THE ROMAN NYMPHAEA IN THE CITIES OF ASIA MINOR: FUNCTION IN CONTEXT

A THESIS SUBMITTED TO THE GRADUATE SCHOOL OF SOCIAL SCIENCES OF MIDDLE EAST TECHNICAL UNIVERSITY

ΒY

NUR BANU UĞURLU

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE

IN

DEPARTMENT OF SETTLEMENT ARCHAEOLOGY

JANUARY 2004

ABSTRACT

THE ROMAN *NYMPHAEA* IN THE CITIES OF ASIA MINOR: FUNCTION IN CONTEXT

Uğurlu, Nur Banu M.S., Department of Settlement Archaeology Supervisor: Prof. Dr. Suna Güven

January 2004, 130 pages

The thesis concentrates on the interaction between man and his settlement within the context of the Roman city in Asia Minor during the imperial period. The analysis is carried out by examining the role of the nymphaea within the context of urban architecture. First of all, an insight of the Roman city and its armatures is given in order to define the Roman urban context. Within this context, the *nymphaea* are treated as landmarks for mentally mapping the city and as urban furniture in a properly functioning urban public sphere. Six sample cities are chosen as case studies. These are Pisidian Antioch, Perge, Hierapolis, Laodiceia, Ephesus and Miletus. The nymphaea within these cities are evaluated through selected criteria to answer questions such as: Where were the nymphaea usually located in the Roman city? What were their functions at those locations? Considering their role in the public sphere, how did the nymphaea affect the design of the city, urban life and its customs? As a result, it is seen that the location of the *nymphaea* within the city was not always dependent on the location of water sources. They were often located along the armature to be visible and memorable. Therefore, as an

urban element the *nymphaea* influenced public activity by contributing to civic consciosnes and the making of livable and 'legible' cities.

Keywords: Nymphaea, Roman City, Imperial Period, Asia Minor, Urban Furniture

KÜÇÜK ASYA KENTLERİNDEKİ ROMA NYMPHAİONLARI (ANITSAL ÇEŞMELERİ): BAĞLAM İÇERİSİNDEKİ İŞLEV

ÖΖ

Uğurlu, Nur Banu M.S., Yerleşim Arkeolojisi Bölümü Tez Yöneticisi: Prof. Dr. Suna Güven

Ocak 2004, 130 sayfa

Bu tez insan ve onun yerleşkesi aras ndaki ilişkiyi Küçük Asyadaki İmparatorluk dönemi Roma Kentleri bağlam nda incelemektedir. Bu inceleme nymphaionlar n (an tsal çeşmelerin) kentsel mimari kapsam nda araşt r Imas yla yap Im şt r. İlk olarak, Roma dönemindeki kentsel bağlam tan mlayabilmek için Roma kenti ve kent armatürü (iskeleti) hakk nda bilgi verilmiştir. Bu bağlam içerisinde, nymphaionlar (an tsal çeşmeler) kentin zihinsel haritas n n ç kart Imas nda referans (nirengi) noktalar ve düzgün işleyen kentsel kamusal mekan içinde kent mobilyas olarak da ele al nm şt r. Örnek olarak alt kent seçilmiştir. Bunlar Pisidya Antakyas, Perge, Pamukkale, Laodik, Efes ve Miletdir. Bu kentlerdeki an tsal çeşmeler seçilen kriterler içerisinde irdelenmiş ve 'Roma kentinde nymphaionlar (an tsal çeşmeler) genellikle nerelere yerleştirilmişlerdir? Yerleştirildikleri bu noktalarda işlevleri nelerdir? Kamusal mekan içerisindeki rolleri düşünüldüğünde nymphaionlar n (an tsal çeşmelerin) kent kurgusuna, kentsel yaşama ve al şkanl klara ne gibi etkileri olmuştur?' gibi sorulara cevap aranm şt r. Sonuç olarak, kent içerisinde nymphaionun (an tsal çeşmenin) lokasyonunu tayin eden faktörün her zaman su kaynağ olmad ğ görülmüştür. Nymphaionlar (an tsal çeşmeler) çoğunlukla kent armatürü (iskeleti) üzerinde görünebilir ve hat rlanabilir olmak ad na yerleştirilmişlerdir. Bu sebeple, kentsel bir eleman olarak nymphaionlar (an tsal çeşmeler) kamusal aktiviteyi biçimlendirmiştir. Bunu da kentsel bilince katk da bulunarak, yaşan r ve 'anlaş I r' (okunakl) kentler yaratarak yapm şlard r.

Anahtar Kelimeler: Nymphaion (An tsal Çeşme), Roma Kenti, İmparatorluk Dönemi, Küçük Asya, Kent Mobilyas To Bahar, Oya and Hüseyin

ACKNOWLEDGEMENTS

I express sincere appreciation to Prof. Dr. Suna Güven for she has the profound insight to construct the 'perfect' lay out of a project among a confused flow of ideas in my mind. She has the foresight of what could be the contribution of an industrial designer to studies in settlement archaeology and she has the remarkable scholarly supervising. This study owes much to her confidential information and her preeminent guidence. I would further like to profuse my gratitude to Prof. Dr. Suna Güven for her great patience, elaborate solicitude and the precious time she always had for me. Within her counselling through the writing process, every single progress of the study was actually a progress of self-confidence and selfawareness.

I also would like to thank other faculty members, Prof. Dr. Umur Talasl, Assoc. Prof. Dr. Geoffrey Summers, Instr. Dr. Hakan Gürsu and Dr. D. Burcu Erciyas, for their suggestions and comments.

To my family, Bahar, Oya and Hüseyin Uğurlu, I offer sincere thanks for their great tolerance and their unshakable faith in me. Without thier favorable love, care and support I would never be able to complete this study and be able to shine.

To my friends, especially Bahar Uğurlu, Nazl Baltac oğlu, Nilay Balkaya, Dolunay & Türker Kesiktaş, Pelin Çakmakl, Özgür Gökdemir, Alper Çalgüner, I owe special thanks for their love for me and faith in me. I appreciate the joy of their friendship.

The technical assitance of tutors of Academic Writing Center in spell-checking, İbrahim Dolanbay in printing the material and the METU library staff are gratefully acknowledged.

I would like to give my special thanks to Dr. Çiğdem Eissenstat who encouraged me to march on with archaeology and pointed the way to the graduate programme of Settlement Archaeology.

It is my fortune to get acquainted with all these precious and unique people.

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Date:

Signature

TABLE OF CONTENTS

ABSTRACTiii
ÖZv
ACKNOWLEDGEMENTS
TABLE OF CONTENTSxi
LIST OF FIGURESxvi
LIST OF TABLESxxi
CHAPTER
I. INTRODUCTION1
II. CONCEPT OF THE ROMAN CITY7
2.1. The Idea of City7
2.2. The Idea of the Roman City8
2.3. Design of Cities11
III. THE ARMATURES16
3.1. The Perceptual Dimension of Armatures in the Urban Fabric
3.2. The Architecture of Connection and Passage
3.3. The Logic of Armatures21
3.4. Notions of Roman Urban Design23
IV. THE CITY AND THE NYMPHAEUM25
4.1. The Legible City and Its Constituent Elements

4.1.1. Path27
4.1.2. Node27
4.1.3. Landmark28
4.2. The Nymphaea within the Urban Context
4.2.1. The Nymphaea as Landmarks
4.2.2. The Nymphaea as Street Furniture
V. The Nymphaea in the Cities of Asia Minor
5.1. Significance by Location35
5.1.1. Pisidian Antioch
5.1.1.1. Location
5.1.1.2. History
5.1.1.3. The City Armature
5.1.1.4. The Nymphaea
5.1.1.4. The <i>Nymphaea</i>
5.1.1.4. The <i>Nymphaea</i>
5.1.1.4. The <i>Nymphaea</i>
5.1.1.4. The Nymphaea

xii

5.1.2.4.2. The <i>Nymphaea</i> at the Septimius Severus Plaza45
5.1.2.4.3. The Monumental north <i>Nymphaeum</i> 47
5.1.3. Hierapolis48
5.1.3.1. Location48
5.1.3.2. History48
5.1.3.3. The City Armature48
5.1.3.4. The <i>Nymphaea</i> 50
5.1.3.4.1. The <i>Nymphaeum</i> of Tritons50
5.1.3.4.2. The <i>Nymphaeum</i> at the Apollo Temenos51
5.1.4. Laodiceia ad Lycum52
5.1.4.1. Location52
5.1.4.2. History52
5.1.4.3. The City Armature52
5.1.4.4. The <i>Nymphaea</i> 54
5.1.4.4.1. The <i>Nymphaeum</i> in the West Agora54
5.1.4.4.2. The Monumental Nymphaeum55
5.1.4.4.3. The <i>Nymphaeum</i> Near the Water Tower56
5.1.5. Ephesus
5.1.5.1. Location56
5.1.5.2. History57
5.1.5.3. The City Armature57

5.1.5.4. The <i>Nymphaea</i> 59
5.1.5.4.1. The Fountain House of Aristion near South Street60
5.1.5.4.2. The So-called Fountain60
5.1.5.4.3. Hydrecdocheion of Laecanius Bassus61
5.1.5.4.4. The Fountain-court on the Pollio Monument61
5.1.5.4.5. Fountain of Domitian61
5.1.5.4.6. The <i>Hydreion</i> in the Memmius Monument62
5.1.5.4.7. The <i>Nymphaeum</i> of Trajan63
5.1.5.4.8. The Hellenistic Well64
5.1.5.4.9. Hexagon (the so-called <i>nymphaeum</i>)65
5.1.5.4.10. Fountain of Ktistes Androclus65
5.1.5.4.11. Circular Monument with Fountain65
5.1.5.4.12. Hellenistic Well House66
5.1.5.4.13. Hellenistic Fountain in the Theater Place
5.2. Significance by Architecture: Miletus67
5.2.1. Location67
5.2.2. History67
5.2.3. The City Armature68
5.2.4. The Nymphaeum69
VI. CONCLUSION

xiv

	FERENCES	RE
	PENDICES	AF
86	A. FIGURES	
	B. TABLES	

xv

LIST OF FIGURES

FIGURE

1.	The Effect of Pictorial Cues for Size Perception
2.	The Colonnades and Their Shade as Pictorial Cues in the Roman Urban Space
3.	Path
4.	Node
5.	Landmark
6.	Map of Asia Minor
7.	Pisidian Antioch: City Map
8.	Pisidian Antioch: Schematic Illustration of City Plan Showing Water Structures
9.	Pisidian Antioch: Schematic Illustration of City Plan and Its Constituent Structures

10. Pisidian Antioch: the Ground Plan of the <i>Nymphaeum</i> at the end of the <i>Cardo</i>
(Graphics by N. B. Uğurlu)
11. Perge: city plan93 (Özgür 1988, 99)
12. Perge: plan of Septimius Severus Square
13. Perge: schematic illustration of city plan showing water structures95 (Graphics by N. B. Uğurlu)
14. Perge: Schematic Illustration of City Plan and Its Constituent Elements
15. Perge: Aerial Photography of the Site
16. Perge: Water Canal Running Along the <i>Cardo Maximus</i>
17. Perge: Reconstruction of the Nymphaeum at the Septimius Severus Plaza
18. Perge: Monumental North <i>Nymphaeum</i>
19. Perge: Reconstruction of the Monumental North <i>Nymphaeum</i> 99 (Özgür 1988, 77)
20. Hierapolis: City Map (D'Andria 2001, 98)
21. Hierapolis: Schematic Illustration of City Plan Showing Water Structures

xvii

22.	Hierapolis: Schematic Illustration of City Plan and Its Constituent Structures
23.	Hierapolis: Reconstruction of the Agora and Environs
24.	Hierapolis: Reconstruction of the <i>Nymphaeum</i> of the Tritons103 (Berti 1993, 142)
25.	Hierapolis: the <i>Nymphaeum</i> at the Apollo Temenos104 (Berti 1993, 144)
26.	Laodiceia: City Map
27.	Laodiceia: Aerial Photograph of the Site
28.	Laodiceia: Schematic Illustration of City Plan Showing Water Structures
29.	Laodiceia: Schematic Illustration of the City Plan and Its Constituent Elements
30.	Laodiceia: Plan of the Monumental <i>Nymphaeum</i>
31.	Ephesus: City Map
32.	Plan of the so-called Administrative District: from the Magnesian Street to Kuretes Street

xviii

33.	Plan of the Commercial Agora and environs: from the Kuretes Street to the Marble Road112 (Scherrer 2000, 129)	2
34.	Plan of the Theater Place and Arkadiane11 (Scherrer 2000, 163)	2
35 . (Ephesus: Schematic Illustration of the City Plan Showing Water Structures	3
36. (Ephesus: Schematic Illustration of City Plan With Its Constituent Elements	4
37.	Ephesus: Reconstruction of the <i>Nymphaeum</i> of Trajan11 (Scherrer 2000, 97)	5
38.	Ephesus: the <i>Nymphaeum</i> of Trajan today11 (Scherrer 2000, 97)	5
39.	Ephesus: Hellenistic Fountain in the Theater Place	6
40.	Miletus: City Map11 (Hanfmann 1975, figure 50)	7
41. (Miletus: Schematic Illustration of City Plan and Its Constituent Elements Graphics by N. B. Uğurlu)	3
42 N	Ailetus: Reconstruction of the Ancient City	9
43.	Miletus: Reconstruction of the Processional Way and Environs120 (Hanfmann 1975, figure 154)	0
45. (Miletus: Plan of City Center120 Akurgal 1989, 214)	0

44.	Miletus: Reconstruction of the <i>Nymphaeum</i> 121 (Gros 1996, 429)
46.	Miletus: Model of the <i>Nymphaeum</i> and the N Gate of the S Agora
47.	The Water Structure at Atatürk Maydan122 (Photograph by N. B. Uğurlu)
48.	Atatürk Meydan: view from İnönü Bouleuvard
49.	Atatürk Meydan: view from Atatürk Boulevard

XX

LIST OF TABLES

TABLES

1.	The Classification of the <i>Nymphaea</i> in the Cities of Asia Minor According to Location	123
2.	. Location of the <i>Nymphaea</i> of Asia Minor with Respect to Nearby Public Buildings	126
3.	. Construction and Renovation Dates of the <i>Nymphaea</i> in the Cities of Asia Minor	.128

"And with water we have made all living things"

Kur'an: Anb yaa

CHAPTER I

INTRODUCTION

A *nymphaeum*, in the Greek world, was a shrine dedicated to *nymphs*, which was often a rural cave or grove with no architectural adornment. The *nymphs* were, with river gods, the guardian spirits of sources of pure water. These terms are thus explained in scholarly reference resources as;

nymphaeum~i, n. A shrine dedicated to the *nymphs*.¹ **nympha**~ae, f. Also *nymphé*~és. A semi-divine female spirit of nature, *nymph* (in habiting woods, waters etc.)² **water** *nymph* (Greek and Roman mythology) a goddess, e.g. a *naiad*, who lives in or (in some cases) presides over a body of water.³

So, in a mythological sense a *nymphaeum* was actually a sanctuary located by wells, springs or in caves, representing the divinity of *nymphs*. In the Roman period, however, a shift occurred in the meaning.

The Roman *nymphaeum* is the architectural continuation of the "sanctuary of the *nymphs*" as we know it from the Classical and Hellenistic periods. Ancient *nymphaea* were sacred places set up around wells or in caves that had springs and embodied the

¹ Oxford Latin Dictionary, see "nymphaeum"

² Oxford Latin Dictionary, see "nympha"

³ Webster's Dictionary, see "water *nymph*"

mythological connection between springs and *nymphs*. This connection disappeared in the Roman period, when *nymphaea* were erected along public thoroughfares and main streets and the water that streamed into their pools no longer came from wells but had been brought down via special conduits...but Roman architects did no longer have to limit themselves to a sacred site as such and erected *nymphaea* whereever aesthetic and/or urban considerations made such desirable.⁴

Apparently a considerable shift both in the meaning and application of *nymphaea* occurred in the Roman republican period which continued and became prominent in the imperial period. The reason for this shift can be examined in the difference of political approaches to the city and the urban ideals of the Greek and Roman cultures⁵. Since the subject of the thesis is not the differences between these cultures but the Roman imperial period, the *nymphaeum* as a Greek sanctuary will not be included in the study. Rather, this thesis will deal with the *nymphaeum* in the context of the city and the urban political attitude of the Roman empire in order to understand why and how the change in the meaning and function of the *nymphaeum* took place.

In general, the Roman city has an easily recognisable order with its designed elements and the overall pattern that these belong to or generate. Thus, as designed elements of urban architecture, the *nymphaea* have to be dealt within the context of Roman urban architecture on the city scale. In this sense, Roman culture can be addressed as an urban culture that can be traced in the civic life of the city. In this respect, the city embodies a collective and ordered series of services. These services were consolidated and visualised in the form of architecture. According to MacDonald (1986, 17), "..cities were and are often represented by widely produced architectural symbols". By referring to

⁴ Segal (1997, 151). For further information consult also Miller, especially 'Transition: the *Nymphaeum*', p. 17-28, notes 15-48, cited in *ibid.*

⁵ For a general comparison and contrast between Greek and Roman architecture see Norberg-Schulz (1979, Chapter VI).

buildings or structures as 'symbols', MacDonald underlines the visuality and monumentality of Roman architecture. In this connection, he defines Roman architecture as " an architecture of connection and passage".⁶ In addition, the collective unity of the instruments of this architecture are tagged as "urban armatures".⁷ In the work of MacDonald, it was this framework that constituted the "unmistakable imagery of imperial urbanism" (MacDonald 1986, 5). In other words, various elements of the so-called armatures, which were built for display, also appear as images, stressing their visual and symbolic nature. In this study, the focus will be on one selected element of the Roman armature, namely, the *nymphaeum*.

By definiton, a *nymphaeum* is not only a fountain, but a monumental one. A fountain can be described as "a construction where water is taken under control for everyone to benefit".⁸ Thus, the *nymphaeum* was not meant to be built merely as an 'enlargened' form of a fountain. Hence it was not meant simply to bring or serve water like an ordinary fountain, but also to '*display*' water, and by extension, to display a public policy. In the case of *nymphaeum* we do not see merely the function of a fountain. Rather, we see a fountain where the stress is on the monumentality, visuality and, adornment. Water being the crucial element of a nymphaeum, the water source or the availability of water frequently had little to do with the location of a *nymphaeum*. Hence, what was the concern of a Roman city in locating and erecting a *nymphaeum* if serving water and if the distance between the water source in the city and the *nymphaeum* was not of primary concern? How may the placement of nymphaea in certain locations of the city plan be explained? What kind of an urban need is at issue here? This study will concentrate on such questions.

⁶ For further information about "the architecture of connection and passage" see MacDonald (1986), chapters II and III.

⁷ For a detailed explanation about armatures see MacDonald (1986), especially his introduction.

⁸ Hasol (1998). Translated by the author of the thesis.

In a designed environment, every element has a certain purpose and character, and with its absence the whole meaning is lost. Since the *nymphaeum* did not function merely like a fountain, the symbolic function comes to the forefront. Citizens of a Roman city were baptized with water in every sense by aqueducts, baths, cisterns, fountains, but in the case of the *nymphaeum* water becomes a more conceptual thing. It was more than a refreshment. It represented a civic landmark, an urban furniture.

Urban furniture is a modern concept, and it may be questionable whether a modern concept can be applied to an ancient context⁹. Therefore, the roots of this modern concept need to be understood first. But before doing so, we have to define what urban furniture is. In fact, there is no overall definition of "urban furniture", yet the term vacillates between "outdoor furniture", "city furniture", "street furniture" depending on the context. In this respect, it may be useful to briefly note the approaches of some designers and architects regarding the meaning of urban furniture¹⁰. First of all, it is explained by the Design Council simply as:

> ... all of the non-moving elements introduced into street and highway corridors as adjustments to the basic surface paving and utility structures and enclosing buildings, fences, or walls (The Design Council 1983).

Önder Küçükerman (1991, 19) states that urban furnitures are the intersection of the city and citizens. In this sense, urban furnitures are the essence of public places, usually defining and completing them. Actually, urban furnitures are a system with which the public spaces function. As for their function, "urban furnitures enable to locate comfort and aesthetics in urban life thus making it more enjoyable and meaningful" (Çubuk 1989,

⁹ Ertuğ (1990) has a good evaluation of applying the concept street furniture in the context of ancient Ephesus.

