CAVES OF WONDER:

THE LEGITIMACY OF THE GROTTO AS A SUBTERRANEAN LANDSCAPE ELEMENT

by

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(Under the Direction of Marianne Cramer)

ABSTRACT

This thesis explores the relevance of the grotto as an architectural type through time and will propose design possibilities for continuing this tradition in the twenty first century. Specifically, it investigates grotto works from the classical period through the twentieth century. Emphasis will be placed on the form, meaning, and purpose of the grotto as an underground chamber or passage. This thesis also considers the grotto as a platform for theoretical speculation on the implications of designing below the earth's surface. The final component of the thesis is a design application comprised of three stories with corresponding collages that portray the design process for grotto inspired structures.

INDEX WORDS: grottoes, nymphaea, fountain design, artificial caves, subterranean architecture, garden structures, follies, symbolism in architecture, survival of antiquity, visionary art, landscape architecture, historic preservation, cultural history

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GLOSSARY OF TERMS

Atlantes (pl). A figure (or figures) of a man used in place of a column to support an entablature. (Harris 1977, 34)

Automata. Moving figures, particularly popular during the Renaissance, activated by a variety of mechanisms, from clockwork to wind-power, but more usually by water, forming complex *giochi d'aqua*. They have a very long history: the best-known treatise concerning them, the *Pneumatica*, was written by Hero of Alexandria in the first century AD, and was the source for their new-found popularity in the Renaissance. (Pizzoni 1997, 258)

Bacchanalia. In Roman religion, festival in honor of Bacchus, god of wine. Originally a religious ceremony, like the Liberalia, it gradually became an occasion for drunken licentious excesses and was finally forbidden by law (186 B.C.). (*The Columbia Encyclopedia* 2004*)*

Bacchus. In Roman religion and mythology, god of wine; in Greek mythology, Dionysus. . . He was worshiped at Delphi and at the spring festival, the Great Dionysia. In Rome, the mysteries of his cult were closely guarded, and he was identified with an ancient god of wine, Liber Pater. Many legends connected with Dionysus were also used in the cult of Bacchus. (*The Columbia Encyclopedia* 2004*)*

Camenae. In Roman religion and mythology, water nymphs gifted in prophecy. At Rome they had a sacred spring from which the vestals drew water for their rites. In later myth they were identified with the Greek Muses. (*The Columbia Encyclopedia* 2004*)*

Cappella. Italian for chapel. (Alvarez 1981, 63)

Castalia. In Greek mythology, spring on Mt. Parnassus. Named for a nymph, it was sacred to the Muses and was said to give poetic inspiration to those who bathed in it. (*The Columbia Encyclopedia* 2004*)*

Castellum (-a). Architectural fountains of monumental proportions that marked the distribution point of an aqueduct. (Alvarez 1981, 15)

Chthon. Refers to the underworld, that which is below the earth and beyond it. (Hillman 1979, 36)

Cryptoporticus. Underground vaulted corridor, usually with oblique lighting through the vault. (Boëthius 1970, 243)

Dionysus. In Greek religion and mythology, god of fertility and wine. . . he was one of the most important gods of the Greeks and was associated with various religious cults. . .

His characteristic worship was ecstatic and women were prominently involved. . . It was believed that not only could he liberate and inspire man through wine and ecstatic frenzy, but he could endow him directly with divine creativity. (*The Columbia Encyclopedia* 2004)

Exedra. A large niche or recess, usually with a bench or seats, semicircular or rectangular in plan and either roofed or unroofed. (Harris 1977, 205)

Fontanone rustico. A rustic fountain of monumental proportions. (Alvarez 1981, 162)

Ge. Refers to the underground, the dark earth. (Hillman 1979, 35)

Giochi d'acqua. An Italian term, literally, 'water games', referring to variously shaped jets of water activated by water-powered mechanisms. Very popular in sixteenth and seventeenth century gardens, *giochi d'acqua* sometimes also gave out sounds [via] worked automata; they might also include *scherzi* (jokes), to catch the unwary visitor by surprise. (Pizzoni 1997, 259)

Grotesque. Sculptured or painted ornament involving fanciful distortions of human and animal forms, sometimes combined with plant motifs, esp. a variety of arabesque which has no counterpart in nature. (Harris 1977, 269)

Grotta. Italian for cave, grotto.

Grot•to \'gräd•(ˌ)ō, -ä(ˌ)tō\ n. [It *grotta, grotto,* fr. L *crypta* vault, cavern – more at CRYPT] 1 a: a natural covered opening in the earth: (1): a cave typically picturesque and rocky and of limited size (2): a recess in a cave (3): a usu. arched recess or hollow place (as in the side of a hill) making a natural shelter and formed by or resembling the mouth of a cave b: an artificial recess or structure typically arched and rocky and made to resemble a natural grotto (Gove 1976, 1002)

1. A small cave or cavern. 2. An artificial structure or excavation made to resemble a cave or cavern. [Alteration of Italian *grotta,* from Vulgar Latin *grupta,* from Latin *crypta,* vault.] (Soukhanov 1996, 799)

An artificial or natural recess whose decoration took on various forms over the centuries: illusionistic in the Mannerist period, scenographic during the Baroque, and 'natural' in the romantic age; decoration was usually à *rocaille,* or fake rock, and à *coquillage,* a kind of mosaic with variously shaped and coloured shells. (Pizzoni 1999, 260)

A natural or artificial cave, often decorated with shells or stones and incorporating waterfalls or fountains. (Harris 1977, 269)

Liber. In Roman religion, god of fertility and wine. He was usually identified with Bacchus . . . Liber and Libera [his consort] had a famous cult on the Aventine Hill in Rome in connection with Ceres. (*The Columbia Encyclopedia* 2004)

Liberalia. In Roman religion, festival of Liber and Libera. The rustic festival of great rejoicing and merrymaking was held on March seventeenth. (*The Columbia Encyclopedia* 2004)

Mostra (-e). Facades marking the outlets of aqueducts. (Wiles 1933, 40)

Musaeum. A grotto like a *nymphaeum,* but originally sacred to the Muses. (Boëthius 1970, 243)

Nekyia. A descent or voyage to the underworld. (Smith 2001, 2)

Nymph. In Greek mythology, female divinity associated with various natural objects. It is uncertain whether they were immortal or merely long-lived. There was an infinite variety of nymphs. Some represented various localities . . . others were identified with the part of nature in which they dwelled . . . and still others were associated with a particular function of nature . . . Nymphs were represented as young, beautiful, musical, amorous, and gentle, although some were associated with the wilder aspects of nature and were akin to satyrs; others were vengeful and capable of destruction . . . The nymphs' cult was widespread in Greece. (*The Columbia Encyclopedia* 2004)

Nymphaeum (-a). Originally a cave with running water, dedicated to the Nymphs. Whence, any artificial fountain grotto or, by extension, any public fountain. (Boëthius 1970, 243)

1. A room decorated with plants, sculpture, and fountains (often decorated with nymphs), and intended for relaxation. 2. A building dedicated to the nymphs; a large chamber, decorated with columns, statues, and pictures and having a stream of spring water gushing from a fountain at its center, providing a cool and pleasant retreat. (Harris 1977, 381)

In classical antiquity, a place or small temple sacred to nymphs and sea and river gods; nymphaeums [sp] became popular in gardens during the Renaissance, usually in connection with a spring, traditionally haunted by nymphs, a symbol of life and necessary for the making of a garden. The nymphaeum might take many forms such as niches, *exedrae,* grottoes and pavilions, and it remained popular throughout the seventeenth century. As a garden structure linked to water, it continued to be used in gardens during the rococo period, while in the age of romanticism it took the form of a 'natural' grotto, as at Stourhead. (Pizzoni 1977, 260)

Strictly a temple of the nymphs, but also applied to decorated grottoes with fountains, and to fountain buildings. (Lyttelton 1974, 325)

Odysseus. Referred to as **Ulysses** in Latin, was the son of Laertes and was the ruler of the island kingdom of Ithaca. He was one of the most prominent Greek leaders in the Trojan War, and was the hero of Homer's Odyssey. (Hunter 1997)

Parnassus. A mountain in central Greece. In ancient Greece it was sacred to Apollo, Dionysus, and the Muses. The fountain of Castalia was on its slopes; at the foot of the mountain lay Delphi. Corycian Cave, sacred to Pan, is located between Delphi and the summit. (*The Columbia Encyclopedia* 2004)

Peperino. Volcanic tufa stone from the Alban Hills, south-east of Rome. (Boëthius 1970, 244)

Porphyry. Rock containing relatively large conspicuous crystals, especially feldspar, in a fine-grained igneous matrix. (Morris 1969, 1021)

Pumice. Pumice is a light, porous volcanic rock that forms during explosive eruptions. It resembles a sponge because it consists of a network of gas bubbles frozen amidst fragile volcanic glass and minerals. All types of magma (basalt, andesite, dacite, and rhyolite) will form pumice. (USGS 2000)

Putti. (pl. of putto). In Renaissance architecture and derivatives, a decorative sculpture or painting representing chubby, usually naked infants. (Harris 1977, 439)

Satyr. In Greek mythology, part bestial, part human creature of the forests and mountains. . . An important part of Dionysus' entourage, they were lustful, fertile creatures, always merrily drinking and dancing. (*The Columbia Encyclopedia* 2004)

Scaena frons. The richly decorated front of the scaena [back building of an ancient theater], facing the audience. (Harris 1977, 480)

Spugne. A form of plasterwork composed of a regional Italian limestone. (Gurrieri and Chatfield 1972, 39 and Jackson 2001, 5).

Stibadium. A semicircular tricliniar [dining] couch. (Ricotti 1987, 137)

Tartari. Natural concretions of calcium carbonate found in great quantities at Tivoli. (Alvarez 1981, 142)

Triclinium (-a). Originally a dining-room, so-called from the conventional arrangement of three banqueting couches (*klinai*) around three sides of a square. (Boëthius 1970, 245)

Tufa. The principal local building stone of Latium and Campania, a concreted volcanic dust. (Boëthius 1970, 245)

CHAPTER 1

INTRODUCTION

"Born of nature and spun by art"
(Miller 1982, 123)

Grotto: A natural or artificial cave, often decorated with shells or stones and incorporating waterfalls or fountains. (Harris 1977, 269)

The grotto is simultaneously a work of nature, art, and science. It is both an architectural structure and landscape feature incorporating the primary elements of earth and water. The grotto summons the visitor to enter its secretive, multivalent chamber and through this process it becomes a portal as much as a destination. The grotto's function is one of invitation, seduction, and transformation. History chronicles its purpose from the ancient use as spiritual sanctuary to the pleasure grounds of the wealthy, indicating its metamorphosis for the purpose of meeting both sacred and profane intentions. The legitimacy of the grotto as a landscape element is to be found in its connection with the cave as both an architectural type and psychological, archetypal symbol. The theoretical implications of grotto construction match the vibrancy of utilitarian arguments in favor of the grotto tradition. The grotto has endured through time, and it is the presence of this survival that advocates further investigation.

This thesis explores the grotto from the classical period through the twentieth century. Emphasis is placed on the form, meaning, and purpose of the grotto as an underground chamber or passage. The primary focus is on Italian examples since Rome was the historical locus for

grotto design and construction. Examples of grottoes within the British Isles, France, and the United States will also be described. The chapters chronicle important developments in grotto design with relevant case studies for each era. The case studies were chosen based on a set of criteria including a grotto's scope of influence, evidence of innovation, and overall characteristics illustrative of the respective time period.

This research considers the grotto an appropriate theoretical platform for the exploration of subterranean design and argues that the grotto represents a valid landscape feature for the twenty-first century. In an effort to portray an accurate chronology of grotto design, many examples are described since there is a multitude of grotto types and a significant amount of variability within each category. A copious number of illustrations and photographs are used to support written descriptions of design details related to form and decorative treatments. The thesis has limited the scope of examination to pagan and secular grottoes, except for twentieth century examples of religious inspired models by grassroots artists, in an effort to buttress the argument that grottoes represent an authentic and suitable landscape form for post-industrial culture. Further research in the areas of historic religious grottoes and accounts of grotto construction within Germany, the Netherlands, and a more extensive survey of France is warranted for future designers interested in grotto fabrication.

Chapters two through six undertake a chronological survey of grotto design through written description within the context of a particular era. The survey begins with Ancient Greece and Rome and proceeds through the Renaissance, the Baroque, the eighteenth century, and is completed with a retrospective of the nineteenth and twentieth centuries. Chapter seven contains an addendum to the grotto chronology through a review of the grotto's clandestine function as a site for erotic activities. Chapter eight discusses the connection between the grotto and the cave,

central to demonstrating the authenticity of the grotto as a subterranean landscape element. It also explores the ambiguous nature of the grotto and how this serves as a foundation for twenty-first century design initiatives. Chapter nine comprises the design application segment which is executed through a set of three stories with corresponding collages depicting the design process for grotto inspired constructions.

CHAPTER 2

THE CLASSICAL WORLD

Ancient Greece

The importance of water in the classical world, as in other civilizations, linked this vital natural resource with a spiritual worldview that necessitated certain relations between the gods and man. In Greece, springs served as a valuable water source because rainfall was limited (Alvarez 1981, 2-3). In order for the springs to continue to provide for man's needs, the Greeks believed the gods must be propitiated in order to ensure the purity and abundance of this life giving resource (Alvarez 1981, 3). The deities associated with water were the Naiads, a type of nymph, who presided over the springs, rivers, and lakes. The nymphs personified natural phenomena such as the mountains, sea, and forests, and were associated with fecundity, prophesy, and protection of their respective habitat. The Muses were connected with the nymphs because they were originally deities allied with mountains and waters. The Greeks, and later the Romans, came to venerate the Naiads as goddesses of water, marriage, and birth (Alvarez 1981, 1-2).

In the Greek language, the term nymphaeum denoted a sacred grotto fountain dedicated to the nymphs (Alvarez 1981, 1). The image conjured by this term for the Greeks was one of a primordial water source ushering from the earth in purity and linked to a protective deity. Physical remains of Greek nymphaea are rare as are descriptions of actual nymphaea in antiquity, so reliance on their depictions found in classical literature is essential (Miller 1982,

13). Early Greek fountains served as public water sources as well as locations to venerate the nymphs (Alvarez 1981, 3). Spring grottoes were preferred to open water sources because the water was cooler and believed to be higher in quality (Alvarez 1981, 4). The seclusion of a cave or rock overhang also provided more privacy for devotions to the deities (Fig. 2-1). For this reason, nymph worship is closely associated with grottoes. In this manner, grottoes functioned as shrines (Alvarez 1981, 5).

> For, as they established temples, groves, and altars, to the celestial Gods, but to the terrestrial Gods, and to heroes, altars alone, and to the subterranean divinities pits and cells; so to the world they dedicated caves and dens; as likewise to Nymphs, on account of the water which trickles, or is diffused in caverns, over which the Naiades . . . preside. (Porphyry 1991, 31)

One well known example is the Corycian cave on Mount Parnassus as referenced by Aeschylus and Pausanius respectively (Fig. 2-2):

> And I revere the nymphs, who live in the Corycian cave,
> Hollow, dear to birds, the haunt of gods. (Aeschylus 22-23)

> The ascent to the Corycian cave is easier for a man on foot than for mules and horses. This cave, as I pointed out a little above, got its name from a nymph Corycia; and of all the grottos I have seen it appeared to me the most worth seeing. The total number of caves that open upon the beach or on the deep sea is past finding out; but the most famous caverns in Greece and in foreign lands are these. (Pausanius 10.32.2-3)

> But the Corycian cave is larger than those I have mentioned, and you can go a very great way through it even without lights. The roof rises to a sufficient height above the floor; and there is water, some welling up from springs, but still more dripping from the roof, so that all through the cave the marks of droppings are visible on the floor. The inhabitants of Parnassus believe that it is sacred to the Corycian nymphs, and especially to Pan. (Pausanius 10.32.7)

The nymphs were not the only deities associated with grottoes or springs. Ovid mentions an area sacred to Diana which possessed a natural cave:

> There was a valley thick with spruce and tapering cypress trees,
> called Gargaphie and sacred to girt-up Diana,
> and there was, in its furthest recess, a woodland cave
> constructed by no art but by nature, in her genius,

> imitating art; for she had shaped a natural
> arch out of light tufa and the native pumice stone. (Ovid 3.155-160)

Caves were found throughout Greece where religious rites of an unknown nature were conducted, though references to the Eleusinian mysteries have been sited as an example of subterranean religious practices (Miller 1982, 15). The use of caves in the classical world as sites of worship and veneration was well known among scholars including Porphyry who would later influence Renaissance artists as well as poets of a later era, such as Yeats, attracted to Neo-Platonist philosophy (Porphyry 1991, 13):

> Caves, therefore, in the most remote periods of antiquity, were consecrated to the Gods, before temples were erected to them. (Porphyry 1991, 42-43)

> Not only, however, did the ancients make a cavern, as we have said, to be a symbol of the world . . . but they also assumed it as a symbol of all invisible powers, because, as caverns are obscure and dark, so the essence of these powers is occult. (Porphyry 1991, 31-32)

On the north slope of the Acropolis, caves are visible in which niches were cut for votives to Apollo and Pan (Fig. 2-3 thru Fig. 2-5). Votive reliefs of Pan and the Nymphs were also located in niches along a cliff face adjacent to these caves (Travlos 1971, 417) (Fig. 2-6 and Fig. 2-7). Pausanius makes the following observation on his way down from the Acropolis of the Klepsydra spring located directly below the Propylaia:

> Descending not as far as the lower city, but below the
> portal, you come to a spring of water, and near it a
> sanctuary of Apollo in a cave. (Pausanius 1.28.4)

Another reference to the link between grottoes and the worship of Pan can be found in the story of Daphnis and Chloe:

> And they decked the grotto and the statues with chaplets of flowers and they
> raised an altar to Love the Shepherd and set up a shrine to Pan… (Longus 4.39)

Sanctuaries to Apollo were often sited near springs and Dionysus was also honored with the presence of grotto sanctuaries (Alvarez 1981, 5). As time wore on, the sites where springs were located became more regulated to meet the demands of growing populations. The distribution of water became crucial near cities so improvements included cisterns and draw basins (Alvarez 1981, 6). If the spring was in the open, roofs were built to cover the water source, mimicking the natural cave or rock overhang. Grotto interiors were sometimes extended or wall construction was completed beside the entrance. A façade and portico might be added to the exterior (Alvarez 1981, 6-7). These types of modifications are illustrated by the Hellenistic Castalian spring fountain house at Delphi that was sacred to Apollo and a location where the Muses were thought to provide poetic inspiration. It was in these waters, discharging from the cliffs of Phaedriades, where pilgrims to Delphi would stop for purification before conferring with the oracle (Miller 1982, 16) (Fig. 2-8).

> And there, at the point where the two rocks meet in the deepest recess of the gorge and at the foot of the east rock (known anciently as Hyampeia and presently as Flempoukos), the most limpid water gushes forth: it is the water of the celebrated Kastalian Fountain where both priest and pilgrims cleansed themselves before entering the temple [of Apollo where the oracle was consulted]. (Andronicos 1976, 6)

The spring was altered by the addition of a basin, channels, niches, and the construction of walls as well as a portico near the entrance (Alvarez 1981, 7) (Fig. 2-9 and 2-10). Remnants of the seven marble pillars capped by an entablature and the statues once found in the three niches are now vanished as are the bronze conduits that brought water down the steps to the collection basin (Miller 1982, 16). Elderkin acknowledges these changes as part of a progression in grotto design:

> The general conclusion is then that the sacred grotto containing a spring of water served the purpose of a temple, was consequently embellished with part or all of a temple façade, and finally yielded an independent structure to which was transferred the mantic function of the primitive cave. (Elderkin 1941, 132)

Modifications to grotto sanctuaries would eventually progress to artificial reproductions of spring grottoes (Elderkin 1941, 132). Springs that were physically isolated, tended to remain without alteration with their function remaining primarily as a sanctuary for the nymphs (Alvarez 1981, 8). Grotto sanctuaries in their pristine state were the ones portrayed in Greek literature as described by Longus (Alvarez 1981, 9):

> There was in the neighbourhood a great rock, round on the outside and hollowed to a cavern within, and it was called the grotto of the Nymphs. And within the grotto stood the statues of the Nymphs, wrought in stone; and these were carven with feet unshod, their arms bared to the shoulder, their tresses flowing loose to the neck and a girdle flung about their loins: smiles played upon their brow: their mien was as of a band of dancers. The mouth of the grotto was the very centre of the great rock. Water bubbling from a spring formed a purling stream which fed and cooled a meadow that stretched its smooth turf up to the mouth of the cave. And all around were hung up milk-pails and flutes, pipes and reed-flutes, the offerings of old shepherds in times gone by. (Longus 1.4)

Despite alterations to grotto sanctuaries, public fountains did not lose their original connection to the sacred grotto image of the nymphaeum. The Cyclopean Fountain and Fountain of Peirene, both in Corinth, are examples of this phenomenon (Alvarez 1981, 9). Peirene was the principal spring at Corinth which sourced both fountains. The siting of the Cyclopean fountain in a partially subterranean location reflected a natural spring grotto and is most likely the first fountain still in existence to draw water from the spring (Hill 1964, 46) (Fig. 2-11 and Fig. 2-12). The Fountain of Peirene, located southwest of the Cyclopean Fountain, included rock-cut chambers that once held water. These chambers were constructed under a rock overhang with an arched façade (Fig. 2-13). This fountain served both as a sacred spring and as a municipal water source which was in use well into the twentieth century (Hill 1964, 109). It underwent significant renovations during seven Roman periods (Hill 1964) (Fig. 2-14). Pausanius' description of Peirene is based on modifications to the spring most likely undertaken by Herodes

Atticus in the second century A. D. during the sixth Roman period or could be that of the earlier fifth period (Hill 1964, 103) (Fig. 2-15).

> Beyond it is an entrance to the water of Pirene . . . the spring is adorned with white marble, and there are chambers made like grottos, from which the water flows into a basin in the open air. (Pausanias 2.3.3)

These two fountains represent a transitional form between the Greek sacred grotto fountain and the Roman monumental public fountain (Miller 1982, 16).

Evolving from the original grotto sanctuary and the enhancements made on behalf of improved water access and distribution, structures were eventually created that allowed the transport of water through pipes or via an aqueduct. These man-made structures referenced the natural grotto through the use of a niche or apse shaped interior whose purpose was that of a public shrine. Household shrines also came to mimic the spring grotto through courtyard niche fountains that would hold nymph statues (Alvarez 1981, 7-8).

In Hellenistic times, public fountains and rooms that imitated grottoes became widespread and were secularized (Alvarez 1981, 11). Large fountains were placed in agoras at this time (Lawrence 1996, 179). These secularized versions of the grotto sanctuary were not referred to as nymphaea by the Greeks, although this term has come to denote such structures in current times by antiquarian researchers (Alvarez 1981, 12).

Ancient Rome

The Romans considered springs a vital part of their city's history and development. Early legends and cults were associated with the springs of Rome; the most famous fountain that of Camenae. This spring that ushered from a cave, a true grotto sanctuary, was the purported location where the second king of Rome, Numa Pompilius, and the water nymph, Egeria, met (Fig. 2-16 thru Fig. 2-18). It was at this site that Egeria and her sisters, the Camenae, imparted

invaluable knowledge to the fledging nation (Coffin 1991, 30). Juvenal laments the alterations made to the grotto as viewed in his lifetime:

> From here we strolled down
> To the nymph's new, modernized grotto. (What a gain in sanctity
> And atmosphere there would be if grassy banks
> Surrounded the pool, if no flash marble affronted
> Our native limestone!) (Juvenal 3.19-23)

The Roman nymphaea consisted of grotto sanctuaries such as the Camenae fountain. In addition, the Romans constructed two other nymphaeum types, monumental public fountains and private pleasure grottoes. All three types originated from the spring grotto of ancient Greece (Alvarez 1981, 15).

Although large public fountains existed in Greece, the Romans brought this form to a much fuller potential. These fountains, referred to as castella, were architectural fountains that functioned as aqueduct distribution points (Alvarez 1981, 15). Castella were dedicated to water nymphs and other water deities, but cannot be considered to be religious structures as the sacred grotto fountains had been in Greece. These fountains were essentially utilitarian and decorative rather than spiritual in function. Since castella had two or three storied facades that incorporated columns and niches that resembled a theater stage set, or scaenae frons, they were termed façade nymphaea (Alvarez 1981, 16). Vitrivus describes these façade stage sets in his treatise on architecture:

> There are three types of sets: one that is called tragic, one called comic, and the third satyric. Their ornamentation is unlike, and conceived on differing principles. Tragic sets are represented with columns and gables and statues and the other trappings of royalty. Comic sets look like private buildings with balconies, and the view from their windows are designed, in imitation, on the principles of private buildings. Satyric sets are ornamental with trees, caves, mountains, and all the other rustic features, fashioned to have the appearance of landscape. (Vitrivus 5.6.8)

Satyric sets incorporated grottoes in their fabrication and were part of a general theatrical lexicon (Miller 1982, 21). Grottoes were an integral part of pastoral drama and poetry, an aspect of their history which would influence later artists of the Renaissance.

> Because satyrs are inhabitants of grottoes within and without, there is an immediate association between grottoes and the pastoral "drama" – its sphere populated by gods and nymphs and satyrs; its principal pursuit, love. As nature anticipates Art, the satyr is a courtier in Bacchic guise. (Miller 1977, 198)

The façade nymphaeum's development was certainly connected with both the theater and the grotto sanctuary. Three types of façade nymphaea existed in Roman architecture (Alvarez 1981, 16). These included nymphaea consisting of a straight wall with niches which were framed by tabernacles as seen in the Trajanic nymphaeum at Miletus (Fig. 2-19). Another incorporated a large central niche with wings on either side with smaller tabernacles as illustrated by the Aqua Julia (Fig. 2-20 and Fig. 2-21). And the third type consisted of a wall with three large niches as can be seen at the Septizonium of Septimius Severus (Fig. 2-22).

Public fountains were important architectural features in Rome. Given that Rome had an abundant supply of water, this resource was diverted into a myriad of water displays for public use and enjoyment. Private nymphaea also existed and have Greek origins as well. The earliest ones were found near Tivoli where there was a proliferation of natural grottoes owing to geologic formations (Alvarez 1981, 17). Miller notes:

> Specifically Roman ties to the creation of grottoes are reinforced by the landscapes of Latium and the Campagna Romana to the south of the city. Walls of tufa, the thick crust of old lava and rock--what grottoes are made of in Pliny and Ovid--came into being through volcanic eruptions and formed the ridges around Rome. (Miller 1982, 22)

The first man-made private nymphaea were "small, rectangular vaulted rooms with an apse or niche" (Alvarez 1981, 17). Their purpose was not religious either; rather, they were for the pleasure that running water bestows an observer. Most private nymphaea remained small

and integrated into villa or palace design (Alvarez 1981, 19). Exceptions to this were the large architectural private nymphaea constructed by the Emperors. The smaller versions were often decorated with pumice, pebbles, shells, and glass, in imitation of natural caverns. Statues were normally placed in the interior, mimicking the Greek sanctuaries. An example can be found in Pompeii at the House of the Little Fountain in which a small, pedimented niche fountain was decorated with mosaics composed of shells and tiles set amongst wall murals of a maritime and rural character (Maiuri 1953, 41) (Fig. 2-23). In the Imperial period, small niche nymphaea such as the example from Pompeii were added to primarily supply water sounds and were often located within open garden dining areas (Alvarez 1981, 19). The Romans also enjoyed the nymphaea because they provided respite from the dry, hot Italian summers by affording both cooler temperatures and higher humidity.

> Soon this kind of shelter [grotto caves] for hot days assumed monumentality; highly sophisticated nymphaea were built in front of natural grottoes, but could also be wholly artificial. (Boëthius 1970, 194)

> Together with the nymphaea and the cryptoporticoes one has to remember subterranean halls, ‘aestivi specus’ [summer grottoes], constructed as shelters against the heat of the warm summer months. (Boëthius 1970, 194)

Grottoes proliferated in the course of the Imperial period with their greatest popularity during the late Empire. Nymphaea would become larger as their designs progressed and rustication would diminish (Alvarez 1981, 17).

Reflecting the Greek tradition of creating rooms that resembled grottoes during the Hellenistic era, private Roman nymphaea became linked with indoor residential dining rooms (Alvarez 1981, 18). These dining rooms were referred to as triclinia which often overlooked gardens as did the nymphaea. Natural grottoes were sometimes used instead of completely man-made structures to create the triclinia, thereby lessening the effort to make a subterranean

structure. The most famous example of this practice is found at Sperlonga which will be discussed under the case studies.

In looking at the appropriation of the Greek nymphaea by the Romans, it is important to distinguish between the employment of the term and the replication of the form. The term nymphaeum was used by the Romans only to denote Greek shrines and sanctuaries dedicated to the nymphs as was the Latin custom at the time. Eventually the word came to signify Roman public fountains, castella, rather than sacred grotto fountains when the term was assimilated into Latin (Alvarez 1981, 22). As far as the replication of form, the grotto sanctuaries, the castella, and the private nymphaea all reflected the design of the Greek spring grotto. The private nymphaea, in particular, were fashioned on Greek antecedents and inspired by the works of Ovid, Virgil, and Propertius (Alvarez 1981, 17). The difference lay in its purpose since the Romans constructed these private nymphaea to delight rather than for purposes of worship. The influence of the Greeks was significant, which is apparent given that Roman versions of the sacred grotto fountain remained in vogue for approximately five hundred years. This influence from antiquity would fall into obscurity for many centuries, only to be revived during the Renaissance when the West turned to classicism for inspiration. It was during this time that nymphaea were rediscovered and revitalized into a myriad of forms based on ancient models.

Case Studies

Sperlonga

Sperlonga, a rustic villa developed during the Augustan era along the coast, south of Rome, incorporated the first known example of an integrated triclinium and grotto (Miller 1982, 25) (Fig. 2-24). The site of the villa along the seacoast encompassed both a lagoon and cavern. The grotto and triclinium were created within the cavern which faced out towards the lagoon.

The triclinium was situated on a man-made island partially composed of rectangular pools filled with fish set within a larger rectangular pond (Fig. 2-25 thru 2-27). Platforms and planking were used as necessary for flooring. The dining area pointed towards the back of the cavern which had frescoed seascapes and Homeric sculptures with a polychrome marble floor (Miller 1982, 25). Visitors would either swim to the dining island or arrive by skiff (Kuttner 2003, 118). A round pool representing Charybdis lay just beyond the rectangular fishpond that surrounded the triclinium island. A sculpture emerged from this circular pool symbolizing Scylla's rock (Ricotti 1987, 168). In this manner, mythology was used as thematic imagery within Roman nymphaea.

The dining area was both practical and ornamental (Ricotti 1987, 138). Dining would begin in mid to late afternoon when the sun would highlight the sculptures sheltered in the rear of the cavern (Ricotti 1987, 169) (Fig. 2-28). Guests would enjoy this spectacle as servants brought food from the banks of the rectangular fishpond onto a small footbridge from which they would float food out to the island where diners would be reclined on pillows (Ricotti 1987, 169). Entertainers would perform using the lateral grotto adjacent to the sculptures (Fig. 2-29). This area was also used for additional dining space as well as a place to relax before or after dinner. At the back of this lateral grotto was a doorway which led to a chamber with three alcoves in which beds were arranged. Guests could have chosen to either rest in this area or take a walk after dining (Ricotti 1987, 169). Sperlonga has been described as:

> . . . the fantastic cave, with its pools and its four Homeric marble groups and other sculpture, which, like a gigantic heathen presepio, faces the sea . . . (Boëthius 1970, 194)

It was unfortunately the site of a landslide during the first century A. D. in which a large portion of the cavern ceiling collapsed, killing some individuals, most likely servants (Ricotti 1987, 138, 168). The Roman emperor, Tiberius, was in attendance during this tragedy:

> He [Tiberius] was dining at a country house called 'The Cavern', near Tarracina, when some huge rocks fell from the roof of the natural cave which served as a banqueting hall and gave the house its name, killing several guests and attendants close to him. (Suetonius 39)

Suetonius claims that guests were killed, but this is highly unlikely given that corroboration for the death of a guest was never documented (Ricotti 1984, 168). Although verification of fatalities is lacking, physical evidence of the collapse is apparent for the mouth of the grotto no longer covers the front part of the triclinium and signs of the landslide may be traced through geologic indications around the entrance (Ricotti 1984, 138) (Fig. 2-30).

Sperlonga represents the appropriation of a natural cavern to create both a grotto and dining room used to please and delight guests. Natural forms and mythological references were integrated into a composition that incorporated earth and water as co-dominant elements intended to relax and entertain those who entered. This grotto was strictly a pleasure garden in the tradition of Roman private nymphaea.

Hadrian's Villa at Tivoli

Most of the large private nymphaea were architectural in their design and built by the emperors. An example of this type is Hadrian's Villa at Tivoli, northeast of Rome. The Villa had twelve large castella, thirty single fountains, six grottoes, twelve pools and basins, seven channels, and ten cisterns (MacDonald and Pinto 1995, 172). The storage and movement of water at the villa was elaborate and complex. Water was transported via cisterns, aqueducts, channels, and piping. In this way, water became a basic landscape design element throughout the villa complex. In analyzing the site, three areas of focus will be expounded: the water court, scenic triclinium, and park grotto.

The water court was entered via a narrow one-sided colonnade walkway through an octagonal, domed vestibule (Fig. 2-31 thru Fig. 2-33). The vestibule had semicircular niches on the diagonal axis and the design of the dome lent a perceived lightness to the structure (MacDonald and Pinto 1995, 97) (Fig. 2-34). The vestibule led the visitor through two peristyle walkways set parallel to each other with a shared roof (Fig. 2-35 and Fig. 2-36). The inner walkway bordered an open court. Running through the middle of the open court was a long shallow pool lined on either side by trees and planting beds that were surrounded by a low border of marble. The court itself served as a garden and included sculpture and friezes that depicted marine and hunting life. The walls were sheathed in marble and beautifully colored mosaic paving covered the floor. A grand nymphaeum containing six fountains lay on axis at the terminus of the open water court (Fig. 2-37 and Fig. 2-38). The nymphaeum chamber had one large central, circular fountain with four additional fountains on the diagonals and a curving fountain at the rear. Six chamber suites lay on either side of the nymphaeum interconnected by open courts that contained centralized square pools. The nymphaeum building was constructed using an internal reverse-curve design. It is unknown whether the nymphaeum had a roof, but it is likely for evidence exists that it served as a summer triclinium. The effect of the water court was fluid yet self-contained with the appearance of being bounded by water through its sequence of spaces (MacDonald and Pinto 1995, 100). There is also an outstanding example of reverse curve architecture along the exterior wall of the water court in the north corner. Two reverse curved pools separated by a ribbon shaped walkway are present and illustrate the creativity Hadrian was willing to express at the villa complex. The water court demonstrates that a private nymphaeum could achieve monumental proportions and exquisite design when resources and experimentation were present.

The canal and scenic triclinium form an integrated yet juxtaposed landscape composition (Fig. 2-39). The canal was surrounded by an eclectic array of sculpture with predominant Greek themes, continuing the Roman tradition of decorative water display (Fig. 2-40). The once reflective quality of the canal was notable, unlike the green algal tones of current times, and was animated by the waterworks of the triclinium. Small boats may have been used on its surface, but their presence could have been avoided so as to not interfere with the scenic quality of the water and sculptural features. The overall design emphasized the water rather than the surrounding artwork and colonnades (MacDonald and Pinto 1995, 111).

The scenic triclinium is based on the Greek's sacred grotto fountain design (Fig. 2-41 and Fig. 2-42). The building is a geometrically complex system of chambers that are not vertically congruent, but this asymmetry cannot be seen from the canal approach (MacDonald and Pinto 1995, 112) (Fig. 2-43). The central section on the lower level of the vault opens to an axial extension in the hillside which is 75 feet long and quite narrow. This extension had a pool for flooring with a roofed platform over its middle area which may have held sculpture or have served as a viewing stage for dining guests (MacDonald and Pinto 1995, 115). In typical Roman fashion, the interplay of light and shadow would coalesce on the water as light filtered on either side of the vaulted platform. Water ran within the extension, filling the space with sound and spray. From a central niche, the water would pour imitating the primordial image of water coming from the rocky earth. The walls of the extension, as well as the platform, were covered with colored marble and the niches were decorated with a glass mosaic thus reflecting and enhancing the play of water that splashed upon its surfaces (MacDonald and Pinto 1995, 114). Mosaics also encased the vault over the pool platform and jets were artfully placed. The water from the extension pool ran to two concentric canals and to a semi-circular pool in front of the

canals, eventually emptying in to a square reflecting pool that was flanked by pavilions (Fig. 2-44 and Fig. 2-45). The canal drew water from the extension pool as well. The hydraulic design was skillfully executed to create a delightful water display that appeared seamless in design (Fig. 2-46).

The vaulted ceiling of the triclinium was decorated with colorful mosaics and was punctured in a radial design (Fig. 2-47). This was done to perhaps allow light and shadow to wander across its irregular surface to add to the delight in a water imbued atmosphere (MacDonald and Pinto 1995, 115). The scenic triclinium with its rectilinear approach via the canal interspersed the pleasures of water, sculpture, an array of color and light, and the strength of a compelling architecture, thereby providing an experience that readily supplied sensory enjoyment (Fig. 2-48). The grotto that lay within the extension of the triclinium was not readily visible until the canal had been traversed. This design provided a transition from the openness of the canal to the confined chamber of the grotto (MacDonald and Pinto 1995, 115). The grotto contained the elements of an ancient Greek sanctuary with its mystery and secrets which offered a scenic backdrop to the stibadium, a semicircular dining couch where Hadrian would have been seated with his dining guests. This is truly an exemplary illustration of a combined banquet hall and grotto based on a sophisticated and unique design. This nymphaeum joins classical Greek elements with Roman ingenuity in design and engineering which produces a uniquely marvelous example of the sanctuary grotto type.

The park grotto located in the upper park portion of the villa complex echoes the dimensions of the scenic canal in length (Fig. 2-49). The grand approach leads to a sunken nymphaeum which had two narrow side entrances and a central, tripartite opening. This nymphaeum had a vaulted roof and water originally discharged from its center. The central

portion of the nymphaeum was covered with pumice and stucco to mimic rough faced stone reflecting a Greek sacred grotto fountain (Fig. 2-50). What was unusual in this design was the grand approach; for the path was wider than the average Roman street, perhaps indicating that the avenue was designed for some sort of ritual procession (MacDonald and Pinto 1995, 124). The design might have been executed to evoke an association with a journey to the underworld (MacDonald and Pinto 1995, 123). Although Hadrian used a common villa feature, a grotto sanctuary, he punctuates its presence with an impressive approach leading to speculation as to its actual meaning and function.

Hadrian's villa illustrates both the enclosed architectural nymphaeum type as well as the sacred grotto fountain. These forms would eventually fade in popularity, but their prolific use in villa designs during the late Republican and early Imperial period attests to the legacy of Greek influence. By the third and fourth centuries, water chamber displays and rustic fountains decreased as did the tendency to enclose them or place them in a garden setting. Instead, strictly architecturally styled fountains gained favor and residences began placing this nymphaeum type in courtyard surroundings (Alvarez 1981, 29). Religious asceticism could have impacted the decline of the sacred grotto fountain (Alvarez 1981, 30). Popular rediscovery and use of the sacred grotto fountain would not resurface in Western Europe until the early sixteenth century during the Renaissance era.

Synopsis for Grotto Design

The Greek nymphaeum was primarily a religious shrine that incorporated rock overhangs or natural caverns and springs with classical statuary, primarily sculpture of nymph deities. Early Greek nymphaea also functioned as public water sources which necessitated various modifications to natural grottoes including facades and porticos, roofs, collection basins, and

water channels. Isolated shrines normally retained their original form and function. Eventually, completely artificial reproductions of grottoes were created and incorporated the use of pipes and aqueducts for water transport. Public fountains did not lose their association with the sacred grotto shrine, but continued to reference classical nymphaea through the use of a niche or apse shaped interior intended to mimic a cavern's internal chamber. These municipal water sources were maintained as public shrines. Private courtyard niche fountains reflected communal sanctuaries in their form and use of statuary. In Hellenistic times, secularized fountains and grotto inspired rooms became widespread. These designs represented a transitional form between the sacred grotto fountain of the Greeks and Roman monumental public fountains.

The Romans constructed three types of nymphaea. These included grotto sanctuaries, the castella which were monumental public fountains, and private pleasure grottoes. Greek sacred grotto fountains provided the prototype for all three forms. Castella and private pleasure grottoes were secular rather than religious in nature, although references to deities were integrated elements of both nymphaeum types. Castella resembled a scaenae frons of the theater with their two or three storied facades and were important architectural structures that operated as aqueduct distribution points. The early pleasure grottoes were generally small vaulted rooms with an apse or niche decorated with a variety of natural materials intended to emulate a natural cavern. Statuary was placed in these private nymphaea and the running water provided relief from the summer heat. These nymphaea became associated with residential dining rooms referred to as triclinia and gained favor for their climate controlled qualities. Most private nymphaea remained modest features of a villa, though the Emperors created grand architectural examples. Grottoes were popular in the Imperial period, reaching their zenith during the late Empire. With time, grottoes increased in size and lost their rustic emphasis.

