



## Ancient Waterfront Palaces: A Case Study of the Triconch Palace in Butrint<sup>1</sup>

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### 1 ABSTRACT

The main goal of the work is to comprehend the motivations behind building an ancient palace next to a body of water and to define the effects of the waterbody on the waterfront palace design. To achieve this goal, the primary waterfront palaces, built in the Mediterranean and Middle East, have been studied chronologically in three time periods determined as Pre-Hellenistic Era, Hellenistic Era, Roman and Late Antique Era in order to detect the structural evolution of the investigated palaces and their interactions with one another.

Using the acquired information, the ancient waterfront palaces have been divided into two main classes as artificial and natural. Artificial waterfront palaces are built inland by creating a man-made waterbody, while the natural waterfront palaces are built next to an untouched waterbody, such as seas, lakes and rivers. Due to the vulnerable location of the natural waterfront palaces, they have been divided into three subclasses regarding the level of security considered for their design.

In order to understand natural waterfront palaces in depth, the Triconch Palace in Butrint, which provides significant information about the design of waterfront palaces in the Roman period, has been chosen as the main focus of the research. The palace was built in 2.- 4. centuries A.D. next to the Vivari Channel. On its first phase, which coincides with Pax Romana period, the palace reflects the features of a Roman seaside villa. After the end of Pax Romana period the increase in the security need caused structural changes on the design of the palace, which sheds light on the evolution of the natural waterfront palaces.

### 2 INTRODUCTION

There is a wide range of written sources about the ancient palaces, whereas the sources regarding palaces built next to a body of water and especially about the relationship between the water and an adjacent palace structure are scanty. Since the mentioned sources handle mainly the palaces around Mediterranean and the Middle East, examples from cultures such as the ancient palaces of China and India have been excluded due to the lack of archaeological data. Therefore the main waterfront palaces, built in Mediterranean and Middle East dating from 14th century B.C. until 7th century A.D., have been included into the scope of the research by means of the sufficient information gained through archaeological excavations and ancient sources.

The main goal of the work has been to comprehend the motivations behind building an ancient palace next to a body of water and to define the effects of the waterbody on the waterfront palace design. In order to choose the appropriate samples for the work, the initial aim has been set as composing a detailed definition of a waterfront palace.

Buildings with the attributes of being designed as a locale for administration and accommodation to be used by a ruler, governor, or a senior official along with being positioned in direct contact with a natural or artificial body of water which shapes the entire design, especially that of the waterfront façade, have been regarded as waterfront palaces. Two vital points should be taken into account when qualifying a building as a waterfront palace: Construction separating the waterbody and the main body of the palace resulting in the weakening of the contact in between should be nonexistent, and, for palaces located at a higher altitude than that of the water, the distance between the waterbody and the palace should not exceed the length of the palace area.

<sup>1</sup> This article is based on the dissertation written by M. Kaan Sağ titled “Antik Dönem Su Kenarı Sarayları”, Istanbul Technical University, Institute of Science, MSc Thesis, 2010.

### 3 THE CHRONOLOGY OF ANCIENT WATERFRONT PALACES

In order to detect the structural evolution of the investigated palaces and their interaction in between, the palace examples from 14<sup>th</sup> century B.C. to 7<sup>th</sup> century A.D. have been examined chronologically in three time periods determined as Pre-Hellenistic Era, Hellenistic Era, Roman and late antique era.

The waterfront palaces in Pre-Hellenistic Era were designed directly on a riverbank or next to artificial waterbodies connected to a river with the exception of the Halikarnassos Palace designed on seaside, which served as an inspiration for the Hellenistic palace of Alexandria.<sup>2</sup> One of the first examples of waterfront palaces were Malkata Palace adjacent to an artificial lake, and the Great Amarna Palace with a grid plan on the River Nile built in Ancient Egypt in 14<sup>th</sup> century B.C.. The following examples of Apries Palace on the River Nile, The Southern Palace of Babylon on the Euphrates and Achaemenid waterfront palaces were all built in between 6<sup>th</sup> and 4<sup>th</sup> century B.C.. Whereas the Apries Palace and the Southern Palace of Babylon were designed around multiple courtyards and had a weak relationship with the waterbody adjacent to them, the gardens and landscape design of these two palaces had a great impact on the Achaemenid waterfront palaces with paradeisos atmosphere including Pasargad Palace next to artificial water channels (6<sup>th</sup> century B.C.), Susa Artaxerxes II Palace (4<sup>th</sup> century B.C.) and Anatolian Satrap Palaces Kelainai, Daskyleion on riverside and finally Halikarnassos Palace on the Aegean Sea (5<sup>th</sup> -4<sup>th</sup> century B.C.). The Achaemenid paradeisos, meaning paradise in Greek, with water and garden elements was an integral component of these palaces.<sup>3</sup>

It is considered that besides the Achaemenid Palaces of the Persian kings, who lived in Apries and Southern Palace of Babylon for a while, the Hellenistic Palaces built by Alexander the Great were also affected by the landscape design of Apries and Southern Palace of Babylon, especially the earliest waterfront palace of the Hellenistic period the Palace of Alexandria of Ptolemaic Kingdom (4<sup>th</sup> century B.C.).<sup>4</sup> The next one was the floating palace Thalamegos of Ptolemaic Kingdom constructed in 3<sup>rd</sup> century B.C.. In the same century Antiochia Palace on the river of Orontes and Ai Khanoum Palace on the river of Amu Darya were built by the Seleucid Kingdom. Finally in 2<sup>nd</sup> century B.C. the Tyrus Palace was built in Ptolemaic Kingdom by the local governor Hyrcanus in the middle of an artificial moat.

