOCK)

The northern limit of this houseblock was provided by the Central Transversal Street, along which the northern walls of Basements 495, 489, 434, 410 and 395 were arranged (Pl. 36). The eastern limit was defined by the Eastern Longitudinal Street, Wall 492 of Basement 495 and remains of Walls 581, 531 and 506. The southern boundary was provided by the Southern Transversal Street and Walls 647 and 639 of Basement 641, as well as by Drain 610. The western border of the block has not been identified because it was covered by the western baulk of the excavation. Hypothetically, it may be located at least half a dozen metres to the west of Wall 380 continuing to the western edge of the excavation. This is suggested by the fact that the space between House VI-2 and the western edge of the excavation pit amounts to only 5 m, which is evidently insufficient for accommodation of a further house-plot here. Since the dimensions of the shorter sides of the majority of the houses throughout the entire Sector NGS exceed 10 m (only in two cases were they shorter, namely 8.5 and 9 m), we have reason to believe that the block continued about half a dozen metres westwards from the western edge of the excavation.

The preserved state of the architectural remains was poor. Especially along the eastern side of the block and its southern third, the excavation was mostly taken down to the virgin soil. Here, fairly numerous but extremely undiagnostic fragments of surface walls, pavements and floors were revealed, which it was impossible to unite into a single plan. Moreover, the walls of two preserved basements, 641 and 661 (Room 661 was a semi-basement), were destroyed almost to their foundations.

In contrast, the walls of the basements located near the northern boundary of the block were mostly preserved relatively well, occasionally to their complete height. Here, two basement blocks belonging to different houses can be clearly distinguished. These are Basements 395 and 410 in House VI-2 and Basements 434, 489 and 495 in House VI-3. That they belong to different houses is, in addition to the similarity of their layouts, indicated also by a slight turn in the orientation of the grid plans, as is evident in the northern walls of the basements. Also, a small passage between the eastern wall of Basement 410 and the western walls of Basements 434 and 474 indicates the existence of two separate houses. We have grounds to suppose that Basement 495 also belonged to House VI-3, since it was connected via a doorway in its western wall (Wall 487) with the neighbouring Basement 489. Between these blocks of basements (with the internal courtyards adjacent to them from the south) and the southern boundary of the quarter, a narrow gap remains, about 23 m long and only about 6 m wide. This interval is certainly insufficient for the construction of one or two independent houses.¹⁵⁶ Until now, only a single house of the Hellenistic period is known in Olbia which in the last building period shrank to 57 m² although originally its area amounted to 158 m.¹⁵⁷ Moreover, within the gap mentioned above, besides Basement 641 there are no further basements. Thus, we have reason to suppose that the two houses, VI-2 and VI-3, both reached the Southern Transversal Street. From the west, the courtyard pavement of yet another house (VI-1) was adjacent to Basement 395; the rest of this pavement continued to the western edge of the excavation.

HOUSE VI-1 (ORIGINAL DESIGNATION NGS-9, WESTERN PART)

Layout

From the north, this house was bounded by the Central Transversal Street, of which a carefully constructed gutter (358) was preserved. Wall 348, laid parallel to the gutter, was the northern wall of House VI-1. The eastern boundary of the house was Walls 379 and 428. In the investigated area, the remains of stone Pavement 384 and Basement 479, south of the former, were partly excavated. The pavement (measuring 4 x 3.5 m) possibly belonged to a courtyard. It is unclear whether the house continued southwards from the southern wall of Basement 479 (Wall 478). No architectural remains contemporary with the existence of the house were extant. The western part of the house continued to the western edge of the excavation.

¹⁵⁶ Only a row of trading shops may have had such a width, as was the case in the western block. However, no archaeological evidence supports this supposition for this location.

¹⁵⁷ Kryžickij 1971b, 20-22, fig. 7.

House	Area covered by construction, m ²	Area of courtyard, m ²	Ratio of courtyard area to the total building area, %	Number of rooms	Number of basements
VI-1	5(?) x 9.5(?) = 48	?	?	1 + ?	1
VI-2	9.3 x 17.8 = 165	7.2 x 5 = 36; 8.7 x 6.8 = 59	22 37	4 + 1(?)	2
VI-3	14.1 x 18.2 = 257	8.3 x 5.2 = 43	17	7 + 3?	6

Table 9.

Fills of the rooms and accompanying finds

Room 479

Of Room 479, only two walls were preserved. The room was not completely investigated and its floor was not revealed.

The fill of the room was only partly preserved. The chronological frame of the finds is the 5th-2nd century BC (Context 243). Among them, amphoras predominate; the other categories of pottery constitute an inconsiderable percentage. In functional terms, fragments of plain and glossed pottery amount to practically equal portions, while those of cookingware exceed them by almost the double. Fragments of wheelmade cookingware are almost five times more numerous than those of handmade pottery (Appendix 2).

Pavement 384

Upon Pavement 384, a few artefacts dating to the 4th-3rd century BC were uncovered. The majority is dated from the 3rd to the early 2nd century BC (G-57, 97-179-97-181, 97-183; Context 244).

The evidence is insufficient to determine the character of the house.

HOUSE VI-2 (ORIGINAL DESIGNATION NGS-9, EASTERN PART)

Layout

The main layout module consisted of Basements 410 and 395 (Pl. 38.1-2). South of them was a courtyard, of which two fragmentary pavements were found. Pavement 496 (south of Basement 410) consisted of fairly large slabs. The two extreme western slabs evidently belonged to the same pavement and are laid in front of the eastern part of Basement 395. The second, Pavement 480, extended as a narrow band (about 1.5 m wide) along the western external wall of the house, south of the western part of Basement 395. The pavement was constructed of gravel and broken pottery. The outline of the pavement, its dimensions and the material it was made from suggest that there may have been a roof above it (a portico). The basements were separated by a common wall (Wall 377), which, in contrast to the surface rooms,¹⁵⁸ indicates that they belonged to a single house. Close analogies of this situation are found in other Olbian houses (for instance Houses A-2 and E-1),¹⁵⁹ in official constructions (the eastern¹⁶⁰ and western¹⁶¹ rows of trading shops) and in an administrative building in the Agora.¹⁶² The maximum height of the preserved walls of the basements was about 2.05-2.10 m.

¹⁵⁸ Where basements were built in adjacent rooms of closely-adjointing separate houses, each basement usually had its own wall, separate from that of the basement of the neighbouring house. Each wall was single-faced (i.e. it had only one façade oriented to the inside of the room) and double-layered. The layer adjoining the edges of the foundation pit was constructed of rubble.

¹⁵⁹ Kryžickij 1971b, figs. 26, 32, 41, 43.

¹⁶⁰ Levi 1956, 53-59; Levi 1985, 96-97.

¹⁶¹ Slavin 1964, fig. 15.

¹⁶² Slavin 1964, fig. 15.

Judging by the dimensions and proportions of the ground plans, the peculiarities of the construction and the accompanying finds, the functions of these basements differed. The area of Basement 410, square in plan, amounted to 25 m² (Pl. 39.1-2). It was connected with the courtyard by means of a stone staircase (Pl. 40.1). Among the finds from the fill were stone fishing-net weights and a quern. The information above, as well as the relatively large dimensions of the room and its underground depth suggest that it may have been used not only for household purposes but also as a dwelling.

The situation is very different for Basement 395. This had elongated proportions, with an area of about 15 m² and it was evidently connected with the surface storey via a wooden staircase (Pl. 40.2). In the southern wall, two windows facing the courtyard with widths of 1.15 m (eastern) and 1 m (western) were located at a height of 1.1 m above the floor of the first building period (with a preserved height of about 0.9 m) (Pl. 41.1). The eastern edge of the eastern window and the western one of the western window were continuations of the longitudinal walls of the basement itself. The underside of the foundation of the wall with the windows was 0.4-0.6 m above the level of the floor of the first period. The contemporary floor was not preserved, but its existence in antiquity can hardly be doubted. All the above, taking into consideration the maximum height of the wall which separated Basements 395 and 410 (the absolute height of the upper level of the wall was 12.08 m), indicates that the minimum height of Basement 395 when the windows were functioning may have amounted to 1.6-1.8 m. In the courtyard, a few blind areas or sinks faced with stone were constructed near the windows at the outer (southern) side of the basement (Pl. 41.2). This fact precludes us from interpreting the openings as doorways.

The elongated proportions of Basement 395, its rather low height and the presence of windows distinguish it from other known Olbian basements. The accompanying finds give us no grounds to presume a cultic use of the room. Taking into consideration the locations of the windows, as well as the sinks near them, the windows seem not to have served exclusively for illumination of the basement. They may equally have been used as receiving hatches for the loading and unloading of goods from and to the basement. A similar facility was found in Olbia in the basement of a house in Sector T-3.¹⁶³ There, in the wall of the basement facing the internal courtyard, was found a window opening at the level of the pavement of the courtyard. The window-sill slanted to the inside of the basement. The finds of several grinders and recesses in the wall for the fixing of a ramp which continued the inclined sill into the basement allow us to presume that such a facility was intended for the hauling down of grain into the basement. In any case, taking into account the peculiarities mentioned, it is unlikely that Basement 395 was used as an ordinary dwelling room. The basement was covered with a thick heap of collapsed tiles.

The courtyard was limited to the north by the southern wall (409) of Basement 410. To the east, the courtyard extended as far as the eastern wall of the house (see below on the location of this wall). To the west, the courtyard ended with the western external Wall 428, or rather with the eastern edge of the courtyard's Pavement 480 (above, the possibility of the presence of a portico at this point was mentioned). On the southern side of the courtyard, its boundary was located within the interval between the edge of Pavement 496 and the fragment of a floor south of Wall 544. It seems most probable that the courtyard ended at the southern edges of the two pavements, since to the south they are both cut short along approximately the same line. In which case, the courtyard occupied 22% of the total area. Otherwise, this ratio amounts to 37%.