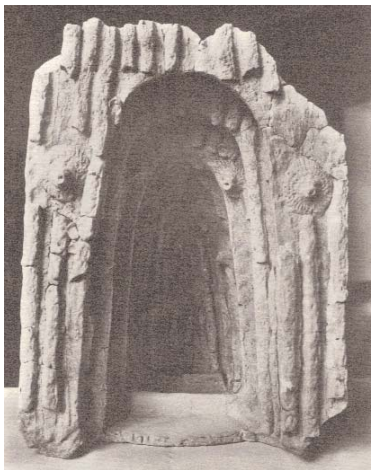
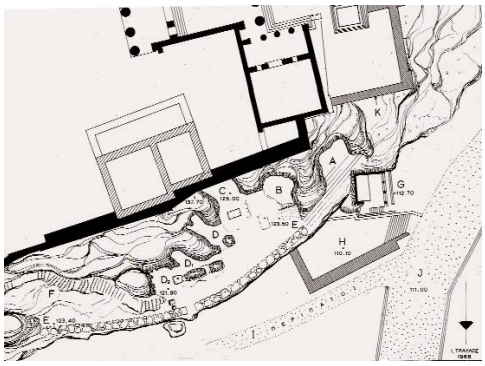


Fig. 2-1: Model of a spring grotto from a cave sanctuary next to Lokroi (Ridgway 1981, XI)

Fig. 2-2: Corycian Cave, Mount Parnassus (Siegel 1998)



A. Cave with rock-cut seats B. Shrine of Apollo Hypoakraisos C. Shrine of Zeus Olympios D, D1, D2. Shrine of Pan E. Perlargikon F. Stairway up to the Acropolis G. Klepsydra H. Paved Court I. Peripatos J. Panathenaic Way K. Panathenaic Way inscription

Fig. 2-3: Northwest slope of the Acropolis (Travlos 1971, 93)

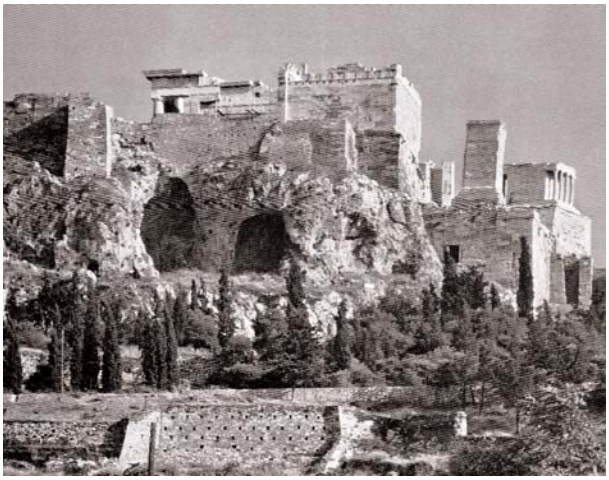


Fig. 2-4: Acropolis Caves, View from the north (Travlos 1971, 92)

Fig. 2-5: Caves of the Shrine of Pan, View from the west, Acropolis (Travlos 1971, 421)

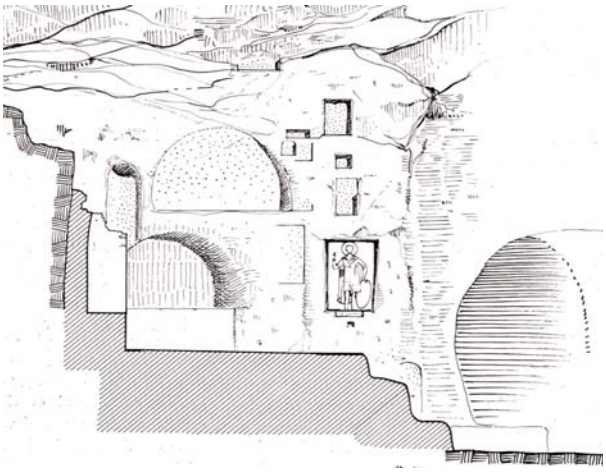


Fig. 2-6: Caves of the Shrine of Pan, Elevation of south side with votive niches, Acropolis (Travlos 1971, 418)

Fig. 2-7: Votive relief fragment of Pan and one of the Nymphs (Travlos 1971, 420)

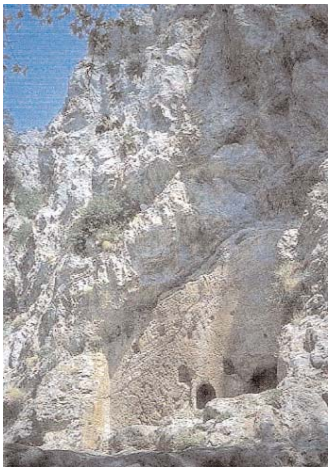


Fig 2-8: Castalian Spring, Delphi (Siegel 1998)

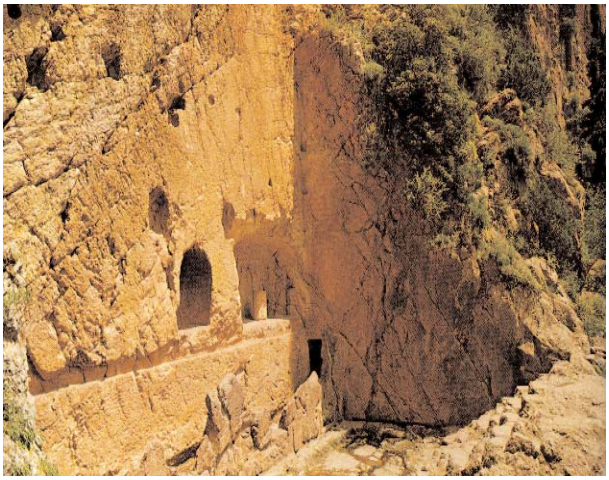


Fig. 2-9: Castalian Spring, Delphi (Andronicos 1976, 44)

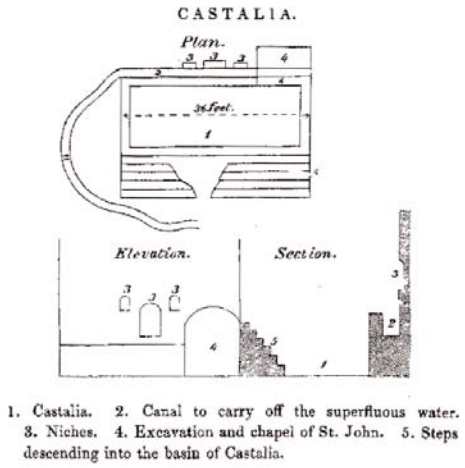


Fig. 2-10: Castalian Spring Plan,, Delphi (Netherlands Historic Data Archive 2001)

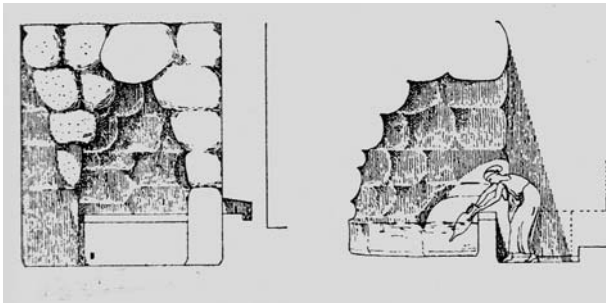


Fig. 2-11: Cyclopean Fountain elevation and section, Corinth (Hill 1964, 47)

Fig. 2-12: Cyclopean Fountain from the west, Corinth (Hill 1964, 46)

Fig. 2-13: Fountain of Peirene, Corinth (Hill 1964, 9)

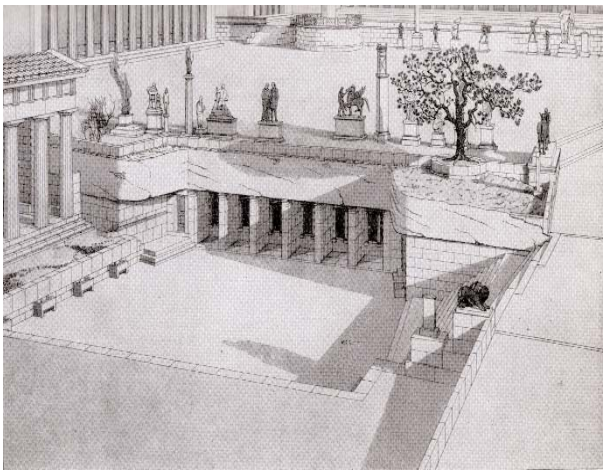


Fig. 2-14: Fountain of Peirene in the 2nd Century B. C., Corinth (American School of Classical Studies 1969, Figure 5)

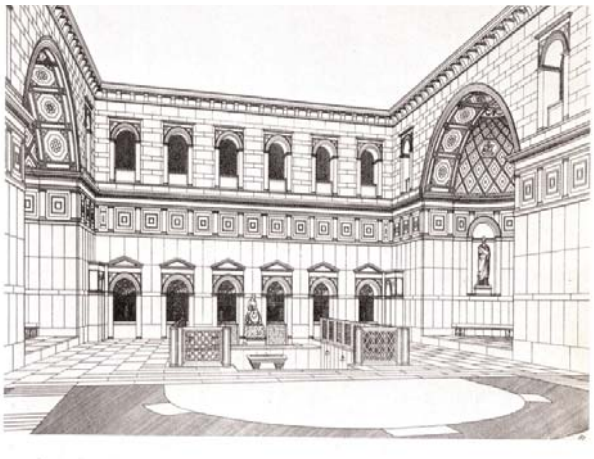


Fig. 2-15: Fountain of Peirene in the time of Herodes Atticus, Corinth (American School of Classical Studies 1969, Figure 6)

Fig. 2-16: Grotto of Egeria, Rome. Nineteenth cenutry engraving, (Roma Sotterranea, n.d.)

Fig. 2-17: Grotto of Egeria, Rome (Coffin 1991, 31)

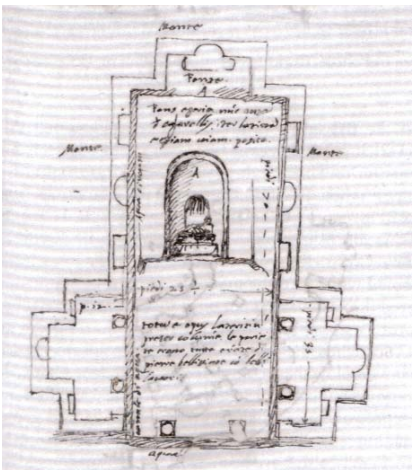


Fig. 2-18: Grotto of Egeria, Rome. Sixteenth century plan by Sallustio Peruzzi (Coffin 1991, 31)

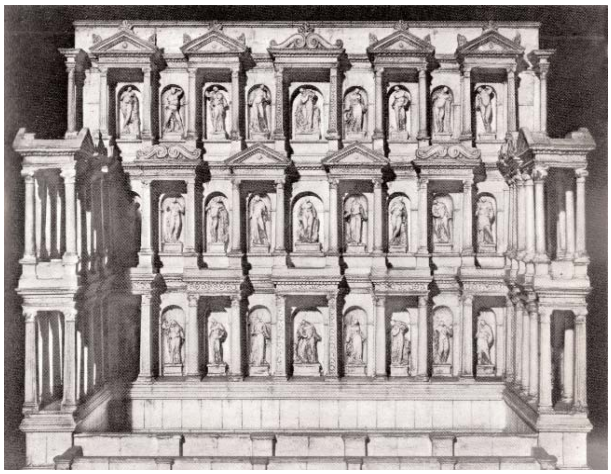


Fig. 2-19: Trajanic nymphaeum, Miletus (Lyttelton 1974, Figure 190)

Fig. 2-20: Aqua Julia, Rome (Nash 1962, 125)

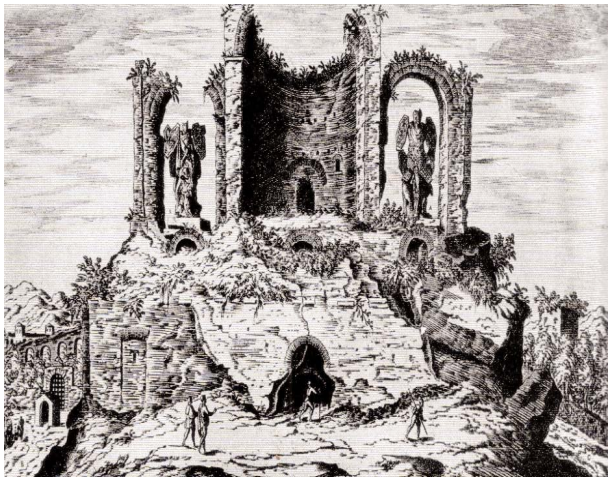


Fig. 2-21: Aqua Julia, Rome. Sixteenth century engraving by S. Du Perac (Nash 1962, 126)

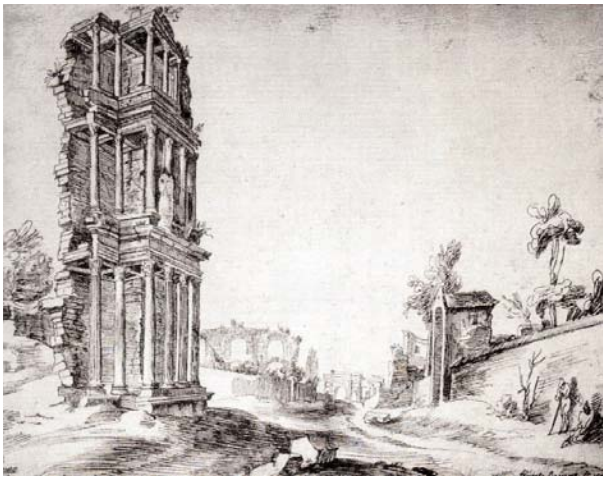


Fig. 2-22: Septizonium of Septimius Severus, Rome (Nash 1962, 303)

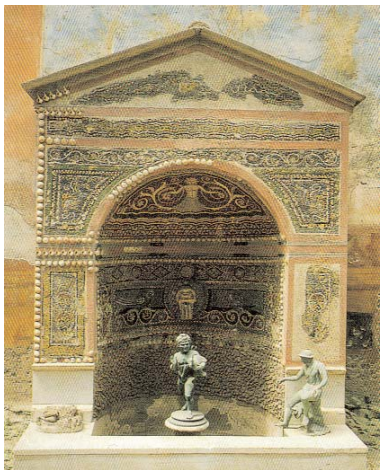
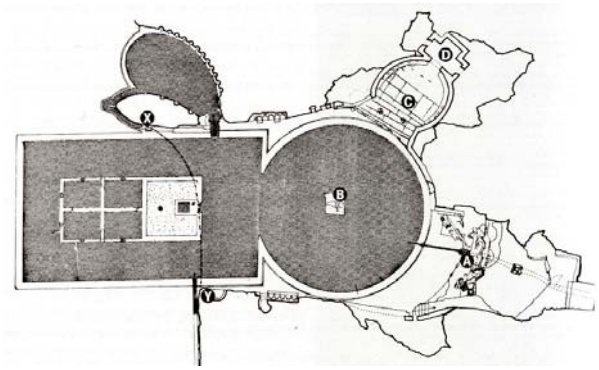


Fig. 2-23: House of the Little Fountain, Pompeii (Rogers 2001, 82)



A. Cave where the Polyphemus sculpture group was set within a rear ledge B. Round pool representing Charybdis C. Lateral grotto that was used as an additional triclinium or stage for performers D. Alcoves used for rest after dining X-Y. Indicates the original entrance overhanging the triclinium

Fig. 2-24: Plan of Sperlonga (Rogers 2001, 90)

Fig. 2-25: Sperlonga, Ship's prow (Ricotti 1987, Figure 5)

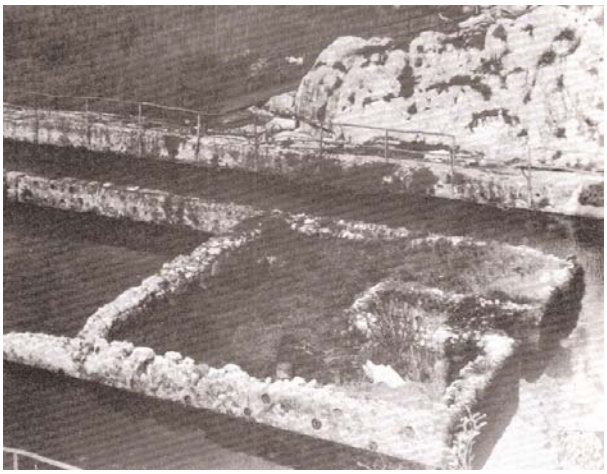


Fig. 2-26: Sperlonga, Triclinium (Ricotti 1987, Figure 3)

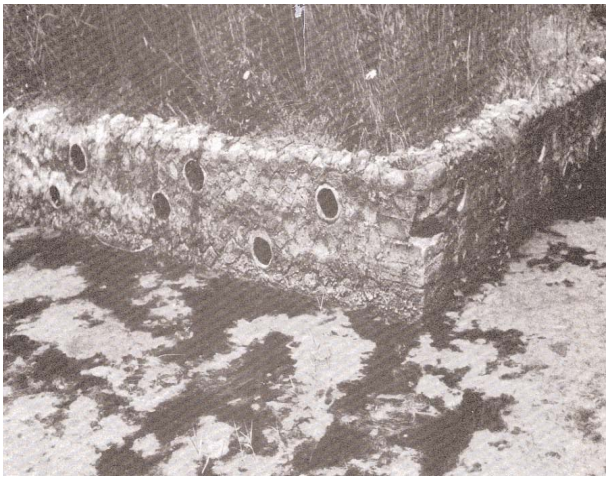


Fig. 2-27: Sperlonga, Walls of the triclinium (Ricotti 1987, Figure 4)

Fig. 2-28: Sperlonga, Polyphemus group, Blinding of Polyphemus (Rogers 2001, 90)

Fig. 2-29: Sperlonga, Lateral grotto (Ricotti 1987, Figure 7)

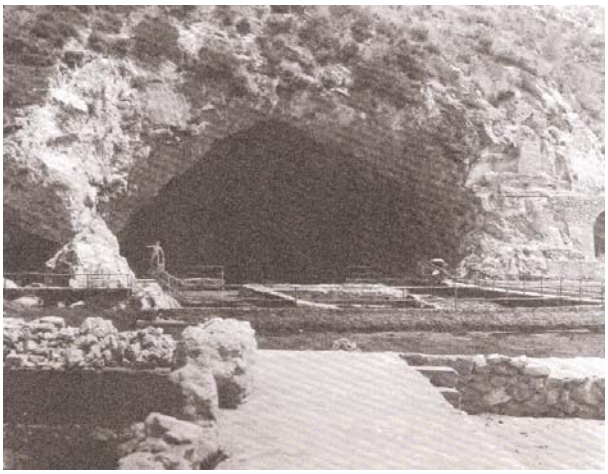


Fig. 2-30: Sperlonga entrance (Ricotti 1987, Figure 6)

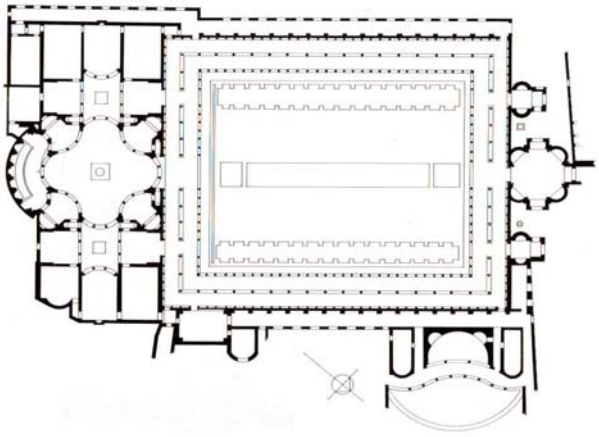


Fig. 2-31: Hadrian's Villa, Water Court plan, Tivoli (MacDonald and Pinto 1995, Figure 114)

Fig. 2-32: Hadrian's Villa, Water Court, Northwest interior flank, Tivoli (MacDonald and Pinto 1995, Figure 117)

Fig. 2-33: Hadrian's Villa, Water Court, Vestibule exterior looking east, Tivoli (MacDonald and Pinto 1995, Figure 116)

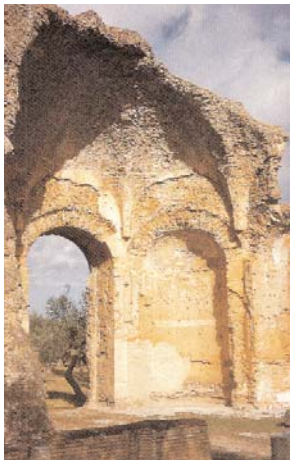


Fig. 2-34: Hadrian's Villa, Water Court, Vestibule looking north, Tivoli (MacDonald and Pinto 1995, Figure 115)

Fig. 2-35: Hadrian's Villa, Water Court, Southwest internal flank, Tivoli (MacDonald and Pinto 1995, Figure 119)

Fig. 2-36: Hadrian's Villa, Water Court, Columns in the chamber northeast of the nymphaeum, Tivoli (MacDonald and Pinto 1995, Figure 120)

Fig. 2-37: Hadrian's Villa, Water Court, External nymphaeum looking southwest, Tivoli (MacDonald and Pinto 1995, Figure 122)

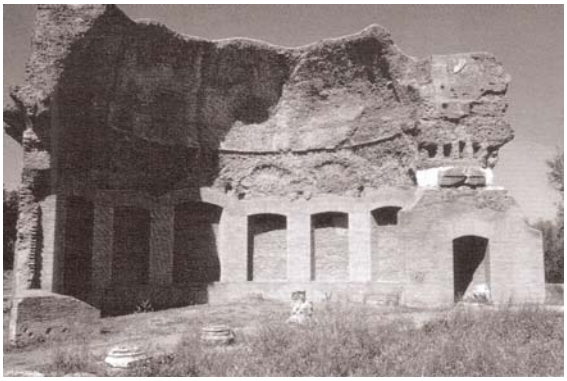


Fig. 2-38: Hadrian's Villa, Water Court, External nymphaeum, Tivoli (MacDonald and Pinto 1995, Figure 121)

Fig. 2-39: Hadrian's Villa, Scenic Triclinium and Canal looking north, Tivoli (MacDonald and Pinto 1995, Figure 134)

Fig. 2-40: Hadrian's Villa, Scenic Triclinium and Canal looking south, Tivoli (MacDonald and Pinto 1995, Figure 133)

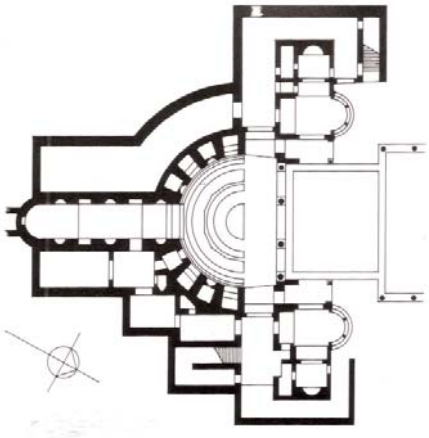


Fig. 2-41: Hadrian's Villa, Scenic Triclinium plan, Tivoli (MacDonald and Pinto 1995, Figure 138)

Fig. 2-42: Hadrian's Villa, Scenic Triclinium looking west, Tivoli (MacDonald and Pinto 1995, Figure 139)

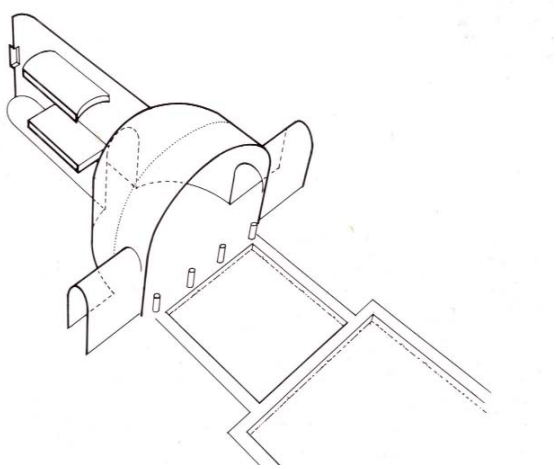


Fig. 2-43: Hadrian's Villa, Scenic Triclinium, Sketch of interior, Tivoli (MacDonald and Pinto 1995, Figure 135)

Fig. 2-44: Hadrian's Villa, Scenic Triclinium, East pavilion, Tivoli (MacDonald and Pinto 1995, Figure 136)

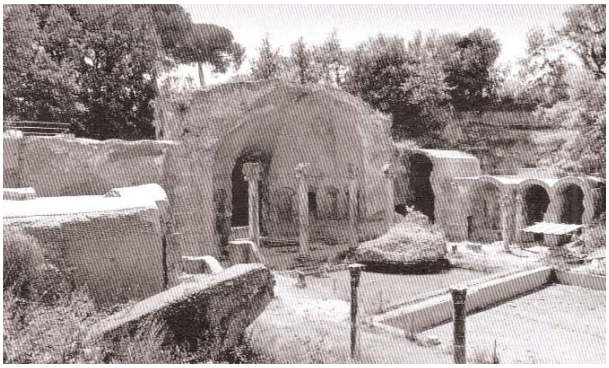


Fig. 2-45: Hadrian's Villa, Scenic Triclinium, West pavilion, Tivoli (MacDonald and Pinto 1995, Figure 137)

Fig. 2-46: Hadrian's Villa, Scenic Triclinium, Water channels and vault exterior, Tivoli (MacDonald and Pinto 1995, Figure 140)

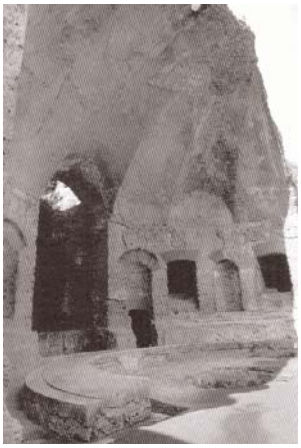


Fig. 2-47: Hadrian's Villa, Scenic Triclinium, Stibadium and its vault, Tivoli (MacDonald and Pinto 1995, Figure 132)

Fig. 2-48: Hadrian's Villa, Scenic Triclinium and Canal looking south, Tivoli (Faure 1960, 11)

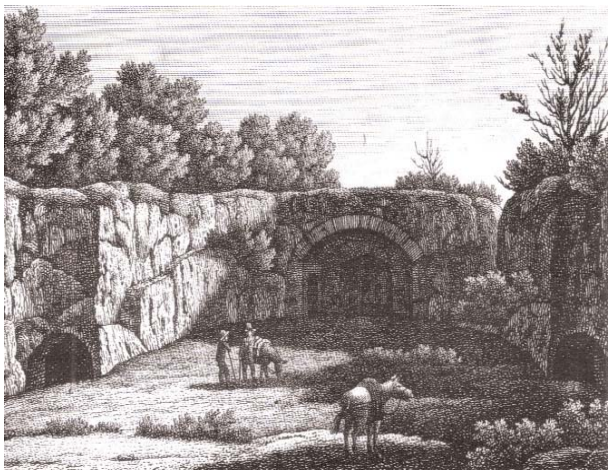


Fig. 2-49: Hadrian's Villa, Park Grotto looking southeast, Tivoli (MacDonald and Pinto 1995, Figure 152)

Fig. 2-50: Hadrian's Villa, Park Grotto detail, Tivoli (MacDonald and Pinto 1995, Figure 153)

CHAPTER 3

THE RENAISSANCE

In the time of the Renaissance, nymphaea were rediscovered and reinterpreted. In this era, remains of classical nymphaea in the vicinity of Rome served as inspiration as did references from ancient literature from poets, natural historians, and geographers. Remnants from antiquity in the forms of reliefs and frescoes also provided clues to ancient fountain types (MacDougall 1978, 94-96). This process of architectural revival emanated from Rome during the sixteenth century and expanded through Italy and other parts of Western Europe. Although the term nymphaeum was known during the Renaissance from classical references, the type of structures it referred to was unclear to scholars in the sixteenth century due to inconsistencies from ancient literary sources and a lack of ample physical evidence. The term did not summon the classical Greek definition; that of a grotto dedicated to the nymphs. Rather, Renaissance scholars attributed the term as referring to monumental public structures of ambiguous function (Alvarez 1981, 49). These scholars were aware that the ruins of these classical structures were municipal constructions associated with water, but they proceeded to label these public nymphaea as being fountains, baths, temples, or public wedding halls (Alvarez 1981, 49). As far as Roman private nymphaea, remains began being recorded in the fifteenth century and were identified by terms such as grotto, fontana, fontana rustica, or cappella (Alvarez 1981, 63). Since the meaning of the term nymphaeum remained uncertain in regards to structures from antiquity, contemporary Renaissance fountains were not associated with the word either. The only sixteenth century

fountain known to have been categorized as a nymphaeum was that of the Casino of Pius IV in the Vatican Gardens. This reference was owed to the inscriptions located on the façade and loggia of the fountain made by the architect Liguria (Alvarez 1981, 71).

There were only three public Roman nymphaea from antiquity that survived to the Renaissance period. These included the nymphaeum Aqua Julia, Nero's nymphaeum that was actually buried until the eighteenth century, and the Septizonium of Septimius Severus (Alvarez 1981, 50-51). Of the three, only the Septizonium was referred to as a nymphaeum. This lack of identification was due to the fact that the term nymphaeum, of Latin origin, did not become part of Italian vernacular custom (Alvarez 1981, 52). Moreover, the Romans themselves only referred to their monumental public fountains as nymphaea while applying terms such as specus, triclinium, or cubiculum, to rustic fountains and chambers (Alvarez 1981, 238). Fontana and grotta were the most common terms used during the Renaissance to refer to rustic fountains and grottoes. It was not until the early seventeenth century that "nymphaeum" was used to denote grotto fountain chambers of ancient origin; a practice that did not become popular until the eighteenth century. Fountains from the Renaissance period were not referred to as nymphaea until the nineteenth century (Alvarez 1981, 239).

The nymphaea of the Renaissance period can be delineated into five basic types: niche nymphaeum, grotto or chamber nymphaeum, fontanone rustico, water theater, and façade nymphaeum (Alvarez 1981). All of these forms were constructed entirely by human effort and did not incorporate natural caverns. The most basic and prolific variety was the niche nymphaeum. The other types evolved from this key form (Alvarez 1981, 108). Another classification system was developed by Neuerburg for Roman nymphaea based on six categories including the artificial grotto and rock-cut chamber, architectural chamber, niche, exedra, façade,

and circular nymphaea (Alvarez 1981, 17-18). The classification based on Alvarez's research will be used in this thesis to analyze nymphaea from the Renaissance through the twentieth century due to availability and extent of translated written material.

The niche nymphaeum suggested a grotto through its interior lining of natural materials including pumice, tartari which is composed of calcium carbonate concretions, shells, or mosaics. Marble or stone may have also been used to mimic naturally faced rock. This type of interior treatment was motivated in part by ancient literary description such as from Pliny the Elder:

> We must not forget to discuss also the characteristics of pumice. This name, of course, given to the hollowed rocks in the buildings called by the Greeks 'Homes of the Muses,' [musaea] where such rocks hang from the ceilings so as to create an artificial imitation of a cave. (Pliny 36.154)

Alberti was aware of the methods of ancient grotto construction and echoes Pliny's observations in the fifteenth century:

> The Ancients used to dress the Walls of their Grottoes and Caverns with all Manner of rough Work, with little Chips of Pumice, or soft Tyburtine Stone, which Ovid calls the living Pumice: and some I have known dawb them over with green Wax, in Imitation of the mossy slime which we always see in moist Grottoes. I was extremely pleased with an artificial Grotto which I have seen of this Sort, with a clear spring of Water falling from it; the Walls were composed of various Sorts of Sea-shells, lying roughly together, some reversed, some with their Mouths outwards, their Colours being so artfully blended as to form a very beautiful Variety. (Alberti 9.4)

Water was an integral part of the niche nymphaeum and would usher from statues, basins, or the niche walls. Typically, statuary would depict water deities including the classical water nymphs. Goddesses such as Venus and Diana of Ephesus were also used as symbols of fertility. The nymphs were understood to be ecstatic goddesses and therefore capable of inducing altered states of consciousness linking the grotto to its mantic and sublime qualities exemplified in classical nymphaea.

> The dramatic dimension of the symbolism of nymphs, together with their chthonic aspect--deities of the earth and of death, and born for a life of heroism--were a fitting accompaniment to those themes which introduced the idea of death, isolation, night, winter, and sleep into the Renaissance grotto. (Szafranska 1989, 78-79)

The pagan iconography was later changed in some nymphaea during the Counter Reformation and Baroque periods (Alvarez 1981, 112). This practice was even extended into the nineteenth century as evidenced at the Villa d'Este where the Fountain of Venus, a classic niche nymphaeum within the Palace, was transformed into the Grotto of Lourdes in an effort to purge pagan iconography from the residence (Barisi, Fagiolo, and Madonna 2003, 128) (Fig. 3-1).

The niche nymphaeum type exemplified the ancient spring grotto of the Greeks. The hollow itself represented the cave while the statuary or basins embodied the source of the life-giving spring (Alvarez 1981, 110-111). The frame surrounding the niche would be of various shapes including that of a tabernacle, triumphal arch or city gate. The elaborateness of the frame tended to become more embellished during the latter part of the sixteenth century (Alvarez 1981, 111). An architectural façade often obscured the organic elements within, displaying the Mannerist style of adornment (Miller 1982, 35). Niche nymphaea would either be architectural through the use of geometric designs of ornamental materials, or naturalistic depending on the degree of rustic decoration applied to the surrounding walls (Alvarez 1981, 111).

This nymphaeum type constituted great variety, but few have survived from the sixteenth century. An early niche nymphaeum that had considerable influence on later nymphaeum designs was constructed in 1512 in the northeast corner of the Belvedere Statue Court at the Vatican Palace, located between the Villa Belvedere and the Belvedere Court (Coffin 1991, 33). Although dismantled in 1550, a drawing survives which provides evidence of its original features. Within this niche was a marble statue from antiquity of a reclining Ariadne. The figure

was believed to be Cleopatra at the time of the fountain's construction, so it was thus named. The Cleopatra figure was resting on a rocky surface that occupied the lower portion of the alcove (Fig. 3-2). The upper portion of the niche was painted to simulate a wood. This use of the background space would serve as a precursor to illusionistic landscapes created within niche nymphaea in the latter part of the sixteenth century (Alvarez 1981, 121-122). Below the statue, water poured from the rocks, mirroring the image of an immortal spring. An antique sarcophagus supported by two dolphins and a clam shell caught the falling water. This sarcophagus sat level with the floor of the court. Several elements of this niche nymphaeum were recreated in later Roman fountains in the first half of the sixteenth century and then spread to other parts of Europe. The central component was the use of a reclining figure situated on a rocky surface. This figure is reminiscent of a classical sleeping nymph known in the Renaissance since the fifteenth century from literary descriptions and archeological examples. In addition, the use of ancient statuary and sarcophagi, the motif of marine creatures, the relatively minor role of water, and the painting of the background to create an illusion of space, became facets of later niche nymphaea (MacDougall 1978, 90).

In the northwest corner of the Belvedere Statue Court is a complement to the Cleopatra fountain. It is also a rustic fountain niche dedicated to Tigris, the river god, created between 1532-34 (Fig. 3-3). The lower section of the niche was covered with pale green marble with the upper portion treated as a woodland similar to the Cleopatra. As in its complement, water ran from the rocks below the figure into a sarcophagus under which marine animal sculptures were located. Once again, a reclining figure is accompanied by rustic elements and a basin to collect the water with a naturalistic background constructed through the use of illusionist painting. These themes would be repeated at other niche nymphaea such as those located at the Villa

Giulia in Rome, Villa Medici at Castello, Villa Barbaro at Maser, and the Villa d'Este at Tivoli (Alvarez 1981, 120-121).

Another influential niche nymphaeum was designed by Bramante within the Belvedere Court at the Vatican Palace from 1504-1513 (Fig. 3-4). The niche was an important design element in the courtyard for it marked the central axis of the court and mirrored the upper terrace's exedra through its concave form (Fig. 3-5). There is no evidence though that the niche was originally designed as a fountain grotto. It was not until the middle of the sixteenth century that the presence of a fountain in the niche is documented through drawings. The first fountain was most likely rustic in nature with a construction date in the early 1550's (Alvarez 1981, 131). The conversion to a nymphaeum occurred only after Bramante's death. Unfortunately, visual sources did not portray the original fountain, but only later alterations. The rustic fountain niche flanked by stairs and framed by a triumphal arch, which Bramante's nymphaeum reflected after subsequent alterations, became a model for a multitude of nymphaea built in the latter part of the sixteenth and early seventeenth century (Alvarez 1981, 127-28). Bramante's nymphaeum came to exemplify the use of natural materials within the niche's lining to suggest a grotto as known in antiquity.

The middle of the sixteenth century heralded the commencement of grand Renaissance villas and gardens in the vicinity of Rome based upon extant knowledge of classical architectural forerunners. These constructions became popular attractions rivaling those of ancient origin (Coffin 1991, 39). The first of these villas, Villa Giulia, whose construction began in 1551 for Pope Julius III, had a unique nymphaeum designed by the architect Ammannati. This nymphaeum was distinctive because it incorporated two sunken stories and was considered the principal feature of the site (Fig. 3-6). This design not only had visual appeal, but was created

for hydraulic purposes. The design allowed water coming from an aqueduct to flow via gravity rather than using hydraulic equipment to keep the water features moving continuously (Alvarez 1981, 135). A visitor would walk on ground level through the piazza, casino, and courtyard to encounter two sunken floors filled with statues, plants, and fountains (Alvarez 1981, 133). At the rear of the theatrical court, a set of curving stairs opens off the loggia and transports the visitor to the middle level of the nymphaeum once shaded by trees (Coffin 1991, 39). This level forms a terrace around the lower level and housed two chambers, one under each loggia (Alvarez 1981, 134). The rear wall has two large niches in which statues of river gods are sheltered; their urns poured water into basins, typical of niche grotto fountains as illustrated by the Tigris fountain in the Belvedere Statue Court (Fig. 3-7). The vault of the rear grotto was adorned in stucco relief, depicting the story of the Aqua Virgo, the aqueduct whose waters supplied the nymphaeum (Coffin 1991, 40). The rear grotto once had a set of hidden spiral stairs to its sides bringing the visitor to an enclosed garden located above and behind the nymphaeum (Coffin 1991, 40). The front of the nymphaeum situated between the curving stairs also had a concealed stairwell that led to the lower floor. The lower level consisted of a small hardscaped island surrounded by water decorated with statue fountains including a sleeping nymph. Ammannati considered this lower level the striking element of his design (Fig. 3-8). This area was richer in decoration as well as having a larger number of antique statues. There was a series of rustic niches surrounded with stucco relief along the walls of the sunken nymphaeum. Inside the niches, statues were situated, some pouring watering. The floor was paved with marble and had water channels cut into its surface. Although the sunken levels were not repeated in subsequent nymphaea, the use of stucco embellishment became a feature in other works as did the paired aviaries located on either side of the rear loggia (Alvarez 1981, 136).

In the latter half of the sixteenth century, the use of niche nymphaea shifted to open surroundings and achieved a fuller integration with the gardens (Alvarez 1981, 137). This form was implemented in public fountain design during this same period. The height of popularity for this form of nymphaeum culminated during the early seventeenth century, but then fell into obscurity. Baroque designers in the seventeenth century would also turn away from the Mannerist love of rusticity and eccentricity.

The second type of nymphaeum, the grotto and chamber form, was comprised of architectural spaces that enclosed a rustic fountain. Typically, the plan was of a rectangular vaulted room with a doorway on one side with a fountain directly across from the entrance. These chambers might have niches along their walls as well. The difference between the grotto and chamber forms is that the grotto nymphaeum would have rustic decoration applied to the walls and vault in addition to the fountain. On the other hand, a chamber nymphaeum would have a more traditional treatment on the walls and vault with rustic elements confined to the fountain. Examples of early sixteenth century grotto and chamber nymphaea are rare. It appears that early examples were primarily architectural in treatment with the grotto type gaining favor around the first quarter of the century (Alvarez 1981, 139). Eventually, the grotto type would fall from popularity during the middle of the century when the chamber nymphaeum becomes prevalent around Rome, although grotto nymphaea remained fashionable in northern Italy until the early seventeenth century (Alvarez 1981, 140). Outside of Italy, France had a considerable number of grotto nymphaea where their popularity lasted until the late seventeenth century. In Germany, grotto nymphaea were introduced in the early seventeenth century. England was the last of the major European countries during the Renaissance to embrace grotto construction during the early to mid 1700s (Alvarez 1981, 188-89). England's first grottoes were

indoor rooms often located within a villa below the piano nobile, beneath the stairs (Jackson 2001, 6). These early examples typically had a fountain and statuary, with shellwork becoming popular shortly after the grotto tradition arrived on the isles.

The taste for grottoes arrived in Rome via Naples early in the sixteenth century. The earliest recorded Renaissance grotto in Rome was the Tiber grotto in the Villa Farnesina (Alvarez 1981, 140). This grotto was placed near a river and was eventually destroyed by flooding. The materials used were pumice and tartari, but there is no evidence that this grotto was rustic throughout its design (Alvarez 1981, 142). Similar to the ancient triclinium, this grotto nymphaeum may have been used for dining. The earliest chamber nymphaeum in Rome is that of the Villa Guila (Alvarez 1981, 152). Although described above under the niche nymphaeum type, the Villa Guila in fact corresponds to a chamber nymphaeum, but was described under the niche category since its individual fountains represent this form. This example illustrates the challenges of classifying nymphaea at villa complexes since these sites often incorporated more than one nymphaeum type within a single structure.

