POLITECNICO DI MILANO

**SCUOLA DI ARCHITETTURA URBANISTICA INGEGNERIA
DELLA COSTRUZIONI
POLO TERRITORIALE DI MANTOVA**

Corso di Laurea magistrale in Architectural Design and History – Progettazione Architettonica e Storia

HADRIAN'S VILLA AND ITS INFLUENCE

Xu Weiwei
Matricola: 891933

Supervisor: Prof. Mariacristina Loi

Academic year 2019/2020

Abstract

Hadrian's Villa is one of the most famous Imperial Roman villas in the world. It is a unique document that displays a notable number of novel forms and of innovative construction methods, as well as a brilliant planning consideration on the issue of the relationship between architecture and landscape. It embodies all of Hadrian's passion and creativity and, in many aspects, reflects the enigmatic Emperor's taste and personality.

Since the fifteenth century the interest in the villa has arisen and architects, artists, archaeologists have started to study the site. These studies carried on throughout the centuries with different methodologies and instruments, and based on excavations, measured drawings, analysis of the documents in historical archives, contributed to increase the understanding of the original image of the Villa.

The principal aim of the thesis is to analyze the influence exerted by the Villa on those architects, from Bramante to Borromini, from Piranesi to Le Corbusier, who introduced elements of the study of the Antique in many of their projects.

There are three main aspects discussed in this thesis: first, the increasing interest in studying Antiquity, then the method of representation and reinterpretation of ancient ruins, and third the attempt to highlight a line of connection between Past and Future.

By studying the architects' personal experience in the Villa, it is confirmed that the basic principle used for their analysis involved drawing and sketching the ruins. Moreover, the study of the topography was essential in order to better understand the general plan of such a vast complex. This method would give them a visual impression of what the buildings were like in Hadrian times. Additionally, they intensively studied the ancient construction techniques adopted by their ancestors. These elements will become essential in their future projects.

Acknowledgements

I am sincerely grateful to my supervisor, Prof. Mariacristina Loi, for her continuous encouragement and guidance through every stage of this thesis. She gave me lots of inspiration and advice to improve my final work. Her thorough knowledge enlightens me to find my personal view of the thesis and my future studies as well.

I am pleased to thank Prof. John Pinto. Due to his exceptional lessons, I had a chance to learn about this magnificent villa and learn about western architectural development from the Renaissance to modern times. There is no doubt that Hadrian's villa plays a pivotal role in the process.

I would like to thank my parents, who supported me with their love throughout my life while studying abroad which allowed me to experience a new culture. Without their encouragement, I could not have completed the thesis successfully.

I would also like to express my gratitude to my friends Kaise, Eleni, Tongge, and Zhuazhua for their generous help, comments, and suggestions on my writing. English is not my mother language, but their selfless assistance helped me to improve its clarity and make it easier to read.

Table of Contents

List of Figures

Chapter3 Studying, Interpreting, and Transforming Antiquity 39

List of Tables

Introduction

Hadrian's Villa is one of the most famous Roman villas in the world. With time passing by, it was destroyed and remained abandoned through history; however, thanks to numerous interventions of consolidation and restoration, it still maintains splendid value in Western art and architecture. The Villa embodies all of Hadrian's passion and creativity. The emperor eagerly commissioned the design of striking buildings, which he had seen traveling in the lands of the Empire.

There is no doubt that Hadrian's Villa directly displays the novel forms of structures and brilliant planning considerations between architecture and landscape. In many aspects, it reflects the enigmatic Emperor's taste and personality.

Since the fourteenth century, many scholars have started to study the site. Up to now, they aimed to reconstruct the original image of the Villa based on excavations, measured drawings, study of ancient descriptions and archival documents. The artists and architects devoted themselves to these studies that exerted a profound influence in many of their their future projects, as we can see for instance in the works by Bramante, Palladio, Borromini, and many others.

This interest in the Villa and my motivation to study it originated from my attendance of the classes and site visit organized by Professor John Pinto and Professor Maria Cristina Loi, as they vividly described the splendor of the Villa as well as its unique influence in Western Art and Architectural History.

The principal aim of my thesis is to try to understand how relevant the study of the Villa was for the architects in their search for knowledge about Proportion and geometric form. More notably, I will seek the answer to what the architects, from the Renaissance to modern times, learn from Hadrian's Villa and how they incorporated the essence of antiquities into their projects. The approach of this research is explicitly based on the theoretical studies of the Villa since the Renaissance period.

There are three main aspects discussed in the following research: 1) The Necessity of Studying the Ruins, 2) The Method of Reinterpretation, and 3) The Connection between the Past and Future.

Chapter 1 The State of Art

Since the Renaissance, Hadrian's Villa has aroused a great interest in architects, humanists, and artists to study and unveil its legacy. This chapter will provide a synopsis of the assembled results of their study that came out in a chronological sequence.

1.1 The Early Studies of the Villa

The *Historia Augusta*, a collection of biographies of the Imperial time, written in the IV century, offers the first information about Hadrian's Villa.

The scholars frequently cited paragraphs from *Historia Augusta* to describe the Villa in their guidebook of Roman ruins. The humanist historians in the early Renaissance aroused interest in studying Hadrian's Villa.

Authors of the first descriptions of the Villa, based on the few information offered by the Historia Augusta, were Flavio Biondo, who described the Villa in his "*Italia Illustrata*," (1450) and his patron Pope Pius II.

They attested the exact position of the Villa in the following time.

Francesco di Giorgio Martini and Giuliano da Sangallo made measured drawings of several buildings or parts of them. Their work was widely disseminated among humanist architects and artists in the Renaissance and motivated them to study Roman ruins and the Villa. Quite a few architects in the early Renaissance compiled their Roman guidebook about the ruins. Most of them moved to amend the writing from the ancient documents

During the first half of the sixteenth century, the essential book was a guidebook *Antiquitates Urbis*, a guidebook of the city's antiquities written by Raffaello's assistant, Andrea Fulvio, and printed in 1527

It is the first of a genre of antiquarian topographical studies. Raffaello and his supporters did the archaeological investigation of ancient Rome that it came out with fruitful results.

In 1554, Palladio wrote his ancient Roman handbook, *Le Antichità di Roma*, which included a reference to Hadrian's Villa in *Historia Augusta*. Palladio also pointed to

other antiquities' studies of other Latin writers before him. He also made three sketches of the buildings of Hadrian's Villa.

Between 1550 and 1568, the first large-scale modern archaeological excavation took place in the Villa dug by Pirro Ligorio. He was the pivotal person for the later examination due to his significant contribution to a summary of the excavation. Another crucial contribution by Ligorio is the description and classification of the he made of the buildings. Moreover, he endeavored to identify the building functions through symbolic meaning.

1.2 The Beginning of the Systematic Excavation

Ligorio's excavation led to a widespread influence among the humanist scholars. In the course of the seventeenth century many archaeologists and historians dedicated their studies to the Villa.

Antonio del Re wrote *Dell' Antichità Tiburtine* (1611), in which the description of the villa was mainly based on Ligorio's work. Another antiquarian, Fabio Croce, described Hadrian's Villa in his book *Ville di Tivoli*, which was published in 1664. One year later, Filippo Maria Mancini published two books in Rome: *the Historia Ampliata di Tivoli* by Canon Francesco Marzi, and *De' Vescovi e Governatori di Tivoli* by Michele Giustiniani.

In 1668, Francesco Contini issued the first measured plan of Hadrian's Villa by using the remaining Ligorio's manuscripts. Having conducted an independent survey in the villa, Contini amended Ligorio's measurement and added the new information that he discovered in the process of his research. He ultimately completed a master plan, which provided an impressive graphical overview of the villa. (Fig. 1.1)

During the eighteenth century, archaeologists and historians begun to exert considerable influence on systematic excavations due to their interest in the villa. The villa was divided into multiple large private properties. In 1725, the Conte Giuseppe Fede, an archaeologist and collector, bought the land in the Villa as much as he could to carry on excavations.

In the middle of this century, four studies on the Villa took place: three of them were completed by architects from the French Academy in Rome and one by Giovanni Battista Piranesi. Piranesi is considered one of the most outstanding interpreters of the villa. "*For him, Hadrian's villa represents the ultimate expression of the energy and variety embodied in Roman architecture.*"[1]

In 1781, Piranesi printed the plan *Pianta delle Fabriche Esistenti nella Villa Adriana*. Some archaeologists dismissed the plan as a fanciful creation based on Piranesi's imagination. Nevertheless, the work of Giovanni Battista Piranesi deserves recognition as the watershed study of Hadrian's Villa. It is considered that his plan formed a pivotal contribution to the history of archaeological exploration. (Fig. 1.2)

1.3 Research on the Villa with a Modern Methods

In the early 1870s, as the internal property barriers were removed, the new government of Italy bought half of the Villa and started a more scientific approach to the research that was proposed. The archaeologists took over the study of the Villa.

Antonio Nibby, an archaeologist and topographer, studied the topography of Rome and the Roman countryside with the rich knowledge of classical and medieval information. In 1819, Nibby produced a book *Viaggio antiquario nei dintorni di Roma* in which he mentioned the Villa for the first time. After surveying in the Roman countryside, Nibby printed his work *the Carta de 'dintorni di Roma* (1827) together with the British archaeologist William Gell. Moreover, Nibby came out with the Historical-topographical-antiquarian examination of the map of the surroundings of Rome in 1837. He sought to consider the critical document *Historia Augusta* to apply the precise names to the buildings into twelve nodes.

By 1826, Luigi Rossini engaged in formulating a study in the history of art. After he had incisively studied the work by Piranesi, Rossini made nine views and a general plan of the Villa. Then, he published his study, *Le Antichità dei contorni di Roma*. (Fig. 1.3)

Agostino Penna contributed with his work to the graphic etchings of the physical records of the Villa. He printed the book *Viaggio pittorico della Villa Adriana* in 1833. His research, based on the vast knowledge of earlier accomplishments of the Villa, was a creative work where his etchings have rich details. Penna made a considerable contribution to a summary of the Villa's history and record of excavation. (Fig. 1.4)

In 1840, another essential scholar's work with useful information was issued with the title *L'architettura Antica descritta e dimostrata con monumenti* by Luigi Canina. He invoked several eminent scholars' results in the past, the ancient literature *Historia Augusta*, and Pliny the Younger's description of his Villa in Tuscany. In the later nineteenth century, Hermann Winnefeld published a monograph on Hadrian's Villa, *Die Villa des Hadrian bei Tivoli*. Besides, in his monograph, he summarized the studies from earlier sources and listed the statues found in the Villa. As the modern villa study began, his publication is celebrated as a milestone of this period.

In this century, a swarm of young architects from France and the United States visited the site and left extensive records of their studies. The drawings elucidate the architectural inspirations of their projects and are derived from the villa. Among these architects, some of them managed to bring their knowledge of the Antiquity into their projects and gained a world-famous reputation. This was for such as Le Corbusier, Frank L. Wright, Louis Kahn, and various fellow architects.

Simultaneously, the archaeologists focused on the works of excavation and restoration by utilizing modern technologies to record and revive the life in the past under a proper imagination. Furthermore, the early studies of the villa have been transformed from the general site to concerned specific areas and buildings. The number of significant publications has increased rapidly during the last century. A summary of the preliminary works follows. (Table 1)

V. Reina and R. Lanciani drew the earliest general map of the Villa. While their work is in shortage of comprehending reports covering all the buildings, they utilized trigonometry and modern techniques as their tools.(Fig. 1.5) The scholars are concerned about the specific buildings and areas by utilizing the advanced techniques of excavations that occurred in the 1930s by the researchers from the American Academy. Meanwhile, G. Lugli discussed a new issue of construction techniques in his advanced studies in 1932. Furthermore, E. Salza Prina Ricotti managed to complete an utterly general map of the Villa by summarizing the previous knowledge and results. His work is beneficial to support the scholars' research after him from the perspective of an architect. (Fig. 1.6)

Several recent more comprehensive publications have significantly improved knowledge of Roman building practice, for what concerns both the construction techniques and the design procedures: they are the publications by De Franceschini (1991), Guidobaldi (1994), MacDonald and Pinto (1995), Packer (1998). By 1991, M. De Franceschini produced the first systematic study of the Villa. (Fig. 1.7) She analyzes the history of Hadrian's Villa and defines the building's function by identifying the different decorative hierarchy. Moreover, this research, based on the results of archaeological excavation, is the first thorough study of mosaics and opus sectile pavement in the entire Villa. W. MacDonald and J. Pinto took a comprehensive perspective to make an in-depth study of the Villa, which provides numerous rare pictures and original interpretations. The book, *Hadrian's Villa and its legacy*, has an extensive influence on the study of Hadrian's Villa in modern architecture. (Fig. 1.8)

The scholars were interested in the subject of the revival of authentic civilization in the Roman period. In the early decades of the 21st century, scholars, with technological development, have produced their professional studies on single buildings and excavations. Michael R. Ytterberg elucidated the hidden ordered mathematically and

theoretical process in the planning of Hadrian's Villa. He also studied the relationship between historic ruin and modern architecture. (Fig.1.8) Recently, professor Francesco de Angelis has been leading a team to excavated at Hadrian's Villa with Marco Maiuro since 2014. This team is supported by the Columbia's Advanced Program of Ancient History and Art (APAHA), the Italian Academy for Advanced Studies in America, and the Università degli Studi di Roma "La Sapienza."

In the meanwhile, a digital Hadrian's Villa project has started since 2007 to provide free access to study and understand the world of Hadrian by people all over the world. Besides, there is an annual competition focusing on the heritage site, "Piranesi PRIX DE ROME," held in Italy, organized by the Adrianea Academy of Architecture and Archeology Onlus. This competition provided an opportunity for both professors and students in the field of architectural heritage to study and appreciate the ruins. In 2018, more than ten teams participated in the competition from universities in Italy.

In August 2018, the team of the Polo territorial di Mantova of Politecnico di Milano Mantova won the first prize due to its excellent design by profoundly understanding the cultural meaning behind this villa.

In this chapter, I listed some of the most important researches and studies that scholars have done in Hadrian's Villa since the Renaissance. The earlier approach for the understanding of Hadrian's Villa focused on the theme of re-studying the ruins based on the directions of the existing monography by Vitruvius, *De Architectura*. While the architects and artists were recording the building type they saw, they lacked a systematic method of analysis and knowledge of excavation. Therefore, in the earlier studies, the scholars neglected to consider the entirety of the ruins lying under the ground. The drawings made by Francesco di Giorgio Martini and Giuliano da Sangallo were the basis for most architects who based their studies on them. But they often offered not complete information, and it was necessary to execute more survey and measured drawings.

However, sometimes their measurements had mistaken, which affected other architects who were not able to visit the Villa.

From the seventeenth century onwards, scholars have started to work on the systematic excavation of the site. Supported by the Cardinals and the Vatican, the archaeologists like Pirro Ligorio, Francesco Contini, Giovanni Battista Piranesi, as well as a few others, dug in to uncover the underground part of the Villa, in order to draw a general map of the complex which would be as complete as possible. Moreover, they sought to represent the Villa through proper terminology, which was based on the most dependable manuscript *Historia Augusta*. Nevertheless, some speculations proved to be fanciful mistakes and errors.

Furthermore, in the early nineteenth century, with modern archeology developing, the archeologists sought to restore the preceding Villa, whereas they were in deficiency of the authentic recording so that they turned to study the specific building in-depth. During the twentieth century, numerous architects crowded into the Villa and left thousands of drawings to study the extraordinary Roman antiquities. Additionally, in the overall work that has been done during this century, including the works by De Franceschini (1991), Guidobaldi (1994), MacDonald and Pinto (1995), and Packer (1998), the complete general map is still undergoing the process of showing the correct relationships among the various buildings, passageway systems, and the different height levels of the Villa. Two of the significant works done by De Franceschini, McDonald, and Pinto attempted to create a sense of integrity as they took into account the Villa as a whole, including not only the buildings, but also the decorations and the landscape, in order to understand the entire environment. As such, these two works remain as the scope for the improvement of the analysis, perhaps for a future scholarship due to its complexity. In a nutshell, all the works mentioned earlier in the chapter will primarily serve as a platform and material to support the studies of scholars that continue working on the Villa. Preventing through their methods to study the fragment pieces, the individual buildings and topics of typologies which could bring to overlook the connections in between.

Mistakes in the analysis of the Villa could be partially justified due to the limited materials owned by the initial scholars and recognition of its complexity, a factor which is illustrated in the following chapter that will be focusing on the nature of the Villa itself.

Table 1 A summary of the preliminary works.

Date	Author	Title
1904	P. Gusman	*La villa Impériale de Tibur*
1906	V. Reina and R. Lanciani	*Tivoli – rilievo planimetrico e altimetrico della villa Adriana, eseguito dalla Scuola per gli Ingegneri*
1909	K. Baedeker	*Central Italy and Rome: handbook for travelers (Hadrian's Villa at Tivoli)*
1920	J. Chillman	*The Casino of semicircular arcades at the tiburtine villa of the Empero Hadrian*
1926-27	G. Lugli	*Studi topografici intorno alle antiche ville suburbane: Villa Adriana, una villa di età repubblicana inclusa nelle costruzioni imperiali*
1932	G. Lugli	*Studi topografici intorno alle antiche ville suburbane: Villa Adriana, le fasi della Villa da Adriano al tardo impero.*
1933	W.L. Reichardt H.D. Miricks	*The Vestibule group at Hadrian's Villa* *The Large Baths at Hadrian's Villa*
1937	H. Bloch	*I bolli laterizi e la storia edilizia romana; la Villa di Adriano a Tivoli*
1950	H. Kähler	*Hadrian und seine Villa bei Tivoli*
1973	F. Rakob	*Der Bauplan eines kaiserlichen villa*
1982	E. Salza Prina Ricotti	*Villa Adriana nei suoi limiti e nella sua funzionalità*
1991	M. De Franceschini	*Villa Adriana - Mosaici, pavimenti, edifici.*
1995	W. MacDonald and J. Pinto	*Hadrian's Villa and its legacy*
1998	J. Packer	*Mire exaedificavit: three recent books on Hadrian's Tiburtine villa*

PLANS OF HADRIAN'S VILLA
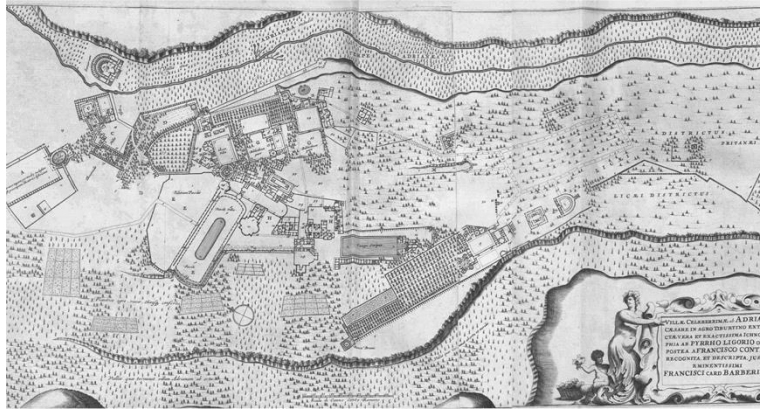
Figure 1.1 Francesco Contini. (1668)
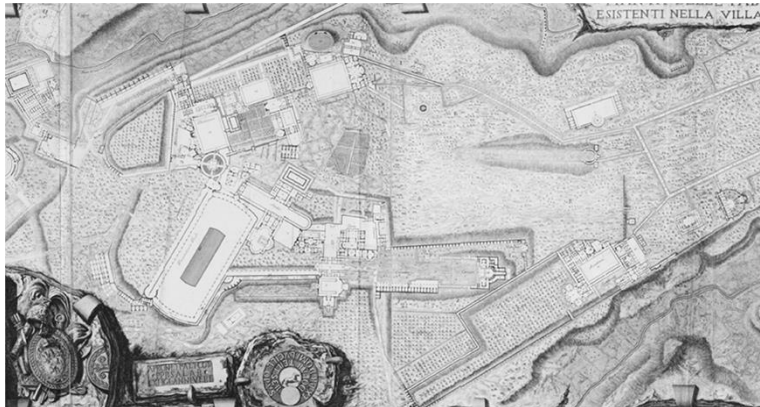
Figure 1.2 Giovanni Battista Piranesi. (1781)
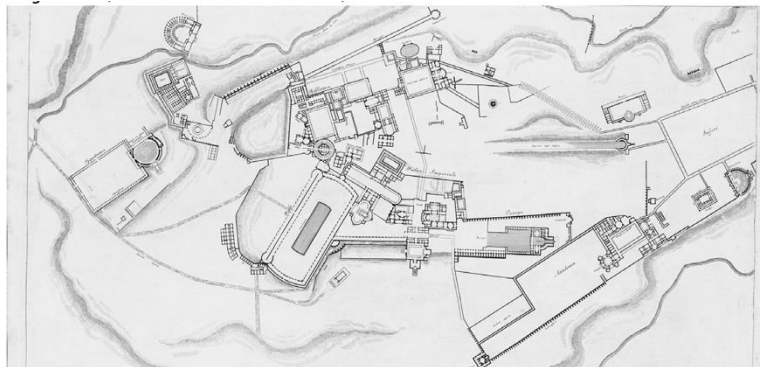
Figure 1.3 Luigi Rossini. (1826)
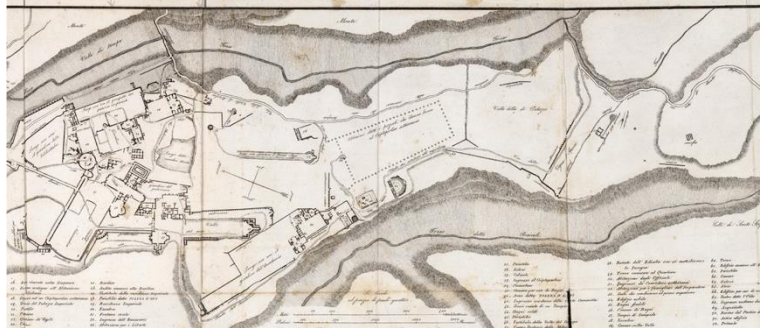
Figure 1.4 Agostino Penna. (1833)
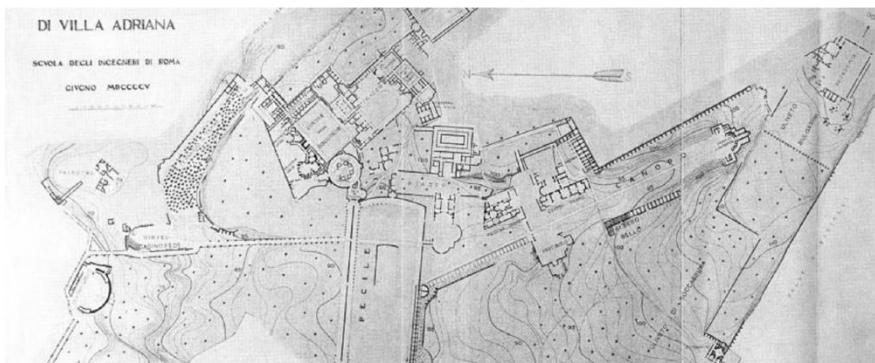
Figure 1.5 V.Reina and R.Lanciani.(1906)
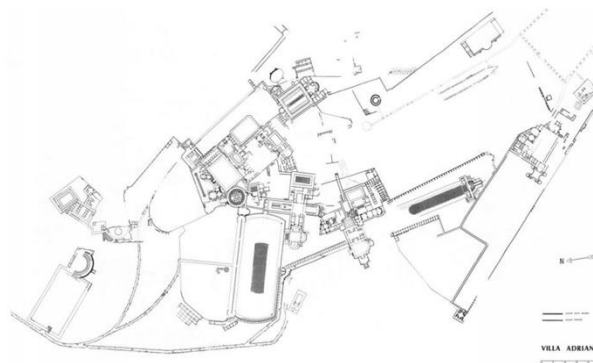
Figure 1.6 E. Salza Prina Ricotti. (1982)
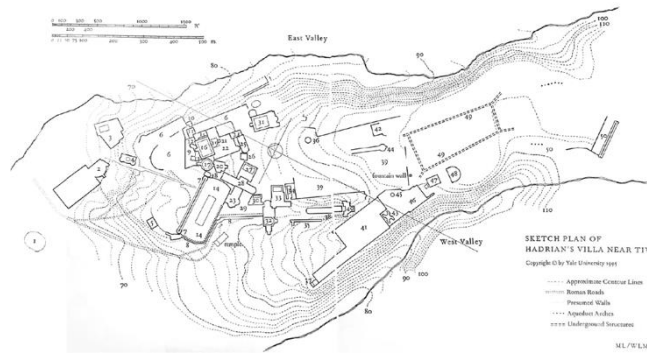
Figure 1.7 W. MacDonald and J. Pinto. (1995)
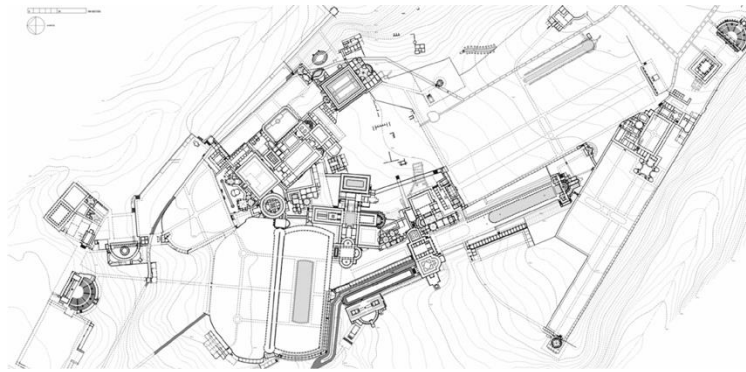
Figure 1.8. M. Ytterberg. (2013)

Chapter 2 Hadrian and His Villa

It is in Latin that I have administered the empire; my epitaph will be carved in Latin on the walls of my mausoleum beside the Tiber; but it is in Greek that I shall have thought and lived.

--<Memoirs of Hadrian>[2]

2.1 The Personal character of Hadrian

Hadrian is one of the distinguished emperors from the Roman Golden Age who attracts historians to study for the mystique of his character and the talent of architectural design. It is worthy of mentioning that the most well-known book of the emperor is Marguerite Yourcenar's *Memoires d'Hadrien* (Memoirs of Hadrian). Based on the massively historical investigations, Yourcenar wrote an attractive fiction with her sophisticated imagination. (Fig. 2.1,2.2)

The *Historia Augusta* records that Hadrian was born in Rome instead of Italica, Spain, where his family was originally from.[3] He was not adopted by his cousin Trajan but married his niece. The emperor gained knowledge in Rome, where he encountered the Greek philosophy and was motivated by the greatest philosopher, Socrates. Hadrian admired the Hellenic culture. Some people used to call him a 'little Greek,' learning the Greek language since he was young, like Cassius Dio describes "*By nature he was fond of literary study in both the Greek and Latin languages.*"[4] He has given his whole life to the kingdom of his rule to introduce Greek art and philosophy. Greece could provide Rome with experience and background, individual experience of the country.

By his thoughts and artistic taste of Greek philosophy, Emperor Hadrian utilized it in his city planning and construction projects. He restored those when he was back in Rome, starting from the Pantheon in 118 A.D following with other projects.[5] However, according to Eugenio La Rocca's research, since the 19th century, they gradually found a series of archaeological evidence proving the emperor Hadrian's reconstruction. (Fig. 2.3,2.4) Recent studies have discussed the authorship of Pantheon and provided the excavation evidence to prove the contribution from the Hadrian period.[6]

Aside from Greek philosophical theory, Hadrian was competent in arithmetic, geometry, and painting. These skills he practiced let him become a "mature architect."[7] Dio Cassius, a Roman historian, confirmed that Hadrian is an expert on architecture

design. The architect of Trajan Apollodorus said to Hadrian, *"Be off and draw your gourds. You do not understand any of these matters."* [8] Nowadays, we could conjecture that death of Apollodorus in connection with criticizing Hadrian's architecture design. It proved that Hadrian did participate in numerous project designs by himself. Compared with the creations of the Trajan Forum in Rome, the Pantheon has a more precise idea that Apollodorus would not attempt. The invention of Pantheon's dome was revised by Hadrian for being too conservative in design.

Derived from the Agrippa period, the Pantheon's porch belongs to the initial construction, but other parts of the building were destroyed.[9] Pantheon's dome, which is far more extensive than the past ones, is made by the hard but lightweight Roman concrete. The vault of baths and other buildings in Hadrian's villa utilized the same revolutionary tech-innovation as he did in the Pantheon. With the construction of the Pantheon, Hadrian was able to associate himself with the great emperor Augustus. He leaves a marble plaque on the portico of Pantheon for memory. (Fig. 2.5, 2.6) Confirmed by records and ample evidence, restoring, and repairing monuments are his habits. Hadrian achieves his dream as an architect erecting multiple remarkable projects like the Pantheon and his villa as well. Having a great passion for the architectural design, he erected his buildings along his journeys, especially numerous temples in Asia without purpose. Currently, these remains erected by Hadrian still survive, for example, the temple at Cyzicus where it found on one of the famous Antoninus Pius statues. As Cassius Dio described, Hadrian set up the statues of Antoninus all over the world and even rebuilt a city in Egypt named after him. (Fig. 2.7)

Because of his charming private character and the tolerance of Christianity, we could find authentic evidence in both the literature and reality, particularly in his last achievement, the splendid Villa at Tibur.

2.2 Construction of Hadrian's Villa

The Villa was the tomb of my travels, the last encampment of the nomad, the equivalent, though in marble, of the tents and pavilions of the princes of Asia.

--<Memoirs of Hadrian>[10]

Each building in Hadrian's Villa is the chart of a dream. The Imperial Villa is not on the top of the mountain, where the views are the best, but on the flatter land below the city of Tivoli, 28 kilometers east of Roma. Hadrian's Villa is twice as large as Pompeii, covering 200 acres, including thirty major building complexes, gardens. The first question came out about why Hadrian chose to build it here. The results might combine various reasons. Some scholars claim that the property belonged to his wife Sabina family, others support the Hadrian heritage of the Villa from his father, Apronianus. It also has rich natural resources like an abundant supply of water resources adorned throughout with fountains and pools. The water systems in Tivoli are complex, with more than 100 fountains, including some artificial fountains.

