SPATIAL ORGANIZATION AND PRODUCTION ACTIVITIES AT BAKLA TEPE DURING THE FIRST HALF OF THE 3rd MILLENNIUM BC

MÖ 3. BİNYILIN İLK YARISINDA BAKLA TEPE'DE MEKÂN YÖNETİMİ VE ÜRETİM AKTİVİTELERİ

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Makale Bilgisi
Gönderildiği tarih: 1 Eylül 2019
Kabul edildiği tarih: 27 Kasım 2019
Yayınlanma tarihi: 25 Aralık 2019

Article Info
Date submitted: 1 September 2019
Date accepted: 27 November 2019
Date published: 25 December 2019

Anahtar sözcükler
Batı Anadolu; Erken Tunç Çağı; Uzun Evler; Megaron; Alan Yönetimi; Üretim Aktiviteleri

Keywords
Western Anatolia; Early Bronze Age; Long House; Megaron; Spatial Organization; Production Activities

DOI: 10.33171/dtcfjournal.2019.59.2.16

Abstract

The coastal region of western Anatolia and the eastern Aegean Islands, which share similar geographic, climatic, and conditions, witnessed a common architectural development process regarding settlement patterns and building types during the first half of the 3rdMillennium BC. A recent comprehensive study of the architecture of Bakla Tepe offers new contributions to our understanding of the development of architectural traditions and settlement models not only of coastal Western Anatolia but also of the eastern Aegean Islands. At the beginning of the 3rdmillennium BC, Bakla Tepe and other coastal settlements of western Anatolia were surrounded by strong defensive systems. This idea of a citadel paved the way for a new perspective on the plans of settlements, and the space within the walls had to be organized as efficiently as possible in order to house all the needs of a community. As a result of this organization, production activities were carried out in private areas inside and outside settlements.

Öz

Coğrafi, iklimsel ve kültürel benzerliklere sahip olan Batı Anadolu sahil kesimi ve Doğu Ege Adaları'nda, MÖ 3. Binyıl'ın başlarında yerleşim modelleri ve yapı tipleri açısından birbiriyle benzer bir mimari gelişim süreci yaşanmıştır. Bakla Tepe mimarisi üzerinde yapılan detaylı çalışma yalnızca Batı Anadolu sahil kesiminin değil aynı zamanda Doğu Ege Adaları mimarisinin ve yerleşim dokusunun gelişiminin de anlaşılmasına katkı sağlamaktadır. MÖ 3. Binyıl'ın başlarında Bakla Tepe ve Batı Anadolu sahil kesimi yerleşimleri güçlü savunma sistemleri ile çevrelenmiştir. Sur ile çevrile alanların kısıtlı olması, yeni yerleşim planlama sistemini ortaya çıkarmış ve sur içinde kalan tüm alanlar mümkün olan en verimli şekilde kullanılmaya çalışılmıştır. Bu organizasyon şemasına uygun olarak, üretim aktiviteleri yerleşimin içinde ve dışında özel alanlarda üretilmiştir.

1. Introduction

The arability of the land, the proximity to natural resources, availability of potable water, suitable land for animal husbandry and suitable harbor conditions for the coastal settlements were some of the most important aspects in deciding on the location of settlements during the prehistoric times. Subsequent layers of occupation at some settlements with long occupation history, reflects conscious decisions of the inhabitants for their choice of residence. The excavations at the settlement of Bakla Tepe, had been carried out within the scope of the IRERP (Izmir Region Excavations and Research Project) between the years of 1994 and 2001

under the scientific direction of Prof. Dr. Hayat Erkanal (Ankara University) and the administrative direction of İzmir Archaeological Museum[1]. Overlooking the fertile Cuma Ovası plain and situated on a small hill 20 m above the plain, Bakla Tepe is connected to Küçük Menderes Valley via Torbalı, the Gulf of Izmir in the north, Ahmetbeyli via Çile River, and Aegean Sea via the narrow valley that Tahtalı River runs through (Erkanal, "Early Bronze Age..." 72-73; Erkanal and Şahoğlu, "Bakla Tepe (1995..." 91). Bakla Tepe also stands out with the mineral deposits located in its vicinity. Even though there is no evidence for the use of these deposits during the prehistoric periods, the abundance of metal finds belonging to the Late Chalcolithic Period and the Early Bronze Age I at Bakla Tepe, suggests that the inhabitants might have exploited these mineral deposits (Fig. 1). The imported "Cycladic frying pans", "Melian obsidian" and the "metal tools" produced from different sources (It has been detected that silver from Sifnos was also used in the Bakla Tepe silver artefacts) indicate that the settlement of Bakla Tepe was an important center in the region during the first half of the 3rd millennium BC (Erkanal, "MÖ. 3. Bin'de..." 118; Şahoğlu, "Crossing Borders İzmir..."; Şahoğlu, "Liman Tepe Bakla...").

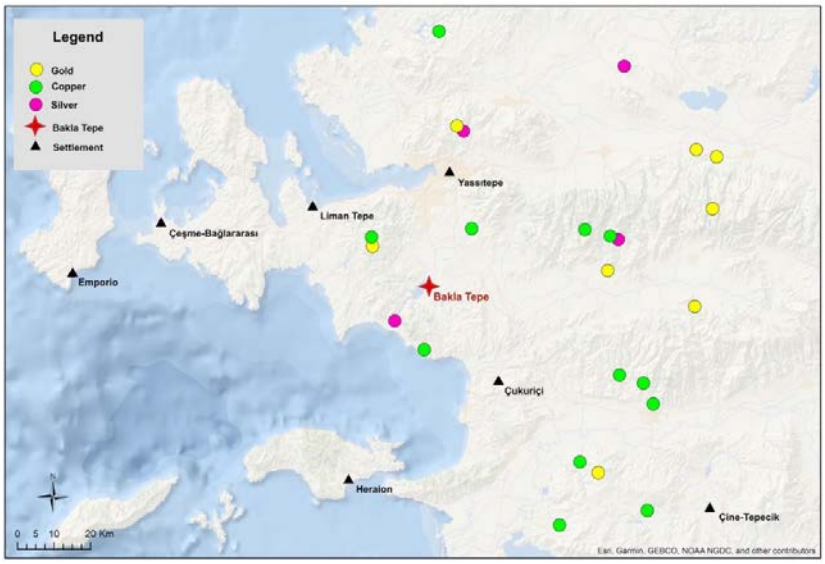

Fig.1 Map showing the location of Bakla Tepe and the metal sources in its vicinity (Gündoğan, "Bakla Tepe Buluntuları..." Harita 6).

[1] Bakla Tepe excavations were carried out within the course of the Izmir Region Excavations and Research Project (IRERP) which is now running under the framework of Ankara University Mustafa V. Koç Research Center for Maritime Archaeology (ANKÜSAM) and was generously supported by the Ministry of Tourism and Culture, Turkey; General Directorate of State Hydraulic Works; Ankara University; Institute for Aegean Prehistory (INSTAP), Ankara University, Faculty of Languages and History – Geography; INSTAP-SCEC and Turkish Historical Society (TTK). For more information on ANKÜSAM and the IRERP Project see http://ankusam.ankara.edu.tr.

2.The Fortifications and the Ditch of Bakla Tepe

The settlement of Bakla Tepe dates to the first half of the 3rd millennium BC and constitutes two main levels of occupation, namely: early (BT IV 2) and late (BT IV 1). These two levels comprise 5 architectural phases: BT IV 2 A-B early and BT IV 1 A-B-C late

I	Roman-Byzantine Period	
II	Late Bronze Age	
III	Early Bronze Age III A Early Bronze Age II (Late)	
IV	Early Bronze Age I	
	IV 1 A	Late Level
	IV 1 B	Late Level
	IV 1 C	Late Level
	IV 2 A	Early Level
	IV 2 B	Early Level
V	Late Chalcolithic Period	

Earthquake

Earthquake

Fig. 2 Stratigraphy of Bakla Tepe

Bakla Tepe is situated on a small hill in Menderes Plain. The conical part of the hill was surrounded by two subsequent fortification walls belonging to the early and later levels during the first half of the 3rd millennium BC. The fortification wall of the earlier level encircles an area of c. 90 m in diameter, covering the entire foot of the hill (Fig. 3).