The western boundary of the house was along Walls 379 and 428. The northern one was defined by the Central Transversal Street. The eastern limit was between Basements 410 and 434 and probably along Wall 435, as suggested by the following. Between Wall 435 and the westernmost Basement 434 of the neighbouring House VI-3 there was a space without buildings with a width of about 1.3 m (taking into account the presence of two independent walls) which may have been used as a *prothyron*.¹⁶⁴ In this connection, the question arises as to which of these adjacent houses the *prothyron* may have belonged. In our opinion, it was to House VI-3, as is indirectly indicated by the position of the stone staircase which led to Basement 410. Indeed, it is unlikely that this staircase can have been located in the open area of the courtyard. In all the cases known to us from Olbia, staircases of this kind were arranged so that one of the

¹⁶³ During the excavations of V.I. Nazarčuk.

¹⁶⁴ The presence of a *prothyron* here is indicated by the relatively broad width of the unoccupied space. If we conjecture that instead of a *prothyron*, a wall was arranged along the longitudinal axis of this space, separating the two houses, then between that wall and the basements (i.e. between the surface and the basement rooms) there would have been unoccupied gaps about 0.9 m wide on each side. Such a situation is not typical for such large and carefully constructed basements as Basement 410.

lateral sides of their flight would have bordered an above-ground wall. Such is the construction of staircases in Houses A-2, E-1, NGF-1,¹⁶⁵ as well as in House IV-4 described above. This arrangement is quite logical because by joining a staircase with a surface wall the roofing above the staircase becomes considerably simpler and banisters are no longer needed on one side. Accordingly, we may presume that the surface stonework over Wall 435 of the basement continued further to the south of Basement 410 and thus it was the eastern wall of House VI-2. The *prothyron* then belonged to the neighbouring House VI-3. This supposition is corroborated also by the fact that the southern Wall 472 of Basement 474 in House VI-3 continued further to the west of the basement. In other words, the area of the *prothyron* belonged to the latter house.

The southern boundary of the house probably ran along the Southern Transversal Street. In addition to those already outlined, there are the following reasons in favour of this proposal. Firstly, to the south of the internal courtyard of House VI-2 there are no remains of a courtyard pavement or a basement which otherwise could be interpreted as belonging to another house. Secondly, if even one additional house were placed in the unoccupied space, then the ground plan of House VI-2 would have acquired traits fairly untypical of the dwellings of Olbia, such as a relatively large size of the courtyard (over 40% of the total area of the structure) and a discrepancy between the expansive dimensions of the roofed rooms and the small total area of the house. Generally, the smaller the house the lower the average dimensions of its roofed rooms (compare, e.g., the houses in Olbia's Sector I with those in Sectors AGD and NGF).¹⁶⁶ This dependence, in our opinion, is explained by the necessity of preserving a functional differentiation between the rooms within the corresponding areas of the buildings. In addition, we must consider the uncommon function of Basement 395. The third reason is the presence of Drain 557, which ran from north to south and flowed into Drain 610 in the Southern Transversal Street. The location of the drain in the plan of the house suggests that it was intended for the drainage of waters from the courtyard. The revelation of a small fragment of a stone pavement (Pavement 558) nearby, to the north of the gutter and Wall 578 parallel to the gutter, can be tied with the remains of a *prothyron* here.

Judging by the presence of the remains of Floor 544, in the southern third of the house there were one or two roofed rooms. However, the available evidence is not sufficient for their reconstruction.

House	Structure no.	Date of basement, century BC	Area, m ²	Depth, m ¹⁶⁷	Presence of a surface room above the basement ¹⁶⁸	Presence of earlier rooms or layers under the basement	Date of earlier remains, century BC
VI-1	479	3rd-2nd	-	-	No	?	-
VI-2	395-a	late 4th-2nd	2.8 x 5.3 = 15	~2	No	Yes	5th-4th
VI-2	410	3rd-2nd	5 x 5 = 25	2.05	No	Yes	5th-4th
VI-3	434	3rd-2nd	3 x 3.4 = 10	1.54	No	Yes	2nd half of 4th
VI-3	489	late 4th-2nd	3 x 4.8 = 14	1.8	No	Yes	5th
VI-3	495	2nd	3.6 x 3.7 = 13	0.85	No	Yes	
VI-3	474	3rd	2.1 x 2 = 4	1.74	No	Yes	1st half of 4th
VI-3	661	3rd-2nd	2.8 x 3.6 = 10	0.8	No	No	-
VI-3	641	4th-3rd	2.3 x 2.4 = 5.5	0.9-1.35	No	No	-

Table 10.

¹⁶⁵ Kryžickij 1971b, figs. 26-28, 32-33, 43.

¹⁶⁶ Kryžickij 1971b, figs. 6, 16, 43.

¹⁶⁷ The maximum preserved height of the walls.

¹⁶⁸ Implied is the time after the functional period of the basement.

Fills of the rooms and accompanying finds

Room 395

This room was filled with grey clayey and yellow clayey soil; the floor was not preserved. From the fill, abundant amounts of pottery were retrieved, dating mostly from the 4th to the turn of the 3rd to the 2nd century BC (Contexts 259-260). Noteworthy is a black-glossed vessel with a rare graffito mentioning Apollon Musagetes.¹⁶⁹ Of interest is the considerable number of fishing-net weights, 12 pottery and seven made of stone, as well as 30 iron nails.

Tableware fragments represent a fairly high proportion of the collection, about 35%. Cookingware fragments, including those of handmade vessels, amount to over half the total pottery (Appendix 2).

Basement 395a

This basement saw at least two building periods, having been constructed upon earlier remains. The first building period is dated to the late 4th to the early 3rd century BC. The second period is dated to the second half of the 3rd to the middle of the 2nd century BC. This was the time when the area of the basement was reduced and additionally strengthened; the walls were thickened and “pillars” in the form of low, thin walls were installed. The result was “a structure with niches” which *inter alia* had the practical function of connecting with the courtyard.

The fill of the first (the earlier) period was practically indistinguishable. The fill of the second phase consisted on the top of a dark-yellow clayey layer, relatively pure and containing considerable quantities of pottery of the 3rd-2nd century BC. In the northern and southern parts of the room, this layer included collapses of stone. Below, the soil was darker, yellow clayey also with large amounts of pottery. In the southern section was a large heap of collapsed tiles at a depth of 1.20 m from the top of the eastern “pillar” of the niche. Below the collapse, was ashy soil and a grey clayey fill in which the floor was found. With remains found still lower and displacement of the soil, the level of the floor varied by almost 30 cm, being lowest to the north. The floor was covered with ash and part of it was dug out in its northern area. It rested upon a compact rubbish layer containing pottery of the 6th-4th century BC. The latter layer partly covered the still more ancient remains of Room 430. No finds were left *in situ* on the floor.

The basement seemingly served as a store room. This is suggested by the “niches” through which goods could have been transferred to the courtyard.

Relatively, many artefacts were recovered, about 16,000 pieces dating mostly from the 4th-2nd century BC, but with some earlier finds too (Contexts 261-265). The tiles were fairly abundant, amounting to about 16% of the finds. As to the other categories of pottery, their percentages show no peculiarities, although tableware and cookingware were represented by significant numbers of sherds, over 1,000 fragments each (Appendix 2). In the layer under the floor, finds of the late 6th-3rd century BC were found (Context 266).

Room 410

A surface room was preserved above Basement 410. It was covered with a small heap of collapsed rubble and eroded, partly burnt mud brick. Below it were horizontal layers of a yellow clayey soil with grey clayey inclusions and grey ashy soils, all containing finds of similar character and chronology. It was difficult to trace the floor.

In the fill of the room, large amounts of artefacts were found, with over 23,000 fragments of pottery. The finds date mostly to the 5th-3rd century BC (Contexts 246-251).

The quantitative distribution of the different groups of pottery demonstrates the predominance of cookingware, over half the entire collection, excluding amphoras and tiles. The frequency of wheelmade cookingware is 8.5 times greater than handmade. Glossed wares are rare, only about 9%. The group of table pottery contains relatively few fragments of greyware, just ca. a quarter of the remainder (Appendix 2).

The room was possibly used as a kitchen.

The finds recovered near Room 410 date to the 5th-3rd century BC (Context 245).

¹⁶⁹ Lejpunskaja & Rusjaeva 2006, 108-126.

Basement 410

Basement 410 was lower than the surface room, however, no clear horizontal boundary between the fills of the above-ground room and the basement was found. A stone staircase led to the basement.

The fill of the basement consisted of horizontal layers of a yellow clayey soil with grey clayey inclusions, a grey clayey soil with yellow clayey inclusions and grey ashy soils all containing artefacts of a similar character.

The floor of the basement was at level with the underside of the foundations of its walls. The surface of the floor was covered with small, occasionally medium-sized pieces of rubble. Between the area compactly packed with rubble, traces of compacted soil were found. On the floor near the northern wall was found an accumulation of oval rounded slabs (101 pieces), raw material for making perforated fishing-net weights. Nearby, the lower body of a redware amphora was lying. Near the western wall was a heap of sherds of a Thasian amphora of the 4th century BC. Below the surface packed with rubble, in the southeastern part of the room, was a cone-shaped pit, the orifice and walls of which were faced with stone; on its bottom was a stone of nearly triangular plan and two arcuate ones. The interior diameter of the structure was 0.52 m, the depth 0.53 m. No traces of plastering or soot were detected on its walls. The inner surface of the stones of the facing was worn. A similar structure was uncovered on Delos,¹⁷⁰ where it is believed to be part of a mill. Near the northern wall of the basement, remains of an inner partition were revealed.

The finds from the fill are extremely diverse, both in terms of their typology and chronology, and date to the late 6th-3rd century BC (Contexts 252-255).

The percentage of tiles recovered from the fill is fairly high, about 15%, as a result of the collapse of a tiled roof. The fill yielded plugs made of amphora handles and various fishing-net weights, including eight made of stone. The distribution of the pottery through functional groups corresponds to that which is usual for other rooms. Tableware is most common, 45% and 15%; among the glossed wares, fragments of black-glossed pottery prevail, being eight times more numerous than fragments of brown-glossed pottery. Cookingware amounts to ca. 40%, of which wheelmade pottery fragments are eight times more abundant than handmade (Appendix 2).

Judging by the milling device installed in the basement, grain was processed here. The find of the raw material for making fishing-net weights informs us about another occupation of the owners of the house.

Pavements 480 and 545

The finds recovered in the course of clearing these pavements and under them date mostly to the 2nd century BC (Contexts 271-272).