From the beginning of 95 A.D, Hadrian attended military training and served with legions combating in which the current countries are Hungary, Bulgaria, western Germany. From 106 to 113, he visited the entire Empire, especially in the eastern half of the Roman Empire. Summarizing the voyages of his whole life, it refers to three prominent journeys. Hadrian's first extended travel is likely to be forgotten, since it happened at the beginning of his reign. He spent eleven months continuously inspecting his Empire, particularly in the eastern provinces. In the second significant trip, from April 121 until the summer of 125, the emperor visited throughout the Empire, from the northern borders of Britain to western Asia Minor. Hadrian stayed in Rome from 125 until the late summer of 128. In the same summer of 128, he went to North Africa on a brief trip. The third journey, from 128 to 132, led Hadrian to travel in Northern Africa, the Near East, and the Balkans. After having come home in 132, he stayed until his death mostly at Tivoli, where he spent the later years of his reign.[11] (Fig. 2.8)

The emperor started to build his Villa early in his reign and decorated it continuously till his death. The Villa at Tivoli was completed before September 125 A.D. since a letter of Hadrian showed the emperor dictated at this time "*from his house at villa Tiburtina*" and addressed Amphictyons and Delphi.[12]

Four Villa references are surviving in Roman literature, three of them in the *Historia Augusta*. The most crucial literary evidence is, in this text redacted in 4th century A.D:

"*His villa at Tibur was marvelously constructed, and he actually gave to parts of it the names of provinces and places of the greatest renown, calling them, for instance,*

Lyceum, Academia, Prytaneum, Canopus, Poecile and Tempe. And in order not to omit anything, he even made a Hades."

"Tiburtinam Villam mire exaedificavit, ita ut in ea et provinciarum et locorum celeberrima nomina inscriberet, velut Lyceum, Academian, Prytaneum, Canopum, Poecilen, Tempe vocaret. Et, ut nihil praetermitteret, etiam inferos finxit." [13]

The existing remains of Hadrian's Villa are composed of brick-faced concrete construction. Materials would have decorated plenty of them followed the hierarchy: painted plaster, marble, and mosaics. Many buildings present the *Opus Mixtum-* an ancient Roman construction technique- consisting of a mix of *Opus Reticulatum* and at the angles and the sides of Opus Latercium.(Fig.2.9) *Opus Reticulatum* is in terms of a diagonal grid pattern of brickwork, and the pattern of mortar lines resembled a net. According to the remaining fragments, the walls in the significant buildings of the Villa would have been decorated with polychrome marble veneer, but almost nothing has survived. Other walls in the ancillary buildings would be covered with the layers of plaster. Like the other Roman ruins from the same period, the decoration on the walls would be likely with frescoes with themes inspired by geometry and nature. However, the wall paintings are preserved in lousy conditions, hardly discovering it intact through the whole Villa. The geometric motifs are seen in the Cryptopoticus under the Peristyle Pool Building (winter palace, Fishpond), covered with graffiti, while others are found in the Cryptopoticus of the Imperial Triclinium. The fragments of the fresco are also visible in the Small Bath on the ceiling of a passage.(Fig.2.10) The fragments of fresco were found in the Cryptoporticus of Canopus, but they were removed in the 1950s.

The emperor named the buildings in the Villa with exotic names, perhaps because of his interest and admiration of Hellenic culture, particularly his dream place, Athens.

The Canopus might instead have been inspired by the voyage in north afraica in the summer of 128. People surmise that the Canopus represents the Nile delta, where his lover Antinous drowned. Research attests to the constructional chronology in the Villa, including three phases of constructions. (Fig.2.11)

With regards to Hadrian's construction scheme, the first phase of construction, in which a great many buildings were built such as the Maritime Theater, the Small and Large Baths, the Latin and Greek Library, and others.

The scheme extended until 125 A.D. when Hadrian returned from the first of his great journeys in Greece and the East. The third phase is the supplement of the previous two. (Table 2)

Table 2 The phases of constructions

Phase I (118-125 A.D.):
Maritime Theater, Hall of the Philosophers, Heliocaminus Baths, Latin and Greek Library, Poecile, Nymphaeum Stadium, Hospitalia, Guard Barracks, Stadium Garden, Three Exedra Building, Small and Large Baths.
Phase II (125-133 A.D.):
Heliocaminus Baths completion, Building with Doric Pillars, Piazza d'Oro, Praetorium, Small Baths completion, Tempe Pavilion, Triclinium Imperiale, Building with Fishpond, Academia, Roccabruna, Temple of Venus, Hundred Chambers, Vestibule, Canopus and Serapeum, Greek Theater, Lyceum.
Phase III (133-138 A.D.):
Large Baths completion, Odeum, Antinoeion, Various midifications including of Serapeum, Vestibule Lararium, Antinous Memorial

The reference can be linked to the ancient Roman Villas and the buildings the emperor saw during his travels. The travel experience enriches Hadrian's first-hand knowledge of the classical world. He is fascinated with Greece and especially with Athens. Ephesus, Antioch, and Alexandria were other favorites cities where he absorbed local buildings' style. Simultaneously, Hadrian amazed the locals with his building style. He drew lessons from the buildings' design in Athens, Syria, Egypt, Asia Minor, and others to his Villa as the souvenir gifts.

The earliest bricks stamp was found dated to 117 after the return from Hadrian's first excursion. These constructions were Maritime Theatre, Hall of the Philosophers, Heliocaminus Baths, Poecile, Nymphaeum Stadium.

What should be mentioned is Serapeum and Canopus, where it creates a scenic spot with its original canal running east from Alexandria. Hadrian imitated the image he saw in Africa and gave an exotic name evoking the memories. As for Temple of Venus in the Villa, Hadrian went to the Greek island of Knidos, where he saw the most famous round Temple of Venus and Venus statue. He built the same replica as the Greek one at his Villa. The earliest surviving primary texts of the round Doric temple is the description by Pliny the Elder:

"The shrine in which it stands is entirely open to allow the image of the goddess to be viewed from every side, and it is believed to have been made in this way with the blessing of the goddess herself." [14]

Pliny the Elder wrote his *Natural History* at the end of his life, in the years before 78 A.D., which it is possible he described the temple located in Greece. However, Pliny illustrated an impressive view of the temple of Venus, which we could associate this temple with the one at Tivoli. In the middle of twenty century, Professor Roberto Vighi undertook an archaeological excavation of the building and a copy of the statue of the Aphrodite of Knidos. (Fig. 2.12, 2.13)

The layout of the villa arranged in a disorderly fashion. The construction of the villa is without durable and sustained planning due to the absence of Hadrian's direction. Moreover, E. Salza Prina Ricotti reported that the high number of brick stamps found at the Villa tracked back to 123. Concerning the general plans, there is no physical evidence to prove that the Villa was planned as a whole. It is likely that the patron Hadrian every time requested to modify his demands after his cultural adventure in his region.

2.3 General Description of Hadrian's Villa

The earliest surviving description of the Villa by *Historia Augusta* gives an impression of the primary functions. Having studied systematically in the complex, the scholars gradually started to distinguish the division of functions in the Villa in a variety of methods to draw the complete overall plan.

Salza Prina Ricotti is concerned about the most fundamental issues in terms of the changes in level and the relationship between multistoried buildings and the landscape. He separated the altitude difference of the buildings into subgrouping buildings to describe the Villa with detailed plans and constantly focused on the part but ignoring its connection in between. M. De Franceschini tends to create the schematically general plan into three sections: eastern quarters, central imperial quarters, and upper quarters. In the opinion of W. MacDonald and J. Pinto, the division of the Villa in several magnificent groups of the buildings, suggested the internal connection, such as the axial cohesion inside the architectural complex or regularly topographical changes.

Indeed, the excavation of Hadrian's Villa has not finished yet. There is no published plan entirely correct, but the archaeological pieces of evidence lend credence to approach the overall layout of Hadrian's intention. W. MacDonald and J. Pinto divided the Villa into eight grand quarters, depending on the analysis of the functions and topographical differences. (Fig. 2.14) Other scholars are continuing to make unceasing efforts in perfecting the unfinished work of the Villa.

However, after five centuries of survey and excavation, experts can create a reconstruction of the Villa in the age of Hadrian. By studying all the materials of the Villa, the best description must contain two aspects: the previous functions and the topographical changes. Concerning the functions, the whole villa complex could be divided into two parts: private and public. The private parts are only facing the emperor and his closest friends including subordinate places of emperor's servant, such as the Maritime Theater, The Imperial Palace, Winter Palace, Heliocaminus Baths, Tempe Pavilion, Latin and Greek Library, Triclinium Imperiale, Poecile and Hundred Chambers, Hospitalia, Guard Barracks. The public quarters are opening to public guests, such as Building with Doric Pilasters, Piazza d'Oro, Academia, Temple of Venus, Three Exedra Building, Small and Large Baths, Greek Theater, and South Theater (Odeum). Both emperors and visitors serve the Canopus and Serapeum. (Fig. 2.15)

Ancient guests approached the villa, most likely along an access road that led to the vestibule or reception complex. The vestibule, a multistoried complex building, is 115 meters long with a magnificent courtyard and an impressive reception hall. The Small Bath and Great Bath areas are near the vestibule with various services in the bathing

complexes. The two baths also connect to places conventionally know today as the Winter Palace and the Canopus. The Canopus had a long canal, 121.40 meters long, 18.65 wide, and 1.7 meters deep, flanked by colonnades and statues consisting of the Hellenic and Egyptian elements. Along the scenic canal, a few prominent statues are displayed at the original place, including four Caryatids bookended by two Salinas figures. The vaulted hood structure known as Serapeum was a monumental summertime open-air dining building in the shell-shape artificial grotto with the nymphaeum set. A Half-Dome dominates the front of the structure under which a semi-circular stone coach was built, namely *stibadium*. On the elevated platform in the Serapeum, the emperor and his closest friends could enjoy the summer feast with a beautiful view. The water cascaded through the hills to cool the air then flow to Canopus. The waterfall adjusts artificially to regulate the flow. The visitors could also walk past a long terrace with a formal garden to visit the Academia.

When the visitors typically visited the villa to conduct officially public business with the emperor, he could work in the special hall in the villa such as Hall of the Philosophers and Building with Doric Pillars. The building with Doric pillars is a great hall that consisted of the marble pillars in Doric order twenty meters by twenty-eight meters in size. The room could accommodate a hundred people. Several visitors might have the chance to be invited to meet privately with the emperor in the Maritime Theater. In the Villa there were two theatres, one is in the north part of the complex, the other one in the south. The north theatre could hold between 2,900 and 3,600 spectators and had a rare oval plan now called Greek Theatre. The south theatre, known as Odeon, could hold 1,100 to 1,200 people. The visitors could be conveyed through three parallel underneath corridors, namely the villa's tunnel system. The villa also had an amphitheater for animals' hunts and gladiatorial combat, which is adjacent to the Piazza d'Oro. The visitors could attend the performances held in these places. (Fig.2.16,2.17,2.18)

Moreover, people nearby might visit the complex for the motivation of the court and worship at the Temple of Venus, Antinoeion, and Roccabruna. Roccabruna has two levels: a lower story, square in plan with a rotunda; and an upper level platform on which was built a circular colonnaded enclosure. The ground floor of the structure with a ramp reaches the ground floor and is well-preserved, but the round temple on top in Doric order was damaged.

There is no doubt that Hadrian's Villa plays an essential role in Western art as a paradigm in classicism from the Renaissance to the present day. Looking into the past, thousands of eminent scholars, including architects, artists, and historians standing on the humanism point, swarmed into the Villa to measure, study and imitate its buildings. The heritage of the site motivated the talented architects and artists, who absorbed the inspiration from the Mediterranean classicism, to grasp thoroughly artistic and

historical treasure. The way this knowledge was extracted and adapted will be analyzed in the following chapter, in which the different approach of the architects towards the villa and its ruins will be examined.

Figure 2.1 Bronze statue of the emperor Hadrian.
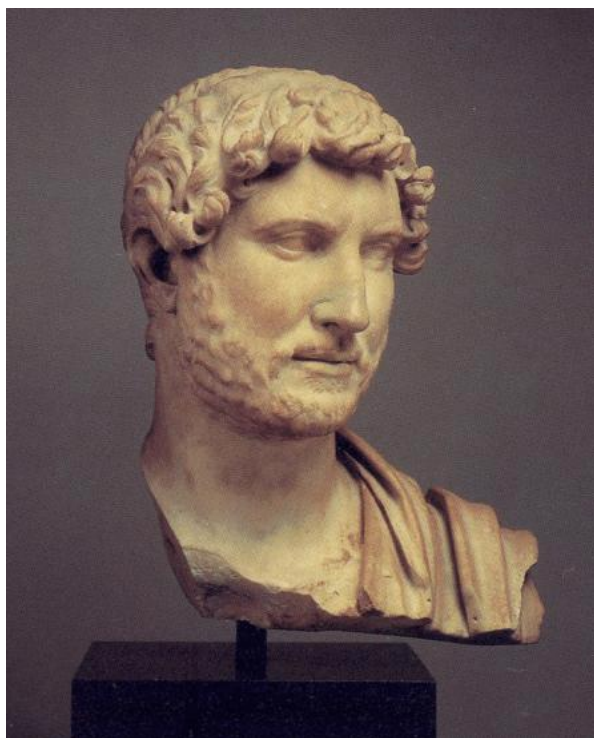
Figure 2.2 Portrait of Emperor Hadrian.
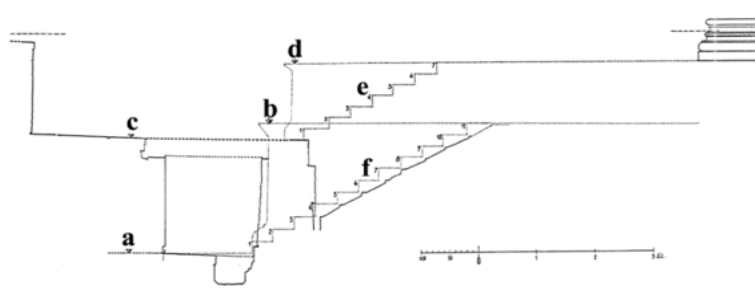
Figure 2.3 The different phases of Hadrian and Augustus in Pantheon Eugenio La Rocca. (2015) (c) and (d) Hadrianic building (e) existing Pantheon and (f) earlier Pantheon before Hadrian period. (Drawing by Giovanni Joppolo)
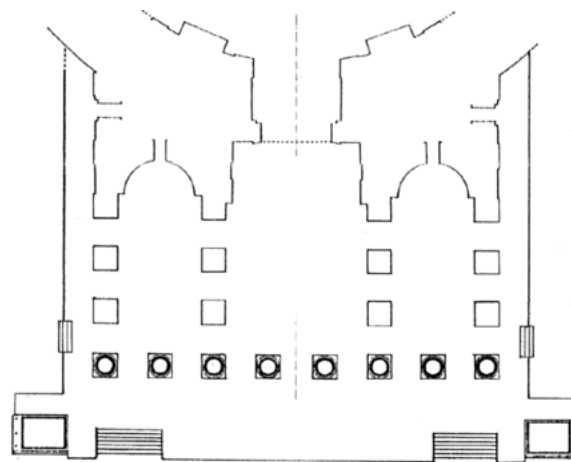
FASE ADRIANEA
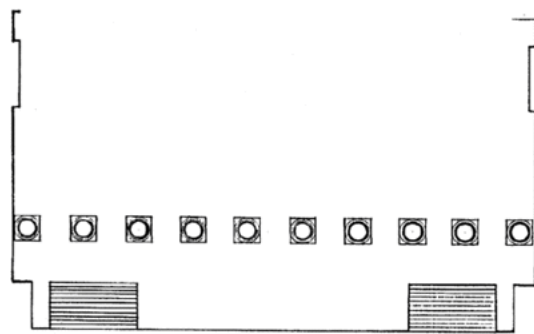
FASE AUGUSTEA

Figure 2.4 The different phases of Hadrian and Augustus in Pantheon Eugenio La Rocca. (2015) The plan of Portico between Augustus and Hadrian phases. (Drawing by Giovanni Joppolo)
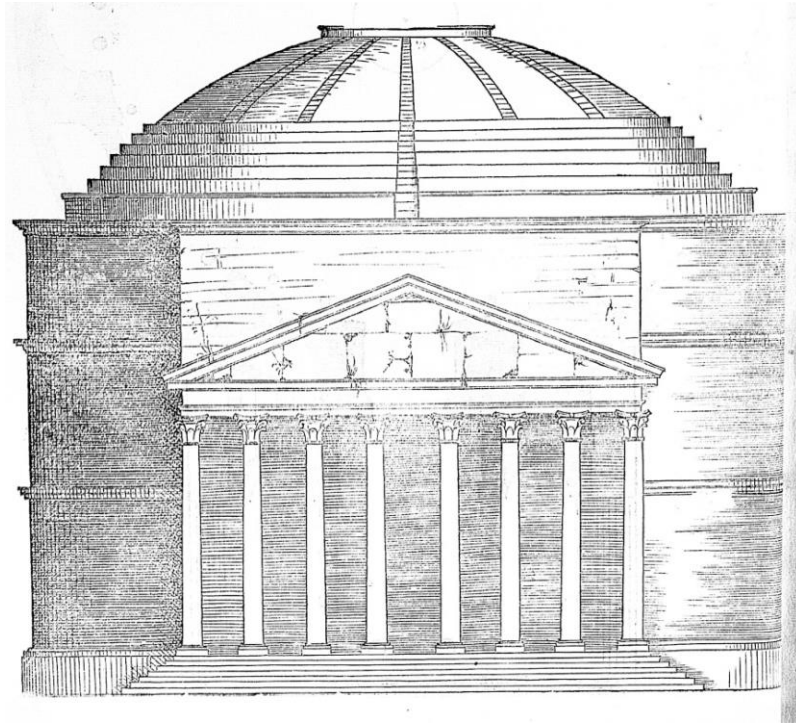
Figure 2.5 The elevation of Pantheon by Sebastiano Serlio. (1560)
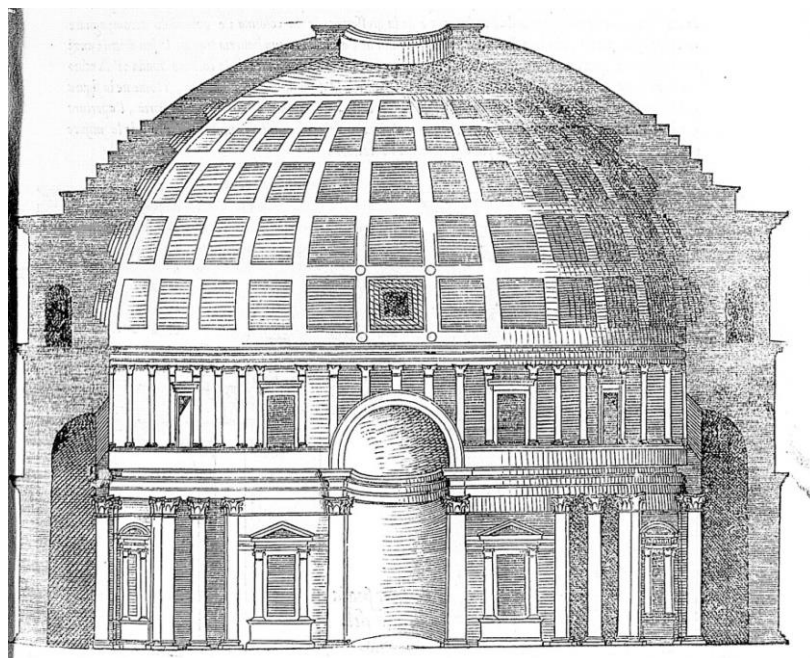
Figure 2.6 The Section of Pantheon by by Sebastiano Serlio. (1560)

Figure 2.7 Marble bust of Antinous.

Figure 2.8: The Voyage of Hadrian.
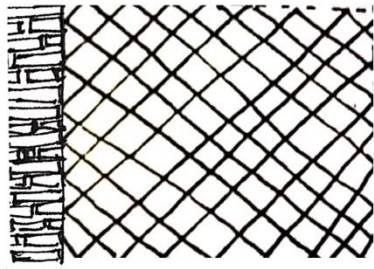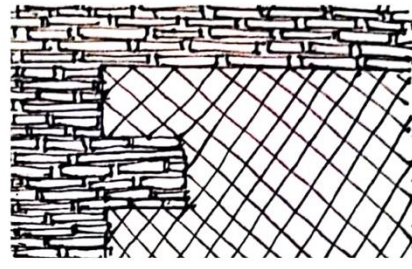
Opus Reticulatum   Opus Mixtum

Figure 2.9 Wall types at Hadrian's villa.

Figure 2.10 The fragments of fresco in Hadrian's villa.
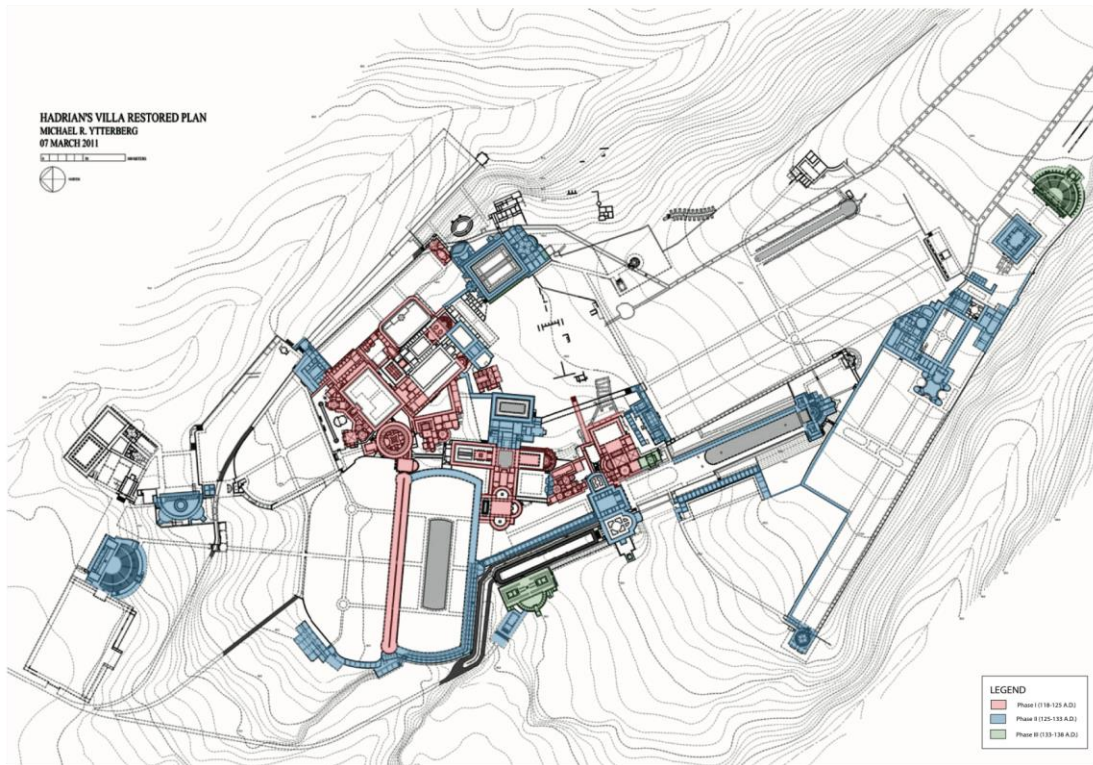
Figure 2.11: Construction Phases of Hadrian's Villa.

Figure 2.12 The temple of Venus area.

Figure 2.13 The ruins of the tholos at Knidos. Copyright Dick Osseman. (2004)
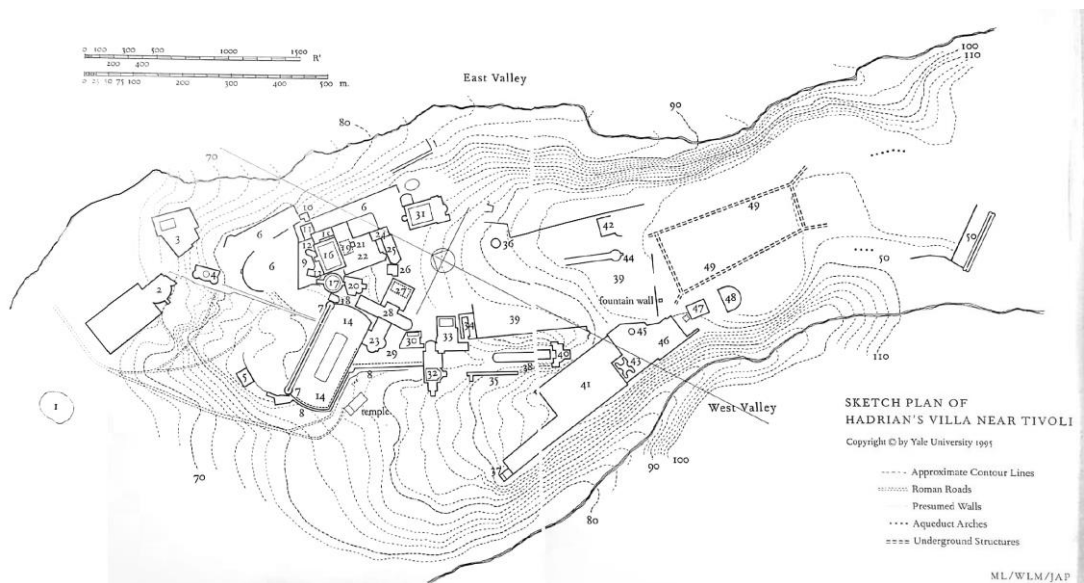
Figure 2.14: The Plan of Hadrian's Villa by W. MacDonald and J. Pinto.(1995),
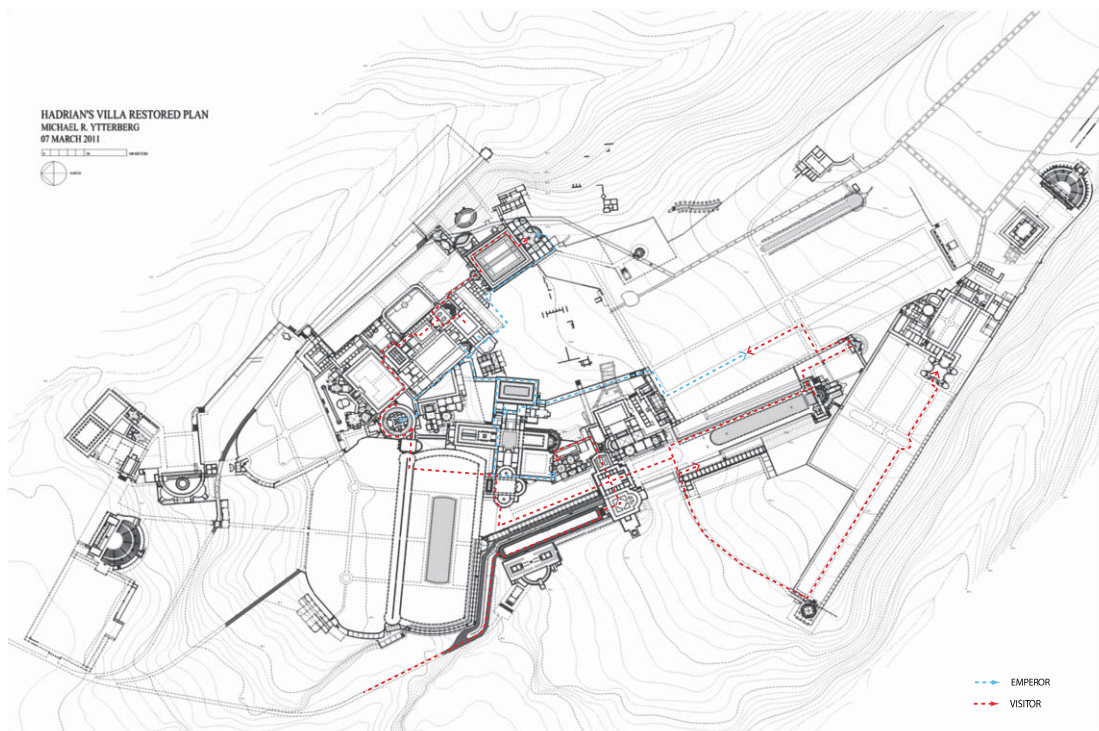
Figure 2.15: The Route in Hadrian's Villa.

Figure 2.16 The Maritime Theater.

Figure 2.17 The Piazza d'Oro area.

Figure 2.18 The Smaller Baths and Large Baths.

Chapter 3 Studying, Interpreting, and Transforming Antiquity

With this in mind, since I have been so completely taken up by these antiquities—not only in making every effort to consider them in great detail and measure them carefully but also in assiduously reading the best authors and comparing their writings with the built works—I think that I have managed to acquire a certain understanding of ancient architecture.

--<Raffaello Sanzio – Lettera a Papa Leone X>[15]

3.1 Early Drawings of Hadrian's Villa

3.1.1 Flavio Biondo (1382-1463)

In the early Quattrocento, after centuries of decadence and spoliation, a new era of *Rinascita* of the splendor of the Roman Empire began. It is in this context that the interest on the Villa grew again.

Roman monuments were in bad condition: some statues were stolen and sold to Pope, some were replaced in the newly constructed building as the decoration, other marbles had been brought to the limestone, only a small part remained in the Villa.[16] Some areas had been replaced by the agriculture field, where local farmers removed the ruins.[17]

By taking serious consideration of the antiquities, the Pope commissioned some architects to measure and study Roman ruins in the city of Rome and the countryside. Born in 1392, Flavio Biondo, a humanist, who was trained in Cremona, printed a guidebook to Rome "*Roma Instaurata* (1445)." It is the first publication about Roman architecture and topography. After reading the essential documents of the *Historia Augusta*, he published "*Italia Illustrata (*1450)". He first described the Villa and highlighted the fact that Hadrian had named the buildings in the Villa with the most famous of the provinces in his region.[18]

The Pope also accepted the humanistic ideas that had emerged in Florence. He began to think about the "Renaissance" of Rome with the aesthetic vocabulary and rhetorical framework developed by these early humanists. Humanist Flavio Biondo and his peers were appointed to record the existence. Nevertheless, after a long medieval

period, it was excessively painful to discover the golden age of relics and revive it. Biondo must look at history in a new way, regarding the past as a story, which is related to death and rebirth. He, like other humanists, tried to slip through the gap between, the Florentine and the Roman worlds. In his mind, Biondo would like to restore Rome and bring it back to its golden age, to Augustus's time, to reformulate it under the Christian context. Even though he was for political propaganda purposes, Biondo decided to reunite the post-Avignon Papacy with the early Christian pontiffs as the first step. After Biondo discovered the ruins, the Pope commissioned the preservation of the "great works" of the churches and monuments in Rome. With Flavio Biondo, a careful examination of the ancient ruins of the Roman Empire, bringing the ancient past back. Flavio Biondo's vision was more likely to create the newly Christian empire aesthetics trends with creative Roman art and architecture. This action provides the architects of the High Renaissance with cultural production and its model of rediscovering Rome.[19]

In September of 1461, Pope Pius II made an excursion to Tivoli accompanied by Flavio Biondo, who made an observation of the Villa's size from a far distance.[20](Fig.3.1) The locals used to call the extensive remains "Tivoli Vecchio".[21] The Pope wrote a more detailed description in his book:

> "*About three miles from Tivoli the Emperor Hadrian built a magnificent Villa like a big town. Lofty vaults of great temples still stand, and the half-ruined structures of halls and chambers are to be seen. There are also remains of peristyle and huge columned porticoes and swimming pools and baths, into which part of the Aniene was once turned to cool the summer heat. Time has marred everything. The walls once covered with embroidered tapestries and hangings treaded with gold are now clothed with ivy. Briars and brambles have sprung up where purple-robed tribunes sat, and queens' chambers are the lairs of serpents. So fleeting are mortal things!*"[22]

The earliest record of the Villa described by Pope Pius II affirmed the connection between the passages in the *Historia August* and the Villa in Tivoli. The pontiff's poetic reference of Hadrian's Villa indicated that he was interested in recognizing the building types in the Villa where he recorded temples, halls, chambers, pools, and baths. He also wrote that the "*Villa is like a big town.*" It shows the complexity and complications of Villa's function. He promoted the unique role of water in the Villa and tried to analyze the speculation that it might be a balanced local thermal atmosphere. For the magnificent Villa, it has now become a relic. "*Time has married* everything. " Such humanists as Biondo and his patron Pope Pius would stimulate their desire to explore the extensive ruins because of the resonance with the relics.