¹⁰ More information on the definition and classification of urban furniture, their function and meaning in the urban context can be found in many scholarly studies such as Aksu (1998, 7-11, 22-38), Eryayar (2002, 5-7), Kaya (2001, 16) and Doğan (et al.) (1986) in general.

17). Moreover, urban furnitures affect and influence the citizen thus shaping urban life. Moreover, Rapoport claims that urban environmental design, in other words, the art of building cities, is a new concept¹¹ in which man creates a built environment to fulfill his aspirations and represent his values.¹² In this sense, it may be claimed that building a designed environment is nothing new. For sure, beautifying the city, or putting it into order began to be named as 'urban environmental design' recently; still the concept goes far back in urban history. We know, for sure, that what classical culture applied in the colonies they planted, or the cities they built involved urban design sensibilities, although the attempt of beautifying the designed environment has begun to be named as "urban design" recently. Here, it is considered more appropriate to utilize the definiton of urban design given by Moughtin, who explains the concept as "..the use of accumulated technological knowledge to control and adapt the environment for social economic, and religious requirement."¹³ From this definition it may be concluded that urban furniture is an important aspect of urban design to make man's environment habitable to himself¹⁴. Hence, the city whether ancient or modern is the product of this combined effort.

In this thesis, the purpose of studying the *nymphaea* within the Roman urban context is to locate the uses of the *nymphaea* as a stimulative constituent of urban design and its functioning. In order to do this, first of all, the concept of the Roman city and its built milieu will be introduced. Then, so as to understand the structuring of the city, the Roman armature will be evaluated. Last but not least, the interaction between the city and the *nymphaea* will be dealt with. This interaction will

¹¹ For a more detailed inquiry about the history of urban furniture consult to Çubuk (1989, 15-17) and Çokar (1995, 8-10).

¹² Cited in Gürsu (1996).

¹³ Moughtin (1992). Cited in Gürsu (1996).

¹⁴ For a deper insight on urban design see Bacon (1975), Cullen (1961), Curran (1983), Krier (1979), Kostof (1992) and Rykwert (1988).

be elaborated through evaluating six chosen imperial cities of Asia Minor rather than carrying on a comprehensive survey of all the cities of Asia Minor. The reason is to demonstrate the role of the *nymphaea* in the Roman urban fabric, rather than factual documentation.

CHAPTER II

CONCEPT OF THE ROMAN CITY

... if you can call it a city when it has no state buildings, no gymnasium, no theater and no agora, when it has no running water at a fountain and the inhabitants live on the edge of a torrent in hovels like mountain huts¹⁵.

2.1. The Idea of City

On the whole the city embodies the concentrated experiences of man and his daily activities. This is a conceptual outlook, since the city itself is indeed a conceptual entity. The physical dimension of the city formulates this conceptuality, and emerges by identifying, delineating and differentiating its territory. Thus, the city is an institution that has come into existence in various manners with the gradual evolution of the concept. Therefore, the attempt of man to build cities has always been concerned with identifying himself, and attributing meaning to his existence¹⁶.

It is not a new approach to define man with his settlement. With an etymological point of view, Norberg-Schulz (1979, 20) asserts that the word "to be" derives from "dwelling". Thus, when one mentions anything about himself, he states his presence by saying "I dwell". Also, in Turkish tradition

¹⁵ Pausanias, 10.4.1., translated by P. Levi. Cited in Mitchell (1993, 80).

¹⁶ Robbins (1998) and Smith (1977) examines the city as a multiple of images, symbols and perceptions.

one would adress the city or region he dwells right after he mentions his name. By recalling his presence with his dwelling, man may be addressing the essence of his existence.

2.2. The Idea of Roman City

What makes a settlement a city? Is it demography, geography, constitutions, administration? It is, of course, possible to vary the 'units' which collectively make up the city or, in other words, the whole concept of city. Apparently, when the subject is the city, the immediate image that comes to mind is usually either the contemporary city or the concept of eternal city¹⁷. Taken together, this leads our way back to the concept of the Roman city as the roots of the former goes back to the Classical city (or earlier), and the latter often suggests the city of Rome, itself. In many ways, the cities we live in today are a continuation of the Classical city, while the concept of 'eternal city' implies, as denoted by Norberg-Schulz, conserving its 'identity' forever, which is often exemplified by the city of Rome.¹⁸

In Roman times, the 'city' was synonymous with civilisation.¹⁹ This is also suggested by the meaning of the Latin word '*urbs*' corresponding to the 'city'²⁰. The concept of "city" has the same main idea, no matter how

¹⁷ The city of Rome is often referred as "the eternal city". See Amderson (1977, 203) and Norberg-Schulz (1979, 138).

¹⁸ See Norberg-Schulz (1979) chapter VI, in general, and p 138, especially.

¹⁹ Bacon (1976, 13) states that "the form of his [man's] city always has been and always will be a pitiless indicator of the state of civilisation.".."..human will can be exercised effectively on our cities now, so that the form that they take will be a true expression of the highest aspirations of our civilisation." Also, consult to Güven (2003, 40-41) for more insight of te idea of the Roman city.

²⁰ *Urbs* is described in the Oxford Latin Dictionary as "**1 a.** a city, large town (either as a place or a political entity)...**c.** a chief city, capital. **2** the city of Rome". In the same manner, *urbanitas* is defined as "**1 b.** the condition of living in a city (in quotations, Rome). And *urbanus* is "**1 a.** Of, belonging to or connected with the city (especially Rome) **b.** living or

different its applications may be in Greek and Roman cultures²¹. In this regard, the Greek *polis* was a democratic community where community and assembly, which equated stability security and prosperity, were crucial for urban life (Owens 1991, 1). Hence, the fundamental well-being of the Greek *polis* depended on its autonomous structure; all the crucial qualities of urban life were based upon and yet gained through this²². Similarly, in the concept of the Roman city, there lies the fulfillments for stability, security and prosperity, moreover order and unity, especially in the empire. What differs between the Greeks and Romans is the way through which these were gained.

As mentioned before, the fundamentals of Greek urban life were based on the autonomy of the city, whereas, the Roman city began to lose its autonomy and civic independence²³ starting from the Hellenistic era, when external rule was involved in the administration of cities. Afterwards, public buildings emerged as the dominant and essential characteristics of cities (Mitchell 1993, 198). As mentioned by Hornblower & Spawforth (1996, 251), with the loss of civic independence "...much more emphasis was laid on the externals of city life, above all splendid public buildings, which were the hallmark of a Roman city". Public buildings were the evidence for the material culture of civic life, and yet it was the characteristic of the Roman period to define a civic community using a cultural, rather than a political criterion (Mitchell 1993, 198). It was this

pursuing one's activities in the city, a city-dweller. The English-Latin Dictionary refers to *urbs* as " the city, for citizens", and *urbanitas* as " a living in the city, city-life. According to these definitions of the roots of the Latin word for 'the city', it is understood that the aspects of civilisation and the fundamentals of civic life correspond with the city.

²¹ Martienssen (1958, 11) affirms that "..the city concept springs from the ideas of collective safety, convenience, the pooling of resources that characterizes man".

²² For the autonomy of the Greek *polis* see Mitchell (1993) in general.

²³ See Mitchell (1993) and Hornblower & Spawforth (1996), for further information about the loss of autonomy and civic independence in Roman period.

cultural criterion that helped the spread of Roman culture, thus this cultural influence was diffused through the world by urbanisation²⁴.

What the Romans inherited from Greek urban culture is the city being the center of administration and being a community. So, viewed from an extended perspective, in an imperial system of administration and control, the city was the 'unit' of administration. A unit is "a part of a complex whole; a group with a special function within a large or complex organisation" (Cowie 1989, 1397). The most striking point of this explanation for our study is that a unit has a special 'function'. Therefore, the key to the concept of the Roman city may be sought in its functions. According to Mitchell for the imperial system of administration and control to work properly there are functions that cities had to fulfill; to maintain order, stability and financial viability.²⁵ These functions came into being through the hierarchical divisions in the society. As mentioned before, since the time of Hellenistic kingdoms, there had been a shift from democracy to oligarchy. In the imperial period, this shift was felt even more. There had been a top-down applicance of power and control, as Rome got involved in the administration of the provinces. Consequently the autonomous nature of the *polis* was not existent anymore. Indeed, this was a result of the imperial administration.

What the imperial administration lacked was not only self-governing cities, but finance as well. Cities were expected both to feed themselves and to be an economic resource for Rome, not vice-versa. So, the reason for this financial situation might have been the provincial taxation or that Rome might have taken too much for herself (Mitchell 1993, 210). No matter what the reason for the situation was, the Roman city overcame this

 ²⁴ For detailed background on urbanisation as an imperial policy consult to Akbaş (2001, 27).

²⁵ "the administrative framework of cities" as called by the writer. See Mitchell (1993, 199-201).

problem through other, and really important, aspects of civic life; such as patriotism and civic benefactions by aristocracy. Patriotism was more than one's love to the city. It involved devotion, dedication, and further, one's admiration for his city. Hence, there was another point which not only fed patriotism, but set the ground for a 'beautified city' together with regulating the civic benefactions; inter-city rivalry. All of these were, also, a result of hierarchical divisions of the society and reinforced unity and stability of the city.

It has already been mentioned that in the imperial scale, the city was a unit to fulfill the urban aspirations of Roman culture. Cities were the units which together formed the Roman urban infrastructure. Therefore, the city is the unit which brought unity to the empire. But, how this unity is established in the city, and thus in the empire, is the question that brings us back to the externals of city life; the design of cities.

2.3. Design of Cities

Roman urban design was a response to the unification of the empire²⁶ by creating a collective identity of cities. In order to evaluate the collective identity of cities, first, the concept of identity of 'the city' should be understood, with regard to the definition of 'identity'. Hence, identity may be defined as "the collective aspect of the set of characteristics by which a thing is definitively recognizable or known".²⁷ Thence, in order to identify a place, or a thing, first, the subject needs to be recognised. Recognition, is a perceptual process and performed, by and large, visually²⁸. Regarding our case, that is the city, the visuality of the subject comes, to a greater extent,

²⁶ Art was a significant agent for the unification of the empire. Consult to Clifford (2000, Chapter 5). Also, Korkmaz (1989, 8-10) explicates unification in imperial scale.

²⁷ The American Heritage Dictionary 2000.

²⁸ See Atkinson & Atkinson (1990). Especially Chapter 5.

forefront. Accordingly, the visual aspects of the city assumes a leading role in forming the essence of its identity. Consequently, to identify a place means to attribute a certain character to it. In other words, it implies investing and assuming a meaning regarding the essence. Therefore, the identity of the city needs to be comprehended in visual content where the very essence of it can be found.

In this study, the visual content refers to the 'man-made environment'; in other words the built environment. Actually, what man built in his environment may not always be supposed to have an immediate conscious meaning. Therefore, the distinction between the architectural content and pure construction has to be understood. For the Roman city this distinction can be made more clearly and thoroughly since designing the form, and by extension, the identity of the city was a rather conscious choice regulated by the tastes of the ruling elite. Thus, the elements of the architecture applied were, more or less, conceptually and schematically analogous throughout the Roman world. Therefore, the "meaning" of architecture, as in Roman architecture, may be better understood in Le Corbusier's words; where he claims that what distinguishes architecture and construction is that 'we are touched by architecture'; that architecture expresses a thought; and that architecture has a contextual relationship which, in return, arouses our emotions (Le Corbusier 1987, 153, 179, 203). Indeed, what Le Corbusier implies here is that the elements of architecture constitute a language²⁹. Furthermore, he claims that "the art of architecture" makes our existences not only visible but meaningful". So far, it has been suggested that the identity of a city can be traced in the 'invested meaning' in the architecture. Therefore, in order to provide an explanation regarding

²⁹ Similarly, Ching (1996, 374) claims that architecture has a connotative meaning, associative values and symbolic content.; as in language. Likewise, Smith (1977, 16) mentions the 'readability' of urban elements, their symbolism, collective encoding and decoding as in a language. Consult also to de Certeau (1984) for a detailed comparison between speech-language and walking-urban systems.

the collective identity of Roman cities, we have to depict their architectural context and content ; thus arriving at the 'meaning' of Roman architecture.

The architectural content of Roman cities, apart from the 'individual' members of the Greek city, were conceived as an "enclosed space"³⁰. Enclosure is defined as "artifact consisting of a space that has been enclosed for some purpose".³¹ Besides, it is appropriate to regard the urban content as an "integrated whole"³². Accordingly, the units that 'gathered' and made up the whole had their own purposes that all together they constituted the fabric of urban life. Hence, this 'wholeness' is the key to the unity in the city, thus the unity in the Empire. Accordingly, MacDonald refers to Roman architecture as

... an architecture more of content than of style.. an architecture of context and of community, the community both for the individual town and of all the towns together (MacDonald 1986, 253).

In this way, MacDonald underlines the importance of architecture amalgamating the aspects of city life, and the urban life forming the framework of empire.

At this point, it is significant to comprehend this 'urban content', which constituted the mental background of Roman city design. First of all, all Roman cities were composed of the very same elements, but with flexible application. The flexibility of the city layout which was adaptable to any environment was one of the achievements of Roman planning. The city plan needed to be flexible in application because it was not always possible to apply planning right before the birth of the city considering that

³⁰ See Norberg-Schulz (1979). Especially chapter IV.

³¹ WorldWeb Online Dictionary

³² See Norberg-Schulz (1979, 140), MacDonald (1986, 5).

in some regions Rome conquered existing cities rather than planting new ones. In places where planning took place, the system of orthogonal planning was used.³³ As is well-known, the history of orthogonal planning goes back to the archaic age. Actually, orthogonal planning was a simple system which was produced around the two main axes *cardo maximus* and *decumanus maximus*; the former representing the north-south, and the latter east-west street axis. It was the Roman street, the very distinctive feature of the Roman city, from the intersections of which a grid plan was formed. As a matter of fact, the contribution of the Roman street to the urban scene was not restricted to the grid system³⁴. The contribution of street to urban fabric was much more;

Properly urban buildings must have streets and squares in order to function; without streets and squares, they are not urban at all...Streets approach, bound, and fix the locations of buildings, linking them together and displaying them. Buildings give streets part of their character and identity as well as their reason for being (MacDonald 1986, 32).

Actually, the Roman street was not only a single element of urban design³⁵, but it was a demarcator of urban life.

The Roman street performed a dual role in the urban context. It not only "unified" the elements of the armatures, but gave "a feeling of being inside" as well (Norberg-Schulz 1979, 142). Furthermore, Norberg-Schulz addresses the Roman street as "an urban interior", with regard to the

³³ For the 'flexibility' and 'adaptability' of Roman planning, see Owens (1991, 112-113, 123, 137, 165).

³⁴ Although Hippodamian planning, which was based on the grid system, was a Greek invention. It was successfully applied to the Roman cities; thus, forming the backbone of them.

³⁵ As urban elements streets played a great role for the interaction between the citizen and the city. See Jacobs' (1993) introduction. Consult also to Güven (2003, 44-45) for the functions of streets as urban elements.

essence of Roman architecture being an "enclosure".³⁶ From his point of view it can be concluded that the spaces had an "interiority" with a feeling of "protection and belonging"; of what are, and were, the essentials of urban life; the very instinct of settling down (Norberg-Schulz 1979, 142). Therefore, before going into detail with the design of the roman city first, city walls should be highlighted. Infact, city walls were the very first element which distinguished the surroundings from the city. Although the city walls diminished with the onset of the concept *pax Romana*³⁷, by setting the boundaries of the city they walls not only produce a feeling of being at home and being protected, but also set the boundaries where civilisation started. In fact, this concept of identifying the state of the citizen was very important for the urbanized world.

The city walls were not only physical boundaries, but the boundaries of the urbanised way of life. Above all those buildings and streets the city was the place where urban activities took place, and it was those urban activities which made the urban life that attractive³⁸. The presence of city walls was to demarcate both the physical and the conceptual being of city and the facilities it brought. In Owens' words "the ancient city was a community and the community expressed itself in its public activities and public buildings" (Owens 1991, 153).

Therefore, it was those public activities and the public buildings that the city walls enclosed. To put it another way, city design must have taken place in order to demarcate the *urbanitas*.³⁹

³⁶ For further information on "*interiority*" and *"enclosure*" see Norberg-Schulz (1979).

³⁷ For a brief information of *pax* Romana refer to Güven (2001, 22).

³⁸ Refer to Southall (1998, 73) for the role of amenities on Roman urbanisation.

³⁹Elementary Latin Dictionary explains *urbanitas* as "a living in the city, city life, life in Rome.- City fashion, city manners, refinement, elegance, politeness, courtesy, affability, urbanity. Oxford Latin Dictionary explains it as "the conditions of living in a city".
CHAPTER III

THE ARMATURES

It has already been mentioned that visually the Roman city design was a part of an 'imperially wide integrated whole' (MacDonald 1986, 5). Thus, the city, with all its architectural elements linked with urban armatures, constituted 'an integrated whole'. This, in turn, contributed to the concept of 'wholeness' and 'unity' in the Empire at large.

Before dealing with how the Roman armature worked in the city, a brief look at what the word embodies will be useful. In the most general sense, armature denotes a structural feature used for reinforcement. (Harris 1993, 44) Likewise, in architecture, it represents "any means of bracing or stiffening a weak part" (*Webster's Dictionary* 1958, 102). But, the invested meaning in armature when used in the context of Roman architecture is more in line with the definition: "in sculpture, a <u>framework</u> for supporting clay in modeling." (Webster's Dictionary 1958, 102).

The concept "armature" thus describes the framework of Roman architecture within the city fabric. This usage was coined and promoted by William MacDonald, in his book *Roman Architecture Vol. II: an Urban Appraisal:*

Armatures consist of main streets, squares, and essential public buildings linked together across cities and towns from gate to gate with junctions and entranceways prominently articulated. They are the setting for the familiar Roman civic building typology, the framework for the unmistakable imagery of imperial urbanism (MacDonald 1986, 5).

No matter how much cities differed in shape, size or configuration, there were fundamental elements that formed the armatures. In the first place, these elements were public structures (MacDonald 1986, 31). They constituted the elements of connective architecture, passage architecture and the public buildings.

Armatures came unimpeded along the urban frame. As MacDonald posits:

The path or road leading inward from the periphery of a primitive town to an open space used as a market and meeting place was the ultimate source of the armature (MacDonald 1986, 17).

As mentioned before, the idea behind armatures lies in the concept of wholeness and unity. Armatures in the Roman city were made up of the elements from the same architectural repertory, and they were meant to be perceived as a whole. In sum, armatures were the definitive frame of the town's formal essence. They formed the basis for unimpeded connections, marked out the vital points of communication and emphasized public activity within public structures. Most importantly, they defined the Roman existential space by regulating the perceptual processes of the Roman citizen living in the city.

3.1 The Perceptual Dimension of Armatures in the Urban Fabric

We react to our perceived environments, thus, how we perceive the environment is directly related with cultural influences, such as the architectural/physical city. Perception is a servant trying to satisfy the two masters: sensation and cognition⁴⁰. By doing so, our perceptual sytem creates illusions to adjust a correct mental image, where we give the decision of how to react in our physical environment. Each and every object in our visual field has a perceived size and depth. The perception of distance and size of an object is a judgemental decision where the perceived size or distance is relative to other objects in our environment. For the perception of size we obtain information mainly through distance cues (Rock 1975, 75). That is, as Rock (1975, 52) mentions, "... normally the way things look entails taking distance cues into account".

In visual perception, especially for depth and size perception, the effect of pictorial clues cannot be underestimated. Before deciding how far or how big the percept is, the human brain works out all the inputs in order to end up with a 'satisfying' perception. In doing so, the pictorial clues within the visual field, in between the percept and the perceiver, are the determinants. The more the pictorial clues in between are present, the more accurate the perceived size/depth will be (figure 1).⁴¹ Therefore, the successful appliance of pictorial clues in the city, in between the Roman pedestrian and any structure in his visual field, must have demarcated how fabulous, how magnificent that structure was. With reference to this, the colonnaded street is a terrific example to show how Roman visual space was sequenced to provide more pictorial cues for a higher faculty of perception (figure 2). That was one of the outreaches of the Roman city design and Roman armature; to let the citizen become aware of the grandeur, and the order that he belonged to. Apparently, the perceptual determinations, and their act on the design of cities, must have played a significant role in emphasizing the unity in the city thus, in the totality of the

⁴⁰ These are the words of Umur Talasl (class lecture, 1998), an experimental psyhologist teaching in METU, department of Psychology. Similar information can be found in Rock (1975, 24) and in Rock (1983) in general.