The palace arrangements of Achaemenid Paradeisos, on which the water and the garden are the dominant components, affected the relationship between water and the structure in Roman palaces as well as in Hellenistic palaces.<sup>5</sup> The Roman waterfront palaces were mostly built on seaside such as Sperlonga Grotto, Villa Jovis, Villa Damecuta of Emperor Tiberius, Caesarea Palace, Triconch Palace constructed in the Pax Romana period. In the same period, Jericho Winter Palace and Dura Europos Palace were located on the borders of Roman Empire on riverside. The latest known waterfront palaces of Roman Empire were Split Palace and Boukoloeon Palace constructed after the end of Pax Romana period with security measurements in the foreground. On the other hand, Sassanid waterfront palaces were built next to the artificial waterbodies such as Firuzabad Palace (3<sup>rd</sup> century A.D.) next to an artificial lake and Qasr-i Shirin Palace (7<sup>th</sup> century A.D.) adjacent to a large scale water channel.

### 4 THE TYPOLOGY OF ANCIENT WATERFRONT PALACES

#### 4.1 Artificial Waterfront Palaces

Within the scope of this work, the ancient waterfront palaces have been divided into two main classes depending on whether the waterbody next to the palace is artificial or natural. In accordance with this, the first class, namely the artificial waterfront palaces, have been accepted as the palaces which were built inland on a terrestrial site adjacent to a man-made waterbody such as an artificial lake, moat or water channel. This artificial waterbody should be in sufficient proximity and size to affect the entire design of the palace. Since these palaces were not located on a main body of water way such as sea or river, they were designed without precaution against the potential threats coming from the water. The waterfront facade of these buildings were planned permeable at utmost level for taking advantage of paradeisos atmosphere softening the terrestrial climate. The artificial waterfront palaces were mostly located in Egypt and Near East. In this context,

<sup>2</sup> NIELSEN, Inge: Hellenistic Palaces Tradition and Renewal. Aarhus, 1999, p. 65.

<sup>3</sup> Ibid. p. 50.

<sup>4</sup> Ibid. pp. 27-34.

<sup>5</sup> Ibid. pp. 49-65.

Malkata Palace, Pasargad Palace, Tyrus Palace, Qasr-i Shirin Palace and Firuzabad Palace can be considered as primary examples of artificial waterfront palaces.

Malkata Palace was built by the 18<sup>th</sup> dynasty pharaoh Amenhotep III (1386-1349 BC) in Western Thebes in the middle of a plain desert (Fig. 1). The 18<sup>th</sup> dynasty was the period in which Egypt became the greatest power among rivaling world states.<sup>6</sup> The palace complex of Amenhotep III consisted of four palace buildings on an area of 270 to 350 meters and a vast T-shaped lake connected to the River Nile.<sup>7</sup> The artificial lake, designed in connection with the River Nile in the eastern part of the palace complex, served on one hand as the royal port of the palace and on the other hand as an area in which the king and queen spent time on their pleasure boats made of ebony tree and gold. This ornamental lake was approximately 1600 meters long and 300 meters wide.<sup>8</sup> In present day, the eastern part of the palace complex has been eroded and covered with earth due to the bad weather conditions. This prevents acquiring sufficient information about the eastern gate of the palace complex, which must be adjacent to the royal port and waterfront facade of the south palace, considered as belonging to the Queen Tiy.<sup>9</sup> On the site plan, the western gate and eastern gate of the palace complex are located on the same axis, which is the main axis of the palace complex.

Sassanid Era during Late Antiquity was another period in which artificial waterfront palaces were built intensively. The palace of Ardashir I (226-241 AD), founder of the Sassanid Empire, in Firuzabad is one of the oldest known Sassanian structures (Fig. 2). On the plan the palace covers a rectangle area of 55 meters to 104 meters. The large barrel-vaulted iwan forming the main entrance of the building and two rooms on each side of the entrance form a symmetrical space. The entrance iwan emphasizes the main axis, which shapes the entire palace design and the surrounding landscape. The artificial circular lake in front of the entrance facade on the main axis indicates the axial order fulfilled with the palace design. The accentuated symmetry of the plan reflects that everything is part of a supreme principle and essence.<sup>10</sup> The lake, formed by enclosing the waters of a stream in a circular wall with a diameter of approximately 50 meters, was located in front of the palace in relation to the sacredness of the water in zoroastrianism. Furthermore, as in the case of Taq-e Bostan, the lake in front of the Firuzabad Palace is considered as a symbol of supernatural approval and support for the ruler.<sup>11</sup>

## 4.2 Natural Waterfront Palaces

As opposed to artificial waterfront palaces, natural waterfront palaces were built next to an untouched waterbody, such as seas, lakes and rivers. Due to the vulnerable location of the natural waterfront palaces on the main water ways connected with the open sea, they have been divided into three subclasses regarding the level of security considered for their design against the potential threats coming from the water (Fig. 3): Waterfront palaces open on the water level with minimal security, waterfront palaces open on a high level with major security, introverted waterfront palaces with maximum security.