The southern part of the house was considerably disturbed, but nevertheless it yielded numerous and diverse finds (A-77, A-89, A-105, B-16, B-47, B-57, B-135, Da-504, E-25, G-10, G-14, G-21, I-16, O-38, O-95, P-22, Rb-27, Re-88, S-80, 96-111-96-116, 96-119-96-123, 96-225-96-228, 96-230-96-234, 96-302-96-306, 96-356, 96-358-96-361, 96-425, 96-479-96-491; 97-252-97-261, 97-321, 97-411, 97-413-97-414, 97-416-97-417, 97-427-97-429, 97-431-97-435, 97-453-97-463, 97-466, 97-468, 97-470, 97-472, 97-502, 97-504-97-517; 98-96, 98-97, 98-192-98-202).

The remains of House VI-2 allow us to suggest that the person resident in this house was occupied with the processing of agricultural products (the mill) and possibly with fishing (the finds of stone weights and the blanks for them). The presence of a large basement, possibly a store, connected via the “niches” with the courtyard, indicates a certain commodity-oriented household economy. The southern part of the house probably consisted of dwelling rooms.

HOUSE VI-3 (ORIGINAL DESIGNATION NGS-10)

Layout

In the northern part of the house, four basements (Basements 434, 474, 489 and 495) were located (Pl. 42.1). One of them (Basement 434; Pl. 42.2, 43.1) had apparently been built prior to the construction of the Hellenistic house. The

¹⁷⁰ Siebert 1988.

second building period, contemporary with the emergence of Basements 489 and 495, saw the reconstruction of the eastern Wall 438 in the middle of which a doorway was made (with a width of 0.73 m). This door connected the basement with Basement 489 (Pl. 43.2, 44.1). Later on, this opening was blocked with stones. Basements 489 and 495¹⁷¹ were also interconnected via a doorway made in Wall 487. All the above, as well as the fact that the northern wall of Basement 489 was bonded by its masonry with the eastern wall of Basement 434, indicate that these basements were contemporary and belonged to a single house. In addition, from the south, yet another small basement, Basement 474, was attached to Basement 434, while the surface Room 477 was added to Basement 489 from above. The narrow gap between the eastern wall of Room 477 and Wall 487 separating Basements 489 and 495 was possibly to construct a staircase leading to the basements.

Thus, in the northern part of the house there actually existed a basement storey. Moreover, the presence of doorways between Basements 434, 489 and 495 attests to their use as dwelling rooms or at least for frequent domestic activities. The small dimensions of Basement 474 suggest its use as a store room. Judging by the height marks contemporary with the cultural deposits of the Eastern Longitudinal Street lying nearby, the basements of the northeastern part of House VI-3 may have been semi-basements. In this connection, it must be stressed that in Olbia during the Hellenistic period, houses with similar semi-basements (House I-6)¹⁷² or basement storeys (Houses A-2, 4, 10, E-1, NGF-1, 2) are known.¹⁷³

The entire eastern part of the house was occupied by roofed rooms and the two Basements 661 and 641 (in addition to the already mentioned Basement 495). That this group of rooms belonged to the house under consideration is indicated (as in the case of House VI-2) by the absence of a paved area south of Stove 561 which could be considered as remains of an inner courtyard. At the same time, we have no reason to suppose that a structure similar to House III-2, lacking its own courtyard, could have been situated here. Such a supposition would not be grounded either in terms of the layout or the accompanying finds, in particular from Basements 661 and 641. Indirectly, such a possibility is contradicted by the way the house with Basement 661 was arranged in the ground plan. Its northwestern corner protruded about 2 m to the north from the possible border of the internal courtyard. That is, in the case of the presence of the above-mentioned structure, the outline of the boundary between the houses would have had the form of a broken line. On the other hand, it hardly seems fortuitous that the western wall of Basement 661 is practically in alignment with the eastern wall of Basement 477. The two basements evidently both served as stores. This supposition is suggested by the extremely poor quality of the masonry of the walls as compared with that of the walls of Basements 489 and 495. The former walls are irregularly and very carelessly constructed of small, almost undressed stones of polygonal shape. At the same time, the walls of the northern basements are constructed of medium-sized polygonal slabs and blocks in a single row of horizontal courses.

The arrangement of the basements allows us to reconstruct four roofed rooms in the Eastern Houseblock, including the one over Basement 495.

The external walls of the two blocks (the northern and southern) of roofed rooms defined the external limits of the house in general. To the north, the limit was the Central Transversal Street, to the east the Eastern Longitudinal Street, to the south the Southern Transversal Street and to the west the wall shared with the neighbouring house; this wall being in alignment with Wall 435 of Basement 410.

The pavement of the internal courtyard was not preserved. However, indirect indications allow us to define its location. South of Basement 474 and Room 477 was a space free from any building remains.¹⁷⁴ Here, a large stove (Stove 561), of rectangular plan and measuring 1.65 x 0.65 m, was found. Of the stove, only the remains of the rectangular chamber with adobe and mud brick walls were preserved, as well as a pan-tile (keramis) laid on the western side (Pl. 44.2). The functioning of the stove was evidently related with a partition of rounded plan abutting the stove on the northern side. The fill in the stove contained ash, fish scales and bones. It is difficult to identify any the function of the stove as anything other than domestic. However, judging by its dimensions and slightly unusual construction it may have been used, perhaps, for smoking fish. This would explain the construction of the stove in a courtyard rather than in a closed room. The same is confirmed also by the presence of a *prothyron* which led directly to the courtyard. Thus, the boundaries of the

¹⁷¹ Basement 495 also underwent substantial reconstructions. Some remains of the double-faced Wall 486 oriented along the north-south axis have survived. The destination of the wall is difficult to determine.

¹⁷² Kryžickij 1971b, 28, fig. 14.

¹⁷³ Kryžickij 1971b, figs. 26, 32, 43.

¹⁷⁴ Room 512 located to the south of it belonged to the latest period, when the reconstructions involved almost the entire area of the house. The ground plan of the house of that period was impossible to reconstruct.

courtyard were the western wall of the house and, to the north, the walls of the block of the northern Rooms 472 and 470. To the east, the courtyard was limited by the western wall of Basement 661. The southern border of the courtyard was located immediately beyond Stove 561. From here and further southward, there were fragmentary building remains of rooms for which it is impossible to reconstruct the ground plans. It is left to us only to conjecture that at least three rooms may have been located here, as suggested by the presence of the remains of Walls 563 and 589. In particular, Room 591 is indicated by the remains of Walls 586 and 590.

Within the limits outlined above, the total area of House VI-3 may have amounted to about 250 m², of which the courtyard occupied 17%. Its layout is on the whole typical of the ordinary Olbian dwelling houses.

Fills of the rooms and accompanying finds

Basement 434

Two building periods were traced; the first construction phase was evidently not later than the second half of the 4th century BC and the second involved the reduction of the area by the installation of the southern wall in the 3rd-2nd century BC.

The fill of the basement down to the upper level of the floor was homogeneous throughout its entire depth, consisting in the northern part of a grey clayey soil, and in the southern part of a grey clayey soil with yellow clayey inclusions. The accompanying finds date to the 4th-3rd century BC (Contexts 274-275, 277). The percentage of tableware fragments is high, about 61%. Fragments of wheelmade cookingware prevail, with the 524 examples being 15 times more numerous than those of handmade ware (Appendix 2).

Two floor levels differing by a height of about 30 cm were revealed. Between the two floors there was a dark-grey clayey soil containing finds of the 6th-5th century BC. In addition, several fragments of brown-glossed vessels and a Knidian stamp of Zenon's circle of 280-255/50 BC (95-128) were found (Contexts 280-282). At the second level of the floor in the southwestern corner, a pavement was preserved, bounded by the walls of the basement and a wall constructed perpendicularly to the southern wall of the room.

Below the level of the second floor down to the virgin soil was a cultural layer in which, in addition to artefacts of the late 6th-5th century BC, four fragments of Rhodian amphoras, including one with a stamp, were encountered (95-421) (Context 283).

Basement 474

The basement was covered with a layer with finds dated from the late 6th century BC to the turn of the 2nd to the 1st century BC (Context 287). The fill of the upper part of the basement down to the first horizon of the floor was a grey clayey soil with yellow clayey inclusions, below which was a very moist and loose grey clayey soil with ashy inclusions and pieces of hearth clay.

In the basement, two horizons of the floor were revealed. Over the upper horizon, a collapse left from a stove was traceable. It belonged to the latest building period of the room and was lying on a dark-grey clayey soil with ashy inclusions and rare artefacts. The second horizon of the floor was attributed to the first building period.

The finds from the fill date mostly to the 5th-4th century BC; in the upper section of the fill, finds of the 3rd-2nd century BC were encountered (Contexts 288-290). Cookingware fragments constitute about 47% of the total pottery finds (Appendix 2). Numerous animal bones were found in the fill, about 950 pieces.

Room 477

In the construction of the room, two building periods were traced.

The fill of the room was a grey clayey layer with yellow clayey inclusions and admixtures of ash; the finds from the fill date to the 3rd-2nd century BC.

The floor of the room was identified. Its western section abutted the walls; to the east it was limited by three slabs arranged parallel to the eastern wall. The southern slab was coated with the plastering of the floor. In the northeastern corner of the room, in the level of the floor there was a layer of crumbled limestone bounded by a shallow groove. In the western part of the room there was probably a hearth. In the floor, three small pits were found, the function of which is unknown.

The finds of the fill date to the 4th-3rd century BC (Contexts 276 and 278). The distribution of pottery across the different groups does not differ from that in other rooms (Appendix 2).

Below the floor, there was a layer of grey clayey soil with artefacts of the second half of the 6th-first half of the 5th century lying on *polevka* (Context 279).

Basement 489

At least two building periods were noticed in this area (the earliest evidently being unrelated to Basement 489). Reconstruction included the blocking of a doorway in the eastern wall and the partial rebuilding of the western wall; Wall 482 was added to the southern wall.