⁴¹ See p108. A is perceived bigger than B, since more pictorial cues are present between the percept and perceiver.

Empire⁴². Thus, armatures bound towns together, made them a whole and created the feeling that "..one's town belonged to the interlocking mosaic of communities making up the Roman world" (MacDonald 1986, 30).

3.2 The Architecture of Connection and Passage

As we have mentioned already, armatures consist of public structures; they consist of the architecture of connection and passage, and public buildings. The architecture of connection and passage sprang from the fact that any component of the Roman urban fabric is coherent. Thus, in MacDonald's study, connective architecture is distinguished from passage architecture. The connective elements are constituted by such elements as thoroughfares, plazas, stairs. These elements provided continuous flow and continuous linear frames of reference (MacDonald 1986, 32). Whereas, the passage structures are arches, arch facades, public fountains, exedras and any kind of four-square structures that are built along the streets or plazas. These elements are there to highlight significant armature points, also they provide amenities. Although the components of connective and passage architecture are marked differently by MacDonald, this study will refer to the architecture of connection and passage as a whole, for the sake that their contribution to the functioning of urban fabric is inseparable. Thus, the architecture of connection and passage is there to be perceived and treated as a whole.

The basic constituents of the the architecture of connection and passage are the streets and plazas. To begin with, thoroughfares were the arteries of the city so that by linking the principal buildings, squares and structures, they made up the skeleton of an armature of avenues and

⁴² For a broad study on visual perception, the perception of urban space and the factors acting upon it see Aktürk (1993, 12-21, 22-30, 42-64). Likewise, consult also to Moughtin (et. al.) (1995, 11-13) for the perception of the architectural city and to Çelik (2000, 20-23, 25-28) for the design and perception of space in the urban environment.

public spaces and their adjoining public buildings (MacDonald 1986, 9). In this regard, the thoroughfare was one of the most important structures of Roman architecture. As a matter of fact, the Roman street constituted the backbone of the city armature. All the other structures that constituted the armature gained access through the street. Streets were both spaces⁴³ and public structures. They connected other forms of spaces, gave their character to the structures they communicated, and were the places where 'the kinetic activity' took place⁴⁴. Without the street, the 'mobile observer' would not have the chance to view the sequences of changing scenes. Indeed, the Roman street was a stage where urban activity took place.

Other than streets and plazas, there are the walls, gates⁴⁵ and stairs. In contrast, plazas and streets formed the frame of walls and gates. Usually, they were emphasized at exaggerated scales. Walls identified and drew the boundaries of civilization, by distinguishing what was urban and what was not. Likewise, gates gave armatures identity by separating them from the surrounding urban fabric. Also they served to mark the junction of main streets. Significantly, gates marked the transition from one side of the wall to another, whereas the walls kept apart the identity of each space. In a similar manner to gates, stairs emphasized points of transition to another level. Moreover, they demarcated the place of structures and spaces in the hierarchical ranking order of city.

Apart from all listed, the mainstay of the Roman city was space, yet the mainstay of its armature was the public space. Paul Knox claims that:

⁴³ According to de Certeau (1984, 117) spaces "are actuated by the ensemble of movements deployed within it". Therefore, he claims that with the human movement along them, streets become spaces.

⁴⁴ The city is enlivened by movement of its citizens. Through walking in the city "they waeve places together" (de Certeau 1984, 97).

⁴⁵ Within the content of this study when gates are mentioned, it is not only the city gates but the honorific gates and the arches that were located inside the city, along the armature as well.

... a public space is provided by public authorities, concerns people as a whole, is open or available to them, and is used or shared by all members of the community. Most definitions of public space emphasize the neccesity of access, which can include access to a place as well as total activities within it (Knox 2000: 117).

3.3 The Logic of Armatures

The unified visual image of Roman city architecture was thus formed by its armature. The elements of armatures and how they were put together gave the Roman city a sense of direction. Within the framework of the city, there seemed to be a logic of this composition that directed the inhabitant or visitor to certain places. In this sense, armatures played a role in identifying urban structures and telling where they stood (MacDonald 1986, 25). No matter how flexible in application, there is a certain logic with armatures; of locating urban structures. Therefore, a plaza, a colonnaded street, stairs or a gate can be the indicator of a subsequent, antecedent or an immediate public structure. Consequently, armatures also create a feeling of direction of how to perceive the city.

As has been already mentioned, the Roman city was designed to form an urban whole and to be an element of the universally wide integrated whole, in return. The city constituted the essence of unity in the Empire. Thus, armatures became the framework of establishing unity in the city. Armatures signify how unity was diffused through city fabric. In this sense, they form a mental map. As mentioned before, the formation of this mental map is a result of the parallelism in both processes of experiencing and proceeding in the city. Therefore, there is a certain logic of the concept of the city, thus perceiving the city. This logic is a key to understand how space was perceived by the Roman viewer. Accordingly, armatures manifested how space was perceived and treated in the empire. What is distinguishing about the Roman urban space is that it belonged to the Roman citizen, in a real sense⁴⁶. In order to enliven the city, the urban space or structures were not enough. Rather, it was the access to those structures that elaborated the very essence of the city. In support of this, MacDonald states that "..urban narrative evolves from movement" (MacDonald 1986, 267). In other words, the urban space begins to function with the access of citizens to it. Therefore it was the 'mobile observer' who brought life to the town's visual coherence⁴⁷. In city context, the impression generated by armatures ought to be contemplated with the "seriality of experiences" through sequences of kinetic and visual effects (MacDonald 1986, 22). Hence, armatures directed the course of this movement.

As the city fabric evolved, it did so with an experiential accumulation. Thus, the city fabric is affected by a double-sided mechanism due to its experiential nature. On one hand there are the forces of geography, period of existence, the ideals and trends of the period acting upon the occurrence of city fabric. By doing so these bear upon the citizens' attitude to their city. The citizen experiences his/her city, furthermore his/her mind is shaped by it. On the other hand, the citizen himself is one of the forces that acts upon and reshapes the city. As a result, the city and the citizen further their own concept, context and perceptual system together in time.

By definition, the city plan is supposed to be applied all at once. It was easy to apply a fully designed city plan in regions where urban culture was not present before, or in totally new foundations. But, for regions that

⁴⁶ Moughtin (1995, 8) claims that the measure for all perceptual experiences of the city is the 'footstep', and that the pedestrian is "*the module that gives proportion to the city.*" Although this statement was made in general for the contemporary city, it also reflects how the role of Roman citizen acted upon the correct perception of the city.

⁴⁷ Similarly, de Certeau (1984) underlines the close relation between places, movement and mapping. These are infact what makes the course of a properly functioning urban narrative. See chapter 9, especially p115-120.

had a long experience of urban culture, like Asia Minor, the process was rather Romanization of the Hellenistic cities. Consequently, when the identity of the imperial city is considered in addition to city planning, the architecture of connection and passage, the dimension of time and the Roman citizen need to be worked out together (MacDonald 1986, 29) with the notions of Roman urban design.

3.4. Notions of Roman Urban Design

More than the architectural elements themselves, their organization was significant. Obviously, the established composition among these elements must have taken place according to a logical system of ordering. Therefore, in order to understand this system of ordering better, we need to take a look at some basic principles of architectural design and how they were applied to Roman urban design.

In a continuous system of arrangement the first principle applied is hierarchy, which "implies ..the degree of importance of ..[forms and spaces of architectural compositions], and symbolic roles they play in their organization" (Ching 1996, 350). Hierarchy establishes a visible order which is based on the relative importance of elements. Hence, the value system created articulates the invested meaning in architecture.

Second, there is rhythm. Rhythm "..incorporates the fundamental notion of repetition as a device to organize forms and spaces in architecture" (Ching 1996, 334). A sense of rhythm was a significant component of the urban armatures. They form a rhythm throughout the empire in that armatures were applied among the whole cities. Yet, within the city they stimulated a sense of rhythm in that "..[armatures] are all conceptually and schematically analogous, and are made up of the elements and motifs from the same repertory" (MacDonald 1986, 5). Thus,

the public structures were situated at proximate intervals along the armatures conspiciously to evoke a sense of rhythm. In addition, the repetition of architectural features implied unity among the urban fabric. Basically the urban articulation created by the connective architecture was achieved by the repetition of forms. By doing so, a coherent visual language was formed. Not only the elements of architecture within the city, but also the primary notions of urban design such as elevation and axiality were also repeated across the Roman world. If we accept that "[Rhythm] is the sense of movement achieved by the articulation of members making up the composition Moughtin [et. al.], 1995, 10), then it follows that it was through rhythm that the city became enlivened by actual motion and also its perception. Apparently, the Roman armature must have been strengthened with a great many pictorial clues to donate the viewer with a perception even better than the real thing⁴⁸; with a better kinesthetic perception.

Third, there are the notions of symmetry and balance, which usually work in a mutual relationship. "[Symmetry is] the balanced distribution of equivalent forms and spaces about a common line (axis) or point (center)" (Ching 1996, 333). In general, symmetry presupposes an existent axis located with respect to a center. Thus, axiality and the concept of center are familiar to Roman urban design. The Roman city was organized around the two axes; *cardo* and *decumanus*. The Roman street attributed axiality and direction to the city; and all the other elements of armatures were distributed so that they established balance in it. In this regard, in modern usage, symmetry means the balance of formal axial buildings, which implies "an axis of movement" (Moughtin [et. al.], 1995, 9). It was this notion of axiality and the organization of the public buildings, streets and plazas around the axis that formed the logic of armatures. By doing so they articulated the sense of direction and movement within the urban fabric.

⁴⁸ It is of no surprise for a society which had established *entasis* to columns to make them 'fit' in the perspective, and to make them perceived 'more correct'.

CHAPTER IV

THE CITY AND THE NYMPHAEUM

The Roman *nymphaeum*, as broadly denoted in the introduction, was a monumental fountain located usually in the public sphere for public use. Therefore, this chapter will focus on and will try to demonstrate primarily why the *nymphaea* were placed at such locations in the Roman city, considering their monumental scale and splendid architecture as well.

The city is not a mechanical thing; on the contrary, considered together with the citizen, it is an organic whole. Apart from all its symbolic and functional characteristics the city possesses an emotional dimension. The citizen undergoes a sentimental relationship with his city and its places (institutions); he enjoys some of these places; he prefers and uses some of them in the first place.

The ancient city is a journey on foot. It is observed by motion, by walking through its streets. Thus, this motion is in human scale. Therefore, understanding the city is understanding the flow of human movement in it; that is understanding the network of paths and how the other institutions of city are organised according to these paths.

Consequently, functionally speaking, to be understood and to be used properly by the city dweller, the legible city appears as a process made up of three elements; the path, the node and the landmark.

4.1. The Legible City and Its Constituent Elements

In a visual field of unmarked space man may feel lost. In settlements where the space is identified and patterned with visual clues, which also serve for measuring the self-movement, the observer feels confident and the city becomes more legible and usable. Man needs to define and comprehend his environment. It is an existential need for man to know his place on earth. Therefore, he has an urge to comprehend his city. But the human brain is not capable of understanding the whole layout of the city at once. Rather information should be segmented and learned in parts. Therefore, for cognitive mapping and then for way finding man needs have some reference points in his visual field.

According to Lynch (1979), a legible city is composed of five elements: paths, nodes, landmarks, districts and edges. For its legibility, the imperial Roman city will be discussed considering paths, nodes and landmarks as its constituents. The path is man's operational space. Most of man's actions take place in horizontal space, thus, Önür denotes paths as "man's concrete world of action" (Önür 1992, 91). "Other elements relate to and are organized around paths" (Lynch 1979: 2). Nodes are the places of concentration in a network of paths. Landmarks are, as Golledge⁴⁹ calls them, mental anchor points. Therefore, urban experience is a process where all the elements of the city are integrated in order to form a logical ordering of space. In order to make the city more legible the notions of node, path and landmark operate all together, stimulating or signifying one another.

⁴⁹ "Research by others (Golledge, 1978), however, has shown that individuals first learn locations, including landmarks, which act as mental anchor points." Cited in Madanipour (1996, 68).

4.1.1. Path

Paths represent a linear and a directional entity. (figure 3) They are the channels of movement. The city dweller experiences his city while moving along its paths. In between the civic institutions, paths are generated mostly by streets and plazas. Thus, MacDonald (1986) refers to plazas as places where the streets widen. The street is what gives order and identity to the city. Lynch argues that "where the major paths lacked identity, or were easily confused one for the other, the entire city image was in difficulty" (Lynch 1979, 52). Most of the activity zones are places along the streets and plazas. Essentially, communication and access take place in streets, thus streets are the lines of communication. If the city is the place where all the activities and needs are concentrated upon, then, the access to these needs and activities happen owing to the streets. The city is a socially integrated whole, thus the street is the showcase of what is provided by the city. Therefore it should be desirable besides being utilitarian. Above its efficiency and accessibility, using the street is related with the emotional bond set with it. The street is one of the main public amenities, as much as the provider of amenities.

4.1.2 Node

The node marks a point of transition. Nodes are "the strategic foci into which the observer can enter" (Lynch 1979, 72). Like the junctions of streets, the plaza is also a node. (figure 4). Nodes are places with perceptual importance. Since the node marks a point of transition it is a point of break in transportation. Therefore, the city dweller is supposed to make a decision at these points⁵⁰. Nodal centers are also concentrations of some characteristics. Therefore, more attention is paid at these places. Consequently, these places are observed with great clarity and become

⁵⁰ According to de Certeau (1984, 99, 101), if nodes are the decision points than paths are the given decisions which are enlivened by walking.

more memorable.⁵¹ That is, nodes gain special prominence through their location⁵² (Lynch 1979, 73).

Since the human perception is centered on oneself, it presupposes the notion of center. Thus, the center is a reference point in perception. Meanwhile, it is the meeting place of the assembly. With a similar manner, in a system of network of paths nodal centers are the points of reference and secondary meeting places.

4.1.3. Landmark

Landmarks are simply defined physical objects. In the city layout, like nodes, landmarks provide reference points. (figure 5). They have no entrance or interiority. Concording the principle of figure-ground relationship, they are expected to be singled out in their context. This is because the most significant characteristic of a landmark is its visibility and thus, being recognizable and memorable in context. In a system of paths and nodes, landmarks are the points of reference. These reference points are used for cognitive mapping and way finding. As the mind can not carry too many nodal centers (Lynch 1979, 75), they need to be signified and become more memorable with the help of landmarks. In way finding, human perception is assisted with landmarks. Also, junctions and breaks in transportation are important for orientation. Because, at these places there is a number of choices present, and the dweller is supposed to make a decision. Therefore, attention is heightened at these points. That is, these places are more memorable due to their special location. Lynch states firmly that "location at a junction involving path decisions

⁵¹ About the significant perceptual characteristics of the node see Lynch (1979), especially pp. 72-73, 76.

⁵² For comprehensive description of nodes and their importance in urban scene as strategic loci see Cendere (1989, 89-90).

strengthens a landmark" (Lynch 1979, 81). Accordingly, the landmarks present at these locations emphasize the significance of that place.

Different ways of perception, when used together, may strenghten being memorable. Thus, Lynch indicates that "sounds and smells sometimes reinforced visual landmarks" (Lynch 1979: 83). Further, he mentions that "the activity associated with an element may also make it a landmark" (Lynch 1979, 81). In the same way Madonipour indicates that:

> ... we recall environments first in term of what we and others do there, i.e. use significance...then we remember where they are, i.e. visibility, location and siting considerations. At last stage we recall what they look like, i.e. the physical form and the detailed architectural considerations (Madanipour 1996, 68).

4.2. The Nymphaea within the Urban Context

Above all, the *nymphaeum* is a visual presentation of water within the city⁵³. Also, it serves senses other than the ocular, like auditory and tactual. More than that, the *nymphaeum* is a relief in urban life both by the relief of the sound of water and the relief of knowing that water is always there and available. The *nymphaeum* is also a place for gathering informally. In that case, the urban fabric is designed for letting access to those buildings by making both these points of passage and the structures standing on them vital⁵⁴.

⁵³ As Cited in Coulton (1987, 82), "Vitruvius emphasizes that water was essential not only for life itself and for daily uses but also for pleasures, *delectationes*". So that, Coulton (1987, 82) concludes that " the sight of an elaborate *nymphaeum* was presumably one of these pleasures".

⁵⁴ Crouch (1993) underscored the essential functions of the *nymphaea* at their significant locations in the Greek city. Crouch (1993, 284) suggested that "fountains were located in or near agora or at the gateways to the city, within the temple precincts, or along the main streets connecting the gates with the agora and acropolis os a Greek city, because these

Primarily, however, the *nymphaeum* is a public fountain and public fountains are meant to serve water as a public amenity. Susan Walker states clearly that there is a need of minimum adequate population for such an investment to worth doing.

... the building of large fountains supplied by lengthy aqueducts presupposes sufficient money, expertise, effective control over the territory in question, the ability to maintain a complex system, and a population, whether resident or visiting, of a size to merit the investment (Walker 1987, 61).

That is, there is a need of adequate population to recognise and facilitate to merit the investment of the *nymphaea*. Therefore, it can be concluded that while the design of armatures contributes to the accessibility and the visibility of the structures, the marking off of specific locations with the *nymphaea* reinforces the concept of armature and, in return, increases the perception and visibility of both the *nymphaea* and the urban landscape. Thus, the flexibility of armatures would make possible to highlight any location in armatures that gains importance in time. This application contributes, also, to the cumulative growth both of the armatures and the passage building.

The passage building contributes to overcome the monotony in urban design, and brings variety to architectural setting. Besides, they contribute to compartmentalize the urban setting into meaningful and easy to perceive wholes. Therefore, a unitary effect is created that helps the urban fabric to be perceived entirely, be more apprehendable and memorable.

were the places where the most people gathered every day". Her comments on the Greek *nymphaea* are implicative for the Roman *nymphaea* as well.

4.2.1. The Nymphaea as Landmarks

What MacDonald (1986) mentioned about passage architecture, namely the *nymphaeum*, corresponds to landmarks. In the ancient city the nymphaea worked as landmarks in that there was an activity associated with them⁵⁵, they were visible and memorable⁵⁶ in their location and they were splendid glorious architectural investments with their marvellous facades resembling the scaenea frons⁵⁷ of a theater. Firstly, the nymphaea were places for informal gathering; they provided relief points in a network of roads but, most impotantly the nymphaea were fountains where water was always present. They were a public amenity. In the hot Mediterranean climate they were oases of the city fabric. That is, the *nymphaea* were use significant. Secondly, the *nymphaea* were usually located in relation with city gates, at the side of or end of colonnaded streets, at the junction of two streets or near or in the plazas. That is the *nymphaea* were significant with their location. Third and last, they were splendid buildings sometimes two storeys high, with niches and pools and also with architectural embellishments. That is the *nymphaea* were significant with their physical form. Also, the sound of water must have reinforced the nymphaea as being a visual landmark. Consequently, all these aspects contributed to the presence of the *nymphaea* as landmarks in the ancient Roman city.

⁵⁵ De Certeau (1984, 103-105) mentions that we are directed to places for their meaning. Therefore, the *nymphaea* give meaning to the locales they stood, that is they give direction to the route of the citizen and act as landmarks.

⁵⁶ Like the *nymphaea*, the triumphal and commemorative arches are also appointed as landmarks for being visible and memorable by Anderson (1997, 265-266).

⁵⁷ Scaenea frons was a characteristic element of the Roman theater, which emerged in Asia Minor. It was a monumental structure representing the front of a palace. The *scaene frons* was a highly decorated back wall of the theater building, embellished with columns, niches, statues, entablatures and, flowing fountains (Grimal 1963, 59-61). *Scaenea frons*, also called the "Asiatic facade", provided "a stage-like monumentality" in the urban scene (Hanfmann 1975, 49). It was associated with the marble style of Asia Minor therefore, it was widely applied throughout the Roman cities of Asia Minor, not only to the theaters but almost to every columnar facade. For more inquiry about *scaenea frons* consult to Ceylan (1994, 72), Hanfmann (1975, 49), MacDonald (1986, 196), Ward-Perkins (1970, 405-6) and about the marble style of Asia Minor consult to Üçer (1998, 101).