The Fontana dell' Organo found within the Quirinal Palace in Rome is the largest chamber nymphaea of the Renaissance period (Alvarez 1981, 157). Its plan contains an apsidal hall whose center had a rustic niche that accommodated a hydraulic organ (Fig. 3-9). On one side of the organ were rusticated fountain niches. Alcoves that once possessed statutes of Apollo and the Muses bordered the fountain niches and organ. The floor was decorated in mosaic patterns that camouflaged water jets. Polychrome stucco reliefs decorated the walls and vault of the chamber in scenes of marine life, allegorical persons, and religious occurrences. The rusticity of the niches was downplayed by the visual strength of the reliefs (Alvarez 1981, 158).

Two loggias flanked the entrance to the chamber nymphaeum, adding a feeling of openness and formalism attributed to nymphaea built in the latter part of the century (Alvarez 1981, 157-58).

Representative of the grotto nymphaeum type is the Grotto of Venus at the Villa Lante in Bagnaia. This grotto nymphaeum was constructed during the 1570's, a time when grottoes had fallen into disfavor in the vicinity of Rome as they had in ancient times during the second century (Alvarez 1981, 151). The grotto is located behind the Palazzina Gambara, within the retaining wall of the upper garden. Formerly, the grotto was set within one of the two story loggias positioned behind the twin Palazzine (Lazzaro 1990, 257) (Fig. 3-10). The grotto consisted of three rooms. There was a central rectangular space with two auxiliary octagonal rooms. A statue of Venus was housed in a niche opposite the entrance within the rectangular chamber (Fig. 3-11). Her breasts had water jets which emptied into basins that bordered the stairs leading down to the grotto. The octagonal rooms were entered by walking under the water jets. These auxiliary rooms were lighted by skylights. Wall niches were positioned along the walls of the auxiliary rooms in which figures of satyrs and nymphs were accommodated. There were once a total of fifteen peperino statues, of which only eight remain (Lazzaro 1990, 329). The walls were treated with small stones arranged in random patterns and most likely had water running along them in the auxiliary chambers down to the grotto below (Alvarez 1981, 149). The floor of the grotto had a water channel running along its perimeter.

The Grotta della Pioggia, also known as the Fountain of the Rain, at the Villa Farnese in Caprarola, represents a different grotto nymphaeum built into a garden retaining wall during the 1570s (Lazzaro 1990, 59-60). The grotto is located beyond a barrel-vaulted rectangular room that functioned as a visual extension of a pergola that ran across the garden, along the central avenue, to the grotto entrance (Lazzaro 1990, 59). This chamber room had four stone wall

benches and was painted to bear a resemblance to the pergola whose mosaic floor obscured water tricks (Alvarez 1981, 156). The grotto itself was also vaulted with sculpted supports in the shapes of satyrs and nymphs (Fig. 3-12). These six supports appeared to merge with the naturalistic tartari lining of the grotto which contained a floor that operated as a collection basin for the water spray that mimicked natural rainfall (Lazzaro 1990, 60). Pipes were hidden amongst the tartari incrustation which trickled water onto the pool floor. At the rear of the grotto, were water steps and smaller satyr statues (Alvarez 1981, 156). Visitors were expected to enter the barrel-vaulted chamber reception area where they could look into the flooded grotto. This design was characteristic of the latter sixteenth century in its division between the rusticated grotto niche and the illusionistic reception chamber (Alvarez 1981, 157).

Another grotto nymphaeum was the Grotta degli Animali, or Grotto of the Animals, at the Villa Medici in Castello located in the garden's enclosing wall, under the upper terrace (Bolton 1919, 282). This grotto offered a cool reprieve from the summer's heat and was endowed with a fanciful interior (Miller 1982, 38). The Grotto was within a vaulted room profusely decorated with stalactites and geometric mosaics composed of shells and colored pebbles on the ceiling (Wiles 1933, 74) (Fig. 3-13). The stalactites were collected from Monte Morello, an area directly behind the garden (Lazarro 1990, 58). This grotto nymphaeum contained three barrel vaulted niches within which colored marble menageries of animal forms expelled water into basins set below the sculptural compositions (Fig. 3-14 and 3-15). Each animal had a specific meaning in some way tied to the patron (Minchilli 1998, 59). Water was discharged through three areas including the niche sculptures, the stalactites, and the mosaic floor which sported concealed water jets (Wiles 1933, 74) (Fig. 3-16). The collection basins resembled ancient Roman tubs and depicted marine life that even incorporated fish for the

basin's feet (Wiles 1933, 75). The grotto, and the garden as a whole, represented an earthly paradise (Miller 1982, 39).

The evolution of this nymphaeum type shifted from a dark, cave like atmosphere to a predilection for a decrease in rustic treatments, better lighting within the chamber, and an expansion of the chamber executed through illusionistic painting (Alvarez 1981, 159). These preferences would finally give rise to designs that broke with traditional nymphaeum design from antiquity. Enclosed nymphaeum, of either type, became uncommon after the first quarter of the seventeenth century (Alvarez 1981, 161).

The third type of nymphaeum, fontanone rustico, is a rustic fountain of monumental proportions. This type was original to the period and was inspired by classical wall paintings and ancient ruins including that of the Roman Aqua Julia, referred to as the Trofei di Mario during the Renaissance (Alvarez 1981, 162). A fontanone rustico consists of a rustic concave wall meant to depict a mount. Water would pour forth from the wall mimicking a spring. Plants would often be placed around the rocks, adding to a naturalistic appearance. This form represents a unique nymphaeum type because this design was not found in antiquity. Inspiration came from classical wall paintings and antique fountains.

The earliest example of this type is the fountain grotto in the gardens of the Villa Madama built in 1520-21 (Fig. 3-17). This grotto was assembled with large rocks at the end of a small valley (Alvarez 1981, 163). Its effect was naturalistic and involved the skill of merging art with nature. At the Villa Lante, a fontanone rustico was constructed during the 1570s and 1580s. It is located between two garden pavilions, referred to as the Loggias of the Muses, and is the natural passage for a mountain spring that is directed along the central axis of the garden (Lazzaro 1990, 265-266). The fountain is semicircular in form with fountain niches (Fig. 3-18).

The central niche has a grotesque statue through which the water spills into the collection pool where stone dolphin sculptures are located. It was labeled “diluvium” in a seventeenth century plan, but today is called the Grotto of the Deluge (Alvarez 1982, 165). Yet another example of this nymphaeum type is found at the Villa Farnese at Caprarola. Known as the Fontana del Pastore or Fountain of the Shepard, it was erected in the early 1580s (Alvarez 1981, 166). Typical of a fontanone rustico, it had a backdrop resembling a mont in front of which a statue of a shepard was centralized (Fig. 3-19). Two satyrs, located above the shepard, decanted water into a collection basin (Alvarez 1981, 166). Bordering the nymphaeum are two reclining river gods and two atlantes which surround the basin (Fagiolo 1997, 106). The fontanone rustico nymphaeum type became more uniform during the seventeenth century as evidenced at the Villa Aldobrandini discussed under the case studies (Alvarez 1981, 167).

The water theater, the fourth nymphaeum type, is composed of a large and open semicircular recess containing niche nymphaea. It is basically a fontanone rustico with rustic fountain niches placed within an architecturally treated concave wall. This type flourished in the early part of the seventeenth century in Rome and Frascati (Alvarez 1981, 172). Often the water theater served as a retaining wall as well as a water pleasure display. The first known water theater was the Oval Fountain, also referred to as the Fountain of the Sibyl or the Fountain of Tivoli, at the Villa d’Este built in 1565 (described under the case studies). The precursor to the Oval Fountain was presumably the scenic triclinium at Hadrian’s Villa in Tivoli (Alvarez 1981, 173). The Oval Fountain also had a large fontanone rustico above it and its design served as an example for later water theaters and fontanoni rustici (Fig. 3-20).

The water theater at the Villa Lancellotti in Frascati, formerly the Villa Piccolomini, was influenced by the Villa Aldobrandini (Fig. 3-21). The date of construction is unknown and the

shape of the hemicycle is more flattened than other examples. It underwent significant alterations during the eighteenth and nineteenth centuries, but the basic form and the incorporation of rusticated niches, classical statuary, and a collection basin is apparent despite modification (Alvarez 1981, 176). The water theater type flourished for almost a century, with the theater at the Villa Doria Pamphili, built in 1644, denoting the end of water theater construction in the Frascati and Tivoli regions (Alvarez 1981, 177). The theater at the Villa Doria Pamphili is not on the central axis of the casino (Fig. 3-22). It had a series of niches filled with statuary that alternated with circular niches set into the surrounding encrusted walls of the hemicycle (Alvarez 1981, 177) (Fig. 3-23 and Fig. 3-24). An underground room was accessed via a door in the center of the theater. This room was a completely architectural artifice devoid of grotto and chamber nymphaea given its decorative treatment and lack of fountains. This design would influence later works in terms of the diminishment of rustic elements and more restrained water displays (Alvarez 1981, 177).

The fifth type, the façade nymphaeum, is a series of rustic fountains arranged on a straight wall. This type is rare and is found with certainty only in the seventeenth century (Alvarez 1981, 177). It influenced the design of mostre, the facades that marked aqueduct outlets, a form reminiscent of the ancient Roman castella (Alvarez 1981, 20 and Wiles 1933, 40). The façade nymphaeum at the Villa Torlonia, formerly known as the Villa Ludovisi, in Frascati, was built in 1621-23 and is a fine example of this type (Fig. 3-25). It served as a retaining wall and had a series of fountain niches that enclosed statues as well as urns. The niches were framed by pilasters and decorated with mosaics as well as being incrusted with rustic materials. Urns were located on the entablature which emptied water into a channel that formed a semicircular collection basin in the center of the nymphaeum's foreground (Alvarez 1981, 186) (Fig. 3-26).

A large stony outcrop intruded from the middle of the facade where water would cascade down from the ascending water chain (Fig. 3-27). This façade nymphaeum was a later addition, inspired by the design of a water theater and water stairs at the Villa Aldobrandini built earlier in the century (Alvarez 1981, 187).

In the early sixteenth century, the revival of the nymphaeum from antiquity arose and spread from Rome (Alvarez 1981, 109). This was possible given the city's powerful cultural and religious authority. Ancient remains were also present in the region which lent inspiration for the renewed creation and use of grotto fountains. The early fountains of the sixteenth century were mainly niche and grotto nymphaea types which gave way in the middle of the century to larger and more complex designs and effects that remained in vogue for the first two decades of the seventeenth century. The water theater, fontanone rustico, rusticated public fountains, and mechanical water tricks were created as part of a general motivation to construct more unique water displays as resources afforded their production (Alvarez 1981, 110).

Fountains constructed in the vicinity of Rome during the Renaissance mainly depended, as did their ancient predecessors, upon the force of gravity to move water. Rome experienced low water pressure and volume during the fifteenth and most of the sixteenth century thereby limiting the possibilities for elaborate waterworks (Coffin 1991, 28). This occurred because the aqueducts of ancient times had deteriorated by the Renaissance period and although mechanical water systems were constructed in the sixteenth century, these devices were expensive and unreliable. Rome, at this time, depended on the Aqua Vergine aqueduct, the Tiber River, and wells (MacDougall 1978, 88). The Aqua Vergine had low water pressure until it was reconstructed in the latter part of the sixteenth century, therefore it could not function as an adequate source for water displays until its restoration. Water from springs was preferred, as it

was in antiquity, and the image of the life-giving spring was revitalized in the Renaissance during the sixteenth century as the iconographical basis for fountain construction. The hill towns outside of Rome such as Tivoli and Bagnaia depended on aqueducts that used local spring water, an infrastructure investment that only the wealthiest could afford. Sometimes these costs were defrayed by local citizens when the water was made available to them (Coffin 1981, 28). It was not until the latter part of the sixteenth century that an abundance of water afforded lavish water displays in both private and public arenas. Since the amount and pressure of available water was a major determinant in waterworks design, the most elaborate constructions were seen in the hill towns rather than in Rome itself because of water resources (MacDougall 1978, 89).

In the fifteenth century, elaborate nymphaea and grottoes from antiquity did not significantly influence Roman gardens (Coffin 1991, 30). The limited water supplies within the city required water features be sourced through private cisterns or wells. Water features were more or less confined to a central fountain or well located within an enclosed pleasure garden (Coffin 1991, 30-31). Bramante's design of the central niche in the middle terrace within the Belvedere Court, described earlier in the chapter, would serve as a stimulus in the revival of ancient nymphaea although the inclusion of waterworks in this design did not take place until the middle of the sixteenth century (Coffin 1991, 32). Bramante's use of terracing which employed a nymphaeum as a focal point would also be repeated, most notably at the Villa d'Este in Tivoli (Coffin 1991, 33). The Cleopatra Fountain induced the resurrection of the naturalistic grotto as did the inspiration from such sources as Alberti and various sixteenth century artists who depicted, at times with a wealth of artistic license, rustic elements in fountain designs (Coffin 1991, 33).

Many sixteenth century nymphaea in the city of Rome were rather simple grottoes where the water dripped along the pumice or limestone walls perhaps with an addition of small water jets directing their stream into basins (Coffin 1991, 45). After the first quarter of the sixteenth century, fountains become more elaborate and usually involved multiple elements in a unified composition. Whether the style was architectural or rustic, nymphaea became more sophisticated in design. Single figure fountains fell into disfavor, but single pools were still used among horticultural plantings (MacDougall 1978, 98). It was during this time that nymphaea began to be used in allegorical programs that required the visitor to enter a garden's narrative, moving through sequences that formed part of a larger story (MacDougall 1978, 99). Two of the most common themes were the inspiration of the intellect through the presence of Apollo and the Muses with the underlying notion that this implied a return to a Golden Age and the other involved the personification of water as the source of life and abundance (MacDougall 1978, 103). Narratives drew the visitor to move through the space rather than remaining in one place for contemplative purposes. At the end of the century, increased water supply and pressure allowed for larger displays of more intricacy as previously noted. It also became common that impress, a form of heraldic badge, and heraldic animals were used in fountain designs (MacDougall 1978, 107). For instance, heraldic symbols were used at the Villa d'Este on the Fountain of the Owl, later discussed under the case studies.

In the sixteenth century, fountains were usually rustic to imitate the hand of nature, but to also surpass it since this was the dominant philosophical position in this period. Man was seen as being able to exceed nature and in so doing, assured a reign of power thought to be the domain of humanity in relation to the natural world (Tuan 1983). Nymphaea were but one illustration of this notion that man could improve nature through artistic and mechanical effort. This was an

era which was steeped in both science and myth, an age where the universe was still seen as having an inherent, hierarchal order (Szafranska 1989). The grotto may be envisioned as a microcosm of this order as viewed by the emerging science of natural history. Nature was perceived as indivisible with forms constantly metamorphosing from the basic elements, an idea commiserate with alchemy (Szafranska 1989). Water was understood to be a fundamental component of existence and from its flow, other life emerged. This is similar to the Greek's conception of the eternal spring. In this manner, the grotto as both a symbol of earth and water could be understood as representing the world itself and connecting directly to the origination of life through the generative aspects of water. In addition, the grotto illustrated the constant flux of natural processes (Szafranska 1989).

The influence of hydraulic engineering also played a role in the Renaissance conception of nature. During the Renaissance, there was an idea that nature and the machine were inherently of the same order (Szafranska 1989). It was this type of thinking that made the grotto and its hydraulic processes an allegory for conceptions of nature during the Renaissance era (Szafranska 1989). The fascination with automata stemmed from the fact that the machine simultaneously symbolized the raw forces of nature and man's mastery over these powers (Rietzsch n.d.).

The grotto was an attempt to recreate nature, to simulate caves and springs, to create an illusion of nature, but nature improved by the skill of humanity. This did not disrupt the inherent order of life, but merely exemplified it. The grotto was simultaneously an escape, a place of inspiration, a site of play and celebration, a Renaissance pleasure ground, but ultimately it displayed the command of humans to alter the world according to their will. The garden grotto may be seen as a fulcrum for the ideas of nature and culture to play themselves out against a

backdrop of religion with an emerging science that sought to answer the fundamental questions of existence. It is this aspect of grotto design that illustrates the philosophical importance of the grotto beyond a pleasure garden.

The grotto was a landscape design that fundamentally demonstrated the use of power over the natural world and how humans understood their place within the universe. This was apparent in the naturalistic rooms and fonts of the Renaissance period and was expressed through the narrative of allegory. The grotto was more than a subterranean escape, for it encapsulated ideas of nature, of humanity, and of universal laws governing the universe. It was through grotto design that we can look back through time to see how philosophy is inherent in the ways that the land is shaped and experienced. The grotto offers not only aesthetic considerations and possibilities, but also sociological and ecological ones. This is especially apparent during the age of the Renaissance given the complex designs and allegorical programs of waterworks display.

The Renaissance garden grotto was a site of meditation as well as festivity for invited guests. The luxurious villas of the sixteenth century echoed the opulent villas of the Imperial period (Miller 1982, 43). Gardens became indispensable to the grand houses rather than being an afterthought as they were in the previous century. Renaissance gardens were not merely for the contemplation of earthly beauty, but were also used to herald the wealth and power of their owners. Indeed, grottoes were often erected to serve as display cases for a patron's statuary, both antiquarian and newly commissioned works. They evoked antiquity for the patron while confronting the designer with the task of imitating nature in a seemingly effortless way while giving an uninhibited permission to delve into the recesses of imaginative fantasy (Amico 1996, 49). Grottoes were also a lavish presentation of a precious resource, water, which was exploited to delight guests. Water games or "giochi d'acqua," became very popular in the sixteenth

century and would carry over into the Baroque era. The rediscovery of automata from classical times spurred enchantment over hydraulic mechanisms for which the grotto provided excellent concealment, an adequate supply of water, and a scenic backdrop for such tricks and fancies (Szafranska 1989, 80).

Two primary concerns related to gardens during the Renaissance were "the paradox of a work of art made of living materials, and the contrast between man-made objects and the creations of nature" (MacDougall 1977, 7). The aesthetic of Mannerism, popular in the late sixteenth century, subverted classicism through the non-traditional use of classical elements. The grotto epitomized the Mannerist aesthetic in its dichotomous play between nature and art by means of rustic architectural treatments (Miller 1982, 44). This ambiguity of relationship is discussed further by Shearman:

> Their [grottoes] revival is particularly interesting since on the one hand they were a known feature of ancient Roman gardens, and therefore exactly the right ornaments to have, and on the other hand their essential duality is so typical of Mannerism as a whole . . . The visitor can amuse himself by speculating whether it [grotto] represents a cave cut in architectural form out of the rock, or, alternatively, architecture overlaid with the dense accretions of time. (Shearman 1967, 125-26)

The grotto became part of the sequencing of Mannerist compositions where no one garden feature predominated. Gardens of this period were designed to be experienced through a set of accumulated impressions much like viewing a performance (Shearman 1967, 125). Furthermore, the grotto served to challenge the rationality of Renaissance geometries through its rustic and irregular compositions thereby introducing a representation of chaos in an otherwise highly ordered world (Miller 1982, 53). The boundaries between art and nature were blurred in a general inclination to create the fantastic and unpredictable.

Case Studies

Boboli Gardens

Boboli Gardens in Florence, Italy, bought by the Medici family in 1550, was transformed from agricultural land to a prestigious garden in the mid to late sixteenth century (Fig. 3-28). Boboli had many impressive features, including grottoes that would became influential to later nymphaeum design. The Grotto of Buontalenti, also referred to as the Grotta Grande, was a large triple chamber grotto inspired by Roman rustic grottoes. The date of construction ran from 1583-1593. Buontalenti used Vasari's portico, but added another story where he contrasted the architectural treatment of the original portico with limestone and pebbles (Fig. 3-29). Stalactites hang from the pediment and archway of the second story, providing a visual contrast from the light of the exterior with the grotto chamber's dark center (Minchilli 1998, 59). There are niches in the lower portion of the entry façade which shelter statues of Ceres and Apollo. The main room houses Michelangelo's four uncompleted slaves which serve as caryatids in the corners of the chamber (Minchilli 1998, 59) (Fig. 3-30). This room was decorated with stalactites and mosaics with a zodiac motif. The first room is the most majestic of the three with walls covered in spugne, a regional limestone made into a plaster and shaped to produce a variety of forms (Gurrieri and Chatfield 1972, 39 and Jackson 2001, 5). Figures made of stucco and spugne show pastoral scenes as well as river gods and nymphs, the classical subject matter found in ancient grottoes (Fig. 3-31). The ceiling itself was frescoed depicting a sublime pastoral setting. Although the ceiling was smooth, the difference in texture between it and the walls was well integrated (Gurrieri and Chatfield 1972, 39). Long side basins held live fish while plants grew from the walls as water dripped within the chamber, providing pleasurable sounds (Minchilli 1998, 59). Visitors would be sprayed by concealed water jets and could see a suspended fish

bowl underneath a skylight, giving those below a view as if they were underneath the depths. The theme of this room was taken from Ovid's Metamorphoses, that of Education and Pyorrhea's repopulation of the earth after the flood. The main chamber encompasses themes of destruction and renewal with the creation, once again, of a golden age after a period of turmoil. This theme related directly to the influence of the Medici family as a restorer of order from confusion and destructiveness (Minchilli 1998, 60).

The second chamber's focus is on a sculpture of Paris abducting Helen. The sculpture was positioned over a marble basin which collected water from a fountain (Fig. 3-32). Scenes of the Trojan War were frescoed upon the walls to match the iconography of the sculpture. The third chamber had a fountain statue of Venus which sat on a green basin of stone (Fig. 3-33). Four satyr sculptures surrounding Venus sprayed water upon her (Fig. 3-34). There were frescoes representing birds, butterflies, and flowers, as well as wall niches that were decorated with mosaics with crystal rock fountains topped with the Medici coasts of arms (Fig. 3-35). This room lent a feeling of lightness through its theme and decoration (Minchilli 1998, 60) (Fig. 3-36). The statue of Venus symbolized Florence and as she was cleansed through the libation of water, she can be interpreted as demonstrating the gifts the Medici family bestowed upon the region (Minchilli 1998, 60).

In the Grotto of the Madama, the highlight is the grotticina commissioned in 1553, making it one of the initial landscape design features. The exterior was classically designed, but was covered with natural materials including stalactites taken from actual caves (Minchilli 1998, 58) (Fig. 3-37). The interior was architectural in style as well, but was given a rustic treatment through the use of stucco, spugne, and frescoes with stalactite borders, thus emulating the façade (Fig. 3-38 thru Fig. 3-40). Within the chamber were three marble goats and a ram's head,

symbol of the owner's zodiacal sign of Aries, which served as a fountain that poured water into an oval basin (Fig. 3-41). The putti holding fish located on either side of one of the goats also dispensed water into the basin, but were most likely a later addition given their smaller scale (Gurrieri and Chatfield 1972, 42). The original basin was removed in 1696 and placed in the palace. This grotto emphasized the power of the Medici family through rejoicing and inviting the visitor to drink from the fountain, a point of honor for the family since their wealth assisted the transport of water to Florence and the surrounding area (Minchilli 1998, 58).

In Ammannati's courtyard, there is an elliptical grotto built into the far wall referred to as the Grotto of Moses. A fishpond is located there whose center has a mossy island from which water jets conducted water (Fig. 3-42 and Fig. 3-43). Putti are found within the pond as well. Columns of native limestone called pietra forte surround a series of statues and basins whose central niche holds a statue of Moses (Gurrieri and Chatfield 1972, 42) (Fig. 3-42). Four marbles encircled the porphyry Moses (Fig. 3-45). These figures symbolized the Medici family and their rule (Gurrieri and Chatfield 1972, 43). Spugne and mosaics in decorative patterns covered the walls. There were also reliefs on the side walls (Gurrieri and Chatfield 1972, 42). The ceiling was dominated by a mosaic of a trumpeting angel (Fig. 3-46). Spugne partitions off the rest of the ceiling into frescoes depicting flora and fauna (Gurrieri and Chatfield 1972, 43).

Boboli represents both the grotto and niche nymphaeum types. The Grotto of Buontalenti was a magnificent grotto that exemplified the elaborate ornamentation of stucco and spugne. This style of grotto had significant rustic elements, but was mixed with smooth frescoes and marble that indicated a more architectural character. The rustic style remained popular in northern Italy longer than in Rome which accounts for the rather late construction period of this grotto nymphaeum. The themes represented in the Boboli grottoes also reflected common ones

from the period. These themes were inspired by classical literature and typically involved a return to a golden age as well as the concept of water as benefactor, usually referring to a patron's generosity and influence. Apollo and the Muses were connected with the golden age motif while the inclusion of Bacchus and Venus regularly characterized the theme of water as fructifier (MacDougall 1977, 103). Certainly the Medici used these motifs in the construction of the Boboli grottoes and this trend would continue throughout the sixteenth century. The elaborateness of Buontalenti's grotto nymphaeum would also influence later design in countries such as Germany which were not introduced to nymphaea until the seventeenth century.

Villa d' Este at Tivoli

The Villa d'Este in Tivoli was originally a Franciscan convent that underwent restoration beginning in the early 1560's (Fig. 3-47). Significant work on the gardens took place between 1565 and 1572. The Villa d'Este exhibits four out of the five nymphaea types and is often considered to be the most intricate and exquisitely designed of sixteenth century water display complexes. The sheer number and original designs of the fountains at the Villa d'Este would inspire other waterworks, notably the Villa Lante at Bagnaia (Coffin 1991, 44). The nymphaea described below are confined to those constructed during the sixteenth century. The Villa had three main sources of water including the Rivelles aqueduct, the Aniene River, and stored rain water (Fig. 3-48). The muddy water of the Aniene was unsuitable for water tricks so water from the Rivelles was collected in cisterns for this purpose. The entire system depended on gravity in the same manner that ancient Romans depended upon it for their fountains (Barisi, Fagiolo, and Madonna 2003, 60). The actual site of the Villa gardens on a steep hillside naturally inspired grotto construction within this hillside with most of the grottoes located amid the terracing between the piazza and the Hundred Fountain Walk (Barisi, Fagiolo, and Madonna 2003, 114).

These grottoes are based on Bramante's niche nymphaeum in the Belvedere Courtyard at the Vatican due to the architectural treatment of the niche frames, although their interiors are rustic with stalactites (Coffin 1991, 41).

There is a multitude of niche nymphaea on the grounds. Often these niches are a component of more sophisticated and larger nymphaea. Examples of such nymphaea include a niche behind the Fountain of the Dragons that originally accommodated a figure of Hercules holding a club and the Fountain of the Organ whose niche was formerly a grotto housing a statue of Diana of Ephesus (Fig. 3-49 and Fig. 3-50). Other niches that fall into this category are the Fountain of the Owl and the Fountain of the Emperors. The Fountain of the Owl was shaped as a triumphal arch with a large central niche (Fig. 3-51). This niche was unique in that water originally ran through a hydraulic mechanism that used wind chambers to create the sound of artificial birdsong. The niche was decorated with rustic encrustations and had the usual rough architectural treatment within its lower portion in which the water basin rested. The Fountain of the Emperors had a large central rustic niche in which figures of Pluto and Proserpina were once protected (Fig. 3-52 and Fig. 3-53). A representation of a more basic niche nymphaeum is the Fountain of Venus in the courtyard of the palazzo. The Fountain of Venus depicts the classical sleeping nymph motif with a background decorated in gilded stucco (Fig. 3-54 and Fig. 3-55). This nymphaeum incorporated rustic decoration in the lower portion of the niche which served as a continuation of the upper niche landscape motif (Alvarez 1981, 122). There are also the Grottoes of Hygeia and Aesculapius which emphasize sumptuous mosaic decoration with a rustic, rough hewn base on which the statues once lodged (Fig. 3-56). Similar niches can also be found on the villa grounds including the grottoes of Pomona and Flora at the end of the Hundred Fountain Walk.

The Room of the Fountain, which corresponds with the central axis of the park and has a favored center position in the villa itself, contains an interior rustic niche nymphaeum built in 1560 (Fig. 3-57). This fountain incorporates an enamel and marble mosaic of Tivoli's acropolis and the Temple of the Sibyl within the niche. This mosaic work accompanies the room's wall frescoes of idealized landscapes. The rocks, now removed, and the basin escape the confines of the niche and are part of the room proper. This integration of the niche with its surroundings was first accomplished at the Villa d'Este and influenced later designs throughout Rome (Alvarez 1981, 122).

The Grotto of Diana is a chamber nymphaeum within the substructure of the villa, which portrays a preference for more architectural treatments characteristic of the mid sixteenth century (Fig. 3-58). It was built between 1570-72. The chamber had a cruciform plan with nymph caryatids at the crossing which lends a feeling of a chapel chamber, dedicated to Diana herself (Fig. 3-59). A large fountain niche is located opposite the entryway with a stucco landscape relief (Alvarez 1981, 146). The niche itself had rustic elements consisting of a central stone projection on which a statue of Diana once rested (Fig. 3-60). To the left of this fountain was another rustic fountain niche. To the right of the main fountain was a door leading to a covered loggia overlooking the valley. The walls in the area of the fountain and doorway are stuccoed with bas relief scenes inspired by Ovid's Metamorphoses. The rustic elements are mainly consigned to the fountain niches. The walls and vault of the chamber are wrapped in mosaic or in glass-embedded stucco, reminiscent of ancient nymphaea (Alvarez 1981, 147). The floor was covered in polychrome tiles. This chamber nymphaeum is not dim and constricting. On the contrary, there is light and landscape vistas offered by the doorways with the relief wall panoramas imparting a sense of increased space.

The Grotto of Venus in the Oval Fountain enclosure is a chamber nymphaeum that had three rectangular rooms with a single entrance (Fig. 3-61). It was built below the villa against the side of a hill in 1566-68. Water from the Aniene provided the Oval Fountain with its necessary water supply. The chamber opposite the entrance accommodated a large fountain and was once used as a triclinium. The treatment is primarily architectural with rustic embellishments confined to the small fountain niches, to the rough surfaces on which the urns were placed from which the water spilled in the niches, and to the central rock outcrop of the large niche in which a statue of Venus once rested. At the base of her feet is a shell from which a fountain of water emerges and falls into a pool in front of the niche. Along the basin's walls are four marble nudes which held urns that poured water into the basin in homage to Venus. These fountains cooled the chamber and provided lovely water sounds (Barisi, Fagiolo, and Madonna 2003, 115).

Above the Oval Fountain is a fontanone rustico designed in 1565. It consists of a concave backdrop resembling a craggy hill with three large fountain grottoes that contain statues signifying three regional rivers (Fig. 3-62 and Fig. 3-63). Two of these statues are of reclining river gods intended to represent the Aniene and the Erculaneo with a central, towering figure of the Tiburtine Sibyl meant to symbolize the Albuneo (Lazzaro 1990, 230). Plants grew from the rustic backdrop, typical of fontanone rustico designs which incorporated a naturalistic appearance (Fig. 3-64). Underneath this mount is a fountain exedra and oval basin (Fig. 3-65). This was the first known water theater. Hadrian's canal and scenic triclinium are considered to be the inspiration for the Oval Fountain (Alvarez 1981, 173). The design encompasses an arcade on piers with a balustrade over top (Fig. 3-66). This arcade creates a corridor that flows along the backside of the oval pool (Fig. 3-67). Niches are located in the piers where water nymphs

are dispensing water from their urns into the pool. At the center of the hemicycle is a semicircular basin that spills water over the arcade into the pool. There is a fine layer of incrustation along the arcade walls and niche interiors. The overall character is more architectural than rustic. This design influenced other fontanoni rustici and water theaters around Rome (Alvarez 1981, 165).

The primary theme throughout the Villa d'Este gardens is that of virtue prevailing over vice (Pizzoni 1997, 63). This can be seen in the juxtaposition between the Grotto of Diana and the Grotto of Venus, giving the visitor a choice of either the easier route to the latter or the more tiring one to the former, but whose virtue was unquestioned (Pizzoni 1997, 63). The battle between virtue and vice was also incorporated into the narrative of Hercules who was used at the Villa as both a patron of Tivoli and the Este family (Barisi, Fagiolo, and Madonna 2003, 86). Typical of the period, allegory was used to honor the patron's merit and lineage. The landscape design of the Villa d'Este was clearly Mannerist in style and would function as a precursor to Baroque theatrical tastes. The use of play, the "improvement" of nature through human artifice, and the dependence on ancient literary sources for inspiration, characterized Renaissance grottoes and would continue to influence design well into the seventeenth century and beyond.

Synopsis of Grotto Design

Classical nymphaea were resurrected as an architectural and landscape element during the Renaissance through inspiration from literature, archeological examples, and artistic depictions in drawings and sculptural reliefs. These nymphaea were strictly pleasure grottoes in the tradition of ancient Roman predecessors. Renaissance nymphaea were completely man-made creations that can be categorized into five basic types: niche, grotto or chamber, fontanone rustico, water theater, and façade nymphaeum. The niche nymphaeum was the most basic type

and served as a model for the other forms. The niche suggested the interior of a natural cavern through its lining decoration of pumice, shells, marble, and other natural materials. Water was incorporated into the niche by the means of piping through walls, statues and ornamental urns. Reference to water deities and fertility goddesses were common. This type most closely represents the Greek sacred grotto fountain. Decoration could either be naturalistic or architectural, but the reference to the hollow of the cave through the concavity of the niche and the use of water symbolizing the eternal spring were consistent features. As the century progressed, Mannerist elements such as embellished niche frames and illusionistic painting within the niche background arose as salient design elements. Niche nymphaea became more fully integrated within the garden in the latter part of the century when its form was also incorporated into public fountain design. Unfortunately, although this type comprises great variety, few survived from the sixteenth century. The niche nymphaeum peaked at the turn of the century, but then fell from favor during the early seventeenth century.

The grotto and chamber nymphaeum types normally consisted of a rectangular vaulted room with an enclosed fountain. Niches were often incorporated into the chamber walls. The walls and ceiling were rusticated in the grotto type, but more traditionally dressed in the chamber form, though both possessed rustic interior fountains. In the early part of the century, the chamber form was more widespread until the grotto type became popular after the first quarter of the century. In Rome, the chamber type gained prominence once again by mid-century. Preferences for chamber day lighting, less rusticity, and illusionistic painting came into vogue for both types as time wore on. Enclosed nymphaeum became uncommon after the first quarter of the seventeenth century.

The fontanone rustico was a monumental rustic fountain comprised of a rusticated concave wall through which water was piped. Plants were a common design material placed around the fountain structure that was intended to resemble a mont. This was an original nymphaeum type of the Renaissance period. The water theater flourished in the early part of the seventeenth century whose large semicircular recess containing niche nymphaea offered complex and elaborate water displays. It often functioned as a retaining wall for villa garden construction. This form thrived for a century lasting well into the Baroque period. The façade nymphaeum was a rare form in which a series of rustic fountains were positioned along a straight wall. The façade type stimulated the construction of mostre.

In the fifteenth century, elaborate classical nymphaea did not impact the design of Renaissance Roman fountains, but in the early sixteenth century, niche and grotto nymphaea became influential fountain types. As the century progressed, elaborate water displays became common and prospered until the first quarter of the seventeenth century. The penchant for complex water displays was achieved through the proliferation of the fontanone rustico, water theater, rusticated public fountains, and the giochi d'acqua which became fashionable after the rediscovery of ancient automata. All of these designs were made possible through increased water resources available in the latter part of the sixteenth century. The niche and chamber types would exert the most influence on Renaissance designs and would function as pleasant climate controlled spaces for entertaining and dining as they did in antiquity. Nymphaea became part of sophisticated allegorical programs, usually involving Apollo and the Muses or the personification of water itself as a fecund source of life. Grottoes were essentially pleasure grounds where water was lavishly displayed and enjoyed. Often, nymphaea became sculpture museums, whether in or out of doors, for the patron's collection. Towards the end of the

seventeenth century in the vicinity of Rome, the variety of nymphaea types was abridged to a basic palace courtyard fountain design. Ultimately each nymphaea form contributed unique visual and tactile qualities to the Renaissance garden and often subverted the rational geometries of the period.