3.1.2 Leon Battista Alberti (1404-1472)

Supported by their patrons, Leon Battista Alberti and other architects studied typologies of Roman ruins following Vitruvius's *De Architettura*. Alberti was the first person in the early Renaissance who rewrote the architectural theory. Based on using mathematical instruments and inventing the scientific methods of measurement, Alberti recorded monuments and surroundings of the ancient city of Rome.

In *De Re Aedificatoria* (1452) Alberti explained his thoughts about the relationship between humans and Nature.

Firstly, Nature is a permanent challenge for architects. Alberti learned from the natural philosophy of antiquity and frequently advocated the imitation of Nature, "*Ancient architects closely followed Nature's example in their desire.* " The underlying reason is that at that period, architects relied on the natural form to maintain that the structure frame keeps stability under any circumstances, for lacking the physics theories supporting. Alberti advocated the imitation of Nature that reflects on the corporeality of natural creations and the laws of Nature. Alberti was inspired by natural philosophy from Plato and Neo-Platonists and it influenced the analysis of the variations of the human body, the shapes, and sizes of columns. In ancient times, people realized the scale of architecture based on the scale of the human body. The essential thing is for human beings to understand their own. (Fig.3.2) Therefore, they utilized themselves as the standard to measure the world and to understand the world. As Alberti writes, "*Having taken the measurements of a man, they discovered the width, from one side to the other, was a sixth of the height, while the depth, from navel to kidneys was a tenth.*"[23]

Secondly, Alberti advocated his ideas on centralized planning of churches. Despite Vitruvius not referring to centralized plans of temples, Alberti and his followers regard it as the ancient forms for temples. He links ideas to the Early Christian church. Alberti had a strong passion for the establishment of the temple in the city, as a temple purifies the mind. The idea of a centralized plan advocates a return to the idea of Nature: "*Nature delights primarily in the circle.* " He maintained that the circle is the pure perfection of the geometric shape in Nature.

Thirdly, Beauty and Ornament are two elements conducted on buildings' aesthetic appearance. Alberti defines Beauty and Ornament. Beauty is the embodiment of harmony within the building, and Ornament is an additional enhancement and improvement to Beauty. Beauty is the inherent proportion of the unity of the building, and the Ornament is an extrinsic addition to the building. Alberti comments more than once in his treatise, the dominant Ornament in architecture depends on the Column.

Alberti appropriately develops several methods of three dimensions which derive from music, geometry, and arithmetic. Rudolf Wittkower thoroughly illustrates,"*...beauty consists in a rational integration of the proportions of all the parts of a building in such a way that every part has its fixed size and shape, and nothing could be added or taken away without destroying the harmony of the whole.*"[24]

Alberti's projects conveyed a harmony of the whole. The achievement is ascribed to a well-known mathematical definition. We could easily observe organic geometry in every building. Alberti found the models for both forms in Roman architecture. Following the conception that combines the arch and column as a whole, he set up his rational motif, which was originally from the ancient paradigm of Roman and Greek ruins. In practice, Alberti took advantage of the columns of the Greek conception and of the arches in Rome. Gradually he discovered the best solution for the combination of the Column and the wall. He used the pilaster instead of the Column for the facade ornament. Columns are the principal part of the architectural Ornament, and the pilaster system was used in the design of his last two building facades, S. Sebastiano and S. Andrea at Mantova. As Rudolf Wittkower analyzes, "*Alberti had not turned away from antiquity... he found a logical way of translating classical architecture into wall architecture proper without compromise.*"[25] After sketching and drawing the antiquities in Rome, Alberti absorbed the ancient essence, namely his conception of column and arch, to apply in his structural formula.

Alberti also devoted himself to observing the constructional techniques in the Roman ruins. He managed to revive the ancient construction techniques in his project for the Palazzo Rucellai in Florence. The brick construction technique, Opus Reticulatum, had been lost with the end of the Roman Empire.

We could say that Brunelleschi had begun a new era that transformed an old architectural concept into a new one from the medieval "constructed" space to logically reusing the visible structural system. Alberti inherited this idea and developed it further. He applied the knowledge of ancient architecture theory on his practical project through his interpretation of ruins. By establishing his methods of defining the ideal harmonic building, Alberti found the solution for his followers to balance the relations of the wall and columns. These humanist architects give impetus to the followers who are starting to comprehend the importance of Roman antiquities.

Alberti invented the precise method for the depiction of ancient buildings. He completed all the previous experiences recording in the practical measurements and knowledge learned from Vitruvius. Alberti endeavored to summarize them in his monography. Through a transformation of antiquities, he started a new way to approach the golden age. Renaissance artists and humanists inherited the way to

transform a concept of ancient geometry that he learned in the classical monuments into a new architectural vocabulary for projects.

The circumstantial evidence allured that Alberti, at least, was familiar with Hadrian's Villa. He took advantage of the villa's name as an example, whereas he overlooked the spelling mistakes to prove Plato's advice "*A grand name will lend a place great dignity and authority*."[26] There is no directly substantial evidence to attest that Alberti had visited Hadrian's Villa at Tivoli. Undoubtedly the attitude towards treating ruins is reflected in his book *De Re Aedificatoria*, which influenced his great successors Bramante and Palladio.

3.1.3 Francesco di Giorgio Martini (1439-1502)

Around 1465, Sienese architect Francesco di Giorgio Martini visited the Villa, where he drew at least two rough plans now in the Uffizi, including measurements and annotations. One represents the Biblioteca Greca and the Teatro Marittimo, and the other one represents the Tempio di Apollo. Later, the assistant of Francesco di Giorgio Martini amended his manuscript with the precise renderings, which is possibly presented in Turin, *Codice Saluzziano*. Martini listed on the manuscript page in front of the Villa's drawings and the intentions that led him to reproduce the old buildings on paper. He highlighted the difficulties that he had to overcome when he measured the monuments. His drawings are the oldest graphic evidence, which still survives today, of a direct study of the Villa. (Fig.3.3,3.4)

Nevertheless, comparing Francesco di Giorgio's work with the precise drawings, scholars confirmed the drawings had errors. The purpose of rough sketches is for recording the data of measurement. It is necessary to have reliable measurement data and generally accurate composition of the space. As far as the result of the measuring accuracy, the accuracy is hugely worse than today but a critical attempt.

The result of the two drawings has deviated from the authentic measurement of the Teatro Marittimo. It is necessary to read the Renaissance architect's critical attitude towards ancient records. Francesco di Giorgio and his assistant revised some parts of his drawing to make it more acceptable as a functional building. There is a small discrepancy between the measurement plan and the final drawing because he wanted to define the space with a simple solution of uniform walls. Having clarified the idea of the axis, the assistant reversed the orientation of the drawings, closing the northern entrance, instead of opening from the southern part of the building. The assistant made four essential modifications to the Teatro Marittimo, "*reducing its peristyle from forty to sixteen columns*," "*diminishing the relative size of the central unit*," "*introducing a*

gratuitous peripteral colonnade around the center," "*and articulating the perimeter wall exterior with niches.*"[27]

The modification of the plan creates a positive influence on architectural history. The round structure with sixteen columns took possession of the center of Turin's drawing. This drawing gave the impression that the central island was converted into a round temple. The action is considered as a resonance with Bramante's idea of Tempietto at San Pietro in Montorio.[28]

Martini incorporated his ancient model based on his proportional system and imagination. Along with the techniques enhancing and measuring method development, later people began to pay attention to archaeological fidelity. His analytical attitude is a common factor in the fifteenth-century architects, many of whom recognized significant differences between real practice and Vitruvius's theory and revised their drawings.

3.1.4 Giuliano da Sangallo (1443-1516)

After settling in Rome around 1465, Giuliano da Sangallo made the drawing of the Villa in his famous sketchbooks known as *Barberini Codex* around the same time as Francesco di Giorgio's drawings. The *Barberini Codex* has an abundance of documents that play an essential role for ancient architects who cannot go to the site to study Roman ruins in the late fifteenth century.[29] The essential prerequisite for the architects to express information on buildings was an ample knowledge of Roman antiquities. Giuliano's manuscript surely has invaluable studying and interpretation of Roman remains.(Fig.3.5)

Giuliano devoted himself to studying plans and features in the Roman ruins. His idea is evidenced in his drawing of stucco-decorated vaults in the large baths at Hadrian's Villa. The drawing illustrates his interest in the organization of the geometric motifs, especially the coffers rather than the decorative elements. According to Linda Pellecchia, Giuliano transformed the old styles of the ancient Roman ruins into a new form to approach the splendor historical models in his projects. Giuliano applied knowledge gained at Hadrian's Villa for palazzo Scala and Lorenzo de' Medici's villa at Poggio a Caiano. Giuliano designed the decoration of stucco-vaults firmly with his drawing in the *Barberini Codex*, which the intention is to recall the ancient prototypes.[30]

3.2 Transforming the Antiquity of Hadrian's Villa

3.2.1 Donato Bramante (1444-1514)

Donato Bramante was born in a small town near Urbino, coming from a peasant background. According to the records by Vasari, Bramante was very likely to gain his first education at Urbino, perhaps working with Fra Carnevale and Piero della Francesca. In the Renaissance, Urbino seemed to start a new tendency influenced by the works and ideas of Piero and Alberti. Young Bramante probably spent much time in Mantova, Padova, and Ferrara to study the works of Alberti and other humanist-architects. During the 1470s, Francesco di Giorgio Martini accepted the invitation of Federico da Montefeltro, Duke of Urbino. Federico da Montefeltro employed him as an architect and engineer until his death on September 10, 1482. Bramante would have a chance to contact Francesco di Giorgio in Urbino to share the knowledge with his experience in the Villa or even see the plans drawn up by his assistant.[31]

After the training in Urbino, Bramante started his career and settled in Lombardy, where he met Leonardo da Vinci. Leonardo and Bramante may frequently contact at the Sforza court. Arnaldo Bruschi wrote that Bramante's capacity for architecture design made an immense improvement after 1488, perhaps thanks also to the relationship he established with Leonardo da Vinci while the two artists were in Milan working for the Sforza court. Leonardo arouses his extraordinary interest in the field of architecture after 1487. Before 1488, he invented a new way to represent three-dimensional objects, which conveys the maximum amount of information. This method of representing architecture helps to produce an idea of illustration of buildings different from the traditional forms of representation. The demonstrative method is constitutive of the plan, elevation, or perspective views at ground level. Leonardo and Bramante discussed with each other. Bramante undeniably influenced Leonardo especially on the issue of the design method, while Leonardo advised Bramante to rethink architecture from a painter's eye rather than a rational architect or engineer. Leonardo encouraged Bramante to consider the connection between space, volume, and construction from a three-dimensional perspective.

Bramante followed the path of great humanist-architect Leon Battista Alberti. "*exploring, considering, and measuring everything, and comparing the information through line drawings*."[32] Leon Battista Alberti impacted Bramante on the attitude of examining ruins and on the procedure of studying Roman monuments. Alberti played an essential role as a guide for Bramante's architectural design. He made a powerful impression on the architectural style of Bramante's early works. The significant aspects

of Alberti's design were the arcades and Roman triumphal arch motif. Bramante took the Alberti's results over, utilized the concept in his work. (Fig.3.6)

Besides, Brunelleschi's work stimulated Bramante's imagination in his design as well. The essential organization of the plan is subject to inspiration by Brunelleschi, the "first founder" of Renaissance architecture. Indeed, some details of his work in S. Maria Presso S. Satiro in Milano, testify the influence by the Florentine architect. By linking the plans, there is a similarity between Brunelleschi's work Basilica di S. Spirito and Bramante's S. Maria Presso S. Satiro. Those projects maintain the principal idea of central planning. As Bruschi has pointed out, Bramante memorized the S. Spirito design: "*a cruciform plan, with a cupola over the crossing, and aisles running completely round the church.*"[33] Comparing the longitudinal drawing of the two churches, we can see that Bramante adopted Brunelleschi's solution of an order-plus-arch system to coordinate the space and arrange different parts of the building including the nave, the aisles and transept, which creates a complete feeling. This solution attempts to arrange the arms of the church beyond the cupola from a perspective view. The arrangement of Bramante's S.Maria delle Grazie's plans inspired by Brunelleschi's Pazzi Chapel in Firenze as well. Bramante maintained in the aspect of crossing's proportion and geometry.

Moreover, the facade of transept consisted of a semicircle and a rectangle, which recalls the Pazzi Chapel designed by Brunelleschi. The design may suggest that Bramante indirectly studied Brunelleschi's project like S. Lorenzo and S. Satiro in Milano. (Fig.3.7) Occasionally Bramante would have a chance to talk to Brunelleschi or even visit his work like S. Spirito and S. Maria degli Angeli in Firenze. At least he was able to hear from his close friend, Leonardo da Vinci, who was acquainted with the buildings in Florence. Among his architectural drafts, in Manuscript B, these sketches reveal the studies of the plan and cupola about Brunelleschi's work in Florence.[34](Fig.3.8)

In 1490, Francesco di Giorgio Martini was called to Milano for the examination of the Milano Cathedral's Tiburio and met Leonardo da Vinci who was involved in the same project.[35] Concerning Bramante, he would appear in Pavia, as his name appears first in the document of the decision in 1488. Likewise, Leonardo and Francesco di Giorgio have contributed to the construction of Pavia Cathedral. In general, Bramante, in all likelihood, had an opportunity to discuss or appreciate the drawings made by Francesco di Giorgio in Hadrian's Villa at Tivoli.

Bramante moved to Rome from Milano for an invading French army. Thoroughly having acquired the primary impression of classical antiquities, Bramante came to Roma with a keen interest in the ancient visiting paradigm. This practice promotes him to obtain further modules for use in his later design. Vasari depicts Bramante devoting

himself to measuring ancient monuments when he arrived in Rome before the inception of the Holy Year 1500. He traveled alone, "*wrapped in thought*," measuring all the ancient monuments situated in the city and the surrounding countryside. Vasari indicated that Bramante visited Hadrian's Villa.[36] Circumstantial hints indicate Leonardo da Vinci's excursion to Tivoli on March 20, 1501("Laus Deo 1500 on March 20"). It is an inscription by Leonardo himself on a sheet of the Atlantic Codex (f. 616 v), "*Old Tivoli, home of Hadrian.* "Leonardo had taken the trip to visit Hadrian's Villa Tivoli to see from near those magnificent ruins, probably with Bramante, his old friend. He records the scene he saw in the *Codex Arundel* (f.224r), which was deemed the prospect of the Serapeum. (Fig.3.9) Whatever Bramante may acquire from predecessor and monuments, those intangible insights would give him strong effects in his work, especially in his essential work, the Tempietto of S. Pietro in Montorio.

Tempietto and Hadrian's Villa

The Tempietto is situated in the cloister of the church of San Pietro in Montorio. (Fig.3.10) The site, on Rome's Janiculum hill was supposed to be the site of San Pietro's crucifixion. The foundation stone, the only historical data that survived to attest to the chronology, was discovered during renovations to the crypt in 1628. It records the year 1502 and the patronage of Tempietto, Ferdinand and Isabel.[37] When Bramante first arrived in Rome, the Tempietto was planned to be built by Spain's royal family. They were firmly supported by concrete and strengthen the spiritual process of the Empire under Christianity. Bramante was commissioned by Spain's imperial heritage to create a new motif of architecture, which he succeeded the predecessor to "*have first restored to the light of day*." (Fig.3.11, 3.12)

From an architectural perspective, the Tempietto has no actual, practical, physical function. The essence is the symbolic meaning of Christian monuments, including most religious and political motives. Considering the project's purpose in his mind: "*the exaltation of Peter as the Roman pontiff,*" Bramante chose the centralized plan for the Tempietto. The ideal plan follows the Renaissance through a eulogy of geometry configuration, like basic figures of circle and polygon, which suggests the ancient forms of the temples for God. Even though Vitruvius is relatively silent about the centralized planning in his treatise, Bramante's Tempietto achieved all the requests for Alberti's ideal temple. As Palladio remarks, "*the unity, the infinite essence, the uniformity and the justice for God.*"[38] In terms of the noble ideal building in the early Renaissance, Palladio accepted the idea of Serlio that Tempietto is an example of the "*good and beautiful architecture* ." Tempietto could be identified as an outstanding and lasting example of the High Renaissance.

Erected in the center of a square of the monastery, Tempietto is a circular building standing on a three-stepped crepidoma with a low podium, followed by a peripteral

colonnade. The centralized plan is by no means a simple choice. It includes the analysis of the world and the divine unity of the geometric figure concerning conceptual expression from ancient times to the Neoplatonism in the Renaissance. Numerous scholars in the High Renaissance studied and made the architectural sketches of Tempietto, including Serlio and Palladio. Sebastiano Serlio's drawings widely disseminated the monument through his treastise, which was printed in 1540. It contains four illustrations: two plans, one exterior elevation, and an interior section drawing. (Fig.3.13) Since the Renaissance, numerous scholars analyzed the idea of Tempietto's centralized plan and identified Bramante's architectural model with ancient Tholos temple that these temples erected in Rome and Tivoli.

The Tempietto's ground plan is subject to the profound influence of Hadrian's Villa. When it comes to the peripteral colonnade of Tempietto, Bramante's plan was constituted of sixteen columns.[39] Bramante decided the number of columns not only following the conceptual examples of Tholos in Rome and Tivoli but some antiquity monuments such as Hadrian's Villa. The buildings in the villa possibly had a considerable influence on Tempietto's plan. With evidence suggested, it seems very likely that Bramante was influenced by the illustrations of the Teatro Marittimo at Hadrian's Villa supervised by Francesco di Giorgio. The drawing consists of sixteen marble columns standing in the center of the annular space. Therefore, Bramante imitated the circular space to create the same rational space in Tempietto. Due to the evident differences in function and form, it is difficult to observe the Bramante model from the Teatro Marittimo.[40](Fig.3.14)

In contrast, Bramante adopted Francesco's plan by reducing the size of the annular 'Canal.' He increased the inner number of columns in the peristyle of ambulatory same as the exterior one rather than eight. Besides, it would be possible that Bramante chose the number of columns associated with symbolic meaning considering architectural motifs and the building's proportions. Bruschi analyzes that sixteen is the perfect number that could be divided into other figures related to religious symbolism, corresponding to the client's intention to propagate religious and political purpose by this monument.[41]

Bramante took ideas from the Doric order in Hadrian's Villa. In elevation, the Tempietto consists of three separate parts: the crypt, the cylindrical part enclosed by a colonnade, and a hemispherical dome and a drum. Regarding the colonnade part, Bramante uses a Doric order instead of an actual sample, the Corinthian order in the Roman Tholos. As far as the choice of the Doric column is concerned, it is, in all probability, directly related to Vitruvius. Although Bramante's architecture alluded to a classical type, he still attempts to seek adaptation based on classics. By confining his references to several antique motifs, he established what he considered to be the precise architectural vocabulary and form to express his purpose. He highlighted Vitruvius's

Doric order with triglyph and metope. Besides, the choice of the Doric system probably is also related to his experience of measuring monuments in Hadrian's Villa. Hadrian revived the Doric order in his villa, which is not frequently used in the Roman imperial architecture, instead of the Corinthian order, echoing the memory of Athens, Greece. The nine-tenths of the existing capitals and fragments in Hadrian's Villa are Ionic and Corinthian. Doric order is sporadic to be seen, and there are two concentric buildings with Doric columns, which the plan shape is a circle: The Temple of Venus and Roccabruna.[42]

Bruschi insisted that Doric order was the most appropriate choice to celebrate the heroic figure of San Pietro. He writes, "*for a building dedicated to a Christian 'hero', forceful, strong… the Doric order was the obvious logical choice. These decisions… were not therefore motivated by merely aesthetic preferences but sprang from the programme.*"[43]

We could not know whether Bramante had a chance to observe the Temple of Venus and Roccabruna in the fifteenth century. By analyzing Francesco Contini's plan in 1668 and Piranesi's plan in 1781, Contini did not individually mark the Venus temple area in his drawing, writing a commentary in the annotation area. Contini reported on the dimension of the Venus temple without a more in-depth, precise description. In contrast, for Roccabruna, he drew an exact plan representing the upper level that has 21 columns to refer that the area is similar to the area with the Hall of the Doric Pillars.(Fig.3.15) Notwithstanding, there is no evidence to confirm when the upper level of Roccabruna was damaged, but probably after Contini's excavations. The Roccabruna was restored as a farmhouse. The first floor was about a dovecote built at the end of the sixteenth century. Later, the additional part was removed in 1881.[44](Fig.3.16) It could speculate that the nearby residents took the ancient Roman marble away from the Villa for consideration as a building material before the archaeological heat. Bramante, who came to Hadrian's Villa to survey and study in the early years of the sixteenth century, supposed that visit the more complete the Venus Temple and Roccabruna with a round-shape Doric system and Hall of the Doric Pillars with the rectangular-shape Doric system.

Bramante took a great leap forward after the accumulation of monuments in Hadrian's Villa. The design on the facade did not follow the style of the ancient Roman Triumph motif like his predecessor, using Corinthian order with a simple pattern of Frieze. Six Guttae were aligned under each Greek-style Triglyph of the Doric Frieze. However, Triglyph and metopes, which have the same size and quantity, could be placed at a distance between two pillars. Likewise, Parthenon and Temple of Poseidon at Paestum have one triglyph, and the Theatre of the Marcellus in Rome is three, but in Hadrian's Villa, the buildings with Doric orders are constituted of two triglyphs. As a result, Bramante may have inherited the idea of triglyph-metope Frieze, which he

learned in Hadrian's Villa. He combined with the Tuscan-Doric system column remembering the native Italian region. The architect used the formula completed on Tempietto based on the description of Vitruvius and the recommendation by Alberti.(Fig.3.17)

In the fifteenth century, it was extremely far-ranging to design balustrade as the transition between the main body and the dome. Bramante applied a new style balustrade that was utterly different from his previous projects in Milan. It is more likely that he was influenced by the temple in the Forum Boarium in Rome and the temple of Portumnus at Porto by Giuliano da Sangallo.[45] The ancient monuments motivated Renaissance architects. Bramante was able to meet Giuliano da Sangallo and see these drawings when he was in Milan.

Remarking on the original design of Bramante in the Uffizi, although the Lantern is missing, some lines are still visible in the drawing. E. Rosenthal asserted that Bramante seems to be hesitating but desires to complete a more sophisticated design of the Lantern. Some scholars hold the opposite view. R. Wittkower supported the design of the Lantern as an addition to the descendants. A. Bruschi agreed with the idea. He studied the ratio of the diameter and height of the Tempietto is 3:4, the relationship between the colonnade, and the diameter is 3:5.[46] It is possible the solution of Bramante to implement his Tempietto influenced by drawings made by Francesco di Giorgio that restored monuments following ancient principles with his imagination. Consequently, based on influence by other coetaneous scholars, Bramante chose the dome without a lantern.[47] J. Ackerman refers to the architects' drawings of the Renaissance and studied Roman ruins. Most of them focus on plans and details rather than elevation.

Bramante bought from the monument's plans and details in Hadrian's Villa. He transformed an old style of ancient ruins into his creative form to take advantage of these in the Tempietto. There were a few observations on the elevation and the facades, which seem sensible that the majority of ancient monuments collapsed so that the architects failed to survey them. In the fourteenth-century, Alberti and Brunelleschi endeavored to establish a new system of elevation motif based on the Roman triumphal arches. Perhaps proportion or other theories generated by them were still too abstract to comprehend. In the end, a talented humanist, Palladio, managed to draw the attention of the significant role of facades. In Vitruvius's ideology, an architect should regard the plan as dominance, and the façade employs the column of the Hellenic mathematical model. Due to the lack of structural engineers, fanciful creation may lead to the construction collapse caused by a severe result. The Renaissance architect's comprehension of the Roman monuments is still confined to the concrete objects, and the understanding of space and order is far from enough. As a result, spontaneously, the comprehension of the Roman monuments remains at the level of imitating of details and plan arrangement. [48]

Also, the painter and architect Baldassarre Peruzzi accomplished an extensive archaeological investigation of ancient buildings. Indeed, numerous drawings he made remain in Uffizi, several of which record the inspiration from Hadrian's Villa. Two of renderings probably suggest to reconstruct the interior image of the Piazza d'Oro. It seems to allude to the architect's idea of overlap between remains in Hadrian's Villa and the new design for Saint Peter's.[49] Peruzzi presented ancient monuments in his vocabulary where he transformed an ancient concept of geometry into a new way of his project. For example, in the project for Palazzo Massimo alle Colonne in Rome, Peruzzi's implementation of rectangular Hadrianic modillions could have promoted a new revival of ancient monuments. Furthermore, the idea of arithmetic and geometry also preserve ancient buildings of the proportion, which roman architects intend to set up a standard system.[50]

What is worthy of mentioning is that Bramante had a great passion for measuring and copying the ruins. It is supposed to indirectly impact the attitude of Baldassare Peruzzi and Raffaello about treating Roman ruins, especially in Hadrian's Villa at Tivoli.

3.2.2 Raffaello Sanzio (1483-1520)

Aside from the influence of Bramante, Raffaello was commissioned by the Court to study the classical Roman monuments under the Pope's interest. He was supported by Baldassare Castiglione, the learned antiquarian Andrea Fulvio, and Ravenna humanist Fabio Calvi. Raffaello engaged Fabio Calvi in translating Vitruvius.

The letter to Pope Leo X on Roman antiquities informs Raffaello's innovative idea of studying, reproducing, and protecting the remains of ancient building art. The letter was considered in the past as the contribution of Baldassare Castiglione. More notably, Raffaello identified the devastation of Roman ruins as two culprits of the invaders like barbarians, the Slavs and saboteurs, and the destruction caused by residents. The author pleaded with the Father to protect the remains of the imperial city, which is all the glory and great mother of Italy. Raphael reveals the primary method to define buildings that need to be mapped and protected. And then, he continued to describe the constant improvement of architecture in ancient and medieval times and expressed his support of Bramante's classical style.

Raffaello made his excursion to Tivoli on April 3, 1516, which records a letter from Pietro Bembo. Bembo is the Latin secretary of Pope Leo X. In the letter, it demonstrably wrote,

"with the Navagiero and with Bazzano and with M. Baldassar Castiglione and with Raphaello tomorrow, I will go to see Tivoli again: that I saw already another time

Twenty-seven years ago. We will see the Old and the New, and what is beautiful in that country." [51]

As Bembo remembered, he had visited the complex of Villa Adriana around 1489 or between the end of November 1487 and October 1488, when he was eighteen. His father Bernardo Bembo had read the *Historia Augusta* and made a marginal note including Villa Adriana, "*Which I saw when I was in Rome as an ambassador and whose view I delighted in extraordinarily because of the general layout, its imposition and the statues placed at the crown of the rooms. Anno Christi 1487.* "[52] Beltramini stated that Bembo went further and paid more attention to building shape when he designed the intervention for the old buildings. Biondo Flavio is the opposite of Bembo. He sought to accomplish the revival of the aesthetics and the name of prestige by restoration.[53]

Back to Raffaello, Cardinal Bibbiena commissioned him to design a private bath in the Vatican or Stufetta del Cardinal Bibbiena. (Fig.3.18) It remarks on Raffaello's design, which the organization of the vaults resembles the Large Bath in Hadrian's Villa at Tivoli. Raffaello probably visited Hadrian's Villa with his project in mind. Raffaello and his followers treated Hadrian's Villa as a typical method for studying antiquities.[54]

G.Bellori remarked on his book "*in the villa of Hadrian, superb even in it is ruined and in the other of Rome, Raffaello da Urbino, Giulio Romano devoted much study at a time when their remains were preserved; thus, whosoever wishes to view ancient paintings will admire them also in the ornament of the Vatican Loggie by Giovanni da Udine and other pupils of Raffaello, the modern Apelles, as well as at the vigna Madama on Monte Mario, in the Palazzo Te in Mantova and other works by Giulio Romano*"[55]

Nonetheless, the progress of Raffaello's archaeological research was interrupted because of his premature death. The book *Antiquitates Urbis*, in which the descriptive text is written by Andrea Fulvio and the maps drawn by Fabio Calvi, was printed in 1527, just before the sack of Rome. It proved so useful as a guidebook that was reprinted in Venice, 1588. When it comes to the description of Hadrian's Villa, it also combines the text of *Historia Augusta* and letter of Pliny the younger.[56]

The text of Andrea Fulvio represents the richness of Raffaello and his followers in the knowledge of Hadrian's Villa. The study of previous architects stayed at the level of description about Hadrian's Villa based on the passage of *Historia Augusta*. Whereas, Raffaello and his followers went further to observe the natural landscape and even vegetation in the paragraph. Concerning Bramante and Raffaello's contribution to Renaissance antiquity, J. Ackerman writes, "*Their work had a classical authority, a way of expressing mass, of modulating light and of transforming voids into positive*

volumes of space…"[57] The sufficient experience of Bramante and Raffaello probably relate to study in Roman relics and monuments like Hadrian's Villa.

After Raffaello, hundreds of architects and artists flocked to study the Villa, many of whom are renowned in the history of architecture. Renaissance interest in Hadrian's Villa reaches a peak in the sixteenth century. Palladio, another great master of the Renaissance, came to Rome to map and learn ancient monuments.