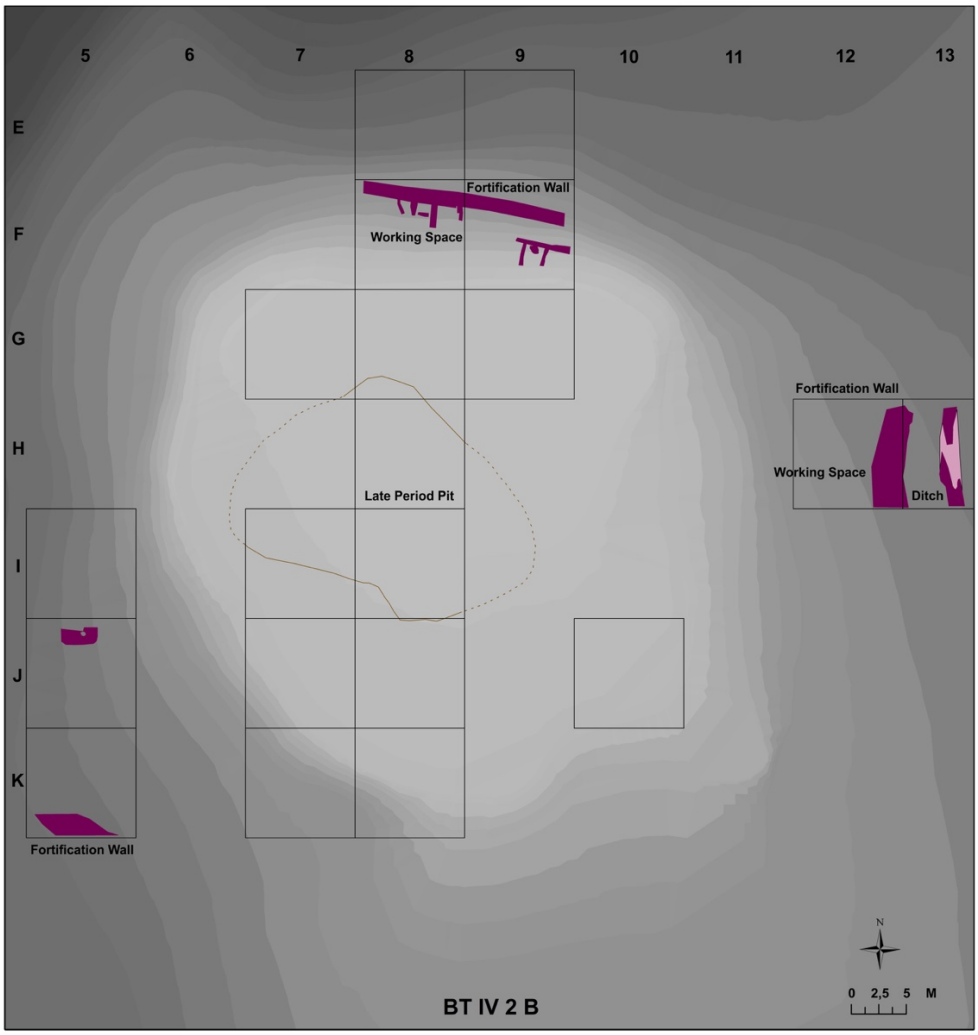

Fig. 3 Bakla Tepe phase BT IV 2 B, plan of the settlement with the fortification wall showing the locations for production activities.

19 m long portion of the earlier fortification wall has been uncovered on the northern slope of Bakla Tepe mound. Outstretching in the east-west direction, 6 rows of stone is preserved in this portion of the stone wall, reaching 1.10 m in height. The stones of the fortification wall, which had collapsed as a block towards the north during an earthquake, had spread over an area of 4.60 m in width (Erkanal and Özkan, "1998 Yılı Bakla..." 268; Erkanal and Özkan, "Bakla Tepe Kazıları" 27). It must have been aimed that by building the fortification wall on this steeper slope of the mound, the height of the slope would also indirectly contribute to the defense of the settlement. The continuation of the fortification wall to the south was maintained by 0.40 m and 0.20 m bends. The fact that the wall was built as a compact construction in concordance with the topography of the hill, this had caused it to collapse as one whole block towards the north. Large-sized stones

were used in the lower rows and smaller sized ones were used in the upper part of the stone foundation of this defense system (Fig. 4).

A stairway, constructed with rows of single-stones and extending parallel to the fortification wall was built in phase BT IV II A. These steps, formed by 11 rows of single-stones laid out on top of each other and leaning on the wall, have a height of more than 1 m and a width of 1.50 m. The inhabitants of Bakla Tepe might have used this stone stairway for climbing up to the towers of the fortification wall (Fig. 4).

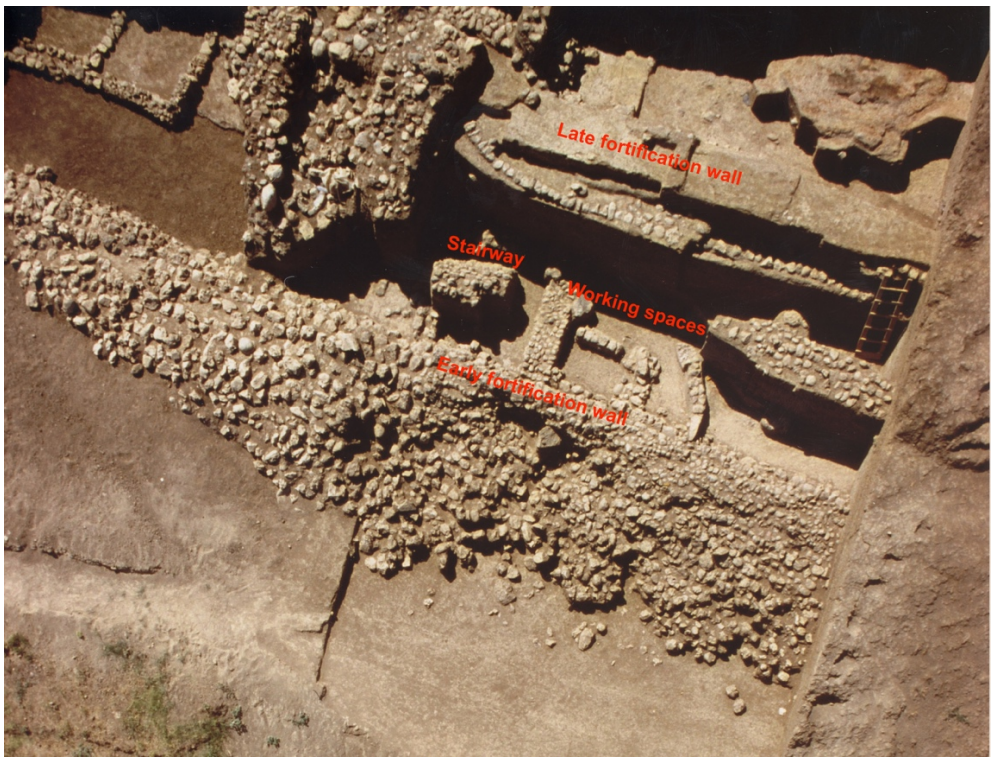

Fig. 4 Bakla Tepe level BT IV 2, fortification wall on the northern slope and the stairway (Photo by Jan Driessen, INSTAP).

Another part of the fortification wall was also unearthed on the less steep eastern slope of the mound, extending in a north – south direction (Fig. 3). 1.55 m high portion of the wall was preserved in this side constituting 15 rows of stones. This part of the fortification wall was constructed in the same technique as the northern part. The width of the foundation level of the wall varies between 3.45 and 2.70 m whereas the upper part of the wall is narrowed down to 1.50 m. This construction technique probably aimed to reinforce the strength of the fortification wall (Erkanal and Özkan, "Bakla Tepe Kazıları " 27-28).

In this area, where the mound joins the plain in a smoother inclination when compared to the northern area, the advantage of the steepness of the slope could not be used; instead, the fortification wall was further supported by an additional ditch dug into the Late Chalcolithic layers outside of the defense system (Erkanal and Özkan, "1998 Yılı Bakla..." 268; Erkanal and Özkan, "Bakla Tepe Kazıları" 28; Erkanal and Şahoğlu, "Bakla Tepe (1995..." 93). 9 m long portion of the fortification wall and the associated ditch have been unearthed in the eastern slope of Bakla Tepe mound (Fig. 3 and 5). The ditch is bordered by the fortification wall in the west and a terrace wall built with large stones located within the cultural layer of the Late Chalcolithic Period in the east (Erkanal and Özkan, "1998 Yılı Bakla..." 268). The ditch was constructed by excavating and creating an open area of 3.40 m in width in the south and 2.70 m in the north between the terrace wall and the defense system all the way down to the bedrock (Fig. 3 and 5). Bakla Tepe so far seems to be the only settlement in coastal western Anatolia with a surrounding ditch dating to the first half of the 3rd Millennium BC. Contemporary settlements with similar ditches are Demircihüyük (Korfmann, "*Demircihüyük I: Die...*") and Karataş-Semayük (Warner) in inland Western Anatolia.