Fig. 3-1: Grotto of Lourdes, Villa D' Este, Tivoli (Barisi, Fagiolo, and Madonna 2003, 128)

Fig. 3-2: Ariadne (Cleopatra) Fountain, Belvedere Statue Court at the Vatican, Rome. Drawing by Francisco D'Ollanda (Coffin 1991, 33)

Fig. 3-3: Tigris Fountain, Belvedere Statue Court at the Vatican, Rome (Wiles 1933, Figure 62)

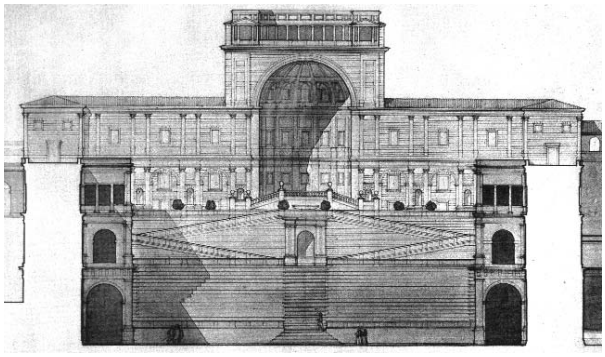


Fig. 3-4: Elevation of the Belvedere Court at the Vatican, Rome, as designed by Bramante (Shepherd and Jellicoe 1993, Plate 1)

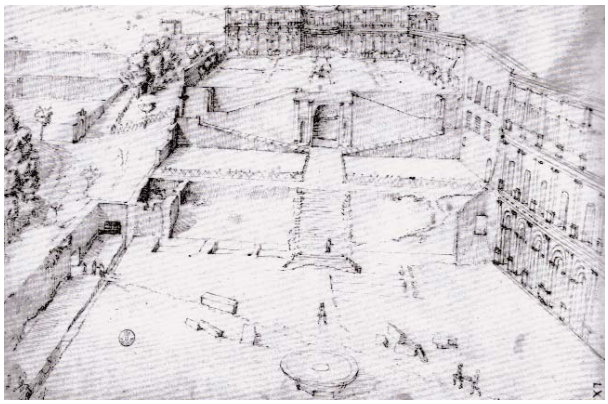


Fig. 3-5: Belvedere Court at the Vatican, Rome. Drawing by Giovannantonio Dosio (Coffin 1991, 16)

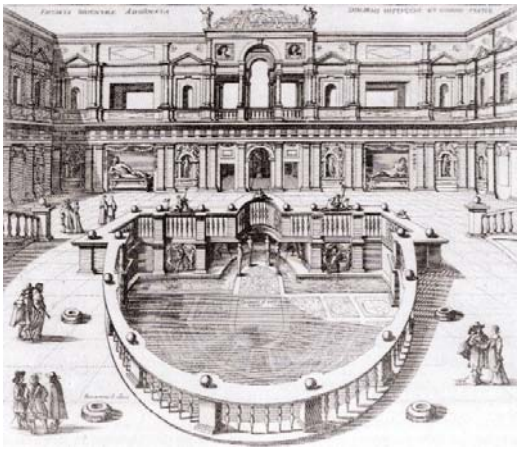


Fig. 3-6: Villa Giulia nymphaeum, Rome, engraving (Coffin 1991, 83)

Fig. 3-7: Villa Giulia nymphaeum, Rome (Coffin 1991, 40)

Fig. 3-8: Villia Giulia nymphaeum, lower level, Rome (Brix 2004, 50)

Fig. 3-9: Fontana dell' Organo, Quirinal Palace, Rome (Triggs 1906, Plate 65)

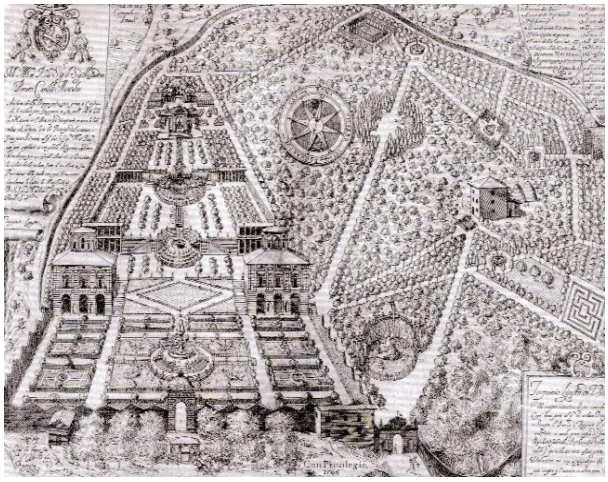


Fig. 3-10: Villa Lante plan, Bagnaia. Drawing by Tarquinio Ligustri (Lazzaro 1990, 249)

Fig. 3-11: Grotto of Venus, Villa Lante, Bagnaia (Fagiolo 1997, 133)

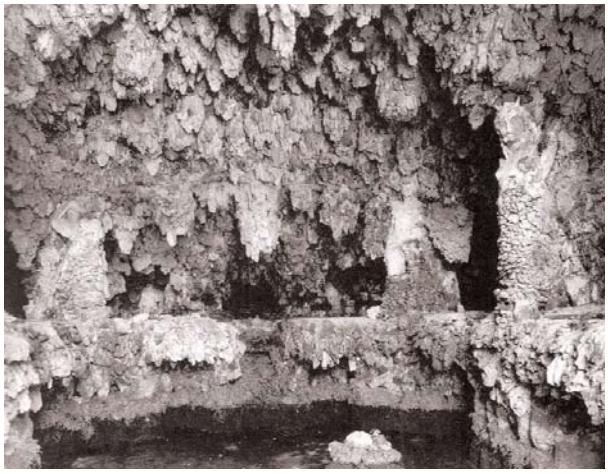


Fig. 3-12: Grotta della Pioggia, Villa Farnese, Caprarola (Lazzaro 1990, 59)

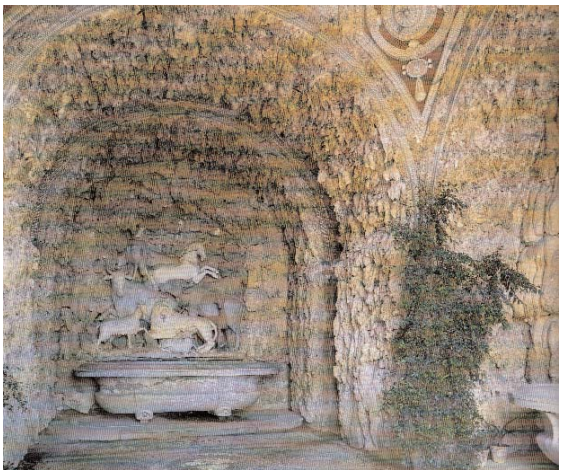


Fig. 3-13: Grotta degli Animali, Villa Medici, Castello (Lazzaro 1990, 58)

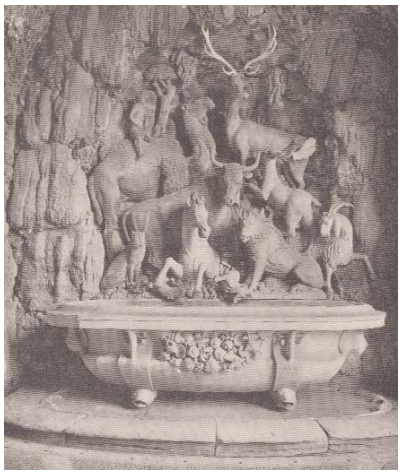


Fig. 3-14: Grotta degli Animali, Villa Medici, Castello (Wiles 1933, Figure 145)

Fig. 3-15: Grotta degli Animali, Villa Medici, Castello (Lazzaro 1990, 183)

Fig. 3-16: Grotta degli Animali, Villa Medici, Castello (Lazzaro 1990, 66)

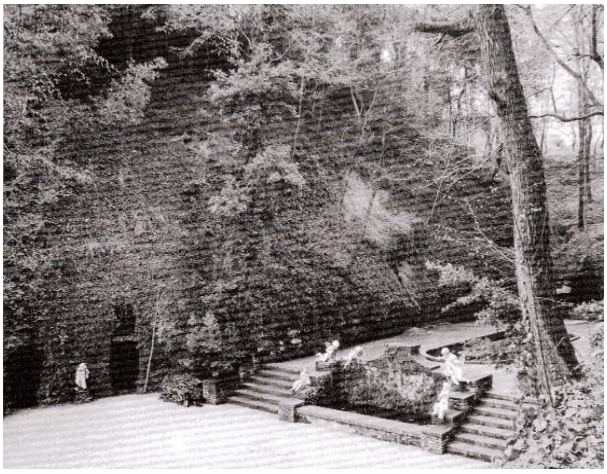


Fig. 3-17: Villa Madama fontanone rustico, Rome (Coffin 1991, 36)

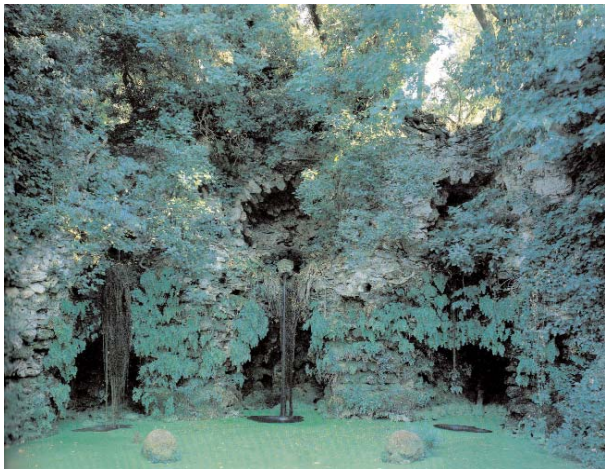


Fig. 3-18: Grotto of the Deluge, Villa Lante, Bagnaia (Lazzaro 1990, 265)

Fig. 3-19: Fontana del Pastore, Villa Farnese, Caprarola (Fagiolo 1997, 106)

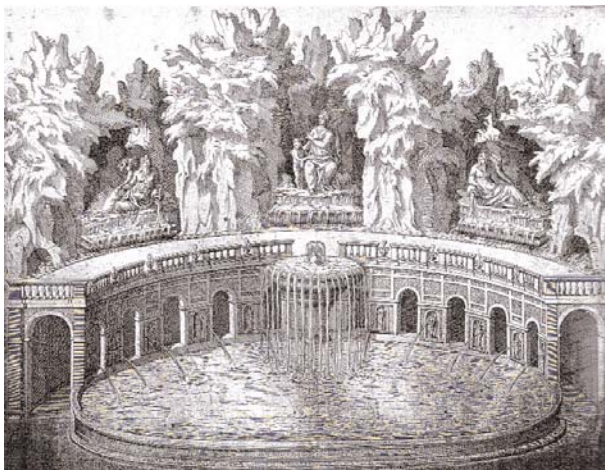


Fig. 3-20: Oval Fountain, Villa D' Este, Tivoli, engraving (Coffin 1991, 53)

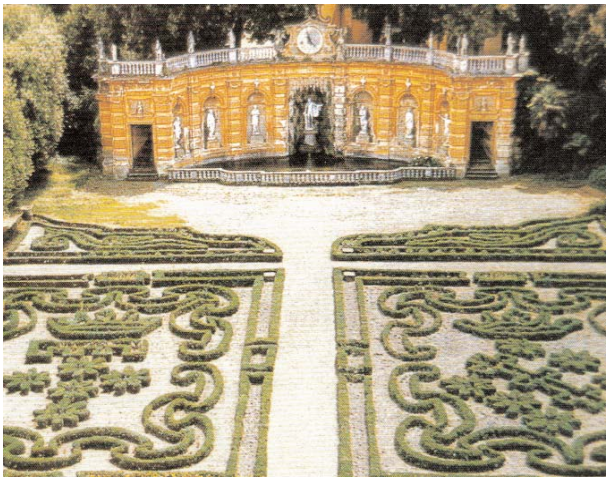


Fig. 3-21: Villa Lancellotti water theater (formerly Villa Piccolomini), Frascati (Pizzoni 1997, 111)

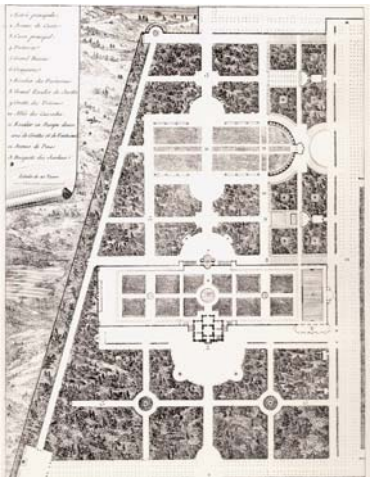


Fig. 3-22: Villa Doria Pamphili plan, Water theater shown in its semicircular form on upper right portion of drawing, Rome (Bolton 1919, 107)

Fig. 3-23: Villa Doria Pamphili water theater, Rome (Bolton 1919, 120)

Fig. 3-24: Villa Doria Pamphili cascade with water theater in the background, Rome (Bolton 1919, 118)

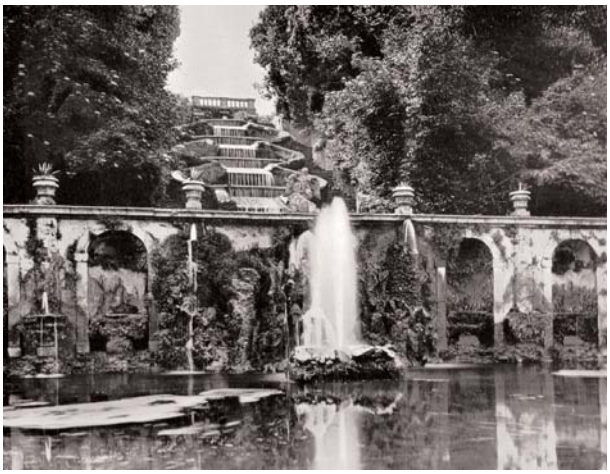


Fig. 3-25: Villa Torlonia facade nymphaeum (formerly Villa Ludovisi), Frascati (Latham 1905, 147)

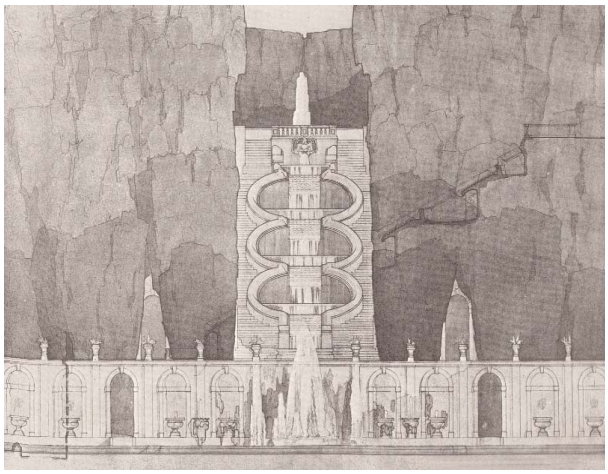


Fig. 3-26: Elevation of Villa Torlonia facade nymphaeum (formerly Villa Ludovisi), Frascati (Shepherd and Jellicoe 1993, 48)

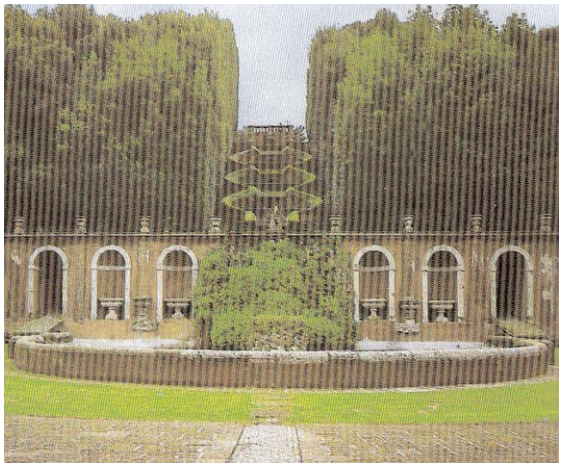


Fig. 3-27: Villa Torlonia facade nymphaeum (formerly Villa Ludovisi), Frascati (Pizzoni 1997, 108)

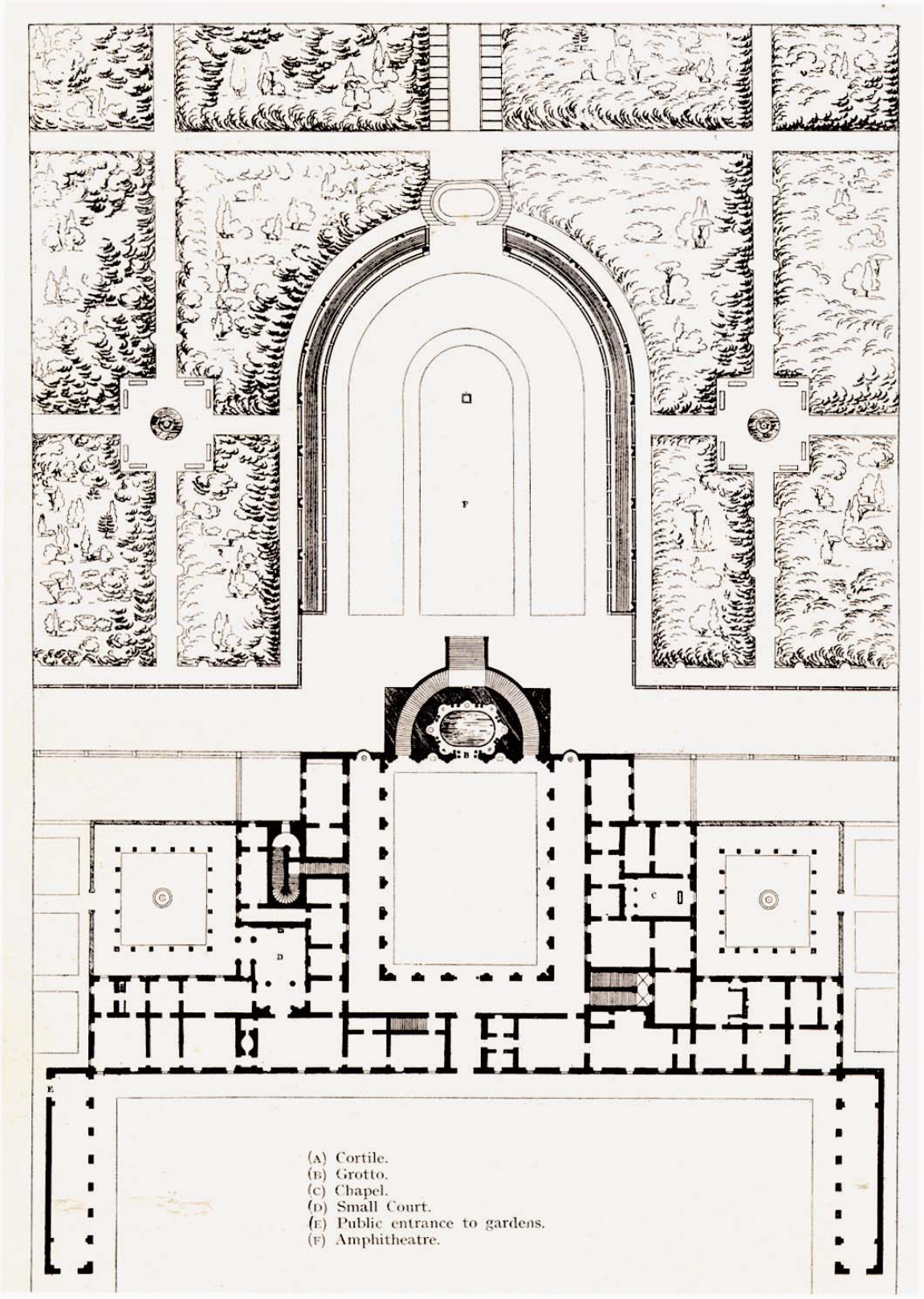


Fig. 3-28: Plan of Boboli Gardens, Florence (Bolton 1919, 262)

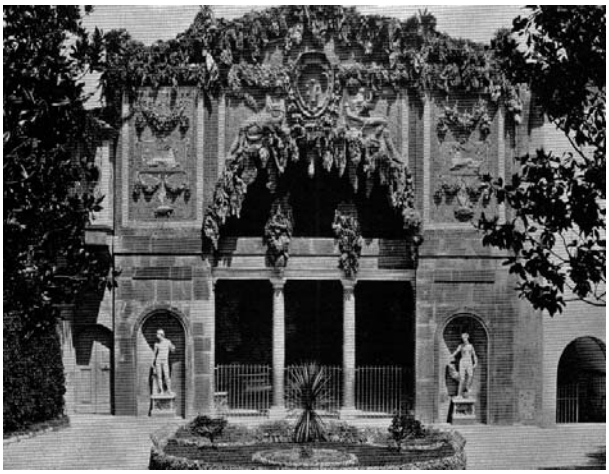


Fig. 3-29: Boboli Gardens, Facade of the Grotto of Buontalenti, Florence (Wiles 1933, Figure 154)

Fig. 3-30: Boboli Gardens, Main chamber of the Grotto of Buontalenti, Florence (Medri 2003, 97)

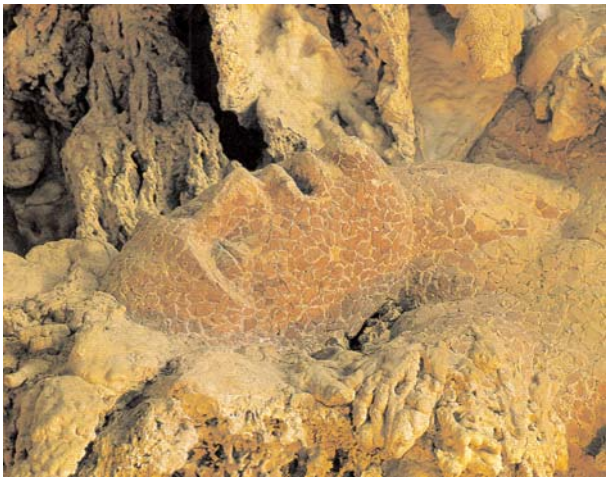


Fig. 3-31: Boboli Gardens, Ninfa dormiente (Sleeping nymph) detail by Piero di Tommaso Mati, Grotto of Buontalenti (Medri 2003, 79)

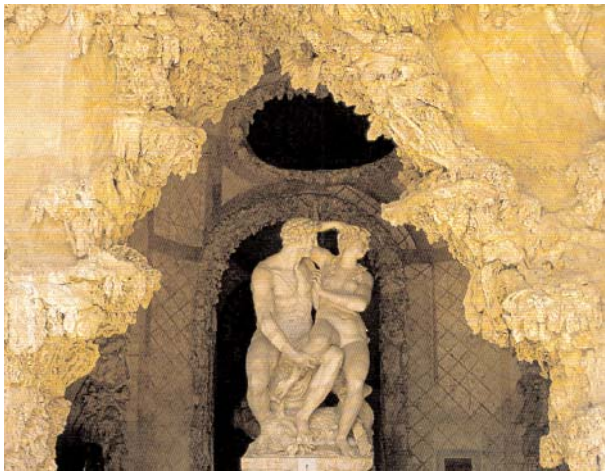


Fig. 3-32: Boboli Gardens, Looking into the second chamber of the Grotto of Buontalenti, Paris and Helen sculpture, Florence (Medri 2003, 82)

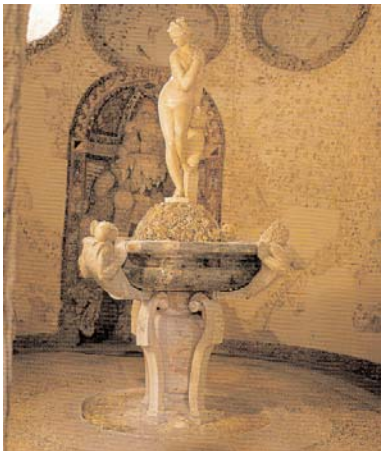


Fig. 3-33: Boboli Gardens, Third chamber of the Grotto of Buontalenti, Venus fountain, Florence (Medri 2003, 85)

Fig. 3-34: Boboli Gardens, Third chamber of the Grotto of Buontalenti, Venus fountain, Florence (Wiles 1933, Figure 119)

Fig. 3-35: Boboli Gardens, Third chamber of the Grotto of Buontalenti, rustic fountain, Florence (Medri 2003, 89)

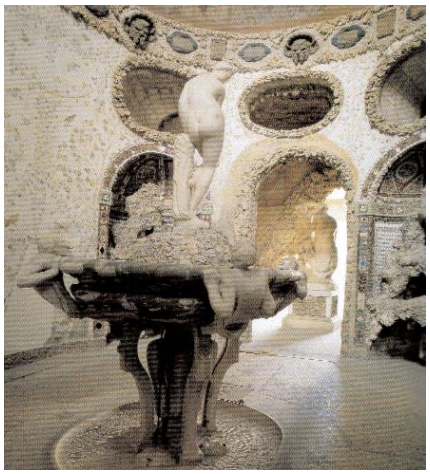


Fig. 3-36: Boboli Gardens, Third chamber of the Grotto of Buontalenti looking into the second chamber, Florence (Medri 2003, 86)

Fig. 3-37: Boboli Gardens, Facade of the Grotto of the Madama, Florence (Medri 2003, 69)

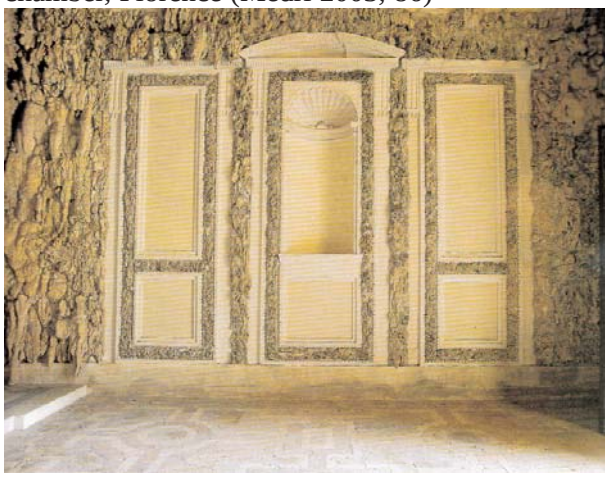


Fig. 3-38: Boboli Gardens, Grotto of the Madama, Interior detail, Florence (Medri 2003, 73)

Fig. 3-39: Boboli Gardens, Grotto of the Madama, Ceiling detail, Florence (Medri 2003, 74)

Fig. 3-40: Boboli Gardens, Grotto of the Madama, Ceiling and fountain, Florence (Medri 2003, 70)

Fig. 3-41: Boboli Gardens, Grotto of the Madama, Fountain detail, Florence (Medri 2003, 99)

Fig. 3-42: Boboli Gardens, Grotto of Moses, Florence (Gurrieri and Chatfield 1972, Figure 53)

Fig. 3-43: Boboli Gardens, Grotto of Moses detail, Florence (Wiles 1933, Figure 156)

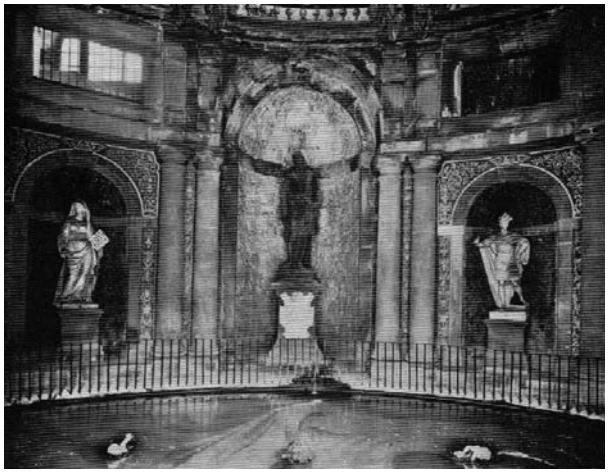
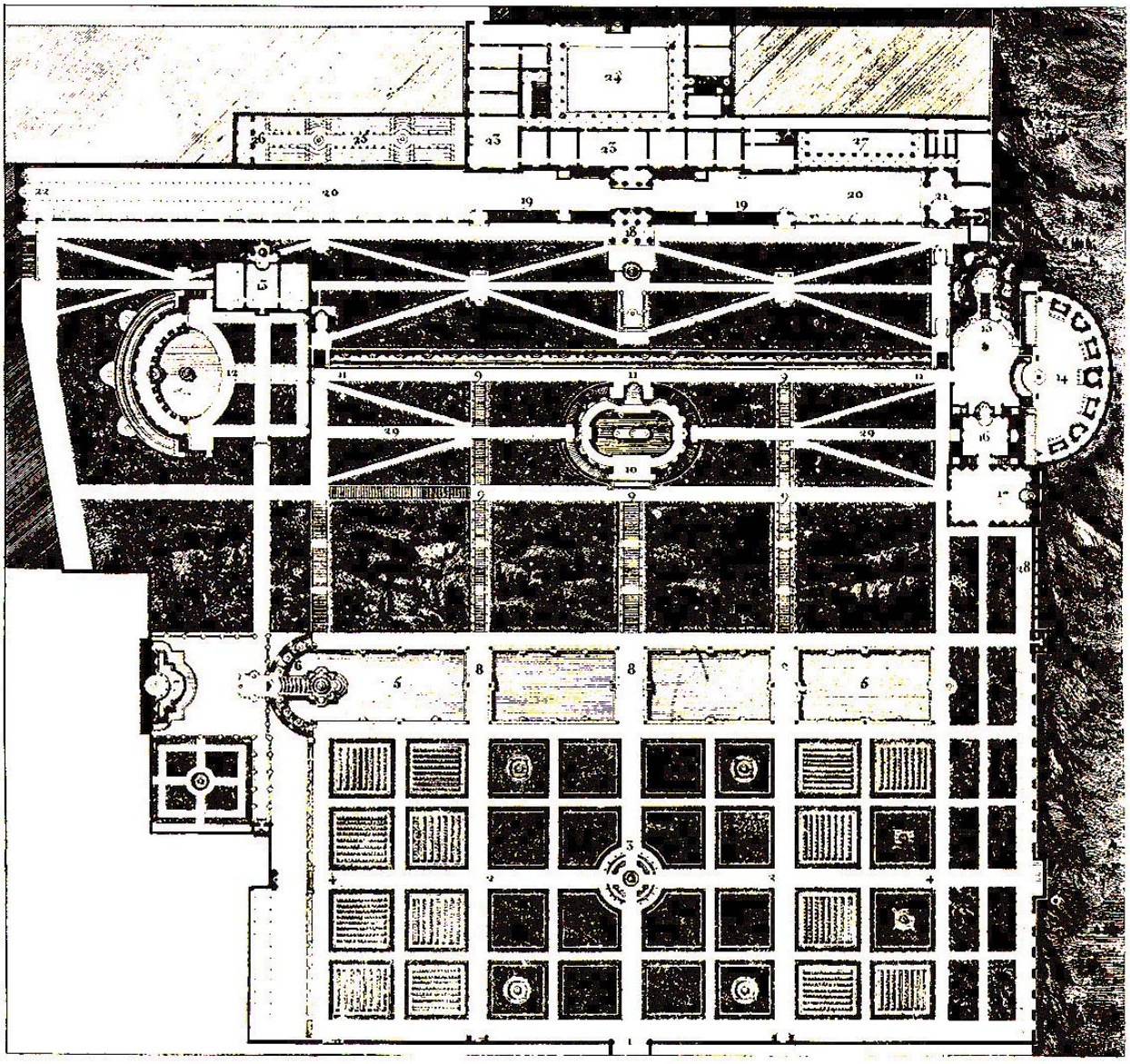


Fig. 3-44: Boboli Gardens, Grotto of Moses, Florence (Wiles 1933, Figure 155)

Fig. 3-45: Boboli Gardens, Grotto of Moses detail, Florence (Medri 2003, 91)

Fig. 3-46: Boboli Gardens, Grotto of Moses, Ceiling detail, Florence (Medri 2003, 94)



199.—PLAN OF THE VILLA D'ESTE AT TIVOLI.

1. Original principal entrance
2. Parterres
3. Cypress ring, seats and fountain
4. Kitchen gardens
5. The great ponds or canal
6. Great cascade with grotto under
7. Organ fountain
8. Bridges over the canal
9. Great stairway ascending bordered by streams of water
10. Fountain in centre of circular stairway
11. Terrace of the hundred fountains
12. Arethusa fountain
13. Baths decorated with shellwork arabesques and statues
14. Model of Old Rome
15. Fountain under a grotto
16. Double stairway with fountains
18. Projecting loggia with terrace over
19. Great stairway up to level of Palazzo
20. Grand terrace with view of Rome
21. Belvedere forming a finish to the terrace
22. Wall fountain to correspond at other end of terrace
23. Living rooms
24. Cordile
25. Private garden
26. Loggia at end
27. Service court
28. High embankment wall raising the plateau of the garden above the slopes of the hill

Fig. 3-47: Plan of Villa D 'Este, Tivoli (Bolton 1919, 191)

Fig. 3-48: Tivoli and the Falls (Bolton 1919, 188)

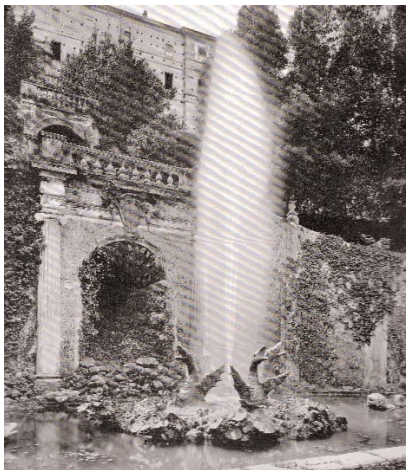


Fig. 3-49: Villa D' Este, Fountain of the Dragons, Tivoli (Bolton 1919, 197)

Fig. 3-50: Villa D' Este, Fountain of the Organ, Tivoli (Coffin 1991, 43)

Fig. 3-51: Villa D' Este, Fountain of the Owl, Tivoli (Lazzaro 1990, 98)

Fig. 3-52: Villa D' Este, Fountain of the Emperors, Tivoli (Fagiolo 1997, 76)

Fig. 3-53: Villa D' Este, Fountain of the Emperors detail showing Pluto with his chariot; Proserpina is now missing (Fagiolo 1997, 77)

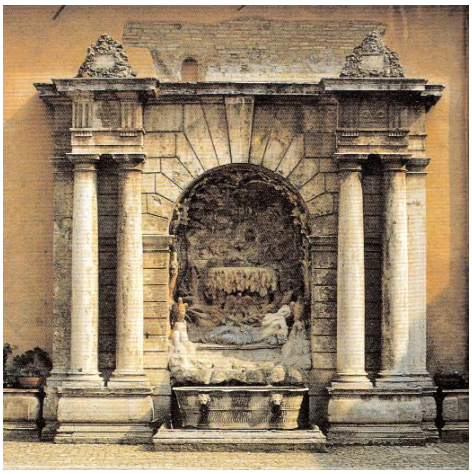


Fig. 3-54: Villa D' Este, Fountain of Venus, Tivoli (Fagiolo 1997, 54)

Fig. 3-55: Villa D' Este, Fountain of Venus detail, Tivoli (Fagiolo 1997, 55)

Fig. 3-56: Villa D' Este, Grotto of Hygeia, Tivoli (Barisi, Fagiolo, and Madonna 2003, 119)

Fig. 3-57: Villa D' Este, Room of the Fountain, Tivoli (Barisi, Fagiolo, and Madonna 2003, 42)

Fig. 3-58: Villa D' Este, Grotto of Diana, Tivoli (Barisi, Fagiolo, and Madonna 2003, 115)

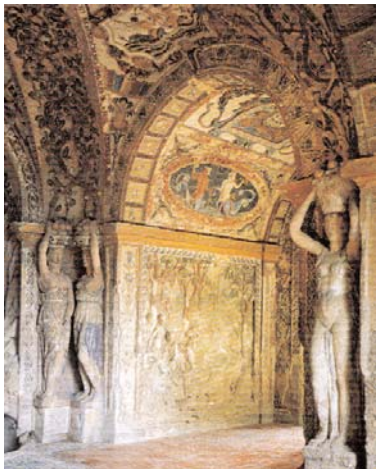


Fig. 3-59: Villa D' Este, Grotto of Diana, Tivoli (Barisi, Fagiolo, and Madonna 2003, 85)

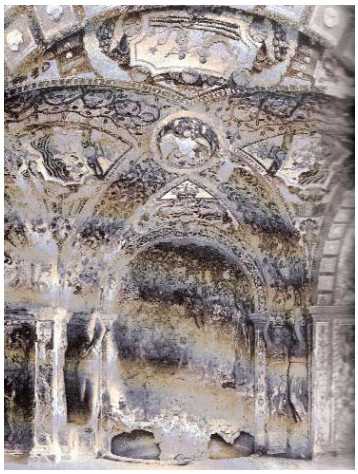


Fig. 3-60: Villa D' Este, Grotto of Diana, Tivoli (Lazzaro 1990, 238)

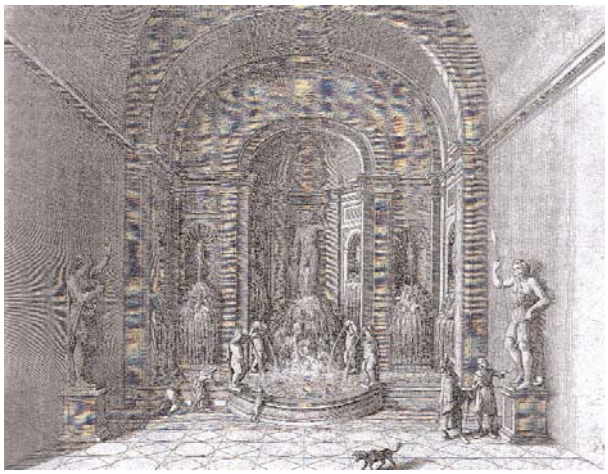


Fig. 3-61: Villa D' Este, Grotto of Venus, Tivoli (Barisi, Fagiolo, and Madonna 2003, 119)

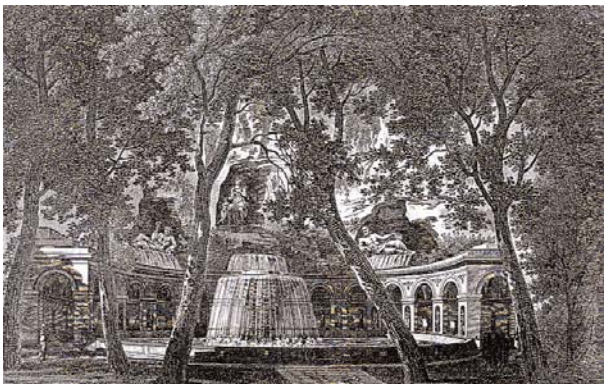


Fig. 3-62: Villa D' Este, Oval Fountain, Tivoli. Engraving by Percier and Fontaine, 1812-13 (Barisi, Fagiolo, and Madonna 2003, 66)

Fig. 3-63: Villa D' Este, Oval Fountain, Tivoli (Coffin 1991, 42)

Fig. 3-64: Villa D' Este, Oval Fountain, Tivoli (Lazzaro 1990, 230)

Fig. 3-65: Villa D' Este, Oval Fountain, Tivoli (Barisi, Fagiolo, and Madonna 2003, 84)

Fig. 3-66: Villa D' Este, Oval Founain circa 1930, Tivoli (Barisi, Fagiolo, and Madonna 2003, 98)

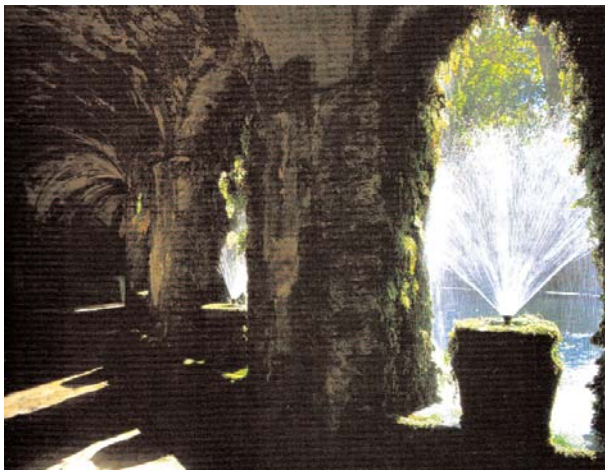


Fig. 3-67: Villa D' Este, Oval Fountain, Behind the cascade (Barisi, Fagiolo, and Madonna 2003, 99)

CHAPTER 4

THE BAROQUE

The crisis of war and economic troubles during the first half of the seventeenth century gave way to the rise of France as the cultural center of Europe. The Baroque period was heavily influenced by French classicism that sought to express artistic extravagance through radical transformations of the environment. Theatricality and monumental displays of exuberant landscapes became popular. There was a shift in grotto and garden design from the illusionistic to the scenographic (Pizzoni 1997, 260). Gardens became a series of open air rooms with broad landscape perspectives that mimicked stage sets. The humanistic iconography of the Renaissance gave way to decoration for its own sake in keeping with the love of drama and delight. Architecture and nature became integrated as one coherent pattern as the countryside itself was incorporated into grand designs (Pizzoni 1997, 84). The Baroque idea of space was influenced by philosophy and mathematics which expanded garden design into seemingly infinite panoramic displays (Rogers 2001, 166). There was a grander and more successful fusion of landscape and residence than was seen in the Renaissance, although Mannerism provided the foundation upon which these new methods flourished (Pizzoni 1997, 84).

The Renaissance had initially tried to imitate antiquarian designs. Imitation metamorphosed into Mannerist illusionistic landscapes that then evolved into Baroque scenography. Baroque designs sought to astonish the visitor. The grotto, with its sublime characteristics, became a widespread feature of garden scenery. The grotto entrance provided a

frame for activities within and could accommodate varied settings always with an element of surprise and wonder (Miller 1982, 59-60). The grotto became more fantastical and given its ambiguity of form, allowed the fusion of artistic practices common in the Baroque to exercise its skill (Miller 1982, 60). Baroque designers were focused on inventive waterworks and the successful domination of hydraulic challenges (Miller 1982, 61). Water theaters were very popular and even modest fountains were fitted with larger than life elements. The pretense of design and the inspiration of wonder went hand in hand. Grottoes and gardens were built to impress and were created on a much larger scale than during the Renaissance. Fascination with the machine brought hydraulic engineering into the limelight for the Baroque aesthetic appreciates complexity of detail. Grottoes and fountains were backdrops and fancies, venturing far from the original Greek version of the grotto as a sacred fountain dedicated to the nymphs.

There was greater sensitivity to the landscape in regards to incorporating distant views into garden design. Designers shifted the vanishing point and thus a long perspective was incorporated in contrast to the short perspective employed in Renaissance gardens (Baridon 1998, 9-10). This lengthening of perspective then required a reworking of proportion since the notion of infinity had been absorbed by the garden (Baridon 1998, 10). The love of spectacle during the Baroque produced striking entrance avenues and sculptural compositions tended to be grandiose. Curved lines and diagonals began to be used which allowed for more varied and subtle visual perspectives (Pizzoni 1997, 83). Naturalistic compositions involving grottoes and rocks were key elements as were water cascades and chains. Vegetation was given freer reign than in the Renaissance and the play of light and shadow from botanical features was highlighted. Emphasis was on botanical verticality with water as a dominant design element (Pizzoni 1997, 84). Rigid, compartmentalized garden designs were given softer, longer lines and

more experimentation with botanical species was achieved. Designs were meticulously integrated through the convergence of axes. The grand scale of French Baroque design allowed for more impressive vistas thereby providing a wider understanding of natural elements as they were included into a panoramic spectacle.

In Italy, design trends did not follow France in its abstract geometric conception of space, rather a bounded topography continued to direct landscape design practice (Rogers 2001, 180). Italian Baroque design still strove for compositional unity, but accomplished this through different methods than the French style and generally on a more modest scale. Terraces and stairs were used in concert with topography to create dramatic settings (Rogers 2001, 179). The greater ease of water transport made waterworks less a conundrum than was experienced in France (Rogers 2001, 179). Elaborate landscapes were able to more explicitly flaunt the power of their patrons, a significant aspect of Baroque design, while recognition of patrimony remained central in Italian gardens (Rogers 2001, 179). Drama was heightened in Italian Baroque gardens by inclusion of actual outdoor theaters and the placement of pastoral sculptures along wooded paths (Rogers 2001, 179). On the whole, Italian designers created more elaborate and larger gardens than their Renaissance predecessors, but did not duplicate the seemingly infinite visual perspectives that the French accomplished. This was probably due to terrain as much as artistic preference.

Remains of early seventeenth century grottoes are not overly abundant. Two British examples are the now destroyed, Wilton House Grotto and the Woburn Abbey Grotto both designed by Isaac de Caus in the early seventeenth century. The Wilton House Grotto was located on the garden's central axis and was composed of a triple triumphal arch dripping with stalactite inspired decoration (Miller 1982, 64) (Fig. 4-1). Water features included a multitude of

jets and surprising splashes for the visitor's enjoyment. The Woburn Abbey Grotto was built as a cool respite from the plague ridden city of London (Miller 1982, 65) (Fig. 4-2 and Fig. 4-3). These two structures are of the grotto nymphaeum type with rusticated features on the walls composed of bas-relief shell mosaics. Marine motifs proliferated including depictions of Neptune, Triton, Venus, and the ever present river gods and goddesses. Shell chariots, putti on dolphins, and Nereids were also in abundance. Statuary was set in niches as was common in the Renaissance. Niche fountains were also present. Despite the rustic treatment of shells and simulated rock, the rooms appeared to maintain an architectural presence rather than achieving a naturalistic atmosphere (Miller 1982, 65). Another British example is that of the Enstone Grotto built in Oxfordshire, but destroyed in the nineteenth century. This grotto was of the chamber nymphaeum type. A large rock served as a multi-cavity fountain from which water dripped continuously through concealed pipes within a vaulted room (Fig. 4-4). The rustic fountain in this grotto was apparently very naturalistic in appearance and performance. Two interesting features executed at Enstone included a device that raised and lowered a ball on a jet of water as well as a water curtain that was triggered by an approaching visitor. These water tricks are typical of the Baroque style.