3.2.3 Andrea Palladio (1508-1580) and Pirro Ligorio (1514-1583)

Born in Padua in 1508, Andrea Palladio started to study Roman architecture thanks to his patron Gian Giorgio Trissino. The patron took him three times to Rome. He went to Rome several times and surveyed and drew a great number of the impressive and venerable Roman buildings, monuments, and relics.[58] Palladio started the first excursion to Rome in 1541, and there were two others in 1547 and 1554.

During his first stay in Rome, Palladio started to absorb knowledge from the works of the great architects from the Roman Golden age of the humanist Popes from Julius II to Clement VII. This experience stimulated the interest of visiting the projects of the architects from his peers. He went to Palazzo Te in Mantova, the work by Giulio Romano, and made several drawings between 1544-1547. Giulio's dramatic transformation of order design strongly shaped Palladio's design, which appeared in the facade of Palazzo Thiene in 1549 and his drawings, but Palladio lost interest of studying Giulio's work after 1550.[59]

During his second trip to Rome, Palladio went to Tivoli, Palestrina, Albano, and Ostia. As he traveled, he sketched and measured the ancient buildings, which provided him with first-hand knowledge of accurately recording data to uncover the past. In 1554 Palladio issued his ancient Roman guide, *Le Antichità di Roma*, which included a reference to Hadrian's Villa in *Historia Augusta*.[60]

He undertook to measure the ruins and made the architectural drawing by collecting accurate information about them. Comparing the representations by Palladio with other writers before him, Palladio had undoubtedly been influenced by them. Giving an account of Palladio's experience, it suggested that he was very likely to have read the works of other Latin authors in Rome, probably including *Roma Illustrata* by Flavio Biondo and *L'antichita di Roma* by Andreas Fulvio.[61] Palladio states in his book, *Le antichità di Roma*," *Nor have I contented myself with this alone, since I also wanted to see and with my own hands measure everything in detail*." [62]

As we know from the letter of May 20th, 1547, written by count Marco Thiene, Palladio had been to Tivoli on the second Rome excursion. He carried on the drawings

of the Roman remains in Hadrian's Villa.[63] He made three pages of sketches of the buildings in the villa, including the Teatro Marittimo, the Grandi Terme, the Piccole Terme, and part of the Praetorium, the Biblioteca Greca e Biblioteca Latina, the Hospitalia and the Accademia. Those sketches are simultaneously full of the richest details. It illustrated that Palladio did not disdain the integrity of remains and was concerned for the archaeological accuracy of the measurement. The drawings made by Palladio's predecessors failed to identify the proper method since they were in shortage of a precise proportional system and comprehensive measurement data. (Fig.3.19)

Meanwhile, more and more architects, like the great humanist Palladio and his contemporary, Pirro Ligorio, perceived the mistakes they made and found the solution while they were measuring and studying the ruins.

In 1570, Palladio issued his most famous work, *I Quattro Libri dell'Architettura*. The architect summed up the variety of relics observed in the Villa through Vitruvian glasses. He writes:

"*I began very minutely with the utmost diligence to measure every one of their parts, of which I grew at last so solicitous an examiner that I have very frequently not only traveled in different parts of Italy but…that I might entirely… comprehend what the whole had been, and reduce it into the design.*"[64]

The drawings by Palladio prove that Roman ruins were under adverse conditions. They show that a large part of the buildings had already fallen in the middle of the sixteenth century. The structure of buildings was remaining and drawn by Pirro Ligorio, and later architectural archaeologist. Despite lacking extensive evidence, Palladio endeavored to reconstruct the plans relying on the guidelines formulated by Vitruvius. Indeed, Palladio is esteemed as a great researcher in the high Renaissance for his close relation to antiquity. He examined Roman architecture's ways of arranging spatial and masses. Then he managed to establish his motif, which had its effects spread all over the world.

Pirro Ligorio carried out the first excavations in Hadrian's Villa. Ligorio probably acted as a tour guide for Palladio while he measured the buildings in the study of the site.[65] He witnessed the relentless destruction of Roman antiquities to prepare the materials for his project. He made the excavations of the villa between 1550 and 1568 as it was in the wishes of the Cardinal of Ferrara. The work has been called "*the first large-scale modern archaeological excavation.*"

Moreover, Ligorio wrote the first comprehensive description of the villa. He criticized the publications of previous and contemporary authors: Biondo Flavio, Andrea Fulvio, Bartolomeo Marliani, and Lucio Fauno.[66] Pirro Ligorio published a

description of the villa in 1723, the *Descritione della superba e magnificentissima Villa Triburtina Hadriana*. The manuscripts were most famous and exerted a strong influence on the subsequent studies of the Villa. (Fig.3.20) Ligorio's work is more extensive and professional than the previous description done by Biondo Flavio, Palladio, and others. Having moved further to distinguish those sites in Hadrian's Villa, Ligorio tended to delve into the ancient functions and descriptions of buildings, which are sometimes supported by specious analogies. He subsequently turned to his topographical method by focusing on specific buildings of the names he created we use till today. Ligorio was a sensitive observer of the architectural structure and advanced assumption that may have proved correct on the existence of the Scenic Canal.

Ligorio's work needed improvement. In some cases, his studies lacked elements such as floors and ceilings. Meanwhile, Ligorio's imagination sometimes led him astray. He invented plenty of fanciful names that were associated with plausible myths. The name convinced his readers of incorrect interpretations for a long time.

The excavation by Ligorio exerted a powerful influence on the subsequent studies. However, Ligorio's manuscripts were widely accepted by the public in the eighteenth century. The manuscript proves that he prepared a systematic master plan for Hadrian's Villa resembling his successor Francesco Contini and Giovanni Battista Piranesi. The general plan of Hadrian's Villa came out in 1668 by Francesco Contini, which included a contribution to Ligorio's work. Nevertheless, in the book written by Antonio del Re, it is confirmed that Ligorio had compiled a general plan of Hadrian's Villa. As hard as Antonio del Re tried, he did not find it.[67] As far as the more credible evidence of Ligorio's general plan, Vagenheim discovered that Athanasius Kircher had proved archives of Tivoli made by Ligorio play an essential role in the work by Francesco Contini.[68] Vagenheim cited another letter from Ludovico D'Agliè to Cardinal Francesco Barberini, in which Ludovico mentioned the drawings by Ligorio.[69] The first volumes of some drawings by Ligorio were printed in the sixteenth century. They could be considered preparatory studies for small parts of the relief. Those preserved drawings were kept in Turin: the *Codice Saluzziano*. The second trunk contained a considerable number of drawings by Ligorio, in which the numbers are around five thousand sold to Monsu d'Autreville. The man brought them to Paris in 1632. Unfortunately, at present, the drawings have disappeared. The purchaser, Monsu d'Autreville, attested the annotation written by Francesco Contini on a copy of the drawings by Ligorio.[70]

Ligorio's work provided thorough materials for restoration studies. Undoubtedly, the ruins were in much better condition than they are today. The illustrations by Ligorio ascribes his precise drawing works to his much-discussed veracity and reliability of antiquarian. The drawing confirmed that the southern complex ascribed to Ligorio in the Contini's plan. Even though Ligorio made his fanciful imagination beyond the current acceptance, in many ways, Ligorio's attitude towards the ruins of Hadrian's

Villa resembles Francesco di Giorgio Martini and Palladio. The observation of geometric forms he read in ruins creatively motivated their designs. MacDonald and Pinto summed up the attitude concerning ruins between Palladio and Ligorio: "*Unlike Palladio, which tends to impose its values on the ruins in terms of hierarchy and symmetry, Ligorio is more inclined to improvise virtuous variations on the themes suggested by the remains.*" [71]

Palladio implemented the ingenious reconstructions in his projects by utilizing the method of organizing plans and designing the landscape, which he learned in the bath and canal. Both the works by Palladio and Ligorio aroused the influence that the villa exerted on the history of landscape architecture.

3.2.4 Francesco Contini (1599-1669) and Francesco Borromini (1599-1667)

The first comprehensive general plan of the Villa was presented in 1668 by Francesco Contini. His work, commissioned by Cardinal Francesco Barberini, was an amendment and supplement of the excavation by Pirro Ligorio. Contini studied the archives and drawings by Ligorio's excavation. Then the printed plan is assigned to Contini's independent research on the site. The proof is given in the preface of the publication in 1668:

"*I went to the place, observed that it occupied a hill surrounded by two valleys roughly six miles in circumference, and I saw that the majority of the ruins were so covered by earth and debris that their foundations could not be made out; indeed, most of the ruins were overgrown by dense and thorny thickets. Such obstacles revealed to me the difficulties I would encounter in producing a plan [...] I began to excavate in order to reveal foundations, I cut through all obstacles, and more than once fell into holes and openings in those rugged areas and vineyards. Through such diligence I also found several subterranean roads, by no means of which one can go undercover from one part of the villa to another, as you see indicated on the plan, which I finally drew with the greatest accuracy possible, considering that the passage of time has erased many parts of the site.*"[72]

There are three versions of Contini's plan. The first one is the original printed in 1668, named as"*Adriani Caesaris immanem in Tibvrtino Villam.*" The second was published in 1671 by the scholar Athanasius Kircher in his book *Latium*. Kircher defined the plan "*vera et exactissima*", "*real and extremely accurate.*" Vagenheim suggested that Kircher considered the plan the result of the contribution of two architects Contini and Pirro Ligorio.

Kircher presumably saw in the Ligorio's original archives of Tivoli including a (general) plan as well, and he quoted:

"Real and exact plan of the most famous villa of Hadrian Caesar in the Tiburtine ager, first made by Pirro Ligorio and later surveyed and described by Francesco Contini, following the order of the most eminent Cardinal Francesco Barberini"[73]

The third version dates to 1751, the title is: "*Pianta della villa Tiburtina di Adriano Cesare, già da Pirro logorio rinomatissimo architetto e antiquario disegnata e descritta, di poi da Francesco Contini architetto diligentissimamente riveduta e data alla luce*." It confirmed the conviction that the author was Pirro Ligorio, rather than Francesco Contini.

The productive imaginations of Contini's work in Hadrian's Villa were the stimulus to a new generation of architects, such as Francesco Borromini, who were motivated by the Villa to create "innovative interpretation of spaces and classical forms." Francesco Borromini managed to grasp the importance of abstract theory instead of exerting on ancient monuments. He followed the practical approach, preferring to invent new things, as he writes:

"Those who follow the others will never be ahead of them, and certainly, I would not have chosen this profession intending to be only a copyist, though I know that in inventing new things, you will receive the fruit of the effort very late." [74]

Contini and his colleague Gaspare Berti went to Hadrian's Villa in 1633. Berti wrote a letter to Cassiano dal Pozzo depicting the excavation process. He demonstrated the details of the building's column. Berti also served as model-marker to Francesco Borromini, for whom he would have a chance to share the experience of excavation in the Villa, even more to detail of remains.[75] Borromini began his career as an architect in 1632. He received his first independent commission to build the monastery and church of San Carlo alle Quattro Fontane in 1634. In the same year, Contini started his exploration of the Villa.

The friendship between Borromini and Fioravante Martinelli started around 1653. In terms of Martinelli's description, it proved that Borromini had a great passion for the remains of ancient Rome study. Martinelli depicted a trip in which they visited the Roman churches together. They strolled among the ruins of the Palatine, where Borromini designed a small villa for his friend in Monte Mario. He also recorded that Borromini owned a copy of the book of Pirro Ligorio's *Antichita di Roma*. Borromini possibly knew about the excavation of Hadrian's Villa.[76]

In 1637, borromini was commissioned to complete the project for the Oratorio dei Filippini near the church of Santa Maria in Vallicella in Roma. He gained a manuscript of a description of the project entitled *Piena Relazione della Fabbrica dell'Oratorio*

Romano. The draft was partly written by his patron Virgilio Spada. It came out in 1725 by Sebastiano Giannini with the Latin title *Opus Architectonicum*.

In the manuscript, Borromini elucidated how the ruins of Hadrian's Villa inspired his work, as Kerry Downes translates:

"*and such was the fear I had of bearing a great vault 83 palms long by 53 wide on a wall without abutment, as it is that facing the piazza, that besides having made the [south] wall 7 palms thick, I exerted myself for a way of making there, as it were, a buttress growing from the decoration of the façade, as I shall say in its place. And not content with this, I wished to follow in some parts in the steps of the ancients who did not dare to place vaults above walls, but raised columns, or piers, in the angles of rooms or halls, over which they threw cross vaults, and all the weight rested on them, the contiguous walls acting only as abutment for the piers, as is seen in Hadrian's Villa near Tivoli[…]*"[77]

Besides, Borromini mentioned a large number of ancient references in the manuscript. He explained the diagonal disposition of the corner pilasters in the monastery's Oratory.

"*I wanted to follow […] as one can observe in Hadrian's villa, S. Maria degli Angeli in the Baths of Diocletian and elsewhere […] Thus in the corners of the interior of said oratory I placed four pilasters diagonally [..] which helped to support the vault and put less strain on the exterior walls.*"[78]

Obviously, in terms of placement of the pilaster diagonally in his project for the Oratory, Borromini strived to diminish the visibility of the corners but to highlight vertical feeling. These solutions determined that inspiration is from the Grandi Terme and the Biblioteca Greca. When he encountered the tasks of a structural problem, Borromini always looked at the ancient antiquity, especially the ample vaulted space in the Villa. Borromini viewed the ruins as references and defined them as solutions in his work. The monuments stimulated him to tackle the problem and creatively devise solutions. From the publication of *Opus Architectonicum*, it is noticeable that Borromini viewed the Ancients, Michelangelo, and nature as three sources to whom he could acquire knowledge. His manifold revolutionary developments rely on those references. The particularly notable drawings attest to his interest in ancient buildings.

Indeed, Borromini exclusively followed the concepts of mainstream architects of the sixteenth century. He was relying on the architectural study of Vitruvius and of the gathered examples of Roman architecture by his predecessor. Michelangelo was educating himself by making the numerous red chalk copies of the measured detail drawings from an early sixteenth-century antique prototype known as the Codex

Coner.(Fig.3.21, 3.22) Borromini, in his youth, took the same lesson from the master to do the copy study. [79]

Furthermore, Borromini's creation improved the Hadrianic style dome into his project. Perhaps Borromini saw Hadrian's unique design of vault in Piazza d'Oro and Serapeum. It is instructive to start the genesis idea of the vault, the S. Carlo alle Quattro Fontane. In the treatment of complicated vaulting, Borromini designed the great centralized vaulted space in S. Ivo Sapienza. His solution is derived from geometry and colossal pilasters, not columns to articulate the wall resembling Hadrian's pumpkin vaults. In the drawing of Scenic Triclinium vault by Luigi Rossini, space and chiaroscuro sense echoed the effect Hadrianic vaulting Borromini adapted. (Fig.3.23, 3.24) The drawing suggested that the contrast spatial volume influenced Borromini. He aimed to create a high altar in S. Ivo Sapienza with a sense of vertical unity.[80]

Besides, Borromini made an essential breakthrough in the rules of the ancients. He created an extensive renovation of the vault in the Villa. Borromini's idea of adapting antiquities is thought-provoking. In contrast, quite a few architects mechanically copied the Roman formula and ancient references without thorough thought. Borromini's vaulting space is constituted by a curved line, such as, the alternately convex and concave segments of the vault in S. Ivo Sapienza. Borromini's friend and patron Virgilio Spada asserted that Borromini's creative transformation is precious to be acquainted with Roman ruins. Spada writes, "*The ancients often employed such means as can be seen in the drawings of Hadrian's villa belonging to Cardinal Barberini, where no fewer than a dozen tempietti composed of curved lines may be seen.*"[81] As MacDonald and Pinto suggested it is likely that Spada referred to the preparatory drawings for Francesco Contini's plan of Hadrian's Villa in his memorandum.[82]

Anthony Blunt summarized the design of the detail achieves everything.[83] Aside from his revolutionary vaulting design, the orders he used in S. Carlo were learned from in Hadrian's Villa. He created an unorthodox change in the capital, giving the impression that it looks like the Corinthian order.

Compared to the previous architects, like Bramante and Palladio, Borromini studied further in ancient ruins. He maintained the idea of transforming the classical proportion into a new concept in his mind, imitating the space of ancient vaulting in Hadrian's Villa. Borromini provided more possibility to reuse the ruins from the solid masses and volume to abstract space, even chiaroscuro between light and shadow. After him, architects began to reconsider the relationship between creative transformation and ancient materials extensively.

3.2.5 Giovanni Battista Piranesi

By the early eighteenth-century, the Roman painter Pier Leone Ghezzi was engaged in the Villa ruins' studies for many years. He has stayed there at least twice. His drawings show two dates: one in 1724 and the other in 1742. (Fig.3.25) He made considerably measured drawings of the Villa, including architectural views and detailed studies. Ghezzi wrote his observation of Contini's work after his measured in Hadrian's Villa on 16 November 1742, "*I took with me the plan made by Contini…and finding nothing in it that corresponds to what one sees I conclude that it is made of ideas*."[84] The French Academy of Art in Rome was founded in 1648. It demonstrated that the establishment of this institution verified effectively to collect valuable knowledge of the antiquities. Around 1756, two scholars at the French Academy, Hubert Robert, and Jean-Hororé Fragonard visited Hadrian's Villa and provided a new point of view of the landscape. (Fig.3.26, 3.27)

Of all the studies over the past five centuries, Giovanni Battista Piranesi's plan is acknowledged as one of the most significant master plans in work done in Hadrian's Villa. Piranesi's work conveyed a lot of information of the Villa by his etchings and drawings. The plan embodied two different types of lines: solid lines and thin lines. These lines illustrate the work defined by Piranesi confirmable and speculative reconstruction in the Villa, which increases the plan readability. Combining the buildings' complexity and variation, Piranesi had desired to create a fanciful conjecture to reconstruct remarkable parts of the Villa. He considered studying the archaeological illustrations an essential prerequisite for understanding the site. As John Pinto points out, "*Piranesi viewed the diversity and inventive power of the ancients as an inspiration for creative design in his own day...*"[85]

Moreover, Piranesi's work contained graphic information by the precise drawings in a variety of aspects of the Villa. (Fig.3.28-33) The plan consists of identifiable information and abundant elements based on both architectural features and topographical features. Renaissance architects tended to study the Roman ruins like Hadrian's Villa through the direction of Vitruvius, for verifying the authentic connection between classical treaties and real relics. Few of them discerned the ambitious idea of emperor Hadrian creating magnificent complexes simultaneously highlighting the role of Nature. Piranesi made a positive contribution to focus on the relation of complex buildings and his plan embraced all the landscape. In contrast, the plan made by Ligorio and Contini appears as the result of natural tree growth after a long time discarded instead of artificial action by Hadrian.

Piranesi's work gave impetus to the scholars of the next generation to study deeply Hadrian's Villa. It appeared that most of the results were kept by the scholars and

gradually increased the richness in precision. A new generation of talented archaeologists such as Antonio Nibby (1792-1839), Luigi Canina (1795-1856), Agostino Penna (1728-1800), and Luigi Rossini (1790-1857), took up the study of the Villa where Piranesi left off in the nineteenth century.

Apart from the remarkable plan, Piranesi produced sixteen views of the Villa. He illustrated the picturesque ruins accurately with his interpretive ability. All of those etching, without exclusion, recorded the authentic scene of the Villa as a shred of documentary evidence. Some parts of the buildings might be lost or destroyed by natural or artificial forces. Piranesi's oeuvre was acclaimed as the masterpiece by the subsequent artists and scholars. By analogy with other picturesque views in the Villa, Piranesi records the delicately painted ornaments and decoration detail, which might be damaged by various factors as time passes. It could identify the decoration's ornaments on the walls and domes. The views showed the well-preserved condition of the construction in the eighteenth century. At that period, lacking modern photography, it is appreciative that Piranesi's etchings recorded plenty of views in the Villa.

The reconstruction interest in Hadrian's Villa accelerated in the mid-nineteenth and twentieth centuries. Some researchers were able to focus on specific excavations and presented reports of complexes in the Villa. Meanwhile, the architects started with the idea that reconstructed and revived the Villa in Hadrian's period. The scholars were interested in the specific individual complex in the Villa with acute insight. Hence, plenty of precise drawings were done by them.

Hadrian's Villa maintained its pivotal role in the history of western art. The Villa embodied the richness and variety of Roman imperial architecture. Piranesi inspected the artistic creation and imaginative power of the ancients as a motivation for creating a significant master plan. As John Pinto summarizes, "*Piranesi is concluding remarks on the great plan of Hadrian's Villa, provides an admirable summary of his view.*" [86]

3.3 Modern time

The magnificent Villa took up an indispensable role in the development of modern architecture. Many talented architects, who visited and studied Hadrian's Villa, reinterpreted the ancient buildings' form into the modern architectural vocabulary to adopt in their own designs. Le Corbusier made his great tour to the Villa in 1911, and his passion for studying antiquities is proved in the sketches of the Villa. Also, Louis Kahn visited the site in 1951, when he spent three months in Rome.

In the early nineteenth century, the restoration work had a sharp increase. It was probably prompted by the French excavation made during the Napoleonic occupation of Rome. The winners of the architectural prize "Prix de Rome" had a chance to

encounter the first-hand restoration work in the Villa. The architects from the same academy, École des Beaux-Arts, surveyed and restored the significant monuments of Latin antiquity. Undoubtedly, French architects like Charles Girault, spent a long time in the Villa preparing the precise actual state to complete the restoration drawings.

Charles Follen McKim, who studied in École des Beaux-Arts, was esteemed as a strong supporter of Beaux-Arts architecture in the United States. Because of the considerable admiration for the splendid example of ancient monuments, McKim, with the great love of Rome, founded the American School of Architecture in Rome that later became the American Academy in Rome. The American architects of the Academy, trained in the Beaux-Arts ateliers, were engaged in the restoration program at the Tivoli villa. Raymond M. Kennedy studied the Piccole Terme drawing a plan and fantastic section in 1919. One year after Kennedy's work was published, J. Chillman threw himself into the study of Edificio con Tre Esedra. Then, Kenneth Johnson worked at the Ninfeo con Tempio di Venere area and made a restored plan and elevation. Last, W.L. Reichardt produced his report of the Vestibolo group at Hadrian's Villa. In the same year, H.D. Mirick produced his pinpoint study of the Grandi Terme at the Villa.

McKim explained in his book that he craved to stimulate his taste and grasp the spirit that was produced in Rome. He went to Hadrian's Villa in June 1901.[87] McKim, along with his partners Mead, & White introduced the classical influence they collected in Rome to the United States. Moreover, they introduced a material that would impact the residential architecture style in the United States for a long time. They chose the narrow, long, light orange-brown Roman brick. The brick was an archaeologically conventional choice that had been used in the ancient Empire. In 1893, the influential world's Columbian Exposition in Chicago started a new era of revival interest in classical form.

The classical revival tendency continued to echo in the works by the mainstream master from that period. Frank Lloyd Wright would have a chance to study in Paris and Rome supported by Daniel H. Burnham, but he refused the offer.[88] Wright, continually reflecting the classical elements in the detail of his work, utilized the Roman brick to accentuate the horizontality in the Robie House and other typical Prairie Style houses. (Fig.3.34) In October of 1909, with construction underway on the Robie House, Wright left America to travel in Europe and spent several months in Italy.

Nevertheless, there is no record of what Wright saw in Italy. By overlapping the plan of Hadrian's Villa and Wright's planning project, it seems that there is no direct connection between those plans. Vincent Scully started to compare Wright's plan project, the Florida Southern College, with Hadrian's Villa's plan. (Fig.3.35) Scully discerned the Wright's plan would indicate having originated from its central circular pool, its building's shape from the printed plans of Hadrian's Villa.

Le Corbusier criticized the previous practice that reduplicates Roman geometry without any development. He dismissed all the works of Renaissance architects and architects from the French Academy except for Michelangelo. Le Corbusier defines his attitude in *Vers Une Architecture*, "*the lesson of Rome is for wise men, for those who know and can appreciate, who can resist and can verify… the Grand Prix de Rome and the Villa Medici are the cancer of French architecture.*"[89] Le Corbusier insisted that what those architects studied in Rome is mechanical imitate ancient form. He acclaims Michelangelo's approach to the interpretation of ancient monuments, "*the work of Michelangelo is a creation.*"[90]

In 1911, Le Corbusier visited Hadrian's Villa. He journeyed for five months to Balkan as well as Rome and Pompeii. During this journey, Le Corbusier made a detailed study in the Villa. He conveyed the concept of "Proportion" as which transfer the building beyond the physical forms to a state of innate sensation by his drawings. This practice exerts a substantial influence on the advancement of his architectural theory and design. By utilizing the study of the construction in ancient Rome, Le Corbusier defines the geometric forms to unify the force which would serve him to create pure space. Subsequently, he formulated criteria of order and architectural solutions under the modern urban context.

Besides, Le Corbusier comprises thirty-seven-page sketches of the Villa in his publication *Le Voyage d'Orient*. (Fig.3.36, 3.37) Le Corbusier absorbed the wise ideas that Roman architects created the spirit of spatial order. He also experienced a sense of space and saw a visual contrast between light and shadow. The talented architect applied innovative insight into the ancient space rather than imitating simple forms. He transformed the ancient knowledge learned in Hadrian's Villa into his design Chapelle Notre Dame de Haut in Ronchamp. (Fig.3.38, 3.39) Vincent Scully deemed the projects done by Le Corbusier to be the reincarnation of Hadrian's Villa.

Moreover, Le Corbusier manifested the affection for Hadrian's Villa in his book, *Vers Une Architecture*. At the Villa, he identified the importance and value of the Villa, commenting that, "*Hadrian's Villa… it is the first example of western planning on the grand scale…to walk in Hadrian's Villa… the modern power of organization has done nothing so far – what a torment this is to a man who feels that he is a party to this ingenuous failure!* "[91]

In the late 1940s, Frank E. Brown taught Roman architecture at the American Academy and at the department of classics at Yale. He appears as a great archaeologist, who led a whole generation of American architects like Johnson, Venturi, and Kahn to gravitate toward studying ruins in Rome. Vincent Scully comments that Frank E. Brown taught the Roman wisdom of architecture, not as an engineering's functional architecture, but poetry of space and nature. [92] Brown's fondness of Hadrian's Villa had

a positive impact on American literature as well. In 1962, Eleanor Clark published her fascinating book called *Rome and a villa*. She dedicated the chapter on Hadrian's Villa to Brown.

Louis Kahn went to the Villa when he was in Rome in 1951. After his excursion, he learned the poetry of space. (Fig.3.40) Kahn read the poetry through the sharp contrast between the beautiful dark void and pure brick ruins, between the fantastic opening on the wall and the nature scene, between the light and building mass. In 1960, Kahn considered Hadrian's Villa as a reference while he was designing the complex project for the Salk Institute. (Fig.3.41) Kahn also incorporated the Roman round-headed arch element he saw at Hadrian's Villa in the porticos of Kimbell Art Museum. (Fig.3.42) He followed Brown and Le Corbusier's steps. The road is entirely different from the majority of Renaissance architects and French architects in the taste of Beaux-Arts. He followed the poetic sense of space, evoking the grandeur and monumental characteristics of the ruins. Kahn's approach is a significant model for young Italian architects who were struggling to come to grips with the heritage of Roman classicism.

Nowadays, architects are acquainted with drawing influenced by Hadrian's Villa: the poetry of order, the organization of the complex, the relationship of nature and construction. Hadrian's Villa is the freezing place where architects would be able to break the chains to rebuild a dialogue with the past.

Conclusion

Since its rediscovery in the fourteenth century, thousands of architects swarmed into the Villa to gain the constructional wisdom of the past. In the Renaissance, scholars recognized the classical based on the interpretative view of Vitruvius to prove the authenticity of this ideal tool. With the excavation developing, some architects proposed a method to trace the architectural principles behind the ancient relics, by sketching and analyzing the plans and details of various parts of the Villa. The scholars, however, were met with the limitations imposed by underlying problems: the brittle nature of the building materials, deficient excavation techniques, and the destruction of human activities.

After the industrial revolution, modern architects managed to create more possibilities in studying the spaces and orders of the Villa, rather than being satisfied just by imitating the classical forms. These masters did not choose to deal with the fundamental question of what architectural form is but altered their focus into understanding the theoretical aspects of how these monuments create a sense of space according to classical aesthetics. Hadrian's villa plays a pivotal role in all procedures of which people realized the value of ruins, transforming the ancient geometry into their

design, then advocating to protect them, and witnessed the rebirth of the ancient ruins into the modern vocabulary used by genius architects.

Comparing all the architects' experience in the study of the ruins, we could find the common aspects in their study process, in whatever the era they stayed. It would be the first action for the architects to sketch and draw the Roman ruins based on the topography. Then, the architects would set up their code following the logic defined by them to interpret the antiquities. Lastly, they would seek their personal view to find a way of translating the proportion and geometry into their vocabulary and applying this knowledge into their architectural design.