The room was filled with a grey clayey soil down to the floor level. The fill contained very scanty fragments of pottery, predominantly amphoras, which date to the 5th-3rd century BC (Context 292). The floor, in the form of a dark, compact and uneven surface, survived only in part of the room. Upon the floor, a poorly-preserved collapse of a stove and an ashy spot were recorded. The finds obtained during clearing of the floor include pottery fragments of the 4th-3rd century BC (Context 293). Under the floor was a layer of grey clayey soil from which finds, also of the 4th-3rd century BC, were recovered (Context 294). Of special interest is a stone mould for casting a rather primitive representation of a *bucranium* (Rb-12).

In the western part of the room, below the floor, remains of a more ancient structure were revealed (Context 296) and in the eastern part there was a layer containing artefacts of the late 6th-3rd century BC (Context 295).

Room 495

During the excavation it was conjectured that two rooms (Rooms 515 and 495) were located here. The post-excavation analysis of the building remains suggested the existence of only one room. This was indicated by three walls, the fill having been preserved only in inconsiderable parts.

In the upper level of the fill, a small collapse of stones was revealed. The basic fill of the room was a grey clayey soil with yellow or occasionally greenish inclusions. The floor was not identified. Lower than the foundations of the walls of the rooms was a grey clayey soil layer with yellow clayey inclusions, in which remains of a "partition" (Structure 500) of the antecedent building period were uncovered. The pottery dates to the late 6th-2nd century BC (Contexts 284-286).

Basement 641

This basement was very disturbed. It was partly covered with a destroyed mud brick structure. The fill in the upper part consisted of a dark-grey clayey soil with inclusions of yellow clay. Below, this was followed by a grey-yellow clayey soil. The floor had a compact, uneven coating. No finds were made on the surface, but the soil above it contained ashy inclusions. The floor was lying on the ancient surface of the ground.

The finds from the fill date predominantly to the 4th to the first half of the 3rd century BC, although among them there are also objects of the second half of the 6th-5th century and the second half of the 3rd century (Contexts 297-299). Sherds of black-glossed pottery are fairly numerous; over 110 fragments, almost 12 times more than the total of brown-glossed fragments (Appendix 2).

Basement 661

The fill in the upper part consisted of a grey clayey soil, that of the lower of a grey-yellow clayey and a grey clayey soil, in places small areas of compacted yellow clay were traceable. The floor had two horizons; in the lower one were fairly rich amounts of fish scales. Below the floor was ashy soil.

The artefacts found in the fill throughout its entire depth were of a mixed character, dating from the second half of the 6th-2nd century BC (Contexts 300-305).

Stove 561

The finds uncovered during the excavation and clearing of the stove date to the late 5th-2nd century BC (Contexts 306-307), while those from the layer below the stove date mostly to the second half of the 2nd century BC (Context 308).

Room 591

This room was poorly preserved. The finds from the fill are mixed and date from the late 6th or the early 5th century BC to the first quarter of the 1st century BC (Context 241-242).

The majority of the rooms of the house, especially the southern one, were destroyed. However, they did yield abundant and diversified finds (98-119, 98-120, 98-191-98-213, 98-443-98-455).

House VI-3 was evidently an ordinary, although rather large (260 m²), dwelling house. It consisted of 13-15 rooms. Its basements were located to the north of the courtyard and used as dwelling rooms and for other domestic purposes. The basements to the southeast were probably used for household and storage purposes. Evidently, the owner of the house was a fairly prosperous resident of the polis.

GENERAL CHARACTERIZATION OF THE HOUSES IN SECTOR NGS

Building materials

The main materials used in the construction of the houses in Sector NGS were stone, clay, wood, tile, metal and lime. The stone was predominantly soft limestone or shell rock, which in the earliest stages was possibly quarried in the territory of the Lower City itself, while later on it was taken from the outcrops on the right coast of the Bug estuary. During rescue excavations along the cliff near Sector NGS, outcrops of such rock with traces of quarrying were revealed. Considerably rarer was sandstone. Still rarer were igneous rocks in the form of boulders and pebbles. Most commonly, stones of rather small dimensions (0.3-0.6 m in length) were used, allowing construction without the use of hoisting instruments. The stones were polygonal, or more rarely orthogonal slabs and blocks. Often, only the facade was dressed while the other sides were just coarsely hewn. The faces of the rectangular slabs and blocks were dressed without the rustication known, for example, from Chersonesean architecture, and the stones were adjusted without *anathyrosis* or the use of clamps. Stone was used in the basement walls, the foundations, the above-ground socles and, occasionally, the surface walls, and for making pavements, mostly of the internal courtyards and sometimes streets, as well as drains.

Equally widely used was loess clay, which was readily available near the city both from the coastal cliffs and from the area of the necropolis. It served for bonding stone walls, for making mud bricks, adobe floors, stoves, pisé roofs and wall plaster.

Wood was used primarily for the construction of the load-bearing structures of roofs, the floors over basements, the door frames and door panels, the window cases and shutters, and for general joinery. It must be noted that the Olbians did not suffer a shortage of wood since the forests of Hylaia, mentioned by a number of ancient authors, in particular by Herodotos (Hdt. 4.9, 18, 55, 76) were located nearby. The forests yielded wood of fairly good quality, such as pine, oak, etc.,¹⁷⁵ which would have sufficed for the timber and joinery works required in the city and its surroundings.

Tiles were fairly widely used, in particular those imported from Sinope. Tiles were possibly manufactured in Olbia also.

For fixing elements of wooden structures, metal nails, both iron and bronze, of various sizes were widely used.

Lime was used only for plastering the walls of roofed rooms. However, it was employed only on a very limited scale. During excavations of Sector NGS it was found very rarely as small fragments and exclusively in a redeposited state.

¹⁷⁵ Šilik 1975, 85.

Construction

The walls of basements and above-ground rooms had no particular foundation. The lowest course was the same as the upper in terms of how the stones were laid and their size and shape. Only in some of the stone works, was the lower course constructed of larger stones and in two cases these were placed as *orthostates*. The stone masonry of the walls and socles (where the walls were constructed of mud bricks) were dug into the earth most often to only part of the height of the lower course. Later on, in the course of reconstruction and repair, the depth of wall foundations was increased along with an increase in the depth of the surface of the streets and the floors of the rooms. The surface of the ground was not always levelled horizontally for laying the lower course of a wall. Furthermore, only two cases of multi-layered foundations were found during the excavation (beneath the southern Wall 318 of Basement 390 in House II-5 and under two walls in Room 410 of House VI-2).

In basements, the walls adjoining the edges of construction pits were constructed in double rows, the core being made of rubble. The façades were of dressed stones bonded with clay, most commonly in a horizontal course (rarely orthostatic) or in an irregular one,¹⁷⁶ both of polygonal stones and of nearly rectangular slabs and blocks (Pl. 45.1). Walls constructed from carefully-dressed ashlar are rare exceptions (Pl. 45.2). In this connection, of special note are the walls of Basement 390 in House II-5, which are outstanding in their high quality. In this basement, they were laid in a single horizontal course made of rectangular slabs and blocks which were carefully dressed and tightly adjusted. Wall 318 (Pl. 46.1, 1) of this basement was constructed upon a multi-layered foundation (three layers were traced). Its foundation course was made of rather small polygonal slabs with poorly-dressed faces. Upon the foundation, a socle course was installed of rectangular slabs about 0.35 m high. Still higher this was followed by three horizontal courses of stones and then by yet another course of *orthostates*. The high quality of the masonry and the large dimensions of Basement 390 make it distinguishable from all the others. Within Sector NGS, this is the only one of such a high quality of construction.

Ashlar walls, where the blocks are placed as binders in alternating layers, have not been recorded. In some rare cases, however, walls with alternating layers of blocks laid horizontally and set as *orthostates*, but without following any definite system of alternation, were found.

In the majority of cases, only insignificant remains were left of the above-ground walls. These were mostly isolated fragments with one to three horizontal courses or irregularly laid stones bonded with clay. The only exceptions are the houses of the Northwestern (I) and Western (III) Houseblocks. Thus, in House I-1, the height of the above-ground walls was preserved up to more than 1 m. This was due to the fact that these houses were located where the terraced part of Olbia starts, so that building remains positioned higher have partly covered the area below protecting the houses situated there from destruction. The above-ground walls were mostly constructed in two or, rarely, three rows.

On the whole, the quality, particularly the strength of the walls, was rather poor. One and the same wall may have included different systems of masonry – both coursed and irregular. The thickness of the above-ground walls varied from 0.4-0.6 m, most often falling within the range of 0.45-0.50 m. The maximum wall thickness, occasionally up to 0.70-0.75 m, recorded in the course of the excavations, evidently resulted from the deformation of the walls after the houses were ruined. This deformation was the result *inter alia* of the use of poorly-worked stone and clay mortar.

The information detailed above attests to the primitive levels of the construction techniques and skills of the builders. Frequently, walls were constructed by people who were evidently poorly acquainted with the rules that must be followed when building walls. On average, the quality of the stone masonry of the walls within Sector NGS was the poorest in Olbia, only matched by that of the houses in Sector I.¹⁷⁷

In connection with the characteristics of the stone walls, we will briefly dwell here on the problem of their dating. It is known that certain construction and technical systems and methods of dressing and laying stones were typical to particular chronological phases. This is true concerning the Greek houses of the northern Black Sea littoral,¹⁷⁸ in particular those of Olbia.¹⁷⁹ However, as experience has demonstrated, the dating of walls exclusively on the evidence of their construction and other peculiarities can only be done in those cases where it does not run contrary to the archaeological context and

¹⁷⁶ Because of the poor quality of the stones, the masonry of the houses in Olbia cannot be described using the same terms used for the high-quality walls of Classical Greece, such as isodomic, pseudo-isodomic, etc. For this reason, we employ a different terminology, which allows us to describe and differentiate between the types of walls found (Kryžickij 1981).

¹⁷⁷ Slavin 1940, figs. 5, 7, 21-23; Kryžickij 1971b, 115-117, fig. 55.

¹⁷⁸ Kryžickij 1982, 23-24, fig. 5.