Moreover, passage architecture highlights significant points and transitions within the armature. The elements of passage architecture are mainly secondary structures, and they stand for a point of transition, lingering or gathering. They are types of half-building; that is they have no entrance or interiority. They are also public enterprises, but like doorways, they were not meant to be entered or enclosed. Rather, passage buildings are a pause along the armature without impeding circulation, mostly located at armature junctions and deflections, at entrances and intersections, and alongside thoroughfares and plazas (MacDonald 1986, 74). While the passage structures stood as components of the architectural wholeness and unity of the city, they were still distinguished in their neighbouring environment. Further, they were present to tell apart the location they stood and to be recognised themselves. Obviously, passage architecture was a highly visible architecture and the passage buildings were meant to be seen. In fact, the Roman city was designed to be seen, to be recognised and to evoke admiration. Hence, the circulatory, "mobile" urban design would have worked for the sake of obtaining visibility within the city. No matter how splendid any single architectural construction is, it has to have qualities other than its visuality, like accessibility and providing public amenity in order to further its attractiveness.

4.2.2. The Nymphaea as Street Furniture

Within the urban context, the *nymphaeum* stood as a landmark. As mentioned before, landmarks were the visual reference points to form a cognitive map thus, to grasp the city. In today's cities not only single buildings, but also elements of street furniture may act as landmarks⁵⁸. According to Geoffrey Warren (1978, 4) "..street furniture is any accessory in a street, road or other thoroughfare that is of public use". The repeated use of i.e. traffic light or street name, reinforces the presence of these

⁵⁸ For the street furniture elements as landmarks see Moughtin (1992), chapter 6 in general.

elements and make them reference points. The function of street furniture is to strengthen the *genius loci*⁵⁹ of the place (Moughtin 1992, 127). That is, street furniture gives identity to both the city and its institutions. Therefore, it emphasizes the visual image of the city, thus reinforcing the use and understanding of it⁶⁰.

In the same manner the *nymphaea* located on the armature were street furniture. Apart from anything, the *nymphaeum* was a fountain therefore, it was a non-building. It had no entrance. It was present to mark the node it stood at. Therefore, it had to be visible and had to be singled out from its context. At the same time, it was a public amenity. The response of an ordinary citizen when he came into a *nymphaeum* was to stop by either for the reasons of astonishment, relief or drinking water. But, the *nymphaeum* had to be recognised in the first place. After that, the citizen was expected to use the *nymphaeum*; to spend time at the *nymphaeum* for any of the reasons listed above. Later on, the emotional bond that the citizen set with the place he/she would come to visit again and again would make the place memorable. The *nymphaeum* was a place where water was celebrated since, it was "the civilising presence of water" within the city (Yegül, 1994: 107). Thus, in general, the water work in the city is citizen's link with nature.

⁵⁹ *Genius loci* is articulated by Norberg-Schulz (1979, 18) as an ancient Roman belief concerning that "every independent being has its *genius*, its guardian spirit [which] gives life to people and places". See *ibid* in general.

⁶⁰ Urban furnitures visually and perceptually function within the urban fabric. Matt (1966) evaluates street furniture according to its perceptual manners in urban scene.

CHAPTER V

THE NYMPHAEA IN THE CITIES OF ASIA MINOR

Every region is significant with its geography; its land forms, natural resources and climate. Hence, water gave a uniqueness to the Mediterrenean region; water was essential for the cities of Asia Minor. Therefore, for the cities of Asia Minor (figure 6), the *nymphaeum* was a significant architectural element. As the archaeological evidence reveals, just about every great Roman city in Asia Minor had at least one *nymphaeum*.

Whatever their number or location, all these *nymphaea* worked for more or less the same purposes: They were all significant with their location in the city and their architecture. Rather than providing comprehensive survey, however, six examples chosen from among cities of Asia Minor will be subjected to search in detail for the purposes of this study⁶¹. The chosen cities are Pisidian Antioch, Perge, Hierapolis, Laodiceia ad Lycum, Ephesos and Miletus. These cities are chosen with specific criteria in mind. Accordingly, they have:

- at least one excavated nymphaeum,
- well published information concerning *nymphaea*, the city plan and other constituent public buildings,
- clearly discernible relations among public structures within the city plan.

⁶¹ See Appendix B for a full list of the Roman *nymphaea* in the cities of Asia minor.

Furthermore, cities from different regions of Asia Minor and cities having different geographical conditions, such as proximity to sea, altitude etc., are considered as secondary criteria while determining the cities. In this manner, it is meant to show that the strategic locating of the *nymphaea* within the city remained more or less the same regardless of geographic conditions. Also, all these six cities underwent a building program in the imperial period. Thus, the *nymphaea* dating to the imperial period are the subjects of the study.

All the *nymphaea* within these selected cities were significant in their locations, however, some of them were also significant for their architecture. The most significant of all was the monumental *nymphaeum* in Miletus. Therefore, all the other cities except for Miletus will be presented in part 4.4.1 *significance by location*, whereas, Miletus will be presented in 4.4.2 *significance by architecture*.

5.1. Significance by Location

5.1.1 Pisidian Antioch

5.1.1.1. Location

Pisidian Antioch lies in southern central Anatolia. It is near the modern city Isparta, on the north side of the Yalvaç Çay, and looks west and south towards lake Egirdir⁶². The ancient city was set on a hill overlooking the Antios Valley, at an altitude of 1236 meters. The ancient river Anthius ran along the east. The city's overall dimensions were 785m x 990m and the area within its walls covered approximately 46.5 hectares. The acropolis was not a level plateau (figure 7). In addition, the eastern,

⁶² The geographical and historical knowledge is taken from Mitchell and Waelkens (1998, 1-14).

southern and northern slopes were very steep. Therefore, the site was accessible only from the western side.

5.1.1.2. History

The earliest history of Pisidian Antioch dates back to 3rd century BC, when Antiochus I founded the city in 280 BC. Later in 25 BC, it was refounded as a Roman colony, *Colonia Caesarea Antiochia*, by the first Roman emperor Augustus. Soon afterwards, the splendid building programme of Antioch took place. Thus, most of the important public structures were constructed in the 1st century AD, during and after the reign of Augustus.

5.1.1.3. The City Armature

Pisidian Antioch had a distinct and prominent armature. In the first place, the reason for this would have been the straight alignment of the main streets and public structures (figures 7-9). In this regard, the cardo and *decumanus maximus* formed the backbone of the city armature. As for its entry, the city was accessible through the West gate. Between the west gate and the decumanus maximus a vertical street extended for 90 m, which was also parallel to the *cardo maximus*. Likewise, the Tiberia Plateia was parallel to the decumanus maximus. It ran along the east-west direction and started 70 m northwards from the point where the cardo and decumanus maximus met. As to its function, Tiberia Platea was also a religious plaza, to the southern end of which stood the imperial temple and the propylon. As mentioned before, the orientation of the public structures was prominent within the city armature. In this regard, all the public structures that stood on both sides of the thoroughfares faced those streets and were located to enable a linear narrative among them. Hence, a linear configuration among clusters of structures can be claimed to have existed.

Firstly, to the north, there appears to have been an association among the baths, the *palaestra*, the North Gate and the North *nymphaeum*. Secondly, to the south, the theatre, the arch, and the "south *nymphaeum*" formed a linear arrangement. Further, both of these groups of structures were almost parallel to each other, and, to the *decumanus maximus* as well. Overall, there is a readily visible correlation between the public structures and the main streets. Because of this, the water constructions within the ancient city of Antioch may be interpreted within this framework.

5.1.1.4. The Nymphaea

As far as we know, there were three basic fountain buildings in Antioch. The locations of these fountain buildings in the city were remarkable indeed (figure 8). From the entranceway onwards these were: the fountain on the west gate, the *nymphaeum* at the junction of the main streets, and the *nymphaeum* at the end of the *cardo maximus*. All the three water structures stood at the most significant nodes within the city.

5.1.1.4.1. The Fountain on the West Gate

The first structure (figure 8-1) cannot be called a common fountain house in the traditional sense. Rather, it was a semi-circular fountain in the form of a series of waterfalls. This fountain was a heraldic announcer of the availability of water in the city, because it was the first structure to be seen after the entry. Furthermore, it was incorporated to the monumental West Gate where the major access to city prevailed (see Figure 5.3.-1). The fountain is dated to the early imperial period, to the foundation of the city for that the assigned date for the monumental gate is the same. For instance, Owens⁶³ describes the fountain and states that the main road leading into the city from the Western Gate was divided into two

⁶³ The following lines describing the water canal and the semi-circular fountain at the West Gate is taken from Owens (1997, 315-320).

carriageways by a large artificial water canal. There was a small fountain in the shape of a semi-circular basin with a limestone parapet at the lower end of the canal. However, the only evidence for the fountain house was this semi-circular basin. According to the reconstruction⁶⁴, the fountain consisted of a solid rear wall with an ornamental spout. The water poured into the tank at this point. In its front, two columns provided a 'facade'. With respect to this reconstruction, the channel was visually impressive, because the road, as it turned northwards, created a cascade of running water. This cascade rose over 2m from the fountain to the contemporary ground level. According to the reconstruction, at the lower end of the cascade a solid rear wall was present. As the visitor entered the city, the first view he confronted was this solid wall, hence the stunning view of a wall of moving water. Thus, according to Mitchell and Waelkens "the water is brought down the middle of the street in a series of decorative waterfalls which is doubtlessly arranged for aesthetic effect" (Mitchell and Waelkens 1998, 101). Besides the aesthetic and visual impact of the cascade, the canal might have also worked for the practical reasons of cooling the surrounding area through evaporation, thus providing psychological relief for the viewer. Furthermore, it was a place for the visitors where they could take refreshment before going on with their journey to the city.

Soon after the visitor entered the city, the very first thing he faced was the fountain. At this location, water was presented to a newcomer in a splendid way. Therefore, considering the long journey to the city and the hot Anatolian climate, it was inevitable that the visitor perceived the fountain in a glorified fashion. Accordingly, the fountain boldly advertised that 'water was available in the city of Antioch'.

⁶⁴ Altough the reconstruction is practically problematic, it is also acceptable for aesthetic reasons. Owens (1997, 320).

5.1.1.4.2. The *Nymphaeum* at the South-East end of the City

Second, there is the structure that can be thought of a more traditional fountain house, compared to the first one. This nymphaeum stood at a very significant armature point; where the *cardo* and *decumanus* maximus met (figure 8-2). At this point, on the decumanus maximus, Mehmet Taşl alan identified four Doric columns and parts of the entablature from a building (Mitchell and Waelkens 1988, 102). This building was supposed to be a small fountain house. It is noteworthy to affirm that, an entrance on the city walls was present at approximately 50 meters south of this location. However, it was probably not used as much as the West gate. Concerning its function, the fountain house signified both this entrance and the 'transition' to the *cardo maximus*. Unfortunately, there is not much information available about this *nymphaeum*. Despite the lack of information, it can still be claimed that by standing at a very important armature point and marking a node where the two main thoroughfares meet, the *nymphaeum* must have been significant and memorable both for the citizen and the visitor.

5.1.1.4.3. The Nymphaeum at the end of the Cardo Maximus

Approaching the *cardo maximus*, the most important water feature of the city becomes visible (figure 10). This is another *nymphaeum* that was situated at the end of the 400 m long *cardo maximus* (figure 8-3). It was erected during the same building program, in the 1st century AD, as the aqueduct. The construction was possibly two storeys high. As a result of its location, the fountain house stood in the visual field of the viewer along the colonnaded street. Considering that the Roman city was designed to be experienced on foot, the effect it created on the viewer would have been marvellous. Hence, with every step taken it must have appeared more detailed and showy. In addition, the increasing sound of water and the feeling of chilling might have contributed to the sensory impression of the *nymphaeum*. Actually, any structure located at the end of a long street is normally perceived as being grander than it is. This is particularly true if it supplies many visual clues to depth perception. Therefore, the fountain house would have seemed in a more splendid manner thanks to the columns placed on both sides of the street. Under these circumstances, the viewer would be attracted to the direction of this magnificent structure. Accordingly, this effect appears to have been the aim of the design. Hence, at this location of the armature, highlighted with the *nymphaeum*, stood a group of significant public buildings. These public buildings were the baths and the *palaestra*. Access to these structures was gained through the North Gate, standing west to the *nymphaeum*. Again, it is consequential that, the fountain house was associated with the gate and that this point of armature was emphasized with a nymphaeum. Furthermore, its location was on one of the highest points of the city. Mitchell and Waelkens suggest that one of its functions in the visible city was to screen-off the undesirable scene of the aqueduct from sight (Mitchell and Waelkens 1998, 197). This suggestion further strengthens the fact that the *nymphaeum* was functioning in the city visually. In brief, the nymphaeum was probably located in this very place to stress the point of transition and to attract attention. Towards the nymphaeum, the cardo maximus broadened from 6m to 30m and it almost became a plaza⁶⁵. Hence, the fountain house might have signified the place that stood for the state agora.

⁶⁵ Also Mitchell and Waelkens have affirmed that this widened part of the *cardo maximus* might have served as the civic forum of the Augustan colony similar to the elongated fora of Syrian Apamea and Gerasa in the Decapolis. Cited in Mitchell and Waelkens (1998, 95). Accordingly, Mitchell and Waelkens state that one of the main streets known as *Augusta platea*, which was usually attributed to the square in front of the imperial temple, might have been the name for the *cardo maximus* as "the term *platea* is appropriate to a broad street, usually lined with colonnades and shops". *ibid*, p101. Cited in Mitchell and Waelkens (1998, 95).

Thus upon entering the city, the first image that occurred in a visitor's mind would be associated with water. Since water was an essential component of civic life for Antioch, it is unlikely that the city lacked other monumentalised water structures.

... the evidence suggests that Pisidian Antioch had a comprehensive system of stone and lead water pipes, the undoubted purpose of which was to deliver water under pressure to stand pipes and ornamental streetside fountains throughout the city (Owens 1997, 318).

As he moved onwards, the Roman viewer would have been reinforced with the idea that Antioch was an easily "legible" city. Hence, the clear armature led the visitor to all of the important structures of the city. In addition, the water structures repeated within the city, especially the gatefountain association, might have created a sense of visual rhythm, thus, strengthening legibility. The even dispersion of structures both on the north and south of the city is also valid for the sides of colonnaded streets.

Also, there was a small ornamental fountain at the *Tiberia platea* and a small fountain house installed during renovations to the original Hellenistic entrance to the theatre (Owens 1997, 317-8).

Consequently, it can be said that there was a balanced distribution of architectural features within the city. Thus, all the 'important' structures in the city were marked with a fountain house. Once the association between an important structure/place and *nymphaeum* was set, the Roman viewer would then look for and therefore find the same approach in whatever city he visited.

The water available in the city of Antioch was visualised and inserted in the daily life in the forms of monumental structures, small fountain houses and stand pipes. The importance put on the adequate water supply, and thus on its psychological and aesthetic functions, is revealed by the invested effort and expense.

5.1.2. Perge

5.1.2.1. Location

Perge is in Pamphylia, in coastal southern Anatolia. The ancient city is situated 18 km east of modern Antalya, between Düden and Aksu rivers⁶⁶. It stood on the merchant route through rough Cilicia (Cilicia Tracheia). Although Perge was an inland settlement, she maintained an outlet to the sea via the Aksu river (the ancient Cestros) 4km to the east (Özgür 1990, 4). The city was situated on a plain at the foot of a hill, approximately 50m high. The initial settlement, however, appears to have been on the hill, at the north end of the site⁶⁷.

5.1.2.2. History

Perge was founded in 1200 BC, by Hellenic people who migrated to the south Anatolian coast after the Trojan war. However, sources dating back to mid-fourth century BC do not mention Perge (Akşit 1987, 205)⁶⁸. Besides, Perge first appears in records in 333 BC, with the arrival of Alexander. Subsequently, the first prosperous period of Perge was in the 2nd century BC, when the city walls and magnificent towers were constructed. The city reached its peak during imperial times, between the 1st and the 3rd centuries AD (Akurgal 1989, 540). Many monumental buildings belong to this period.

⁶⁶ The general background information about Perge is plentiful. See: Abbasoğlu (2001, 175-185); Akşit (1987, 205-206); Bean (1979, 25-38); Hornblower and Spawforth (1996, 1139); Stillwell (1976, 692-693).

⁶⁷ Abbasoğlu (2001, 177) and Stillwell (1976, 692).

⁶⁸ Still, as Geoffrey Summers denoted in the dissertation of the thesis, Perge was identified in the Bronze tablet from Hattusa.

5.1.2.3. The City Armature

The city of Perge was roughly divided into four quarters by colonnaded streets (figures 11, 13,14). These colonnaded streets extended in north-south and east-west direction. They crossed at right-angles towards the north end of the city, thus establishing the city armature. Except for the north end of the *cardo maximus*, four main gates⁶⁹ provided access at the ends of these colonnaded streets; two of them were successively at the south end, one of them at the west and the other one at east.

It seems evident that public structures were situated with respect to the colonnaded avenues, thus, forming clusters in three different locations (figure 14). The first cluster was at the south end of the city, outside the city walls, and in the west of the *cardo maximus*. The second building group was located at the southern end inside the city walls, on both sides of the *cardo maximus*. The third cluster was at the northernmost part of the city, emerging from the junction of the colonnaded streets and extending westwards along the *decumanus maximus*.

To begin with, the first group of buildings consisted of the theatrenymphaeum complex and the stadium (figure 11-1,2). Almost all of these structures were erected during the 2nd century AD. On the other hand, the structures in the second group constituted the late antique gate, the socalled Septimius Severus Plaza, the East Basilica, the Agora, and the South Bath (figure 12). Within the Septimius Severus plaza were two nymphaea, the propylon and the three niches on the west, the Hellenistic

⁶⁹ "The Hellenistic wall had three gates, on east, west, and south" (Abbasoğlu 2001, 177). The south one became a double-gate system with the erection of another gate in 4th century AD. Akurgal claims that the outer gate, the so-called late antique gate, of this gate system was initially constructed during the period of Septimius Severus. After the city walls were built during the 4th century AD, the gate was probably incorporated into the walls (Akurgal 1989, 542-543).

gate and the triple-arched gate. The main entrance to Perge was through this gate complex at the southern end of the city. Except for the basilica, the late Roman gate and the Hellenistic gate, all the other structures at this location were built during the 2nd century AD. Lastly, the public structures in the third cluster were the North *Nymphaeum*, the West Baths, the *Palaestra* and the West Gate that led to the necropolis (figure 11-9,10,11). The *palaestra* dates to the 1st century AD, the north *nymphaeum* to the 2nd century AD, and the north baths to 3rd century AD.

5.1.2.4. The Nymphaea

There were four fountain houses in Perge. These were the theater *nymphaeum* in the south-east, outside the city walls; two *nymphaea* in the Septimius Severus plaza, in the south; and the monumental *nymphaeum* in the north. Each stood out within its cluster. Hence, they all appeared to be significant markers in their respective locations. As a connective element, a water canal (figures 14, 16, 18) passed through the colonnaded streets. "Down the middle of each [colonnaded street] ran a broad water channel barred at intervals of 6m by cross walls" (Stillwell 1976, 692). These water channels, without question, contributed much to the visual appearance of the city, above all, to the visual wholeness of the water structures in the city.

5.1.2.4.1. The Theater Nymphaeum

The first *nymphaeum* to be described stood outside the city walls, right of the *cardo maximus* (figure 13-1). It was formed by erecting a 12m high wall backing against the stage building (Bean 1979, 29). The construction date of the fountain house is determined as the second half of 2nd century AD. Mansel claims that one of the reasons of construction was

to support the stage building⁷⁰. On the other hand, the erection of the fountain house must certainly have had other obvious reasons. As mentioned before, the city of Perge was approached from the south. Therefore, for a visitor coming to town, the initial route had to pass along the *cardo maximus*, thus next to the theatre. For this reason, the outer facade of the theater building, which was converted into a *nymphaeum*, logically faced the *cardo maximus*. In other words, when a visitor walked along the colonnaded street to enter the city, the first structure he saw would have been the *nymphaeum*. Therefore, upon approaching the city of Perge, the first image formed in the visitor's mind would have been the gate ahead and the *nymphaeum* nearby. With reference to this image, it is important to realize that the visual impression would have been further enhanced by the sound of water accompanying that view.