Figure 3.1 Portrait of Pope Pius II.
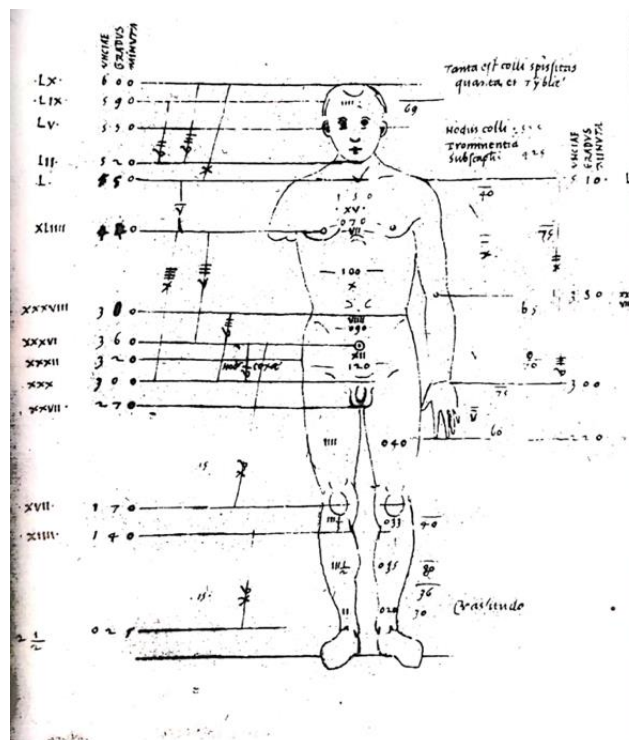
Figure 3.2 Study on Proportions by Leon Battista Alberti.
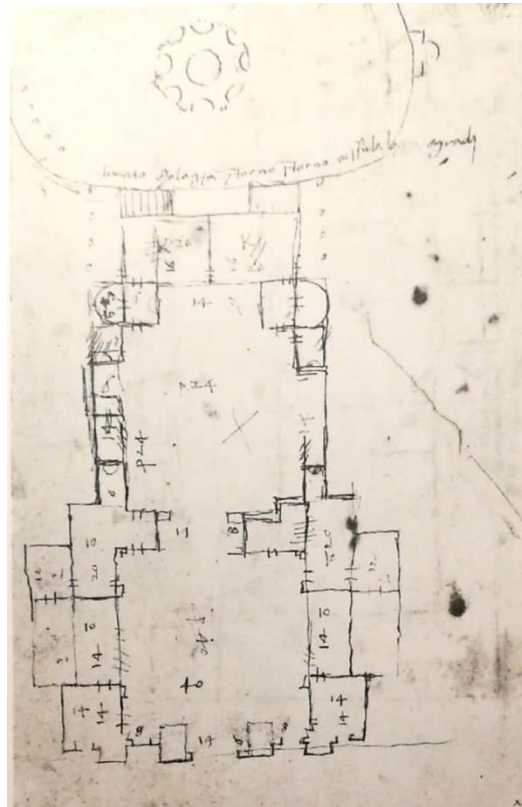
Figure 3.3 Plan of the Maritime Theatre and Greek Library. Sketch by Francesco di Giorgio Martini.
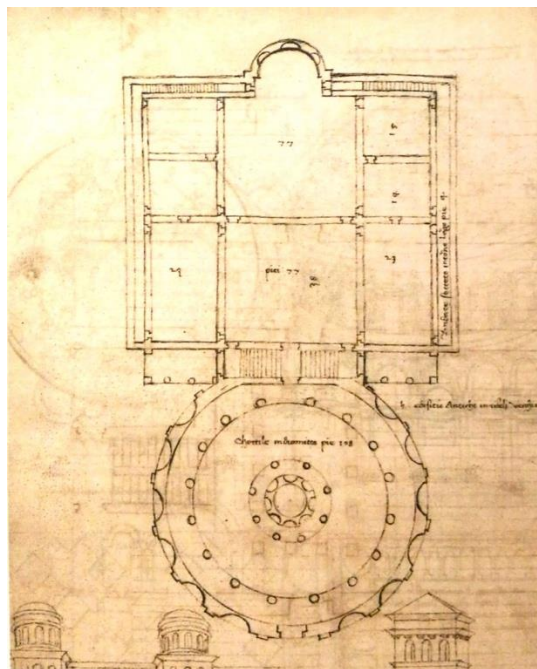
Figure 3.4 Plan of the Maritime Theatre and Greek Library. 'Clean copy' by Francesco di Giorgio Martini and his assistant.
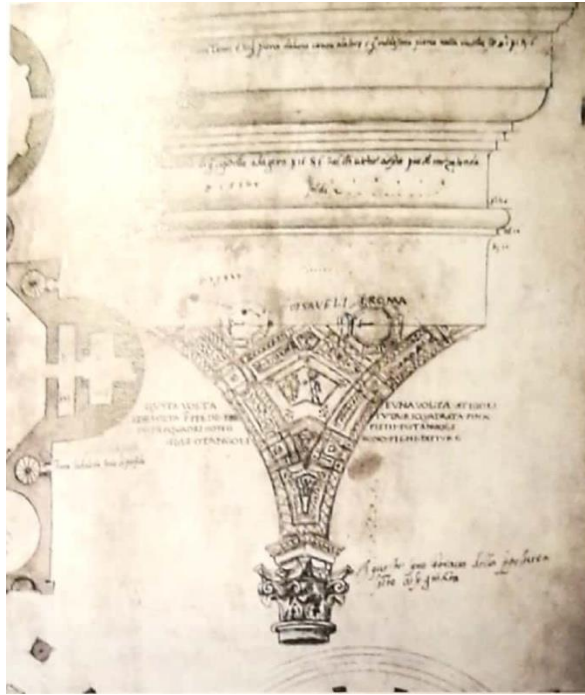
Figure 3.5 Drawing of the stucco ceiling of the Large Baths by Giuliano da Sangallo.
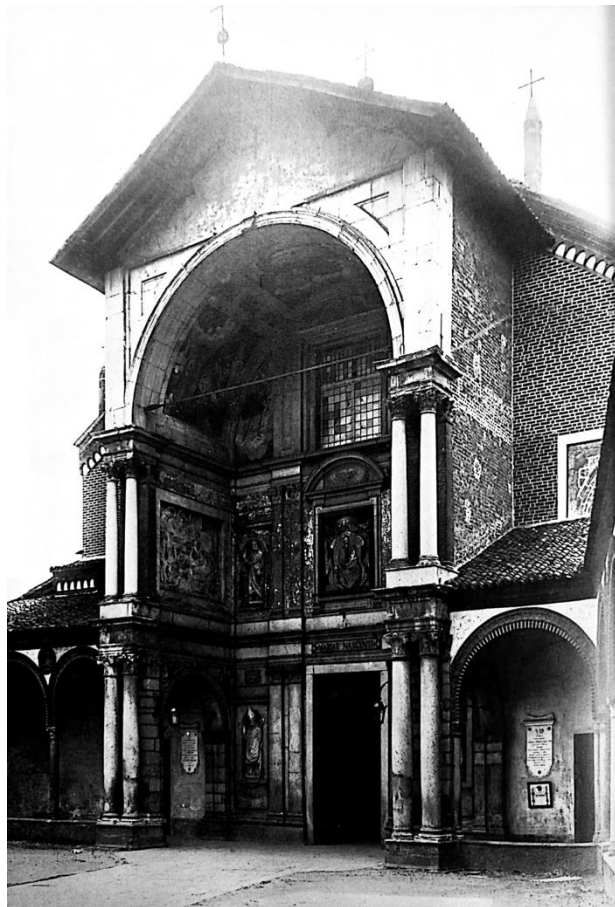
Figure 3.6 The facade of Santa Maria Nascente, Abbiategrasso.
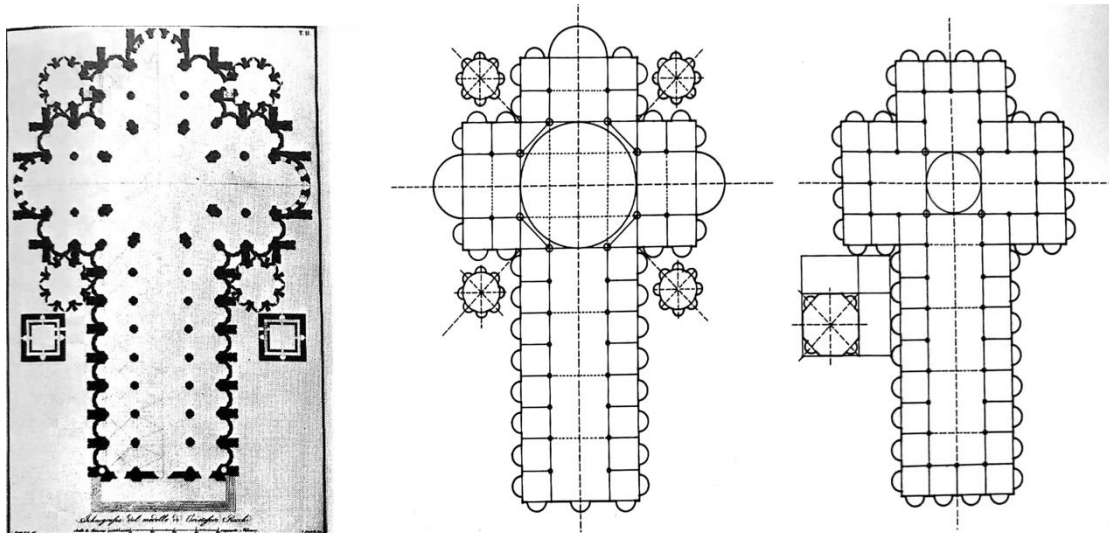
Figure 3.7 Pavia Cathedral: Plan based on the model (from Malaspina di Sannazaro), and geometrical analysis of that plan compared with Brunelleschi's S. Spirito in Florence by A. Bruschi. (1977)
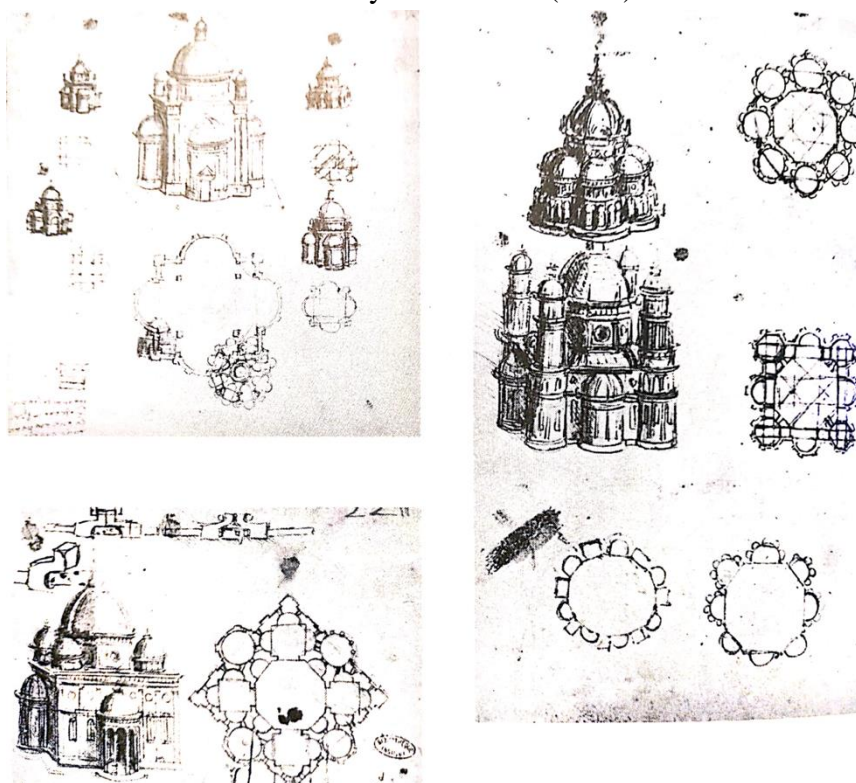
Figure 3.8 Leonardo da Vinci, Sketches on the theme of centrally planned churches.

Figure 3.9 Prospect of the Serapeum by Leonardo da Vinci. The Codex Arundel, The British Library, MS 263, f.224r.

Figure 3.10 Tempietto di San Pietro in Montorio.

Figure 3.11 Foundation stone of the Tempietto, Front. Tempietto, crypt. Rome,
Bibliotheca Hertziana, Max-Planck-Institut für Kunstgeschichte.

Figure 3.12 Foundation stone of the Tempietto, Back. Tempietto, crypt. Madrid,
CABBSA.
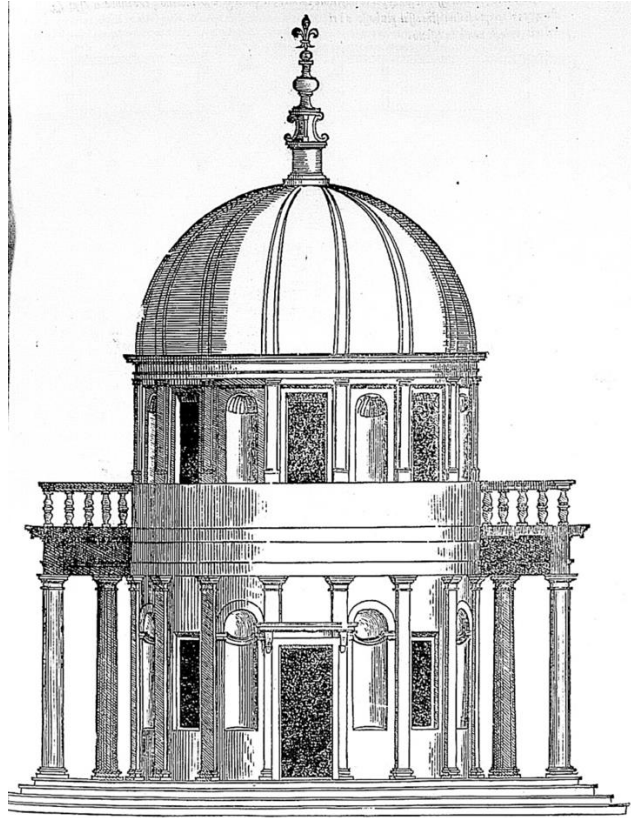
Figure 3.13 Elevation of Tempietto by Sebastiano Serlio. (1560)
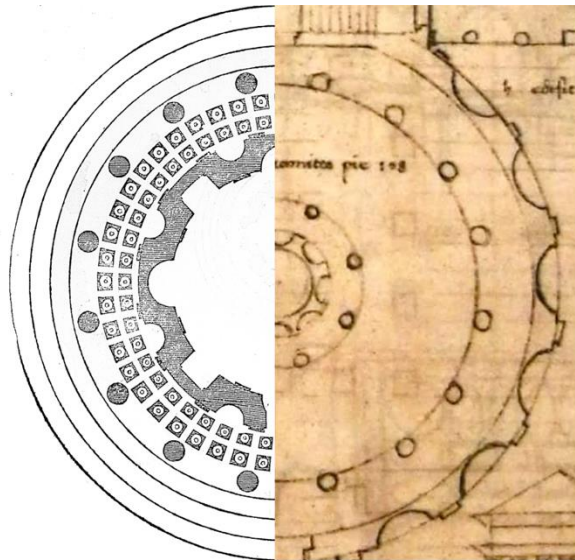
Figure 3.14 The plan of Tempietto compared with Francesco di Giorgio Martini's drawing of the Maritime Theater.
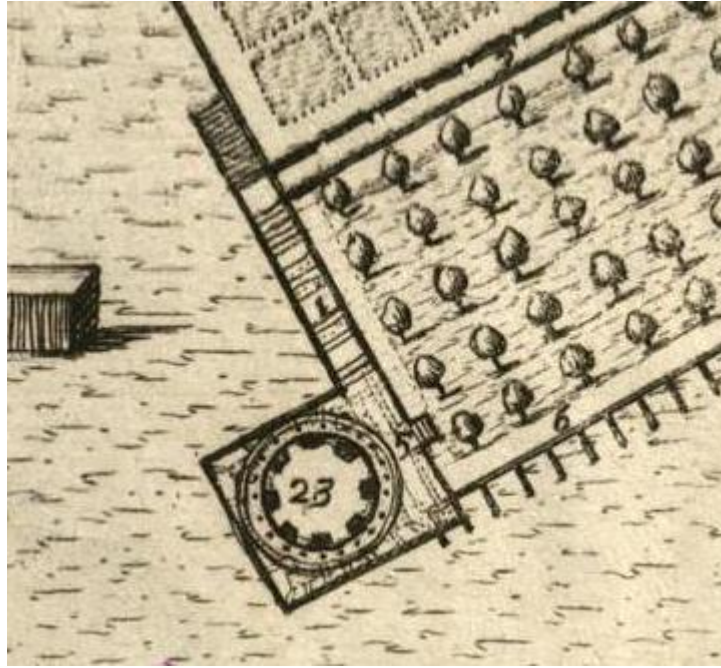
Figure 3.15 The plan of Roccobruna by Francesco Contini. (1688)
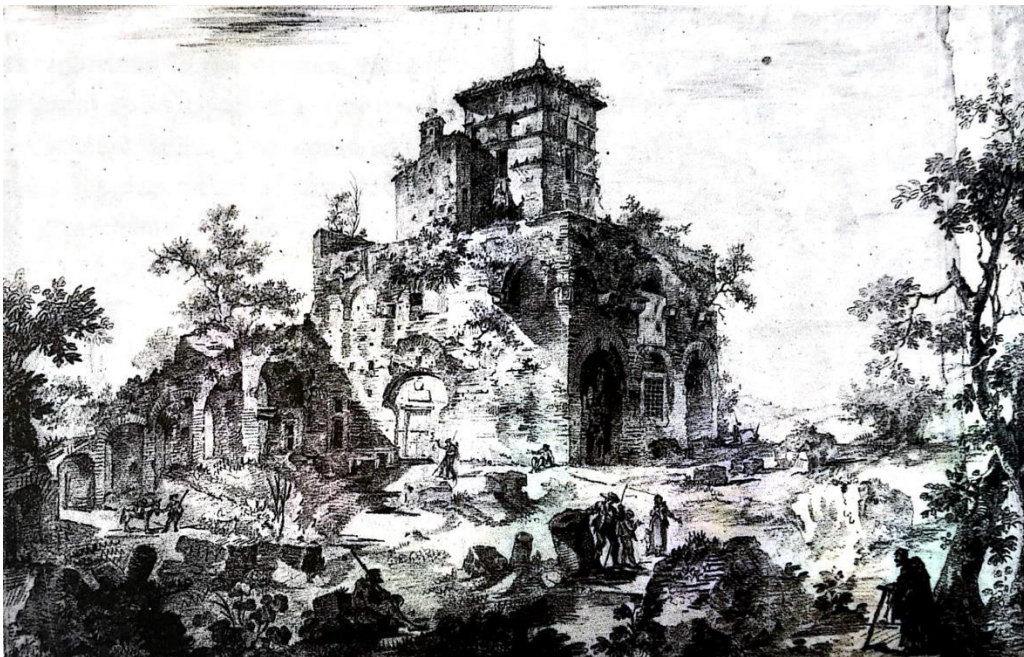
Figure 3.16 The view of Roccobruna by anonymous draftsman after Piranesi. London, The British Architectural Library. RIBA.

Pazzi Chapel

The Arch of Constantine

Basilica di Sant'Andrea (Mantova)

The Arch of Titus

The Temple of Venus(Tivoli)   The Tempietto

Figure 3.17 The analysis of triglyph-metope Frieze.
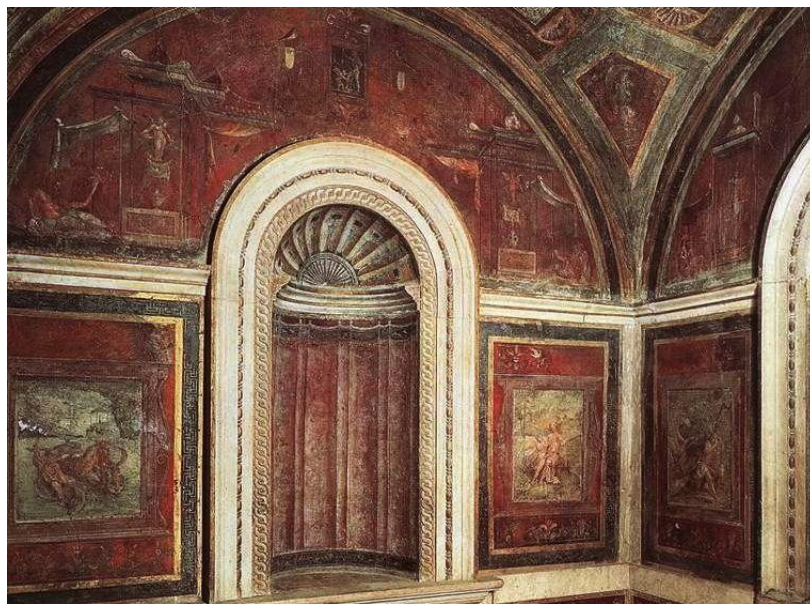
Figure 3.18 Pierluigi De Vecchi. The Private bath in the Vatican or Stufetta del
Cardinal Bibbiena, Raffaello Sanzio. (1975)
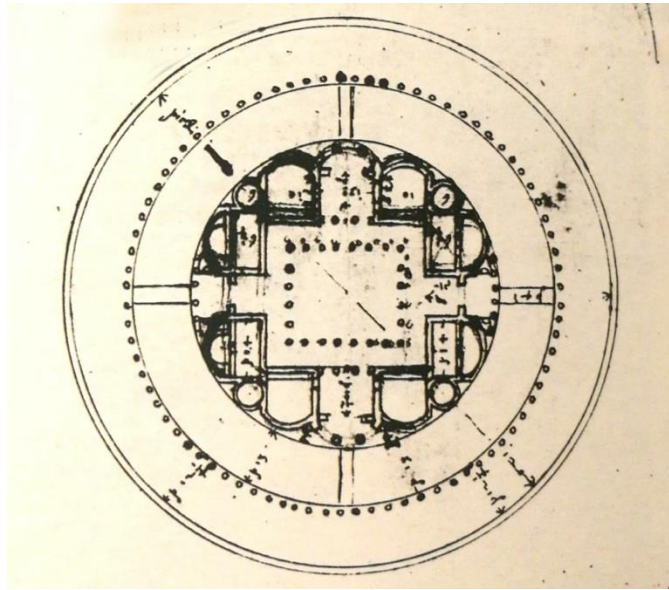
Figure 3.19 Plan of the Maritime Theatre by Andrea Palladio.
London, RIBA, vol. IX, f.12.
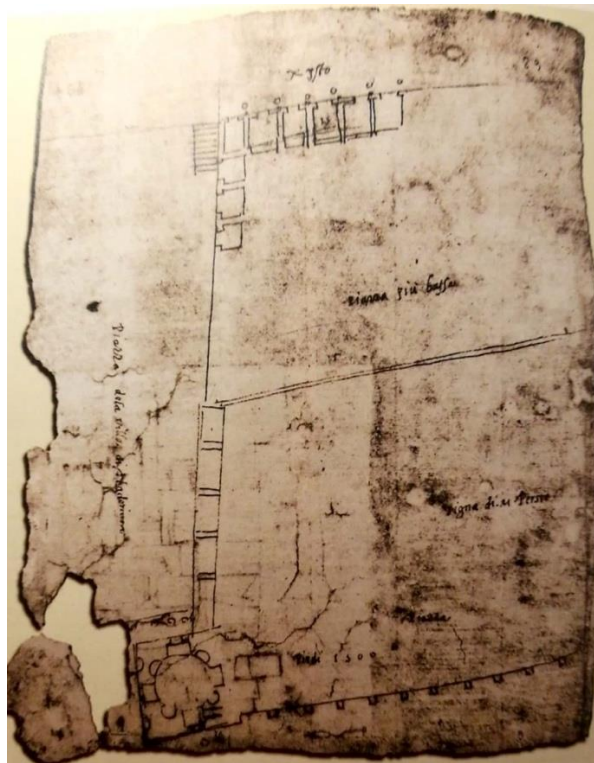
Figure 3.20 Plan of Roccobruna and surrounding areas by Pirro Ligorio.
Codice di Torino, vol. XX, f. 89.
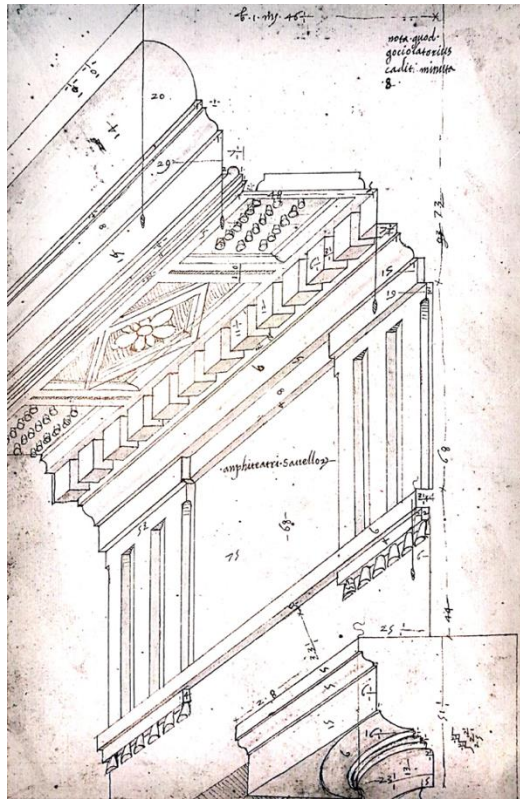
Figure 3.21 The trabeation drawing of the Theater of Marcellus, Codex Coner,
Bernardo della Volpaia. Codex Coner, London, Sir John Soane's Museum, fol.76.
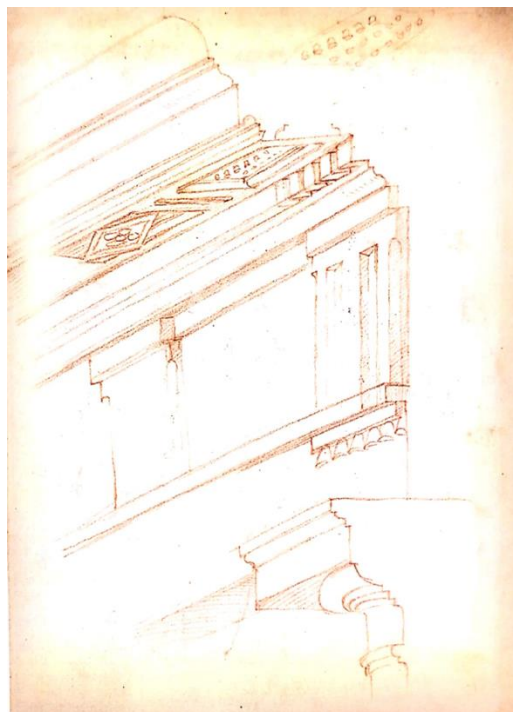
Figure 3.22 The copying draft after the Codex Coner by Michelangelo. London, The
British Museum, inv.1859-6-25-56or. (W18r, Corpus 516r)

Figure 3.23 Luigi Rossini, The view of Serapeum by Luigi Rossini. Instituto Centrale per il Catologo e la Docimentazione. (1826)
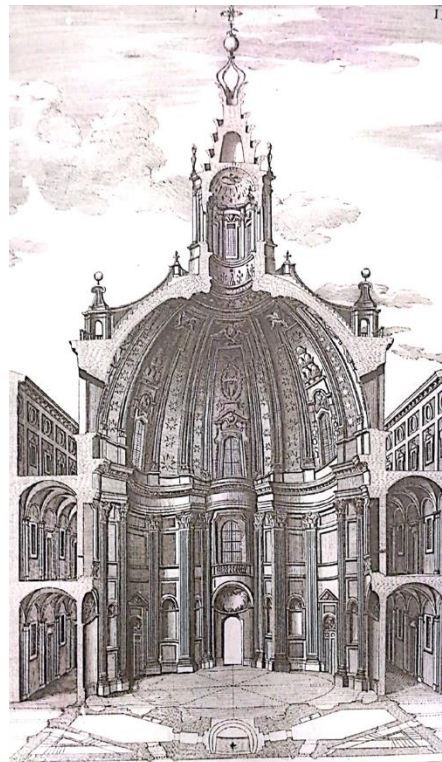
Figure 3.24 Sebastiano Giannini, The section of S. Ivo Sapienza by Sebastiano Giannini.(1720)
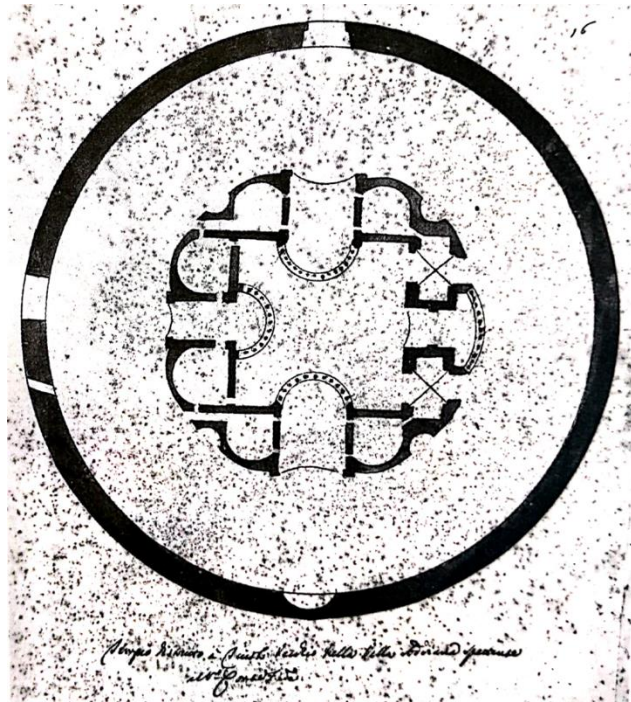
Figure 3.25 The plan of Maritime Theater by Ghezzi. (1724)
Biblioteca Apostolica Vaticana.

Figure 3.26 The view of Serapeum by Robert. (1760)

Figure 3.27 The view of Greek theatre by Fragonard.(1760)
Rome, Instituto Centrale per il Catologo e la Docimentazione.

Figure 3.28 The view of Philosopher's Hall and Library by Piranesi. Getty Center for
the Fine Arts and the Humanities Resource Collection.

Figure 3.29 The view of Temple of Apollo by Piranesi. Getty Center for the Fine Arts
and the Humanities Resource Collection.

Figure 3.30 Giovanni Battista Piranesi, The view of Serapeum by Piranesi. Rome,
Instituto Centrale per il Catologo e la Docimentazione.
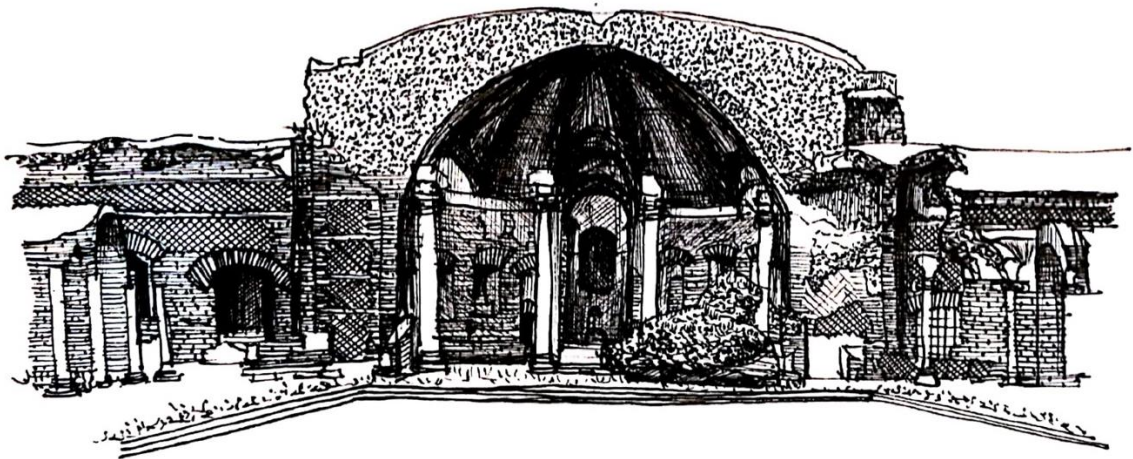
Figure 3.31 The view of Serapeum.