¹⁷⁹ Kryžickij 1971b, 111-113.

stratigraphy. In Olbia, in the 3rd century BC (exactly the period to which the absolute majority of the architectural remains in Sector NGS area are dated) "...the quality of the masonry deteriorates sharply: the construction systems become more primitive, finds are re-used without any special dressing, the stones are not adjusted on the site, building finds of irregular size are used, and single course walls laid horizontally from roughly dressed blocks and slabs loosely adjusted with varying heights of the stones in the courses become fairly widespread. ... In a single wall often elements of differing systems are mixed".¹⁸⁰ At the same time, the quality of the walls was varied across different areas – the worst are recorded in the outlying district of Sector I.¹⁸¹

The stone walls in Sector NGS completely correspond to the situation described above. Thus, for instance, irregular stonework or single-course, horizontally-laid walls constructed of poorly-dressed (or completely undressed) stones are found here dated throughout the entire Hellenistic period. We must also take into consideration the evolution of building techniques during the Hellenistic period, when, in Olbia, the polygonal system vanished, as e.g. the "saw teeth", and single-course (occasionally double), horizontal (or rarely orthostatic) systems were predominantly employed. All this suggests that the type of construction and the level of care of its execution in the Hellenistic period depended mainly on the economic resources of the builder of the house, rather than on the time of its construction. To be sure, the features of the masonry of the walls of Basement 390 in House II-5 (Pl. 15.1-2) are more typical of the 4th century BC than of the 3rd, but such features are found also later. An example is the western wall of the pit of the staircase leading to the basement in House VI-2 (Pl. 40.1). Another instance is the wall in House III-1 separating Basements 742 and 743, dated to the 4th century BC. This wall was constructed as a single row of both polygonal and rectangular slabs and blocks laid horizontally, without tight adjusting and with numerous irregularities in the system of construction (Pl. 21.1). In terms of its features, without considering the archaeological contexts, this wall would be dated to the late 3rd to the first half of the 2nd century BC. However, the finds from the fills of these basements and the stratigraphy contradict such a dating. Therefore, features of masonry may be employed as a chronological criterion only when they sit in accordance with the rest of the archaeological context, in particular the stratigraphic evidence.

The relatively small numbers and moderate dimensions of accumulations of collapsed stones, as well as the presence of yellow clayey masses (and occasionally also collapsed separate mud bricks) recorded in the course of excavations, attest that mud bricks were widely used in construction. However, no remains were found *in situ*.

On the inside, like on the outside, the walls were plastered with clay. Clearly defined single fragments of stucco were encountered only in three houses (II-3, III-3 and IV-4).

The floors in the basements and the above-ground rooms were made of adobe. They had no distinct construction, most often being constituted as a thin layer of clay plastered over the levelled surface of the virgin soil (in some basements) or over cultural deposits (in the majority of cases). During repairs of the floors, the old plaster was not usually removed, but was instead covered with a new floor. The ceilings over the basements were constructed of wood. Stone pavements, except that in Room 59 in House II-3, were discovered only in courtyards.

In four houses, remains of stone staircases were revealed. Two of these were in houses which had several storeys. Thus, in House II-3, in the earliest building period, a staircase of four steps led from the Western Longitudinal Street to the *prothyron*. In House III-2, the staircase, also constituted of four steps built of polygonal slabs, led from the Western Longitudinal Street to a roofed surface room. Yet another similar four-stepped staircase leading from the street to the courtyard was revealed in the Upper City in House I-1.¹⁸² In all three cases, the staircases were located on the inside and were devoid of any additional platforms, thus indicating indirectly that the doors opened outwards. Similar staircases have been found in Olbia so far only in the outskirts of the city, where residents of modest means were living and the quality of the buildings was low. The occurrence of staircases was induced by the rise of the pavement level which took place spontaneously due to the accumulation of both deposits after rain-fall and construction debris during the inconsiderable, though undoubtedly frequent repairs to the houses. It is logical to suppose that the control of *astynomoi* hardly stretched to such districts of the city.

The staircases in two other houses – IV-4 (the width of the flight being about 1 m) and VI-2 (a width of 0.8 m) – were intended to connect the internal courtyards with basement rooms. Five steps were preserved in both. These two staircases were both located outside the limits of the basements, within the area of the courtyards. The staircase in House

¹⁸⁰ Kryžickij 1971b, 122.

¹⁸¹ Kryžickij 1971b, 123.

¹⁸² Slavin 1940, 14-15, fig. 4.

VI-2 was separated by a small landing from the entrance to the basement. In House IV-4 such a landing was lacking and the flight of stairs ended immediately flush with the internal plane of the wall. This fact allows us to suggest that over the mentioned staircase a closed lobby was constructed and the door to the basement storey was most likely located in that lobby at the level of the courtyard, rather than at the level of the basement.

However, in the majority of cases the basements were presumably entered through a hatch in the floor of the surface room via a wooden staircase or a ladder. No remains of these wooden structures have survived to date. The mortises of different forms, occasionally found in basement walls, yield no reliable evidence for the reconstruction such staircases. Nevertheless, it is difficult to imagine any other means of connecting the basements and surface rooms.

Of the doorways, only the fragmentary lower parts set in stone walls have survived. Their width varies between 0.55-1.60 m. Two thirds of over two dozen openings had a width of 0.9-1.1 m. This value is below the average width of doorways in the Mediterranean. Thus, for example, in Delos in the theatre block the width of the doorways amounted mostly to 1.2-1.55 m¹⁸³ and on Thasos in the quarters near the Gate of Silenos the widths ranged from 1.1-2.1 m.¹⁸⁴ Doorways wider than those in Olbia are found also in other Mediterranean cities, such as Peiraieus, Olynthos, Priene, etc.¹⁸⁵ This difference is explained most probably by the colder and moister climate in Olbia.

It is also of note that in Sector NGS we cannot trace any relation between the dimensions of doorways and their positions in the house plans. Both of the two widest doorways connected internal roofed rooms (Houses I-1 and III-2).

No windows were revealed in any of the houses due to the insufficiently preserved height of the walls. A single exception is perhaps House VI-2. Here, near the southern wall of Basement 395 facing the inner courtyard, two blind areas were detected (see above).

Remains of stationary hearths and stoves were uncovered in 18 rooms among a total of about 84 surface and basement rooms. Hearths were constructed as open firing platforms about a quarter of a square metre in area; sometimes they had low vertical ridges around the perimeter. The main heating device was the brazier. Fragments of these were encountered in two rooms of House III-3; in House IV-1 a support for a brazier was found. In addition, on the floors of some rooms, remains of ash and pieces of charcoal were encountered in isolated spots. It is logical to explain their presence to the use of braziers, which were taken away when the rooms were abandoned.

House	Room	Heating	House	Room	Heating
I-2	119	Hearth	IV-1	253	Hearth
II-3	89 (basement)	Hearth	IV-1	315	Hearth(?)
II-3	59	Hearth(?)	IV-2	280	Hearth(?)
II-5	62	Stove	IV-2	302	Stove
III-1	329	Stove	IV-2	302 (basement)	Hearth
III-2	52	Hearth	IV-3	343	Accumulation of ash in a compartment
III-3	278	Stove	VI-3	474	Stove
III-3	368	Stove, brazier	VI-3	477	Hearth
III-3	359	Brazier(?)	VI-3	489	Stove
III-3	328	Hearth(?)			

Table 11.

¹⁸³ Chamonard 1906, 495.

¹⁸⁴ Grandjean 1988, 402-403.

¹⁸⁵ Hoepfner & Schwandner 1986, figs. 10, 29-31, 147.

Layout

In terms of their ground plans, the houses followed the principle of equivalently-parallel. We have no grounds to assume that the so-called *megaron* principle of planning was employed. Our houses had, on the whole, small ground plans.¹⁸⁶ A relatively distinct subdivision into two halves (evidently men's and women's sections) was recorded only in House III-3, where in one of the rooms special structures for installing couches, characteristic of *androns*, were uncovered.

The excavations in Sector NGS have allowed us address the problems of the two most characteristic types of dwelling houses devoid of an architectural order in Olbia. Concerning the first type, of most interest is the Central Houseblock, (Pl. 46.1, 1-3, 5), which followed the typical scheme of small ground plans. This provides us with the opportunity to describe the particularities of this type of house on the basis of the positions of the courtyard and roofed rooms in the plan of the house, as well as the total area of the structures. The basic planning technique in houses of this type included the location of the internal courtyard in the southeastern or southwestern part of the plot with a "T"-like arrangement of roofed rooms opening to the courtyard. The areas of the houses varied from 107-144 m² and in plan they were close to a square. The courtyard occupied 18-26% of the house. The houses had from one to three basements located to the north, rarer to the west or east of the courtyard. Some of them were used not only for storage but also for dwelling or household purposes. In two of the houses, the roofed rooms to the north of the courtyard were arranged in two rows. As already mentioned above, we have no evidence for the use of architectural order. The degree of confidence in the accuracy of the reconstructions of the plans of this type of house is relatively high, falling within the interval of 0.820-0.875.

In addition, houses with this layout were also uncovered within Sector NGS in the Northwestern (House I-1) (Pl. 46.1, 8) and Northern Houseblocks (Houses II-4 and II-6) (Pl. 46.1, 4, 6). Their dimensions were similar: the areas of the houses ranged from 89(?) - 182 m², of which the courtyards occupied 17-33%. Although the level of confidence in the accuracy of their reconstructions is lower, amounting to 0.660-0.795, nonetheless, the basis of the planning technique has been fairly reliably established.

Three houses similar to those described above were excavated earlier, also in the Upper City of Olbia. One was situated near the northern defensive wall in the Upper City, namely House I-2 in Sector I, which in the first building period also had the Γ-like arrangement of the inner rooms relative to a courtyard located in the southwestern part of the house (Pl. 46.1, 7).¹⁸⁷ In this house, a basement was constructed beneath one of the rooms. The total area of the house was 106 m² of which the courtyard occupied 17%.¹⁸⁸ The same method of planning was applied to the layout of two other houses located in the Central Quarter near the Agora: Houses E-5¹⁸⁹ and E-18.¹⁹⁰

The investigations of the houses in Sector NGS have allowed us to distinguish a second type of dwelling. This is a house with a three-sided arrangement of roofed rooms around a courtyard: House II-3 (Pl. 46.2, 6) in the Northern Houseblock and House VI-3 in the Southern Houseblock. Their total areas are 190 and 260 m² of which the courtyards occupy 20% and 17% respectively. Judging by the ground plan of the house in the Northern Houseblock, it may be supposed that on the northern side of the courtyard it had a portico. Like the houses of the Central Houseblock of Sector NGS, these two houses both had basements.