5.1.2.4.2. The Nymphaea at the Septimius Severus Plaza

As the visitor continued to walk along the *cardo maximus*, he would arrive at the gate complex. There, he would enter the city arriving at the so-called Septimius Severus plaza. The first structure in the west of the plaza was the monumental *nymphaeum* (figures 13-2, 17). The fountain was erected during the early Severan period, after AD 198. The construction was two storeys high. It was supposed to be a component of the building project that had been developed during the overall reorganization of the place⁷¹. On the other hand, there was another fountain house next to the monumental *nymphaeum*. Actually, this fountain house was the continuation of the monumental fountain building complex⁷². Its

⁷⁰ "Wie Mansel nachweisen konnte, lag der Errichtung des Brunnens die Absicht zugrunde, durch ihn das vermutlich bei einem Erdbeben stark beschädigte Bühnenhaus abzustützen" (Dorl-Klingenschmid 2001, 226).

⁷¹ "Es ist anzunehmen, da β er Bestandteil des Baukonzeptes war, das zur Neugestaltung des gesamten Platzes entwickelt worden war" (Dorl-Klingenschmid 2001: 230).

⁷² "Das Nymphaeum bildet die südliche Fortsetzung des unter Kat.-Nr. 86 katalogisierten Baukomplexes." (Dorl-Klingenschmid 2001: 230)

construction date was probably a few years later than the monumental fountain considering the architectural details of both.

The Septimius Severus plaza (figure 12) was in fact the extension of the colonnaded street and together with the buildings it was erected during the reign of Septimius Severus. The amazing round towered gate of the city rose at the northern end of the plaza. Although the gate was built in the Hellenistic period, a horseshoe-shaped courtyard was incorporated around 120-122 AD. Thus, with this erection, the place acquired a monumental character. Bean claims that the older gate, which was present at the end of the square, was the most interesting part of the city (Bean 1979, 31). Moreover, he asserts that the horseshoe-shaped court in front of this gate was "designed and built for ornamental rather than strategic use" (Bean 1979, 31). Indeed, the whole place was full of monumental structures which had a rather ornamental use. Accordingly, there was a monumental gate (propylon) next to the nymphaeum leading to the south bath. Moreover, in the east, the square was bordered by the continuation of the galleries of the colonnaded avenue (Özgür 1990, 50). From this eastern part, an access opened to the agora. Regarding all these facts, it is possible to suggest that the plaza also had a symbolic and visual character.

Consequently, the *nymphaea* in the west of the square must have had other uses than simply serving water. In this respect, the *nymphaea* obviously had a significant and emphatic visual effect contributing to the symbolic meaning of the plaza. In addition, it was a sign of welcoming the visitors with water, thus with refreshment and relief. Also, the location of the *nymphaea*, situated both at the end of the colonnaded avenue and inside the plaza marked by monumental gates, must have added much to their prominence. Considering the double effect of the *nymphaea*, both visual and auditory, complemented by locational significance, the impression generated must have been marvellous.

5.1.2.4.3. The Monumental North *Nymphaeum*

After passing through the Hellenistic Gate in the south, a long colonnaded street extended towards the acropolis. At the northern end of this colonnaded street stood the monumental north nymphaeum (figures 13-3, 18, 19). It was located just on the skirts of the acropolis and was probably built between 130-150 AD. The construction was two storeyed, having two openings that led to the stairs of the acropolis. Hence, the *nymphaeum* also served as a portal. As for its function, at this location, the fountain house must have acted as a landmark that marked an important transition point. Since the nymphaeum was situated at the end of the colonnaded avenue, it must have directly struck the Roman viewer who passed through the gates and entered the cardo maximus. Along the street, the *nymphaeum* stood at the visual field of the viewer, providing him with more visual clues and a grander view in every step he took. By standing at the viewer's visual field for such a long time, the *nymphaeum* must have become more memorable. Also, the water canal running in the middle of the colonnaded street till the *nymphaeum* must have contributed to the impression generated. Additionally, the cooling effect and the remedying sound of water passing all over the streets would have been the reward of being a Roman citizen, thus a successful way to show off imperial amenities. Consequently, it can be said that the element of water in the imperial Roman city was not only physically vital, but psychologically and visually essential as well.

5.1.3. Hierapolis

5.1.3.1. Location

Hierapolis was an inland city in the Phrygian region. The city was at an altitude of 376m and spread over an area of 1000 by 800m (Türkoğlu 1988, 17). The ancient city was located atop a level plateau (figure 20) on the Meander valley, at the foothills of Çal Dağ (Freely 1988, 183). It now belongs to the urban area of modern Denizli.

5.1.3.2. History

According to Akurgal, and several other sources⁷³, the city was founded by the Pergamene king Eumenes II, and was named after "Hiera", the wife of the legendary founder Telephos. According to the will of Attalos II the city was bequeathed to the Romans in 133 BC. In AD 17, during the reign of Tiberius, and in AD 60, during the reign of Nero, it was destroyed by strong earthquakes. After that the city was restored and reached its peak during the 2nd and 3rd centuries AD. Refuting this, however, Bean claims that Hierapolis was not a Pergamene foundation (Bean 1989, 201).

5.1.3.3. The City Armature

Hierapolis was a fairly well planned city, thus she had a clear armature (figures 21, 22). The cardinal feature of the city armature was a mile long street travelling the length of the town, running at the north-south axis. In reality, the true alignment of the street was from NW to SE. Eventually, all the public structures were located with regard to this axis, to

⁷³ Similar historical information about Hierapolis can be found in sources such as; Akurgal, (1989, 464); Akşit (1987, 170); Berti, De Bernardi Ferrero and others (1993, 70-75); Freely (1988, 183); Stillwell (1976, 390).

the *cardo maximus*. Hence, at either end, the street was marked by monumental gateways. Access to the city was available through these monumental entrances.

The public structures of Hierapolis can be examined in three clusters (figure 22). Firstly, the civic monuments were clustered at one end of the armature (Parrish 2001, 38). These were the theatre, the bath-complex, the Frontinus gate, a public latrine, the agora and the *nymphaeum* of the Tritons located around the northernmost part of the cardo; around the street of Frontinus (figure 20-1,2,4,5). Under Hadrian this northern area (figure 23) underwent a construction programme to monumentalize the city⁷⁴. Thus, the enormous agora, the theater and the bath-complex at north were all part of this construction plan. All these structures including the *nymphaeum* of the Tritons which was built later in the second half of the 3rd century AD, were located facing the street. Also, many other structures in the city were oriented toward the *cardo maximus*. As a matter of fact there was another cluster of public structures to the center of the city. This second cluster consisted of, from the western end of the city to the eastern end; the large baths, the *nymphaeum* of the Apollo sanctuary, the sanctuary of Apollo, the theatre and the *castellum aquae* on the outer skirts of the city (figure 20-6,8,9,10,11). Among them, the large baths, the enclosure wall of sanctuary of Apollo, the nymphaeum of the Apollo sanctuary and the theatre were oriented toward the cardo maximus (D'Andria 2001, 105). Out of these buildings, the theater was constructed during the 1st-3rd centuries AD, the baths in 2nd century AD, and the nymphaeum and the sanctuary of Apollo in 3rd century AD. Thirdly, the gymnasium and the southern gate stood at the southern end of *cardo*, both dating back to 1st century AD (figure 20-12,13).

⁷⁴ Francesco D'Andria (2001, 105) suggests a building programme in the northern area of the town. Further, according to him, the alignment of buildings was with regard to the *plateia*. Cited in Parrish (2001, 97-115).

In concordance with the distribution of the public structures along the armature, it is evident that the buildings at the northernmost part of the city served both the citizens and the visitors coming to town for commercial purposes. Thus, the foundation was commercial rather than military (Berti 1993, 85). Therefore, it can be suggested that visitors to the city might have been coming mostly from the north. Accordingly, structures such as the northern theatre, the baths and the *nymphaea* were erected at later periods, probably to make visible the growing prosperity and grandeur of the city.

5.1.3.4. The Nymphaea

Berti (1993) and Fabbri (1987)⁷⁵ claim that there were three fountain houses present in Hierapolis. Yet, more recent sources (Parrish 2001, 20; Dorl-Kleigenschmid 2001, 193-197) mention the presence of only two *nymphaea*. Regardless of their number, these *nymphaea* were significant in their locations.

5.1.3.4.1. The Nymphaeum of the Tritons

This *nymphaeum* was located toward the northern end of the *cardo maximus* (figure 21-1). It stood outside the agora, to the SW and was parallel to the Frontinus street. The fountain house was 70m long. It was preceded by the rear wall of the agora, and was dated to the reign of Alexander Severus. It was a huge and richly decorated fountain house (figure 24), in fact, one of the grandest *nymphaea* revealed in Asia Minor (Dorl-Klingenschmid 2001, 196). Since the city was built and flourished as a commerical foundation, the *nymphaeum* of the Tritons might have become a popular place for the visitors. Similarly, Berti suggests that " it was used as a resting place for caravans arriving at Hierapolis" (Berti and

⁷⁵ Berti (1993, 91) and Fabbri and others (1987, 69). Fabbri claims the presence of a third *nymphaeum* located at the center of the city, which has not been studied yet.

others 1993a, 65). As the northern end of the *cardo maximus* was evidently the commerical center, the most probable objective of the city was to make the place visible. That was the likeliest reason why a *nymphaeum* was establihed here. Beside providing water, humidity, coolness, relief and a resting place for the visitor, the *nymphaeum* was also clearly intended to be seen and to evoke admiration. At this very location, relating to the agora, to the main street and to the city gate, the fountain must have gained more prominence and attention. Therefore, it clearly stood as a landmark for the city⁷⁶. The *nymphaeum* of Tritons was also a good example of the showy architecture of Roman fountain houses. The reconstruction exposes that the *nymphaeum* was obviously a visual display of water and imperial power.

5.1.3.4.2. The Nymphaeum at the Apollo Temenos

The *nymphaeum* was located at the city center, in front of the temple of Apollo (figures 21-2, 25). It was probably built in the 3rd century BC, and the source of water was evidently the *castellum aquae* at the easternmost part of the city. The location of the *nymphaeum* was significant according to the building clusters in the city. As mentioned before, there were three places where buildings were clustered in Hierapolis. One of these settings was the city center, where the *nymphaeum* stood. The fountain house was close to the north south axis. Moreover, it stood at the transition point where another cluster of significant public structures appear. Therefore, the *nymphaeum* must have acted as a landmark and, evidently signifying this passage. Also, the fountain was a way station for the visitor, who would approach the city from the southern gate.

⁷⁶ Parrish (2001, 20) also argues the same fact, suggesting that "its scale and rich sculptural decoration made it a major landmark".
5.1.4. Laodiceia ad Lycum

5.1.4.1. Location

Laodiceia was a city of Phrygian origin, located at the junction of the road to the Maeander valley and the road leading to south-east Pisidia (Bean 1989, 213). The ancient city is near the Eski Hisar village today. It was 10 km further, to the south-west of ancient city of Hierapolis. The city was situated on a hill at an altitude of 304 meters. (Türkoğlu 1988, 43). Although ancient Laodiceia was an inland city, it was also well-watered as the city was located along the southern coast of the river Lykos (Akurgal 1989, 466).

5.1.4.2. History

Laodiceia was founded by the Seleucid king Antiochus II (Theos), between 216 and 253 BC, and was named after his wife Laodice⁷⁷. During the 2nd century BC the city was ruled by Pergamene kings. Later, it was included in the province of Asia in 129 BC. During the reign of Tiberius, Laodiceia became one of the important cities of the empire. In AD 129 Hadrian visited the city. Thus, the most prosperous period for Laodiceia was the 2nd century AD.

5.1.4.3. The City Armature

The ruins of Laodiceia stand on a flat-topped hill, which comprised not only the acropolis, but the whole city (figures 26, 27). What is left from the city armature on this flat-topped hill can be seen in the four gates and

⁷⁷ According to many sources available on Laodiceia, (Akurgal 1989, 466; Bean 1989, 213; Freely 1988, 187; Türkoğlu 1988, 39), the city was founded by Antiochus II. However, Bean suggests that there is the probability that Antiochus I might have founded the city and named it after his daughter (Bean 1989, 213).

the extending of *cardo* and *decumanus maximus*. In Laodiceia the *decumanus maximus* has survived in two parts. The first part of the *decumanus*, starting from the Ephesian Gate, extends to the center of the plateau where it meets the *cardo*. From this point on the *cardo maximus* runs approximately 125 meters to the north where it meets the *decumanus maximus* extending to the east.

Laodiceia was accessible from four directions by four gates (figure 26-14,15,16,17). Hence, the public structures in the city were loosely distributed and were clustered in proximity to these gates and in relation to the main streets figure 29). Three of these gates were located to the west of the city: the Hierapolis Gate at the north-west, the South Gate (Aphrodisias Gate) at the south-west and, the Ephesian Gate at the westernmost part on the road connecting to the bridge. Actually, all the three gates to the west got together almost at the same location, to the West Agora. With respect to that, the West Agora must have been a significant place for the ancient city since, it was the last point before departure and yet the first point of arrival. Therefore, the significance of the place was emphasized with a *nymphaeum*.

From this point on, the *decumanus maximus* extended to the center of the city. At the center, the *decumanus* was crossed by the *cardo* at right angles. Here, the *cardo maximus* stretched to the south, where it led to a cluster of public structures. This group of structures located to the south consisted of the *bouleuterion*, the South Agora, the bath-gymnasium, the water tower, another *nymphaeum* and the stadium. Probably, this cluster of structures was located with regard to the aqueduct, so that some of them were fed by the aqueduct. On the other hand, to the north, the *cardo* lead to the monumental *nymphaeum* in the first place. The monumental *nymphaeum* stood where the *cardo* met the *decumanus* in the form of a colonnaded street. In the second place, from the *nymphaeum* onwards, the *cardo* extended to another cluster of public structures to the north. These included the small theater, the north basilica and the large theater. On the other hand, at the northern intersection of the *cardo* and the *decumanus*, where monumental *nymphaeum* stood, the road ran to the east. Along this road, a monumental complex with a porticoed piazza was present. The Syrian Gate was located at the east end of the *decumanus maximus*. It held the main street to the center of the plateau from east, as did the Ephesian Gate from west.

5.1.4.4. The Nymphaea

There were three known *nymphaea* in the city (figure 28). The location of these fountain buildings must be the consequence of the loose arrangement of structures within the city. In other words, the three *nymphaea* were placed in three different locations, thus, in these locations public structures were clustered either with respect to the gates or main roads.

5.1.4.4.1. The Nymphaeum in the West Agora

Approaching either from the Ephesian Gate or the South Gate, or the Hierapolis Gate, the West Agora is the first way-station for a visitor. Inside the agora stood the *nymphaeum* (figure 28-1). It is obvious that, the location of the *nymphaeum* in the agora contributed much to the visual appearance, hence the "image" of the city. Any passenger walking through these gates had to pass by the *nymphaeum*. Thus, he would have the opportunity to enjoy the water available in the city. The *nymphaeum* not only marked an important node for the visitor, but made the point of entrance more memorable, in addition to providing water. Certainly, the presence of water, in the form of a *nymphaeum*, must have brought life and spirit to the place. In this regard, the fountain must probably have functioned as an informal gathering place and a place to get relief both for the citizen and for the visitor alike.

5.1.4.4.2. The Monumental Nymphaeum

The monumental *nymphaeum* stood almost in the center of the plateau, at the junction of colonnaded streets (figure 28-2). It was built in the reign of Caracalla, and followed by four reconstruction periods (Akurgal 1989, 467). The location of the fountain house was important. It has already been mentioned that the *nymphaea* within the Roman city stood as landmarks. The very significant location of the cities were the points where streets meet. These places were decision points, nodes, and they needed to be remembered by means of mental mapping. Therefore, the position of the *nymphaeum* at the intersection of colonnaded streets must have made these locations more memorable. On the other hand, another function of the monumental *nymphaeum* was to mark the road to the north of the city, where the small theater, the large theater and the north basilica were located. That is, the decision determined at this very location was either to walk along *decumanus* to the east, or to go along the *cardo* to the north, to the theaters, or to walk along to the south.

Besides, the crossection of the fountain house was L-shaped (figure 30). That is, the *nymphaeum* had two fronts, each facing the both streets. Therefore, the design of the fountain house indicates that the fountain was aimed to be seen from both directions. As the viewer walked in to the town from the Syrian gate, the *nymphaeum* appeared in his visuel field. From then on, as he walked through the street, the *nymphaeum* continued to stay in his visuel field, thus forming bigger images in each step he took. Therefore, the *nymphaeum* became more memorable and had a grander effect on the visitor. In addition, the *nymphaeum* must have acted as a

reward after the long walk along the street. Hence, the experience must have remained the same for the viewer approaching from the south.

5.1.4.4.3. The Nymphaeum Near the Water Tower

The third *nymphaeum* of the city was situated in the cluster of structures in the south. The *nymphaeum* stood at the west foot of the water-tower, on the way to the stadium (figure 28-3). Bean suggests that the *nymphaeum* may be dated back to the 1st century AD, as the stadium was dedicated to Vespasian, in AD 79 (Bean 1989, 217). On the other hand, the water tower is dated to the reign of Domitian according to an inscription. Therefore, the fountain must have been built at the same phase due to the building connection between the water tower and the fountain (Dorl-Klingenschmid 2001, 212). Obviously, the *nymphaeum* was associated with the stadium and the water tower. Since the *nymphaeum* stood at the passage to the stadium, it must have worked to glorify the most striking feature of the city, that is the stadium itself. Also, the fountain probably marked the water source of the city; the water tower. Consequently, at this very location the *nymphaeum* worked as a point indicator.

5.1.5. Ephesus

5.1.5.1. Location

Ephesus lies on the Aegean coast of Asia Minor. The ancient city was at the mouth of the ancient river Caystros, near modern Selçuk. The initial settlement was on the Ayasoluk, on the north slope of the theater hill, 1200m west of the Artemision, by the ancient port of Koressos. The city remained in this location for about 400 years. About 290 BC, the city was moved by Lysimachos, between the mountains of Bülbül-dağ and Panay rdağ, to the edge of the Ephesian bay⁷⁸ (figure 31). The city remained in this location for more than a thousand years, up to the 7th-8th centuries AD.

5.1.5.2. History

The city of Ephesus had a long history going back to the 5th millenium BC⁷⁹. According to Strabo and Pausanias, Ephesus was an lonian foundation⁸⁰. Similarly, Akurgal states that like other Ionian settlements, the city must have been colonized by the 10th century BC (Akurgal 1973, 42). During the following periods, the region was occupied by Carians and Lydians. In 334 BC Alexander reached Ephesus and ruled the city for eleven years. After his death in 323 BC, the city fell into the hands of Lysimachos, together with the whole of Ionia. Then, the city passed to Rome with the kingdom of Attalus III in 133 BC. Accompanying this, the city became the capital of the province of Asia under the first Roman emperor Augustus.

5.1.5.3. The City Armature

Ancient Ephesus was accessible from three main directions (figure 33). First of all, it was accessible from SE, from the Magnesian gate. As though no supporting evidence is present, the gate is dated to the Lysimachian period (Scherrer 2000, 68), same as the Hellenistic city walls which it belonged. Second, the city was accessible from W, from the three harbour gates on the bay. Among these gates, the southern harbour gate

⁷⁸ Stillwell (1976, 309) and Scherrer (2000, 10).

⁷⁹ However, Stillwell states the city "was founded on an older settlement of Carians and Leleges" (Stillwell 1976, 306) and in *The Oxford Classical Dictionary* the city was supposed to be founded by "Ionian colonists led by Androclus son of Codrus" (Hornblower and Spawforth 1996, 528). For further information on the city's history, refer to Bean (1966); Scherrer (2000; 2001).