Rome remained a center for innovation for grotto development (Miller 1982, 67). Evidence of grottoes from this period indicated the complexity of design typical of Baroque influence. Intricate decoration intended to imitate nature's hand is demonstrated by the rustic grotto fountain, the Fontana della Galera or Fountain of the Jail, at the Vatican positioned on the west side of the palace within a terrace garden (Triggs 1906, 97) (Fig. 4-5). It was remodeled during 1613-14 into a fontanone rustico (Alvarez 1981, 169). The grand and bold design of the fountain as well as the lavish use of water is indicative of the Baroque period. The niche, after

remodeling, held a statue of Neptune set on a rock foundation from which water ran down into the fountain's collection basin (Fig. 4-6). The bronze ship located within the basin, sculpted by Bernini, was added after the early seventeenth century modifications. This sculpture transformed the style of the fountain from a rustic to an architectural design (Alvarez 1981, 170). The Fontana della Galera, like others located at the Vatican gardens, was for display in addition to actual use (Miller 1982, 67).

Not only was there a standardization of the fontanone rustico type during the early seventeenth century, but grand water theaters were built in the town of Frascati that were to exceed the fame of sixteenth century predecessors (Miller 1982, 68). The Villa Aldobrandini is the most well known and will be discussed under the case studies.

French grotto examples include the chamber nymphaeum at the Château of Wideville built in 1635. This was a quadratic chamber with a highly decorated façade whose interior had a triple niche design (Fig. 4-7). A semicircular basin was also present into which a nymph originally poured water from her urn, evoking the classical image associated with water. The interior was decorated with pebbles, shells, and multi-colored crystals. On the ceiling was a fresco depicting Apollo (Miller 1982, 70). Obviously, Renaissance influence is evident, but the cartouche on the façade pediment surrounded by river gods is stylistically Baroque in its overt display of lineage as is the rusticated decoration on the façade columns. Another example is that of the grotto at the Château of Ruel (Fig. 4-8). This grotto nymphaeum had interior shell work in the shape of satyrs, a central fountain on a marble table, and a heavily rusticated façade. The chateau boasted numerous water cascades and grottoes typical of this period landscape (Miller 1982, 71).

The Baroque garden functioned as a transitional space between the landscape and the residence, but was tightly integrated with both. Fusion of forms and materials is a mark of the Baroque aesthetic and the grotto certainly was a significant element within the landscape illustrating this fusion. The grotto has always been imbued with ambiguity for it is an imitation of a natural form. This ambiguity was embellished during the Mannerist period, but was heightened in the Baroque. Extravagance led to more elaborate decoration and richly complex water tricks. Art and nature fused and then arose as separate entities with marked distinction as grottoes were sometimes fashioned naturalistically and at other times architecturally. Grottoes remained pleasure gardens, but the control over nature intensified and the multitude of decorative possibilities for grottoes increased. The Baroque was concentrated on inspiring awe and wonder so the grotto became part of a larger artifice intended to produce fantasy surroundings similar to the backdrop of a play. Designers succeeded in this venture due to the improvement of engineering skills and an increase of water resources as well as wealth that allowed the continued building of leisure landscapes. Although an interest in rusticity waned from the Renaissance era, grottoes continued to be decorated with living materials in efforts to evoke naturalistic settings. Perhaps it can be said that art triumphed over nature during this period, for nature was overtaken and heavily controlled in a larger scale than was possible during the Renaissance. What remained was the wanting to experience a space evocative of the cave, of the marine depths, of the cool and relaxing chambers built since antiquity. This desire would continue into the next century, but once again tastes would change and so the grotto necessarily underwent transformation.

Case Studies

Villa Aldobrandini

The Villa Aldobrandini at Frascati, southeast of Rome, was built between 1598-1603 and was renowned for its extensive and unique waterworks (Fig. 4-9). The villa possessed a chamber nymphaeum that incorporated an imposing sculptural niche nymphaeum, three fontanoni rustici, and a celebrated water theater (Fig. 4-10). The niche nymphaeum of Apollo and the Muses heralds the final stage of illusionistic niche background design in the region. The fountain's motif incorporates painted wooden sculptures of Apollo with the nine Muses and Pegasus on Mount Parnassus. The construction projected significantly into the room in three dimensional relief creating a sense of space between the painted landscape backdrop and the sculptural foreground. Water flow was minimal, unlike what is found in rustic niche nymphaea, but still evoked an image of a primordial spring (Alvarez 1981, 159). This nymphaeum had a concealed water organ that appeared to spill music from the instruments held by the frolicking muses within the niche. The inspiration for this particular niche nymphaeum, a component of a larger chamber nymphaeum, was the Grotto of Diana at the Villa d'Este (Alvarez 1981, 159). Similarities between the two grottoes include the integration between the niche background and the fountain, the painted landscape wall panels, and the pergola inspired vault (Alvarez 1981, 159). The increased presence of light and the illusionistic landscape view within a more classical architectural space breaks with the traditional grotto nymphaeum more strongly than does the Grotto of Diana at Tivoli (Alvarez 1981, 160). Once again, this is part of the trend away from rusticity during the mid to latter part of the sixteenth century in the vicinity of Rome.

Three versions of the fontanone rustico nymphaeum type are found at the Villa Aldobrandini. They were designed in 1602-03 and consisted of varying styles set at different

elevations (Alvarez 981, 167). The uppermost fontanone rustico was fed directly from the supply aqueduct and was composed of a rocky wall that had a central waterfall which was bordered by fountain niches (Fig. 4-11). The niche fountains dispensed water from the upper portion of the alcoves where it flowed down through a series of levels and was collected in a large basin (Alvarez 1981, 167). The water from this first fountain then drained into the other two nymphaea. The second fontanone rustico was primarily architectural and, unfortunately, was completely destroyed. The third was the most naturalistic, being made up of a central waterfall with two side cascades. Water jets were also present, all of the water filtering into a lower basin. The water from these three fontanoni rustici would eventually be carried through an open channel to the water theater (Alvarez 1981, 168) (Fig. 4-12).

The water theater at the Villa Aldobrandini was considered one of the most spectacular of its kind built in the early seventeenth century and undoubtedly was inspired by the Oval Fountain at the Villa d'Este (Coffin 1991, 47). The hemicycle served as a retaining wall for the south terrace and was on axis with the villa (Fig. 4-13). The center of the hemicycle had a niche nymphaeum which held a figure of Atlas holding the world, signifying divine wisdom (Rogers 2001, 180) (Fig. 4-14). There are two sizable rustic niche nymphaea on either side of Atlas with statues of a Centaur and Polyphemus respectively. In between the central niche and those housing the above stated statues, are smaller niche nymphaea sheltering several smaller figures and frescoes (Fig. 4-15 thru Fig. 4-17). Water poured forth from fish located at the feet of these smaller sculptures as well as from rustic fountains located in front of the niches. Unlike the Villa d'Este, the fontanoni rustici are not adjacent to the water theater, but are located well above it, out of view of the theater (Alvarez 1981, 175). The water would flow from the first fontanone rustico through the second to the other fontanone rustico and finally to the water theater via a

delightful cascading waterway, all by the force of gravity (Fig. 4-18 and Fig. 4-19). This nymphaeum was dedicated to Water, as personified by the nymph of classical origins, and was seen as a living substance affording dignity to the Villa's landscape.

Baroque influences can be seen in the grandeur of the water theater and the water cascade which feeds it. The water theater's architecture is characteristically Baroque in its forcefulness and juxtaposition of diagonals as well as its play of light and shadow also popular in antiquity (Rogers 2001, 181). Hydraulics were created that imitated natural forces such as rain, thunder, and wind, illustrating the rather obsessive quality of the will to control nature during this time (Miller 1982, 68). Imprese were placed in niches of the water theater, common in the Baroque, to candidly acknowledge the garden's patron. There still remained an iconographic program, an element belonging to the Renaissance era. This program symbolized the power of the Church and the nobility of the Aldobrandini family (Pizzoni 1997, 110). This villa is a prime example of Baroque inventiveness and excess as well as a demonstration of the influence exerted by the Mannerist style in the early seventeenth century.

Château de Vaux le Vicomte

The garden at the Château de Vaux le Vicomte, outside of Paris, was redesigned beginning in the early 1650's by André Le Nôtre and Daniel Gittard (Fig. 4-20). Water was redirected through the landscape and additional springs were sought in 1653-54 to provide for the new designs (Brix 2004, 24). In 1656, land to the south was purchased including a pond which would later become part of the Grand Canal. The château itself was not begun until 1656 (Brix 2004, 30). The redesign that was accomplished during this time period is considered to represent significant innovation within the French Baroque landscape.

Water was a central design element throughout the landscape. Vaux was compared at the time to Tivoli and Frascati for its exuberant display of water and was considered to surpass them by French visitors (Brix 2004, 119-20). Water cascades were incorporated comparatively late and did not typically dominate French gardens as they did in Italian designs, but grottoes were a standard French landscape feature (Brix 2004, 120). The grotto at Vaux was located underneath a terrace on the far side of a canal that ran parallel to the Grandes Cascades (Fig. 4-21). The grotto actually supported the terrace above and consisted of rusticated stone (Fig. 4-22). Two large river gods were placed in niches decorated with dripping stone beneath the stairs that rise to the terrace above, representing the Tiber and Anqueil (Fig. 4-23 and Fig. 4-24). The Anqueil actually sourced the garden's canal. The grotto was usually in shadow and contrasted with the robust, sun-lit architecture surrounding its niches (Brix 2004, 124). Eight atlantes separate the grotto into seven niches, each containing a rock fountain that was made of strange looking accretions of stone from which water flowed into a rectangular basin below (Fig. 4-25 and Fig. 4-26) The atlantes are crowned with aquatic plants, suggestive of their link with Neptune and the sea (Brix 2004, 128) (Fig. 4-27). Originally, an ornate fountain was to be placed in the basin into which the rock niche fountains flowed. This fountain was to have sculptural compositions of Neptune and Tritons, but was never constructed (Brix 2004, 128). The slow trickling water from the grotto contrasts with the vigorous cascade that directly faces the grotto across the Grand Canal. As a visitor approached the grotto, the seven niches initially appeared to contain sculpture and the grotto caves, which housed the river gods, seemed to be of rusticated stone although the opposite is true (Brix 2004, 128). Such visual illusions are representative of Baroque scenography.

The use of trickery, hallmark of the Baroque, was also evident as one looked into the grotto's water basin below the niche rock fountains and perceived strange shapes and faces reflected on the surface. Suggestions of figures were perhaps carved into the original construction of the rock accretions that made up the fountains, a feature barely discernable today (Brix 2004, 130). The grotto at Vaux is the only site in the garden that holds evidence of the sublime and irrational. The immediate surroundings, as well as the rest of the garden, represent order through the use of vigorous architecture without rustication or allusion to a subterranean realm. The grotto at Vaux incorporates the classical elements of rusticated niches, sculptures of river gods and other marine motifs, as well as the use of water flowing from niches into a basin. The Baroque influence is evident as far as the grand scale of the grotto and the boldness of the adjacent architecture. The grotto was created to delight and surprise, typical of both Renaissance and Baroque constructions. This grotto is of the façade nymphaeum type, rare in the sixteenth century. As was characteristic of this type, the grotto served as a retaining wall. The grotto was a mixture of both sixteenth and seventeenth influences as was also seen at the Villa Aldobrandini. Both examples show the evolution of the grotto from antiquity and how this form was appropriated by prevailing tastes. The eighteenth century would tire of the extreme artifice of Baroque designs and desire more naturalistic compositions. The grotto would therefore continue to undergo alterations.

Synopsis of Grotto Design

The Baroque period marked a love of spectacle, theatricality, and the will to impress through complexity of detail. Grottoes became part of the scenographic evolution of the garden by way of elaborate designs that were bolder and grander in scale than that of the Renaissance. The objective to instill awe was paramount and grotto design reflected this in complexly

engineered water displays which made use of the abundance of water resources, especially in the town of Frascati. Inventiveness of waterworks design and the domination over nature through the skill of human creativity were hallmarks of the Baroque grotto designer. Fountains of all types were richly embellished through daringness of form and a profusion of decorative treatment. Sophisticated giochi d'aqua reflected the love of intricate mechanisms. It was an age of extravagance and grotto design was an exemplar of excess. Niche nymphaea were still predominant, but the chamber and grotto nymphaea were also abundant. Water theaters became the rage of the wealthy and Baroque designs surpassed Renaissance creations. Grottoes were constructed in both naturalistic and architectural styles, but the emphasis on rusticity that was prevalent during the Mannerist period was not reproduced to the degree it was in the preceding century. Natural materials remained the stock decorative element and organic compositions continued, but artistic fusion allowed art to prevail over nature in the seventeenth century. Remains of seventeenth century grottoes are not plentiful, but basic design trends are evident in this age of sumptuous taste that required resources not be spared to achieve the fantastic.

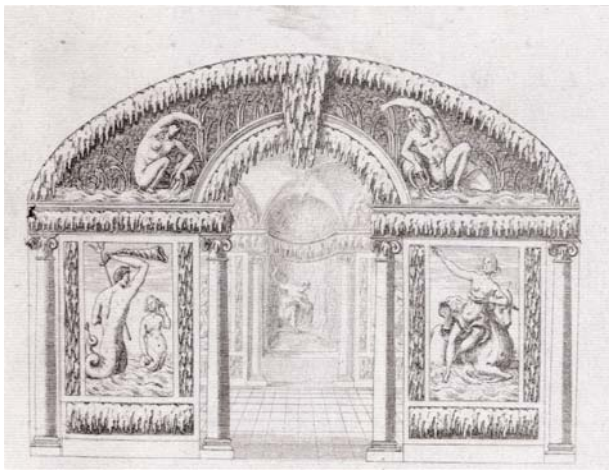


Fig. 4-1: Wilton House Grotto, Wiltshire, England (Miller 1982, 65)

Fig. 4-2: Woburn Abbey Grotto, Bedfordshire, England (Jackson 2001, 3)

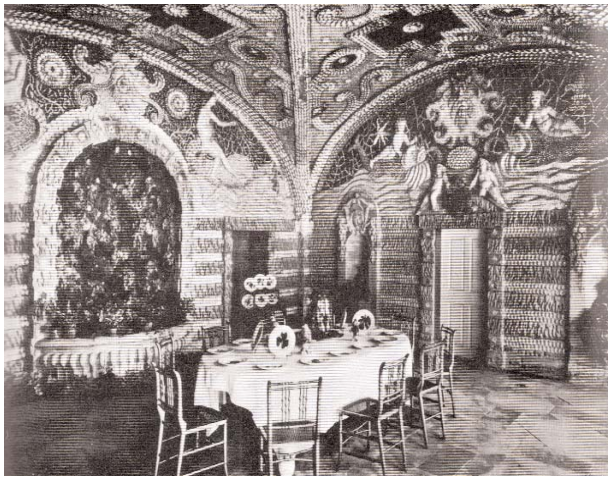


Fig. 4-3: Woburn Abbey Grotto, Bedordshire, England (Jones 1974, 147)

Fig. 4-4: Enstone Grotto, Oxfordshire, England (Miller 1982, 66)

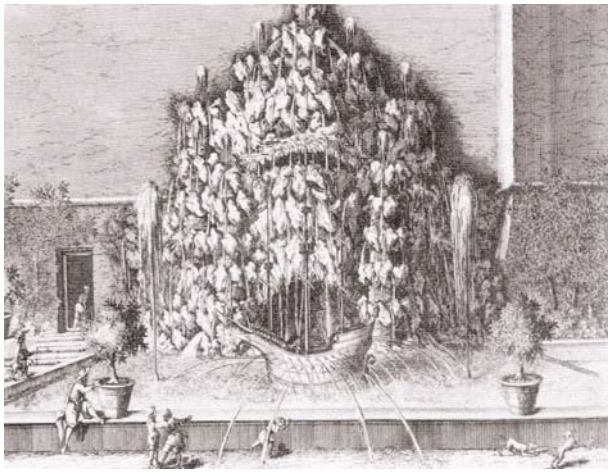


Fig. 4-5: Fontana della Galera, Vatican, Rome (Miller 1982, 67)

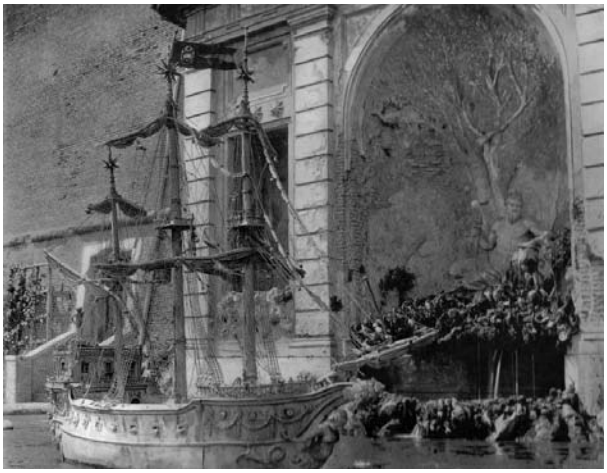


Fig. 4-6: Fontana della Galera, Vatican, Rome (Triggs 1906, Plate 73)

Fig. 4-7: Château of Wideville, France (Miller 1982, 70)

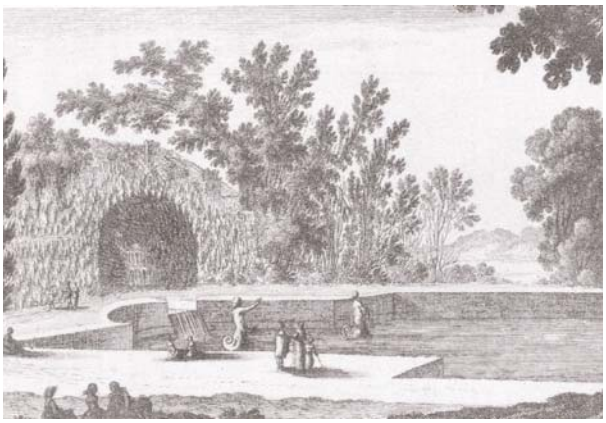
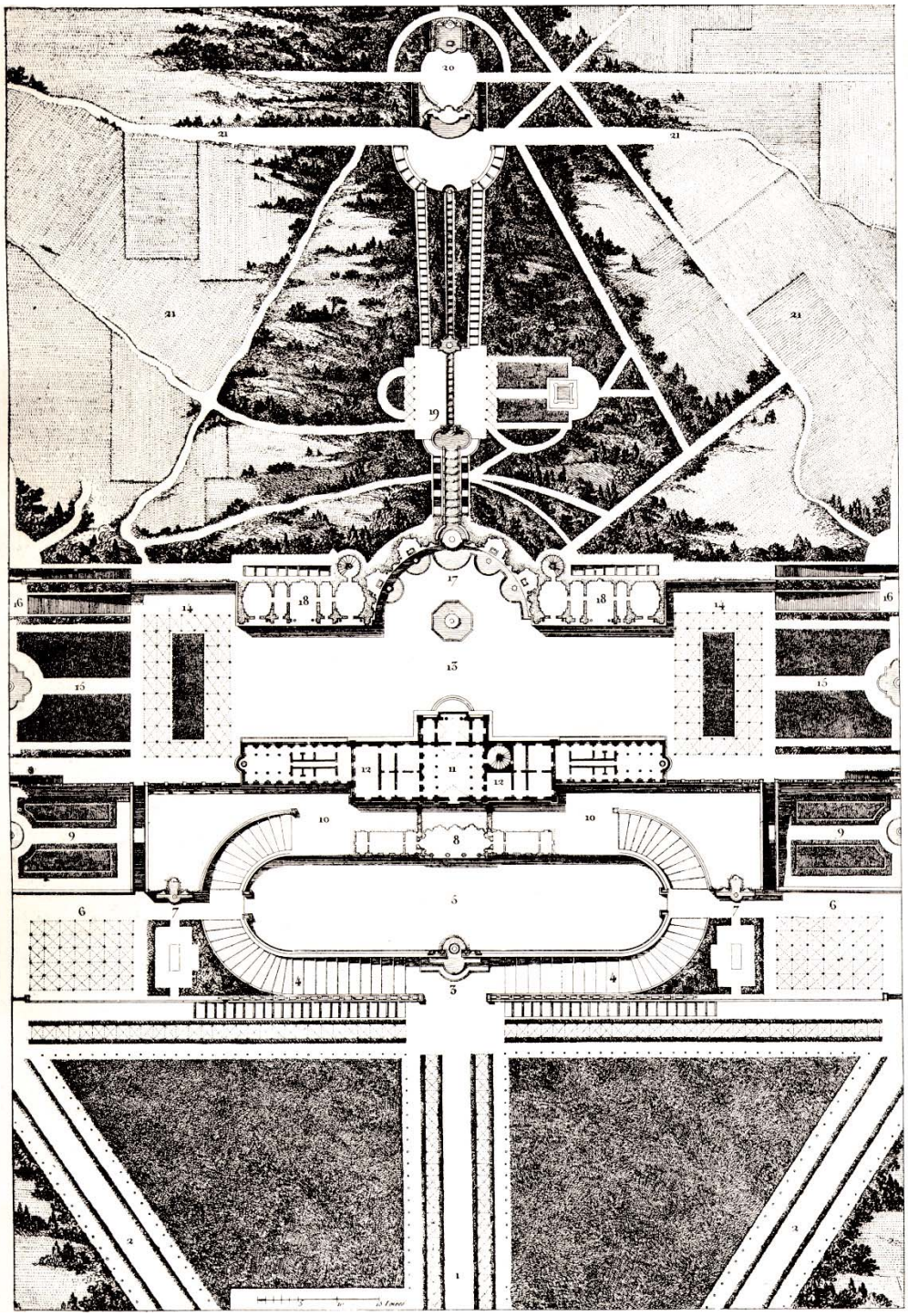


Fig. 4-8: Château of Ruel, France (Miller 1982, 71)



(1) Main entrance.
(2) Parterres.
(3) Fountain opposite entrance.
(4) Sloping way to first terrace.
(5) Terrace in form of a circus.
(6) Quincunx of trees.
(7) Fountains at base of terrace wall.
(8) Cold rooms and grottoes under terrace.
(9) Parterres with flowers.
(10) Terrace at level of ground floor of Villa.
(11) Vestibule.
(12) Living-rooms.
(13) Terrace at level of first floor of Villa.
(14) Quincunx.
(15) Grass lawns with jet fountain.
(16) Grand stairways to gardens.
(17) Apsidal terrace with niches and fountains.
(18) Cold rooms under terrace.
(19) Water channel between cascades.
(20) Fountain which feeds waters of cascade.
(21) Woods which rise in amphitheatre to top of mountain.

Fig. 4-9: Plan of Villa Aldobrandini, Frascati (Bolton 1919, 162)

Fig. 4-10: Villa Aldobrandini, Room of Parnassus, niche nympheaum of Apollo and the Muses, Frascati (Fagiolo 1997, 231)

Fig. 4-11: Villa Aldobrandini, Fontanone rustico above the water theater, Frascati (Bolton 1919, 168)

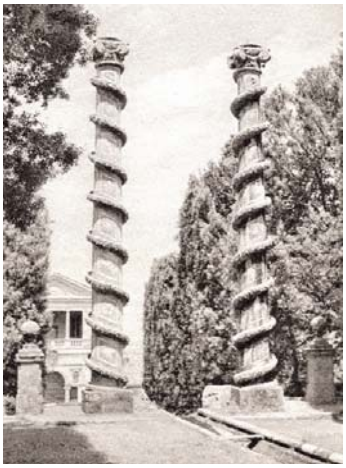


Fig. 4-12: Villa Aldobrandini, Columns at the top of the water theater, Frascati (Faure 1960, 174)

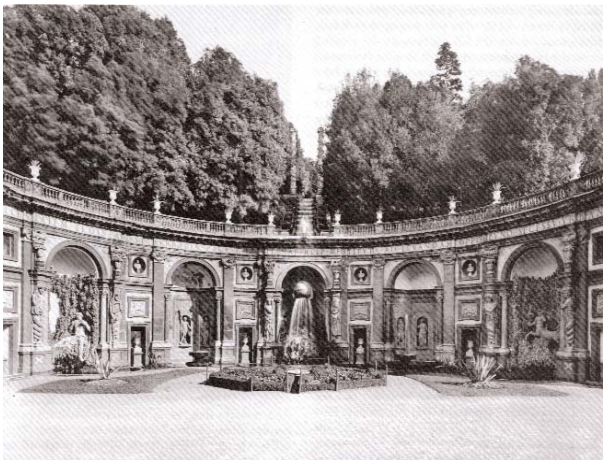


Fig. 4-13: Villa Aldobrandini, Water theater, Frascati (Coffin 1991, 47)

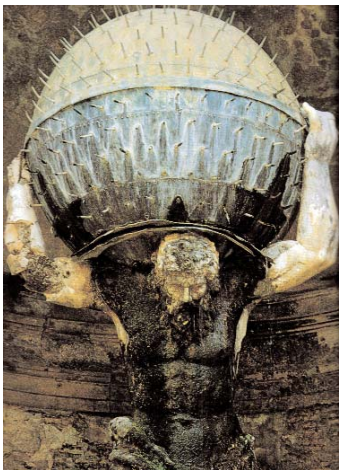


Fig. 4-14: Villa Aldobrandini, Water theater detail of Hercules, Frascati (Fagiolo 1997, 226)

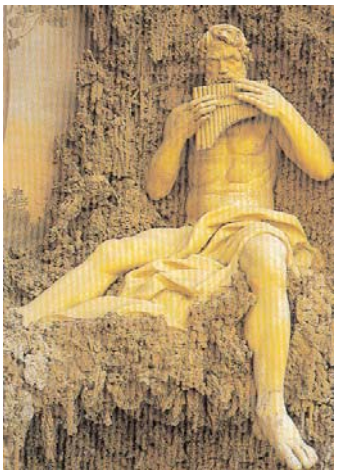


Fig. 4-15: Villa Aldobrandini, Water theater niche detail, Frascati (Pizzoni 1997, 110)

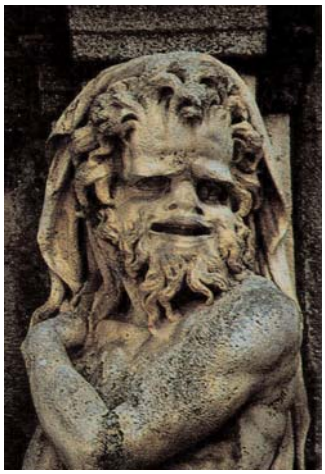


Fig. 4-16: Villa Aldobrandini, Water theater niche detail, Frascati (Fagiolo 1997, 227)

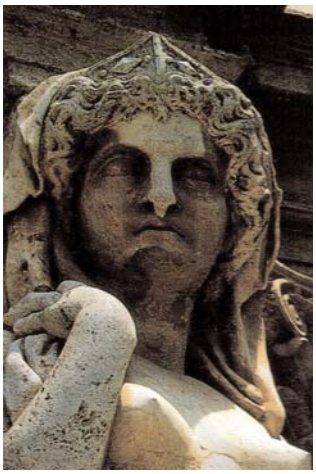


Fig. 4-17: Villa Aldobrandini, Water theater niche detail, Frascati (Fagiolo 1997, 227)

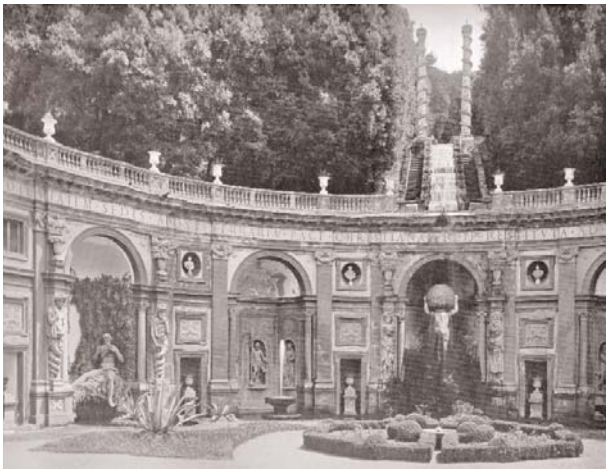


Fig. 4-18: Villa Aldobrandini, Water theater, Frascati (Bolton 1919, 174)

Fig. 4-19: Villa Aldobrandini, Water theater, Frascati (Bolton 1919, 165)

Fig. 4-20: Château de Vaux le Vicomte, Aerial of château and garden, France (Brix 2004, 41)

Fig. 4-21: Château de Vaux le Vicomte, View over the pool of the Grand Canal looking towards the grotto, France (Brix 2004, 99)

Fig. 4-22: Château de Vaux le Vicomte, Grotto with the pool of the Grand Canal in the fore-ground, France (Brix 2004, 109)

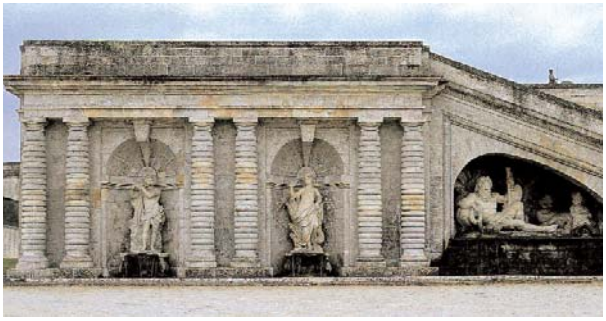


Fig. 4-23: Château de Vaux le Vicomte, Left side of the grotto with a statue of the river god Anqueil, France (Brix 2004, 110)

Fig. 4-24: Château de Vaux le Vicomte, Right side of the grotto with a statue of the river god Tiber, France (Brix 2004, 124)

Fig. 4-25: Château de Vaux le Vicomte, Grotto detail of the atlantes and rock fountains, France (Brix 2004, 125)

Fig. 4-26: Château de Vaux le Vicomte, Rock fountains within a grotto niche, France (Brix 2004, 130)

Fig. 4-27: Château de Vaux le Vicomte, Detail of the grotto atlantes, France (Brix 2004, 128)

CHAPTER 5

THE EIGHTEENTH CENTURY

The eighteenth century heralded a new confidence in reason fostered by the Enlightenment and its emphasis on secular and scientific visions of the universe which eventually led to a reaction, namely Romanticism. Colonial empires were created in this period as nations expanded and the cultural authority of France began to dissolve, but not disappear. French garden design continued to influence Europe during this era through the rococo style, particularly in Germany, but new design principles began to emerge which contradicted the ordered formalism of the previous century (Pizzoni 1997, 134). Gardens evolved from being spaces that emphasized a patron's power and virtue as well as ability to entertain to being places where meditation and contemplation would predominate (Miller 1982, 78). There was a desire among designers to stimulate the mind and conjure emotions rather than produce models of abstract beauty. A more naturalistic aesthetic emerged from contemporary philosophy and art with an accent on imagination and sense experience (Rogers 2001, 232). The love of nature and veneration of the human mind were intimately connected during this period that attempted to express nature unadorned, but not untouched, through artistic arrangements of land forms and ornament.

A reverence for antiquity arose during this century, but was in contrast to the Baroque interpretation of classical themes. The inspiration ancient Rome provided to the English landscape motivated designs that were smaller in scale and less extravagant in ornament than

Baroque predecessors. English landowners began to construct agrarian landscapes that simultaneously created places of retreat, entertainment, and economic investment centered upon sensitivity to scenic views and aesthetic comfort (Rogers 2001, 237). The surrounding landscape became an object of contemplation within a less constrained design. Poetry of ancient and contemporary origin, as well as seventeenth century landscape painting, became influential in eighteenth century garden design. These influences harkened to a previous Golden Age, isolated from the ills of civilization, sought by travels made during the Grand Tour by British citizens (Pizzoni 1997, 162). Chinese gardens also had significant impact on eighteenth century landscapes for their designs were considered expertly concealed by the marvels of nature (Rogers 2001, 234). Designers and patrons were seen as working with natural elements in a less domineering manner, although the transformation of the British landscape during this time involved major economic, political, and environmental shifts executed strictly through human decision (Rogers 2001, 237). Nature was conceived as having an inherent beauty that was to be brought forth through human effort, but not overly restricted by architectural ornamentation or landscape practices. The notion of the spirit of place, or genius loci, was instrumental in garden design (Miller 1982, 77). As the century progressed, wild nature was emphasized and allegorical references waned as garden visitors became less aware of thematic ideology popular during the sixteenth and seventeenth centuries. Although poetry and history provided thematic references in gardens during the early eighteenth century, this tendency eventually gave way to more expressive and less symbolic programs (Rogers 2001, 235).

The elaborate waterworks of the seventeenth century did not endure, but the grotto became a typical feature of eighteenth century English gardens along with follies that were intended to evoke ideas and sentiment within the human imagination (Miller 1982, 77). The love

for antiquity, particularly Rome, created a passion for idealized landscapes and was fostered by painting and poetry of the era. Follies, including grottoes, served as intermediary structures between neoclassical architecture and the more informal landscape of the period (Balmori 1991, 38). These intermediary edifices not only mediated between the contradictory aesthetic of Palladian villas and a less stylized landscape, but also expressed the character of the relationship between nature and art that was in considerable dispute (Balmori 1991, 40). As the eighteenth century progressed, nature was conceived as a pristine territory, separate from culture. The function of intermediary structures ceased to be maintained in a worldview that ultimately divided architecture from the landscape and oriented landscape design towards nature rather than art (Balmori 1991, 56). Nature was thought to possess an inherent and superior order unblemished by overt contrivance, an aspect landscape designers attempted to recreate through broad panoramas, irregularity of line, and variety of experience. No longer was the ideal to create an elaborate pretense governed by a central perspective, rather the garden became a process that would unfold through time and space (Miller 1982, 78). The grotto became an emblem of antiquity, a symbol of nature's influence and power, and a refuge for the imaginative mind (Miller 1982, 78). The grotto imparted a pensive quality to the grounds, fashionable during the period. Ideas of nature were heavily discussed and debates arose around notions of the beautiful, picturesque, and sublime. As theories and fashion changed regarding the landscape, grottoes reflected the ideology of both patron and designer.

Lord Cobham's estate at Stowe represents an early eighteenth century garden in which a succession of spaces was skillfully arranged with a thematic program centering on the paradisiacal Elysian Fields as depicted in Homer and Virgil (Rogers 2001, 242). The garden was also divided thematically into sites of contemplation and public interaction (Miller 1982, 80). A

multitude of temples, statuary, obelisks, bridges, and alcoves sought to inspire appreciation for antiquity as well as instilling national honor through adherence to the virtues of ancient Rome (Miller 1982, 80). Several monuments on the grounds are grotto like in their use of statuary, niches, and water (Miller 1982, 80). The grotto proper is located at the head of a river and is bordered by twin pavilions where it was used for dining (Jackson 2001, 8-9) (Fig. 5-1 thru Fig. 5-3). One pavilion is encrusted with shells and the other with pebbles and flints. This grotto is of the chamber nymphaeum type with a square vaulted room in which an entry basin was once filled with fish (Miller 1982, 81). A statue of Venus was placed within a central niche and water flowed within the chamber through a chain of basins that emptied into the river (Jackson 2001, 8). The walls were decorated with mirrors that were framed with plaster inset with shells, minerals, and glass shards that provided wondrous reflections (Miller 1982, 81). Its original ornament was characteristic of early eighteenth century grottoes which typically exhibited a vast array of shells, corals, and crystals (Miller 1982, 88). Through the use of marine decoration, the grotto's metaphoric realm during this era was underwater as much as it was underground. The grotto at Stowe was later modified in a more rusticated manner as was common later in the century (Jackson 2001, 9).

The positioning of grottoes near water reflects classical influence and though secular in nature, echoes the sacred grotto fountains of the Greeks. Other early examples of this practice may be found at Chiswick where the grotto is located at the site of a river cascade and the grotto at Pelham, built in 1730s, situated at the head of a lake (Miller 1982, 81). Ironically, the construction of grottoes in Britain did not hold the environmental benefits as they did in Greece and Rome due to the cool, rainy climate, but the appeal of such structures became widespread due to aesthetic preferences (Miller 1982, 81). There were critics of these structures who were

prone to insult their functionality and lack of refinement (Miller 1982, 84-85). The rage for grottoes mixed with the eccentricity of a patron could obviously lead to ill fated designs.

Elements of the sublime were also incorporated into grotto design, especially as the century progressed (Miller 1982, 88). These grottoes were darker, made to look more natural than the shell encrusted kind, and emulated a mysterious cavern that could simultaneously evoke unease and admiration. Reference to underwater worlds remained intrinsic to grottoes even in the rusticated style due to the inclusion of internal pools and waterfalls as well as the watery forms of stalactites often found in the simulated caves. The preference for rustication may have been influenced by travelers making the Grand Tour who might have seen Italian sea caves and returned home with ideas for more naturalistic grotto designs (Jackson 2001, 17). One example is the Painshill grotto begun in the 1740s sited on a island surrounded by a man-made lake. The structure was built of brick with an outer and inner sheathing of limestone tufa, giving it a more natural appearance (Fig. 5-4). The tufa was perforated with holes to mimic aged rock worn by water, another method to associate the construction with classical predecessors (Miller 1982, 88) (Fig. 5-5). A visitor would have to pass under rusticated bridges that linked the various islands together before approaching the grotto entrance created to look as if it was a cavern's mouth at the water's edge (Miller 1982, 88) (Fig. 5-6). This entrance became a circuitous passageway, twenty yards long, whose walls were faced with crystals and gypsum with imitation stalactites hanging from above, all lighted by small holes cut through the walls to provide glimpses of daylight (Jackson 2001, 17) (Fig. 5-7). The tunnel led to a rusticated chamber room that had a view over the lake. This room was also encrusted with crystals and stalactites and had a small hidden waterfall which was hand operated and flowed to rocky pools set in the floor (Jackson 2001, 17). The waterfall surprise dimly reflects the water tricks of the previous century. This

exceptional simulated limestone cave would influence other grotto designs in the latter part of the eighteenth century including the water cascade at Bowood House and the rock grotto at Old Wardour Castle, both highly rusticated to mimic natural formations (Jackson 2001, 17-19) (Fig. 5-8 and Fig. 5-9).

A further example of a grotto built to emulate a natural cavern was the Oatland's Park grotto, adjacent to a lake, only four miles from Painshill. This two story, domed grotto was built in the late 1740s out of brick. The triple chambers on the lower floor were vaulted and were connected with faintly lit corridors. The brick was completely covered with lava set with coral and various minerals. One chamber held a water cascade and was decorated with stalactites (Fig. 5-10). Another chamber served as a gaming room with the third adorned with shells housing a Venus statue (Miller 1982, 88-89). The upper floor functioned as a dining or sitting room which was accessed by an outdoor ramp (Jackson 2001, 18). This room was ornamented with shells and coral framed mirrors which reflected incoming natural light (Miller 1982, 88-89). The use of such rooms for dining and refreshments is in the Roman triclinium tradition, although on a more modest scale. One more exceptional model of this grotto type was Ascot Place, also constructed in the 1740s. It looked over a lake and had multiple stone and tufa chambers spectacularly adorned with feldspar stalactites in addition to mineral bands across the ceiling (Jackson 2001, 18) (Fig. 5-11 and Fig. 5-12). The central grotto was approximately thirty five feet long with interior pools and seating (Fig. 5-13). It had a pebble floor interspersed with inlaid geometric patterns that were asymmetrically spaced (Jones 1974, 160). The grottoes were lit by natural light by means of eight windows as well as small skylights and an antechamber (Jones 1974, 1960-163). The inside was most likely illuminated by candles and lanterns given

the small holes found scattered within the walls (Jones 1974, 160). Ascot Place bears impressive testament to the ornate interiors of eighteenth century designs.

Garden buildings were sometimes embellished with grotto-like facades in keeping with landscape tastes. One example is the grotto-fronted ice house at Hillsborough Castle in Ireland (Fig. 5-14). The ice house sits above a water cascade and is composed of sandstone boulders set into a hill (Howley 1993, 30). The entrance exterior is rusticated with ferns and mosses growing from rock crevices offering a naturalistic effect (Howley 1993, 30). The retrofitting of such structures was less costly than building an actual grotto, but still afforded the benefit of a grotto façade in the landscape.

Hawkstone Park epitomizes the rustic and wild scenery approach of late eighteenth century designs. The owners spent forty-five years creating a series of tunnels and grottoes into the hills of the park (Jackson 2001, 19) (Fig. 5-15). The goal was to create a sublime landscape that would ellicit trepidation as well as incredulity (Jackson 2001, 19). A visitor would climb arduous steps built into a ravine as they clung to tunnel like walls from which they would come forth into a labyrinth of chambers set on top of Grotto Hill (Fig. 5-16). These chambers were cut from the rock itself and poorly lit (Fig. 5-17). The main chamber was originally decorated with shells, pumice, tufa, and slag punctured by stained-glass windows (Jackson 2001, 19). A visitor would then work his or her way through the labyrinth to what was called Raven's Ledge, a steep cliff face (Jackson 2001, 19). The description alone lends a somewhat ominous air to what must have been an awe inspiring garden experience.

Some grottoes became showcases for shell collectors in a similar vein as when earlier grottoes functioned as statuary displays for sculptures during the Renaissance. The Rococo movement integrated shell inspired motifs which added to the craze for shell collecting and

display (Jackson 2001, 14-15). These grotto types are usually termed shell houses and were very popular in the eighteenth century. They often took many years to complete due to the intricacy of ornamentation. Typically, such constructions were comprised of a central chamber elaborately decorated with shells, corals, fossils, minerals, pebbles, glass, and mirrors. An existing garden structure was sometimes converted into a rustic shell pavilion or house. Shell grottoes are sometimes merely decorated shell rooms while others contain more grotto like elements such as river god or nymph statuary, niches, and water cascades. Another form of the shell grotto featured subterranean passages or tunnels built into hillsides which contained chambers or niches decorated with the usual eye-catching materials. The function of these houses was typically for social affairs such as dining or having tea, a private retirement area for activities such as needlepoint or reading, and a place to be poetically inspired. It is interesting to note that shell collecting and the design of shell grottoes was a hobby taken up to a large degree by women since it was a socially acceptable outlet for the wealthy of both sexes (Jackson 2001, 15).