Houses of a similar type were excavated in the Upper City of Olbia in Sector AGD (Houses A-3, A-4)¹⁹¹ and in the Central Quarter near the Agora (Houses E-1, E-2¹⁹² and House E-6¹⁹³) (Pl. 46.2, 1-5). Their areas vary mostly from 200-350 m². Of these houses only Houses E-1 and E-6 had porticos.

¹⁸⁶ Kryžickij 1971b, 103-106.

¹⁸⁷ Kryžickij 1971b, fig. 7. Karasev's supposition about the three-sided arrangement of the roofed rooms around the courtyard (Levi & Karasev 1955, fig. 9) seems to be insufficiently grounded (Kryžickij 1971b, 15-16).

¹⁸⁸ In addition, relevant structures were uncovered in Sector I on the upper terrace west of House I-6 (Slavin 1940, 43-45, pl. VI). On the basis of them, Alexander N. Karasev reconstructed the ground plan of a house with a Γ-like arrangement of the roofed rooms (Levi & Karasev 1955, fig. 4). The area of the house was 62 m² of which the courtyard occupied 19%. Unfortunately, the reasoning behind this reconstruction is unknown and the evidence recorded in the reports induces us to doubt its reliability.

¹⁸⁹ Slavin 1975, 28-31, fig. 8.

¹⁹⁰ Lejpuns'ka 1994, 74-78, fig. 4. The areas of these houses exceed 200 m² (220 and 280 m² respectively). Moreover, it is supposed that they had *pastades*.

¹⁹¹ Kryžickij 1971b, fig. 16.

¹⁹² Kryžickij 1971b, fig. 30.

¹⁹³ Slavin 1975, 31-34, fig. 8; Lejpuns'ka 1997, 91, fig. 1.

Taking into consideration the number of houses of the two types described above, as well as their locations, which were not concentrated in a single site but in different parts of the city, we have grounds to presume that both types were widespread in Olbia. Two circumstances must here be noted. Firstly, the houses with the Γ -like arrangement of roofed rooms had smaller dimensions than the houses with the Π -like configuration. Secondly, the proportions of the houses of the first type were close to a square in plan, while those of the second type varied from square to rectangular. Also, it should be mentioned that the building methods of these houses did not differ in principle from those of other Olbian dwellings.

Thus, the excavations of Sector NGS, as compared with other parts of Olbia, have yielded the most comprehensive knowledge about the most common type of buildings, namely dwellings in the outskirts of Olbia (Pl. 47).

Dimensional solutions

In terms of dimensions, the houses were constituted mostly of a single storey above ground. The thin above-ground walls, the poor quality of their construction with clay as a bonding material and the absence of remains of at least the lower steps or bases of staircases lead us to doubt the presence of a second storey. Most of the houses had fairly respectable basements, some of which served not only for storage but also for dwelling. The peculiarity of the basement construction in Sector NGS is the continuity of the locations of the basements in houses successively replacing each other.

In connection with the question of the number of storeys, it must be noted that there are reasons to suggest the existence of so-called “one-and-a-half”-storeyed houses, in which the lower storey was not strictly a basement but rather a semi-basement. Such a house was excavated previously in Sector I in the Upper City of Olbia. In House I-6, the floors of two northern dwelling rooms bordering the Longitudinal Street were sunk 0.6 m below the pavement of the inner courtyard and 2 m below the surface of the nearby eastern street of the upper terrace.¹⁹⁴ In a single-storeyed (in our case a semi-basement) variant, the top of the roof of the house would be lower than the level of the pavement of the street of the upper terrace (if it were gabled) or, at best (with a single-pitched roof), it would have exceeded it by approximately a metre.¹⁹⁵ Both the first and the second variants seem less likely than the “one-and-a-half”-storey option, which would have provided complete privacy to the occupants of the house.

According to the stratigraphic evidence available, in Sector NGS, such “one-and-a-half”-storey houses were represented by House IV-4 in the Central Houseblock and House VI-2 in the Southern Houseblock. This is attested by the following observations. In House IV-4, it was recorded that the height of the top of the basement Wall 338 (11.28 m) separating Basements 353 and 351 exceeds by 0.47 m the height of the courtyard (10.81 m). In other words, the extant height of the basement wall indicates that the floors of the rooms of the ground floor were at least 0.5 m (more probably about 0.7 m¹⁹⁶) higher than the surface of the courtyard.

A similar situation was found in House VI-2, where the highest point of the extant wall separating Basements 395 and 410 (12.22 m) is higher by 0.32 m than the level of the pavement (11.90 m). Accordingly, the level of the floor of the surface storey was approximately 0.5 m above the surface of the courtyard. At the same time, the height of Basement 410 was about 2.15 m (the height of the floor of the basement was 10.06 m).

Basement 395 was originally the same height as Basement 410. However, the southern wall of Basement 395 was later reconstructed. It received windows and blind areas beneath them. During the reconstruction, the level of the floor of the basement was raised by approximately 0.7-0.8 m. Thereby the underside of the foundation of the basement's southern wall became higher than the floor of the first building period. In this case, the height of the basement would have been 1.35-1.45 m. However, the dimensions of the basement and the presence of the windows offering daylight suggest that it was often frequented. We may doubt, therefore, that it actually had such a low height. Rather, in the second building period the height of the basement was increased as indicated by the reconstruction of the surface room above it.

We have no direct evidence for the use of architectural orders in the houses of Sector NGS. No remains of *stylobates* or separate bases for columns or *antae* were found. Notwithstanding the rather considerable area excavated, only five bases (of which four were found unconnected with the houses under study) and one capital in the Attic order made of

¹⁹⁴ Kryžickij 1971b, 28-29, fig. 14.

¹⁹⁵ Kryžickij 1971b, fig. 13.

¹⁹⁶ Only in this case would it be possible to set the minimum height of the basement within the range of 2.0-2.1 m. The absolute height mark of the floor of Basement 353 is 9.3 m.

the local limestone and dated to the late Hellenistic period were uncovered (X-1-X-6). These were all found in secondary depositions. This fact, naturally, does not exclude the existence of supports for primitive lean-to roofs along the side of a courtyard, as supposed concerning House II-3, or pilasters framing the entrance to a room. In House II-7, two small rectangular platforms, which could have served this purpose, were revealed. The absence of an architectural order indirectly attests that the height of the houses may have been lower than those calculated on the basis of a known order.

Reconstruction of the main elements determining the outer appearance of the houses

The reconstructions of the three-dimensional structure of the houses were based on the principles developed by us previously during analysis of ancient houses in the northern Black Sea littoral, particularly in Olbia.¹⁹⁷ These principles determine the height of the rooms, the construction, shape and direction of the pitch of the roofs, and the shape and dimensions of the doorways and window openings.

As noted above, there are no grounds to presume the existence of a true second storey in any of the houses excavated within Sector NGS. The problem, therefore, is reduced mostly to the determination of the height of the ground floors. Since we have no direct evidence of the height of the ground floors in Sector NGS, in order to establish this we are obliged to employ indirect data, including the characteristics of structures uncovered in other areas of Olbia. Taken as a whole they allow us to evaluate approximately the average parameters, which in general do not transgress those calculated by researchers of ancient Greek houses in other cities.

The maximum height of a wall of a surface room in Olbia was recorded only in Sector I, where the northern wall of Room 3 (House I-1) was preserved to a height of at least 2.5 m.¹⁹⁸ In A.N. Karasev's drawing, this height actually amounts to 2.9 m.¹⁹⁹

This height roughly coincides with the height of porticos of the Attic order calculated on the basis of their column bases, capitals or the spans of *prostas* in the Olbian houses with an architectural order (Houses ZK(3K)-1 and E-1). Thus the smaller sides of the known Attic capitals measure 0.13-0.3 m, with the majority falling within the range of 0.18-0.22 m. Based on the ratio, common to the Attic order, between the narrow side of the pillar and its height – one to ten or eleven – we obtain a height for the pillar of a portico of 1.3-3.3 m, most frequently 1.8-2.4 m. A height of 2.4-3.3 m may be attributed to the portico pillars in Houses ZK-1, E-1, NGF-1, if we define it on the basis of Vitruvius' observations on as the correlation between the spans of galleries and the heights of porticos (Vitr. 6.3.7). Hence, taking into account the inclination of the roofs of Olbian houses (17-21°), the height of the architrave (0.3-0.4 m) and the spans of the porticos, the height of representative rooms in houses with an architectural order may have been (as calculated from the underside of the capitals) 2.6-3.2 m.²⁰⁰ In houses devoid of an architectural order, these values must have been lower, approaching the heights defined above on the basis of correlations between the heights of basements and those of the ground-storey rooms. Thus, we assume 2.5-2.9 m as the upper limit for the height of surface rooms in houses built without an architectural order.

Moreover, the height of the basements also correspond well to these values. Wall sockets for floor beams between the basements and ground-floor storeys (Houses I-2, A-10) suggest that the average height of a basement was 1.9-2.2 m. The heights of basements in Sector NGS fall within the same range.²⁰¹ It is realistic to assume that the heights of the surface rooms would hardly be lower, because, generally, basements are lower than above-ground rooms. Thus we can conclude that the height of the above-ground rooms was most probably at least 2.2-2.5 m.

In addition, it must be taken into consideration that different rooms, or blocks of rooms, within the same house may have had a varying heights. Household rooms may have been lower while dwelling ones (especially the representative ones) may have been higher. However, the average value (± 0.2 -0.5 m) seems to us convincing and sufficient for the purpose of reconstructing the dimensions.²⁰²

¹⁹⁷ Kryžickij 1971b, 88-96; Kryžickij 1993, 25-31.

¹⁹⁸ Slavin 1940, 17.

¹⁹⁹ Slavin 1940, pl. IV.

²⁰⁰ For details, see Kryžickij 1971b, 90-93.

²⁰¹ Some of the basements of houses such as A-10 or A-2 were possibly even higher, as suggested by the surviving height of the walls. However, in the given case the lower limit is of greater importance for us.

²⁰² Similar values are determined by different researchers for the houses of the Mediterranean region (Kryžickij 1971b, 90).