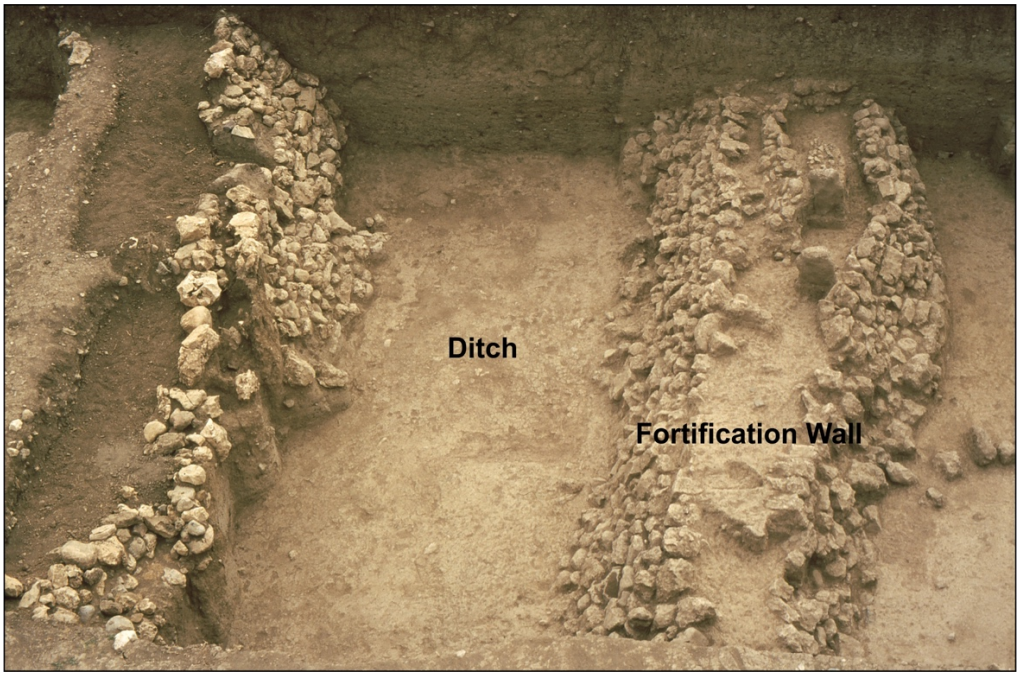

Fig. 5 Bakla Tepe level BT IV 2, fortification wall and the ditch.

The monumental and distinctive fortification wall of the earlier level (BT IV 2) at Bakla Tepe, had been constructed with a considerably wide stone foundation, which was gradually raised both from the inside and the outside. Other than Bakla

Tepe, this type of defense system has not yet been discovered in any settlement in coastal western Anatolia, the eastern Aegean Islands, or in inland western Anatolia. Glacis or ramps connected to the outer façades of the fortification walls have been unearthed at Liman Tepe VI (Erkanal, "Erken Tunç Çağı" 131; Erkanal, "Liman Tepe: New…" 180; Erkanal and Şahoğlu, "Liman Tepe (1992…" Fig. 3), Heraion I-III (Kouka and Menelaou, 121) and Demircihüyük F_1 (Korfmann, "*Demircihüyük I: Die…" Fig. 55*). The fortification wall of the earlier level of Bakla Tepe distinguishes itself from the other examples by its gradually raised stone foundation both from the inside and the outside (Fig. 5).

The earlier defense system of Bakla Tepe was destroyed by a severe earthquake. Following this event, instead of repairing the old one, the inhabitants of Bakla Tepe constructed a whole new defense system which encloses an area of approximately 50 x 50 meters. This new system reflects a saw-tooth pattern which is totally different than the earlier one. This defense system was first built during the phase BT IV 1 C, and then with some modification in the subsequent phases, was used throughout all phases of the later level (BT IV 1 A-B-C) (Fig. 6).

A 19 m-long-part of the fortification wall of the later phase BT IV 1 C has been uncovered on the northern slope of the mound. This new fortification was constructed with a saw-tooth technique and was built in separate blocks unlike the single block construction of the earlier fortification wall. Only 3 blocks of this new defensive system have been unearthed in the excavated areas.

The first block of the fortification wall (the western block) which extends into the unexcavated area in the west, has a stone foundation reaching up to a height of 5 rows. 7.20 m long part of this block has been uncovered. 1.40 m in width, the stone foundation was constructed by using rubble stones irregularly placed and mortared with mud. Larger stones were also used in some parts of the stone foundation. The superstructure of the stone foundation was constructed by using mud-bricks with dimensions of 0.32x0.06 – 0.34x0.10 – 0.36x0.07 m. Light yellow-colored clay was used in the making of the mud-bricks, and the mud-mortar used for binding the bricks together is of brown color (Fig. 6 and 7).

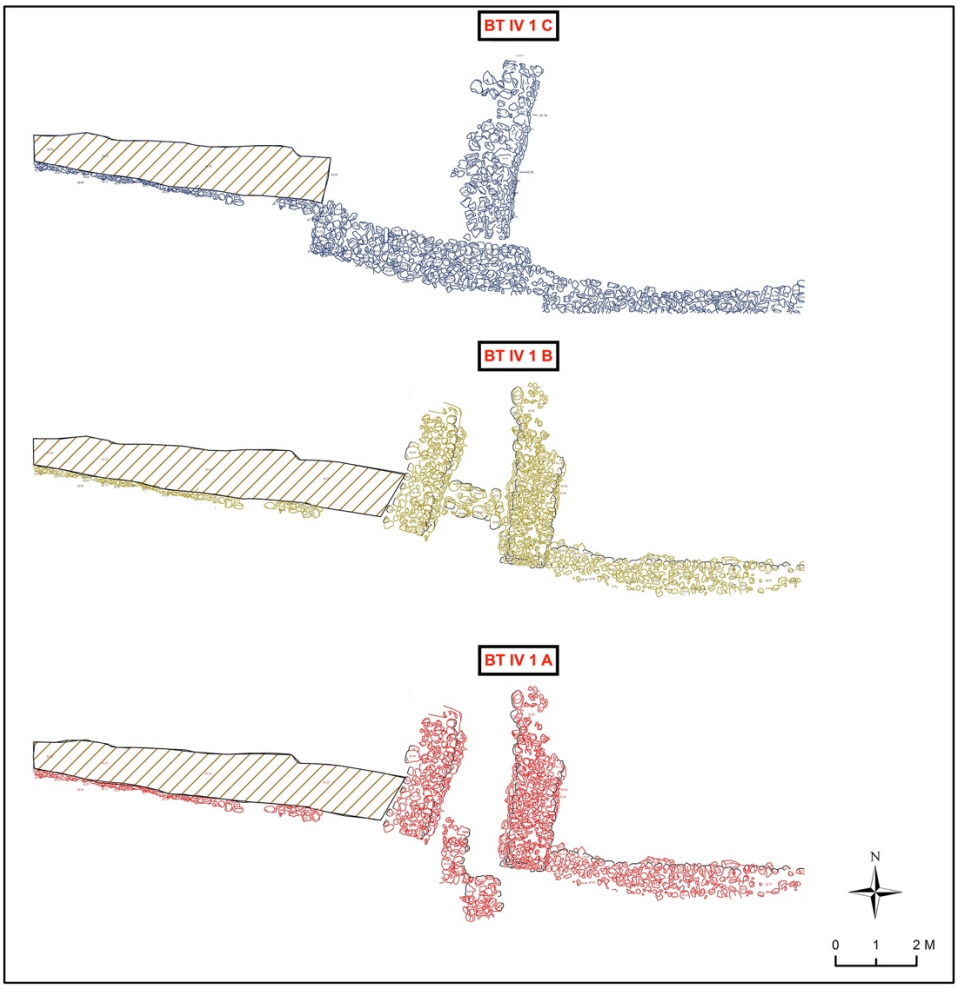

Fig. 6 Bakla Tepe level BT IV 1, development of the fortification wall on the north slope of the mound.

The second block (middle one) of the fortification wall is 5.45 m in length and like the western block, it is 1.40 m in width. 0.40 m portion of the second part of the wall adjoins the first part and the remaining 1m width was constructed towards the south of the first part (towards the inner part of the settlement), creating a saw-tooth pattern in the fortification system extending in the eastern direction (Fig. 6 and 7). This building technique further strengthens the system. 3 rows of the wall are preserved with partially larger stones used in the edges and relatively smaller stones in the middle. Unlike the other blocks, this wall was further supported by building another wall perpendicular to it in the north-south direction from the outside. This supporting wall must have been built in order to prevent the fortification wall from collapsing. Partially preserved up to 1 m in height, this wall is 4.40 m in length, and has 8 rows of stones built on one another. While the eastern face of this wall was built with regular large stones, the western face leans on the soil slope rather than forming an aligned wall (Fig. 6).