France exhibited a dual trend in garden design during the eighteenth century (Rogers 2001, 261). One tendency focused on creating gardens as theatrical scenery where ornament predominated over the landscape. The other propensity was more contemplative and centered on the simplicity of nature. This garden type was heavily influenced by the works of Rousseau and was in keeping with a more naturalistic approach to landscape design (Rogers 2001, 261). Although this approach was akin to the English style, French designs were distinctive due to their approach being more intimate in visual scope (Rogers 2001, 265). The grotto nonetheless became, as it was in Britain, a metaphor for natural forces. Though completely artificial, designers strove to create an illusion of nature in response to the rigid geometry of Baroque

models. One of the first examples, built in the late 1760s, is the Grotto of the Naiads at Ermenonville which sat below a beautiful cascade (Fig. 5-18 and Fig. 5-19). This grotto had rustic elements, with views of the cascade, and incorporated literary references to induce a rather melancholic mood (Miller 1982, 93). In this manner, the grotto augmented a view, generated a mood, and produced curiosity within the overall landscape. This was indeed the purpose of such fantasy elements, or follies, during the Picturesque period (Jackson 2001, 11).

France also demonstrated grottoes that had more classical elements and may be said to reflect aspects of ancient nymphaea. An example of this type is the nymphaeum at Chatou built in 1774 which was clearly inspired by antiquarian models (Miller 1982, 96). This nymphaeum is constructed from a rustic stone colonnade set as a hemicycle circling a water pool (Fig. 5-20). The columns themselves are polychrome-banded, encrusted supports which meet a vaulted ceiling that resembles the underside of a shell (Miller 1982, 96). This nymphaeum overlooks the Seine River and most likely served a social function as such a structure would have done in ancient Rome (Miller 1982, 97). Another grotto example that is heavily infused with classical references is the La Folie de St. James. This grotto had a grand rustic archway which framed a Doric temple that sheltered the grotto's entrance (Fig. 5-21). The grotto housed a Roman bath whose water would usher forth across the temple's portico down to the lake that sat in front of the structure's façade (Miller 1982, 97). These examples display both rustic and classical elements in unique configurations. In addition to these examples, the grotto design plans of Jean-Jacques Lequeu were elaborate mechanisms that incorporated waterfalls and cascades, alabaster nymphs, and an atmosphere reminiscent of a Golden Age (Miller 1982, 99). Lequeu's drawings are suggestive of convoluted Baroque spectacles. In some grottoes there is even evidence of architecture parlante as found in designs by Ledoux and Montreuil (Miller 1982, 98,

100). That the French penchant for grotto design waned in the late eighteenth century is no surprise given the political situation. Their contribution to grotto design reflected both an interest in antiquity as well as a desire to create new forms within a period of artistic and cultural change.

The eighteenth century's fascination with the sublime and its fondness for shell grottoes waned as the nineteenth century began. Although examples of both may be found in the early 1800s, new technology and materials would alter the design of grottoes as such innovations had done in previous eras. Garden designs are constantly amended to suit taste and availability of materials. The eighteenth century saw the grotto as a consistent landscape element in naturalistic landscapes. Mood, sense, and imagination were guided by associative meanings of garden ornament that eventually gave way to a more expressive style that depended less on specific metaphorical programs. The landscape itself became the provocateur, allowing the mind to escape and ponder in reverie with an often melancholic ambience. The grotto resembled a crucible that held a visitor in its depths to consider both the wonders of nature and the mind. Grottoes were also the site for entertainment and socializing. Echoes of the Roman triclinium as well as the ritual passageways of the Greeks can be inferred from an analysis of eighteenth century grottoes. Grottoes remained a leisure activity of the wealthy, but the eighteenth century did not incorporate lavish water displays or the wide range of nymphaeum types as seen in the Renaissance or Baroque periods. In fact, water was often absent from them, but allusions to the sea or cavern remained consistent through surface decoration. For example, water was depicted through the use of mirrors and reflective glass mosaics. The grotto evolved during the century reflecting debates between the beautiful and the picturesque that permeated English garden design and all of its features. Despite debate and the diminishment of particular types, the grotto

does not leave the imagination of the populace. Grottoes will simply continue to develop to suit the desires of modern gardeners in the nineteenth and twentieth centuries.

Case Studies

Stourhead

The English garden at Stourhead was constructed in the 1740s with an array of elements including temples, a hermitage, a tower, and terminal grotto through which a virtual mythological playground was crafted (Fig. 5-22). What appears to be a thematic program was used in the garden plan based on Virgil's Aeneid, a common poetic work used in Renaissance itineraries (Rogers 2001, 246). The grotto was constructed in 1748 and is a replication of a naturalistic cavern beside the River Stour which was dammed to create a lake (Fig. 5-23). The approach involved circling the lake and descending to the grotto entrance via a richly vegetated path (Miller 1982, 86) (Fig. 5-24). The pediment of the entry arch was inscribed with Latin: "Within, fresh water and seats in the living rock, the home of the nymphs" (Woodbridge 1971, 10). The archway opens onto a narrow, dark tunnel with a glimpse of a river god at the far end of the grotto complex (Miller 1982, 86) (Fig. 5-25). This subterranean corridor was penetrated to allow sunlight to filter through and was paved with a brick floor (Hyams 60). The central area of the grotto is an ocular-domed, circular grotto nymphaeum sheathed in tufa with a pebbled floor. There were four arched openings in the chamber as well as four niches sheltering stone seats built into the walls of the alcoves. The aperture in the dome allowed rainwater to fall through into the central chamber (Miller 1982, 86-87) (Fig. 5-26). One archway leads to a sleeping nymph, the classical protectoress of sacred waters, who lies on a rocky ledge nestled in a niche from which water streams down into a basin (Fig. 5-27). This particular statue is most likely a version of the Vatican's Ariadne identified as Cleopatra during the Renaissance

(Woodbridge 1971, 10) (Fig. 5-28). The collecting basin bears a Latin inscription imploring visitors not to disturb the nymph in her reclining slumber (Miller 1982, 85). It reads:

> Nymph of the grot these sacred springs I keep
> And to the murmur of these waters sleep;
> Ah! Spare my slumbers, gently tread the cave,
> And drink in silence or in silence lave. (Hyams 61).

Across the central room from the niche grotto of the nymph is a view through the chambers' cavernous mouth out onto the lake with a distant prospect of the stone bridge and Stourton Church (Fig. 5-29). Opposite the grotto's entrance, through a passage off the central chamber, the river god of Stour appears in Baroque splendor with his right arm uplifted and his left placed upon an urn through which water commences down the rocky base that supports the sculpture (Woodbridge 1971, 10) (Fig. 5-30). The entrance to his cave bears an inscription taken from Ovid's Metamorphoses, another popular poetic work used in Renaissance and Baroque nymphaea:

> This was the home, the dwelling, the most secret haunt
> Of the great river. Sitting here, in a cave hewn out of
> The cliffs, he was dispensing justice to the waves and to
> The nymphs who inhabited his stream. (Woodbridge 1971, 10).

Upon leaving the niche grotto of the river god, a visitor would climb up a windy, steep path that leads to the Watch Cottage and then on to the Pantheon. The exit from the nymphaeum was more of a challenge than its descent into its entry tunnel (Miller 1982, 87). The entire circuit was a journey, the completion of which is considered an accomplishment, alluded to by the employment of Aeneas' epic adventures (Miller 1982, 87).

The grotto was sited where springs fed the river Stour (Hyams, 61). Stourhead was so named because of the abundance of these springs (Miller 1982, 86). The use of nymph statuary and the honoring of the spring fed river echo the Greek's sacred grotto fountain, although

Stourhead was devoid of religious significance. The statues of the nymph and river god were not favored by some designers of the period for their placement was seen as incongruent with the naturalism of the grotto cavern. Rules for statue placement were quite specific for naturalistic gardens, but the composition which utilized these white lead deities was considered surprisingly in keeping with the environs by landscape gardeners of the period (Hyams, 61). Stourhead began as an allegorical sequence of spaces with a sublime inspired grotto that incorporated the classical elements of water deities through the employment of niche and grotto nymphaea with more contemporary elements that included an elongated entrance passage, poetic references, and the prospect and refuge views of the naturalistic garden style. Allegory was reminiscent of the Renaissance and Baroque periods, but this eventually gave way at Stourhead as the century progressed. A more expressive style was realized through a simplification of its plan and program to create a more visually ideal, but less intellectually encumbered landscape (Rogers 2001, 247).

Twickenham

The Twickenham grotto, located outside of London, was a subterranean tunnel passage situated between the villa's lawn adjacent to the banks of the Thames River and the garden set in front of the house, across a road (Miller 1982, 83). The original grotto was completed in 1725, but was continually worked on until Alexander Pope's death in 1744 (Brownell 1980, 58). This grotto has been described as a cryptoporticus, but also bears elements of a grotto nymphaeum. The tunnel emerged from the basement of the villa whose end provided a view of the Thames (Fig. 5-31). It was four feet wide and six-and-a-half feet high at the center point extending twenty-two feet until it opened into a lobby entrance on the garden side (Willson 1998, 35). Pope constructed the original grotto in the middle of this tunnel and both the grotto and its

passage were opulently decorated, becoming a prime feature of the estate (Willson 1998, 33). This design was unique because it used a tunnel-grotto instead of a traditional terrace linking the villa and primary garden (Willson 1998, 33). The tunnel would eventually be extended twice, finally reaching a length of sixty-three feet. Its axis did not parallel the villa, but this did not hinder the view of the Thames from the cellars. The passage sloped upwards towards the garden, maximizing the ability to view the river from the garden end and facilitating water flow from the spring that Pope later discovered within the garden lobby (Willson 1998, 35). Unfortunately, later extensions of the tunnel obscured the scenic outlook upon the river (Willson 1998, 36). The garden lobby had seats on either side and was embellished with shells, flints, and iron. This lobby also possessed a marble plaque at its entrance inscribed with the words of Horace: "A secluded journey along the pathway of life unnoticed" (Miller 1982, 82). The grotto was soon extended within the cellars of the villa which housed the main chamber. Mirrors were positioned on the ceiling of the central, vaulted chamber which allowed spectacular reflections from the multitude of minerals, crystals, shells, pebbles, and glass adorning the walls and ceiling (Jones 1953, 151). Pope wrote a detailed description of the grotto in 1725:

> . . . I have put the last Hand to my works of this kind, in happily finishing the subterraneous way and Grotto; I there found a Spring of the clearest Water, which falls in a perpetual Rill, that echoes thro' the Cavern day and night. From the River Thames, you see thro' my Arch up a Walk of the Wilderness to a kind of open Temple, wholly compos'd of Shells in the Rustic Manner; and from that distance under the Temple you look down thro' a sloping Arcade of Trees, and see the Sails on the River passing suddenly and vanishing, as thro' a Perspective Glass. When you shut the Doors of this Grotto, it becomes on the instant, from a luminous Room, a *Camera obscura*; on the Walls of which all the objects of the River, Hills, Woods, and Boats, are forming a moving Picture in their visible Radiations: And when you have a mind to light it up, it affords you a very different Scene: it is finished with Shells interspersed with Pieces of Looking-glass in angular forms; and in the Ceiling is a Star of the same material, at which when a Lamp (of an orbicular Figure of thin Alabaster) is hung in the Middle, a thousand pointed Rays glitter and are reflected over the Place. There are connected to this Grotto by a narrower Passage two Porches, with Niches and Seats; one toward the River, of smooth Stones, full of light and open; the other toward the Arch of Trees, rough

> with Shells, Flints, and Iron Ore. The Bottom is paved with simple Pebble as the adjoining Walk up the Wilderness to the Temple, is to be Cockle-shells, in the natural Taste, agreeing not ill with the little dripping Murmur, and the Aquatic Idea of the whole Place. It wants nothing to compleat it but a good Statue with an inscription . . . (Pope 1956, 296-297)

This description provides excellent detail of decoration including the use of mirrors, an indoor lamp, and the contrast between the porch on the river side and the garden lobby. The shell temple on the garden side is also described. This temple eventually collapsed and was later rebuilt beginning in 1736 (Andrews 1981, 35) (Fig. 5-32). The spring that originated within the garden lobby ran along the floor of the tunnel where it emptied into a circular basin set within the floor of the main grotto chamber. The water was then piped through the wall and crossed beneath another chamber to the left, referred to as the bagnio, before leaving the tunnel-grotto via a conduit (Willson 1998, 39). The water may have been piped into the bagnio if it was indeed ever functional.

The original grotto was most likely influenced by ancient literature, most notably Homer. Pope intended it to be a structure in the Greek tradition of a musaeum whose purpose is to pay homage to the Muses. The grotto, in addition to its function as a tunnel passage, was ultimately meant to be a refuge for contemplation. The grotto served as a locale for philosophical and literary reflections as well as social entertainment (Miller 1982, 83). In 1740, Pope began to redesign the grotto's appearance to make it resemble a quarry mine (Brownell 1980, 58). A wealth of minerals, ores, spars, stalactites, crystals, marbles, and rock were accumulated to achieve the new look Pope had envisioned. During the remodeling, the rear grotto was merged with the portico that faced the river to produce a single gallery (Willson 1998, 43). Three waterfalls were created within the main grotto which Pope describes:

> My whole Amusement this Autumn has been my Grotto, which proved a laborious Work, but is now ended, all but the pavement. I have conveyd into it three falls of water, which

> break very naturally over two Rocks of Cornish Diamonds & Plymouth Marbles, and murmur in a Cavern till they run out of sight. (Pope 1956, 267)

The alterations also included work on three side chambers that began in 1741 (Willson 1998, 44-45). These side rooms did not connect with the main gallery nor did they have any window openings (Jones 1953, 150). One of these chambers was to be embellished with shells and another one in minerals (Willson 1998, 46). The bagnio appears to have moved from the left to the right chamber during this period (Willson 1998, 44). A visitor to the grotto in 1742 relates its appearance:

> . . . the Grotto is lin'd with an infinite variety of shining sparking Stones and interspers'd with pieces of looking Glass; the Water is made to run murmuring down the sides in several places, and fall away into receptacles deepening the sound; on the left is an opening of the Rock, having below a small Bason of Water; and beyond it a large piece of Rock separated from the rest which with the uneven surface and design'd irregularity of the whole, makes it look perfectly natural. (*Some observations made* [1742], 92-94)

Pope's design was ultimately restrained by the size and plan of the cellars (Willson 1998, 46). By the time of his death, the grotto had expanded throughout the cellars underneath the center of the villa and the bagnio was transformed into a rock pool (Willson 1998, 47). Pope was indebted to his friends and supporters for the grotto's ornament which was collected from around the world. The grotto was very popular during Pope's lifetime. Within a year of Pope's death, his gardener had created a guide to the grotto that included a plan view map, a list of decorative materials used in the interior, and a perspective illustration (Willson 1998, 47) (Fig. 5-32 and Fig. 5-33). Further changes continued when the property was sold. Regrettably, visitors to the grotto came and took pieces as souvenirs which continued until 1785 when gates were placed at the entrance (Willson 1998, 49) (Fig. 5-34).

Over the course of Pope's dedicated labor, he expanded a rustic single chamber grotto to an elaborate five room structure excavated to reflect his passionate interest in mining (Willson

1998, 57). Pope also experimented with optical illusion techniques to play with a visitor's sense of space (Miller 1982, 82). One of the most significant modifications made to the grotto during Pope's lifetime included the prolific addition of minerals, fossils, and stalactites to lend a more natural appearance although the grotto was clearly contrived. Water was another naturalistic element blended into the composition (Jones 1953, 151). In the spirit of treasured collections, the grotto became a showcase for an abundant assortment of geological curiosities. Although this grotto makes reference to a classical nymphaeum, it actually illustrates an eighteenth century artifice in its eclectic style and novel plan. The rage for grottoes surely influenced the expensive detailing of a passage tunnel into a dark, but splendorous underworld. The development of the Twickenham grotto in the earlier part of the century from a stylized to a more naturalistic arrangement towards mid-century reflected the change in decorative techniques of grottoes in general for British designers. The architecture of fantasy, so popular in the eighteenth century, referenced antiquity, but primarily exhibited the tastes of wealthy landowners to court visitors and satisfy romantic notions of the contemplative life. Grottoes, like other garden fashions, emerge and recede in popularity. The nineteenth century would continue to bring changes, but grottoes such as Twickenham lived on as both beloved and scorned testaments to the political and cultural particularities of eighteenth century Europe.

Synopsis of Grotto Design

Eighteenth century designs were modest as compared to Baroque compositions. Thematic programs began to wane as the century progressed in contrast to Renaissance and Baroque gardens. The extravagant waterworks of the preceding century did not persist, but grottoes themselves were common landscape features in the eighteenth century. Gardens became sites for contemplation and repose rather than being emblems for a patron's power over

natural forces. The grotto itself was often sited near a body of water emulating classical examples. Early designs were clad with shells, corals, and crystals with rustication gaining ascendancy as the century progressed. Sublime elements were incorporated as the Picturesque gained preference transforming the grotto into a dark, enigmatic cavern intended to provoke both fear and fascination.

The passion for shell collecting was pervasive during this century and grottoes became collection houses for these treasures. The design and construction of shell houses came into full flower during the eighteenth century. These structures consisted of a central chamber richly embellished with a variety of material most notably corals, fossils, glass, mirrors, and of course, shells. Some incorporated statuary, niches, and fountains. In addition to shell houses, subterranean tunnels were also created that were copiously decorated. Both shell houses and grottoes served as sites for entertainment including dining in the tradition of the Roman triclinia and a place for reflection and introspective pursuits.

The eighteenth century assimilated the grotto into its informal landscape designs and, although grottoes did not encompass grand water displays or show the array of variation as seen in the preceding centuries, they remained significant architectural elements. Water was often absent from the designs, particularly in shell houses, but references to the sea and cave remain consistent through decorative treatment. The regard for the grotto extended to the retrofitting of various garden buildings into shell houses or grotto-like chambers at many residences. Grottoes became an esteemed replication of nature during the Romantic period, simply changing appearance to suit the predilections of garden designers.

Fig. 5-1: Plan of Stowe Grotto, Buckinghamshire, England. Drawing by W. Fairchild, 1763 (Stowe School n. d.)

Fig. 5-2: Stowe Grotto, Buckinghamshire, England. Engraving by T. Medland (Miller 1982, 79)

Fig. 5-3: Stowe Grotto, Buckinghamshire, England (Jackson 2001, 9)

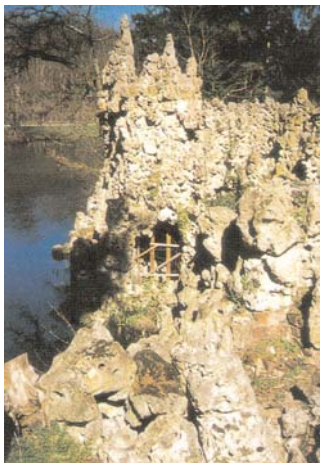


Fig. 5-4: Painshill Grotto, Surrey, England (Jackson 2001, 16)

Fig. 5-5: Painshill Grotto, Detail of rockwork, Surrey, England (Jackson 2001, 32)

Fig. 5-6: Painshill Grotto entrance, Surrey, England (Jackson 2001, 17)

Fig. 5-7: Painshill Grotto interior, Surrey, England (Jackson 2001, 17)

Fig. 5-8: Bowood House cascade, Wiltshire, England (Jackson 2001, 18)

Fig. 5-9: Old Wardour Castle Grotto, Wiltshire, England (Jackson 2001, 19)

Fig. 5-10: Oatlands Grotto, Surrey, England (Jackson 2001, 18)

Fig. 5-11: Ascot House Grotto, First room, Berkshire, England (Jones 1974, 163)

Fig. 5-12: Ascot House Grotto, Roof of the central grotto, Berkshire, England (Jones 1974, 162)

Fig. 5-13: Ascot House Grotto, Central grotto looking towards the lake, Berkshire, England (Jones 1974, 144)

Fig. 5-14: Hillsborough Castle, Grotto-fronted ice house, Ireland (Howley 1993, 30)

Fig. 5-15: Hawkstone Grotto Plan, Shropshire, England (Jackson 2001, 34)

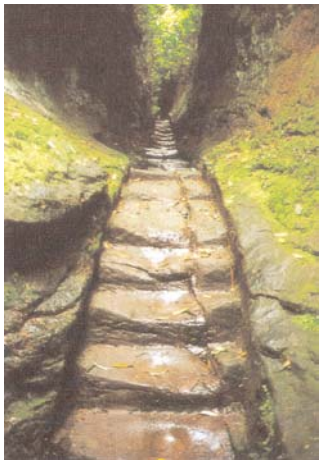


Fig. 5-16: Hawkstone Grotto, The Cleft leading up to the top of Grotto Hill, Shropshire, England (Jackson 2001, 19)

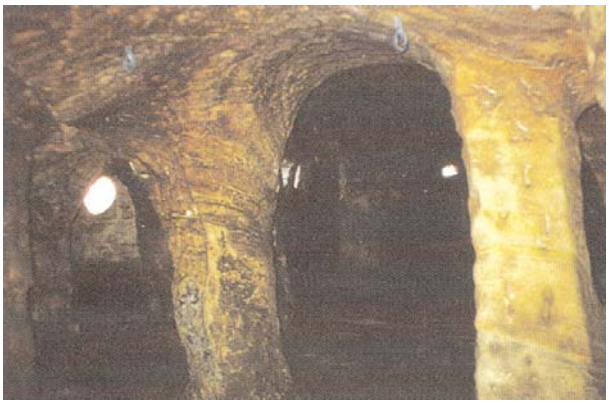


Fig. 5-17: Hawkstone Grotto interior, Shropshire, England (Jackson 2001, 19)

Fig. 5-18: Ermenonville Grotto, Looking towards the cascade, France. Engraving by J. Merigot (Miller 1982, 92)

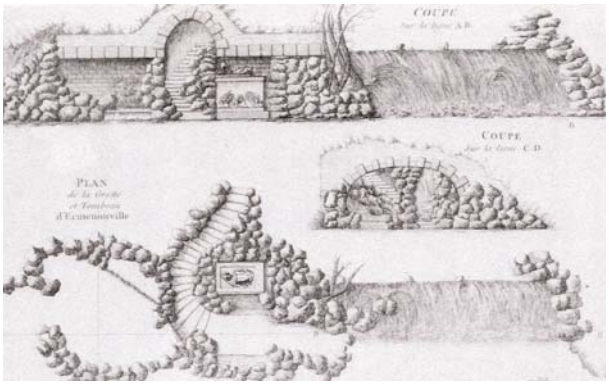


Fig. 5-19: Plan and Section of Ermenonville Grotto, France. Engraving by G. L. Le Rouge, 1785 (Miller 1982, 92)

Fig. 5-20: Chatou Grotto, France (Miller 1982, 96)

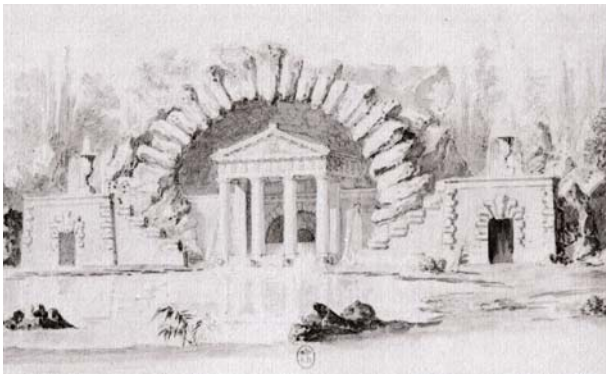


Fig. 5-21: La Folie de St. James Grotto, France. Drawing by F. J. Belanger (Miller 1982, 97)

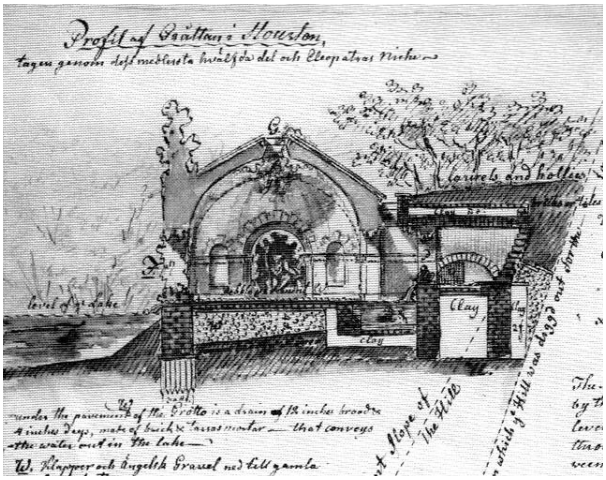


Fig. 5-22: Section of Stourhead Grotto, Wiltshire, England. Drawing by F. M. Piper, 1779 (Woodbridge 1971, Figure 12b)

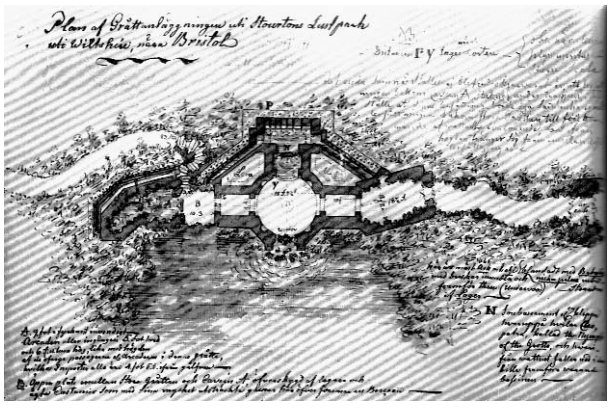


Fig. 5-23: Plan of Stourhead Grotto, Wiltshire, England. Drawing by F. M. Piper, 1779 (Woodbridge 1971, Figure 12a)

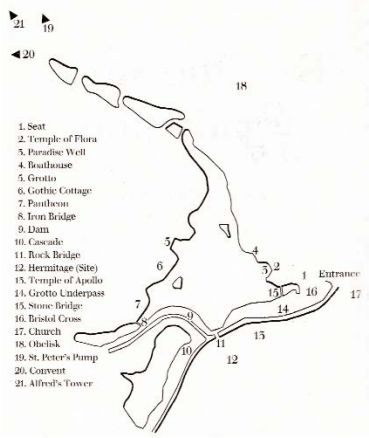


Fig. 5-24: Stourhead, Lake and key to landscape features, Wiltshire, England (Woodbridge 1971, 2)

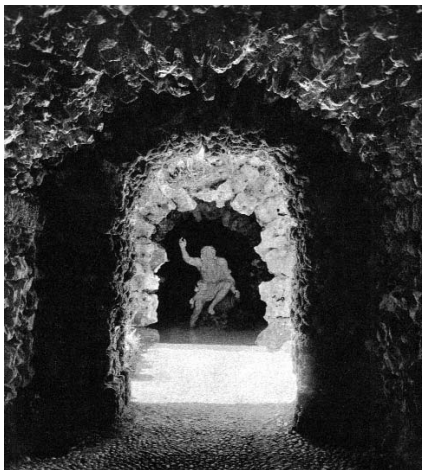


Fig. 5-25: Stourhead Grotto, Interior view of the river god, Wiltshire, England (Hyams 1964, Figure 34)

Fig. 5-26: Stourhead Grotto Interior, Wiltshire, England. Watercolor by F. Nicholson, 1813-14 (Woodbridge 1971, Figure 18b)

Fig. 5-27: Stourhead Grotto, Interior view of the sleeping nymph, Wiltshire, England (Hyams 1964, Figure 35)

Fig. 5-28: Stourhead Grotto, Detail of the sleeping nymph, Wiltshire, England (Woodbridge 1971, Figure 7a)

Fig. 5-29: Stourhead Grotto, Looking out towards Stourton Church and the stone bridge, Wiltshire, England (Woodbridge 1971, Figure 6a)

Fig. 5-30: Stourhead Grotto, Detail of the river god, Wiltshire, England (Woodbridge 1971, Figure 7b)

Fig. 5-31: Pope's Villa on the Thames, Middlesex, England. Engraving by Joseph Stadler after J. Farington, 1795 (Brownell 1980, 46)

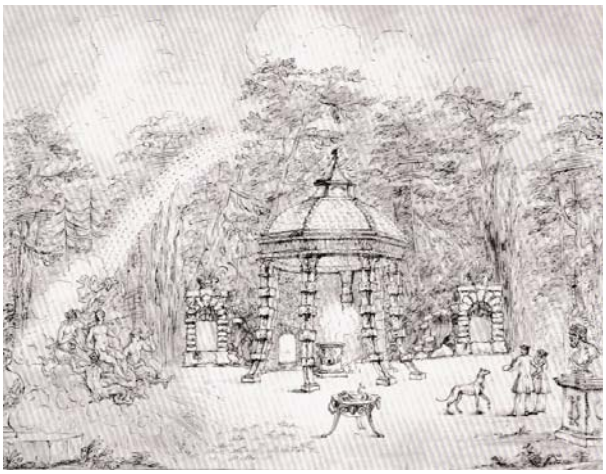


Fig. 5-32: View of the Shell Temple and garden entrance to the grotto. Drawing by William Kent, c. 1725 (Brownell 1980, 63)

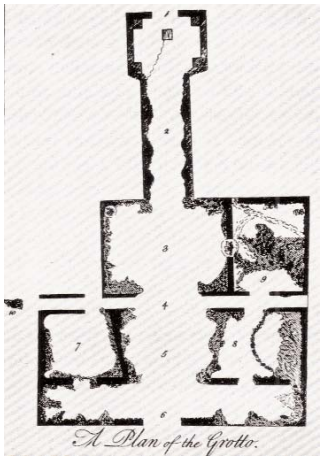


Fig. 5-32: Plan of Pope's Grotto at Twickenham, Middlesex, England. Drawing by John Searle, 1745 (Brownell 1980, 64)

Fig. 5-33: Pope's Grotto at Twickenham, Interior view, Middlesex, England. Drawing by John Searle, 1745 (Brownell 1980, 65)

Fig. 5-34: Pope's Grotto at Twickenham, Interior view, 1965, Middlesex, England (Mack 1969, 75)

CHAPTER 6

THE NINETEENTH AND TWENTIETH CENTURY

The nineteenth century brought significant social and political change throughout Europe with a robust confidence in science and the machine. The predominant influence in landscape design was the English garden whose inspiration spread throughout Europe beginning in the late eighteenth century and continuing throughout much of the nineteenth century. The theoretical debates within England emerging in the late 1800s concerning the Picturesque would persist into the following century with ideas of nature and the role of art providing a focus for intellectual disagreement (Pizzoni 1997, 187). The mediation sought by Pope to achieve a collaboration between art and nature earlier in the eighteenth century gave way to a view of nature as a territory detached from human caprice. The ideal of nature became separated from art, dovetailing with the rise of the Picturesque movement which strove to keep the mark of man suppressed from the landscape (Balmori 1991, 55). Nature was being designed to look as natural as possible during the latter part of the eighteenth and beginning of the nineteenth centuries. These debates over nature, art, and landscape, ultimately led to a general eclecticism during the nineteenth century (Pizzoni 1997, 186). Victorian gardens returned to geometric plans and classical Italian influences. The profuse use of flower beds in formal patterns became popular as did the reintroduction of topiary. An emphasis on a wealth of exotic plants and garden furniture was also typical of the period (Pizzoni 1997, 189-190). Towards the end of the nineteenth

century, disputes between informal and formal gardening styles erupted in Britain and remained a source of controversy into the twentieth century.

A few shell houses were built in the nineteenth century, but imitation caves were more common. These caves had exterior walls encrusted with fossils and minerals rather than shells and were often located in rock gardens (Jackson 2001, 20-21). Technological advances such as the mass production of glass and iron and the greater ease of importing exotic plants allowed the proliferation of glass conservatories (Jackson 2001, 22). The sweeping lawns, native plants, and follies of the eighteenth century gave way to elaborate flower beds, rock gardens, and conservatories by the latter part of the nineteenth century (Jackson 2001, 23-24). Grottoes sometimes underwent alteration as they did in antiquity to suit the taste and necessity of a later period. An example may be found in a Bedfordshire grotto built in the 1830's which was converted into a fernery during the 1870's to reflect Victorian garden preferences (Fig. 6-1). Alterations included a glass dome roof, stained glass doors, and the addition of ferns in rock niches located in the tufa of the original grotto interior (Jackson 2001, 23). New building materials of the nineteenth century also influenced grotto design. The creation of Pulhamite made from cement allowed imitation boulders to be easily produced. These boulders were used to build rock gardens and imitation caves (Jackson 2001, 24).

The prevailing attitude in Europe towards the eighteenth century English landscape garden became an emblem of privileged society and fell into disfavor. The trend of the landscape garden survived in the nineteenth century primarily within the domain of public park planning (Miller 1982, 119). The grand niche and grotto nymphaea began to recede as they had in previous generations. Often the only grotto reference within nineteenth century English gardens was a rock tunnel which served as a subterranean bridge between different garden areas.

These tunnels were made of rough rock or its imitation and often had a sharp turn near the entrance forcing the visitor to experience darkness before perceiving the exit with its attendant light (Jackson 2001, 22-23). These tunnels were a mere echo of the elaborately encrusted eighteenth century subterranean channel grottoes such as Twickenham. Sometimes small grottoes were located in conservatories (Jones 1974, 174).

Shellwork survived during this time period and could be found in social gathering places as well as private residences because decorative grotto elements, or grot-work, remained a vernacular custom throughout nineteenth century England (Jones 1974, 174). Irish examples include shell panels on cottages near the sea, one late nineteenth example being the Dungarvan shell cottage where shells were embedded into the garden walls (Howley 1993, 37) (Fig. 6-2).

The first half of the twentieth century continued to witness the decline of grotto construction in Britain. After the First World War, labor became harder to acquire for private gardens and economic depression led to difficulties in the maintenance of estates, leaving a paucity of newly built garden structures (Jackson 2001, 26). The Second World War marked a time of estate vandalism and after the War, taxes forced many estates to be divided and sold (Jackson 2001, 26). Lack of interest and money were behind the decline in grotto maintenance and construction, but examples did continue in the first half of the twentieth century, reflecting the individuality of the builder rather than a general trend in landscape design. This would mark the transition from estate grottoes and grotto inspired features, which were an element of a broader landscape program popular in the preceding two centuries, to more self-contained structures built by individuals who are sometimes referred to as landscape visionaries or grassroots artists. This phenomenon would continue through the twentieth century to the present both in Europe and the United States.

There has been a parallel folk tradition of grotto construction, unlike the grandiose nymphaea designed and built for wealthy patrons. This tradition in Europe is based on religious pilgrimages during the Crusades which entailed shell collecting and the incorporation of these objects into grottoes or shrines upon the return home (Brackman 1999, 25). A remnant of this tradition was found in England in the form of "Grotto Day" in which young children collected shells into a conical pile whose top supported a candle and asked for money from those who passed. The day varied by geographical region and appears to change through time, but it often coincided with religious observances and the opening of oyster season (Brackman 1999, 26). This tradition of begging is akin to Halloween trick or treating in America (Brackman 1999, 25). Sometimes these grottoes were built of brick, earth, and stone instead of shells and were decorated with pieces of glass, shells, and china (Brackman 1999, 26). This custom was alive through much of the twentieth century. Similar grottoes were noted in London arising from WWII rubble (Brackman 1999, 26). This type of spontaneous art made from local materials by everyday people is similar to practices found in the United States. The American grotto form is usually constructed of concrete with an abundance of encrusted objects collected by the artist. This form is also found throughout Europe in the twentieth century, most likely a carryover from the popularity of eighteenth century shell works.

The shell garden of George Howard in England is one European example (Fig. 6-3). This garden was begun in 1948 and work continued until Howard's death in 1984. It is now maintained by his wife (Manley and Sloan 1997, 46). Typical of such constructions, the shell garden was deeply connected to an individual's personal history and involved decades of labor. Howard traveled all over the world and his garden incorporates souvenirs from these journeys. Exotic shells, carvings, and vernacular objects such as glass, pottery, and tiles fill the garden

(Manley and Sloan 1997, 46) (Fig. 6-4). These objects are embedded in concrete in a multitude of configurations. Shell and tile paved walkways lead one through the garden to grottoes which house statues of Buddha and the Virgin Mary (Manley and Sloan 1997, 46). The encrusted decoration, the sheltering of statuary, and the presence of water pools, echo traditional nymphaea.

Eclecticism is part and parcel of twentieth century grotto design. La Grotte at Les Vauxbelets in France combines a grotto and chapel into one composition (Fig. 6-5). Originally build in 1914 and enlarged in 1916 and 1923, this structure has a grotto interior created to mimic the Lourdes grotto with an outer chapel façade (Jackson 2001, 26). The exterior is embedded primarily with shells and china. Vegetation surrounds the grotto whose purpose appears to be a devotional shrine.

The Ave Maria Grotto in Alabama was begun in 1932 by Joseph Zoettl, an abbey layman, who worked on the grotto until his death in 1971. Zoettl was commissioned by a bishop to construct the grotto which is composed of hundreds of miniature replicas set amongst rocks from the original quarry site for the abbey (Manley and Sloan 1997, 44). Tiny cathedrals and basilicas are mounted among native rock as are models of Holy Land sites (Fig. 6-6). There is a large niche grotto on the grounds, rustically decorated, in which religious statuary is located (Fig. 6-7). The presence of a large niche alcove with statuary and a fountain located near the niche reflect classical nymphaea design. Obviously, the religious iconography of the architectural composition uniquely represents the talent and devotion of the artist.

There is a multitude of examples, both in Europe and the United States, of shell or grot-work in which a variety of objects is set in concrete, forming fantastical murals or abstract designs in a garden-like setting, whether in or out of doors. This type of artwork flows from the

grotto tradition, but typically lacks the niches, chambers, and fountains of classical nymphaea. Grottoes have been appropriated and redefined in the twentieth century, but their allusion to the sea and the cave has not been lost. The allure of the unknown and the inspiration of wonder can be found in sites such as the Nativity Rock Museum otherwise known as "The Grotto" located in Missouri (Fig. 6-8). This complex was created by Claude Melton beginning in 1939 when he decided to dig out a basement from underneath his house which led to his early designs, largely with rocks (McCrary and Blumb 1999, 73). The structure is a series of rooms that spread beyond Melton's house into numerous rear additions that create a labyrinth like atmosphere (Fig. 6-9). Bizarre assemblages of objects are set to a thematic program of Jesus' life strewn with secular references (McCrary and Blumb 1999, 72) (Fig. 6-10). The museum provides a sequence of curious images in which everything from taxidermy mounted road kills to car accident dioramas are profusely but disproportionately arranged with descriptive labels and signs (McCrary and Blumb 1999, 75-79) (Fig. 6-11 and Fig. 6-12). Objects saved and given run rampant through the display rooms as one weaves through the seemingly subterranean chambers, taking in the richly textured pebble mosaics and Christmas lit adornments (Fig. 6-13). Time and materials are squished together in a confusing array of spectacles (McCrary and Blumb 1999, 75) (Fig. 6-14).

All seems a manifest dream directly from the artist's mind. The Grotto is a shrine, a testament, and a legacy of Melton. This work is one of a mad-cap collection turned into a series of visual sermons from a man who has something to share. The only direct grotto influences are the concrete embedded decorations proliferating from the many nooks of the museum and the copious rockwork, yet the overall ambience of the site is similar to a grotto cavern in which awe is awakened. This form of grotto is specific to a single artist's vision, but falls within the broad category of twentieth century grottoes. The elements that categorize Melton's work as a grotto

are its devotional program, grot-work embellishment, and the subterranean character of its circulation pattern.

Early in the twentieth century, the design and construction of religious grottoes arose in the Upper Midwest of the United States. European immigrants, most notably German Catholic, apparently brought this tradition from their homelands and gave it expression in the heartland of America (Stone, Zanzi and Iversen, 1999, 51). The nucleus of the movement was the Grotto of the Redemption created by Father Paul Dobberstein, described under the case studies (Niles 1997, 31). Dobberstein most likely influenced Father Mathias Wernerus to build the Dickeyville Grotto who, in turn, inspired others to produce both religious and secular grottoes across the Midwest (Niles 1997, 32-34). Their shrines also spurred creative works which incorporated concrete mosaics of various objects in a multitude of sculptural arrangements outside of the grotto genre (Stone and Zanzi 1993, 58). Similarities may be found between Dobberstein and Wernerus, but Wernerus developed his own signature approach and evidence of cross influence has been suggested (Niles 1997, 32-33). An example of their diverging taste can readily be noted in regards to materials. Dobberstein used minerals, tile, and exotic geologic specimens almost exclusively while Wernerus preferred colored glass and included assortments of donated secular objects in his designs (Niles 1997, 33).

The Dickeyville Grotto created by Wernerus was begun in 1924 on a corner of his parish's cemetery in Dickeyville, Wisconsin. It is comprised of several religious inspired grottoes as well as a patriotic shrine and soldier's memorial (Fig. 6-15). The first grotto to be built was the Eucharistic altar which was formed of concrete slabs covered with tiles, semiprecious stones, shells, and glass rosettes (Niles 1997, 11). It is a form of niche nymphaeum in which a domed roof structure protects an altar above which lies a small niche (Fig. 6-16). The

iconography centers on the Catholic Eucharist (Fig. 6-17). The exterior of the structure is covered in quartzite with shards of colored glass found on the supports (Niles 1997, 11). The roof is decorated with shells and details found in the interior include collected items such as gearshift knobs (Niles 1997, 41) (Fig. 6-18).