Figure 3.32 Giovanni Battista Piranesi, The view of Ambulatory Wall by Piranesi.
Getty Center for the Fine Arts and the Humanities Resource Collection.
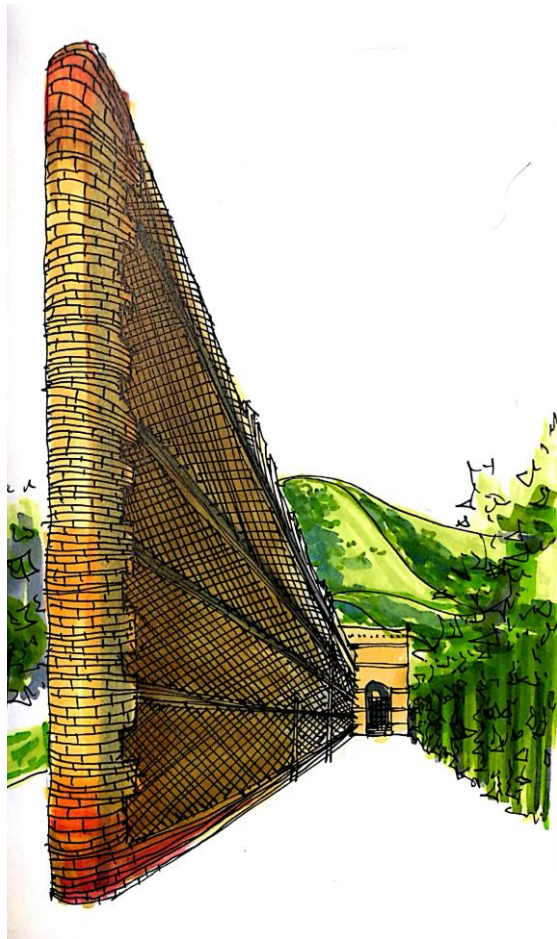
Figure 3.33 The view of Ambulatory Wall.

Figure 3.34 The view of Robie House.

Figure 3.35 The Plan of the Florida Southern College by Frank Lloyd Wright. The Frank Lloyd Wright Foundation Archives (The Museum of Modern Art | Avery Architectural & Fine Arts Library, Columbia University, New York).
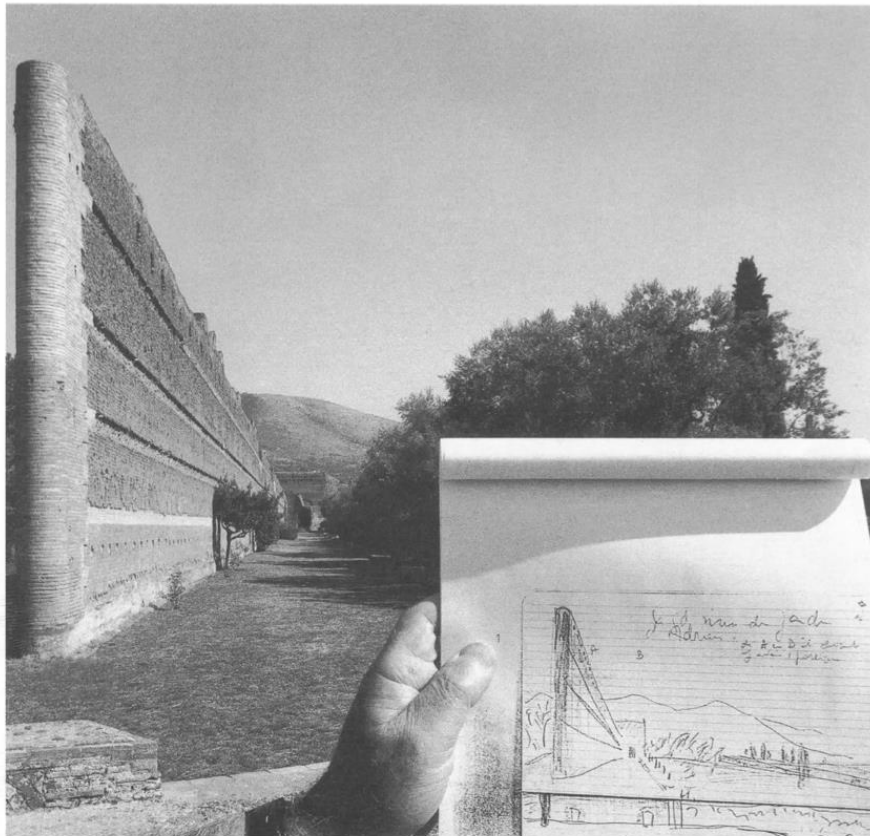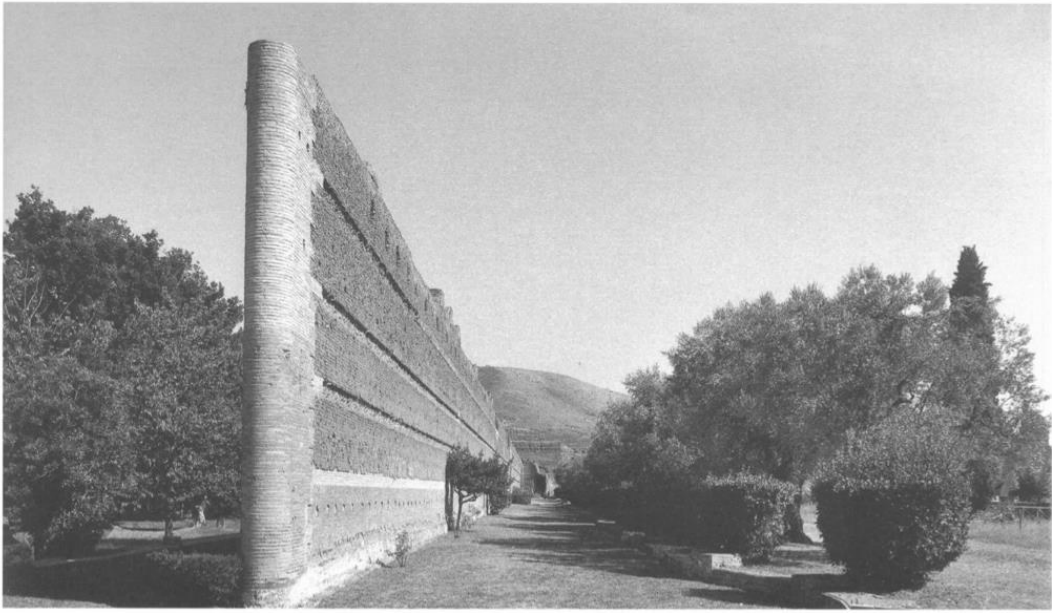
— 31 —

Figure 3.36 The sketch of ambulotory wall in Hadrian's villa by Le Corbusier. Tedeschi,
Eugenio Gentili, Denti, Giovanni. (1999)

Figure 3.37 Le Corbusier, The sketches of Hadrian's Villa by Le Corbusier
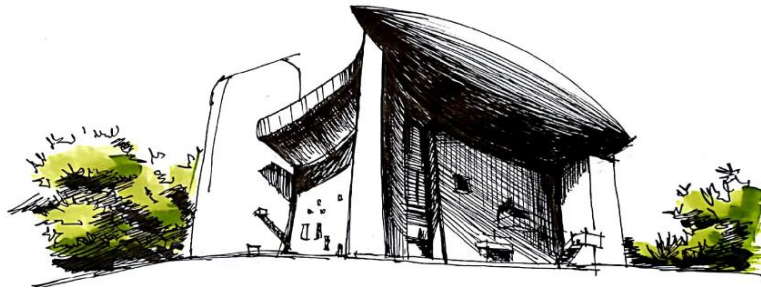
Figure 3.38 Chapelle Notre Dame de Haut in Ronchamp.
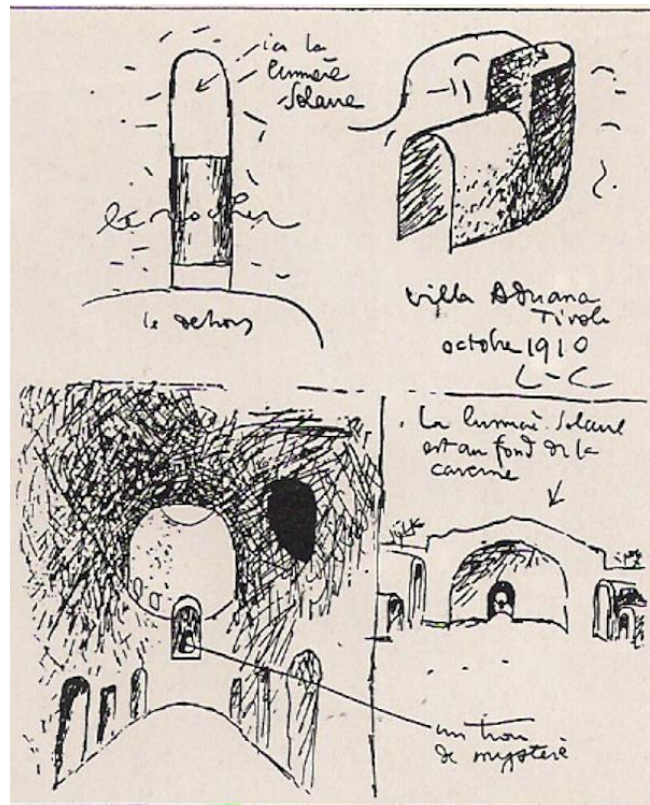
Figure 3.39 The draft of Ronchamp by Le Corbusier.
New York/Spadem,Paris, Artists Rights Society. (1995)

Figure 3.40 Large Baths, Hadrian's Villa, Tivoli by Louis I. Kahn, (1951)
Rome, Instituto Centrale per il Catologo e la Docimentazione.

Figure 3.41 The Salk Institute for Biological Studies.

Figure 3.42 Kimbell Art Museum.

Epilogue: The Lesson of Rome

Hadrian created a magnificent complex for himself to collect all his memories during the voyages through his empire. He contributed to creating a cultural exchange from the east to the west and from the west to the east. With the time passing by, the Villa's remains prove of the Golden Age and the glorious period of Mediterranean classicism. Hadrian's Villa, as evidence, authenticates the application of the excellent innovation that was the building material known as "Roman Concrete. " This material is commonly applicable in the construction of Hadrianic pumpkin dome.

The architects confirmed the necessity of studying the ruins for architectural design. The architects in the Renaissance started from measuring the roman monuments. The topography provided an accurate recognition of the monuments' dimension and helped to gain a general impression, which is still the primary method for modern people to understand antiquities. With the improvements in excavation techniques, the scholars created the general maps of the Villa rather than focusing on the fragments of the individual buildings. The information made by architects enthusiastically imitate the plans and details of the ruins in their design. Additionally, the architects started to apply the principles and classical forms studied in the site into their projects. Especially after the eighteenth century, where they appear to pursue an architectural form with rhetorical vocabulary. This trend of following the classical principles continuously impacts the architects until the nineteenth century.

In the middle of the nineteenth century, the Crystal Palace arouse a new architectural tendency for the revolution of material and constructional techniques. The architects started to concentrate on the role of Nature in the complex. They gradually obtain a general idea of the Villa instead of a single building. The architects considered that the landscape in the Villa was forming an indispensable component for the intentions of Hadrian. The scholars also proposed a new perspective to interpreting the ruins based on the spatial three dimensions. Masters like Le Corbusier criticized the Neoclassicism movement for their misunderstanding of the lesson taught by Rome. The lesson of ruins demonstrates the building proportion, the spatial geometry, and the importance of Nature, instead of the redundancy of the decoration of façades. They remarked that the right action would be that architects should study the sense of space as well. Commonly, architects who studied the Villa would transform the mass of the ruins to design a similar space in their projects, evoking monumental characteristics in this way. The architects from the new generation carried on the inspiration from the great master and brought further advancement through original ideas while recalling the ancient monuments. Likewise, the entrance of the Conference Pavilion by Tadao Ando recalls a memory of the sketch about an ambulatory wall in Pecile made by Le Corbusier and Piranesi at Hadrian's Villa. More and more architects studied the Villa to find their

interpretation of the ruins while using their vocabulary to embed it into their design. Hadrian's Villa is not a freezing relic but a profound encyclopedia, including great wisdom left to us by Antiquity.

Indeed, the studies of Hadrian's Villa represent the development of science and the improvement of technology. Additionally, the creation of the architects after studying in the Villa serves as concrete evidence to prove the changes in their taste in the context of western architecture.

From the aspect of geometry and proportion, there are two different ways that architects would be able to follow.

The first followed by architects, like Alberti, Bramante, and Palladio, concentrated on the 'Concrete,' adapting the geometry and proportion of plan and detail into their design. Alberti advocated the geometry, mostly expressed on his plan and structural components for decoration. He utilized the arithmetic proportions to design the building's façade with a Roman Arch as a motif. Bramante would be the first architect to transform a concept of the Teatro Marittimo and Doric order into his project. He and Peruzzi followed the geometry of the plan and the proportion of structure order. Raffaello followed the same road as Bramante. Palladio chose to follow the way of Bramante and Raffaello to enhance the composition of the building plans and define a motif for the façade design. Neoclassical architects discarded the incredibly complicated decoration by Rococo style to revive the geometric lines, and order by Greek and Roman- influenced styles.

The other way was that of like Michelangelo, Borromini, Le Corbusier, and other modern masters, who devoted themselves to creating the 'Abstract' of spatial sense and relationship between the light and building mass linked to the monumental sense that indicated the geometry of space. Nevertheless, the talented architect, Michelangelo, appeared to break the chain to create a vertical and harmonic sense in the building space instead of employing geometric plan and detail. Borromini respects Michelangelo as his teacher for using the spatial geometry in his design, in order to create a richness of light illumination. Le Corbusier comprised the Michelangelo's approach to create the geometric building shape. Even though he did not use the classical motifs, Le Corbusier has developed a monumental sense of 'Purism' which ordinarily responds in the Roman ruins. Le Corbusier's architectural theory constantly influenced the architect's approach today.

The lesson of Hadrian's Villa will never cease.

Appendix

- **Appendix I：**

  The Scriptores Historiae Augustae with an English translation.

- **Appendix II**:

  Memoirs of a Renaissance Pope; the commentaries of Pius II

- **Appendix III**:

  Pietro Bembo, Lettera al Cardinale Bibbiena sulla gita a Tivoli con Raffaello, 3 Aprile 1516

- **Appendix IV**:

  Francesco Borromini: Opus architectonicum.

Appendix I

HADRIAN

9 inus reservavit. et moriens quidem hos versus
fecisse dicitur :

Animula vagula blandula
hospes comesque corporis,
quae nunc abibis in loca
pallidula rigida nudula ?
nec ut soles dabis iocos !

10 tales autem nec multos [1] meliores fecit et Graecos.
11 Vixit annis LXII,[2] mensibus V, diebus XVII. imperavit annis XX,[3] mensibus XI.

XXVI. Statura fuit procerus, forma comptus, flexo ad pectinem capillo, promissa barba, ut vulnera, quae in facie naturalia erant, tegeret, habitudine robusta.
2 equitavit ambulavitque plurimum armisque et pilo se
3 semper exercuit. venatus frequentissime leonem manu sua occidit. venando autem iugulum et costam fregit. venationem semper cum amicis participavit.
4 in convivio tragoedias comoedias Atellanas sambucas
5 lectores poetas pro re semper exhibuit. Tiburtinam Villam mire exaedificavit, ita ut in ea et provinciarum et locorum celeberrima nomina inscriberet, velut Lyceum, Academian, Prytaneum, Canopum, Poicilen, Tempe vocaret. et, ut nihil praetermitteret, etiam inferos finxit.
6 Signa mortis haec habuit : natali suo ultimo, cum

[1] *multos* P ; *multo* Peter.   [2] LXII Salm. ; LXXII P.
[3] XX Cas. ; XXI P.

---

[1] Translated by A. O'Brien-Moore.
[2] The name was derived from Atella, a Campanian town, where, it was supposed, farces of this type originated.
[3] This palace was built by Hadrian during the last years of his reign; it was a characteristic expression of both his

78

Magie, David. *The Scriptores Historiae Augustae with an English translation*, Volume I. (1921-1932) pp. 78-79.

Appendix II

than the Tomb of Hadrian in Rome, since the city of Tivoli is rated as a second fortification of Rome.

Tivoli, so famous in antiquity, lies in a fold of a lofty mountain not far from its foot, about 1,000 feet above the plain. The part of the city where the fortress is situated is separated from the rest of the mountain, which towers above it by a broad, deep moat. From the gate leading to the olive groves and Palestrina to a second near the Aniene, which leads to the meadows, and from the gate first mentioned to a third which commands the direct road to Ponte Lucano and looks toward Rome, the city is defended by precipitous cliffs and by the wall hastily built by King Alfonso while he was living there. The other parts of the city are completely protected by the Aniene, which falls to such a depth that the eye can scarcely follow it. This river rises in the mountains not far from the monastery of Subiaco and winds gently through a shady valley as far as the monastery itself. There it encounters the cliff, where it plunges with a crash into the abyss, and it does not become calm again till it leaves the rocks and barriers of massive stone and descends to level ground. They say that under the cave where Benedict lived was once a wall which dammed the river and made a lake in the valley above, whence the monastery was called Sublacense [12] but later, when this wall collapsed, the lake disappeared.

The river then flows through a lovely valley delightful in summer, between meadows, fields, and many castles as far as the monastery of San Clemente, where it is again narrowed by mountain barriers and with roaring and clamor foams its course to Vicovaro. Though from there on it is quieter, its waters are never really calm till it reaches the meadows of Tivoli, where it glides somewhat more gently. But when it reaches the walls of Tivoli, after flowing some 200 feet with the city on its left, unable any longer to find a pathway among the jutting crags it hurls itself headlong into the deep valley below with increased noise and uproar—*and that not with a single leap, but rent and torn by numerous cataracts before it reaches the bottom and rushes on its foaming and complaining course with a din* that drowns the human voice. Its complaining does not cease till near Ponte Lucano, where it becomes smooth and would be navigable if the trees which block it were removed. It empties into the Tiber near the Ponte Molle. We call it today the Teverone. Beyond Tivoli it is crossed by four bridges: the first under Tivoli itself is called Ponticolo; the second is Ponte Lucano, where a marble pile, once erected as the tomb of the

[12] I.e., Subiaco.

noble family of the Plautii, now serves as a fort; the third is the Ponte Mammolo, said to have been built by Mammaea, mother of the Emperor Alexander; the fourth is the Ponte Salaro, built by the eunuch Narses. Its waters throughout its course are clear and very cold and there are many trout in it.

The part of Tivoli which lies across the Aniene is small and sparsely inhabited because of civil dissensions. It is connected with the main city by a wooden bridge. Above the river the houses of the city and the lofty cliffs serve as walls. In the city itself there is nothing especially remarkable except an old building with high and broad arches called today the Porta Obscura. It was formerly the entrance to the city where merchandise was deposited and duty paid. What were once spacious and handsome lodgings for merchants or publicans or distinguished men are now all open stabling for cattle and on the high vaulted roofs vegetable gardens are cultivated. Remains of a temple of Vesta or some other god with lofty columns are to be seen on the cliffs above the Aniene and not far from the citadel were traces of a splendid amphitheatre, but the citadel has destroyed them all. Part of the Aniene has been diverted to the city, where it serves mills, workshops, and fountains and adds greatly to the beauty of the place.

About three miles from Tivoli the Emperor Hadrian built a magnificent villa like a big town. Lofty vaults of great temples still stand and the half-ruined structures of halls and chambers are to be seen. There are also remains of peristyles and huge columned porticoes and swimming pools and baths, into which part of the Aniene was once turned to cool the summer heat. Time has marred everything. The walls once covered with embroidered tapestries and hangings threaded with gold are now clothed with ivy. Briers and brambles have sprung up where purple-robed tribunes sat and queens' chambers are the lairs of serpents. So fleeting are mortal things! Between this villa and Tivoli are most beautiful vineyards and olive groves and among the vineyards you may find all sorts of trees, including a great number of pomegranates, which bear enormous fruit of delicious flavor.

All about Tivoli in summer are the most delightful green fields where the Pope used often to go with the cardinals for refreshment of mind, sometimes sitting in a grassy nook under the olives, sometimes in a green meadow on the edge of the Aniene where they could look down into the translucent water. Two miles from the city in a secluded valley are meadows watered by many springs through which a powerful stream of water drawn off from the Aniene used to be carried on lofty

Pope Pius II (1405-1464). *Memoirs of a Renaissance Pope; the commentaries of Pius II,* translated by Florence Alden Gragg (1959): p.192-193

Appendix III

in quarto
note: privilegio di papa Leone x
ad Aldo Manuzio, datato Roma, 28
novembre 1513, con sottoscrizione
di Pietro Bembo; prefazione
dedicatoria di «Iucundus Veronensis»
a papa Leone x
Vicenza, Biblioteca Internazionale
La Vigna, GEN C XVI 22

Stampato a Venezia dapprima nell'*editio princeps* curata da Giorgio Merula presso Niccolò Jenson nel 1472, più tardi nell'edizione dell'architetto Fra' Giovanni Giocondo da Verona presso Aldo Manuzio nel 1514, il *corpus* degli *Scriptores rei rusticae* costituisce una preziosa silloge delle quattro principali trattazioni antiche in lingua latina inerenti all'ambito agronomico: il *De agri cultura* di Marco Porcio Catone, il *De re rustica* di Marco Terenzio Varrone, il *De re rustica* di Lucio Giunio Moderato Columella e l'*Opus agriculturae* di Rutilio Tauro Emiliano Palladio. Composte lungo un arco temporale che si estende dal II secolo a.C. al IV-V secolo d.C., i precetti relativi ai lavori dei campi e all'allevamento di vari tipi di bestiame, tali opere offrono una gran messe di dati utili a studiare non soltanto il progressivo consolidarsi di un patrimonio sapienziale relativo a diversi generi di colture bensì le modalità e i regimi di sfruttamento della proprietà rustica della quale concorrono a fornire anche i caratteri tipologici che ne contraddistinguono l'assetto sul piano strutturale, nel contesto di sezioni più propriamente dedicate alla descrizione della *villa*. Fulcro residenziale di un'unità produttiva diversificata anche sul piano sociale, quest'ultima risponde sul piano architettonico a esigenze distinte, opportunamente focalizzate da ciascuno degli *scriptores*.
Ne reca traccia innanzitutto l'esposizione del cui manuale, articolato in 162 capitoli, si sottolinea, sia pur sinteticamente, l'opportunità che la *villa rustica*, soggetta all'ispezione oculare del *pater familias* (*Agr.* 2, 1), sia *bene aedificata*, dotata di una cantina olearia e una vinaria (*Agr.* 3, 2), nonché fornita di buone stalle e comprensiva di un'ala specificamente adibita alla residenza padronale, adeguata alle risorse patrimoniali del proprietario (*Agr.* 4, 1), e ancora sita in un buon podere e in una buona posizione, capaci di invogliarlo con il suo decoro a risiedervi spesso, a tutto vantaggio della possibilità di incrementare la rendita del fondo. Ricca di precetti prettamente agronomici, funzionali a illustrare l'impianto e la conduzione di diverse colture, fra le quali spiccano olivo e vite, oltre che di suggerimenti relativi alla lavorazione e trasformazione dei prodotti agricoli, la trattazione catoniana illumina non di rado la dimensione socio-economica della villa, indugiando sulle diverse mansioni assolte dai lavoratori attivi entro di essa, e sull'apporto essenziale del coordinamento svolto dal fattore (*vilicus*) (*Agr.* 5). Ciononondimeno, non manca di dettagli più tecnicamente interessanti sul piano architettonico, come dimostra ad esempio la rubrica prevista per il caso in cui occorra edificare una villa nuova affidandone i lavori in appalto (*Agr.* 14): specificamente destinata al costruttore, essa coniuga ammaestramenti sui diversi materiali edilizi utili e sul loro acquisto con precisazioni inerenti ai vari moduli della struttura, allargando lo sguardo dagli interni all'esterno, fino a lasciar spazio ai precetti relativi alle modalità di costruzione di recinzioni o macchine quali macine e torchi (*Agr.* 15; 18-20).
Debitrice del modello catoniano, la trattazione dedicata da Varrone alla villa nel primo dei tre libri che costituiscono il *De re rustica*, oltre a tradire la crescente attenzione delle fonti agronomiche per l'illustrazione di requisiti e caratteri peculiari della residenza rustica, documenta la progressiva percezione del ruolo determinante della cornice ambientale: in tal senso i precetti del Reatino non insistono soltanto sull'opportunità di preservare le dovute proporzioni fra la villa e il fondo, o sull'utilità di tener conto della vicinanza dell'acqua nonché di luoghi utili al pascolo, bensì ribadiscono ulteriormente la necessità di un'ubicazione confortevole dal punto di vista microclimatico e più in generale igienico (*Rust.* I, 11-12). Puntuale nelle prescrizioni relative alle sezioni da destinare alle stalle e alla conservazione di prodotti alimentari, nonché nel motivare in ragione dell'*usus* quotidiano la sistemazione dei locali adibiti alla residenza del *vilicus*, alla cucina, al deposito degli attrezzi rurali, ai cortili esterni, ai letamai, e non più sulle recinzioni e sulla sistemazione delle adiacenze (*Rust.* I, 13-16), l'esposizione varroniana fotografa d'altro canto l'evoluzione registratasi nella più recente interpretazione della *villa*, non più concepita come nella fase più antica per rispondere unicamente al criterio del rendimento agronomico bensì a quello del lusso, destinato a prevalere anche nei parametri seguiti per la *villa urbana* (*Rust.* I, 13), poi stigmatizzato nell'ultimo libro dell'opera (*Rust.* III, 2).
Del resto, indizi di un'attualizzazione dei precetti affiorano più tardi, nel I secolo d.C., anche nel trattato di Columella. In esso, accanto ai consueti e quasi topici consigli di ordine igienico-sanitario relativi alla scelta del sito, alla puntuale descrizione delle tre *partes* della villa rurale (*urbana, rustica, fructuaria*), rispettivamente usate per la dimora padronale, per quella dei lavoratori attivi nel podere e per la lavorazione e conservazione dei prodotti dei campi, nonché degli annessi, o ancora alle notazioni prettamente tecniche circa le modalità di costruzione delle fondamenta sui declivi (*Rust.* I, 5-6), si rileva anche l'invito a costruire una villa adeguata al patrimonio del proprietario e confortevole, sì da indurlo a risiedervi volentieri e soprattutto da riuscire gradita alla consorte, superando la naturale ritrosia femminile ad abbandonare gli agi cittadini (*Rust.* I, 4). Destinate a trovare spazio nel Tardo-antico nell'opera di Palladio, organizzata a guisa di efemeride utile a scandire mensilmente il calendario dei lavori campestri, ove si registrano ancora precise prescrizioni sulla costruzione dell'edificio rustico (*Op. agr.* I, 8-9) nonché sui *balnea* (*Op. agr.* I, 39), le osservazioni degli *Scriptores rei rusticae* sulla villa rappresentano, in conclusione, una tappa tutt'altro che secondaria della progressiva attestazione in sede manualistica di un modello strutturale per altro verso ben documentato per l'età antica anche dai riscontri archeologici.

Bibliografia: Carandini 1988, pp. 19-108; Carandini 1989, pp. 101-200; Vera 1995, pp. 189-211, 331-356; Marcone 1997, pp. 132 ss.

IDA MASTROROSA

13.
Pietro Bembo (1470-1547)
Lettera al cardinale Bibbiena sulla gita a Tivoli con Raffaello, 3 aprile 1516
in *Delle lettere di M. Pietro Bembo*, stampate in Roma, per Valerio Dorico et Luigi fratelli ad instantia di m. Carlo Gualteruzzi, nel mese di settembre 1548, I: *Lettere di messer Pietro Bembo a sommi pontefici et a cardinali et ad altri signori et persone ecclesiastiche scritte, divise in dodici libri*, pp. 83-84
in quarto
in mostra è esposta l'edizione di Venezia: [Gualtiero Scoto], 1575, in ottavo
Vicenza, Biblioteca Civica Bertoliana

Il 3 aprile 1516 Pietro Bembo, allora segretario pontificio, scrive da Roma al cardinale Bernardo Dovizi detto il Bibbiena, in quei giorni a Fiesole, annunciandogli che «Io col Navagiero et col Bazzano e con M. Baldassar Castiglio-

Cafà, Valeria. *Pietro Bembo, Lettera al Cardinale Bibbiena sulla gita a Tivoli con Raffaello, 3 Aprile 1516*, published in Andrea Palladio e la villa veneta da Petrarca a Carlo Scarpa, eds. Guido Beltramini-Howard Burns, exh. cat., Venezia. (2005): p.196

19'

ne et con Raphaello domani anderò a riveder Tivoli: che io vidi già un'altra volta XXVII. anni sono. Vederemo il vecchio et il nuovo, et cio che di bello sia in quella contrada. Vovvi per dar piacere a M. Andrea, il quale fatto il dì di Pasquino si partirà per Vinegia». Mentre Bembo era stabile a Roma già dal 1512, il Bibbiena, investito di delicati incarichi diplomatici dal pontefice, si trovava a Fiesole di passaggio, dopo essere stato fino al fianco di Giuliano de' Medici, terzogenito di Lorenzo il Magnifico e duca di Nemours, morto il 17 marzo di quell'anno. Bembo invia poche righe, scritte con un lessico spontaneo e confidenziale a testimonianza di uno stretto legame tra i due oltre che di una loro frequente corrispondenza, per mettere a conoscenza l'amico Dovizi di una gita a Tivoli in programma per l'indomani e definita almeno nelle sue tappe principali (in mostra l'edizione del 1575 delle *Lettere*). È un'uscita di piacere con amici di vecchia data spinti dal desiderio di vedere o rivedere «il vecchio et il nuovo, et cio che di bello sia» a Tivoli, di certo villa Adriana e il tempio di Ercole, identificato ancora in quegli anni come la villa di Augusto. Come ricorda lo stesso Bembo, già in passato – intorno al 1489 o piuttosto tra la fine di novembre del 1487 e l'ottobre 1488 (Shearman 2003, I, p. 239) quand'era diciottenne – si era recato a visitare il complesso di villa Adriana, in occasione della missione diplomatica del padre Bernardo a Roma per conto della Repubblica di Venezia (21 novembre 1487-22 ottobre 1488). A tal proposito, si ha notizia di un'escursione nei dintorni di Roma alla fine del 1487 (Giannetto 1985, pp. 191-192), che vide assieme i due ambasciatori veneziani Sebastiano Badoer e Bernardo Bembo, accompagnati da Pietro appunto, e dal suo precettore, Giovanni Alessandro Urticio. Ancora sulla cronologia della prima visita di Pietro alle rovine antiche romane, che nonostante tutto rimane di datazione incerta, segnaliamo

che un appunto di Bernardo nel suo esemplare del *De re aedificatoria* di Leon Battista Alberti, documenta un'escursione romana, nei pressi del lago di Nemi, nel 1489. Tuttavia anche in questo caso si è pensato a un errore di datazione, compiuto questa volta da Bernardo (Giannetto 1985, p. 192).
Nel 1516 Pietro ad ogni modo si apprestava a tornare a Tivoli al fianco di una compagnia d'eccezione che contava Andrea Navagero, umanista e uomo di lettere al quale forse aveva consegnato in prima lettura le sue *Prose della volgar lingua* (Shearman 2003, I, p. 239); Agostino Beazzano, un giovane trevigiano da lui stesso avviato alla carriera diplomatica, e infine Castiglione e Raffaello, a poco più di un mese dalla prima stesura della lettera a Leone X sulle antichità di Roma (Shearman 2003, I, p. 247). Sebbene resti da chiedersi se l'escursione abbia avuto effettivamente luogo in quel fine settimana di aprile (il 3 risulta essere un giovedì), viste alcune incongruenze nelle lettere successive inviate da Pietro Bembo (Burns 1984; Shearman 2003, I, p. 239), la missiva è una testimonianza preziosa dello spirito che alimentava umanisti e artisti del tempo, che si avventuravano tra le architetture in rovina della villa adrianea spingendosi fino a una indagine diretta delle vestigia del passato. La viva ed entusiastica voce del Bembo rappresenta infine un documento biografico importante per la vita di Raffaello, di cui non si conservano disegni con studi di ville antiche, ma che – si può ipotizzare – deve aver approfittato di occasioni del genere per osservare da vicino simili edifici e per sperimentare in prima persona la validità delle sue teorie sulla restituzione dell'architettura antica.