The third excavated block of the fortification wall is 6.30 m in length. Starting from the mid-section, this wall extends into the unexcavated area in the east (Fig. 6). The uncovered width of this wall is approximately 1 m. However, a portion of the wall falls into the margin of the unexcavated part of the trench. This third block of the fortification wall should also have a width of at least 1.40 m like the others (Fig.7). The fortification wall of the later level had collapsed during an earthquake at the end of phase BT IV 1 C tilting towards north.

Following the collapse of phase BT IV 1 C settlement due to a severe earthquake, radical changes took place on the northern part (on the slope) of the settlement during the following phase BT IV 1 B. During this phase, the fortification wall was further supported with a stone-paved, sloping gateway with two towers on its both sides. 2 m in width in the north, the gate entrance was gradually narrowed to 1.25 m towards south (Fig. 6).

Fig. 7 Bakla Tepe phase BT IV 1 C, fortification wall with a saw-tooth pattern.

A smaller portion of the defense system encircling the settlement during level BT IV 1 has also been unearthed on the southern side of the mound. This part of the fortification wall was in use with no changes throughout all phases of this later level. Like the northern part of the defense system, the stone wall is 1.40 m in width, and 4 rows of stones were preserved in its foundation. Outstretching in the east-west direction, the fortification wall continues towards northwest following the cone of the mound.

The fortification system of level BT IV 1, created a saw-tooth pattern on the northern side of the mound, thus preventing the fortification wall to collapse in one-piece, allowing changes to be made on the defense system, and enabling it to make a smoother turn in concordance with the topography of the mound. Due to the fact that the elevation on the southern side of the settlement is less than that of the northern side, the saw-toothed form of the fortification wall seems to have not been adopted on this side. The wall was being constructed with a natural bending following the shape of the mound on the southern side. This data is of particular importance in showing that the master builders had performed a risk assessment in the construction of the defense system and consequently built the fortification wall according to the topography of the settlement. Although the defense system of Troia has also been evaluated as a saw-toothed one (Korfmann, "Zu Troias Ältester..."), it is questionable and no real example with an exact saw-tooth pattern has so far been found in the coastal region of western Anatolia except for the one at Bakla Tepe. The defense system with a saw-tooth form unearthed at Hacılar Büyük Höyük in the inland region of western Anatolia is the most spectacular example of this special construction style uncovered to date (Umurtak and Duru, "Excavations Hacılar Büyük..." Plan 1; Umurtak and Duru, "Hacılar Büyük Höyük...").

3. The Domestic Architecture at Bakla Tepe

While a variety of building techniques and settlement patterns are seen in the second half of the 4th millennium BC, a more analogous settlement pattern consisting of encircling defensive walls and insula of long houses divided by streets was formed by the beginning of the 3rd millennium BC, both in the coastal region of western Anatolia and in the eastern Aegean Islands, (Gündoğan, Batı Anadolu Sahil... 360; Kouka, "Cross-Cultural Links..." 32)

The long houses at Bakla Tepe consist of western, eastern, southern and northern insulae. The structures within these blocks extending perpendicular or parallel to the defense system open to two main streets that run in the north-south direction. In phase BT IV 1 C of Bakla Tepe, the entrance to the settlement must have been reached through a gate located in the south. (Fig. 8). In phase BT IV 1 B, a new gate supported with two towers on both sides was also built on the northern slope of the mound (Fig. 9). This entrance with towers was also in use during the succeeding phase BT IV 1 A (Fig. 10). In phase BT IV 1 B, the street starting at the towered entrance on the northern slope continues towards south and joins the southwestern street running in the east-west direction, to which the western block

houses open. Another street starts at the southern side of the settlement and like the street located in the western part, extends in the north-south direction. This road network must have been completed with another street intersecting these roads in the middle of the settlement. Unfortunately, due to later destruction at the center of the mound, the connection of all these streets cannot be revealed with accuracy. However, a wall fragment of a structure, 1.50 m in length and belonging to phase BT IV 1 B, indicates that there must have been some structures at the center of the settlement instead of an open courtyard (Fig. 9).

The long houses seen at Bakla Tepe, constitute the dominant house-type among the settlements in the coastal region of western Anatolia and the eastern Aegean Islands during the first half of the 3rd Millennium BC. They usually consist of one or more rooms, a hearth located at the center and smaller fireplaces adjoining the house walls. Storage units located on the porch or at either right or left side of the entrance, are one of the most characteristic features of the Bakla Tepe long houses. These houses are not independently built but in all cases, belong to an insula sharing common walls with the adjacent houses. With or without porches in the front part opening to the street, these structures have also been defined as “row houses” in various publications (Erkanal and Özkan, "1995 Bakla Tepe..." 266; Hiller; Ivanova). Usually 10-25 m in length, the width of the long houses varies between 3 and 6 m. These structures were used as domestic space as well as for production activities.

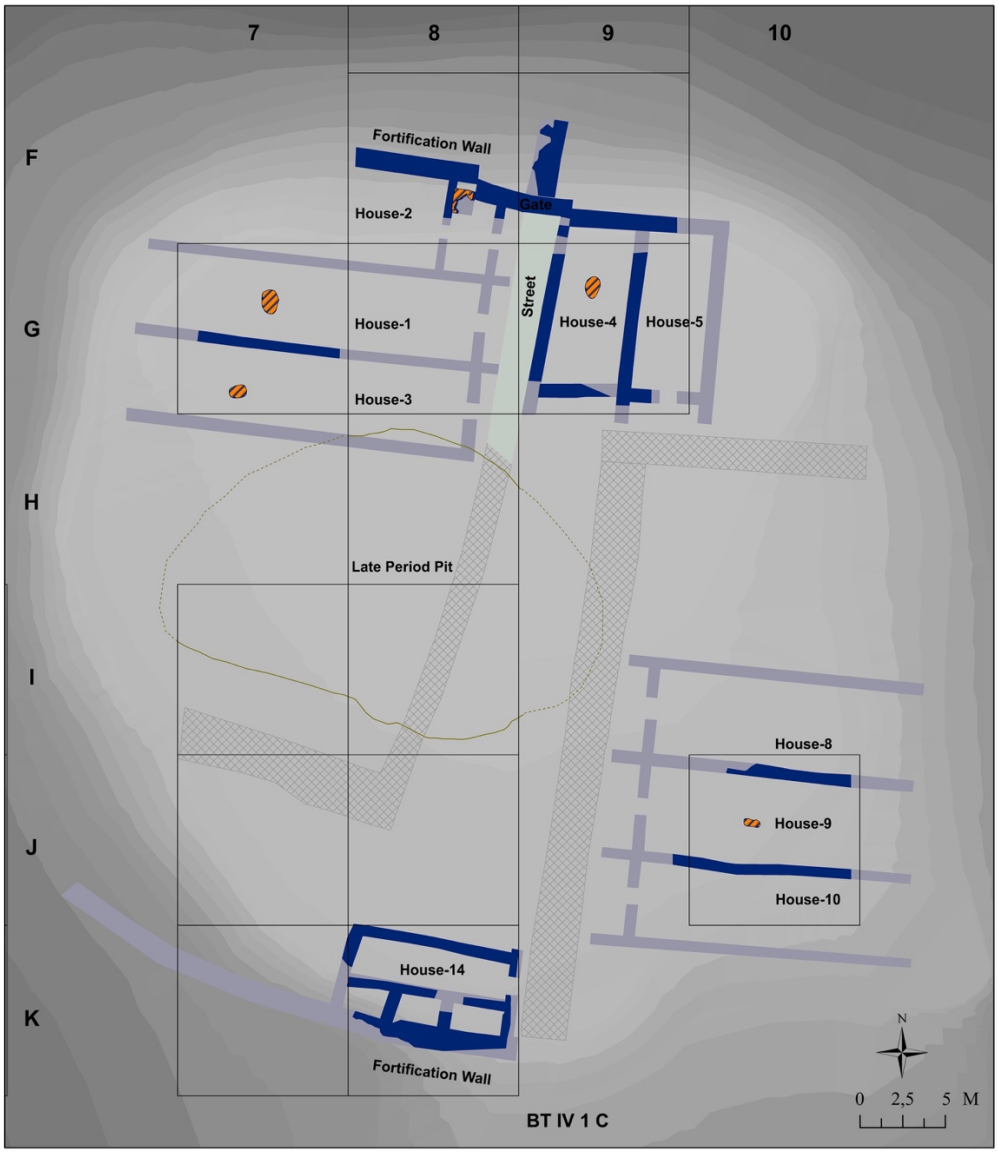

Fig. 8 Bakla Tepe phase BT IV 1 C, schematic plan of the settlement.