⁸⁰ Cited in Bean (1966, 161).

belongs to Severan period (around 200 AD), the middle harbour gate was probably erected during the reign of Hadrian, and the north harbour gate is dated to the middle of the 3rd century AD (Scherrer 2000, 178). Third, the city was accessible from N, from the Koressos gate. The Hellenistic Koressos gate was located somewhere between the commercial agora and the great theater (Scherrer 2001, 63). However, the Byzantine Koressos gate was located in NNE, behind the stadium on Byzantine walls. In between these gates lay the main streets, forming the backbone of its armature. The network of streets formed the connection and provided communication among essential public structures, thus constituting an integriation among them⁸¹. During the imperial era, the processional way was composed of the south street, the Domitian street, the Kuretes street, the marble street, the Arkadiane and the plateia of Koressos. The south street stretched from the Magnesian gate to the state agora and continued onwards (figure 34). However, according to the present day knowledge, only the part between the gate and the agora belonged to the processional way. The south street met the Domitian street from the SW corner of the state agora. From then on, street of Domitian extended northwards, where it shifted westwards and met the Kuretes street. The Kuretes street ran along the SE corner of the commercial agora, and there met with the Marble (figure 35) street which ran northward to the great theater. If we need to establish a heartland⁸² for the ancient city of Ephesus, it would either be the plaza in front of the Library and Agora, or the Great Theatre and the square in front of it⁸³ (figure 36). The place might have worked as the center of the town, thus the main streets running from the city gates

⁸¹ Scherrer mentions this 'network of roads' as "one main road, often called the 'processional way' " which "leads through Ephesos touching nearly all important areas of the known Roman city" (Scherrer 2001, 81).

⁸² Actually, the place in front of the Library of Celsus is generally considered as the center of the town. Therefore, it can be said that the city had two important centers. Still, by means of the network of streets leading to the gates, the theater place seems more central than the place in front of the library.

⁸³ Also, Yegül (1994, 100) claims that "defined on the west by the massive stage wall of the theater, this open space was one of the most important hubs of Ephesus".

meet at this very place; in front of the theater. The Arkadiane ran in between the middle harbour gate and the theater. Moreover, the *plateia* in Koressos (the so-called theater street) stretched along the northernmost part of the city and ended up before the theater. Therefore, it can be concluded that this location was the most significant node in the ancient city of Ephesus.

All the significant public structures were constructed along this processional way. Thus, they stood as landmarks⁸⁴. Still, other public structures were needed to mark and highlight the focal points of the city. Whenever a new focal point was established or a place gained or regained importance within the city, it would be usually adorned with new fountain houses⁸⁵. Thus, the architectonic whole created by the armature was bounded together by the civilising presence of water along the processional way (Yegül 1994, 107).

5.1.5.4. The Nymphaea

There are numerous *nymphaea* in ancient Ephesus (figure 32). These water structures were constructed at different periods to mark the altering foci within the city. From the Theater Plaza till the Magnesian Gate, an Ephesian or a visitor was never completely out of reach of water (Yegül 1994, 107). Yet, all these fountains were constructed in certain distances for the sake of visual continuity. Therefore, the visual field of the viewer never lacked water. Thus, each of these fountains will be listed in this study

⁸⁴ Strabo (14.1.4) refers to a gymnasium as a "landmark", while describing the location of abandoned Smyrna. Cited in Scherrer (2001), *The Historical Topography of Ephesos*, p.73.

⁸⁵ Scherrer (2001, 74) indicates that when the imperial temple and the harbour entrance with the adjacent bath-gymnasium complex became the two new focal points of the city, during the "golden age" from Domitian to Hadrian, they were connected by colonnaded streets, thus decorated with several fountain houses.

to depict the coherent and visually linked design of the street embellished with water.

5.1.5.4.1. The Fountain House of Aristion near South Street

This *nymphaeum* was located at the south side of South street leading to the Magnesian gate (figure 32-1). It was erected during the building period in 102-117 AD. The fountain was two-storeyed and also richly decorated with statues. When a visitor entered into the city from the Magnesian gate, he would be met with a welcoming water structure within his visual field. Thus, the fountain was the first civic display of visual splendor to be seen. Besides, the fountain was the predecessor of the approaching State Agora, an important focus of the imperial town. Also, the fountain house was the first resting place in line, after a long hot journey⁸⁶. Thus, it was a highly visible indicator of accessibility of water within the city.

5.1.5.4.2. The So-called Fountain

The fountain is located on the south side of the colonnaded street (figure 32-2). It was initially erected in 92-93 AD under the proconsul P. Calvisius Ruso Julius Frontinus. In the 2nd century AD, the *nymphaeum* witnessed an enlargement and refurbishment. Its front facade faced the street, thus drawing attention to it. Apparently, the fountain house was a signifier for the street and for the so called administrative district⁸⁷. Besides, it marked the transition point of a side-street and the south gate to the agora. During the 1st-2nd century AD, a construction phase took place in the state agora and in its surroundings. Following this, the area gained

⁸⁶ According to Yegül (1994, 107) it was an attractive fountain which also served the thirsty travellers entering or leaving the city from east.

⁸⁷ Yegül (1994, 110) adresses the public fountain as another "prominent visual station along the colonnaded eastern continuation of the Magnesian street".

importance. The *nymphaeum* was one of the adornments to attract attention to the place, thus highlighting its significance.

5.1.5.4.3. Hydrecdocheion of Laecanius Bassus

The fountain stood at the SW corner of the state agora (figure 32-3); it was aligned with the Domitian street (Dorl-Klingenschmid 2000, 186). It was erected in 80-82 AD by the governor C. Laecanius Bassus. The construction was two-storeyed and had a U-shaped plan. Functionally speaking, Yegül (1994, 106) states that it was a lavishly decorated *nymphaeum* which combined convenience and delight. Ostensibly, the fountain emphasized the transition point to the Domitian street. As for its function, Scherrer suggests that "the fountain installation...incorporated the western end of a row of houses and *tabernae* which lay between the Doric colonnade of the state agora and the south road" (Scherrer 2000, 76). Apart from these, the *nymphaeum* was obviusly for the daily use of citizens.

5.1.5.4.4. The Fountain-court on the Pollio Monument

In 92-93 AD, a fountain was altered to the honorary monument of C. Sextilius Pollio. The monument stood at the NW corner of the agora (figure 32-4), thus the fountain, was oppening to the agora. Actually, access to the agora was realized through the monument. Therefore, the fountain must have been constructed according to a need to mark the NW entrance to the agora, during the 1st century AD.

5.1.5.4.5. Fountain of Domitian

Adjoining to the south of the Pollio monument is the fountain of Domitian (figure 32-5). It was oriented towards the Domitian square. It was

built in 92-93 AD. The fountain stood on the transition point from the Domitian street to to Domitian plaza, or vice-versa. That is, the fountain marked both of the structures, the street and the plaza. Dorl-Klingenschmid claims that the fountain was architecturally, optically and functionally in unity with the adjacent fountain on Pollio monument (Dorl-Klingenschmid 2000, 184)⁸⁸.

5.1.5.4.6. The Hydreion in the Memmius Monument

Departing the Domitian square, the route eventually turned northwest to meet the Kuretes street. At the junction of these public spheres stood the Memmius monument and the adjoining *hydreion* (figure 32-6). The monument was built in the 1st century BC. Afterwards, probably during the reign of Augustus, a fountain was added on to the west side of the monument. The fountain experienced a renovation around AD 200. As for its function, the fountain was another visual reference along the processional way. Since the the fountain stood at the transition point from the Domitian square to the Kuretes street at west and to the Sacred way at east, it emphasized the significance of the place. On the other hand, the fountain was also located at the end of the Kuretes street, thus facing the street. Therefore, it stood in the visual field of the pedestrian all way along the thoroughfare. That is, in its location, the fountain was visually functioning either for punctuating an important node, or overstressing the Kuretes street.

⁸⁸ "Bammer sieht in dem Apsisbrunnen und dem benachbarten Brunnenhof auf dem Pollio-Bau eine architectonische, optische und funktionale Einheit, die er unter der Bezeichnung Domitiansbrunnen führt."

5.1.5.4.7. The Nymphaeum of Trajan

Along the Kuretes street, not much farther than the hydreion, another nymphaeum existed (figure 32-7). This was, by far, the most remarkable and splendid nymphaeum of the ancient city (figure 37). It stood at the right wing of the Kuretes street, aside the Panay rdag, 40m to the east of the bath street. Just before the *nymphaeum* stood Trajan's Gatehouse. According to Scherrer (2000, 114), it was a part of a propylon which functioned as an ornamental entrance to the side street. The gate was dated to AD 114-115. Similarly, the nymphaeum was built before AD 114, and was dedicated to emperor Trajan. Consequently, with regard to the construction dates and locations of these buildings, it seems clear that this place gained importance during the 2nd century AD. Accordingly, another monumental gate at the northern end of the Kuretes street, which was also erected in honor of emperor Trajan, is a further evidence that this location gained significance during the 2nd century AD⁸⁹. Therefore, with respect to what was said before, the *nymphaeum* of Trajan was probably built in this location so as to emphasize the significance of the place. On the other hand, the fountain marked the node where transition from the Kuretes street to the baths street existed. Onen (1983, 30) claims that the bath street was visually emphasized by the fountain house. Moreover, he states that the southern extension of the bath street went accross the Kuretes street, which was the most splendid region of the city according to an inscription (Önen 1983, 30). Therefore, one of the functions of the fountain would have been to highlight the houses of the elites⁹⁰. That is, the *nymphaeum* was not only a construction to emphasize the whole

⁸⁹ To put it differently, Scherrer (2001, 76-77) suggests that both gates might have been part of the same building program honoring the emperor's expected arrival after the Parthian war.

⁹⁰ Önen (1983, 30) also conjectures that the houses of Ephesian nobility might have stood on this slope of the mountain. Similarly, Scherrer (2001, 77-78) argues that spanning the lower southern side of the Kuretes street, terrace houses were constructed for the wealthy.

street, but a landmark to signify the transition point as well as the most prestigious district of the city.

The *nymphaeum* of Trajan was also architecturally distinctive. It was a two-storeyed construction with a U-shaped plan and a richly decorated facade. Also, a double life-size statue of Trajan was displayed in its central niche. Most importantly, its columnar facades were designed in a theatrical fashion, same as the *scaenea frons*⁹¹ (Scherrer 2000, 116). In this respect, aesthetic considerations must have played a considerable role in the construction, thus the building was intended to be visually impressive. In other words, this theatrical bulding tradition indicates that the fountain house was designed to be memorable, honorable, monumental and visually magnificent⁹².

5.1.5.4.8. The Hellenistic Well

The Hellenistic well stood to the northwest of the Kuretes street, at the southern street egde (Figure 5.27.-8). It was also opposite the Academy street, backing against the terrace houses in the south. The building was reminiscent of the Hellenistic fountain near the theater (Scherrer 2000, 122). The fountain was built initially in 1st century BC, yet continued to function till late antiquity. Although the function of the fountain might have presented slight differences along its lifespan, during the imperial period it must have worked so as to highlight the Kuretes street, and the terrace houses to its south. Additionally, the fountain stood in the pedestrian's visual field during the way down the Academy street. So that,

⁹¹ Since the Roman theater surpassed other buildings in prestige with their splendid architecture, the *scaenea frons* was successfully adopted to the front facade of the *nymphaea* (Grimal 1963, 59-61).

⁹² Unfortunately, the restitution of the Trajan *nymphaeum* lacked the architectural grandeur of the original building. See figure 38.

it must have signified the approaching important civic structure, namely the Kuretes street, to the inhabitant.

5.1.5.4.9. Hexagon (the so-called *nymphaeum*)

Next to the Hellenistic well was another *nymphaeum* (figure 32-9). It provided steps to the street. Although its construction date and functions were not clear, it might have contributed to the visual definition of the street.

5.1.5.4.10. Fountain of Ktistes Androclus

The fountain of Ktistes Androclus was a monumental fountain, probably built towards the end of the 2nd century BC, in honor of Ktistes Androclus, who was the mythical founder of Ephesus. It had a U-shaped plan, and was originally 13m high. The fountain was located at the southeast corner of Kuretes street, next to the gate of Trajan (figure 32-10). Thus, the gate of Trajan stood at an important node where Marble street, Kuretes street and the so-called Stair street met⁹³. Yegül (1994, 102) emphasizes that the urban scene changed character going through the Kuretes street. Regarding his claim, the fountain was the first structure of this changing environment. Therefore, it probably acted as the most eye-catching instrument in the street, thus highlighting this urban corridor. Hence, it signified the node, the coming colonnaded street and, the transition from the Marble street to the Kuretes street.

5.1.5.4.11. Circular Monument with Fountain

After the transition to the Marble street, the first fountain in line was located at the southeast of Tetragonos agora (figure 32-11). It was a

⁹³ Scherrer (2000, 129) refers to the street south of Trajan gate as 'Steigengasse' meaning the 'Stair street'.

decorative fountain, probably built at the end of the Hellenistic age (Scherrer 2000, 136). As for its function, apart from serving water, the fountain might have also punctuated the south entrance to the commercial agora and the plaza in front of the library which could be the center of the town.

5.1.5.4.12. Hellenistic Well House

The Hellenistic fountain house was at the north-west of the Great theater (figure 32-12, 39), adjoined to its exterior walls⁹⁴. It stood at one of the most remarkable nodes in the city. Empathically, the fountain was associated with the Great theater. Apart from its relation with the theater, the fountain was ready for use by all pedestrian approaching from either the Arkadiane, or the Koressos street (theater street), or the Marble street. Most important of all was its function as visually referencing the theater plaza, which was the informal gathering place of Ephesians. Also, for the visitors approaching from the harbour, the fountain availed water in the first sight. Moreover, by standing at the south end of the Arkadiane, the fountain stood in the visitor's visual field all the way along the street. Therefore, it must have had a grander impression on the visitor, especially, when combined with the effect of the theater.

5.1.5.4.13. Hellenistic Fountain in the Theater Place

This fountain was located to the south of Hellenistic well house at the theater (figure 32-13). Also, it faced the view axis of the Arkadiane. Scherrer (2001, 63) claimed that the fountain must have been located outside the initial Koressos gate, somewhere between the commercial agora and the Great theater. The fountain was dated to the Late Hellenistic

⁹⁴ Wilberg dates the fountain to the 2nd century BC due to the architectural decoration, whereas, Alzinger claims that the building belonged to the 1st century BC, without presenting any evidence (Dorl-Klingenschmid 2001, 180).

period. Considering its relation with the Koressos gate, its probable function was to wellcome the visitor to a city where water was celebrated in forms of sophisticated structures.

5.2. Significance by Architecture: Miletus

5.2.1. Location

Miletus was located in the south-west coast of Asia Minor, where the Meander River (Menderes today) ran into the sea. Today, the ruins of the ancient city stand near the modern village Akköy, 30km from Söke. The ancient city was bordered by Priene in the north, Myus and Herakleia in the east, and Didyma in the south (Baran 1965, 7). Initially, the city was founded on a peninsula near the sea, extending 2km in length in a northeast south-west axis. Later, the city fell victim to the silting of the river and became an inland town 9-10km away from sea (Akşit 1982, 97).

5.2.2. History

Miletus was a prosperous and important city of the ancient world for over a thousand years. The city had a long history dating back to the 2nd millenium BC⁹⁵. However, ancient sources refer to the settlement as an Ionian foundation (Stillwell 1962, 578 and Akşit 1982, 97). During the 1st millenium BC, Miletus was the most important, and probably the largest, town among Ionian cities. The city experienced a very prosperous period during 7th-6th centuries BC, when she established colonies in the Black Sea and the Mediterranean. At that time, she became the metropolis of the Ionian world. During the 6th century BC, Miletus fell under Lydian

⁹⁵ Akurgal (1973, 206) mentions that an important Mycenaean colony existed in Miletus from the middle of the 2nd millenium on. Similarly, Bean suggests that the site was occupied by Mycenaeans between 1400 and 1200 BC. Akşit (1982, 97) goes further and claims that from the Archaic period, dating back to 3000 BC, there had been traces of settlement at Kalabaktepe, where the temple of Athena stands today.

domination. Afterwards, the golden age of the city ended with a sea battle in front of Miletos near the island of Lade in 494 BC, when the city was destroyed. There upon, the city was rebuilt between 479-450 BC, with the withdrawal of Persians from western Asia Minor. In 334 BC, Alexander the Great visited and took control of the city. During the Hellenistic period, the city was dominated by Antigonos, Lysimachos, Seleukos, Ptolemais, and Pergamene kingdoms. When the kingdom of Pergamon began to lose its power, the city was annexed to Rome⁹⁶.

5.2.3. The City Armature

Miletus was a harbour city (figures 40, 41), therefore, its armature was constructed with respect to its bays (figure 42). The ancient city lay in between the four harbours of the town, three of which were namely the Athena Harbour in the SW, the Theater Harbour in the west and, the Lions Harbour in the north. Also, another harbour existed in the east of the city. These harbours were the locations where public life took place, hence, the city was accessible through these bays. In this respect, Miletus was approachable both from the sea and from land; it was approachable through its bays and through the sacred way in the south of the city, east of the fact that Miletus was an important harbour city. During the imperial era, the preeminent one among these bays was the harbour of Lions, because, a 28m long processional route (figure 43, 44-12) extended between the gateway on the Lion harbour and the South Agora. Besides, this district was also the center of the town.

Along the processional way, most of the public structures were situated. These were, starting from the harbour of Lions, the harbour

⁹⁶ Akşit (1982, 98) claims that the city was taken over by Rome in 133 BC. On the other hand, Hornblower and Spawforth (1996, 980) assert that Miletus became a part of the province of Asia in 129 BC.

gateway, the Delphinion, the North Agora, the Ionic Stoa, the Capito Baths, the Gymnasium, the Bouleterion, the monumental *Nymphaeum*, and the South Agora. These structures were either dated back to the imperial period, or were built before, and yet experienced a re-expansion or reconstruction in the imperial era. Actually, during the reigns of Claudius, Trajan and Hadrian, the city experienced building programmes⁹⁷. As a result, the processional route was monumentalized and transformed into a magnificent street during the Roman imperial period (Stillwell 1976, 578).

As mentioned before, all the important districts in the city were located with respect to the harbours. Further, three agoras of the city were related with these bays. The Theater Harbour was the oldest of these bays and. It was probably the previous city center⁹⁸. Even though its significance as the city center did not last along the whole lifespan of the city, the district was still important since the Theater, the Stadium and the Faustina Baths were located here. The Athena harbour was the third in rank; the temple of Athena was built in the place during the 5th century BC.

5.2.4. The Nymphaeum

There was one known *nymphaeum* in ancient Miletus, yet, it was the grandest and most splendid among the fountain houses in Asia Minor (figure 45, 46). This *nymphaeum* is dated to the 2nd century AD. It was probably built by Trajan, who dedicated the fountain to his father, M. Ulpius Traianus, the proconsul of the province of Asia in the year 79-80 AD. The *nymphaeum* was a magnificent structure, 17m in height and 20m in width.

⁹⁷ Akşit (1982, 98) states that during the reigns of these emperors, the harbour gate, the *nymphaeum*, the delphinion, the sacred way, a gate opening to the sacred way and the north gate of the south agora were built. Also, the town was encircled by a wall. Likewise, Akurgal (1973, 218) emphasizes that the city underwent a vigorous development from the very beginning of the Roman empire.

⁹⁸ Stillwell (1976, 580) mentions that the theater was probably the meeting place of the council before the *bouleuterion* was built.

The construction was three-storeyed with an incredible marble elevation. The decorative front facade was embellished with entablatures, columns, niches and statues of goddesses, gods and *nymphs*. It was a fine example of facade architecture in Asia Minor, displaying the marble style, which provided a stage-like monumentality to the fountain. In fact, this facade resembled the scaenea frons of a Roman theater. The water used to flow profusely from the mouths of fishes, which were placed in nine niches, into a pool with gushing sounds. Certainly, the effusive display of water in this lavish architecture must have brought a new dimension to the visual environment around the Roman citizen. Here, it is important to note that a three-storeyed lavishly designed architecture reveals an attempt beyond serving water. Clearly, the *nymphaeum* was displaying the prosperity of the Empire⁹⁹. Further, the astonishing view and the splashing sound of water was a social stimulant to orient towards the *nymphaeum*. Beyond doubt, the visual appeal and the remedying auditory and tactual perception of the fountain were extremely impressive. In this sense, the citizen must have been pampered, thus being proud to be Roman and Milesian.