The centerpiece of the grotto complex, the Grotto of Christ the King and Mary, His Mother, was constructed between 1925 and 1929 (Fig. 6-19). This grotto has two components; that of a grotto nymphaeum in which a statue of the Virgin and Child is located and an outside walkway behind this structure which is composed of a series of joined, glass-lined niche nymphaea arranged in the form of a horseshoe that accommodate statues of Jesus and his apostles (Niles 1997, 12) (Fig. 6-20 thru Fig. 6-22). The grotto nymphaeum, composed of glass and stone embedded concrete panels, has inset designs on both its interior and exterior walls (Niles 1997, 43). Two poles border the sides of this edifice which support cement and glass flags, one representing 'religion' and the other 'patriotism,' the two themes found intermingled throughout the site. The transformation of immigrant identity is inherent in Wernerus's grotto design (Niles 1997, 31). Symbols and inscriptions are profuse as Wernerus liked to have all surfaces covered with a gleaming array of materials in mosaic patterns. Shells, fossils, and glass rosettes sheath the interior as do stalactites and stalagmites, in reference to a natural cavern (Niles 1997, 13). Statuary and figurines complete the grotto nymphaeum's interior scene (Fig. 6-23). The exterior bears wall niches that shelter depictions of the gifts granted by the Holy Spirit (Niles 1997, 14). Windows are located above these niches to provide light to the nymphaeum's interior. The rear of the grotto's exterior incorporates the Holy Ghost Tree, formed of petrified wood and colored glass (Niles 1997, 14).

Other components of the sight include the Patriotism Shrine whose nautical motif features Columbus who serves as the focus for the blending of religious and patriotic themes while the Grotto of the Sacred Heart is essentially an altar shrine (Niles 1997, 30) (Fig. 6-24 and Fig. 6-25). Gardens are located on the site and consist of lawn, flower beds, statuary, and decoratively embedded concrete fences (Niles 1997, 16). Wernerus's overall design mixed secular and religious images, thereby appealing to a wide audience (Niles 1997, 33). Materials were comprised of rocks, minerals, shells, coral, stone, glass, and tile within a base of cement, all typical of twentieth century grottoes (Fig. 6-26 and Fig. 6-27). A fountain was integrated into the Patriotism shrine, but was not part of other grotto features (Fig. 6-28).

The Dickeyville grotto depicts the eclectic use of iconography, the profuse use of embedded cement, and the inter-mixing of common and precious objects. These details reflect folk art characteristics of grottoes found throughout the twentieth century. Although some classical references may be seen at Dickeyville, such as the niche and chamber nymphaea forms, most of the details reproduce the eighteenth's century fetish for a copious amount of decorative embellishment using natural materials. Twentieth century designs are usually driven by a single individual, although they are normally assisted by devoted aides. In the case of Wernerus, his cousin, Marie and her adopted sister, Caroline, were both active in the grotto's construction (Niles 1997, 17). Designs of this century are long term labors involving dedication, endless hours procuring materials, and the tiring effort of actual construction and decoration. Grottoes such as Dickeyville were built to convey a message, and even secular examples frequently bear a theme from the maker. Unlike grotto predecessors, most twentieth century examples are not part of a large landscape program. They tend to be built organically, without reference to an overall plan and lack a general design trend regarding form or decoration details. Grottoes usher from

the imagination of an individual artist, but the tradition of grotto construction through the ages seems to filter down as the reference to natural caves and the sea appear to remain constant.

The persistence and unique visions of twentieth century grotto builders may also be witnessed in residential designs. Baldasare Forestiere, an Italian immigrant, excavated a ninety-room underground house in Fresno, California, from 1908 until his death in 1946 (Fig. 6-29). The house is composed of "ten acres of patios, courts, archways, and grottoes, all linked by paths meandering through sunken gardens ten to twenty-five feet below ground" (Headley 1996, 160-161) (Fig. 6-30). Forestiere even grew citrus trees in the underground chambers with holes for them to grow through to the surface for easy picking. Forestiere intended to create a large ballroom chamber and an underground lake, but neither was completed (Headley 1996, 161). The lake was actually meant to be converted into an aquarium of sorts for the ten foot diameter chamber had a hole in the floor that was to be covered with glass so the sitting room directly below it would allow a visitor to look up and see the aquatic life swimming above (Headley 1999, 161-162). This is reminiscent of lavish Roman and Renaissance designs as is the cool respite from the summer heat that his underground creation certainly afforded. Forestiere excavated all the chambers by his own hands which is an amazing feat. His will to move the garden underground demonstrates the force of his character. Unfortunately, like so many grotto inspired features, it is falling into disrepair (Headley 1999, 162).

Resurgence in grotto preservation and construction has occurred since the 1980s. England in particular has seen renewed interest in grotto restoration and new construction (Jackson 2001, 27). A notable reconstruction is Dido's Cave at Stowe (Fig. 6-31). Originally built in the early 1720s under an architectural style, it was later rusticated during the late eighteenth century. It was in dire shape when restoration began in 2000 for The National Trust

in England (Fig. 6-32). The approach was to expose the various historical layers rather than return the grotto to a particular time period (Fig. 6-33). Thankfully, the restoration was quite successful. In regards to new construction, a well recognized project is the 1986 construction of a grotto at Leeds Castle in Kent. A visitor must navigate through a garden maze to arrive at the grotto entrance which consists of a winding tunnel whose walls are decorated with shells composing a selection of occult images (Jackson 2001, 27) (Fig. 6-34 and Fig. 6-35). The Leeds grotto incorporates the entry tunnel with a water cascade, suggestive of Renaissance design (Jackson 2001, 27). Intricate shell works as well as rusticated cave replicas have both been revived in contemporary England. Grottoes remain pensive spaces in most of these creations, but innovation has occurred such as the integration of a grotto with a whirlpool and sauna at the Menagerie, an eighteenth century house in Northhamptonshire (Cornforth 1995, 29) (Fig. 6-36 and 6-37). Amateur grotto builders have also contributed to the resurgence of grotto design (Jackson 2001, 28). Diane Reynell, a former jewelry designer at Marlborough College, has become a professional grotto designer and builder taking part in projects such as the Leeds Castle grotto as well as the shell house restoration at Goodwood in Sussex (*Living national treasure* [1993], 36-37) (Fig. 6-38). Reynell represents not only the renewed interest in grottos, but the re-establishment of women grotto builders, a trend begun in the eighteenth century (Jackson 2001, 28-29).

Current references to grottoes in the United States within the field of landscape architecture are not abundant, but can be found. One example is the grotto fountain built at the Sprint World Headquarters in Overland Park, just outside of Kansas City (Fig. 6-39 and Fig. 6-40). This fountain is located in one of several campus courtyards and serves not only as a pleasant visual feature, but accommodates water runoff for a hundred year storm as required by

the city (Sloan 2001, 27). In this manner, grotto design has been assimilated into an engineering necessity while providing aesthetic improvement. A stirring illustration of grotto design for the new millennium may be observed in the winning submission for the World Trade Center site memorial competition. Michael Arad and Peter Walker have created a memorial that incorporates primary grotto elements such as the sight and sound of falling water within an enclosed subterranean space (Fig. 6-41). The written description provided by the designers hearkens to historical accounts of entering grottoes and caves:

> Descending into the memorial, visitors are removed from the sights and sounds of the city and immersed in a cool darkness. As they proceed, the sound of water falling grows louder, and more daylight filters in from below. At the bottom of their descent, they find themselves behind a thin curtain of water, staring out at an enormous pool. . . Standing there at the water's edge, looking at a pool of water that is flowing away into an abyss, a visitor to the site can sense that what is beyond this curtain of water and ribbon of names is inaccessible.

The feeling of enclosure, the sound of water, the coolness from being below the surface, as well as the primal experience of looking into the abyss of the primary elements of earth and water, can be traced back to the grotto form. The viewing room for unidentified remains is particularly evocative of a grotto since it was specifically designed as a contemplative, underground space. The use of stone, the skylight, and running water, evokes the cave and spring of a Greek sacred grotto fountain (Fig. 6-42). It is a place for in-dwelling and a renewal of hope. The design as a whole, including its grotto element, is a provocative public shrine for the twenty-first century.

Another contemporaneous allusion to the grotto may be found through Chip Sullivan, landscape architect and design professor, who has recently published a book on the incorporation of historical garden elements with environmentally based designs for the present-day garden. Sullivan argues that features used in previous eras such as grottoes and cryptoportici create important microclimates which have beneficial environmental and economic consequences.

Climate is considered a primary design element in Sullivan's perspective, whose views are a result of "a journey to create a new energy-efficient landscape design philosophy" (Sullivan 2002, xii). The use of passive design was central to historical design and Sullivan believes that much is to be gained through this method (Sullivan 2002, xvi). He also asserts that metaphysics was an essential aspect of historical gardens which enhanced the connection between people and nature, a relationship that has been sorely impeded by status quo design practice (Sullivan 2002, xii-xiii). Sullivan suggests "the contemporary garden has the potential to become not only a place of functional utility, but also of spiritual enlightenment" (Sullivan 2002, xiii). This reflects the gardens of antiquity and perhaps suggests a bridge between the sacred grotto fountain of the Greeks and the twenty-first century grotto, whatever forms and functions it will come to possess.

Case Studies

Grotto of the Redemption

The Grotto of the Redemption was built between 1912 and 1954 in West Bend, Iowa, by Father Paul Dobberstein with the help of Matthew Szerensce and later, Father Louis Greving (Fig. 6-43). It is composed of petrified wood, fossils, rocks, crystals, geodes, ores, minerals, corals, and shells (Fig. 6-44). The Grotto illustrates the fall of man and his redemption through Jesus' life and sacrifice thus leading to a reunion with God. The overall appearance of the Grotto is one of a series of mountains with cavernous alcoves used to depict scenes that visually narrate the work's religious theme (Niles 1997, 31) (Fig. 6-45 and Fig. 6-46). The Grotto was set on a site the size of a city block, with a lake located north of the grotto proper (Fig. 6-47). This property was adjacent to the church to which Father Dobberstein was assigned in the late nineteenth century. Dobberstein created the shrine to honor a promise he made to the Virgin Mary after surviving pneumonia before his ordination (Stone 1999, 51). Grottoes were believed

to have functioned as remote places of prayer for shepherds during the Middle Ages when worship in churches was not possible due to physical isolation. According to Dobberstein, this was the manner through which grottoes became connected with Christianity (Stone 1999, 52). Dobberstein believed that teaching comes through a range of sense experience so the Grotto was to assist a visitor in finding divine truth both visually and tactically (Stone 1999, 53). Dobberstein and Szerensce collected rocks and mineral specimens from across the country to supply decorative material. Both indigenous and exotic rocks were used, set in concrete, to build the complex (Fig. 6-48). Light acts upon these geologic treasures in flattering ways and the surrounding fields of the countryside gave an oceanic reference to the landscape (Stone 1999, 53).

The plan of the Grotto incorporates nine contiguous grottoes that depict the Fall of Man through the Resurrection (Fig. 6-49). The eclectic use of architectural styles and the fluid use of concrete form the body of these structures (Stone 1999, 53) (Fig. 6-50). The Grotto referenced nature through its geologic details which Dobberstein believed could induce religious experience (Stone 1999, 55) (Fig. 6-51). Plantings were placed in encrusted flower stands and a multitude of religious marbles can be found throughout the Grotto (Fig. 6-52). Dobberstein did not use common glass or china for his work, but insisted on higher quality materials and was apparently often successful in their acquisition (Stone 1999, 55). In addition to Dobberstein's spiritual motivation, he expressed the desire to show a formidable geologic collection, mirroring the passion for natural collections of the eighteenth century (Fig. 6-53). In 1915 a bear pit was added to the composition, but was later removed due to a human injury (Stone 1999, 56). The lake was a man-made construction and provided recreation for visitors.

The exquisite detail of design and material likens the Grotto to eighteenth century creations (Fig. 6-54). The use of niches, marble statuary, an artificial lake, the labyrinth quality of the complex as a whole, and the exuberance of decorative elements link it with more classical nymphaea. It is a characteristically twentieth century design in its juxtaposition with more mundane objects such as a neighboring grain elevator, corn fields, and the adjacent conventional architecture of the church. The use of ornamentally encrusted concrete is once again typical of the twentieth century genre as is the strong association with its idiosyncratic creator. This is in contrast to previous eras in which grottoes were an integrated feature within a larger landscape plan. The Grotto continued to expand after Dobberstein's death through the work of Father Greving. Alterations were made including the addition of a large arched grotto placed above the original entrance (Stone 1999, 68).

Dobberstein was commissioned in the 1920s to 1940s to build both religious and civic grottoes in the Upper Midwest (Fig. 6-55 and Fig. 6-56). His signature was the creation of shellwork niches which were later replicated by other grotto designers (Stone and Zanzi 1993, 17) (Fig. 6-57). These commissions carried on his distinctive efforts to integrate sculpture and architecture. They have remained a landscape element that fascinates, delights, and inspires, thereby fulfilling the purposes which grottoes are meant to accomplish.

Villa Vizcaya

The Villa Vizcaya was built between 1914 and 1916 in Miami, Florida, as an Italian Renaissance style villa and garden during the Country Place Era in the United States that spanned the late nineteenth and early twentieth centuries (Pizzoni 1999, 247). The main garden, located south of the house, has a fan-shaped plan with a north-south axis continuing that of the villa (Littlefield 1983, 9). Along this access is a Baroque casino on a mount beyond which lies a

lagoon and south garden connected via bridges. The main gardens are influenced by Renaissance and Baroque designs. Fountains, pools, cascades, and grottoes are prominent features. Two niche grottoes edge the entrance of a water stairway leading to the casino (Littlefield 1983, 68) (Fig. 6-58). These twin grottoes have native limestone atlantes supporting the niche's pediment (Fig. 6-59). The interior has rusticated decoration in imitation of a limestone cave and is lined with shells. There are stone benches and a cooling fountain in the niche interiors (Littlefield 1983, 68). The water stairway presents a rusticated treatment, mimicking the limestone characteristics of the flanking grottoes (Fig. 6-60). There is also a walled garden on the property that has rusticated stone features and a grotto inspired entrance that moves a visitor through a simulated cave archway inside which water drips along fern lined walls (Littlefield 1983, 84) (Fig. 6-61). Inside the walls, a niche nymphaeum is placed at one end of the garden above a stone bench (Fig. 6-62). This niche has native limestone columns, handsomely decorated, that support an inverted scallop shell pediment under which a rusticated grotto with a small interior fountain is located (Littlefield 1983, 84) (Fig. 6-63).

A unique grotto form is found at the Villa Vizcaya. This grotto encompasses a swimming pool that lies underneath the house which extends beyond the exterior walls (Fig. 6-64). The room surrounding the interior portion of the pool is arrayed with shells, corals, and carved stone (Fig. 6-65). Aquatic life is depicted on the walls and ceiling in fine detail through paint and surface relief (Littlefield 1983, 88) (Fig. 6-66). Rusticated wall fountains with marble basins line the walls while colored marble floors add to the luxurious feel of this chamber nymphaeum decorated in the spirit of the eighteenth century (Fig. 6-67 and Fig. 6-68). The Villa Vizcaya hearkens back to classical nymphaea types in their Renaissance and Baroque forms (Fig. 6-69). The use of rusticated niches with dripping interior fountains, the atlantes support

columns, the water stairway, and the opulent chamber nymphaeum is unique in the twentieth century. Contrasting with the folklore grottoes more prevalent during the twentieth century, the Villa Vizcaya is an anachronism, but its design ultimately supports the classical appeal of grottoes in more contemporary times.

Synopsis of Grotto Design

The nineteenth century entailed the production of imitation caves, a limited number of shell houses, and the use of the grotto as a passageway between sections of the garden. The simulation of caves was executed through exterior encrustations of minerals and fossils. New technology allowed for ease of construction of faux boulders and rock gardens proliferated. Classical nymphaeum forms such as the niche and grotto types diminished as design elements, but references to the grotto remained in the form of subterranean passages and small grotto fountains located in conservatories. Shellwork survived into the nineteenth through vernacular traditions.

The twentieth century saw an initial decline in grotto construction, but folk architecture kept the custom alive. A significant shift from estate grottoes, which incorporated the grotto as one element in an extensive landscape plan, to more condensed versions promulgated by an individual designer occurred during this era. Eclecticism denotes twentieth century versions of the grotto. Grottoes became a spontaneous expression made from vernacular materials, most notably mosaics set in concrete. A plethora of objects are embedded into building walls, garden fences, shrines, and altars, reminiscent of earlier shell and grot-work. Classical nymphaeum forms such as grand niches, chambers, and fountains are usually absent. Exceptions to this are found in religious based grottoes such as those found in the Upper Midwest of the United States built during the second quarter of the twentieth century. The purposes of grottoes vary, but most

convey a message or theme, whether secular or religious, from the designer. They remain part of the pleasure grotto genre instituted by the ancient Romans. Grottoes are constructed at great cost of time and resources, often taking many years to complete through dedicated labor. They usually lack a comprehensive plan and are idiosyncratic in their revelation of a vision held by an individual artist rather than being illustrative of a wider design trend. What persists within the grotto building tradition is the link to the natural cavern and the sea primarily through the use of decoration rather than form in the twentieth century.

Fig. 6-1: The Swiss Garden, Old Warden, Bedfordhshire, England (Jackson 2001, 23)

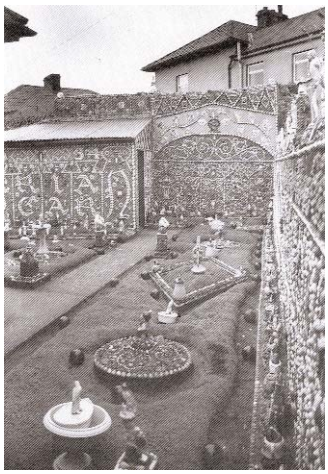


Fig. 6-2: Dungarven Shell Cottage, Ireland (Howley 1993, 37)

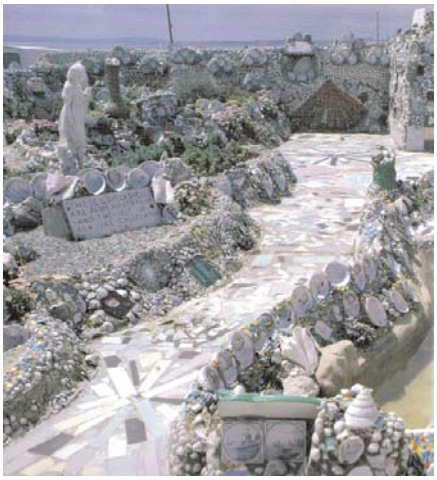


Fig. 6-3: Shell Garden of George Howard, Southbourne, England (Manley and Sloan 1997, 46)

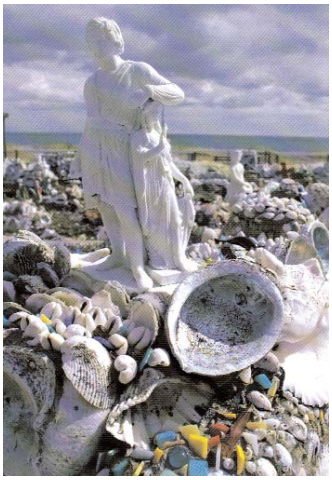


Fig. 6-4: Shell Garden of George Howard, Southbourne, England (Manley and Sloan 1997, 47)

Fig. 6-5: La Grotte at Lex Vauxbelets, Guernesy, France (Jackson 2001, 26)

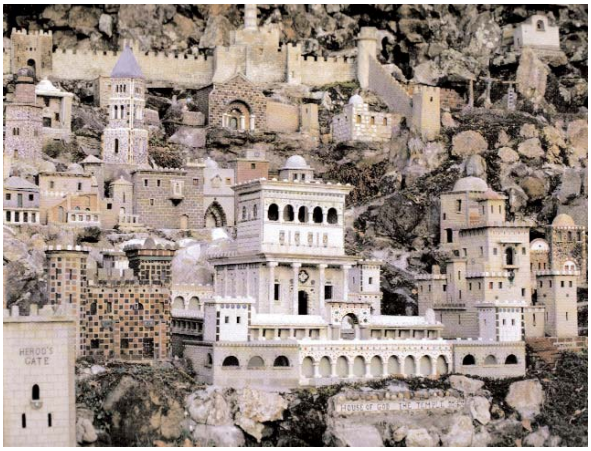


Fig. 6-6: Ave Maria Grotto, Cullman, Alabama (Manley and Sloan 1997, 45)

Fig. 6-7: Ave Maria Grotto, Cullman, Alabama (Manley and Sloan 1997, 44)

Fig. 6-8: Nativity Rock Museum, Claude Melton in front of his home/museum, Kearney, Missouri (Brackman and Dwigans 1999, 70)

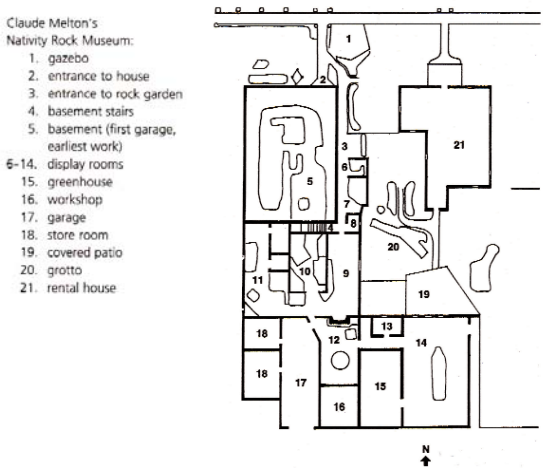


Fig. 6-9: Plan of Nativity Rock Museum, Kearney, Missouri (Brackman and Dwigans 1999, 73)

Fig. 6-10: Nativity Rock Museum, Display room, Kearney, Missouri (Brackman and Dwigans 1999, 75)

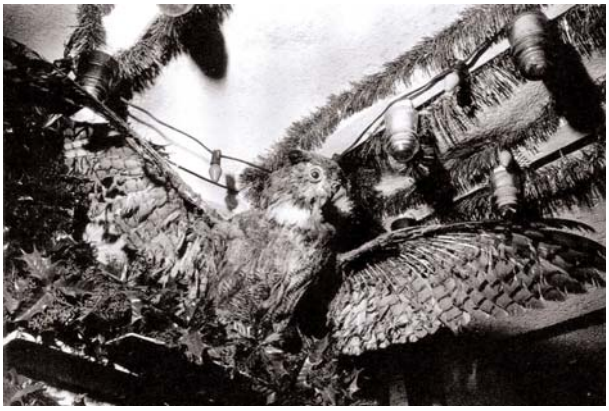


Fig. 6-11: Nativity Rock Museum, Display detail, Kearney, Missouri (Brackman and Dwigans 1999, 79)

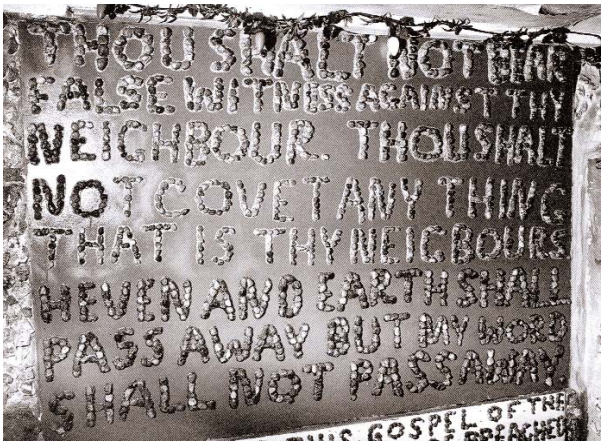


Fig. 6-12: Nativity Rock Museum, Display detail, Kearney, Missouri (Brackman and Dwigans 1999, 80)

Fig. 6-13: Nativity Rock Museum, Walkway through west side of the basement, Kearney, Missouri (Brackman and Dwigans 1999, 72)

Fig. 6-14: Nativity Rock Museum, Display detail, Kearney, Missouri (Brackman and Dwigans 1999, 78)

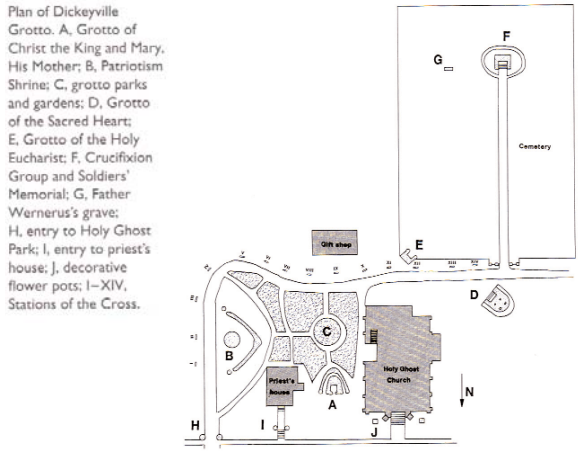


Fig. 6-15: Plan of Dickeyville Grotto, Wisconsin (Niles 1997, 11)

Fig. 6-16: Dickeyville Grotto, Grotto of the Holy Eucharist facade, Wisconsin (Niles 1997, 39)

Fig. 6-17: Dickeyville Grotto, Grotto of the Holy Eucharist interior altar detail, Wisconsin (Niles 1997, 40)

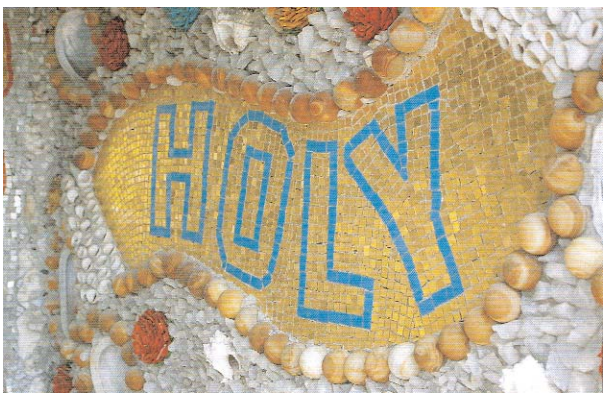


Fig. 6-18: Dickeyville Grotto, Grotto of the Holy Eucharist detail, Wisconsin (Niles 1997, 41)

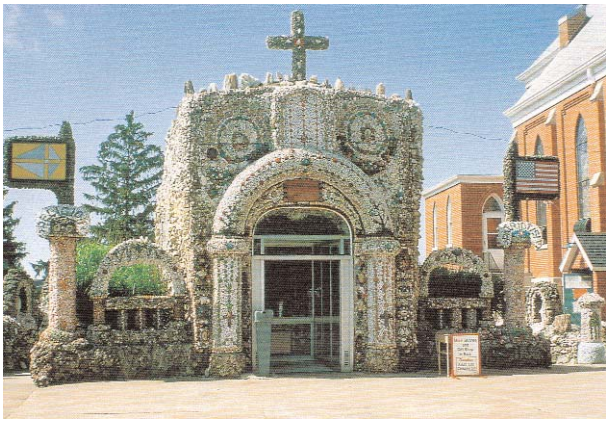


Fig. 6-19: Dickeyville Grotto, Grotto of Christ the King and Mary, His Mother facade, Wisconsin (Niles 1997, 42)

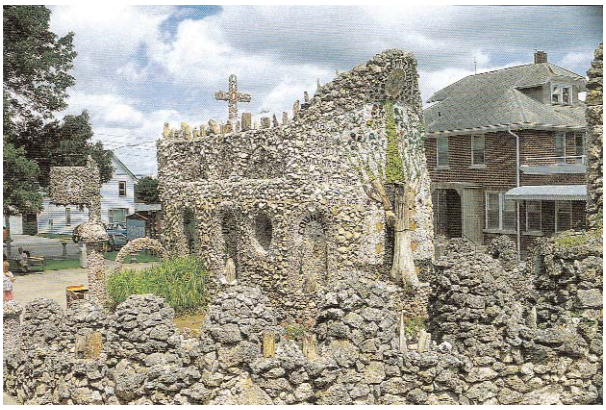


Fig. 6-20: Dickeyville Grotto, Grotto of Christ the King and Mary, His Mother, Outside wall, Wisconsin (Niles 1997, 49)

Fig. 6-21: Dickeyville Grotto, Grotto of Christ the King and Mary, His Mother, Niched walkway, Wisconsin (Niles 1997, 53)

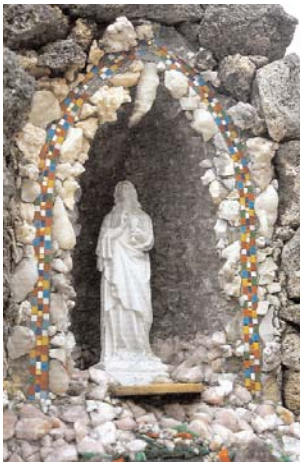


Fig. 6-22: Dickeyville Grotto, Grotto of Christ the King and Mary, His Mother, Niche dedicated to St. John, Wisconsin (Niles 1997, 54)

Fig. 6-23: Dickeyville Grotto, Grotto of Christ the King and Mary, His Mother, Interior detail, Wisconsin (Niles 1997, 45)

Fig. 6-24: Dickeyville Grotto, Patriotism Shrine, Central image of Christopher Columbus, Wisconsin (Niles 1997, 57)

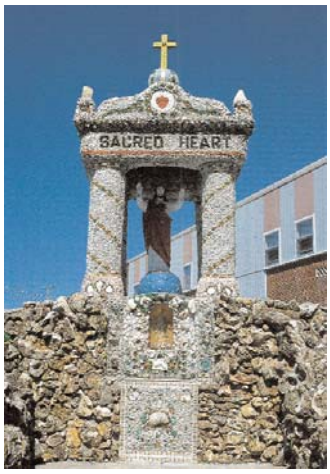


Fig. 6-25: Dickeyville Grotto, Sacred Heart Shrine, Wisconsin (Niles 1997, 61)

Fig. 6-26: Dickeyville Grotto, Patriotism Shrine detail, Wisconsin (Niles 1997, 58)

Fig. 6-27: Dickeyville Grotto, Grotto of Christ the King and Mary, His Mother detail, Wisconsin (Niles 1997, 51)

Fig. 6-28: Dickeyville Grotto, Patriotism Shrine fountain (Niles 1997, 60)

Fig. 6-29: Home of Baldasare Forestiere, Interior, Fresno, California (Headley 1996, 160)

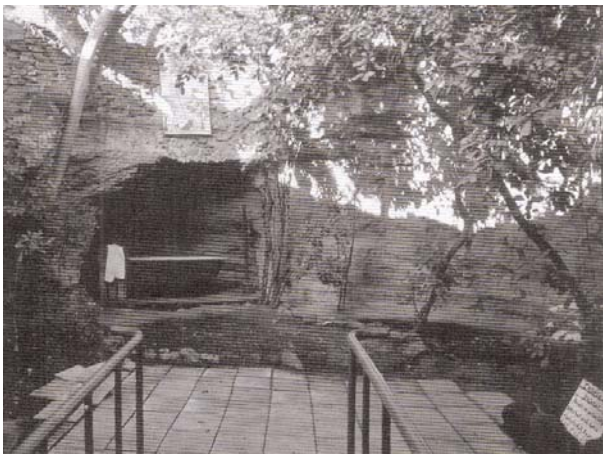


Fig. 6-30: Home of Baldasare Forestiere, Sunken gardens, Fresno, California (Headley 1996, 161)

Fig. 6-31: Dido's Cave at Stowe, c. 1720, Buckinghamshire, England (Knox n. d.)

Fig. 6-32: Dido's Cave at Stowe, Before restoration, Buckinghamshire, England (Knox n. d.)

Fig. 6-33: Dido's Cave at Stowe, After restoration, Buckinghamsire, England (Knox n. d.)

Fig. 6-34: Leeds Castle Grotto, Kent, England (Jackson 2001, 27)

Fig. 6-35: Leeds Castle Grotto detail, Kent, England (Jackson 2001, 27)

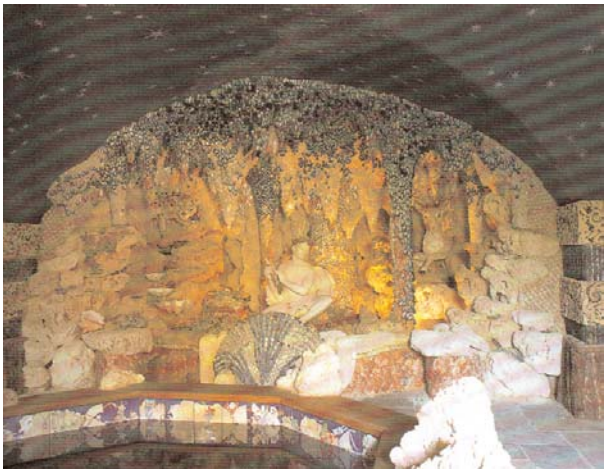


Fig. 6-36: Menagerie Grotto, Jacuzzi interior, Northamptonshire, England (Cornforth 1995, 29)

Fig. 6-37: Menagerie Grotto Detail, Northamptonshire, England (Jackson 2001, 28)

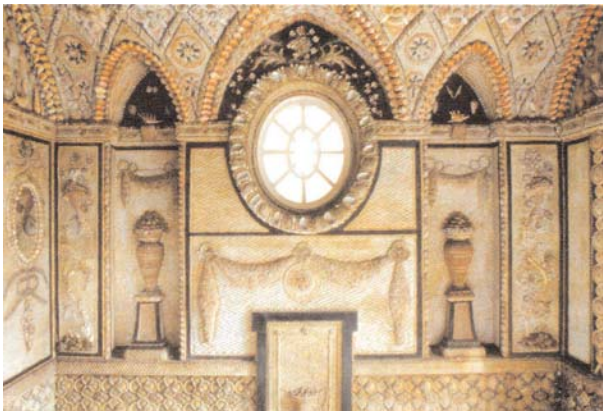


Fig. 6-38: Goodwood House, Shell house interior, Sussex, England (Jackson 2001, 11)

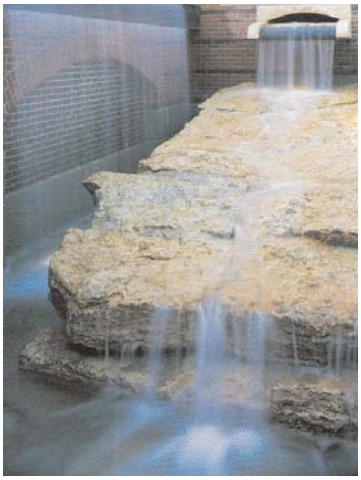


Fig. 6-39: Sprint World Headquarters, Courtyard grotto, Overland Park, Kansas (Sloan 2001, 26)

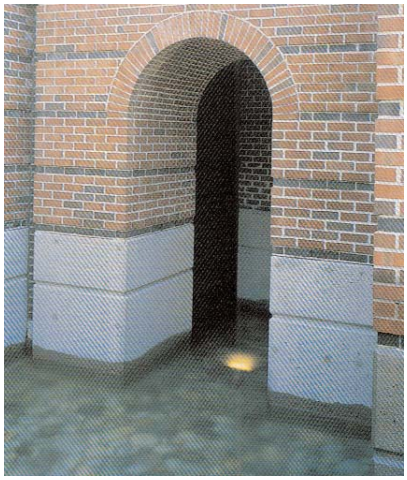


Fig. 6-40: Sprint World Headquarters, Courtyard grotto, Overland Park, Kansas (Sloan 2001, 28)

Fig. 6-41: World Trade Center Site Memorial Competition winning design, Curtain of water (Arad and Walker n. d.)

Fig. 6-42: World Trade Center winning design, Viewing room for unidentified remains, North Tower footprint (Arad and Walker n. d.)