Bibliografia: Golzio 1936; H. Burns, in Frommel, Ray, Tafuri 1984, p. 419, scheda 3.2.7; Giannetto 1985; Shearman 2003, con bibliografia.

VALERIA CAFÀ

14.
Pirro Ligorio (1513/1514-1583)
*Ricostruzione dell'aviario
della villa di Varrone a Cassino*
1569-1575
penna e inchiostro marrone
su carta azzurra; 411 × 278 mm
iscrizioni: «ORNEITHON OVERO
ORNESTHOTROPHION»;
«ISOLA»; «STAGNO»; «FALARE»;
«AREA»; «PESCINA»; «PESCINA»;
«CASINO FIUME»; «VINIO
FIUME»
Torino, Archivio di Stato, Biblioteca Antica, Pirro Ligorio, vol. XII, j.a.III.14, fol. 227 *recto*

La monumentale opera manoscritta torinese di Pirro Ligorio, costituita da trenta volumi mirabilmente illustrati che trattano delle antichità secondo un'organizzazione enciclopedica del sapere, sono una testimonianza di enorme valore sulla conoscenza e lo studio dell'antico in pieno Cinquecento. L'impresa torinese è databile al periodo in cui l'antiquario e architetto napoletano si trovava presso la corte ferrarese di Alfonso II – dal 1569 fino alla morte, nel 1583 – e risponde a un ambizioso programma di ricostruzione delle antichità sulla base di fonti diverse, letterarie, epigrafiche, archeologiche e non da ultimo frutto della esperienza diretta dell'autore. Tra le erudite voci ligoriane, rigorosamente in ordine alfabetico, alla lettera «O» compare quella relativa all'aviario, declinato alla greca come «Ornithon», il luogo in sostanza «dove si tenivano varie sorte di Augelli, e per piacere e per utile, in casa e in Villa [...] bella invenzione, et utilissima in tutti i modi, per giovamento del corpo e dell'animo». Il modello «piu' famoso et bene disposto», descritto da Ligorio con due efficaci grandi illustrazioni che restituiscono l'aviario in pianta (fol. 229 *recto*) e in leggera prospettiva (fol. 227 *recto*), è quello di Marco Varrone (116-27 a.C.). L'aviario varroniano costituiva una delle attrazioni della ce-

lebre villa del poeta, «historico e Grammatico» reatino, che sorgeva presso Cassino e che, prima di Ligorio, aveva attirato l'interesse di architetti come Francesco di Giorgio Martini e Giuliano da Sangallo. La ricostruzione proposta da Ligorio è fedele al racconto che ne fa lo stesso Varrone nel terzo libro dei *De re Rustica* (III, 5, 9-17), fonte esplicitamente e ripetutamente indicata, e il giudizio che ne dà in apertura è di un luogo «di sì estrema bellezza, che pareva un Theatro». Ligorio ricostruisce tutte le parti dell'aviario, ai suoi tempi ridotto in rovina, soffermandosi spesso sulle soluzioni che gli paiono più felici, come quella di cenare «in luogo che si vedessero l'Augelli», ma lontano dai loro cattivi odori, su un isola al centro di uno «stagno d'acqua viva». Come evidenziano i disegni, il sito dell'aviario si collegava a quello della villa e al museo per mezzo di un ponticello che permetteva l'attraversamento del fiume; l'aviario per metà era immerso nella selva e su tre lati era circondato dal corso del fiume Vinio, verso sudovest, e Casino a est. All'interno dell'aviario risultava rigidamente concepito secondo una disposizione simmetrica delle sue parti: a destra e a sinistra l'uno dopo l'altro si susseguivano voliere rettangolari a portico architettonicamente definite da colonne lapidee su stilobate, scoperte al centro e con piccoli arbusti, ma completamente recintate da reti in canapa, destinate a piccoli uccelli, poi ampie peschiere rettangolari, ancora voliere a portico, e infine uno stagno circolare navigabile con al centro l'isola con il tempietto circolare attrezzato come un triclinio, luogo privilegiato dell'aviario, da dove si poteva godere del canto dei più melodiosi volatili immersi in un suggestivo «picciolo Theatro». Tutt'intorno allo stagno v'era un anello circolare in pietra destinato forse alle anatre e ai loro nidi (non è a tutt'oggi chiara la definizione di «falare») e infine un portico circolare destinato ai volatili, coperto da reti resistenti per impedire che entrassero altri

Cafà, Valeria. *Pietro Bembo, Lettera al Cardinale Bibbiena sulla gita a Tivoli con Raffaello, 3 Aprile 1516*, published in Andrea Palladio e la villa veneta da Petrarca a Carlo Scarpa, eds. Guido Beltramini-Howard Burns, exh. cat., Venezia. (2005): p.197

Appendix IV

"[28r] e fù tale il timore ch'io hebbe di apoggiare un voltone longo palmi 83, e largo palmi 53, ad una muraglia che non haveva contrasto come è quella che risponde in piazza, che oltre l'havere fatto la muraglia grossa p(al)mi 7 m'ingegnai nel mezzo di farvi, come un sperone fatto nascere dall'ornato della facciata, come dirò à suo luogo, e non contento di questo volsi seguire in qualche parte le pedate degli Antichi quali non osavano di piantar le volte sopra le muraglie mà alzando negl'anguli delle camere, ò sale, che faccevano, colonne, ò pilastri, sopra quelli gettavano le volte à crociera, e tutto il peso sopra quelle riposava, servendo le muraglie contigue solam(en)te d'apoggio à d(ett)i pilastri come si vede nella Villa d'Adriano vicina à Tivoli, in S.ta Maria degl'Angeli nelle terme Diocletiane, et altrove, et ultimanm(en)te osservai questo in una cava fatta fare dall'Ill.mo Sig.re March(es)e del Buffalo vicino all'hospitale di S.Gio laterano, dove in un tempio ritrovato sotto terra negl'anguli erano pilastri che reggevano la volta, mi risolsi dunq(ue) negli quattro anguli interni del d(ett)o oratorio piantare quattro pilastri p(er) sbiescio, come si vede nella pianta [al num.o] che aiutassero à reggere la volta, per faticare meno le muraglie esterne, et essendo ott'anni che fù finito non vi si vede pure un minimo pelo

All'incontro poi del cantone dell'Orat.o ingrossato non essendovi bisogno di fortezza per essere unito al resto della fabrica, si è cavata la commodità della detta scala lumaca con una porticella, che risponde verso il cortile p(er) il bisogno dei musici p(er) salire alli chori, senza passare p(er) l'orat(or)io mentre è pieno di populo, p(er) i Sagretani, e p(er) chi sermoneggia valendosi tutti di d(ett)a porticella segreta p(er) entrare, et uscire senza folla ad ogn'hora benche sia pieno l'oratorio havendo anche [di] commodità dietro all'Altare di passare senz'incommodo loro ne d'altri "

J. Connors. *Francesco Borromini: Opus architectonicum.* (1998): p. 55

Note

1. O. Bletsou (2013), p.14
2. M. Yourcenar (2000), Pp. 40-41.
3. M. Yourcenar (2000), Pp. 40-41; D. Magie (1921), Pp.3-5, A.R. Birley (1997) Those scholars approved the standpoint with HA. However, the Roman History compiled by Cassius Dio didn't mention about the birthplace of Hadrian.
4. Among many publications, see Cassius Dio: Roman History (1925); D. Magie, (1921), p.5; A.R. Birley (1997), Pp.16-17.
5. Hadrian also restored the Saepta, the Basilica of Neptune, many sacred temples, the Forum of Augustus and the Baths of the Agrippa and left without highlighting his name. see in D. Magie (1921), Pp. 59-61.
6. "*The expert found that the concrete foundation belongs to Augustus period under the colonnade of Hadrian's legacy. The real ground is about 1.5 m lower than it is now the ground pavement. The excavation evidence shows that the steps under the portico belonged to Augustus age.*" see in E. La Rocca. Two Agrippa's Pantheon and Its Origin. (2015) The discussion on authorship of the Pantheon. See in Andrea Carandini, Emanuele Papi (2019); Alessandro Viscogliosi (2001), pp. 156-161; Marc Wilson Jones (2013), pp. 31-49
7. See in D. Magie (1921), Pp.47; Also, in Cassius Dio: Roman History.
8. According to the records by Cassius Dio: Roman History.
9. M. Yourcenar (2000), Pp. 146-147.
10. Ibid, Pp. 114-115.
11. About Hadrian's trip description: see D. Magie (1921), Pp.15- 45; W. MacDonald and J. Pinto (1995), Pp. 18-19; A.R. Birley 1997), Pp.27-76; F. Gregorovius (1898), Pp. 30- 172; see also in the thesis of S. Destephe (2019).
12. J. Alexander (1938), Pp.149-150; see also in O.Bletsou (2013), p. 10 and A.R. Birley (1997), Pp.192-194.
13. D. Magie (1921), Pp. 78-79.
14. Pliny, the elder (2006), NH36.4.20-21; see in I. Love (1970), p:154; A. Smith and S. Pickup (2010), p.254.
15. R.Sanzio (1840), Pp.15-16. R.Sanzio and B. Castiglione (1994): 115-27; translated as "The Letter to Leo X by Raphael and Baldassare Castiglione, c.1519," in Vaughan Hart and Peter Hicks (2006), Pp.179-92.
16. Pirro Ligorio "*i fragmenti dei piedi e de le mani che avemo vedute di varie imagini, che sono state portate a la calcara.*" Pirro Ligorio (Torino, vol. 20); see also in M. De Franceschini (2016), p.24.
17. See in M. De Franceschini (2016), p.24; W. MacDonald and J. Pinto (1995), p.206.
18. F. Biondo wrote: "*Ci resta agir per la terza strada Tiburtina, per giunger agli altri termini de'latini; sedeci miglia lunge da roma per quella strada è Tivoli, più antica di roma come vuole strabone […]. Sono vicino a Tivoli grandi e meravigliose ruine, e d'altri molto magnifici edificij, e prinpalmente da la villa che adriano*

imperatore vi edificò; dice spartiano di questa villa, che Adriano vi pose i nomi più celebri de le province, e de'luoghi del mondo [...]."

Translated by M. De Franceschini

"we still will have to go to the third road Tiburtina [...] sixteen miles from Rome, along that road is Tivoli, more ancient than Rome, as Strabo says [...]. Close to Tivoli there are great and marvellous ruins, and of other magnificent buildings, and primarily of the villa that emperor Hadrian built; Spartianus says about this villa, that Hadrian gave to it the most famous names of the provinces and of the places of the world [...]"

F. Biondo, "*Roma Ristavrata, et Italia Illustrata.*" (1452), Pp.104-105; See also in M. De Franceschini (2016), p.24.

19. See in the thesis of Ryan G (2016).

20. A letter, by F. Biondo showed the detail of his excursion with Pope Pius II and also the quotation of the *Historia Augusta*. See in M. De Franceschini (2016), p.25.

21. The old name of Hadrian' villa was called by locals as "Tivoli Vecchio" mentioned by Francesco di Giorgio Martini (1841) p.15; B. Nogara (1927): p.201; But as "Tibur Vetus" noted by W. MacDonald and J. Pinto (1995), p.207.

22. About the Pope Pius II and Falvio's excursion, see in Pope Pius II (1959), p.192-195; M. Belozerskaya (2009), p. 141-142; Quote in W. MacDonald and J. Pinto (1995), p.207.

23. Alberti translated by Ioseph Rykwert (1988), p. 308.

24. R. Wittkower (1971), p.7.

25. Ibid, p.37.

26. Although Alberti made a wrong spelling of the name, it proved that he is familiar with the document of *Historia Augusta*.

    Alberti wrote, "*That the emperor Hadrian approved of this is demonstrated by the famous names, such as Licus, Canopeius, Achademia, and Tempe, that he gave the rooms of his Tiburtine villa*"

    Alberti, "*On the Art of Building in Ten Books.* " translated by I. Rykwert (1988), p. 58.

27. See in W. MacDonald and J. Pinto (1995), Pp.208-209

28. J. Ackerman (1986), p.140; A. Bruschi (1977), Pp.133-34; J. Freiberg (2014), p.80.

29. A. Nesselrath (1989), Pp.281-92.

30. See in H. Joyce (2004), Pp.193-217; W. MacDonald and J. Pinto (1995), Pp.211-12.

31. See in A. Weller (1943), Pp. 1–44; F. Benelli (2010), p.141; P. Riahi (2010), p.11.

32. Alberti translated by I. Rykwert (1988): p.155; see also in J. Freiberg (2014), p.71

33. A. Bruschi (1977), p.36-37

34. Di Teodoro, Francesco P. (2015), Pp. 2; A. Bruschi (1977), p.44

35. On the visit of Hadrian's Villa by Leonardo da Vinci, see in P. Riahi (2010), p. 12, 16; C. Pedretti (1962): p.17, 78-81; Di Teodoro, Francesco P (1989).

36. Giorgio Vasari wrote: "*Bramante had brought some money from Lombardy, and*

he earned some more in Rome by executing certain works; and this he spent with the greatest economy, since he wished to be able to live independently, and at the same time, without having to work, to be free to take measurements, at his ease, of all the ancient buildings in Rome. And having put his hand to this, he set out, alone with his thoughts; and within no great space of time he had measured all buildings in the city Rome and in the Campagna without; and he went as far as Naples, and wherever he knew that there were antiquities. He measured all that was at Tivoli and in the Villa of Hadrian, and ... made great use it."

Giorgio Vasari, "*The Lives of the Most Excellent Painters, Sculptors, and Architects (Modern Library Classics)."* (2006), p.78; A. Bruschi (1977), p.73; W. MacDonald and J. Pinto (1995), p.212; J. Freiberg (2014), p.71.

[37.] One side of the stone, "*Lapidem Apostocolor (um) Principis martirio sacrum, Ferdinandus Hispaniarum Rex, et Helisabeth regina catholici, post erectam ab eis aedem posuerunt anno salutis Christianae 1502. (Ferdinand and Isabel, Catholic King and Queen of the Spain, set up this stone sacred to the martyrdom of the Prince of the Apostles after the church had been erected by them. In the year of Christian salvation 1502.)*" "The inscription on the other side, "*Bernard (in)us Carvajal Card. S.R.E. primum lapidem, i(n)ecit. (Bernardino Carvajal, Cardinal of the Holy Roman Church, deposited the first stone.*"

E. Rosenthal, "*The Antecedents of Bramante's Tempietto.*" (1964), p.55; J. Freiberg (2014), Pp.138-139.

[38.] See in R. Wittkower (1971), Pp.24-25.

[39.] E. Rosenthal wrote: "*The Temple of Vesta at Tivoli has eighteen Corinthian columns of travertine. The Temple of Vesta in Forum Romanum in Rome has eighteen Corinthian columns. The temple of Hercules Victor in the area of the Forum Boarium in Rome has twenty Corinthian columns of Pentelic marble (two placed in antiquity with Luna marble. The round temple in the Largo Argentina was composed of eighteen columns.*"

E. Rosenthal, "*The Antecedents of Bramante's Tempietto.*" (1964), p. 60; J. Freiberg (2014), p.77.

[40.] See in W. MacDonald and J. Pinto (1995), p.213; J.Freiberg (2014), p.80; A. Bruschi (1977), p.133.

[41.] A. Bruschi wrote: "*Sixteen (the teleion) is regards as the perfect number (according to Virtruvius, Bk III, chap.1); Virtruvius also explains that sixteen could be divided into 10+6(numbers which are also perfect, one according to the Pythagorian and Platonic tradition, and the other 'according to mathematicians', Moreover sixteen could also divided into 8+8. It contains all the fundamental numbers: 2,3,4,5.*" Eight represent the concepts of salvation, regeneration, and resurrection, all of them linked to the symbolic meaning of Christianity. All the numbers appeared on Tempietto, by no means a random decision by Bramante, which is appropriate to the symbolization of religion.

A. Bruschi, "*Bramante*", (1977), p.134.

42. W. MacDonald and J. Pinto (1995): p.51.

43. A. Bruschi (1977), p.132.

44. According to the annotation of the area where Piranesi drew a temple with a semi-circle colonnade, Francesco Contini reported that a temple with marble columns, which is very likely to be considered of Temple of Venus. Roccabruna is a temple with Doric order as well. In the Contini's plan, it has specific highlighted to show the structural plan. It could be counted that it has 21 one columns.

45. Francesco Contini wrote: "*poggio alto dalla detta piazza palmi 60. sostenuto in piano per tre lati dalli sudetti muri numero 19 nel qual sito era un tempio ornato di colonne di marmo striate di tre palmi di diametro, come si vede dalli torzi di esse sparsi per il sito, nel quale sono anco due capitelli d'ordine composito intagliati à lingua di cane, l'una sopra l'altra, & con delfini in luogo di volute. questo sito è horo pieno di macchia folta solta, & è posseduto dalli Signori Altouiti, con una parte del piano numero 3.*" ("*High hill from the said square palms 60. Supported in plan on three sides by the walls number 19 in which site was a temple adorned with marble columns striated three palms in diameter, as can be seen from the torches of them scattered throughout the site, in the which are also two capitals of composite order carved on the tongue of a dog, one above the other, & with dolphins instead of volutes. This site is now full of thick bushes, & is owned by the Altouiti Lords, with part of the plan number 3.*"
Francesco Contini, "*Adriani Caesaris*" (1668).

46. R. Wittkower (1971), p.25; J. Freiberg (2014), Pp.126-127.

47. Most scholars support that Bramante did not design a lantern: J. Freiberg (2014), Pp.88-101; A. Bruschi (1977), Pp.134-137; R. Wittkower (1971), p.24; A. Venturi (1938), XI, Part I, 75-76.

48. E. Rosenthal (1964), p.65; J. Freiberg (2014), Pp.89-90; A. Bruschi (1977), Pp.131-133.

49. J. Ackerman (1954), p.9.

50. W. MacDonald and J. Pinto (1995), p.213 and the annotation p.361; see in P. Britton, (2000), p. 1.

51. M. Jones (1988), Pp. 63-64; Hadrian modillions type are found in the cornice of the main order, see in D. E. Strong (1953), Pp. 118-151.

52. Bernardo Bembo wrote: "*lo col Navagiero et col Bazzano et con M. Baldassar Castiglione et con Raphaello domani anderò a riveder Tivoli: che io vidi già un'altra volta XXVII. Anni sono. Vederemo il Vecchio et il nuovo, et cio che di bello sia in quella contrada.*" V. Cafà "*Pietro Bembo, Lettera al cardinale Bibbiena sulla gita a Tivoli con Raffaello, 3 aprile 1516.*" (2005), Pp. 196-197; See also in P. Marini (2014), p.221; G. Beltramini (2013), p.15.

53. "*la quale vidi quando fui a Roma come ambasciatore e della cui vista mi dilettai straordinariamente a causa dell'impianto generale, della sua impo- nenza e delle statue poste a coronamento degli ambienti. Anno Christi 1487*"
G. Beltramini "*Pietro Bembo e l'architettura.* " (2013), p.15; see in N. Giannetto

(1985), p. 192

54.   G. Beltramini (2013), p. 16.

55.   W. MacDonald and J. Pinto (1995): p.213

56.   Andrea Fulvio wrote: "*They were besides that, busy villas & beautiful suburban calls, to be close to Rome, such as the Lucullano, the Tusculano, the Formiano, & many others that today have become possession & isolated villages. I do not want to walk through with silence the Villa Tiburtine of Hadrian Emperor who wonderfully built on him, so much so that in that were found the names of Province & of places celebrated, such as the Lyceum, the Academy, the Prytaneum, Canopus, Poecile, and Tempe. In the Roman peasantry there were already many Castelletto or farmhouses, which are ruined, are given territory, possessions & pastures of Rome, where today you make vegetables, & you sow, & you are pastured there; where the herds & herd sat out & try very hard to be the grassy ground, & rich in water resources, the hills far-flung & the valleys attractive: where maximum the Bufolis that in ancient times were not in custom fatten, not for a long time in here conducted in Italy, therefore that in ancient times very rare were seen & only public performances, and what Martial, Pliny & Solino knows: that if they were merged in large quantities as today they are, & so domestic, they would not be passed with silence in Mareo Varrone ne Columella*"

"*Erano oltre a questo, ville molto frequentate & belle chiamate suburbani, per essere vicine à Roma, come il Lucullano, il Tusculano, il Formiano, & molte altre che oggi sono diventate possessione & villaggi di privati. Non voglio trapassare con silenzio la villa Tiburtina di Adriano Imperatore la quale meravigliosamente su da lui edificata, tanto che in quella si ritrovavano i nomi di Provincie & di luoghi celebratissimi, come il Licio, la Academia, il Pritanio, Canopo, Pecile, e Tempe. Nel contado romano erano già molti castelletti ovvero casali, i quali rovinati, son datti territorio, possessione & pascoli di Roma, ove oggi si fanno ortaggi, & vi si semina, & vi si fanno pasture; ove gli armenti & gregge si nutriscono & provano assai per essere il terreno erboso, & di acque abbondevole, i colli aprichi & le valle amene: ove massimamente i Bufoli i quali anticamente non erano in consuetudine ingrassano, non da molto tempo in qua condotti in Italia, perciò che anticamente rarissimi si vedevano & solamente ne pubblici spettacoli, e quali sa menzione Martiale, Plinio & Solino: che se fusero itati in gran quantità come oggi sono, & cosi domestichi, non gli sarebbero trapassati con silenzio ne Mareo Varrone ne Columella.*"

Andrea Fulvio, "*Antiquitates Urbis*," (1588): Pp.181-182.

See also in G.P. Bellori (1664), Pp.64-65; J. Shulz (1963), Pp.90-92; W. MacDonald and J. Pinto (1995): p.212; S. Vedovelli (2013-2014), Pp.21-22.

57.   J. Ackerman (1991), p.29

58.   P. Gaulio (1616), quoted by Zorzi (1958-1959): p.93; also see in M. De Franceschini (2016), p.69.

59.   Bellori assessed*: "I do not want to pass in silence over the Emperor Hadrian's*

villa in Tivoli, which was so marvelous built by him, so much so that the names of provinces, and very famous places such as the Lyceum, the Accademia, the Prytaneum, Canopus, Pecile, and Tempe. In the Roman countryside, there were already many small towers, where vegetables were made, sowed, and pastures were made, where the herds and herds were fed and produced much to be the herbaceous soil, and the waters were abrupt, the hills open and the valleys pleasant."

W. MacDonald and J. Pinto "*Hadrian's villa and its legacy.*" (1995): p.214; also see in G. Beltramini, and H. Burns (2008), Pp.40-53; J. Ackerman (1983): p.26.

60. Palladio wrote: "*Non voglio trapassare con silenzio la villa tivurtina di adriano imperatore laquale maravigilosamnete fu da lui edificata, tanto che in quella si ritrovavano i nomi di provincie, et di luogi celebratissimi, come il Liceo, la Accademia, il Pritaneo, Canopo, Pecile, e Tempe. Nel contado romano erano gia molti castelletti overo si fanno ortaggi, et vi si semina, et vi si fanno pasture, ove gli armenti et greggi si nutriscono et producono assai per essere il terreno herboso, et di acque abbudevole, i colli aprichi e le valle amene.*"
Palladio, "*De templi de gli antichi fuori di Roma.*" (1554): p. 31

61. R. Wittkower, concluded Palladio's scholarship including "*not only used the works of modern roman antiquarians, Biondo, Flavio, Fauno and Marliani, but also classical authors, Dionysius of Halicarnassus, Livy, Pilny, Plutarch, Appianus Alessandrinus, Valerius Maximus and Eutropius.*" But with regards to the description of a paragraph about Hadrian's Villa, Palladio would probably be a description of the two people combined with Flavio Biondo and Andreas Fulvio but deriving from the original description from *Historia Augusta*.
R. Wittkower, "Architectural principles in the age of humanism."(1971), p.62.

62. Palladio wrote: "*Nè mi sono contentato di questo solo, chè anco ho voluto vedere e con le mie proprie mani misurare minutamente il tutto*"
Palladio, "*Antichità di Roma,*" See also in G. Zorzi, G. Fiocco (1959), p.30; M. De Franceschini (2016), p.70.

63. Zorzi, Giangiorgio, Fiocco, Giuseppe (1959), p.18; also see in G. Beltramini, and H. Burns (2008), p.54; M. De Franceschini (2016), p.69.

64. Palladio, Andrea with a new introduction by Adolf K. Placzek. (1965), THE AUTHOR'S PREFACE TO THE READER.

65. G. Zorzi, G. Fiocco (1959), p.22; W. MacDonald and J. Pinto (1995), p.216; M. De Franceschini (2016), p.77.

66. P. Ligorio (1553), p.4,13; also see in M. De Franceschini (2016), p.78.

67. A. Del Re worte: "*Accennò in detta descrizione il Ligorio volerne far disegno a detto cardinale Ippolito, [p. 78] ma non si è trovato.*"
"*In the above description, Ligorio mentioned that he wanted to make a drawing of said Cardinal Ippolito, [p. 78] but was not found.*"
A. Del Re and P. Ligorio, "*Dell'antichità Tiburtine.*" (1611), Pp.77-78; also see in G. Vagenheim (2008), Pp.83-84.

68. Vagenheim quoted two letters of Kircher that demonstrated it has the possibility the plan drawn by Francesco Contini was partly derived from archives of Tivoli including the plans and writings of Ligorio belonged to Cardinal Francesco Barberini.

Ludovico D'Agliè mentioned: "*Having carefully examined all that I have been lucky enough to find in the archives of Tibur, among other things these documents made by the famous antiquarian and architect Pirro Ligorio; the letter[…] comes to a knowledge of the true distribution of this villa and of the detailed distribution of its parts, and he draws the plan on a piece of paper, as far as the obscurity of the subject allows him, and accompanies this with the fullest explanation possible. This representation is preserved to this day, to be transmitted to posterity, in the treasury of Cardinal Francesco Barberini.*"

The second letter depicted that Contini's general plan of the villa was attributed to the contribution of Ligorio's work in Hadrian's villa.

"*His Eminence Cardinal Francesco Barberini of the Holy Roman Church, moved by the prayers of many letters, and not afraid to take a good initiative in order to decorate and enrich the Republic of letters […] in part derived from the drawings of architect Pirro Ligorio, first created on the orders Cardinal Ippolito d'Este, and partly enriched by compilation due to assiduous work by Francesco Contini, an eminent connoisseur of antiquity, and then printed in a new size, and then corrected, erasing all the numbers; this was done with such diligence and care that you cannot contemplate anything that reaches its perfection.*"

G. Vagenheim "*Retour sur Pirro Ligorio et Francesco Contini a Tivoli, le plan de la villa d'Hadrien et son explication (Dechiaratione), La villa et l'univers familial dans l'antiquité et à la Renaissance.*" (2008), Pp.84-85. also see in M. De Franceschini (2016), p.84.

69. Monsù d'Autreville wrote, "*In the excerpt of the privilege of the republic to the aforementioned Tramezzino, you mention the following papers and drawings of the same Ligorio: sheet or drawings of ancient Rome, of modern Rome, of the Circus Maximus, of the Circus Flaminius, of Italy and of the Castro Prætorio, drawn by Messer Pirro Ligorio, Neopolitan painter; a large number of drawings of the same Pirro Ligorio, to the number of about five thousand, and among which were many things taken from antiquity, and others made imitating ancient fables, and histories and of things of architecture.[…]and the efforts so described by messer Pietro Stefanoni, a Roman antiquarian had this final outcome: he said he met the wife of the above mentioned man [Ligorio], and that she had two trunks, one of books, that are in the hands of the Duke of Savoy; another [trunk]of drawings, a great part of which were in the hands of the above mentioned Raimondi, who sold part of it individually, and part went as we said to the above mentioned Frenchman.[…]*"

R. Lanciani, "*Storia degli scavi di Roma e notizie intorno le collezioni romane di antichità.*" (1902), Pp.112-113; also see in I. Campbell and C. Dal Pozzo. (2004):

p.177; G. Vagenheim (2008), Pp.89-90; M. De Franceschini (2016), p.84.

70. In Codice Windsor: "la pianta autografa è accompagnata da questa nota Pianta d'una parte della villa d'Hadriano a Tivoli, vista e cauata da *Pirro Ligorio... la* quale è stata da uno schizzo del suddetto tirata da Francesco Contini. I disegni di detta villa furono portati in Francia da monsu di Autreville che gli haueua compri da un rigattiere ferrarese" Codice Windsor, *Anticà diverse*, VII 36.
    R. Lanciani, "*Storia degli scavi di Roma e notizie intorno le collezioni romane di antichità."* (1902), p.113; also see in W. MacDonald and J. Pinto (1995), p.218; G. Vagenheim (2008), p.86; M. De Franceschini (2016), p.85.