Streets and alleys are located between the insula of houses, either independent from the fortification wall, or extending parallel or perpendicular to it. Similar settlement layout is also attested at various sites in coastal western Anatolia from north to south, in Troia I (Ivanova), Beşik-Tepe (Korfmann, "Beşik-Yassıtepe 1986..."), Yassı-Tepe (Derin and Caymaz, Çiz. 3), Liman Tepe (Erkanal and Şahoğlu, "Liman Tepe (1992..."), Bakla Tepe (Erkanal and Özkan, "Bakla Tepe Kazıları"), Çeşme-Bağlararası 3 (Şahoğlu et al. Res. 16), Çukuriçi (Horejs, Grasböck and Röcklinger, Fig. 5.1), Çine-Tepecik (Günel, Res. 4) and in the eastern Aegean Islands at Poliochni (Kouka, *Siedlungsorganisation in Der Nord...* Plan 2), Yenibademli Höyük (Hüryılmaz, 185 Çiz. 4), Thermi (Lamb; Lamb and Brock) and Heraion (Kouka, “"Minding the Gap: Against... "”; Kouka, "Prehistoric Heraion Reconsidered..."), during the first half of the 3rd millennium BC. (Fig-11).

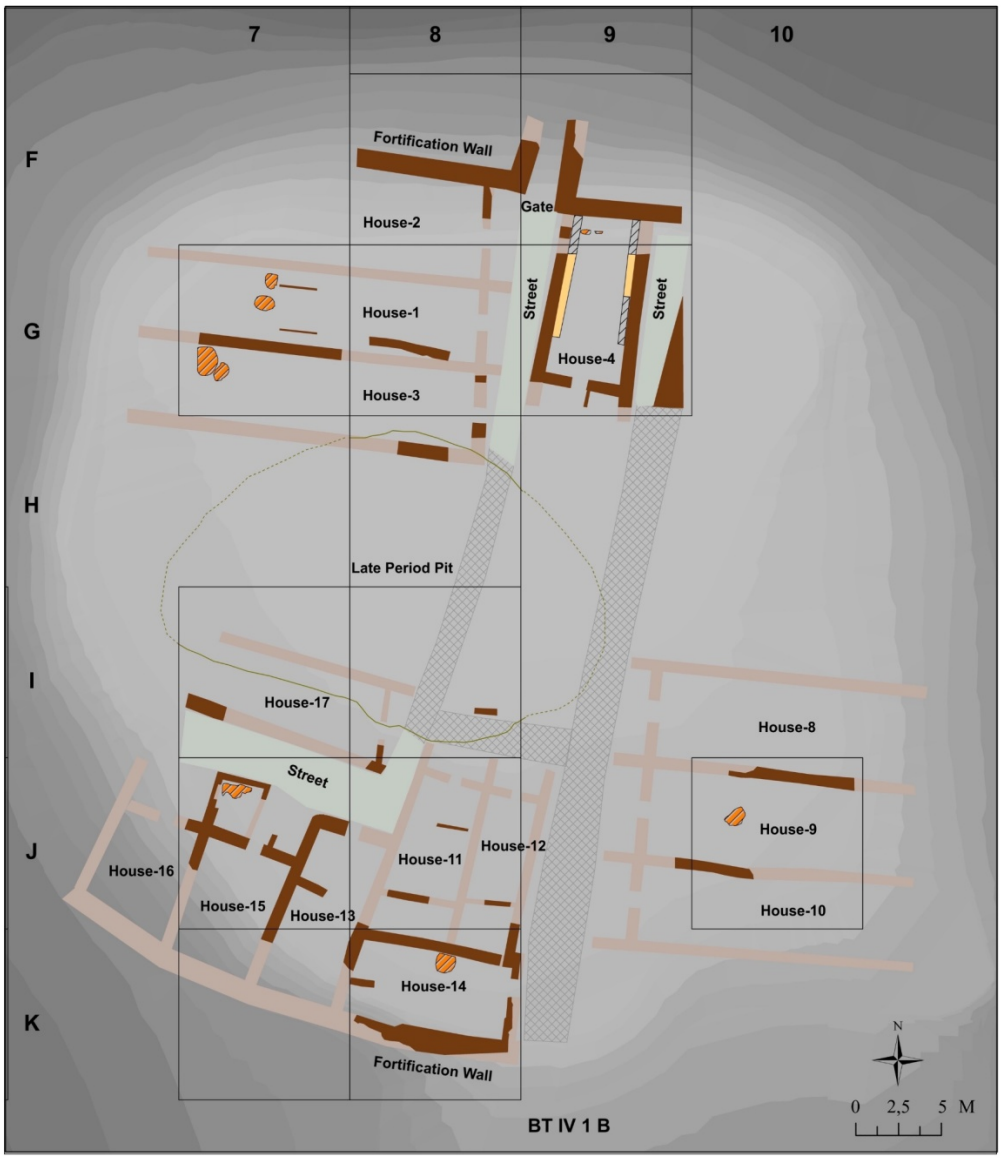

Fig. 9 Bakla Tepe phase BT IV 1 B, schematic plan of the settlement.

Megaron, is another architectural plan which was in use during this period. Even though the megarons have a similar plan to that of the long houses, they differ from the long houses in terms of being independent structures and their function. The long houses seen in the first half of the 3rd millennium BC could be evaluated as the predecessors of the megarons.

The earliest examples of megaron planned structures in western Anatolia appear for the first time during the first half of the 3rd millennium BC. Megaron House 4 which was in use during the later levels of Bakla Tepe (BT IV 1), revealed strong connection with metals (Fig. 9 and 10). This evidence can be used to associate this house plan with a probable élite group of inhabitants at Bakla Tepe.

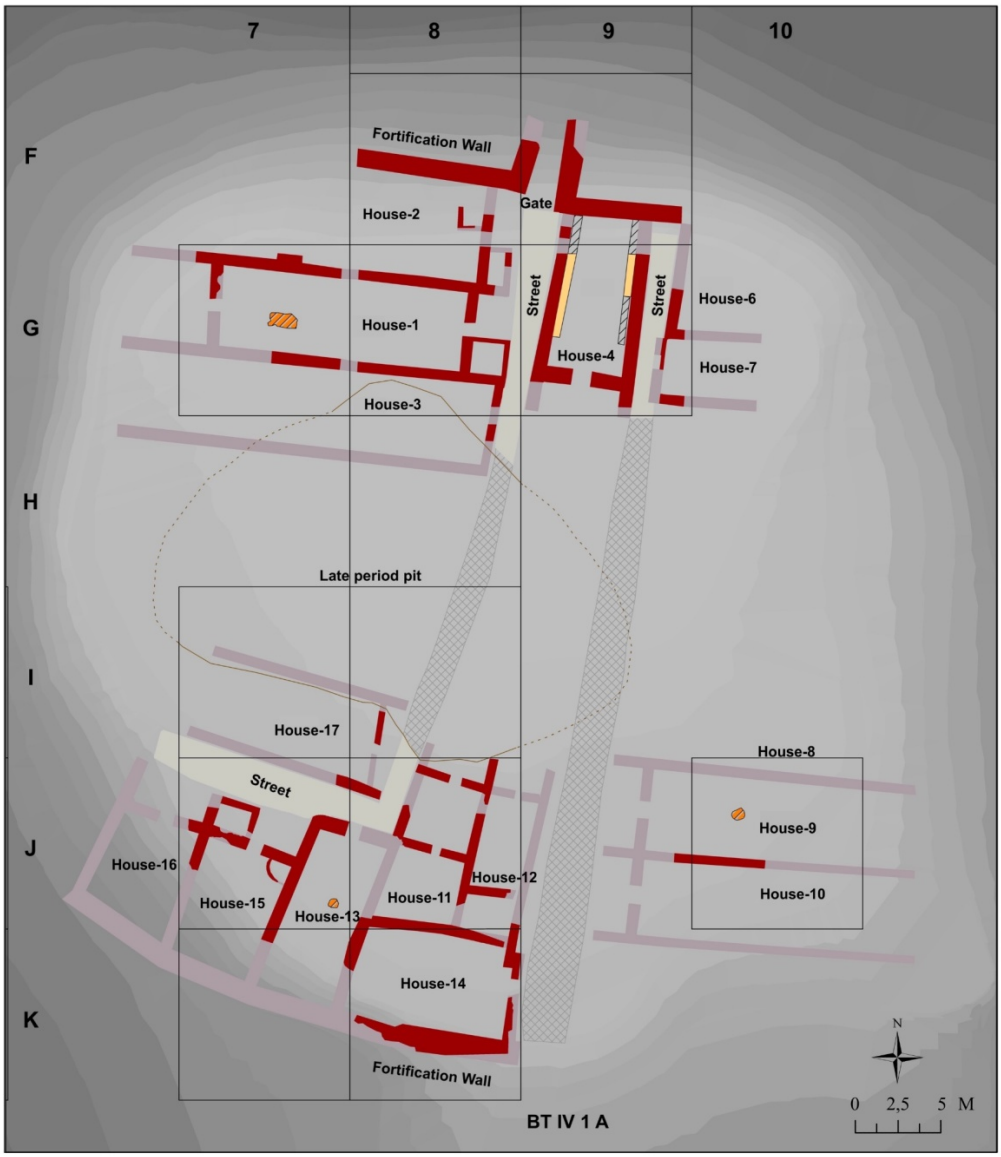

Fig. 10 Bakla Tepe phase BT IV 1 A, schematic plan of the settlement.