The reconstruction of doors and particularly windows remains, in many respects, hypothetical. As to the former, as already mentioned above, we have at our disposal evidence of the position of some of them, and the width of their openings mostly equal 0.9-1.1 m. During excavations of Sector NGS, a fragment of a stone doorstep with a socket for the door post was recovered. It is of note that during the excavations of Olbia, stone sockets for fixing the door posts were encountered now and then, however, no finds of door hinges are known to us. Furthermore, doorways leading to the street may have had no door frame since there was no need to preclude draughts here. Such a construction has been recorded in Olynthos.²⁰³ However, for openings connecting a courtyard with a roofed room, a door frame was indispensable and therefore the width of such a doorway must have decreased by 15-20 cm. Thus, the net width of the opening would have been in the range of 0.7-0.9 m. Given such dimensions, the doors were most probably single-leaved. Only in two cases, where the width of the opening amounted to about 1.5 m, are there reasons to suppose the construction of double-leaved doors.

As to the windows, their reconstruction is possible only on the basis of analogies. A window in the basement of House A-2 with a window opening measuring 0.19 x 0.44 m²⁰⁴ may serve as an analogy for the windows in semi-basements. Similar small windows were quite possibly present in the basements of Houses IV-4 and VI-2. It would be logical to suppose that small windows, similar in terms of dimensions and shape, were also present in the external walls of the house in the above-ground rooms located far from the courtyard. In such cases, the windows were probably set fairly high, under the ceiling, so that it would be impossible to peep into the rooms from the outside.²⁰⁵ The windows which faced the inner courtyard were larger and positioned lower. They may have been not only single-section windows but also constituted of several sections like those of Delian houses.²⁰⁶ Nevertheless, the windows in Olbian houses, as well as the doors, were of smaller dimensions than those in Greece due to the local inclement climate. Thus, for instance, in Olbia we can hardly expect the presence of windows measuring about 2.5 x 1.2 m (like a three-section window in one of the Delian houses).²⁰⁷ Probably, in Olbian houses, the windows consisted of one section, in rare cases of two. By analogy with the houses in Delos, the window frame (wooden or stone) of each section had two lateral uprights and two horizontal beams.

Another general point when considering the reconstruction of the houses is the problem of the construction of roofs. As in previous work at Olbia, during the excavations of the Hellenistic houses in Sector NGS the most common tile finds are fragmentary tiles of the Corinthian type, considerably rarer are those of the Laconian type. The percentage of the tile fragments within the pottery (including amphoras walls) from the fills of basements and rooms varies, and in Sector NGS falls within the range of 2-29%, most frequently 7-8%. Since the percentage of tile fragments among the artefacts from a particular room was very arbitrary, the tiles found cannot be tied directly with the question of the material of the roof over the room. In addition, we must also take into consideration that if the remains of a surface room were preserved over a basement (i.e. the floor of the surface room covered the fill of the basement) then, when considering the roofing material, we must take account of only the finds from the fill of the surface room, since the basement had already ceased to function before the roof collapsed. Unfortunately, in cases in which the floors of the ground floors are lacking over the fills of the basements, we are not always able to establish whether the basement and the surface room above it went out of use simultaneously. From the last half century of excavations, only a single case is known in which the contemporary destruction of a surface room and the basement beneath it can be reliably recorded. The case in point is from Sector T-3, in the terraced part of the city, where remains of the collapsed beams from the floor over a basement were revealed in the fill of the basement buried under the mud brick walls of the surface room.

The only reliable evidence regarding the material used for the roofs of specific rooms is layers of collapsed tiles uncovered *in situ*. Massive collapses of tiles have been revealed in particular in Houses IV-2 and VI-2.²⁰⁸ In these cases, we can conclude that the roofs over these rooms were constructed of tiles. It is notable that in Sector NGS accumulations of

²⁰³ Robinson & Graham 1938.

²⁰⁴ Kryžickij 1971b, 96, fig. 50.2.

²⁰⁵ Thus, for example, in the Delian House on the Hill the height of a window sill above the ground surface amounted to 2.5 m (Chamonard 1922-1924, 287).

²⁰⁶ Chamonard 1922-1924, 286-303.

²⁰⁷ Siebert 2001, 119.

²⁰⁸ Naturally, the absence of collapsed tiles by no means always indicates that a house (or its individual rooms) did not have tiled roofs. During ordinary reconstructions, a tiled roof would have been carefully disassembled and re-used.

collapsed tile are found more rarely than in other areas of Olbia. Generally, the fragments of tiles among the accompanying finds are not so numerous as to give us grounds to presume that the roofs of all the houses were tiled. Nevertheless, finds of tiles in all of the fills attest that in each house certain rooms had tiled roofs. This conclusion follows from the fact that the fills of the basements were predominantly formed by the destruction of the same house.

Along with tiles, roofs covered with pisé were also used in this area. The construction of adobe roofing is attested indirectly by the absence of strictly rectangular plans in some groups of rooms. In these cases, tiles of the Corinthian type would hardly be applicable due to the geometric rigidity of that system.

Taking into consideration all that is stated above, in the reconstructions of the houses we assume the presence of tiled roofs of the Corinthian type only for some isolated blocks of dwelling rooms. In other cases, where the ground plans were not rectangular, roofs covered with tiles of the Laconian type or pisé are presumed.

House	Room	Tile, percentage of all finds	House	Room	Tile, percentage of all finds	House	Room	Tile, percentage of all finds	House	Room	Tile, percentage of all finds	House	Room	Tile, percentage of all finds
I-1	9	25	II-5	311	7	III-1	Stove	6	IV-1	253	8	IV-4	351	25
II-3	89	12	II-5	294	4	III-2	52	15	IV-1	257	3	VI-1	479	4
II-3	92 [R]	6	II-5	390	11	III-2	255	7	IV-1	290	7	VI-2	395 [R]	5
II-3	92 [B]	5	II-6	186	9	III-2	164 [R]	6	IV-1	315	4	VI-2	395 [B]	22
II-3	59	16	II-6	195	13	III-2	164 [B]	7	IV-2	280	10	VI-2	410 [R]	8
II-3	58	5	II-6	260	2	III-3	278 [R]	9	IV-2	302 [R]	20	VI-2	410 [B]	16
II-3	67	14	II-6	202	4	III-3	278 [B]	~8	IV-2	302 [B]	5	VI-3	434	9
II-3	129	9	II-7	20	8	III-3	359	7	IV-2	301	4	VI-3	474	4
II-3	144	3	II-7	56	6	III-3	328	7	IV-3	343 [R]	29	VI-3	495	2
II-4	243	3	II-7	116	4	III-3	331	8	IV-3	343 [B]	15	VI-3	641	4
II-4	176	10	III-1	734	5	III-3	332	21	IV-4	353	22	VI-3	661	7

Table 12. Percentage of tiles in relation to the total number of finds from particular rooms of the houses

All of the reconstructions include single-pitched or double-pitched roofs resting on inclining roof timbers. The direction of the inclination of the pitch and their number are determined by the location of the inner courtyard, the surrounding buildings and the number of spans roofed. Furthermore, taking into account that the climate here is damper than in Greece and that the walls were constructed of mud brick or stone plastered with clay, there are grounds to suppose that it was undesirable to drain rain-water into the neighbouring plot, and this would impact on room design. In the case of relatively wide spans, evidently double-pitched roofs were preferred as being the more practical solution. The design of such roofs is well known both in cult installations and dwelling houses in the cities of Greece and in Olbia itself. Single-pitched and double-pitched roofs are assumed in reconstructions of the dwelling houses of, for example, Olynthos, Kassope, Priene and Abdera.²⁰⁹ The presence of double-pitched roofs in Olbia is proved by finds of ridge tiles, and transversa²¹⁰ and longitudinal *kalypteres*.²¹¹ However, these finds are few. Moreover, the longitudinal ridge *kalypteres* of the Archaic

²⁰⁹ Hoepfner & Schwandner 1986, figs. 32, 110, 172, 199.

²¹⁰ Brašinskij 1964.

²¹¹ Kryžickij, Rusjaeva & Nazarčuk 2005, 26-27, pl. III.1-3.

period would have belonged to a temple. Anyway, their presence attests that double-pitched roofs were known in Olbia. On the basis of archaeological evidence, the angle of slope of the pitches is assumed to fall within the range of 17-21°. ²¹²

Bearing in mind the observations made above, the reconstruction of the roofs of houses in Sector NGS is proposed as follows. ²¹³

HOUSE I-1

The roof over the northern rooms was single-pitched, sloping down to the south towards the inner courtyard. The basis of this supposition lies in the fact that the northern group of rooms of this house was sided by the roofed rooms of a neighbouring house. The unusually large proportion (25%) of fragments of tiles among the finds from the fill of the inner courtyard suggests that its roof was tiled.

HOUSE II-3

On the east side the house was abutted by the covered rooms of House II-4. To the south was the courtyard with an altar of House II-5 and later on – hypothetically – the roofed rooms of House II-7. To the west was the street. To the north was a gap between Houses II-1 and II-3 in which a gutter ran. Thus, over the eastern and southern rooms it was possible to build only single-pitched roofs inclining towards the courtyard. The roof over the western Rooms 92 and 89 was most probably double-pitched (due to the possibility to discharge rain-water both to the west into the street and to the east into the courtyard), while the height of these rooms was higher in comparison to the three southern Rooms 59, 58, and 67 by the height of the upper edge of the latter's single-pitched roof. Over the hypothetical portico to the north of the courtyard, the construction of a pitched roof which sloped to the north and to the south was possible. However, taking into consideration that it was just a small portico with a narrow span, the roof over it was most likely single-pitched, sloping to the courtyard.

HOUSE II-4

The roofed rooms of the house were arranged north and east of the courtyard. The total roofed span of the northern group of rooms was about 7.5 m, of the eastern at least 8 m. Given such a considerable width of span, the most rational roofing solution seems to be the construction of double-pitched roofs. The rooms of the two blocks offered no hindrance to such a construction. On its southern side the roof over the northern rooms faced the inner courtyard, while its northern side was turned to the previously-mentioned gap between this house and its neighbour. Over the eastern rooms, the roof pitch was turned towards the courtyard and the Eastern Longitudinal Street.