Beside its architectural significance, the location of the fountain house also demands attention. It was located in the city center (figure 44), at the end of the processional road, to the north-east of the South Agora, in front of the *bouleuterion*. As mentioned before, during the imperial period the place expanded architecturally; a magnificent monumental north gate was added to the South Agora, and a rectangular structure is discovered in front of the *bouleuterion*, which was probably the sanctuary of the imperial cult. The place at the end of the processional street was a significant location for a visitor who approached the city from the Lion harbour. Further, it was the official meeting place for the council. Therefore, this very place was an important context for the display of the prosperous public life

⁹⁹ Coulton (1987, 81) exemplified the *nymphaeum* at Miletus as " a more attractive opportunity for displaying generosity". Hence, Coulton (1987, 81) included that " a better water supply is simply the route to a higher standard of living".

that, further, it had to be emphasized. At this location, the *nymphaeum* clearly stood as a landmark, which had no other architecturally matching example in visual glory.

CHAPTER VI

CONCLUSION

Life is animated water. Vernadsky¹⁰⁰

Water is everywhere; it rains from the sky, fluxes in streams, gathers in lakes, flows in rivers, gushes from waterfalls, falls into the seas. It keeps us and the environment alive. Water is a significant parameter for urban life¹⁰¹. Settlements have always been dependent on water. Thus, from the beginning of urban history, man settled at a certain distance to water sources. Rivers, seas, lakes often define the edges of cities where civilisation starts. Further, Crouch (1993, 343) addressed water management to be essential for urban life, and added that it " defines how people will live in their settlements". In our urban lives we need to interact with water; we need to hear it gush or splash, we need to see it flow, we need to feel moist in our skin. More importantly, we need to be sure that water is always "there and available"¹⁰² for us. So that it would be a relief to know that we are never too far away from water to lose our connections

¹⁰⁰ Cited in Hillel (1991, 32). Also, Vernadsky's early insights can be found in Kamishilov (1976). Cited in *ibid*.

¹⁰¹ "Human settlements began where people saw the chance of establishing sustainable lifestyles on fertile land where water was more or less regularly available" (Kinnersky 1988, 1). Cited in Ward (1997, 1).

¹⁰² According to Kaplan (1977) "even those who are far from any waterway derive enjoyment from knowing that water is always there and available". Cited in Herzog (1995, 47).

with nature. More specifically, water is the ultimate source which shapes our environment. It flows through rivers forming valleys; it deposites sediments on shores forming deltas; it splashes on the fronts changing the morphology; it is a potent power capable of changing the whole geography.

On the other hand, inside the city, water is "designed" in many forms by means of architectural structures. By doing so, in a symbolical sense, water is taken under control by man and by his city in the architectural forms it takes in the urban scene¹⁰³. These architectural water structures may also be regarded as representation of man's dominance over natural forces. In addition, in our 'artificial environments' the architectural water structures are the representation of natural elements. As Specter (1974, section 5 p 7) states "... a flamboyant fountain recalls the waterfall; a water basin evokes the limpid mountain pool". Obviously, 'urban' water is one of the most symbolic¹⁰⁴ expressions epitomizing many meanings for *civitas*¹⁰⁵. As Thales of Miletus solemnly declared, "water was the first principle of all things"¹⁰⁶.

In fact, the city is the physical statement of a community of people. Regarding that, man and his ideas form the basis of the city¹⁰⁷. In other words, the physical city is the declaration of its dwellers' ideas. The architectural city determines how the citizen is supposed to act in the city. It

¹⁰³ Likewise, Norberg-Schulz (1979, 58) stated that "by moving natural forces into the settlement, the forces are domesticated".

¹⁰⁴ For more insight about urban water, its use and symbolism see Betsky (1995) and Moore (et al.) (1994, 15-49).

¹⁰⁵ "*Civitas* describes the coming together of people in order to make a community rather than human settlements in terms of a particular physical artifact" (Genovese et. al. 1998, 11).

¹⁰⁶ Vitruvius, ten books on architecture, in Granger (1998, 96).

¹⁰⁷ Nicias said to his soldiers on the beach of Syracuse that "it is men that make a polis, not walls or ships or devoid of men". Cited in McEwen (1993, 120).

can bring people together or keep them apart, it may make them feel safe or inconfident, it may even make a community them of or it may not. With this in mind, the thesis shows how the imperial Roman city was distinguished by the physical city and its armature. The Roman armature which was the skeleton of the ancient city's public places was formed mainly by the articulation of its streets and plazas, and highlighted by elements like fountains. Hence, streets and plazas are significant components of Lynch's (1979) legible city. Accordingly a legible city comprises: paths, nodes, landmarks, districts and edges. Actually, path and node are the very basic constituents of urban armatures; hence, the way they are brought together manifests the physical and conceptual design of the city: its form and identity. In the case of Roman imperial cities, the elements of path, node and landmark went hand in hand with the notions of rhythm, hiearchy, symmetry and balance, thus forming both the urban fabric and the logic of it.

In articulating the ancient city, paths, nodes and landmarks became significant reference points forming the mental image of the city. This study has shown how –as landmarks or otherwise- the Roman *nymphaea* acted as such reference points in the ancient city. Accordingly, the *nymphaea* functioned both aesthetically and physically through their role as urban furniture in the city. Through our observations in the six cities chosen, namely Pisidian Antioch, Perge, Hierapolis, Laodiceia, Ephesus and Miletus, the *nymphaea* had clear locational and architectural significance; they were all placed at the activity zones of these cities and at those locations they were visually emphasized. Therefore, either due to their visible and obvious architecture or for their respective locations along the armatures –placed along paths and nodes-, the *nymphaea* acted as notable landmarks. Again, they called attention to those spots where they stood and became memorable at those places with their splendid

architectural features. These facts surely contributed much to the legibility of the Roman city, thus, making it a livable place for the citizens and visitors alike.

The six ancient cities chosen all reflect urban attitudes. All of them are significant examples indicating that prosperity was an urban standard among the cities of the Empire. Especially, the monumental *nymphaeum* at Miletus may be singled out as a spectacular example. Through its scale, theatrical facade and significant location, the *nymphaeum* was visually functioning in the city. Located at the urban center, it attracted attention and evoked marvel, declaring proudly and lavishly the grandeur of the ancient city.

Among the sample cities, Ephesus also boasts extraordinary legibility. Along the Embolos, the colonnaded street starting from the Magnesian gate and extending till the plaza in front of the library, which can also be called as the center of the city, fountain buildings were spaced one after another, perpetually remaing in the visual field of the wayfarer. This remarkable organization of water structures through the main artery of Ephesus has shown that the city design was signified with fountain buildings. Consequently, it can be posited that especially for the cities of Asia Minor, the *nymphaea*, hence the element of water, were prominent, significant, efficacious media for constructing the image of the city and indicating how they functioned.

Likewise, in Perge, the presence of a water canal starting from the southern city gate extending through the skirts of the Acropolis is noteworthy. Through the canal, water was let to flow through the middle of the colonnaded street. Here, the main artery was underscored with with the visual and aural influence of water. Above all, the water canal was punctuated with *nymphaea* on either side, further reinforcing the emphasis of the ancient city's armature. Despite the fact that in the remaining sample cities, namely Hierapolis, Laodiceia and Pisidian Antioch, the *nymphaea* did not occur as incessant interwals as in Ephesus and Perge; still, they were significant enough to punctuate paths and to emphasize nodes since they were placed at crucial spots on the armature. For this reason, after covering the six sample cities it can be demonstrated that inside the imperial Roman city, and in the cities of Asia Minor, the *nymphaea* had distinctive functions other than merely serving water. As such, the *nymphaea* served:

- to highlight the significant spots along the city armature,
- to make those significant spots the locus of public activity; by making them appealing for the wayfarer; making them informal gathering places and places to take relief,
- to show up and emphasize the prosperity of the Empire and the privilege of being a citizen,
- by being located at similar sequences, to compartmentalize the city into legitimate parts in order to let the citizen depict the mental image of the city so that it would be legible, livable and adorable. In other words, to construct and then to strengthen the ligament between the city and her citizens.

Consequently, a legible and livable city comes to life where the citizens' physical contact to their city and the emotional bonds set between them intersect. Accordingly, one of the facts which made the Roman city legible was the *nymphaea* placed at regular sequences in the armature, so that the ancient city was organized into legitimate parts and mentally mapped. Therefore, the Roman citizen was able to understand, adore and

use his city. In other words, he affirmed his citizenship and bonds of belonging to a city.

In this sense, similarities in city design served a kind of unity through the Empire at large. This fact allowed the Roman citizen to feel himself a part of his empire as much as he felt himself a part of his city. Overall, the Roman cities were treated with the same logic. Thus, throughout the Empire, the collective identity of cities brought a certain standardisation¹⁰⁸ which was flexible. The result was unity and coherence¹⁰⁹ both within the city and throughout the Empire. That is, all the cities possessed a self identity, yet, together they were a 'whole'. This was the success of Roman urbanization. Clearly, the functions of the *nymphaea* within the city contributed much to this urban success.

The grandest artefact of man, that is his city is built upon concepts; thus, the city comes to life when these concepts befell and agnized by its citizens. Therefore, it is the concept of water and the water structures within the city through what the public space and its symbolization, which makes the city, can be illustrated. In that sense we may conclude that it was also the *nymphaea* which invigorated public space design and realized the concept of the Roman city. Thus, as for their function, the *nymphaea* may be thought to be one of the aspects which symbolize the concept of the city within a universal frame. Similarly, the same manner can be sought, and also found, in the water structure located at a significant node,

¹⁰⁸ For further acknowlegdement on standardisation of the physical city and urban life, and how it contributed to the unification of the empire see Zanker (1988, 336).

¹⁰⁹ Unity and coherence make a whole. Calvino (1972, 15) evaluates this concept of wholeness by relating to the concept of "armature", in the same way as MacDonald (1986). In this regard, he identifies the city of Zora as having "the quality of remaining in your memory point by point" for that its coherent urban environment has "patterns following one another as in a musical score where not a note can be altered or displaced". These lines quotes an imagined city sharing the success of Roman armatures and urbanity.

at the Atatürk Meydan, where the two primary thoroughfares of Ankara, the Atatürk boulevard and the İnönü boulevard, meet. In this case, the structure, being an urban furniture and a landmark, acts as a mental anchor point within the city, just like the *nymphaea* did in the ancient Roman city.

The major contribution of this research is to show how a modern concept may be successfully applied to an ancient context. The study of Roman *nymphaea* as urban furniture not only articulates the significant role of this element in ancient city design but provides lessons from which we may still learn in creating livable cities today.

REFERENCES

ABBASOĞLU, H. (2001). The founding of Perge and its Developement. In D. Parrish (ed.) <u>Urbanism in Western Asia Minor: New Studies on</u> <u>Aphrodisias, Ephesos, Hierapolis, Pergamon, Perge and Xanthos.</u> JRA Supplement no: 45. (171-185). Dexter; Michigan: Thompson-Shore.

AKŞİT, İ. (1987). Ancient Treasures of Turkey. İstanbul: Haşet Kitabevi.

AKURGAL, E. (1973). <u>Ancient Civilizations and Ruins of Turkey; from</u> prehistoric times until the end of the Roman Empire. Istanbul: Haşet.

AKURGAL, E. (1979). <u>Anadolu Uygarl klar</u> İstanbul: Net.

ATKINSON, R. L. ; ATKINSON, R. C.; SMITH, E. E.; BEM, D. J. and HILGARD, E. R. (1990). <u>Introduction to Psychology</u>. New York: Harcourt Brace Jovanovich.

BACON, E. N. (1975). <u>Design of Cities</u>. Harmondsworth: Penguin Books.

BARAN, M. (1965). <u>Guide to Miletus.</u> Ankara: Ankara Üniversitesi Bas mevi.

BARTON, I. M. [ed.] (1989). <u>Roman Public Buildings</u>. Exeter: University of Exeter.

BEAN, G. E. (1966). <u>Aegean Turkey: an archaeological guide</u>. London: Benn.

BEAN, G. E. (1979). <u>Turkey's southern Shore.</u> London: Benn

BEAN, G. E. (1989). <u>Turkey Beyond the Meander: an archaeological</u> <u>guide.</u> London: J. Murray.

BERTI, F.; FERRERO, D. de B.; FRANGIPANE, M. and LAGONA, S. (1993). <u>Arslantepe, Hierapolis, Iasos, Kyme: Scavi Archaeologici Italiani in Turchia.</u> Venezia.

CALVINO, I. (1972). <u>Invisible Cities.</u> New York; London: Harcourt Brace Jovanovich, Inc.

CERTEAU, M. de. (1984). <u>The Practice of Everyday Life.</u> Berkeley: University of California Press.

CHING, F. D. K. (1979). <u>Architecture: form, space and order.</u> New York: Van Nostrand Reinhold Company.

COULTON, J. J. (1987). Roman Acqueducts in Asia Minor. In S. Macready & F. H. Thompson (Eds.). <u>Roman Architecture and Greek</u> <u>World.</u> (60-71). London: Society of Antiquaries of London.

COWIE, A. P. (1989). <u>English Dictionaries for Foreign Lerners: a</u> <u>history</u>. Oxford: Clarendon Press; New York: Oxford University Press.

CROUCH, D. P. (1993). <u>Water Management in Ancient Greek Cities.</u> New York: Oxford University Press.

CULLEN, G. (1961). <u>Townscape</u>. New York: Reinhold Publishing Corp.

CURRAN, R. (1983). <u>Architecture and Urban Experience.</u> New York: Van Nostrand Reinhold Co.

ÇAKMAKLI, D. (1992). <u>Bina-Kentsel Çevre İlişkisi.</u> İstanbul: Y ld z Üniversitesi Mimarl k Fakültesi Mimarl k Bölümü.

D'ANDRIA, F. (2001). The evolution of Hierapolis of Phrygia. In D. Parrish (ed.) <u>Urbanism in Western Asia Minor: New Studies on Aphrodisias, Ephesos, Hierapolis, Pergamon, Perge and Xanthos.</u> JRA Supplement no: 45. (98-115). Dexter; Michigan: Thompson-Shore.

THE DESIGN COUNCIL (1983). <u>Street Furniture</u>. London: Design Council Publication.

DOĞAN, N.; ERHAN, İ.; TOKA, C. and GURKUT, U. [eds.] (1986). Endüstri Ürünleri Tasar m nda Kent Mobilyalar : ürün sistemleri; teknolojik ve yap sal özellikleri; boyutlar ; konum ve kullan m yerleri. TÜBİTAK Ofset.

DORL-KLINGENSCHMID, C. (2001). <u>Prunkbrunnen in</u> <u>Kleinsasiatischen Stadten: Funktion im Kontext.</u> München: Verlag Dr. Friedrich Pfeil.

EROL, A. (1999). <u>Aiolia, İonia, Karia, Lykia, Pisidia, Pamphylia, Kilikia</u> <u>Bölgesi Çeşme Yap lar</u>. Unpublished PhD Thesis. Ankara: Ankara Üniversitesi Sosyal Bilimler Enstitüsü.

FREELY, J. (1988). <u>The Western Shores of Turkey.</u> London: J. Murray.

GENOVESE, T. and EASTLEY, L. (1998). Civitas/ What is City. In T. Genovese, L. Eastley and D. Synder [eds.]. <u>Civitas/ What is City.</u> (10-14). New York: Princeton Architectural Press.

GRIMAL, P. (1963). <u>The Civilization of Rome.</u> New york: Simon and Schuster.

GROS, P. (1996). L'Architectura Romaine. Paris: Picard.

GÜRSU, H. (1996). <u>An Approach to systemize Urban Environmental</u> <u>Design Based on Man-product Relations</u>. Unpublished PhD Thesis. Ankara: METU.

GÜVEN, S. (2001). Roma Liman Kentleri: Pompeipolis'e bir Bak ş. In 2000 Y I Anadolu Medeniyetleri Müzesi Konferanslar . (22-30). Ankara.

GÜVEN, S. (2003). Evolution of the Colonnaded Avenues in the Roman Cityscape: Role of Cilicia. In <u>Olba VIII (Özel Say</u>). Mersin: KAAM Yay nlar.

HANFMANN, G. M. A. (1975). From Croessus to Constantine: The Cities of Western Asia Minor and Their Arts in Greek and Roman Times. Ann Arbor: University of Michigan Press.

HASOL, D. (1988). Ansiklopedik Mimarl k Sözlüğü. İstanbul: YEM

HERZOG, T. R. (1995). A Cognitive Analysis of Preference for Waterscapes. In A. Sinha (Ed.). <u>Readings in Environmental</u> <u>Psychology: Landscape Perception.</u> (47-63). London; San Diego; New York: Harcourt Brace & Company, Publishers.

HILLEL, D. J. (1991). <u>Out of the Earth.</u> New York: Maxwell Macmillan Int.

HORNBLOWER, S., and SPAWFORTH, A. [eds.] (1996). <u>The Oxford</u> <u>Classical Dictionary</u>. New York: Oxford University Press.

JACOBS, A. B. (1993). <u>Great Streets</u>. Cambridge; Massachusetts: MIT Press.

KOSTOF, S. (1992). <u>The City Assembled: the Elements of Urban Form</u> <u>Through History.</u> Boston: Little Brown.

KRIER, R. (1979). Urban Space. London: Academy Editions.

KÜÇÜKERMAN, Ö. (1991). Endüstri Tasar m ve Kent Mobilyalar . In M. Çubuk (ed.) Kamu Mekanlar Tasar m ve Kent Mobilyalar Sempozyumu 15-16 May s 1989. (19-20). İstanbul: MSÜ-Mimarl k Fakültesi.

LE CORBUSIER (1987). <u>Towards a New Architecture.</u> London: The Architectural Press.

LYNCH, K. (1979). Image of the City. Cambridge: MIT Press.

LYNCH, K. (1981). <u>A Theory of Good City Form.</u> Cambridge: MIT Press.

MACDONALD, W. L. (1986). <u>The Architecture of the Roman Empire</u> <u>Vol. II: an urban apraisal</u>. New Heaven; London: Yale University Press.

MADANIPOUR, A. (1996). <u>Design of Urban Space: an inquiry into a</u> <u>socio-spatial process.</u> Chichester: John Wiley & Sons Ltd.

MARTIENSSEN, R. D. (1956). <u>The Idea of Space in Greek</u> <u>Architecture</u>. Johannesburg: Witwatersrand University Press. MCEVEN, I. K. (1993). <u>Socrates' Ancestor: an essay on architectural</u> <u>beginnings.</u> Cambridge; Massachusetts: MIT Press.

MITCHELL, S. (1993). <u>Anatolia: land, men and Gods in Asia Minor</u>. Oxford: Clarendon Press; New York: Oxford University.

MITCHELL, S. and WAELKENS, M. (1998). <u>Pisidian Antioch: The Site</u> and Its Monuments. London: Duckworth-The Classical Press of Wales.

MORWOOD, J. (1998). <u>A Dictionary of Latin Words and Phrases</u>. Oxford; New York: Oxford University Press.

MOUGHTIN, J. C. (1992). <u>Urban Design: street and square.</u> Oxford; London; Boston: Butterworth Architecture.

MOUGHTIN, J. C.; OC, T. and TIESDELL, S. (1995). <u>Urban Design:</u> <u>ornament and decoration.</u> Oxford; London; Boston: Butterworth Architecture.

NORBERG-SCHULZ, C. (1979). *Genius Loci*. New York: Rizzoli.

OWENS, E. J. (1991). <u>The City in the Greek and Roman World.</u> London; New York: Routledge.

ÖNEN, Ü. (1983). Ephesos: ruins and museum. İzmir: Akademia.

ÖNÜR, S. (1992). <u>Architectural Experiences and Experiments in Public</u> <u>Sphere.</u> Unpublished Master Thesis. Ankara: METU.

ÖZGÜR, E. M. (1988). <u>Perge: a travel guide.</u> İstanbul: Net Turistik Yay nlar.

PARRISH, D. (2001). The urban Plan and Its Constituent Elements. In D. Parrish (ed.) <u>Urbanism in Western Asia Minor: New Studies on</u> <u>Aphrodisias, Ephesos, Hierapolis, Pergamon, Perge and Xanthos.</u> JRA Supplement no: 45. (8-41). Dexter; Michigan: Thompson-Shore.