Megarons have been uncovered at Bakla Tepe in coastal western Anatolia, at Poliochni in the eastern Aegean Islands (Kouka, *Siedlungsorganisation in Der Nord...*), at Küllüoba in inland western Anatolia (Fidan, Res. 17), and at Büyük Hacılar Höyük (Umurtak and Duru, "Excavations at Hacılar Büyük...") and Karataş-Semayük (Warner) in southwestern Anatolia during the first half of the 3rd millennium BC.

House-14 at Bakla Tepe is another significant structure with its divided rectangular units (Fig. 8). Its building plan and location at the site, distinguishes this structure from all the other buildings. In phase BT IV 1 C, metallurgical activities were also attested in relation to this structure. Possibly located next to the main entrance, this structure must have been used as a public building of some sort, rather than a domestic one. House-14 of Bakla Tepe has a similar plan

(although smaller in size) to the building number 28 of Poliochni. Similar public buildings are known from sites like Poliochni (Bernabò Brea) and Heraion (Kouka and Menelaou) in the Eastern Aegean Islands.

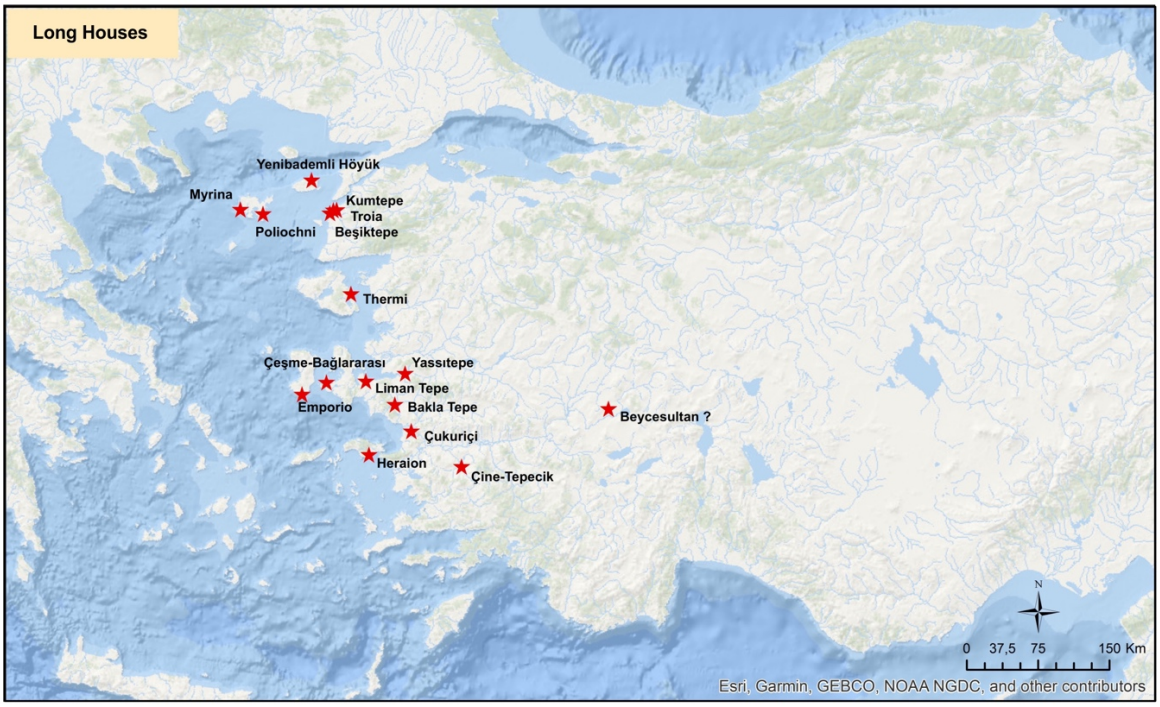

Fig. 11 Distribution of Long Houses in coastal western Anatolia and the eastern Aegean Islands.

4.Use of Space and Production Activities at Bakla Tepe

The Late Chalcolithic settlement at Bakla Tepe which had an open layout without a fortification wall and had independent house units, totally perishes with a big fire at the end of the Late Chalcolithic Period. Following this period, radical changes occur in the settlement model of Bakla Tepe at the beginning of the 3rd Millennium BC. The settlement shrinks in size and clustered around the mound, covering a much smaller area. A strong fortification wall was built around the settlement as a new aspect during this period. The idea of fitting more living space in the citadel enclosed by the fortification wall with less material, time and labor, has made the construction of the long houses with shared walls inevitable. As the settlement surrounded by the fortification wall got smaller in size, the area within the wall had to be used as efficiently as possible.

The idea of long houses manifested itself as a result of an advanced architectural understanding and collective workforce. While building structures with shared walls saved time, material and labor, the space saved from decreasing the number of walls was used for the construction of houses. When the southern insula of houses at Bakla Tepe is taken into consideration, if the 6 buildings that are part of this insula were to be built independently, 12, instead of 7 walls were going to be leaning on the fortification wall. By building these long houses as an insula, 7 walls were used saving up to 40% on both time and labor. In addition to this, the space that would be occupied by 5 more walls, averagely 0.60 m in width and more than 10 m in length, was saved and utilized for construction of other structures. Moreover, the shared use of the walls in the long houses allowed the structures to form blocks. Thus the buildings provided a healthier living space by protecting the interiors from extreme cold in winters and extreme heat in summers.

The streets were kept narrow on purpose in this new architectural layout of the settlement at Bakla Tepe. Although the corners of the buildings were almost in all cases rectangular (90^0), the corners of the houses adjacent to the streets were deliberately built in elliptical shape in order to provide wider space. The wall of House 13 facing the alley is a good example reflecting this architectural application (Erkanal and Özkan, "1996 Bakla Tepe…") (Fig. 9-10). Contemporary buildigs at Çukuriçi Höyük, which is located close to Bakla Tepe, were lined up side by side along the street and were being constructed with elliptic corners (Schwall Fig. 34). Similar practices were also attested at Çeşme-Bağlararası 2b (Şahoğlu et al.) in coastal western Anatolia, Thermi IV and the building level IV of Emporio in the eastern Aegean Islands (Hood; Şahoğlu et al.). This practice, aims to utilize the inner citadel within the defense wall in the best possible way. The fact that the walls of almost all the buildings located along the streets at Çukuriçi Höyük were built in an elliptic form, could indicate that the architectural plan of this settlement might have been studied and created before its construction had begun.

The layout of the settlements also had a significant effect on the production activities taking place at these sites. In the earlier phases of Bakla Tepe, the production activities were carried out in the open spaces between the buildings and the fortification system. As the fortification wall of Bakla Tepe's earlier level was being constructed with a gradual inclination, the walls of the long houses were not leaning on this wall, thus leaving enough open space for production activities in

between. Production activities continued uninterruptedly in these open spaces during both phases of the earlier level BT IV 2 A-B (Fig. 3-4).

Even though there is limited information about the settlement plan of the earlier phases at Bakla Tepe, there is good evidence for areas assigned for production activities within the citadel. Three small constructed units and an associated open working space were identified around the northern slope of the settlement inside the citadel (Fig. 4). Flint and obsidian debitage were found together with obsidian cores in this area. Antler and metal slags from the same area further highlight the presence of various activities of production in open areas located at this part of the settlement. (Fig. 3-4).

In the second phase (BT IV II A) of the earlier level, an apsidal structure was constructed at this location replacing the three small units of the earlier phase. Archaeological evidence related to this structure indicates that this time, the production activities continued to be carried out inside the apsidal structure and the open space adjacent to it. It is interesting to note that the lithic production specifically took place outside this building, and the evidence for this comes from the 2.50 m wide open space between the apsidal house and the fortification wall. The reason for carrying out the lithic industry outside the houses and limiting it to certain corners of the settlement must have been to prevent the scattering of sharp cutting edges of the debitage into the settlement and streets. This must have prevented cutting and wounding of the feet during walking inside the settlement. Open spaces were also particularly useful for benefiting from daylight while working on the production of chipped stone tools that require a finer workmanship.

The fact that metal-slag and crucibles have also been recovered from the open working spaces, sheds light on metal production activities at Bakla Tepe. Metallurgical and metal working activities took place again in the northern side of the settlement within the citadel in the open space near the fortification wall, especially in the earlier level until end of phase BT IV 2 A.