### 4.2.1 Waterfront Palaces Open on the Water Level with Minimal Security

The common feature of the waterfront palaces open on the water level is that the security measures taken as precaution against the potential threats coming from the water are considered as a minor design factor. These palaces associate with the water at a maximum level. Usually, there is a landscape arrangement between the building and the waterbody creating a paradisiac atmosphere. The part of the palace or the palace area facing the water is designed to be permeable both on water level and on higher levels. The permeability between the building and the waterbody provides the evolution waterfront facade design and brings with it the practice of designing the facade as a complete unit. In this context, The Great Palace of Amarna, the Palace of Artaxerxes II in Susa, Roman seaside villas, the Triconch Palace in Butrint, the Caesarea Palace and the Grotto of Tiberius in Sperlonga can be considered as primary examples of this subclass.

One of the first waterfront palaces The Great Palace of Amarna on the River Nile (1350 BC) is at the same time one of the first natural waterfront palaces. However the natural waterfront palaces became widespread

<sup>6</sup> BRATTON, Fred Gladstone: *The Life and Times of Ikhnaton the King*. Boston, 1961, pp. 40-51.

<sup>7</sup> BADAWY, Alexander: *Architecture in Ancient Egypt and The Near East*. London, 1966, p. 31.

<sup>8</sup> BADAWY, Alexander: *A History of Egyptian Architecture*. Berkeley, 1966, p. 49.

<sup>9</sup> SMITH, Stevenson: *The Art and Architecture of Ancient Egypt*. England, 1965, pp. 160-172.

<sup>10</sup> POPE, Arthur Upham: *A Survey of Persian Art, From Prehistoric Times to the Present*. London, 1938, pp. 534-537.

<sup>11</sup> AKIN, Günkut: *Asya Merkezi Mekan Geleneği*. Ankara, 1990, p. 155.

in Pax Romana period through the seaside villas emerged in Mediterranean (Fig. 4). In Pax Romana period, which was initiated by Augustus in 27 BC and lasted for about 200 years, the Mediterranean Sea became an enclosed sea and therefore the seatriade began to be carried out without the threat of piracy.<sup>12</sup> The safe environment with the disappearance of the enemy threat caused the hellenistic city walls remain functionless and to be demolished. In this period seaside villas (Villa Maritimae) emerged in Giglio, Giannutri, Argentario, Italian mainland and increased rapidly in number.<sup>13</sup>

Art historian Swoboda (1889-1977) sorted the Roman villas into three main types according to their plan scheme as peristyle villa, porticus villa and porticus villa with corner risalits.<sup>14</sup> Since the portico structure adapted highly to the shoreline by opening directly to the sea, porticus villa plan scheme became the main plan scheme of seaside villas, which comprise in some cases both peristyle and porticus plan scheme together.<sup>15</sup> It is known, that seaside villas were used also by Roman emperors such as Augustus, Tiberius, Nero and Domitian.<sup>16</sup> The portico, which is the primarily component of seaside villas increased the permeability between the palace and the waterbody. It provided the integration of the palaces with nature and increased the number of the the waterfront facade variations. The proliferation of the seaside villas in such a peaceful period, in which Roman Empire reached its largest borders with a total security inside indicates that the permeability of the waterfront palaces built directly on the sea shore is related with the confidence of an administrative strength.

#### 4.2.2 Waterfront Palaces Open on a High Level with Major Security

The common feature of the waterfront palaces open on a high level is that the isolation and the security measures taken as precaution against the potential threats coming from the water are considered as major design factors. For this purpose the part of the waterfront facade opening to the water is located on a higher level than the water level on top of a impermeable or a less permeable surface such as a blind wall or a cliff. These palaces were mostly built in war periods or on the borders. In this context Split Palace, Boukoleon Palace, Villa Jovis, Villa Damecuta, Dura Europos Palace, 3. Jericho Winter Palace, Halicarnassus Palace, Antiochia Palace, Thalamegos and Alexandria Palace can be considered as primary examples of this subclass.

Through the archaeological outputs and written sources Split Palace is one of the most informative example of the waterfront palaces open on a high level with major security (Fig. 5). The palace was built in Split, Croatia by the Roman emperor Diocletian at the beginning of the 4th century as a retirement for himself. The military plan of the palace indicates that the palace was built in an insecure period.<sup>17</sup> The palace comprises porticus villa plan scheme and military camp (castrum, praetorium) features together.<sup>18</sup> In the third century as a reaction to the sack threat of plunderer tribes military requirements began to affect the Roman architecture as is seen on Aurelian Walls in Rome (271-275 AD). Villas with military plan, which emerged at the end of the third century prove that the Split Palace was not a unique example.<sup>19</sup>

Split Palace has a rectangle plan with a south facade on seaside and a north facade on land side approximately 180 meters in length, additionally a west and an east facade approximately 216 meters in length (Fig. 6). The exterior walls of the palace are protected by square and octagonal towers projecting from the facades and giving a castlelike character to the palace. The main gates of the palace are located in the middle of the north, east and west facades opening to the two colonnaded streets intersecting on the centre of the palace. The colonnaded street extending on the east-west axis divides the building into two sections as north and south parts. Today it is considered that the north part of the palace, which is less conserved than the south part was used as the residence section for soldiers and servants. Conversely in the southern part of the palace the emperor's private units were positioned to take full advantage of the sea view. The south facade among the two corner towers comprises a gallery with rhythmic arcades and three lodges on a specific

<sup>12</sup> RODGERS, Nigel: Ancient Rome. London, 2006, p. 12.