71. W. MacDonald and J. Pinto (1995): p.220.

72. "[…] Cominciai a far cavar terra per trovar i fondmenti: feci recider gl'intoppi, che m'impedivano, e più volte calai in varij pozzi, & aperture, che scopersi in quelli scoscesi, e per quelle vigne[…]"
    Contini, Francesco, "*Adriani Caesaris.*" (1668); translation by W. MacDonald and J. Pinto (1995), p.220-221; M. De Franceschini (2016), Pp.176-177;

73. Kircher wrote: "*Villae celeberrimae Adriano Caesare in agro tiburtio extructae, vera et exactissima ichnographia ab Pirrho Ligorio olim, postea a Francisco Contini recognita, et descripta jussu eminentissimi Francisci Card. Barberini.*"
    A. Kircher, "*Athanasii Kircheri, Latium: Id est, Nova & parallela Latii tum veteris tum novi description.*" (1671), Pp.145-151; also see in M. De Franceschini (2016), p.178.

74. Borromini wrote: *"[…] chi segue gli altri non gli va mai innanzi, ed io certo non mi sarei posto a questa professione, col fine d'esser solo copista, benché sappia che nell'inventare cose nuove, non si può ricevere il frutto della fatica se non tardi […]"*
    J. Connors, "*Francesco Borromini: Opus architectonicum.*" (1998); M. Kahn-Rossi and M. Franciolli (1999), p.201; also see in M. De Franceschini (2016), p.132.

75. W. MacDonald and J. Pinto (1995), p.224.

76. F. Martinelli (1769); A. Blunt (1979), p.36; also see in W. MacDonald and J. Pinto (1995), p.225,363, in the notes, W. MacDonald and J. Pinto mentioned that Martinelli's manuscript guide of 1660-1663 was published with Borromini's annotation; J. Connors (1998) Introduction: p.59.

77. J. Connors (1998), p. 55; translated in English by Downes, Kerry (2009), p.71; M. De Franceschini (2016), p.132.

78. J. Connors (1998), p. 55; English translation in W. MacDonald and J. Pinto (1995), p.224.

79. Cammy Brothers (2008), p.45; A. Blunt (1979), p.37.

80. A. Blunt (1979), pp.70,116; W. MacDonald and J. Pinto (1995), Pp.225-226.

81. Virgilio Spada wrote: *"[R]ispetto à quell'ingresso nella prima nave in forma curva è bene stato differente dagli altri, mà non dagli Antichi, ne da Michelangelo medesimo, quale hà usato l'istesso in San Pietro nelle tre braccia della Croce, et*

il suo disegno stampato mostra, che voleva fare il medesimo, anche nell'ingresso, e gli Antichi l'hanno sempre usato, come si può vedere ne i disegni della Villa Adriana in mano dell'Eminentissimo Barberino, dove si vedono non meno di una dozzena di Tempietti, tutti di linee curve." Letter, in the Spada archive, of 7 Oct. 1656, to Rasponi.

K. Güthlein, "*Quellen aus dem Familienarchiv Spada zum römischen Barock.*" (1981), p.209; R. Echols (1992), p.151; W. MacDonald and J. Pinto (1995), p.226.

82. W. MacDonald and J. Pinto (1995), p. 226.
83. A. Blunt. *Borromini*. (1979), p.68.
84. R. Lanciani (1893), p.179; also see in W. MacDonald and J. Pinto (1995), p. 232; J. Pinto (1993), Pp.465-466.
85. J. Pinto (1993), p.473.
86. Ibid, p.475.
87. McKim mentioned Hadrian's Villa in his biography. "*At Hadrian's Villa, they had 'the only guide who speaks English.'*"
    C. Moore, "*The Life And Times Of Charles Follen Mckim.*" (1929), p.192.
88. Daniel H. Burnham was the president of the American Institute of Architects and the organizing force behind the Chicago fair. Burnham had been a close collaboration with McKim since 1891. Even if Frank Lloyd Wright had not completed his studies in engineering course. Burnham would like to support his study in Europe. In the letter mentioned, Wright replied to Burnham, "*... Uncle Dan – it's too late now, I'm afraid. I am spoiled already. I've been too close to Mr. Sullivan. He has helped spoil the Beaux-Arts for me or spoiled me for Beaux-Arts...*" Burnham would suggest Wright attend the McKim's new Atelier in Rome. H.R. Hitchcock, "*Frank Lloyd Wright and the 'Academic Tradition' of the Early Eighteen-Nineties.*" (1944), p.46.
89. Le Corbusier (1911), p.173.
90. Ibid, p.162.
91. Le Corbusier (1911), Pp.157-158; W. MacDonald and J. Pinto (1995), p. 322.
92. V. Scully (2003), p. 310.

Bibliography

Ackerman, James S. "*The Architecture of Michelangelo.* " The University of Chicago Press, Second edition (1986)

Ackerman, James S. "*Imitation.* " *in Antiquity and its Interpreters*, A. Payne, A. Kuttner & R. Smick, eds, Cambridge. (2000)

Ackerman, James S. " *Palladio.* " Penguin books, London. (1991)

Ackerman, James S. "*Architectural Practice in the Italian Renaissance.* " Journal of the Society of Architectural Historians. (13, March 1954)

Ackerman, James S. "*The Villa: Form and Ideology of Country Houses.*" 2nd Edition, Princeton University Press; Reprint Edition. (1993)

Ackerman, James S. "*The Tuscan/Rustic Order: A Study in the Metaphorical Language of Architecture.*" *Journal of the Society of Architectural Historians 42*, no. 1 (1983): 15-34. doi:10.2307/989854.

Alberti, Leon Battista. "*Descriptio urbis Romae.* " edition critique par Jean-Yves Boriaud & Francesco Furlan; introduzione di Mario Carpo & Francesco Furlan; ouvrage coordonne par Francesco Furlan, Casa Editrice Leo S. Olschki, English translation Peter Hicks. (2005): pp.115-128.

Alberti, Leon Battista. "*On the Art of Building in Ten Books*. " translation of: *De re aedificatoria*, translated by Ioseph Rykwert, Neil Leach, Robert Tavernon, Cambridge, Massachusetts; London: MIT Press. (1988)

Alexander, Paul J. "*Letters and Speeches of the Emperor Hadrian*. " Harvard Studies in Classical Philology, Published by: Department of the Classics, Harvard University, Vol. 49 (1938), pp. 141-177 (37 pages) https://www.jstor.org/stable/310702

Argan, Giulio Carlo, Bruno Contardi and Gabriele Basilico (Photographer)**.** "*Michelangelo (Pall Mall).* " London: Publisher: Pall Mall. (2012)

Argan, Giulio Carlo. "*Borromini*. "Firenze: Sansoni editore. (1996)

Barry, Fabio, Giulio Romano, Gombrich, E. H., and Tafuri, Manfredo. "*Giulio Romano*. " Cambridge: Cambridge university. (1998)

Belozerskaya, Marina. "*To Wake the Dead: A Renaissance Merchant and the Birth of Archaeology*. " New York: W.W. Norton & Co. (2009)

Bellori, Giovanni Pietro. "*Nota Delli musei, librerie, gallerie et ornamenti di statue e pitture ne' palazzi nelle case e ne' Giardini di Roma*. " Roma (1664)

Beltramini Guido. "*Pietro Bembo e l'architettura*. " Pietro Bembo e l'invenzione del Rinascimento, a cura di Guido Beltramini, Davide Gasparotto, Adolfo Tura, Centro

Internazionale di Studi di Architettura Andrea Palladio, Marsilio editori s.p.a. in Venezia, Fondazione Cassa di Risparmio di Padova e Rovigo. (2013)

Beltramini, Guido and Howard Burns. "*Palladio*. " Venezia: Marsilio Editori, (2008)

Benton, Tim. "*The Rhetoric of Modernism: Le Corbusier as a Lecturer.*" Basel: Birkhäuser Publications. (2009)

Benelli, Francesco. "*Diversification of knowledge: Military architecture as a political tool in the Renaissance. The case of Francesco di Giorgio Martini.*" published in Anthropology and aesthetics, Res57/58, Spring/Autumn. (2010): pp.140-155. https://www.academia.edu/10944399/Francesco_di_Giorgio_Martini._Diversification _of_Knowledge

Birley, Anthony Richard. "*Hadrian: the restless emperor.*" London; New York, NY: Routledge. (1997)

Biondo, Flavio. "*Roma Ristavrata, et Italia Illustrata*." Published in Venetia: Michele Tramezzino. (1452)

Bletsou, Olga. "*Hadrian's other world a study of the structures in the High Ground of Villa Adriana.*" Lund University, Department of Archaeology and Ancient History. (2013)
http://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=3812845&fileOId =3812859

Blunt, Anthony. "*Borromini.*" Cambridge Mass.: Belknap press of Harvard University, Opyr. (1979)

Boucher, Bruce, Paolo Marton. "*Andrea Palladio: The Architect in his Time*." New York, (1993): pp.205-233.

Brothers, Cammy. "*Michelangelo, drawing and the invention of architecture.*" New Haven: Yale University Press (2008)

Britton, Piers Dominic. "*A PERUZZI DRAWING AND THE NYMPHAEUM AT GENAZZANO.*" Published by: The University of Chicago Press on behalf of the Bard Graduate Center, Source: Notes in the History of Art, Vol. 19, No. 4 (Summer 2000), pp. 1-6. https://www.jstor.org/stable/23206948

Bruschi, Arnaldo. "*Bramante.*" foreword by Peter Murray with 183 illustrations, Thames and Hudson Ltd, London. (1977)

Carandini, Andrea, Emanuele Papi. Adriano, "*Roma e Atene.* " Turin: UTET. (2019)

Cartwright, Julia. "*Baldassare Castiglione the perfect courtier.*" *his life and letters, 1478-1529*. London: John Murray. (1908)

Cafà, Valeria. "*Pietro Bembo, Lettera al cardinale Bibbiena sulla gita a Tivoli con Raffaello, 3 aprile 1516.*" published in Andrea Palladio e la villa veneta da Petrarca a Carlo Scarpa, eds. Guido Beltramini-Howard Burns, exh. cat., Venezia. (2005): pp. 196-197
https://www.academia.edu/14987253/Pietro_Bembo_Lettera_al_cardinale_Bibbiena_ sulla_gita_a_Tivoli_con_Raffaello_3_aprile_1516

Campbell, Ian and Cassiano Dal Pozzo. "*Ancient Roman Topography and Architecture: Drawings by Francesco di Giorgio, Ligorio, Labacco, Dosio and four*

anonymous sixteenth-century draughtsmen." London: The Royal Collection in association with Harvey Miller Publishers. (2004)

Cermenati, Mario. "*Leonardo a Roma.*" In: "Nuova Antologia", Rome, vol. 202, rec. 286, sixth series, Jul-Aug (1919): pp. 308-331

http://www.franuvolo.it/sito/doc/Leonardo-in/044.pdf

Connors, Joseph. "*Borromini and the Roman Oratory: style and society.*" New York: The Architectural History Foundation. (1980)

Connors, Joseph. "*Francesco Borromini: Opus architectonicum.*" Milano: Il polifilo. (1998)

Connors, Joseph. "S. Ivo Alla Sapienza: The First Three Minutes." *Journal of the Society of Architectural Historians* 55, no. 1 (1996): 38-57. doi: 10.2307/991054.

Contini, Francesco. "*Adriani Caesaris immanem in Tibvrtino villam aevo labente collapsam confvseq; ac temere per senticeta disiectam avthoritate ac ivssv eminentiss. ac reverendiss. Cardinalis Francisci Barberini Franciscvs Continvs agressvs exqvirere per insanas primvm svbstrvctiones singvla persecvtvs exin foris qvae svperant adhvc parietinas et rvdera observate contemplatvs ac metitvs omnia tabvlam hanc privatvm fructvm laboris svi pvblicam facit plana totivs areæ descriptione proposita: qvam ex vero desvmpsit orthographia erecti operis adiecta quam animo ex vestigiis extantibvs et ex singvlarvm commensv partivm informavit havd poenitendvm operae pretivm sive ad antiqvam Romanorvm magnificentiam principvm aestimandam ocvlis sive ad præsentivm rervm aliqvando fvtvrvm occasvm evidenti præteritarvm exemplo repræsentandvm.*" In Roma : per Fabio di Falco, MDCLXVIII.（1668）

https://arachne.unikoeln.de/TeiViewer/cgibin/teiviewer.php?manifest=BOOK-810182

Cohen, Jean-Louis. "*Rome: a lesson in Urban Landscape.*" AV Monographs. (2015)

Del Re, Antonio and Ligorio, Pirro. "*Dell'antichità Tiburtine.*" Roma: Appresso Giacomo Mascardi. (1611): pp.76-88.

De Franceschini, Marina. "*Architecture and Archaeoastronomy in Hadrian's Villa near Tivoli, Rome.*" published online. (2013)

https://www.academia.edu/10630775/Architecture_and_Archaeoastronomy_in_Hadrian_s_Villa_near_Tivoli_Rome

De Franceschini, Marina. "*Villa Adriana Accademia Hadrian's Secret Garden, I. HISTORY OF THE EXCAVATIONS, ANCIENT SOURCES AND ANTIQUARIAN STUDIES FROM THE XVTH TO THE XVIITH CENTURIES.*" Fabrizio Serra Editore, ISTITUTI EDITORIALI E POLIGRAFICI INTERNAZIONALI, Pisa Rome. (2016)

Destephen, Sylvain. "*The Time Travelling Emperor: Hadrian's Mobility as Mirrored in Ancient and Medieval Historiography.*" Printed in Israel by Magnes Press, Jerusalem. (2019) http://www.israel-classics.org

Dio, Cassius. "*Roman History.*" published in Vol. VIII of the Loeb Classical Library edition. (1925)

http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Cassius_Dio/69*.html

Di Teodoro, P. Francesco. "*Leonardo da Vinci: The Proportions of the Drawings of Sacred Buildings in Ms. B,* " Institut de France, Architectural Histories, 3(1): 1, (2015): pp. 1-10, DOI: https://journal.eahn.org/articles/10.5334/ah.cf/

Di Teodoro, P. Francesco. "*Francesco di Giorgio e le proporzioni del tiburio del Duomo di Milano.*" Published by: Vita e Pensiero – Pubblicazioni dell'Università Cattolica del Sacro Cuore, *Arte Lombarda,* nuova serie, No. 90/91 (3-4) (1989): pp. 42-46 (5 page) https://www.jstor.org/stable/43132047

Doordan, Dennis P. *"Changing Agendas: Architecture and Politics in Contemporary Italy."* Assemblage, no. 8 (1989): 61-77. Accessed March 30, 2020. doi:10.2307/3171014.

Downes, Kerry. "*Borromini's Book: The "Full Relation of the Building" of the Roman Oratory by Francesco Borromini and Virgilio Spada of the Oratory.*" Wetherby: Oblong Creative (2009)

Echols, Robert. "A Classical Barrel Vault for San Giovanni in Laterano in a Borromini Drawing." *Journal of the Society of Architectural Historians* 51, no. 2 (1992): 146-60. doi:10.2307/990711.

Ficacci, Luigi. "*Giovanni Battista Piranesi: the complete etchings.*" Koln: Taschen, (2016)

Forster, Kurt, and Richard J. Tuttle. "*The Palazzo Del Te.*" J*ournal of the Society of Architectural Historians 30*, no. 4 (1971): 267-93. doi:10.2307/988701.

Freiberg, Jack. "*Bramante's Tempietto, the Roman Renaissance, and the Spanish Crown.*" New York: Cambridge University Press. (2014)

Ficacci, Luigi. "*Giovanni Battista Piranesi The complete Etchings.*" TASCHEN bibliotheca Universalis. (2016)

Fulvio, Andrea, (in Latin 1510-1543). "*L'antichita di Roma.*" translation of: *De urbis antiquitatibus libri quinque*, tranlated by Ferrucci, Girolamo. In Venetia: Per Girolamo Francini Libraro in Roma all'infegna del Eonte. (1588) https://archive.org/details/lantichitadiroma00fulv/page/n3

Grafton, Anthony, Glenn W. Most and Salvatore Settis. "*The Classical Tradition*."The Belknap Press of Harvard University Press, (2010): p.418

Gregorovius, Ferdinand. "*The Emperor Hadrian: A Picture of the Graeco-Roman World in His Time.*" London, Macmillan & co. (1898)

Gualdo, Paolo. "*VITA DI ANDREA PALLADIO*." Saggi E Memorie Di Storia Dell'arte 2 (1958): 91-104. www.jstor.org/stable/43139937.

Güthlein, Klaus. "*Quellen aus dem Familienarchiv Spada zum römischen Barock.*"RömJbKg 19. (1981): pp.173-243.

Hitchcock, Henry-Russell. "*Frank Lloyd Wright and the 'Academic Tradition' of the Early Eighteen-Nineties*." Journal of the Warburg and Courtauld Institutes 7 (1944): 46-63. Accessed March 27, 2020. doi:10.2307/750380.

Jones, Mark Wilson. "*Palazzo Massimo and Baldassare Peruzzi's Approach to Architectural Design.*" Published by: *SAHGB Publications Limited Architectural History*, Vol. 31 (1988): pp. 59-106.http://www.jstor.org/stable/1568536.

Jones, Mark Wilson. "*Who built the Pantheon?*", in Th. Opper, a cura di, Hadrian: Art, Politics and Economy, London 2013, pp. 31-49

Joyce, Hetty E. "*Studies in the Renaissance Reception of Ancient Vault Decoration.*" Journal of the Warburg and Courtauld Institutes 67 (2004): pp.193-232. http://www.jstor.org/stable/40026030.

Jashemski, Wilhelmina F., Eugenia Salza Prina Ricotti, and John Foss. "*Preliminary Excavations in the Gardens of Hadrian's Villa: The Canopus Area and the Piazza D'Oro.*" American Journal of Archaeology 96, no. 4 (1992): 579-97. Accessed January 20, 2020. doi:10.2307/505186.

Kahn-Rossi, Manuela and Franciolli, Marco. "*Il Giovane Borromini. Dagli esordi a San Carlo alle Quattro Fontane.*" Milano: Skira. (1999)

Kircher, Athanasius. "*Athanasii Kircheri, Latium: Id est, Nova & parallela Latii tum veteris tum novi description.*" Amsterdam. (1671) [Hadrian's villa pp.145-154] http://arachne.uni-koeln.de/item/buch/234

La Rocca, Eugenio. "*Two Agrippa's Pantheon and Its Origin.*" https://erenow.net/ancient/the-pantheon-from-antiquity-to-the-present/2.php

Love, Iris Cornelia. "*A Preliminary Report of the Excavations at Knidos.* " American Journal of Archaeology, Vol. 74, No. 2 (Apr. 1970): pp. 149-155

Le Corbusier. "*Voyage d'Orient.*" Carnets. Milano: Electa spa, 1987. (1911)

Le Corbusier. "*TOWARDS A NEW ARCHITECTURE.*" New York: DOVER PUBLICATIONS, INC, 1986. (1911)

Ligorio, Pirro. "*Antichità di Roma (Torino, vol. 20) Libro o vero trattato dell'antichità XXII di Pyrrho Ligorio Patrizio Napolitano e Cittadino Romano nel quale si dichiarano alcune famose Ville e particolarmente della antica città di Tibure e di alcuni monumenti.*" Torino, Archivio di Stato, ms. a.II.7.
http://ligorio.sns.it/ligorio.php?tipo=doc&idDoc=31

Ligorio, Pirro. "*Libro di M. Pyrrho Ligori Napolitano delle antichità di Roma, nel quale si tratta de' circi, theatri e anfitheatri, con le Paradosse del medesimo auttore, quai confutano la commune opinion sopra varij luoghi della città di Roma.*" Edited and commented by *Margaret Daly Davis,* Venezia. (1553)
https://archiv.ub.uni-heidelberg.de/artdok/562/1/Daly_Davis_Fontes9.pdf

Ligorio, Pirro and Contini, Francesco. "*Pianta della villa tiburtina di Adriano Cesare, già da Pirro Ligorio rinomatissimo architetto e antiquario disegnata e descritta, di poi da Francesco Contini architetto diligentissimamente riveduta e data alla luce.* " Roma. (1751)
https://archive.org/details/ichnographiavill00ligo

Lanciani, Rodolfo Amedeo. "*Di un nuovo codice di Pier Leone Ghezzi contenente notizie di antichità.*" Bullettino della Commissione Archeologica Comunale di Roma, Roma. (1893): pp. 165-181
https://digi.ub.uni-heidelberg.de/diglit/bcom1893/0181

Lanciani, Rodolfo Amedeo. "*The golden days of The Renaissance in Rome, from the Pontificate of Julius II to that of Paul III.*" London, Constable. (1907)

https://archive.org/details/goldendaysofrena00lancuoft

Lanciani, Rodolfo Amedeo. "*Storia degli scavi di Roma e notizie intorno le collezioni romane di antichità.*" Volume 2, Roma: E. Loeschler & Co. (1902): pp.108-119
https://archive.org/details/storiadegliscavi02lanciala

MacDonald, William L., and J. Pinto. "*Hadrian's villa and its legacy.*" New Haven and London: Yale University Press. (1995)

Magie, David. "*The Scriptores Historiae Augustae with an English translation.*" Volume I, Cambridge: Harvard University Press First published 1921, Reprinted 1930, 1953, 1960, 1967, 1979, 1991, London. (1921-1932)
https://archive.org/details/scriptoreshistor01camb

Marini, Paolo. "*L'epistolario del Bibbiena. Appunti sul censimento delle carte autografe a mezzo secolo dall'edizione Moncallero, in Epistolari dal Due al Seicento*, Atti del XVI Convegno di Letteratura Italiana "Gennaro Barbarisi" (Gargnano del Garda, 29 Sett. -1 ott. 2014)." Univ. degli Studi di Milano, pp. 201-234
https://www.academia.edu/38026927/L_epistolario_del_Bibbiena._Appunti_sul_cens imento_delle_carte_autografe_a_mezzo_secolo_dall_edizione_Moncallero_in_Episto lari_dal_Due_al_Seicento_Atti_del_XVI_Convegno_di_Letteratura_Italiana_Gennar o_Barbarisi_Gargnano_del_Garda_29_sett.1_ott._2014_Univ._degli_Studi_di_Milan o_pp._201-234

Martini, Francesco di Giorgio. "*Trattato di architettura civile e militare.*" Torino: Tipografia Chirio e Mina. (1841) https://archive.org/details/bub_gb_S7z-QxnJwPUC

Martinelli, Fioravante. "*Roma ricercata nel suo sito: con tutte le curiosità, che in esso si ritrovano tanto antiche, come moderne, cioe' chiese, monasterj, ospidali, collegj, seminarj, tempj, teatri, anfiteatri, naumachie, cerchi, fori, curie, palazzi, statue, librarie, musei, pitture, e sculture, ed i nomi degli artefici.*"In Roma: Presso Michel'Angelo Barbiellini al Palazzo Massimi. (1769)

Maurer, Maria F. "*Gender, Space and Experience at the Renaissance Court: Performance and Practice at the Palazzo Te.*" Amsterdam: Amsterdam University Press. (2019)

Montel, Sophie. "*The Architectural Setting of the Knidian Aphrodite,* published in *Brill's Companion to Aphrodite.*" Edited by Amy C. Smith and Sadie Pickup, Koninklijke Brill NV, Leiden, The Netherlands. (2010): pp. 251-268
https://www.academia.edu/8848783/The_Architectural_Setting_of_the_Knidian_Aph rodite

Moore, Charles. "*The Life and Times of Charles Follen Mckim.*" Houghton Mifflin Company. (1929)
https://archive.org/details/lifeandtimesofch010849mbp

Nesselrath, Arnold. "*Zeitschrift Für Kunstgeschichte* 52." no. 2 (1989): 281-92. doi: 10.2307/1482483.

Nogara, Bartolomeo. "*Scritti inediti e rari di Biondo Flavio.*" Biblioteca Apostolica Vaticana (1927): pp.194-202.

http://saprat.ephe.sorbonne.fr/media/667d8bd1b0acf02fcdf5ddef5ab57538/camenae-06-selter.pdf

Palladio, Andrea. "*Le antichità di Roma. Raccolta brevemente da gli auttori antichi, et moderni. Nuovamente posta in luce*." Roma: appresso Vincenzo lucrino. (1554)

Palladio, Andrea. "*The Four Books on Architecture, with a new introduction by Adolf K. Placzek.*" Dover Publications, Inc., New York. (1965)

Pedretti, Carlo. "*A Chronology of Leonardo da Vinci's Architectural Studies After 1500, Librairie E. Droz.*" First English Language Edition, Geneva (Switzerland), (1962)

Pinto, John. "*Piranesi at Hadrian's Villa.*" in *Eius Virtutis Studiosi: Classical and Postclassical Studies in Memory of Frank Edward Brown*, R.T. Scott & A.R. Scott, Eds. Hanover. (1993): pp.465-477

Pinto, John. "*Giovanni Battista Piranesi's Plan of Hadrian's Villa.*" The Princeton University Library Chronicle, Vol. 55, No. 1 (AUTUMN 1993), pp. 63-84 https://www.jstor.org/stable/26509106

Pinto, John. "*Speaking Ruins: Piranesi, Architects and Antiquity in Eighteenth-Century Rome.*" Ann Arbor. (2012)

Pliny, The elder. "*Natural History, Volume X: Books 36-37.*" Translated by D. E. Eichholz, Harvard University Press. (2006)

Pope Pius II (1405-1464). "*Memoirs of a Renaissance Pope; the commentaries of Pius II, an abridgement.*" translated by Florence Alden Gragg, edited by Leona C. Gbel, published by Capricorn Books, New York (1959): p.169-196

Riahi, Pari. "*ARS ET INGENIUM: THE EMBODIMENT OF IMAGINATION IN THE ARCHITECTURAL DRAWINGS OF FRANCESCO DI GIOGRIO MARTINI.*" thesis McGill University. (2010)

Rocca, Eugenio. "*Agrippa's pantheon and its origin.*"(2015). 10.1017/CBO9781139015974.003.

Rosenthal, Earl Edgar. "*The Antecedents of Bramante's Tempietto.*" Journal of the Society of Architectural Historians, Vol. 23 No. 2, May. (1964): pp. 55-74 DOI: 10.2307/988161 https://www.jstor.org/stable/988161

Rowland, Ingrid. "*Raphael, Angelo Colocci, and the Genesis of the Architectural Orders.*" *The Art Bulletin*, Vol. 76, No. 1 (Mar. 1994): pp. 81-104. https://www.jstor.org/stable/3046004

Sanzio, Raphael. "*Lettera di Raffaello d'Urbino A Papa Leone X Di Nuovo Posta in Luce Dal Cavaliere Pietro Ercole Visconti.*" Tip. delle Scienze in Roma (1840) http://saprat.ephe.sorbonne.fr/media/667d8bd1b0acf02fcdf5ddef5ab57538/camenae-06-selter.pdf

Sanzio, Raphael. "*The Letter to Leo X by Raphael and Baldassare Castiglione, c.1519.*" in Vaughan Hart and Peter Hicks, *Palladio's Rome: A Translation of Andrea Palladio's Two Guidebooks to Rome* (New Haven: Yale University Press, 2006): pp.179-92

Schulz, Juergen. "*The Revival of Antique Vault Decoration.*" Acts of the XX International Congress of the History of Art 2, Princeton, Vol.II, (1963)

Scully, Vincent Joseph. "*Modern Architecture and Other Essays, Selected and with introductions by Neil Levine.* "Princeton and Oxford: Princeton university Press. (2003)

Serlio, Sebastiano. "*L'ARCHITETTURA I libri I-VII e Extraodinario nelle prime edizioni.*" Milano: EDIZIONI IL POLIFILO. (2001)

Selter, Bert. "*ARCHITECTURE & POETRY.THE LETTER OF RAPHAËL TO POPE LEO X AND THE INTRODUCTIONS TO A FEW HUMANIST EDITIONS OF CONSTANTINIAN POETRY.* " (Camenae n° 6 – juin 2009)

Smith, Amy C.and Sadie Pickup. "*Brill's Companion to Aphrodite*, Koninklijke brill NV.*" Leiden, the Netherlands (2010)

Strong, D. E. "*Late Hadrianic Architectural Ornament in Rome.*" Published by British School at Rome, Vol. 21 (1953): pp. 118-151 https://www.jstor.org/stable/40310526

Tedeschi, Eugenio Gentili, Denti, Giovanni. A cura di Annalisa Mauri, fotografie di Federico Brunetti, "*Le Corbusier a villa Adriana un Atlante.*" Firenze: Alinea. (1999)

Vasari, Giorgio. "*The Lives of the Most Excellent Painters, Sculptors, and Architects (Modern Library Classics).*" translated by de Vere, Gaston du C, New York: Modern Library (2006)

Venturi, Adolfo. "*Storia dell'arte italiana.*" v.11, pt.1, Milano: U. Hoepli. (1901) https://archive.org/details/storiadellarteit111vent

Vagenheim, Ginette. "*Retour sur Pirro Ligorio et Francesco Contini a Tivoli, le plan de la villa d'Hadrien et son explication (Dechiaratione), La villa et l'univers familial dans l'antiquité et à la Renaissance.*" l'Universite Paris-Sorbonne. (2008) : pp.79-90.

Viscogliosi, Alessandro. "*Il Pantheon e Apollodoro di Damasco*", in F. Festa Farina, G. Calcani, C. Meucci, M. L. Conforto, A. N. Al Azm(a cura di)Tra Damasco e Roma. L'architettura di Apollodoro nella cultura classica, Catalogo della mostra. Roma (2001): pp. 156-161

Warwick, Ryan G. "*Viget Certe Viget Adhuc: The Invention of the Eternal City in Flavio Biondo's Roma Instaurata.*" Annandale-on-Hudson, New York May. (2016) https://digitalcommons.bard.edu/cgi/viewcontent.cgi?article=1192&context=senproj_s2016

Weller, Allen Stuart. "*Francesco di Giorgio, 1439–1501.*" Chicago: The University of Chicago Press. (1943): pp. 1–44.

Wittkower, Rudolf. "*Architectural principles in the age of humanism.*" W. W. Norton & Company. (1971)

Ytterberg, Michael. (2005). "*The perambulations of Hadrian: a walk-through Hadrian's Villa.* "https://www.researchgate.net/publication/35641808_The_perambulations_of_Hadrian_a_walk_through_Hadrian's_Villa

Yourcenar, Marguerite. "*Memoirs of Hadrian.*" first published 1951, published in Penguin Books 1959, Great Britain. (2000)

Zorzi, Giangiorgio, Fiocco, Giuseppe. "*I disegni delle antichità di Andrea Palladio.*"Venezia: N. Pozza. (1959)