HOUSE II-5

The roofed rooms in this house were arranged on the southern and western sides of the courtyard. The covered span of the southern block of rooms can be determined by the external walls of Basements 311 and 390. It equals approximately 9 m (it is not the total span that is implied here but that between the façades of the walls). The width of the span of the western block is unknown. It may be only supposed that it was at least 4-5 m – from the western boundary of the house to the eastern end of Wall 51 located in alignment with the northern wall of Basement 390. Correspondingly, over the

²¹² The lower limit is indicated by the frieze plate recovered during excavations in Olbia in 1909 and 1910 (Farmakovskij 1913, 73). The upper limit was determined on the basis of a transversal roof-ridge *kalypter* found during the excavations of 1902-1903 (Farmakovskij 1906, 65-66; Brašinskij 1964, 297).

²¹³ Because of insufficient evidence, we omit consideration of the possible variants of the roofs of houses I-2, I-3, I-4, II-1, II-2, III-1 and VI-1.

southern block the roof was probably double-pitched with the drainage directed to the Northern Transversal Street and to the courtyard. The roof-ridge span, considering the significant length of Basement 390, evidently rested upon Wall 318 so that the pitch was not of an equal length. Possibly, the height of the sheltered rooms above Basements 311 and 390 was higher in comparison with the other rooms of the house. This is attested by the manifestly representative role of Basement 390. Over the western block, a single-pitched or a double-pitched roof likewise may have been constructed.

HOUSE II-6

The roofed rooms in this house were arranged on the northern and eastern sides of the courtyard, being limited to the north by an interior passage of the quarter and to the east by the Eastern Longitudinal Street. Such a position provided the possibility to build double-pitched roofs over both the northern and the eastern blocks of rooms.

HOUSE II-7

There is not sufficient data to reconstruct the eastern part of this house. As to its central and western parts, the following reconstruction of the roof seems the most realistic. Over the northern group of sheltered rooms a single-pitched roof with drainage into the courtyard was constructed, due to the proximity of the neighbouring house to the north. Over the western room, considering its small span, it was expedient to adopt a single-pitched roof. The direction of this pitch towards the courtyard was determined by the need for a solid junction with the roof of the northern rooms. Rain-water could be drained from the roof of the southern rooms both to the street and to the courtyard. Therefore, and given the wide span here, the roof was evidently double-pitched.

HOUSE III-2

The presence of an unoccupied area on the west side of this house and of the Western Longitudinal Street to the east suggests a double-pitched roof with a southern orientation of the roof ridge. The lack of any strict rectangularity in the plan attests in favour of a mud brick roof.

HOUSE III-3

Owing to the houses neighbouring to the north, the roof over Rooms 278, 328 and 362 was probably single-pitched with drainage to Courtyards 332 and 331. Over Room 359, which presumably was used as an *andron*, the roof was double-pitched, sloping to the north and south, since drainage was possible in both directions.

HOUSE IV-I

The roof over Rooms 290, 253 and the *prothyron* was most probably double-pitched with, drainage oriented to the west to the Western Longitudinal Street and to the gutter in the inner courtyard. The roof over Room 252 was probably also double-pitched, with the southern pitch facing the courtyard and the northern one the Northern Transversal Street.

HOUSE IV-2

Over the northern block of rooms, the roof was double-pitched with the span of the roof ridge running via the wall separating Rooms 287 and 301 from Rooms 280 and 302. The orientation of the drainage was to the north into the Northern Transversal Street and to the south to the inner courtyard. The roof over the eastern room and *prothyron* may have had a pitch facing either the east (the Eastern Longitudinal Street) or the west (the courtyard). Considering the narrowness of

the covered span of this room, the roof over it was probably single-pitched with drainage directed towards the courtyard. It is possible that the northern block of rooms, considering their large dimensions, was higher in comparison with the eastern room and the *prothyron*. In that case, the roof over the latter two structures may have had no connection with the roof over the northern rooms and may have begun below their cornice.

HOUSE IV-3

The presence of the Western Houseblock of House IV-1 north of House IV-3 precluded the construction of drainage directed to the north over its northern room. The most probable orientation of the drainage was to the south to the courtyard, since in that case the span to be covered was smaller by a third than in the western direction. Above the western rooms, drainage was possible only southwards towards the Central Transversal Street or westwards to the courtyard. Considering the arrangement of the roofed rooms of the surrounding houses, the most probable reconstruction seems to be a single-pitched roof with drainage directed to the courtyard.

HOUSE IV-4

In this house there are two variations on the reconstruction of the roof. One is a single-pitched roof, analogous to that of House IV-3. The second possibility, accounting for the “one-and-a-half-storey” reconstruction, implies an increase by up to 0.7-1 m in the height of the northern rooms and the use of a double-pitched roof with the pitch facing north and south (to the courtyard). In that case, the roof over the eastern block of rooms also may have been double-pitched with drainage to the Eastern Longitudinal Street and to the courtyard. Some kind of cover must also have been placed over the blind area in which the staircase leading from the inner courtyard to the basement storey was located. Taking into consideration that the staircase flight was adjacent to the southern wall of Basement 353, in the blind area there was probably a lobby. Because this lobby would have abutted the western wall of the neighbouring House IV-3, its roof was most probably single-pitched with drainage to the east.

HOUSE VI-2

In this house were two blocks of rooms arranged on two sides of the courtyard – the northern and southern. The external façades faced the Central and Southern Transversal Streets. It is possible to reconstruct double-pitched roofs over each of the blocks with drainage to the north and south. The northern block, as mentioned above, was probably one-and-a-half storeyed. As in House IV-4, the blind area for arranging a staircase leading from the courtyard to the basement must have been roofed. Since the blind area was closely adjacent to the eastern external wall of the house, it is most realistic to presume here the construction of a single-pitched roof with drainage directed to the west.

HOUSE VI-3

The roofs over the northern and southern blocks of roofed rooms were constructed in a similar manner to those of the previously described house. However, these roofs of House VI-3 would have been supplemented by a roof over the eastern rooms, which may have been either single-pitched or double-pitched with drainage directed to the courtyard.

The positions of the doors, except for those cases where their remains were traced in excavation, are defined arbitrarily, considering the interconnections and hypothetical functions of the rooms and taking account of analogies. In the reconstruction of the outer appearance of the houses, the windows are also shown arbitrarily.

The general character of the buildings in Sector NGS was fairly uniform. Among the ubiquitous single-storeyed buildings, the one-and-a-half-storeyed houses were not particularly distinguishable (Pl. 48).

The degree of reliability of the reconstructions of the plans of the houses varies within the reliability coefficient range of 0.59 to 1.00. Only two of the houses have a reliability coefficient equal to 1.00. These are the so-called row of trading

shops (House III-2) and the *andron* of House III-3. Besides these, the highest confidence index may be attributed to six houses (four of which are situated in the Houseblock IV).

The reliability index (Kr) of the reconstruction of the plans of the houses was calculated according to a formula where 1 corresponds to 100% reliability:

$$Kr = 0.1 \times (\Sigma K_1 - K_8) + 0.05 \times (\Sigma K_9 - K_{12}).$$

House	Correction factors												<i>Kr of the plan</i>
	Side of the house ²¹⁴				Side of the courtyard ²¹⁵				Elements of minor importance ²¹⁶				
	K ₁ South	K ₂ West	K ₃ North	K ₄ East	K ₅ South	K ₆ West	K ₇ North	K ₈ East	K ₉ Number of rooms	K ₁₀ Limits of rooms	K ₁₁ Interrelation between rooms	K ₁₂ Position of entrance	
I-1	1.0	0.3	1.0	1.0	1.0	0.3	1.0	1.0	0.3	0.7	0.7	1.0	<i>0.795</i>
II-3	1.0	1.0	0.9	0.8	1.0	1.0	0.9	1.0	0.8	0.8	0.7	1.0	<i>0.925</i>
II-4	0.3	0.8	0.9	0.8	0.3	1.0	1.0	0.8	0.5	0.3	0.3	0.3	<i>0.660</i>
II-5	1.0	0.8	0.9	0.7	0.8	0.7	1.0	0.8	0.3	0.3	0.3	0.3	<i>0.730</i>
II-6	1.0	0.7	0.8	1.0	1.0	0.7	0.7	0.7	0.7	0.7	0.3	0.8	<i>0.785</i>
II-7	0.8	1.0	0.9	0.0	1.0	1.0	0.3	0.3	0.3	0.3	0.3	0.3	<i>0.590</i>
III-2	1.0	1.0	1.0	1.0	-	-	-	-	1.0	1.0	1.0	1.0	<i>1.000</i> ²¹⁷
III-3E	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	<i>1.000</i>
III-3W	1.0	0.3	1.0	1.0	0.7	0.3	1.0	1.0	0.7	0.7	0.7	0.5	<i>0.760</i>
III-3	-	-	-	-	-	-	-	-	-	-	-	-	<i>0.880</i>
IV-1	0.8	1.0	1.0	0.8	1.0	1.0	0.7	1.0	0.8	0.8	0.3	1.0	<i>0.875</i>
IV-2	0.8	0.8	1.0	1.0	1.0	1.0	1.0	0.7	0.8	0.8	0.3	0.7	<i>0.860</i>
IV-3	1.0	1.0	0.8	0.8	1.0	1.0	0.5	0.9	0.7	0.7	0.3	0.7	<i>0.820</i>
IV-4	1.0	0.8	0.8	1.0	1.0	1.0	1.0	0.5	0.7	0.7	0.3	0.8	<i>0.835</i>
VI-2	0.5	0.8	1.0	0.8	0.5	0.5	1.0	0.7	0.5	0.5	0.3	0.5	<i>0.670</i>
VI-3	0.5	0.8	1.0	0.8	0.5	0.8	1.0	0.5	0.5	0.5	0.3	0.7	<i>0.690</i>

Table 13.

²¹⁴ The value of each element is 0.1.

²¹⁵ The value of each element is 0.1.

²¹⁶ The value of each element is 0.05.

²¹⁷ Taking into consideration the absence of a courtyard in this house and the fact that each correction factor is equal to one, we assume that the reliability index of the entire reconstruction of the plan is also equal to one.