<sup>13</sup> McKAY, Alexander : Houses, Villas and Palaces in the Roman World. London, 1975, p. 106.

<sup>14</sup> SWOBODA, Karl: Römische und Romanische Palaeste. Wien, 1924, pp. 29-60.

<sup>15</sup> McKAY: *ibid.* pp. 115-117.

<sup>16</sup> *Ibid.* p. 131.

<sup>17</sup> RODGERS: *ibid.* p. 350.

<sup>18</sup> McKAY: *ibid.* pp. 206-207.

<sup>19</sup> WARD\_PERKINS, John Bryan: Roman Imperial Architecture. Hong Kong, 1981, p. 458.

height higher than the water level. Two of these lodges are on the eastern and western edges of the facade and the other one is in the middle. Under the middle lodge there is the sea gate, which is smaller than the other three main gates and a quay located on the water level.<sup>20</sup>

The function of the gallery, which appears from the seaside along the south facade is to interrelate the private emperor units with the sea. The permeability of this corridor gallery was accomplished by an arcade along the waterfront facade, as is seen on the seaside villas. The massive towers on both sides of the waterfront facade and the blind wall under the gallery with the sea gate indicate that the facade was planned to protect the palace from the threats coming from the water and on the other hand utilize the visual advantages of the sea by the emperor. The effect of the waterbody on the plan scheme of the palace is visible by the symmetry created through the two axes connecting the main gates in the middle of the facades and intersecting each other on the centre of the palace. Especially the street along the north-south axis with emperors units attached indicates that the privacy of the north-south axis related with the seaside and quay is another effect of the waterbody on the palace design.

#### 4.2.3 Introverted Waterfront Palaces with Maximum Security

The common feature of the introverted waterfront palaces is that they were built around courtyards and the exterior walls were impermeable or permeable at minimum level as is seen on the first monumental palaces built inland mostly on top of a hill. Although these structures were built next to a waterbody, their relationship with the water was weak due to the security measures. In this context The Southern Palace of Babylon, Apries Palace and Ai Khanoum Palace can be considered as primary examples of this subclass.

The Southern Palace of Babylon next to the Euphrates was built by the king of Neo-Babylonian Empire Nebuchadnezzar II (604-532 BC) on the north side of the city of Babylon adjacent to the city walls (Fig. 7). The Southern Palace of Babylon was constructed around five consecutive courtyards on the east-west axis surrounded by the private units of the palace. The main entrance of the palace was on the eastern courtyard opening to the main procession street of the city, which connects the Ishtar Gate with Marduk Temple and Ziggurat along the eastern side of the Royal Palace. The two consecutive courtyards on the eastern part of the palace were used for administrative purpose. The third courtyard in the middle was called the main courtyard. This courtyard was 60 to 55 meters long and the throne room of the king stood on its south edge. The western part of the palace following the main courtyard was the first palace of Nabopolassar (658-605 BC). This part comprised the two western courtyards surrounded by the private rooms of the king. The harim was located on the south side of the western courtyards.<sup>21</sup> Nebuchadnezzar builded a 25 meters wide fort among the Euphrates and the western part of the palace as a protection against the moisture of the river. It is also known, that on the contrary to the River Nile, Euphrates used to flood unpredictably.<sup>22</sup>

The Southern Palace of Babylon reflects the common features of the first monumental palaces built inland with introverted multi-courtyard character. The citadel, which was built among the palace and the Euphrates against the flood, moisture and enemy threat decreased the relationship of the waterfront palace with the waterbody to a minimum level. This fact indicates that the waterbody had scarcely any effect on the design of the Southern Palace.

## 5 THE TRICONCH PALACE AND THE EVOLUTION OF NATURAL WATERFRONT PALACES

Within the scope of the work the Triconch Palace has been included into the subclass of the natural waterfront palaces open on the water level with minimal security. The reason was that on its construction phase, which coincides with Pax Romana period, the palace reflects the features of a Roman seaside villa. However after the end of Pax Romana period the increase of the security need caused structural changes on the design of the palace. Since these changes shed light on the evolution of the natural waterfront palaces, the Triconch Palace in Butrint has been chosen to analyze in depth.

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<sup>20</sup> McKAY: *ibid.* pp. 206-207.

<sup>21</sup> ÖNGÜL, Zehra: Kıbrıs'taki Vuni Sarayı ve antik çağ saray mimarisi içindeki yeri. I.T.U., Institute of Science, Phd Thesis, 2005, p. 27.

<sup>22</sup> OATES, Joan: Babil. Istanbul, 2004, pp. 155-164.



The Triconch Palace was built in Roman Imperial period on the south part of the Butrint on the shore of Vivari Channel connecting Butrint Lake with Corfu Strait (Fig. 8). Butrint (Buthrotum), an ancient Greek city within the borders of Albania, was one of the main ports of the Adriatic Sea since its establishment. The ancient Greek city Butrint consisted of two main parts such as acropolis, which is 42 meters higher than the water level and lower city on the level of Vivari Channel. The earliest settlement traces of the city dating back to 8th century BC have been found on acropolis. In archaic period Butrint was a cult city dedicated to the Asclepius. In this period a theatre and a temple dedicated to Asclepius were built on the south part of the acropolis.<sup>23</sup> In the 4th century BC the acropolis was enclosed with city walls. The city, which became a Roman colony in the reign of Augustus (27 BC-14 AD) remained as a port of the Roman Empire until the 6th century<sup>24</sup>.