ROBBINS, E. (1998). Thinking the City Multiple. In T. Genovese, L. Eastley and D. Synder (Eds.). <u>Civitas/ What is City.</u> (36-45). New York: Princeton Architectural Press.

ROCK, I. (1975). An Introduction to Perception. New York: MacMillan.

ROCK, I. (1983). The Logic of Perception. Cambridge: MIT Press.

RYKWERT, J. (1988). <u>The Idea of a Town: The Anthropology of Urban</u> <u>Form in Rome, Italy and the Ancient World.</u> Cambridge; Massachusetts: MIT Press.

SCHERRER, P. (Ed.) (2000). <u>Ephesus: the new guide.</u> [Turkey]: Ege Yay nlar .

SCHERRER, P. (2001). The Historical Topography of Ephesos. In D. Parrish (ed.) <u>Urbanism in Western Asia Minor: New Studies on Aphrodisias, Ephesos, Hierapolis, Pergamon, Perge and Xanthos.</u> JRA Supplement no: 45. (57-79). Dexter; Michigan: Thompson-Shore.

SEGAL, A. (1997). From Function to Monument: urban landscapes of Roman Palestine, Syria and Provincia Arabia. Exeter: The Short Run Press.

SMITH, P. F. (1977). <u>The Syntax of Cities.</u> London: Hutchinson.

SPECTER, K. (1974). <u>Urban Spaces.</u> Greenwich; Conn: New York Graphic Society.

STILLWELL, R. (Ed.) (1976). <u>The Princeton Encyclopedia of Classical</u> <u>Sites.</u> Princeton: Princeton University Press.

STROCKA, V. M. (1981). Das Markttor von Milet. Berlin: de Gruyter.

TRAVERSARI, G. (ed.) (2000). <u>Laodicea Di Frigia I.</u> Rivista di Archaelogia Supplementi 24. Roma.

TÜRKOĞLU, S. (1988). <u>Pamukkale: Hierapolis.</u> İstanbul: Net.

WALKER, S. (1987). Roman *Nymphaea* in the Greek World. In S. Macready & F. H. Thompson (eds.). <u>Roman Architecture and Greek</u> <u>World.</u> (60-71). London: Society of Antiquaries of London. WARD, C. (1997). Reflected in Water. London ; Washington: Cassell.

WARD-PERKINS, J. B.- BOETHIUS, A. (1970). <u>Etruscan and Roman</u> <u>Architecture</u>. Harmondsworth; Middlesex: Penguin Books Ltd.

WARREN, G. (1978). <u>Vanishing Street Furniture.</u> London: Newton Abbot & Charles.

YEGÜL, F. (1994). The Street Experience of Ancient Ephesus. In Z. Çelik, D. Favro and R. Ingersoll (eds.). <u>Streets: critical perspectives on public space.</u> Berkeley.

ZANKER, P. (1988). <u>The Power of Images in the Age of Augustus.</u> Ann Arbor: The University of Michigan Press.

APPENDICES

APPENDIX A

FIGURES



Figure 1. The Effect of Pictorial Cues for Size Perception



Figure 2. The Colonnades and Their Shade as Pictorial Cues in the Roman Urban Space



Figure 3. Path



Figure 4. Node

Δ

landmark

Figure 5. Landmark


Figure 6. Map of Asia Minor



Figure 7. Pisidian Antioch: City Map



Figure 8. Pisidian Antioch: Schematic Illustration of City Plan Showing Water Structures







Figure 10. Pisidian Antioch: The Ground Plan of the *Nymphaeum* at the End of the *Cardo*



Figure 11. Perge: City Plan: 1. Theater; 2. Stadium; 4. Septimius Severus Nymphaeum; 5. South Baths; 6. Hellenistic City Gate; 7. Agora 8. Main Streets; 9. Monumental North Nymphaeum; 10. Palaestra; 11. Western Baths; 12. Acropolis; 13. City Walls. Inside the circle: the Septimius Severus Square



Figure 12. Perge: Plan of Septimius Severus Square. A. Hellenistic Towers; B. Horseshoe-shaped Courtyard; C. Water Canal; D. Propylon; E. the *Nymphaeum*; F. Late Antique Gate; G. Agora



Figure 13. Perge: Schematic Illustration of City Plan Showing Water Structures



Figure 14. Perge: Schematic Illustration of City Plan and Its Constituent Elements



Figure 15. Perge: Aerial Photography of the Site.



Figure 16. Perge: Water Canal Running Along the Cardo Maximus.



Figure 17. Perge: Reconstruction of the *Nymphaeum* at the Septimius Severus Plaza



Figure 18. Perge: Monumental North Nymphaeum.



Figure 19. Perge: Reconstruction of the Monumental North Nymphaeum



Figure 20. Hierapolis: City Map. 1. Baths; 2. Frontinus Gate; 3. Street of Frontinus; 4. Small Theater; Nymphaeum of the Tritons; 6. Castellum acquae; 7. House of Ionic Capitals; 8. Apollo Sanctuary; 9. Nymphaeum of Sanctuary;10. Large Baths; 11. Large Theater; 12.Gymnasium; 13. Southern Gate







Figure 22. Hierapolis: Schematic Illustration of City Plan and Its Constituent Structures



Figure 23. Hierapolis: Reconstruction of the Agora and Environs.



Figure 24. Hierapolis: Reconstruction of the Nymphaeum of the Tritons.



Figure 25. Hierapolis: the *Nymphaeum* at the Apollo Temenos.



Figure 26. Laodiceia: City Map. 1. Bouleuterion; 2. Bath-Gymnasium; 3. Water Tower; 4. Stadium; 5. Baths; 6. Large Theater; 7. Small Theater; 8. Monumental Nymphaeum; 9. Colonnaded Street; 10. Monumental Complex; 11. N Basilica;12. S Basilica; 13. Basilica; 14. Ephesos Gate; 15. Hierapolis Gate; 16. Syrian Gate; 17. South Gate; 18. Nymphaeum in the W Agora.



Figure 27. Laodiceia: Aerial Photography of the Site



Figure 28. Laodiceia: Schematic Illustration of City Plan Showing Water



Figure 29. Laodiceia: Schematic Illustration of the City Plan and Its Constituent Elements



Figure 30. Laodiceia: plan of the monumental nymphaeum..





Key to the map:

3. Coressus Harbour; 10. Magnesian Gate; 11. Hellenistic City Wall; 12. E Gymnasium; 13. Basilica in E Gymnasium; 15. Street Well; 16. Baths on the State Agora; 17. Fountain; 18. so-called State Agora; 19. Doric Gatehouse; 20. Temple on the state Agora; 21. Basilica Stoa; 22. Odeion/Bouleuterion; 23. Temenos; 24. Prytaneion; 27. Chalcidicum; 28. Pollio Monument and Fountain of Domitian; 29. Hydrecdocheion of Laecanius Bassus; 30. Temple of domitian; 31. Niche monument; 32. Memmius Monument; 33. Hydreion; 35. Hercules Gate; 36. Curetes Street (Embolos); 37. Trajan's Gatehouse; 38. Nymphaeun of Trajan; 39. Bath Street; 40. Temple of Hadrian; 41. Baths of Scholasticia; 42. Academy Stree; 43. Latrine and "House of Pleasure", 44. Alytacrh's Stoa; 45. Hellenistic Well; 46. Hexagon /Nyphaeum; 47. Octagon; 48. Androclos Heroon; 49. Hadrian's Gate; 50.-51. Terrace Houses; 52. Altar; 54. Culvert Gate; 55. Celsus Library; 56. S Gate of the Agora; 59. Circular Monument with Fountain; 60. Marble Street; 61. Tetragonos Agora; 62. Hall of Nero; 63. W Gate of the Agora; 64. N Gate of the Agora; 65. West Road; 66. Medusa Gate; 67. Serapeion; 72. Theater Place with Fountain; 73. Arcadiane E Gate; 74. Hellenistic Well house; 75. Theater; 78. Theater Street; 79. Theater Gymnasium; 82. Arcadiane; 84. Four Columned Monument; 86. Exedra; 87.-88.-89. Harbour Gates; 90. Market Buildings at the Harbour; 92. Harbour Baths; 93. Harbour Gymnasium; 94. Halls of Verulanus; 98. Olympeion; 104. Stadium; 106. Vedius Gymnasium; 107. Coressian Gate.



Figure 32. Plan of the so-called Administrative District: from the Magnesian Street to Kuretes Street. (refer to the key on page 110-111)



Figure 33. Plan of the Commercial Agora and environs: from the Kuretes Street to the Marble Road. (refer to the key on page 111)



Figure 35. Plan of the Theater place and Arkadiane (refer to the key on page 111)











Figure 37. Ephesus: Reconstruction of the *nymphaeum* of Trajan.



Figure 38. Ephesus: the *nymphaeum* of Trajan today.



Figure 39. Ephesus: Hellenistic Fountain in the Theater Place.



Figure 40. Miletus: city map.



Figure 41. Miletus: reconstruction of the ancient city.



Figure 42. Miletus: Schematic Illustration of City Plan and Its Constituent Elements



Figure 43. Miletus: Reconstruction of the Processional Way and Environs



- Figure 44. Miletus: Plan of City Center. 1. Harbour Gate; 2. N Agora;
 3. Delphinion; 4. Capito Baths; 5. Gymnasium; 6. Sanctuary;
 7. Bouleuterion; 8. Nymphaeum; 9. N Gate of Agora; 11. S Agora;
 - 12. Processional Way.



Figure 45. Miletus: Reconstruction of the Nymphaeum .



Figure 46. Miletus: Model of the Nymphaeum and the N Gate of the S Agora.



Figure 47. The Water Structure at Atatürk Maydan.



Figure 48. Atatürk Meydan: View From İnönü Bouleuvard.



Figure 49. Atatürk Meydan: View From Atatürk Boulevard.

APPENDIX B

TABLES

Table 1. The Classification of the Nymphaea in the Cities of AsiaMinor According to Location.

CITIES	Thoroughfares			Plazas		Gates
	At the end	At one side	At the junction	Inside	In relation with	In relation with
AIZANOI		\checkmark				√ Agora Gate
ALEXANDRA TROAS		\checkmark				
ANDRIAKE						√ Main Gate
ANTIOCHIA ON ORONTES 1. Ostraka			V	\checkmark		
2. Trajan						
3. Museaum						
APHRODISIAS 1. Gaudin's fountain						
2. Agora Gate					√ Tiberius Plaza	√ Agora Gate
ARIASSOS*	√ Main Street			√		
ASPENDOS				√ City Plaza	√ Agora	
EPHESUS 1. Street Well		√ Magnesia Street				√ Magnesia Gate
2. Fountain		√ Magnesia Street	\checkmark			
3. Hydrecdocheion		\checkmark	√ Magnesia & Domitian Streets		√ State Agora	
4. Pollio		\checkmark			√ State Agora	
5. Fountain of Domitian		\checkmark			√ State Agora	
Table 1. (continued)

CITIES	Th	oroughfa	res	Pla	Gates	
	At the end	At one side	At the junction	Inside	In relation with	In relation with
6. Hydreion	\checkmark		\checkmark		With	With
7. Trajan's		\checkmark	V			
8. Hellenistic Well						
9. Hexagon		\checkmark				
10. Androclos		\checkmark	\checkmark			
Heroon						
11. Circular		\checkmark		\checkmark		
Monument	1		1	1		
12. Hellenistic Well	N		N	\checkmark		
House						
	V		V	V		۷ Harbour G
HERAKLEIA		\checkmark				
UNDER LATMOS						
HIERAPOLIS		\checkmark				
1. Tritons		Frontinus Street				
2. Apollo Temenos						
KAUNOS		√ Harbour			√ Harbour Agora	
LAODICEIA				√ West		
1. Agora				Agora		
2. Monumental			√ Main Streets			
3. Water Tower		√ road to stadium				√ South Agora
LETOON						
(XANTHOS)						
MAGNESIA ÁD				√ Agora		
MEANDRUM				Ŭ		
MILETOS		\checkmark		\checkmark		
OLBA-						
DIOCAESAREA	Main Street					
OLBA-URA			√ road to Diocaesarea & Korylos & Seleucia			
PERGAMON						\checkmark
1. Eumenes						Eumenes Gate
2. Lower Agora					√ Agora	
3. City fountain		√ Main Street				√ South City Gate
PERGE	√ Main				\checkmark	√ **
1. Monumental	Street					

Table 1. (continued)

CITIES	Th	horoughfares		Pla	Gates	
	At the	At one	At the	Inside	In	In
	end	side	junction		relation	relation
					with	with
2. Septimius	\checkmark			\checkmark		\checkmark
Severus	Main			Septimius		Hellenistic
	Street			Severus		Gate
3 Theater		al the read				
J. mediei				Plaza		v Hellenistic
			,	i laza	,	City Gate
PHASELIS			√ Main Street	<u>√</u>	√ Hadrian Agora	
PISIDIAN		\checkmark	\checkmark			gate to
ANTIOCH		Main				northern
1. Monumental		Street				batris
2.						√ entrance
3. City Gate	\checkmark					
						City Gate
PRIENE			√ West Gate			
1. Hellenistic			Street & side			
2. Spring Gate			√ Spring			\checkmark
			Gate Street & side str.			Spring Gate
3. Pithos						
4. Agora Gate					\checkmark	\checkmark
					Agora	Agora Gate
SAGALASSOS		√ Main		√** *		
1. Hellenistic		road to				
		Theater				
2. Upper Agora				√ Upper Agora		
3. Lower Agora		\checkmark			√ Lower Agora	
SELGE						\checkmark
	Main					
	Street					
SIDE				√****		\checkmark
1. Monumental	Main Street					Monumen tal City Gate
2. Vespasianus						√ Late
	Colonnaded					Roman
	Street					Inner Gate
3. Three Pools		\checkmark				√ Late
		Colonnaded				Roman
		Street				Gate

Table 1. (continued)

CITIES	Th	oroughfai	res	Pla	Gates	
	At the end	At one side	At the junction	Inside	In relation with	In relation with
4. Late Roman		√ Colonnaded Street				√ Late Roman Inner Gate

* The *nymphaeum* is not excavated yet.

** The *nymphaeum* itself was used as a gate on the road to acropolis.

*** In the early imperial period the place in front of the *nymphaeum* was transformed into a plaza¹.

**** The main street of the city runs outside the city gate till the *nymphaeum*. Thus, in front of the nymphaeum it almost becomes a plaza².

Table 2. Location of the Nymphaea of Asia Minor with Respect to Nearby Public Buildings

Key to Table 2:

H: Harbour Th: Theater BI: Bouleuterion Gy: Gymnasium B: Bath Aq: Acqueduct L: Library S: Stadium R: Religious Pal: Palaestra

CITIES	Н	Th	BI	Gy	В	Aq	L	S	R	Pal
AIZANOI										
ALEXANDRA				\checkmark						
TROAS										
ANDRIAKE										
ANTIOCHIA ON										
ORONTES										
1. Ostraka										
2. Trajan										
3. Museaum										
APHRODISIAS									\checkmark	
1. Gaudin's fountain										
2. Agora Gate										
ARIASSOS						\checkmark				
ASPENDOS						\checkmark				
EPHESUS										
1. Street Well										
2. Fountain										
3. Hydrecdocheion										
4. Pollio										

¹ See Erol (1999, 132) for further information.

² Ibid p.145

Table 2. (continued)

CITIES	Н	Th	BI	Gy	В	Aq	L	S	R	Pal
5. Fountain of										
Domitian										
6. Hydreion										
7. Trajan's										
8. Hellenistic Well										
9. Hexagon										
10. Androclos Heroon										
11. Circular							\checkmark			
monument										
12. Hellenistic Well		\vee								
HOUSE	1	1								
	γ	N								
HERAKLEIA		N								
UNDER LATMOS										
HIERAPOLIS										
1. Iritons										
2. Apollo Temenos	1								N	
KAUNOS	N									
LAODICEIA										
1. Agora		1			1					
2. Monumental		N		1	γ			1		
3. Water Tower				N				N		
LETOON										
(XANTHOS)										
MAGNESIA AD										
MEANDRUM										
MILETOS						\checkmark				
OLBA-										
DIOCAESAREA										
2 Lower Agora										
2. Lower Ayora										
				Ň						
PERGE										
1. Monumental										
2. Septimius Severus		1	γ		γ			1		
3. Theater		γ						γ		
PHASELIS										
PISIDIAN					\checkmark					\checkmark
ANTIOCH										
1. Monumental										
2.										
3. City Gate										
PRIENE										
1. Hellenistic										

Table 2. (continued)

CITIES	Н	Th	BI	Gy	В	Aq	L	S	R	Pal
2. Spring Gate										
3. Pithos		\checkmark								
4. Agora Gate										
SAGALASSOS 1. Hellenistic		\checkmark								
2. Upper Agora										
3. Lower Agora										
SELGE										
SIDE										
1. Monumental										
2. Vespasianus										
3. Three Pools										
4. Late Roman										

Table 3. Construction and Renovation Dates of the Nymphaea in theCities of Asia Minor.

CITIES	Hellenistic	AD 1st	AD 2nd	AD 3rd	AD 4th
		century	century	century	century
AIZANOI			\checkmark		
ALEXANDRA			\checkmark		
TROAS					
ANDRIAKE					
ANTIOCHIA ON					
ORONTES					
1. Ostraka					
2. Trajan					
3. Museaum			\checkmark		
APHRODISIAS	\checkmark				\checkmark
1. Gaudin's fountain					
2. Agora Gate	\checkmark				
ARIASSOS			√ S	everan	
ASPENDOS				\checkmark	
EPHESUS			\checkmark		renovated
1. Street Well			102-117 AD		
2. Fountain		√ 92-93 AD	renovated		renovated
3. Hydrecdocheion		√ 80-82 AD			
4. Pollio		√ 92-93 AD			
5. Fountain of		√ 92-93 AD			
Domitian					
6. Hydreion	√ 27 BC	-14 AD	renovated		renovated
7. Trajan's			√ before		
			114 AD		
8. Hellenistic Well	√ 1st c BC				

Table 3. (continued)

CITIES	Hellenistic	AD 1st	AD 2nd	AD 3rd	AD 1st
		century	century	century	century
9. Hexagon					
10. Androclos	$\sqrt{10}$ end of				
Heroon	2nd c BC				
11. Circular	\checkmark				
monument					
12. Hellenistic Well	\checkmark				
HOUSE			renew of the d		
13. Theater	√ late		renovated	1	
HERAKLEIA				\sim	
UNDER LATMOS				1	
HIERAPOLIS					
1. Tritons				222-235 AD	
2. Apolio Temenos	1			\mathbb{N}	
KAUNOS	N	renovated			
LAODICEIA					
1. Agora				1	
2. Monumental				\checkmark	
Water Tower					
		V 79 AD			
			γ 117-138 ΔD		
	1		renewated (D		
	N		renovated (R	ioman period)	
			1		
MILETUS			ν		
OLBA-			Lata On	√ al ⊑a alta Orad	
DIOCAESAREA			Late 2h	d-Early 3rd	
OLBA-URA	1		N		
PERGAMON	\checkmark				
1. Hellenistic					
2. Demeter			V		
2. City formatoin	1		138-161 AL		
3. City Iountain	Ŋ				
PERGE			√ 120.150.AT		
1. Monumental			130-150 AL		
2. Septimus Severus			V 193	S-211 AD	
3 Theater			2		
			N N		
		2	V		
		V			
2					
3 City Gate	√ Early I	mperial			
	√ Larry I	inpenal			
1 Hellenistic					
2. Spring Gate		Ron	nan (exact da	ate is not know	'n)

Table 3. (continued)

CITIES	Hellenistic	AD 1st century	AD 2nd century	AD 3rd century	AD 1st century
3. Pithos	\checkmark		,		
4. Agora Gate		Rom	nan (exact dat	e is not knowr	n)
SAGALASSOS	\checkmark		renovated		
1. Hellenistic					
2. Upper Agora			\checkmark		
			160-180 AD		
3. Lower Agora		√ Late 1st	-Early 2nd		
SELGE			\checkmark		
			138-161 AD		
SIDE			\checkmark	renovated	
1. Monumental			140-180 AD		
2. Vespasianus				\checkmark	
3. Three Pools				\checkmark	
4. Late Roman				√ Late R	oman