It has been clearly observed that specific areas within the citadel were assigned for production activities at Bakla Tepe (Fig. 3). Similar practices can also be seen at Poliochni and Thermi. In Poliochni starting from layer Azzurro, the metal production had continuously been carried out in area Insula I-II until phase Giallo (Kouka, "Zur Struktur Frühbronzezeitlichen …"). In phases Thermi I-IV A, the metal workshop is located in area E. Even though the settlement plan had changed in

phase Thermi IV A, metal production activities continued to be carried out at the same place in area E (Kouka, "The Embodiment Land…").

The size of the settlement shrank and consequently the houses were lined up in a denser order in the following later phases at Bakla Tepe BT IV 1 A-B-C (Fig. 8-9-10). This new development had a new impact on the behaviors of production for Bakla Tepe's inhabitants. The chipped stone industry which used to be carried out within the citadel in the previous phases was now transferred to an area outside the fortification wall. No evidence for flint or obsidian debitage have been found inside the citadel during this period. All the evidence belonging to the chipped stone industry consists of finished products. On the other hand, in a special area outside the citadel, to the south of the mound, 87 obsidian tools, 1 obsidian core, 1 obsidian core tablet and 6 hearths were found along with debitage. The fact that only obsidian finds and débitage were recovered in this special area, suggests that the production of obsidian tools was made by master knappers and flint tools were produced by the public in line with their daily needs (Kolankaya – Bostancı). This evidence clearly indicates that the chipped stone production activities were now being carried out outside the citadel as a new behavior of production activity at Bakla Tepe.

Metal production is another activity carried out within the citadel, inside the houses of Bakla Tepe. The fact that tools regarding metal production have been found not in all of the buildings but only in some structures (House-4, House-14) in phase BT IV I C, implies the presence of craftsmen specialized in this field. As for phase BT IV 1 B, the fact that metal production is seen only in House-4 and around this structure, could even suggest that metal production may have been controlled by a prominent household.

The loom weights and spindle whorls uncovered in the long houses of the later phases at Bakla Tepe, reveals that textile production was carried out in almost every household. The fact that unlike the other long houses, particularly in House-1, special working spaces were created for the work-flow related to textile production in the earlier and late phases, exhibits the significance of the textile production for this household. This can be evaluated as a step to specialization in textile production.

5. Conclusion

Architecture reveals the life-styles of societies and the development of construction techniques on one hand and provides important information on social organizations and the socio-political structures of the period on the other. The common working spaces around the structures located within the citadel give important information on the production activities of the communities.

The changes seen in the socio-political structures at the beginning of the 3rd millennium BC has led the way to the emergence and development of new settlement patterns, spatial organizations and new building types. The change manifested itself in architecture with the introduction of strong defensive systems, and the first appearance of insula of long houses built in a compact fashion within the citadels.

All the settlements of coastal western Anatolia from Troia in the north to Çine-Tepecik in the south, and in the eastern Aegean Islands from Poliochni in the north to Heraion in the south, reflect a similar architectural development in terms of construction techniques, building types and settlement patterns during the first half of the 3rd Millennium BC.

Although the ceramics recovered at Bakla Tepe during the first half of the 3rd millennium BC reflect the continuation of the traditions coming from the late 4th millennium BC, the fundamental innovations attested in architecture reflect the emergence of new, organized complex societies in this region by the beginning of the 3rd Millennium BC. The construction of massive defense systems, streets, and the insula of long houses, which requires complex organizations, clearly reflect the presence of a complex organized society at Bakla Tepe and the wider surrounding area during this period. The absence of a cultural interruption in the transition from the Late Chalcolithic Period to the Early Bronze Age points out that this fundamental change cannot be connected to a migration of different ethnic elements, and that it has emerged as a socio-political movement within the dynamics of the region itself (Erkanal, "Erken Tunç Çağı…").

Starting from the initial establishment of the settlements, the construction of the structures must have been executed in line with a particular plan, determining the locations of the defense systems, houses, streets and public areas. Following the settlement plan, the presence of an administrative body which decides on the locations of the houses and the street should also be questioned. In particular,

there might have been some kind of property rights established in the society, as the structures were re-built throughout different phases without a change in their directions and position plans. A similar way of construction to this Bakla Tepe approach seen in the late phases, has also been observed in other sites around coastal western Anatolia and the eastern Aegean Islands (Kouka, "The Embodiment Land…). The fact that the buildings were re-constructed without a change in their locations at Bakla Tepe, Liman Tepe, Troia (Blegen et al.; Ivanova) and Çeşme-Bağlararası in coastal western Anatolia and Thermi phase 1-2 (Lamb and Brock), in the eastern Aegean Islands, must have been connected to property rights. The protection of personal property may have been executed via a control mechanism which also controls the work-flow and organization of the construction of the defensive systems and the insula of long houses.

Important developments which could be defined as a cornerstone in the development of complex social societies in coastal western Anatolia and the eastern Aegean islands can be followed at Bakla Tepe during the first half of the 3rd millennium BC. As in Bakla Tepe, the fact that the settlements were surrounded with fortifications at the beginning of the 3rd millennium BC, points out to the emerging political and social changes in coastal western Anatolia and the neighboring cultural regions surrounding it. Towards the middle of the 3rd millennium BC, the settlements at Kumtepe (Riehl), Beşik-Tepe (Korfmann, "Beşik-Yassıtepe 1986… "), İzmir Yassı-Tepe (Derin and Caymaz), Çukuriçi (Horejs) and Bakla Tepe in coastal western Anatolia were abandoned, and new, bigger citadels with fortification walls, began to emerge at coastal sites like Troia and Liman Tepe. This may indicate that some small settlements were abandoned around the middle of the 3rd millennium BC, and people began to gather around larger regional centers. This new world order can be explained by the acceleration of social stratification and hierarchy and the rise of more complex societies around coastal western Anatolia and the eastern Aegean islands by the middle of the 3rd Millenium BC.

WORKS CITED

Bernabò-Brea, Luigi. *Poliochni I, Citta' Preistorica Nell'isola Di Lemnos.* Roma: Bretschneider, 1964.

Blegen, W. Carl et al. *Troy: General Introduction the First and Second Settlements.* New Jersey: Princeton University, 1950.

Derin, Zafer and Tayfun Caymaz. "İzmir'in Prehistorik Yerleşim Alanı-Yeşilova Höyüğü 2012 Yılı Çalışmaları." *Kazı Sonuçları Toplantısı* 35.1 (2014): 419-433.

Erkanal, Hayat. "Early Bronze Age Urbanization in the Coastal Region of Western Anatolia/ Erken Tunç Çağı'nda Batı Anadolu Sahil Kesiminde Kentleşme." *Housing and Settlement in Anatolia: A Historical Perspective*. Ed. Yıldız Sey. In Habitat II, İstanbul: 1996. 70-82.

---. "Erken Tunç Çağı Batı Anadolu Sahil Kesimi Yerleşim Modelleri ve Konut Mimarisi." *Karşıdan Karşıya. MÖ 3. Bin'de Kiklad Adaları ve Batı Anadolu*. Ed. Vasıf Şahoğlu and Peggy Sotirakopoulou. İstanbul: Sakıp Sabancı Müzesi, 2011. 130-135.

---. "Liman Tepe: New Light on Prehistoric Aegean Cultures." *Proceedings of International Symposium: The Aegean in the Neolithic, Chalcolithic and the Early Bonze Age.* Ed. Hayat Erkanal, Harald Hauptmann, Vasıf Şahoğlu and Rıza Tuncel, Ankara: Ankara Üniversitesi, 2008. 179-190.

---. "MÖ. 3. Bin'de Batı Anadolu Sahil Kesimi Ve Kiklad Adaları: Giriş." *Across: The Cyclades and Western Anatolia During the 3rd Millennium Bc.* Ed. Vasıf Şahoğlu and Peggy Sotirakopoulou. İstanbul: Sabancı Universitesi Sakıp Sabancı Müzesi, 2011. 116-122.

Erkanal, Hayat and Turhan Özkan. "1995 Bakla Tepe Kazıları." *Kazı Sonuçları Toplantısı*, 18.2 (1997): 261-280.

---. "1996 Bakla Tepe Kazıları." *Kazı Sonuçları Toplantısı*, 19.1 (1998): 399-425.

---. "1998 Yılı Bakla Tepe Kazıları." *Kazı Sonuçları Toplantısı*, 21.1 (2000): 263-278.

---. "Bakla Tepe Höyüğü Kazı Çalışmaları." *Tahtalı Barajı Kurtarma Kazıları Projesi / Tahtalı Dam Area Salvage Project*. ed. Turhan Özkan and Hayat Erkanal. İzmir: İzmir Arkeoloji Müzesi Müdürlüğü, 1999. 21-41.