The city of Butrint was reshaped in colonial period of Roman Empire. Some large scale public buildings, such as a bath, a basilica, a baptistery and aqueducts were built out of the 4th century acropolis walls. In this period the Triconch Palace was located in the lower city next to the Vivari Channel<sup>25</sup>. Archaeologically it has been discovered that in the palace area there are traces of three different periods. The first phase of the palace covers the timeline between the 2nd century and 4th century. In this period the palace was designed as a small scale Roman seaside villa on the shore of the Vivari Channel along a long gallery facing the channel. It is considered that one of the main entrances of the palace was on the east side of this richly decorated gallery opening through a vestibule to the street. On the west side of the gallery there was a apsidal reception hall. On the south side of this hall there was a gate opening to the channel.<sup>26</sup>

The second and third phases of the palace covers the first half of the 5th century. In the second phase of the palace between 400-420 AD the focal point of the building was shifted to the north by adding a square peristyle courtyard on the north side of the gallery. In this phase on the southwestern part of the palace some mercantile buildings were constructed close to the channel. On an inscription, which was found on the west gate of the peristyle courtyard, it is mentioned that the owner of the palace was a high ranking senator. On the third phase of the palace, the building was enlarged towards east and the peristyle courtyard was rebuilt.<sup>27</sup> In this phase it is considered that the palace was used by a city governor or a bishop.<sup>28</sup> The triconchal dining room, which gave the name of the palace was added to the eastern part of the courtyard also in this phase (Fig. 9).<sup>29</sup>

At the end of the 5th century the city walls were rearranged by including the lower city on the shore of the Vivari Channel.<sup>30</sup> This rearrangement changed the relationship between the channel and the seaside buildings. Due to these changes some parts of the palace started to be used as a workshop.<sup>31</sup> As the palace and the mercantile buildings on the seaside were abandoned, the relationship between the channel and the palace area started to be carried out through a narrow gate opened on the new city walls (Fig. 10). From this period onwards the large scale luxurious residences of the Roman elite were replaced with the construction of religious buildings such as churches. One of the reasons of abandonment of the palace is considered to be the rising water level and floods. The palace area, which was used as a cemetery from the half of the 6th century until the half of the 7th century, remained totally functionless until the 9th century.<sup>32</sup>

In the 5th century and afterwards the main reception halls of the large scale residences started to be used on the first floor rather than the ground floor. These residences formed the first examples of the piano nobile usage, which became a rule by the palace architecture from middle ages until the early modern period. The Triconch Palace, which was single storey on its first phase and two storied on later phases, was one of the first examples using the piano nobile innovation. In addition to the uncertainty of the reasons behind rising of

<sup>23</sup> HODGES, Richard, SARACI, G., BOWDEN, William: Late-antique and Byzantine Butrint. Interim report on the port and its hinterland. In: *Journal of Roman Archaeology* 1994-95, 10, 1997, pp. 207-234.

<sup>24</sup> BESCOBY, David: *Butrinti: 1993-2003; ten years of research*. London, 2003, pp. 32-33.

<sup>25</sup> HODGES, Richard, SARACI, G., BOWDEN, William: *ibid.* pp. 207-234.

<sup>26</sup> BOWDEN, William, MITCHELL, John: *The Triconch Palace at Butrint: The Life and Death of a Late Roman Domus*. In: *Housing in Late Antiquity*, Boston, 2007, pp. 455-472.

<sup>27</sup> *Ibid.* pp. 455-472.

<sup>28</sup> HODGES, SARACI, BOWDEN: *ibid.* pp. 207-234.

<sup>29</sup> BOWDEN, MITCHELL: *ibid.* pp. 455-472.

<sup>30</sup> HODGES, SARACI, BOWDEN: *ibid.* pp. 207-234.

<sup>31</sup> BESCOBY: *ibid.* pp. 32-33.

<sup>32</sup> BOWDEN, MITCHELL: *ibid.* pp. 455-472.

the reception halls to the first floor, it is considered, that it might have occurred due to a protective function or the increase of the population by using stables and storages on the ground floor. On the Triconch Palace it is considered, that the emergence of the first floor is connected with the rising of the sea level.<sup>33</sup>

The Triconch Palace sheds light to the evolution of the natural waterfront palaces through its different structural phases. On its first phase the building reflects the features of the seaside villas, which emerged on the same period with the Triconch Palace. This single storey villa next to the Vivari Channel gets directly opened to the sea through the portico structure along its gallery facing the channel. This permeability is related with the secure environment developed by the Roman Empire reaching its widest frontiers on this period. After the end of Pax Romana period the increase of the security need and rising of the water level caused structural changes on the design of the palace. As the palace started to turn inwards with the addition of the peristyle courtyard on its later phases, the relationship between the sea and the palace became totally weak especially after the construction of the new city walls on the shore. The single storey villa located parallelly to the channel on the east-west axis displays a totally different form on its last phase turning to the north-south axis and having minimum contact with the channel by rising from the sea level through the additional first floor.

## 6 CONCLUSION

It has been determined that chronologically one of the oldest waterfront palaces Malkata Palace and Amarna Palace were built in the 18th Dynasty period of Ancient Egypt (1550-1292 B.C.). The changes Ancient Egypt lived through in this period shed light to the emergence factors of the waterfront palaces. In the 18th Dynasty Egypt became an empire and the greatest power of its age. The products being brought from the conquered lands transformed the Nile Delta into the center of the world trade.<sup>34</sup> In the reign of Amenhotep IV local polytheistic Egypt religions were abandoned and for the first time in the history of Egypt a monotheistic religion was accepted. Amenhotep IV and his followers internalized the God Aten as the creator of the whole universe rather than one state.<sup>35</sup>

Becoming a leading power on the fields of administration, trade and religion brought with the assertion of a universal dominance, especially in an age that the known frontiers of the world were seen equal with the frontiers of the universe. This fact brings to mind, that the fundamental factor behind the emergence of the waterfront palaces such as Malkata Palace next to an artificial lake and Amarna Palace next to the River Nile is to reflect the universal dominance gained by one of the first empires designing the new palaces of their own. The importance of possessing main water ways for the world dominance and representing the water element, one of the main components of the cosmos, with all other elements on the palace building transformed the waterfront palaces into a symbol of universal dominance. Pools, gardens and living spaces for different kind of animals created in these palaces indicate that there was a demand for creating a small scale representational cosmos with the purpose of reflecting all elements of the universe, which was claimed to be conquered.

Similarly, different structural phases of Triconch Palace were also related with the changing confidence levels derived from the world dominance. As it is seen on Triconch Palace example, while the dominance of Roman Empire on vast territories weakens, the relationship of the palace structure with the waterbody parallelly decreases. Moreover the fact, that the waterfront palaces in the pre-Hellenistic Era were mostly constructed on riverbanks and conversely in the Pax Romana period mostly on the seaside indicates the mentioned confidence gained by taking control of wider territories.

On the other hand especially on artificial waterfront palaces there are additional reasons behind building a palace next to a waterbody. In Achaemenid and Sassanid waterfront palaces it has been noticed, that there are other design factors such as softening the terrestrial climate and accepting the water as a sacred object related with the zoroastrianism. Besides, on Achaemenid Palaces such as Pasargad Palace water element, an integral component of the paradeisos atmosphere incorporates political, philosophical and religious symbolism. The idea of the king creating a fertile garden out of barren land, bringing symmetry and order out of chaos and revitalizing the paradise on earth, constituted a powerful statement symbolizing authority, fertility and

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<sup>33</sup> Ibid. pp. 455-472.

<sup>34</sup> BARD, Kathryn: Encyclopedia of the Archaeology of Ancient Egypt, London, 1999, p. 57.

<sup>35</sup> ALDRED, Cyril: Akhenaten Pharaoh of Egypt – a new study, England, 1968, pp. 66-67.

legitimacy.<sup>36</sup>The usage of the Malkata Palace artificial lake as a pleasure lake for boat trips of the emperor and as the royal port indicates also the practical and aesthetical needs beside the religious factors.

In general the water element has different effects on the waterfront palace design. On the contrary to the first monumental inland palaces designed without axes, in the same period waterfront palaces were designed along axes created under the influence of the waterbody. Almost on all examples from Malkata Palace to Firuzabad Palace it has been noticed that the palace design was planned along one or multiple axes. On most of the cases that the axis planned perpendicular to the waterbody the waterfront facade was designed in a symmetry. Between the palace building and waterbody there are different amounts of permeability depending the level of security. This permeability is provided through a portico structure on the water level in case of minimum security need and on a higher level with an impermeable surface on the water level in case of severe security need. On the latter case the living spaces placed on the upper floor form the first examples of the piano nobile usage. On the facade design of the mentioned palaces monumentality and extroversion increase through the permeability and symmetry factors. Especially on the waterfront facade there are architectural elements such as monumental gates, lodges, terraces, quays and lighthouses. Besides the waterbody clearly affects the spatial configurations of the palace design. On most of the waterfront palaces the private units of the ruler are located on the edge of waterbody, on the other hand the service units are located on the land side.

In conclusion the waterfront palaces were designed geometrically along axes except a few examples of introverted ones, whereas the ancient terrestrial palaces were mostly built on top of a hill around multiple courtyards without a planned geometry. It has been determined that waterfront palaces were built with different motivations such as religion, aesthetics, climate conditions and political dominance. Moreover the water was the main design factor affecting the design of a waterfront palace by forming axes, spatial configurations, symmetry, monumentality and permeability on the facade. Yet another finding is that the rulers, who builded these palaces were mostly aware of the previous examples and were affected by them. The palace examples which have been analyzed from 14th century B.C. to 7th century A.D. indicate that in an approximately 2000 years of a time line the basic approaches of planning waterfront palaces repeated without changing.

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<sup>36</sup> FAKOUR, Mehrdad: *Garden in Achaemenid Period*. <<http://www.iranica.com>>, 15.03.2011.