Erkanal, Hayat and Vasıf Şahoğlu. "Bakla Tepe (1995–2001)." *Dil ve Tarih-Coğrafya Fakültesi 75. Yıl Armağanı Arkeoloji Bölümü, Tarihcesi ve Kazilari (1936–2011) Anadolu-Anatolia*, Ek Dizi 3.2. Ankara: Ankara Üniversitesi, 2012. 91-98.

---. "Liman Tepe (1992–)." *Dil ve Tarih-Coğrafya Fakültesi 75. Yıl Armağanı Arkeoloji Bölümü, Tarihcesi ve Kazilari (1936–2011) Anadolu-Anatolia*, Ek Dizi 3.2. Ankara: Ankara Üniversitesi, 2012. 219-230.

---. "Liman Tepe, an Early Bronze Age Trade Center in Western Anatolia: Recent Investigations." *Early Bronze Age Troy: Chronology, Cultural Development and Interregional Contacts.* ed. Ernst Pernicka, Sinan Ünlüsoy and Stephan W. Blum. Bonn: Verlag Dr. Rudolph Habelt Gmbh, 2016. 157-166.

Fidan, Erkan. "Küllüoba İlk Tunç Çağı Mimarisi." *MASTROP 7* (2012): 1-44.

Gündoğan, Ümit. "Bakla Tepe Buluntuları Işığında M.Ö 3. Binin İlk Yarısında Batı Anadolu Sahil Kesimi Mimarisi ve Yerleşim Modelleri." Unpublished Dissertation. Ankara: Ankara Üniversitesi, 2019.

---. "Batı Anadolu Sahil Kesiminde Kalkolitik Çağ: Mimari ve İnşaat Teknikleri." *Anadolu/Anatolia* 44 (2018): 351-370.

Günel, Sevinç. "Çine-Tepecik 2012 Yılı Kazıları." *Kazı Sonuçları Toplantısı* 35.2 (2014): 111-123.

Hiller, Stefan. "Early and Late Helladic 'Megara': Questions of Architectural Continuity in Bronze Age Greece." *Early Helladic Architecture and Urbanization.* Ed. Robin Hagg and Konsola Dora. Göteborg: Paul Aströms Förlag, 1986. 85-89.

Hood, Sinclair. *Excavations in Chios 1938-1955: Prehistoric Emporio and Ayio Gala.* London: Thames and Hudson, 1981.

Horejs, Barbara. "The Çukuriçi Höyük Research Project." *Çukuriçi Höyük 1. Anatolia and the Aegean from the 7th to the 3rd Millennium Bc.* Ed. Barbara Horejs. Vienna: Austrian Academy of Science Press, 2017. 11-26.

Horejs, Barbara, Stefan Grasböck and Maria Röcklinger. "Continuity and Change in an Early Bronze Age 1 Metal Workshop." *Çukuriçi Höyük 1. Anatolia and the Aegean from the 7th to the 3rd Millennium Bc.* Ed. Barbara Horejs. Vienna: Austrian Academy of Science Press, 2017. 95-125.

Hüryılmaz, Halime. "Gökçeada-Yenibademli Höyük 2011 Yılı Kazıları." *Kazı Sonuçları Toplantısı* 34.1 (2013): 169-186.

Ivanova, Maria. "Domestic Architecture in the Early Bronze Age of Western Anatolia: The Row-Houses of Troy I." *Anatolian Studies* 63 (2013): 17-33.

Kolankaya-Bostancı, Neyir. "Bakla Tepe Erken Tunç Çağı I Dönemi Obsidyen Atölyesi." *Hacettepe Üniversitesi Edebiyat Fakültesi Dergisi* 23.2 (2006): 221-232.

Korfmann, Manfred. "Beşik-Yassıtepe, 1986 Kazı Raporu." *Kazı Sonuçları Toplantısı* 9.1 (1987): 131-134.

---. *Demircihüyük I: Die Ergebnisse Der Ausgrabungen 1975-1978: Architektur, Stratigraphie Und Befunde.* Mainz am Rhein: Verlag Philipp von Zabern, 1983.

Kouka, Ourania. "Cross-Cultural Links and Elite Identities: The Eastern Aegean/Western Anatolia and Cyprus from the Early Third Millennium through the Early Second Millennium Bc." *Cyprus and East Aegean: Intercultural Contacts from 3000 to 500 Bc, Proceedings of the International Archaeological Symposium-Pythagoreion Samos.* Ed. Vassos Karageorghis and Ourania Kouka. Nicosia: Leventis Foundation, 2009. 31-47.

---. "The Embodiment of Land Ownership in the Aegean Early Bronze Age." *An Archaeology of Prehistoric Bodies and Embodied Identities in the Eastern Mediterranean.* Ed. Maria Mina, Sevi Triantaphyllou and Yiannis Papadatos. Oxford: Oxbow books, 2016. 129-135.

---. ""Minding the Gap": Against the Gaps, the Early Bronze Age and the Transition to the Middle Bronze Age in the Northern and Eastern Aegean/Western Anatolia." *American Journal of Archaeology* 117.4 (2013): 569-580.

---. "Prehistoric Heraion Reconsidered: Glimpses on the Excavations 2009–2013 North of the Sacred Road." *Ein Minoer Im Exil, Festschrift Für Wolf-Dietrich Niemeier*. Ed. Diamantis Panagiotopoulos, Ivonne Kaiser and Ourania Kouka. Bonn: Dr. Rudolf Habelt GmbH, 2015. 223-242.

---. *Siedlungsorganisation in Der Nord-Und Ostägäis Während Der Frühbronzezeit (3. Jt. V.Chr.).* Internationale Archaologie 58. Rahden: Marie Leidorf, 2002.

---. "Zur Struktur Der Fruhbronzezeitlichen Insularen Gesellschaften Der Nord-Und Ostägäis: Ein Neues Bild Der Sogenannten Trojanischen Kultur." *Proceedings of the International Symposium the Aegean in the Neolithic, Chalcolithic and the Early Bronze Age.* Ed. Hayat Erkanal, Harald Hauptmann, Vasıf Sahoglu and Rıza Tuncel. Ankara: Ankara Üniversitesi, 2008. 285-301.

Kouka, Ourania and Sergios Menelaou. "Settlement and Society in the Early Bronze Age Heraion: Exploring Stratigraphy, Architecture and Ceramic Innovation after Mid-3rd Millennium Bc." *Pottery Technologies and Sociocultural*

Connections Betwen the Aegean and Anatolia During the 3rh Millennium Bc. Ed. Eva Alram-Stern and Barbara Horejs. Vienn: Österreichische Akademie der Wissenschaften, 2018. 119-144.

Lamb, Winifred. *Excavations at Thermi in Lesbos.* Cambridge: Cambridge University Press, 1936.

Lamb, Winifred and J. K. Brock. "Excavations at Thermi." *Annual of the British School at Athens* 31 (1933): 148-165.

Riehl, Simone. *Bronze Age Environment and Economy in the Troad: The Archaeobotany of Kumtepe and Troy. Bioarchaeologia* 2. Tübingen: Mo Vince Verlag, 1999.

Schwall, Christoph. *Çukuriçi Höyük 2: Das 5. Und 4 Jahrtausend V. Chr. In Westabatolian Und Der Ostagais.* Oriental and European Archaeology 7, Vienna: Verlag der österreichische akademie der wissenschaften, 2018.

Şahoğlu, Vasıf. "Crossing Borders, the Izmir Region as a Bridge between the East and the West During the Early Bronze Age." *Crossing Borders: Proceedings of the 7th, 8th and 9th International Workshops, Athens 1997–1999*. Ed. Carole Gillis and Birgitta Sjöberg. Sävedalen: Aström, 2008. 153-173.

---. "Liman Tepe and Bakla Tepe: New Evidence for the Relations between the Izmir Region, the Cyclades and the Greek Mainland During the Late Fourth and Third Millennia Bc." *Proceedings of the International Symposium the Aegean in the Neolithic, Chalcolithic and the Early Bronze Age.* Ed. Hayat Erkanal, Harald Hauptmann, Vasıf Sahoglu and Rıza Tuncel. Ankara: Ankara Üniveristesi, 2008. 483-501.

Şahoğlu, Vasıf et al. "Çeşme-Bağlararası: Batı Anadolu Sahil Kesiminde Bir Tunç Çağı Yerleşimi." *Anadolu/Anatolia 44* (2018): 371-389.

Umurtak, Gülsün and Refik Duru. "Excavations at Hacılar Büyük Höyük in 2016 - Hacılar Büyük Höyük Kazıları-2016." *ANMED* 15 (2017): 27-35.

---. "Hacılar Büyük Höyük Kazıları 2013." *Arkeoloji ve Sanat* 145 (2014): 1-20.

Warner, Jayne. *Elmalı-Karataş 2: The Early Bronze Age Village of Karataş.* Bryn Mawr: Bryn Mawr College, 1994.