8 FIGURES

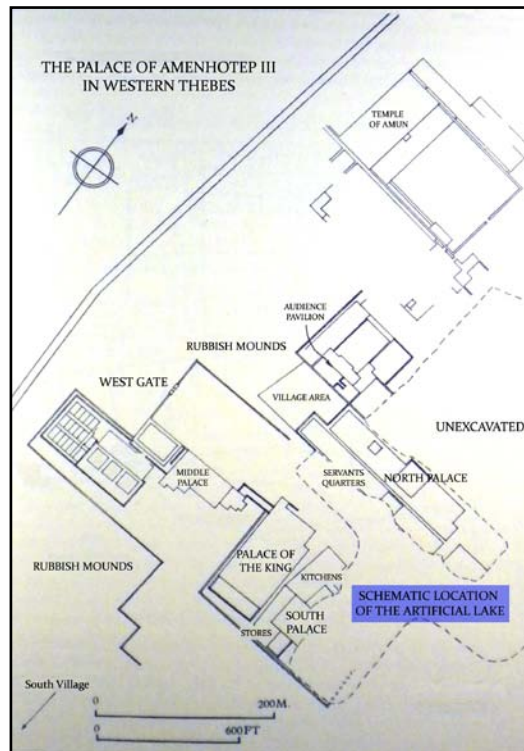


Fig. 1: The site plan of Malkata Palace

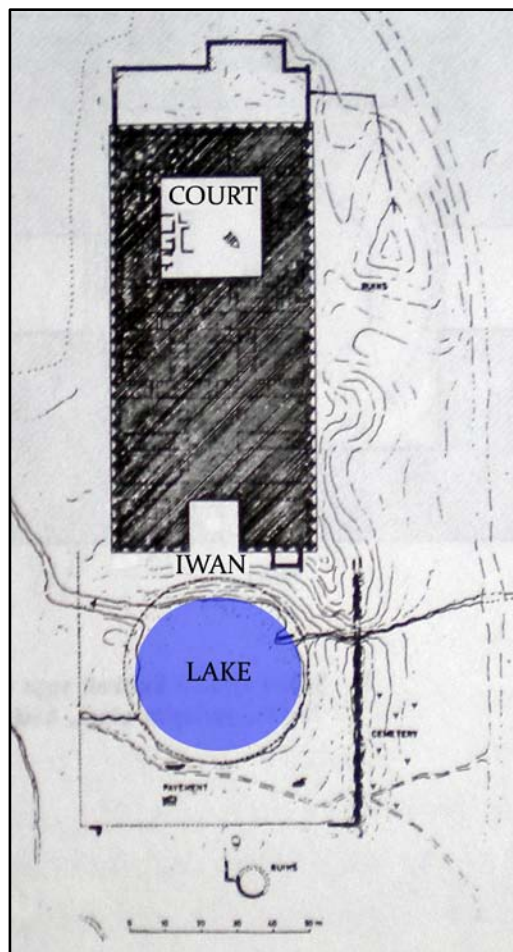


Fig. 2: The site plan of Firuzabad Palace

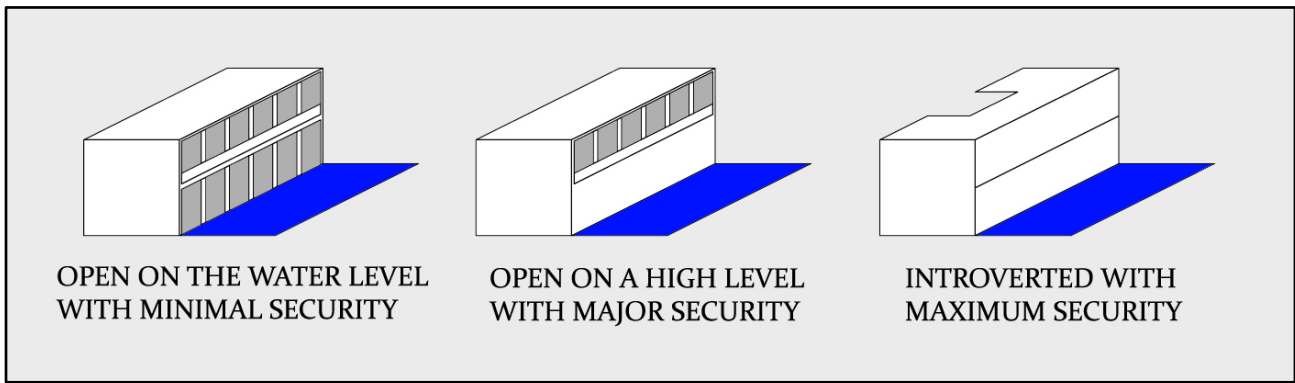


Fig. 3: Subclasses of natural waterfront palaces



Fig. 4: Lucretius Fronto House, Fresco of Seaside Villas (Villa Maritimae)



Fig. 5: Split Palace



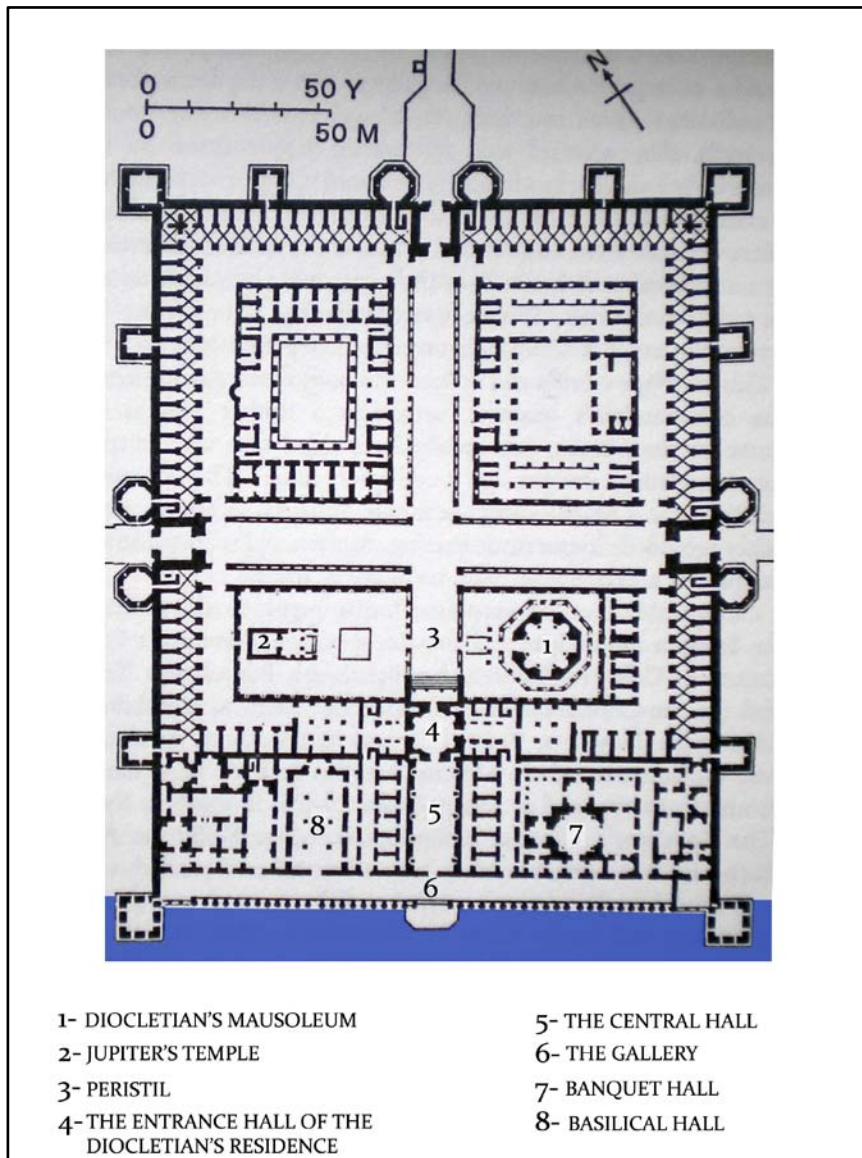


Fig. 6: Plan of Split Palace

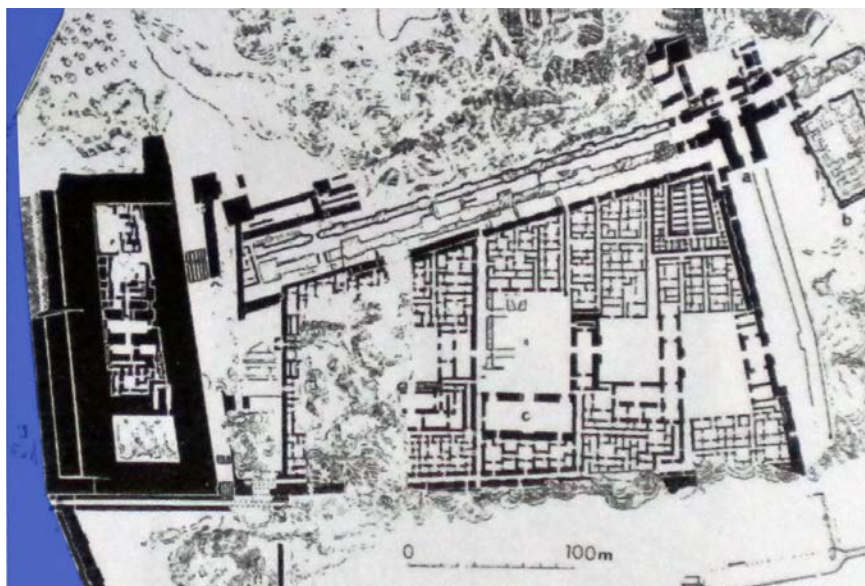


Fig. 7: Plan of The South Palace of Babylon

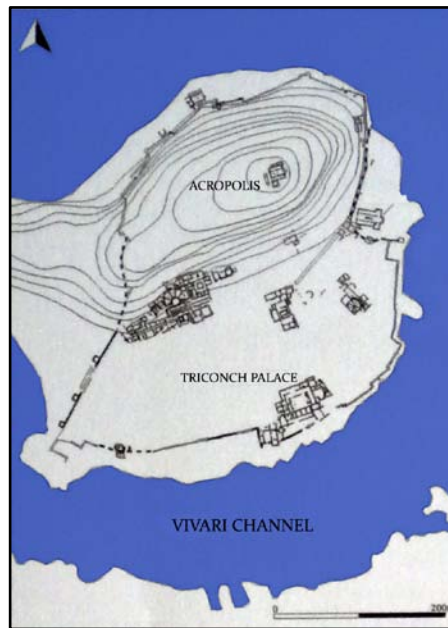


Fig. 8: The site plan of Triconch Palace



Fig. 9: The third phase of Triconch Palace



Fig. 10: Triconch Palace in 6<sup>th</sup> – 8<sup>th</sup> century