Fig. 6-43: Grotto of the Redemption, Father Paul M. Dobberstein with Hector, West Bend, Iowa (Brackman and Dwigans 1999, 50)

Fig. 6-44: Grotto of the Redemption, South wall, West Bend, Iowa (Brackman and Dwigans 1999, 66)

Fig. 6-45: Grotto of the Redemption entrance, West Bend, Iowa (Manley and Sloan 1997, 18)

Fig. 6-46: Grotto of the Redemption, Stations of the Cross, West Bend, Iowa (Manley and Sloan 1999, Figure 15)

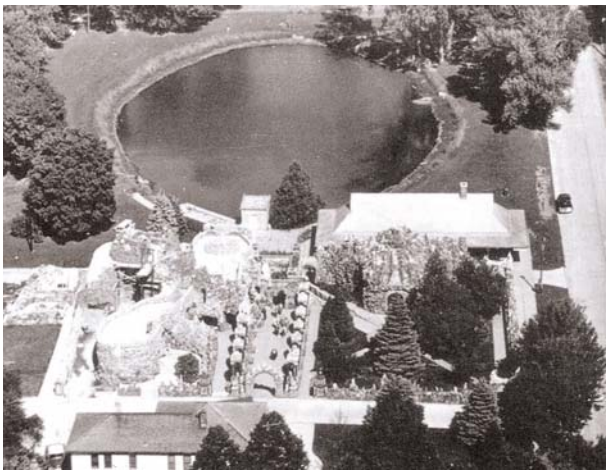


Fig. 6-47: Grotto of the Redemption, Aerial view circa 1950, West Bend, Iowa (Manley and Sloan 1997, 51)

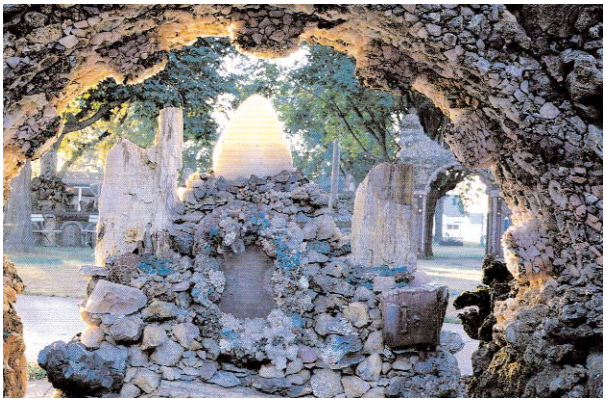


Fig. 6-48: Grotto of the Redemption detail, West Bend, Iowa (Manley and Sloan, 1997, Figure 17)

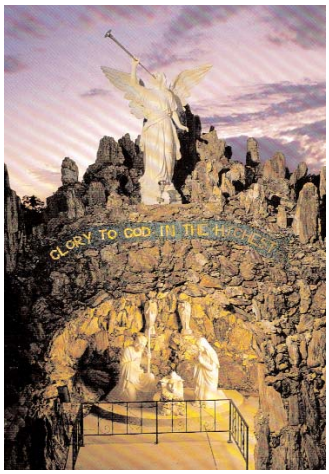


Fig. 6-49: Grotto of the Redemption, Grotto of Bethlehem, West Bend, Iowa (Manley and Sloan 1997, Figure 19)

Fig. 6-50: Grotto of the Redemption, Exterior view from the northwest, West Bend, Iowa (Manley and Sloan 1997, 54)

Fig. 6-51: Grotto of the Redemption detail, West Bend, Iowa (Manley and Sloan 1997, 52)

Fig. 6-52: Grotto of the Redemption, Grotto of Paradise Lost detail, West Bend, Iowa (Niles 1997, 65)

Fig. 6-53: Grotto of the Redemption, Twelve Stations of the Cross, West Bend, Iowa (Manley and Sloan 1997, Figure 18)

Fig. 6-54: Grotto of the Redemption, Twelve Stations of the Cross detail, West Bend, Iowa (Manley and Sloan 1997, Figure 16)

Fig. 6-55: Dobberstein's First commission, Humboldt, Iowa (Brackman and Dwigans 1999, 57)

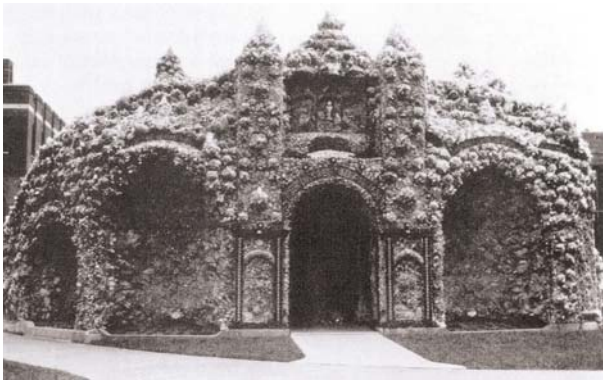


Fig. 6-56: Dobberstein's Grotto of the Blessed Virgin, La Crosse, Wisconsin (Brackman and Dwigans 1999, 64)

Fig. 6-57: Grotto of the Holy Family, Designed by Dobberstein, St. Joesph, Wisconsin (Brackman and Dwigans 1999, 59)

Fig. 6-58: Vizcaya, Grottoes flanking the stairway, Miami, Florida (Littlefield 1983, 68)

Fig. 6-59: Vizcaya, Niche detail, Miami, Florida (Littlefield 1983, 69)

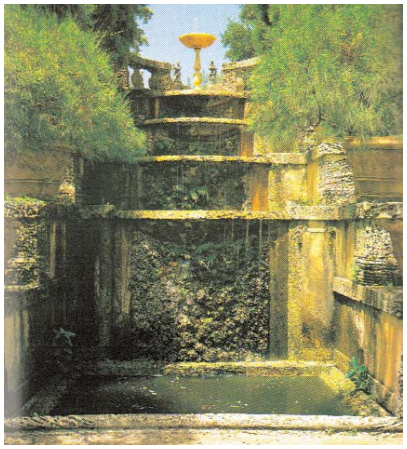


Fig. 6-60: Vizcaya, Water stairway, Miami, Florida (Littlefield 1983, 70)

Fig. 6-61: Vizcaya, Secret garden, Grotto-inspired entrance, Miami, Florida (Littlefield 1983, 87)

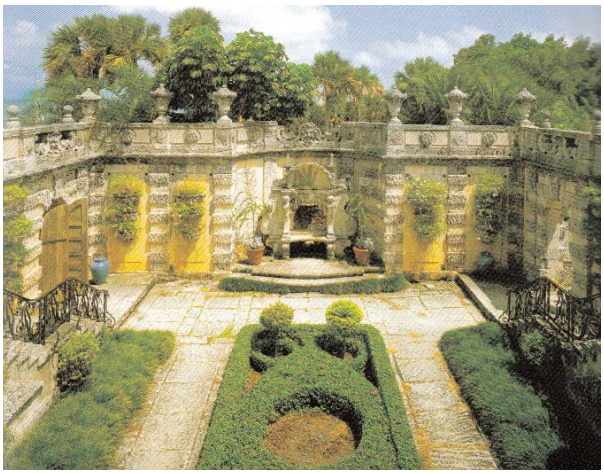


Fig. 6-62: Vizcaya, Secret garden, Looking towards the niche nymphaeum, Miami, Florida (Littlefield 1983, 84)

Fig. 6-63: Vizcaya, Secret garden, Niche nymphaeum, Miami, Florida (Littlefield 1983, 85)

Fig. 6-64: Vizcaya, Swimming pool, Miami, Florida (Littlefield 1983, 88)

Fig. 6-65: Vizcaya, Swimming pool interior, Miami, Florida (Littlefield 1983, 89)

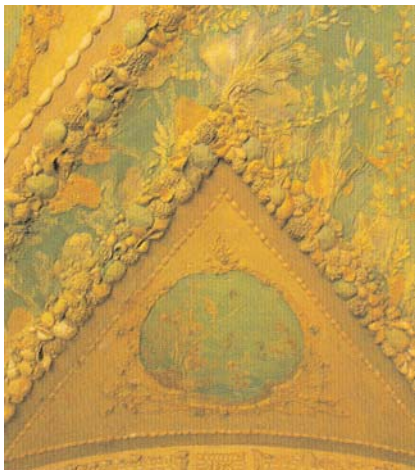


Fig. 6-66: Vizcaya, Swimming pool interior detail, Miami, Florida (Littlefield 1983, 89)

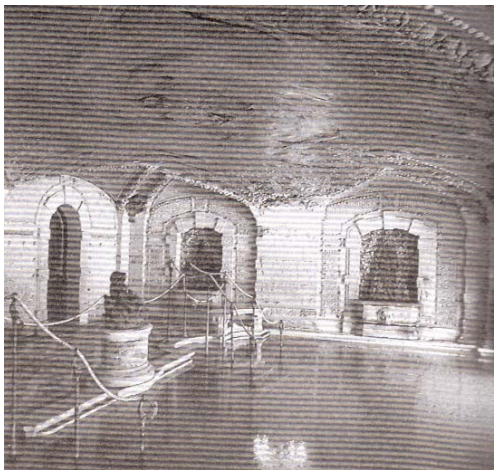


Fig. 6-67: Vizcaya, Swimming pool interior showing rusticated wall fountains, Miami, Florida (van Leeuwen 1999, 120)

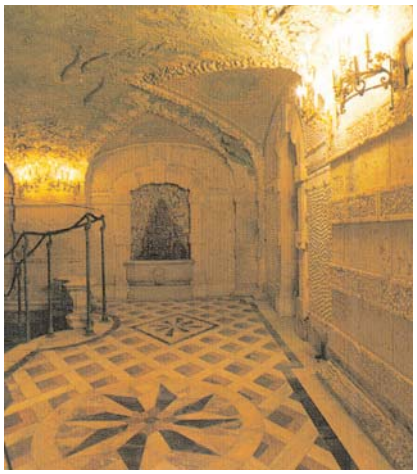


Fig. 6-68: Vizcaya, Swimming pool interior, Miami, Florida (Littlefield 1983, 89)

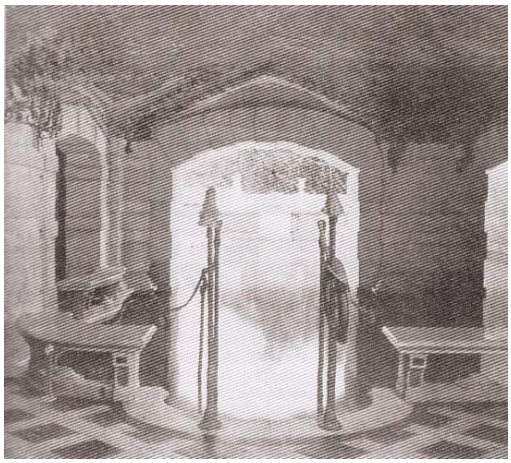


Fig. 6-69: Vizcaya, Swimming pool interior, Miami, Florida (van Leeuwen 1999, 121)

CHAPTER 7

A HIDDEN HISTORY

Grottoes have possessed an ancillary history as a pleasure garden. In addition to providing a venue for relaxation and entertaining, they were endowed with a clandestine purpose through the centuries, involving what has generally been considered licentious behavior. Research has remarked on this fact, but unfortunately has not sought to elaborate on the erotic dimension of the grotto's history. Documented since antiquity, grottoes and temples were not infrequently the site of sexual unions and orgiastic practices. Ancient literature reveals this aspect of a grotto's function (Alvarez 1981, 236). Homer wrote of Calypso and Ulysses (Fig. 7-1 thru Fig. 7-3):

> Even as he spoke
> the sun set and the darkness swept the earth.
> And now, withdrawing into the cavern's deep recesses,
> long in each other's arms they lost themselves in love. (Homer 5.248-251)

Dido and Aeneas in Virgil's Aeneid also reflect such meetings (Fig. 7-4):

> Dido came to the same cave as the Trojan
> leader. Primal Earth and Juno, Goddess of Marriage,
> gave a sign to the knowing Air, and the lightning
> flashed at this rite. Nymphs called from a hilltop. (Virgil 4.165-168)

Juvenal speaks of the liaison between Numa and Egeria at the site of the Camenae fountain:

> By the ancient dripping arches of the Capuan Gate, where once
> King Numa had nightly meetings with his mistress. (But today
> Egeria's grove and shrine and sacred spring are rented. . .) (Juvenal 3.13-15)

Ancient literature is merely reflecting common practice in regards to the connection between grottoes and amorous activity. The Greeks in fact held nationally as well as locally sanctioned and subsidized festivals in which sexual revelry was an inherent aspect of the celebrations. The honoring of deities such as Aphrodite and Dionysus entailed feasting, dressing up as nymphs, bacchantes, and satyrs, dancing through the cities, drinking to excess, and engaging in sexual acts (Fig. 7-5). These endeavors were performed under the premise that such activities facilitated religious experience through a communion with the respective deity (Partridge 2002, 13) (Fig. 7-6). Of course, such pursuits were resonate with hedonism and a general release of inhibitions. The Corycian cave located on Mount Parnassus, sacred to the nymphs and Pan, was undoubtedly a site for "bacchic orgies" (Miller 1982, 15). Pausanias writes:

> From the Corycian cave it is hard even for a man on foot to reach the peaks of Parnassus. The peaks are higher than the clouds, and the Thyiad women rave on them in honour of Dionysus and Apollo. (Pausanias 10.32.7)

In referencing the Thyiad women, Pausanias is alluding to the orgiastic rites held to honor the gods (Partridge 2002, 13). Rome also celebrated in a similar manner with the cult of the Bacchanalia, considered an adulterated version of the Greek Dionysia, which became infamous even in its day until it was outlawed in 186 B. C. (Fig. 7-7).

> I have no doubt of your awareness that Bacchic rites have long been conducted throughout Italy, and are now held in many places in Rome. You know this not only by hearsay, but also through the drumming and howling which reverberate by night through the whole city. (Livy 39.15.6)

> . . . Ever since the rites had been conducted without distinction of sex, with men mingling with women and additionally with the permissiveness of darkness, no crime, no outrage had been left uncommitted there. . . They considered it the highest form of religion to regard nothing as sacrilegious. Men as though out of their minds prophesied with frantic jerking of their bodies; married women dressed as Bacchants with hair flowing free . . . The crowd was huge, now virtually a second citizenry, including certain men and women of the nobility. (Livy 39.13.10-14)

Although the Bacchanalia was suppressed, sexual rites continued as part of other festivities including the Liberalia (Fig. 7-8).

> Now come the rites of Liber . . . As to these rites, it is wearisome to speak at great length of the depth of wickedness which they have plumbed . . .the god Liber was to be propitiated, in order to secure the growth of seeds and to repel enchantment from the fields: a matron was compelled to do in public what even a prostitute would not have been allowed to do in the theaters if there were respectable women in the audience! (St. Augustine 7.21)

Besides public spectacles, private gatherings were apparently prevalent among Roman emperors and wealthy citizens. Gatherings typically included fine dining, an excess of wine, and amorous activity. It is not unreasonable to assume that triclinia grottoes, including Sperlonga, would have hosted such events given their function and accommodation for both dining and lounging. Accounts of these private affairs occurring within grottoes is found in ancient literature, that of Emperor Tiberius on the isle of Capri perhaps the most well known. Tiberius was purported to have built twelve villas in honor of the Olympian gods where he resided the last ten years of his reign (Fig. 7-9). Capri had numerous natural caves in the limestone cliffs that drop directly into the sea, the most renowned being the Blue Grotto (Fig. 7-10). It is so named because sunlight filters into the cavern through an opening which casts a blue glow from reflections produced by the watery interior. This grotto was once adorned with Roman statues and supposedly served as a bath for the Emperors, including Tiberius. Accounts of Tiberius' sexual proclivities, although not verified as historically accurate, were nonetheless made notorious by the Roman writer, Suetonius:

> But having found seclusion at last, and no longer feeling himself under public scrutiny, he rapidly succumbed to all the vicious passions which he had for a long time tried, not very successfully, to disguise. . . .
> . . . He furthermore devised little nooks of lechery in the woods and glades of the island, and had boys and girls dressed up as Pans and nymphs prostituting themselves in front of caverns or grottoes. (Suetonius 42-43)

The Blue Grotto itself was alleged to be the site of pedophilic activity enjoyed by Tiberius as he swam and bathed in the sea cave's beautiful internal chamber (Partridge 2002, 58). The Blue Grotto would remain associated with eroticism well into the nineteenth century (van Leeuwen 1999, 62). In fact, Ludwig II, King of Bavaria, was so influenced by the popularity of the Blue Grotto that he had his Venus Grotto at Linderhof artificially lighted to reproduce the mood of the Italian original (van Leeuwen 1999, 68). This grotto, built to resemble a limestone cave in replication of a Wagnerian opera set, was created as a contemplative chamber replete with an artificial lake that also functioned as an indoor swimming pool, an uncommon and extraordinarily expensive novelty at the time (van Leeuwen 1999, 58) (Fig. 7-11 and Fig. 7-12).

The connection between grottoes and what is considered forms of sexual debauchery continued to be recorded. Perhaps one of the most well known accounts is that of the mid-eighteenth century Hellfire Club resurrected by Sir Francis Dashwood (Miller 1982, 79) (Fig. 7-13). Members of the organization referred to themselves as the Monks of Medmenham or the Knights of St. Francis and included a considerable number of men from reputable, wealthy families (Miller 1982, 79). Dashwood initially held club meetings at an old medieval abbey, referred to as Medmenham, located on the River Thames near his West Wycombe estate. Subsequent to the public learning of the decadence of the club's pastimes, he had an elaborate excavation of caves made in a cliff near West Wycombe (Mannix 2001, 127). The site was elaborately composed, enlarging what was once a chalk quarry, and ran a quarter of a mile into the earth (Mannix 2001, 128) (Fig. 7-14). The entrance was obscured by yew trees and featured a Gothic style entrance set into the hill with an iron privacy gate (Fig. 7-15). The entry tunnel boasted carved demon heads on its walls set before maze-like passageways referred to as the catacombs (Mannix 2001, 133) (Fig. 7-16 and Fig. 7-17). Beyond the catacombs was a long

tunnel that opened into a chamber forty feet in diameter and fifty feet high. This chamber was known as the Banqueting Hall. Small rooms led off the Banqueting Hall and were professed to be just large enough to hold a bed (Mannix 2001, 134). A passageway at the far end of the Hall escorted a visitor to the Triangle, sexual in its connotation as was characteristic of Dashwood's taste. The Triangle was directed towards an underground body of water known as the "River Styx" that had to be traversed by boat. A well was positioned beside the river from which new initiates were "baptized" and then led to the Inner Temple. This room was circular and was the purported site of Black Masses and sexual rites (Mannix 2001, 134-135). Activities that took place in the Abbey merely shifted to the more private accommodations of the caves. Members allegedly dressed as monks and consorted with prostitutes and willing women of society who were supposedly costumed as nuns. As in the abbey, the place was fraught with sexual references in both imagery and inscription (Miller 1982, 79). The Hellfire Club simply maintained an ancient tradition of using grottoes or grotto inspired chambers to provide a place for orgiastic rituals. Though historical documentation does not prove that the West Wycombe Caves definitively functioned as a locale for orgies, they unquestionably had erotic overtones.

The convention of using grottoes as chambers for sexual activity would prevail in the twentieth century as exemplified by Hugh Hefner's grotto inside the Playboy Mansion West. Hefner purchased the 1920s mansion and six acre site located in the Holmby Hills district of Los Angeles in 1971. Amenities were soon added including a swimming pool, tennis court, and the famed grotto (Fig. 7-18). Ron Dirsmith, architect for Hefner, explains:

> . . . Because of the discussions we got into with him [Hefner] about history, we came up with the idea of creating the Grotto as if it had emerged from the sea millions of years ago. We did research in museums to find prehistoric life-forms, and brought in Bob White, a glass artist from Chicago, and commissioned him to do five fused glass panels that are in the ceiling of the sky dome of the Grotto. If you look up at those panels, you'll

> see that they're actually designs of 400-milllion-year-old mosquitolike creatures trapped in amber. (Edgren 1998, 154)

The mansion and grotto once again became the scene of private parties as Hefner re-entered the public limelight after his second marriage ended in the late 1990s. Though activities at the Mansion have been derided by many, Hefner has continuously drawn a wide audience of famous personalities and a portion of mainstream America fascinated with a hedonistic lifestyle. Hefner's grotto is simply part of a wider decadence reminiscent of earlier periods. Like other grottoes, most notably those prior to the twentieth century, water is displayed and utilized for pleasure. The water is easily controlled via temperature and jet settings within a rustic interior reminiscent of an ancient cave with arched openings that allow natural light to filter into the chamber (Fig. 7-19). The grotto has been a favored mansion setting as wryly noted by Edgren:

> If asked to vote for their favorite spot on the estate, Mansion habitués of the Seventies would surely have made the Jacuzzi Grotto their hands- (and pants-) down favorite. (Edgren 1998, 155)

The association between grottoes and ardent expression is part of an ongoing tradition which is apparently still in vogue as attested by the popularity of Hefner's grotto. The odes of Horace speak of this convention, emphasizing the enchantment a grotto may provide:

> Pyrrha, what slender youngster, soaked with perfume, holds you in his arms, lying on a heap of roses in a delightful grotto? (Horace 1.5)

From the classical world to the excesses of a post-modern America, the grotto will most likely carry on as a locus for erotic experience.

In addition to the association between grottoes and orgiastic behavior, the imagery of natural caverns themselves have been utilized since prehistoric times to allude to female genitalia and their generative power (Fig. 7-20). This metaphorical relationship was consciously

acknowledged by grotto designers at least since the time of the Renaissance (van Leeuwen 1999, 58).

> Usually such structures [grottoes] followed simple organic precepts in which easily legible forms were employed, such as oval openings, bulging masses, mossy cliffs, coral-colored stalactites, and so on. The intended meanings were reinforced by figure groups of fauns and nymphs that often depicted scenes from Ovid's Metamorphoses. (van Leeuwen 1999, 58-59)

The cave as womb and its opening as vagina is a basic mythological representation carried forward through time in the evolution of the grotto. This basic understanding of life's procreative forces is hardly obscene, but needs to be unabashedly recognized since the allure of the grotto is surely attached in some manner to this observation. The concavity of the cave and the draw of the moistness within was played upon in very direct ways by some grotto designers and downplayed by others in regards to sexual imagery. The use of shells for grotto interiors also emphasized the suggestive forms of grotto exteriors (Fig. 7-21). Bachelard comments upon this quality:

> Shells, like fossils, are so many attempts on the part of nature to prepare forms of the different parts of the human body; they are bits of man and bits of woman. In fact Robinet gives a description of the Conch of Venus that represents a woman's vulva. (Bachelard 1994, 114).

Other decorative treatment also had erotic connotations such as the inclusion of statuary that consistently incorporated Venuses, reclining nymphs, and festive satyrs into grotto niches and chambers. The role these figures played in mythology is clearly suggestive of sexual desire and expression.

The historical connection between grottoes and sexuality should not be overlooked or disregarded in contemporary design since the legitimacy of future constructions lies just as much in cultural perceptions as it does in scientific feasibility and utilitarian concerns. To strip the meaning away from the grotto by de-eroticizing it would rob the richness of its allegorical

meaning. Grottoes carry history as do other architectural and landscape elements, and this presence of the past must somehow be accepted and recognized if the tradition is to viably remain in current practice.

Fig. 7-1: A Fantastic Cave Landscape with Odysseus and Calypso by Jan Brueghel the Elder and Hendrick de Clerck, 1568-1625 (Moore 2001)

Fig. 7-2: Odysseus and Calypso by Arnold Bocklin, 1883 (Arnold Collection 2004)

Fig. 7-3: Ulysses and Calypso by Max Beckman, 1943 (American Repertory Theatre 2003)

Fig. 7-4: Dido and Aeneas take refuge from a storm in a cave, 4th C. A . D. mosaic, Low Ham Roman Villa, Somerset, England (McManus n. d.)

Fig. 7-5: Dionysiac Mysteries, Wall painting of a ritual dance (Ferguson 1970, Figure 52)

Fig. 7-6: Priapus, Greek god of fertility included among the retinue of Dionysus, Painting on wall of the House of the Vettii, Pompeii (Förlag n. d.)

Fig. 7-7: Bacchanalia by Peter Paul Rubens, 1615 (My Art Prints.co.uk n.d.)

Fig. 7-8: Liber with his consort Libera, Second or third century A. D. (Perowne 1983, 63)

Fig. 7-9: Ruins of the Villla of Tiberius on the Isle of Capri (Suetonius 2001, Figure 4)

Fig. 7-10: Blue Grotto, Isle of Capri (Hotel San Michele n. d.)

Fig. 7-11: Grotto of Venus, Linderhof, Germany (van Leeuwen 1999, 69)

Fig. 7-12: Grotto of Venus, Linderhof, Germany (Galfetti 1999, 49)

Fig. 7-13: Sir Francis Dashwood (Walsh 1999)

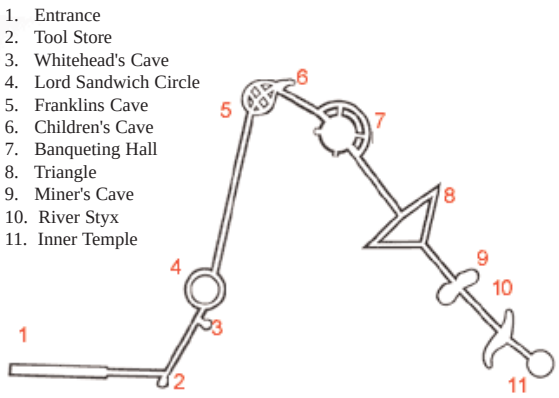


Fig. 7-14: Plan of the Hellfire Caves as they exist today, Buckinghamshire, England (Walsh 1999)

Fig. 7-15: Hellfire Caves entrance, Buckinghamshire, England (Eager 2001)

Fig. 7-16: Hellfire Caves interior passage (Walsh 1999)

Fig. 7-17: Hellfire Caves, Interior wall sculpture, Buckinghamshire, England (Walsh 1999)

Fig. 7-18: Playboy Mansion West Grotto, Los Angeles, California (Edgren 1998, 196)

Fig. 7-19: Playboy Mansion West Grotto, Los Angeles, California (Edgren 1998, 155)

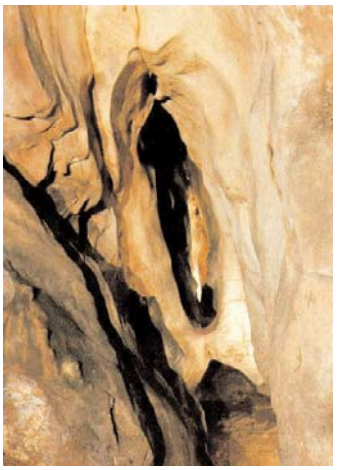


Fig. 7-20: Domica Cave, Slovakia (Slovakia Cave Server n. d.)

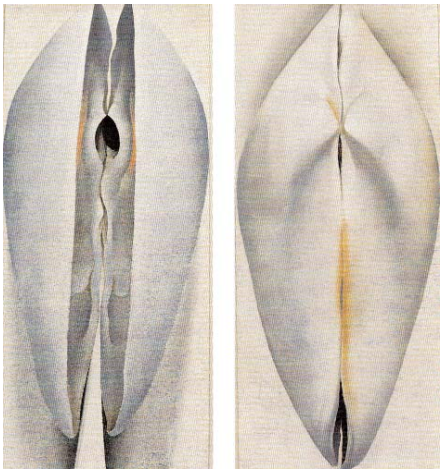


Fig. 7-21: Open and Closed Clam Shell by Georgia O'Keefe, 1926 (Turner 1999, 73)

CHAPTER 8

THE GROTTO AND THE CAVE

> Only a language which encompasses the possibility of the impenetrable--which seeks depth rather than absolute clarity, operates through allusion rather than explicit statement--can therefore describe the journey to the interior. (Lesser 1987, 49)
>
> In any description of the other world, therefore, lurks an implicit contrast with this world; for the strange, the unfamiliar, the other can only be explained in terms that are familiar, even if only by a negation of those terms . . . (Edmonds 2004, 2)

The grotto has been analyzed through a basic chronology according to form, meaning, and purpose from the classical era to the present day. Within a larger scope of the past, prehistory may also grant insight regarding the value of the grotto as an underground chamber or passage. In this regard, the connection between the grotto and the cave will be explored through the fields of subterranean architecture and depth psychology. This examination is being conducted in order to provide a theoretical foundation for the legitimacy of contemporary grotto design and construction.

The cave is the origin of human shelter and has served as home, temple, burial ground, and defensive fort through millennia. Caves have been physical, political, and spiritual refuges for many peoples and its value to human civilization should never go unrecognized. The power of association between human kind and the hollows of the earth accompany our instinct for survival as well as our dream world where fissures and cracks simultaneously repel and summon our desire to enter. The cave is a primordial form in both the physical realm and the interior

depths of our psyche. In its manifestation as tunnel, the cave becomes a liminal space, a passage which straddles the boundaries between what lies within and without. This form is capable of instilling a sense of security as well as abject fear of enclosure. The cave offers both protection and subversion of safety. For this very reason, it presents a challenge to the human imagination. This challenge is made apparent through an assessment of the cave as both an architectural type and psychological symbol. It is through ambiguity and a dichotomous character that the cave and the grotto are perpetually forged in lasting connection so analysis of the cave furthers an understanding of the grotto as a cavern, shrine, pleasure ground, and domestic interior.

The Cave as Architectural Type

Natural caves have sheltered humanity for at least 100,000 years and represent one of two basic architectural types, the other being the tent (von Meijenfeldt and Geluk 2003, 19). The cave speaks to our pre-history as well as an enduring attraction to crevices in the earth. This appeal ushers from a need for human survival, but also points to a collective desire to inhabit what is simultaneously an architectural and psychological archetypal form. Humans have been entering the earth and going underground for millennia for shelter, ritual, defense, storage, burial purposes, and pleasure. Communities have created a wealth of different variations of the cave as home through wide-ranging global examples across generations, most notably in arid environments (Golany 1983, 3). Underground architecture varies from partial to full enclosure and runs the gamut between the use of natural formations to artificial replications. The hollow rock and the hole in the ground represent the two basic types of underground architecture (von Meijenfeldt and Geluk 2003, 19). In contemporary times, the will to go below the surface continues for several reasons. Some of these include protection from stressful climates, to

reduce energy expenditures, promote environmental conservation, accommodate burgeoning populations, increase safety, and for aesthetic purposes (Golany and Ojima 1996).

There are striking versions of below ground architecture that have been created in the last several decades which demonstrate an incredible breadth of environmental and aesthetic sensitivity. For example, the fascination of living within the ground and emphasizing organic contours of natural formations is illustrated by the house and studio of César Manrique located in Lanzarote, Spain. Lanzarote is a volcanic island dominated by craters and tropical vegetation. Manrique sought to protect and emphasize the island's natural environment through a series of semi- embedded rooms and passageways built directly into the volcanic rock (Fig. 8-1). Although the façade of the house from afar looks similar to other construction in the area, the interior is quite amazing for its subterranean detail (Fig. 8-2).

> A cavernous labyrinth of tubes, partially tunneled through the hard volcanic rock, connects the five bubbles and the swimming pool with its organic forms, an oasis in the desert of lava. These bubbles, named after the colour of the lower part, are spaces of an almost "found" architecture, where the plasticity of the characteristic geology of their walls is accentuated here and there by the overhead light. (Galfetti 1999, 166)

Natural forms and their variety of textures and shape create fluidity between the surrounding environment and the residence's architecture (Fig. 8-3). The ambiguity of inside and outside, like that of classical nymphaea, is present. Manrique's design evokes the cave with its amorphous interior space, full of mystery and a sense of intimate enclosure (Fig. 8-4). Daylight comes through overhead openings and is supported by atmospheric, artificial light skillfully placed inside the bubbles (Fig. 8-5). Vegetation is also integrated into the bubble chambers thereby suffusing the space with a verdant quality.

The villa of Prince Vittorio Emmanuel and Princess Marina Doria located on the island of Cavello, Italy, was designed by Savin Couelle and represents another instance of remarkable

subterranean architecture. This residence also sought an intimate incorporation with the landscape (Fig. 8-6). This desire was realized through two intentions: "The house was to be virtually invisible from the exterior while the interior was to open up to the surrounding landscape" (Galfetti 1999, 176). The exterior was concealed by designing the residence on a multitude of levels and covering the walls with local stone (Fig. 8-7). The interior was cut into the rock to lend a natural flow from the rooms within to the landscape without (Fig. 8-8).

> The interiors were then excavated to produce habitable spaces, creating an artificial grotto. The distribution of the different rooms was determined by the presence of a number of enormous rocks, polished by erosion. The strange rocks scattered across the terrain have been respected and left in their magical place, and have become protagonists of the interior space. According to their situation, they assume different functions. (Galfetti 1999, 176)

Curves are an essential feature of the architecture, its details, and furnishings (Fig. 8-9). Natural materials such as stone, metal, and leather are used for all interior needs (Fig. 8-10). The exterior makes use of the large boulders to create a screen which also serves to form a harbor in front of the residence (Fig. 8-11). Galfetti notes, "The primitive cave and the life of the troglodyte are the mystical referents for this artificial grotto" (1999, 176). The influence of the grotto has spread from a sacred temple shrine to a fanciful landscape feature to a ground plan for a beloved residence in the course of the preceding centuries.

The appeal of earth interiors has also remained in the garden. An enthralling example is found at the Haw Par Villa Tiger Balm Gardens in China created in the 1930's. The gardens have a strong moral theme narrated by grotesque forms and nightmarish scenarios (Galfetti 1999, 114). What is of interest in regards to subterranean architecture is the garden's reproduction of a primitive cave (Fig. 8-12). Ledges, tables, and seats appear to surge out of the artificial rock of this structure (Galfetti 1999, 118) (Fig. 8-13). Stalactites and stalagmites are abundantly present, but instead of the typical rustication, there is a sinuous flow throughout the interior as if the

inside is made of moldable clay that has not yet dried (Fig. 8-14). Truly a fantasy inspired structure, the metamorphoses of the cavern into a twentieth century playground is resplendent in this work.

The desire and ability to mirror what is above, below the ground speaks to necessity and the human imagination. Antiquity provides many subterranean examples such as tombs, cryptoportici, cisterns, and catacombs to name but a few (Miller 1982, 121). Contemporary subsurface architecture, whose inspiration most likely developed from ancient examples, ranges from transportation based construction such as tunnels and subways to sewers, storage vaults, shopping malls, and office space. In addition, ducts, tubes, and wires subsist underneath as a system of life supporting veins feeding electricity, gas, water, and providing waste transport to and from our surface dwellings (Miller 1982, 121).

There is both repulsion and attraction to the underground. Below is a dark realm where subversion dwells, but it is also the locus of epic adventures (von Meijenfeldt and Geluk 2003, 14). Our fears bubble from underneath where monsters stir in their chambers, or so it has always been in folk belief and fairytale. This connection between the underground and the grotesque remains in the twenty-first century, at least in the collective unconscious of our psyches. The cellar, as a domestic representation of the cave, can be seen as a locus of fear where harm dwells. Bachelard explains:

> As for the cellar, we shall no doubt find uses for it. It will be rationalized and its conveniences enumerated. But it is first and foremost the *dark entity* of the house, the one that partakes of subterranean forces. When we dream there, we are in harmony with the irrationality of the depths. . . .
> . . . In the cellar, darkness prevails both day and night, and even when we are carrying a lighted candle, we see shadows dancing on the dark walls. (Bachelard 1994, 18-19)

The cellar may also be an environment of disgust where undesirables are forced to live. Unfortunately, there exists a sociological stigma attached to subsurface dwelling among certain

groups since it can be associated with the under classes of human society and even sub-human lower orders (Miller 1982, 121). In this manner, trepidation is related to subsurface architecture. Furthermore, anxieties over feeling closed in and trapped occur in connection to subterranean construction (von Meijenfeldt and Geluk 2003, 178). Concerns such as this are addressed by providing an environment that mimics the surface in terms of light, perspective, and legibility. Clear circulation routes and connections with the surface need to be well integrated and easily reached (von Meijenfeldt and Geluk 2003, 178).

The value of building below ground beyond economic and ecological reasons may be drawn from nebulous sources as well. A want to return to Nature, so exalted in the Romantic Movement of the eighteenth century, is found today among post-industrial societies. Moving to forms built directly in the earth may provide individuals with a greater sense of connection with the natural environment and respect for its gifts of sustenance, warmth, protection, and beauty. The return to indigenous architecture, the inspiration for contemporary terratecture, is capable of creating a more intimate association with a variety of civilizations of both past and present. The evocation of the cave has religious or spiritual significance given the link between earth hollowed temples and the divine as understood by a range of human cultures. There is also the possibility that construction which is carefully designed in terms of the surrounding elements of earth and water may lead to broader awareness of the social and natural environment. Finally, the experience of inner peace often linked with cave environs may provide a healthy retreat for post-industrial societies whose pace of living is often correlated with an increased presence of psycho-physical stress.

The cave as an architectural type develops a basis to support the credibility of present-day grotto construction. Subterranean construction as a general building practice has a multitude of

benefits related to environmental, social, economic, and aesthetic factors. The appeal of grottoes as a specific subterranean structure is multifold. It is simultaneously a landscape and architectural element that incorporates both earth and water in configurations meant to offer physical and psychological respite. Whether or not a grotto is literally built in the earth, its reference is always to the cave with its climate controlling properties that both comfort and delight. The grotto offers mystery, refuge, wonder, and titillation. One facet that makes grotto design intriguing is its incorporation of sublime aspects through the compositional use of darkness, a sense of remoteness, and an often unfamiliar demarcation of space. In an age where the perceived need for maximum security has become fodder for global paranoia, landscapes that have the potential of inducing a bit of fear or anxiety may seem anomalous, but this aspect of landscape design should not be abandoned for its existence nourishes the psyche's longing for unknown territories. This craving for the dark, the depths, and recesses of an undiscovered world remains in the human unconscious. What better element to resurrect than the grotto, sin qua non for the underworld.

The grotto originated as a cave temple in ancient Greece and evolved into a secular display for human comfort, pleasure, and entertainment, as its form and function changed over generations. Through the investigation of the grotto through time it has become evident that some resemblance of form, meaning and purpose was retained in vestiges of the grotto as it developed, but primarily its ambiguous nature survived the centuries. Dichotomies between nature and art, reality and illusion, profanity and divinity, architecture and landscape, and interior versus exterior are forever engaged in grotto design. It is through these dichotomies that references to the past and the will to innovate may emerge in thought provoking designs thereby carrying the grotto into a new millennium.

The grotto is often considered merely a caprice, but the primordial images attached to its configurations impart a more compelling definition. The cave and sea beckon us to enter, despite the danger or potential ruin. The grotto serves as crucible in which the visitor is transformed for it also functions as a gateway where states of mind and stages of life are offered passage. The cave becomes a birth womb just as easily as it can become a crypt, thereby taking a place of morbid fascination in the human imagination. The ambivalence in which caves are generally experienced perhaps reveals the basis for a grotto's elusive charm. Leonardo da Vinci exemplifies this tendency in his journals:

> And drawn on by my eager desire, anxious to behold the great abundance of the varied and strange forms created by the artificer Nature, having wandered for some distance among the overhanging rocks, I came to the mouth of a huge cavern before which for a time I remained stupefied, not having been aware of its existence, my back bent to an arch, my left hand clutching my knee, while with the right I made a shade for my lowered and contracted eyebrows; and I was bending continually first one way and then another in order to see whether I could discern anything inside, thought this was rendered impossible by the intense darkness within. And after remaining there for a time, suddenly there awakened within me two emotions, fear and desire, fear of the dark threatening cavern, desire to see whether there might be any marvelous thing therein. (da Vinci 1941, 1127-28)

We cannot quite capture why we wish to enter and linger for it is gloomy and damp at the heart of such places, but we do so anyway as if we cannot tear ourselves away. We are inexplicably drawn to the indefinite, the strange, and the terrible which threatens to do us in. The grotto as cave is essentially a sublime landscape. This significant aspect of the grotto is most appropriately interpreted through the perspective of the cave as a primordial symbol.

The Cave as Psychological Symbol

The symbolism of the cave is luxuriant in associations with an intrinsic ambiguity of meaning present within its imagery as was found in the analysis of the cave as a manifest architectural form. The variety of dichotomous relationships discovered in reference to the cave

as an image within the psyche is significant. The cave as a psychological symbol is intimately wedded to its architectural typology. It is through further scrutiny of its figurative powers that the cave reaches a crucial zenith in terms of theoretical meaning and import.

The cave as a proto-architectural type is generally identified given its role in the historical evolution of architecture (von Meijenfeldt and Geluk 2003, 19). Designers have recently acknowledged the cave as a representation of the primeval nexus between in and out, a principal ambiguity inherent in grottoes.

> We often love cavelike spaces, close-fitting vantages upon the world. This may derive from our experience of space just prior to and just after being born. From the caves inside and outside of the body, we can come to feel secure in tight, small places that fit our form and enjoy a small oculus that opens out onto the world. Our earliest architecture is structured on the model of a comforting cave: the cradle, the crib, and the perambulator all form cavities that fit close around small bodies. From then on, we tend to seek out places to snuggle within; we collect caves. Nooks and crannies, igloos, berths, burrows, and hollows feel like our elemental home. (Messervy 1995, 28)

The mention of cave-like structures providing the semblance of an elemental home is perhaps an explanation for the popularity of grotto construction.

Christopher Alexander in his seminal work, “A Pattern Language” also credits the worth of cave-like spaces in his patterns labeled “alcoves” and “child caves” (Alexander 1977). In addition, Alexander assesses the significance of water and the role spiritual sanctuaries play in the passage of human life, two other key elements inherent in historic grotto design.

> We came from the water; our bodies are largely water; and water plays a fundamental role in our psychology. We need constant access to water, all around us; and we cannot have it without reverence for water in all its forms. (Alexander 1977, 323)

> What is a church or temple? It is a place of worship, spirit, contemplation, of course. But above all, from a human point of view, it is a gateway. A person comes into the world through the church. He leaves it through the church. And, at each of the important thresholds of his life, once again steps through the church. (Alexander 1977, 332)

Furthermore, Alexander elucidates a very important aspect of architecture ever present within the grotto; its ability to conceal and reveal. The power of a secret place is potent and necessary for the mind.

> Where can the need for concealment be expressed; the need to hide; the need for something precious to be lost, and then revealed? (Alexander 1977, 930)

In a philosophical analysis of home as poetic space, Bachelard points out that the idea of a haven and hideaway is embedded in our thoughts and dreams not just in relation to human dwellings, but also in regards to non-human abodes:

> It is striking that even in our homes, where there is light, our consciousness of well-being should call for comparison with animals in their shelters . . . Thus, well-being takes us back to the primitiveness of the refuge. Physically, the creature endowed with a sense of refuge, huddles up to itself, takes to cover, hides away, lies snug, concealed. (Bachelard 1994, 91)

Bachelard declares the pleasure humans have in withdrawal to more private surroundings while emphasizing the fascination that such objects as nests and shells, both animal homes, hold in relation to their image as refuge. In explicating the tendency for humans to retreat and hence, disguise their presence, he admits the symbolic properties of the shell, an essential ornament in grotto design:

> With nests and, above all, shells, we shall find a whole series of images that I am going to try to characterize as primal images; images that bring out the primitiveness in us. I shall then show that a human being likes to "withdraw into his corner," and that it gives him physical pleasure to do so. (Bachelard 1994, 91)

He continues with an examination of shells and the creatures that live within them, lending another interpretative layer to the decorative interior features of grottoes:

> Everything about a creature that comes out of a shell is dialectical. And since it does not come out entirely, the part that comes out contradicts the part that remains inside. . . .
> . . . the obvious dynamism of these extravagant figures [those that live in shells] lies in the fact that they come alive in the dialectics of what is hidden and what is manifest. (Bachelard 1994, 108)

The ability to obscure ranks in significance to the capacity to disclose for the relation between these powers is fundamental to human consciousness. We seek not only to veil experience from others, but also from ourselves in a perpetual game of hide and seek between our conscious and unconscious states of being. The relevance of the psyche in relation to architectural patterns has been demonstrated through historical and cultural analyses of architecture to which Alexander and Bachelard have greatly contributed.

The influence of natural elements, like that of architecture, not only affects our physical world, but also exerts force within the interior of our consciousness. The qualities of earth and water penetrate our physical senses and cross over to the psyche with sublime images of both their generative and fatal aspects. How is this possible? Carl Jung described this phenomenon as an inherent component of the relationship between the collective unconscious and its archetypes. Jung explains:

> A more or less superficial layer of the unconscious is undoubtedly personal. I call it the *personal unconscious*. But this personal unconscious rests upon a deeper layer, which does not derive from personal experience and is not a personal acquisition but is inborn. This deeper layer I call the *collective unconscious*. . . It is, in other words, identical in all men and thus constitutes a common psychic substrate of a suprapersonal nature which is present in every one of us. (Jung 1990, 3)

Jung goes on to comment upon the contents of the collective unconscious, referred to as archetypes:

> "Archetype" is an explanatory paraphrase of the Platonic εἶδος. For our purposes this term is apposite and helpful, because it tells us that so far as the collective unconscious contents are concerned we are dealing with archaic or--I would say--primordial types, that is, with universal images that have existed since the remotest times. (Jung 1990, 4-5)

> An archetype means a *typos* [imprint], a definite grouping of archaic character containing, in form as well as in meaning, *mythological motifs*. (Jung 1968, 41)

Jung makes the point that tribal lore, myth, and fairytale represent an alteration of the archetype as it is pulled into human consciousness and transmitted according to custom.

Nonetheless, such teachings "contain a revealed knowledge that was originally hidden, and they set forth the secrets of the soul in glorious images" (Jung 1990, 7). The cave is a symbol of the Mother archetype.

> Down to our day, the feminine vessel character, originally of the cave, later of the house (the sense of being inside, of being sheltered, protected, and warmed in the house), has always borne a relation to the original containment in the womb. (Neumann 1974, 137)

Jung stresses that "all these symbols can have a positive, favourable meaning or a negative, evil meaning" (Jung 1990, 81). Indeed, the cave is not confined by one image or explanation.

> Thus the womb of the earth becomes the deadly devouring maw of the underworld, and beside the fecundated womb and the protecting cave of earth and mountain gapes the abyss of hell, the dark hole of the depths, the devouring womb of the grave and of death, of darkness without light, of nothingness. . . This Terrible Mother is the hungry earth . . . (Neumann 1974, 149)

The cave as vessel is also seen as a crucible of transformation. Jung references this meaning in the description of the Eighteenth Sura of the Koran, referred to as "The Cave."

> The cave is a place of rebirth, that secret cavity in which one is shut up in order to be incubated and renewed. . .Anyone who gets into that cave, that is to say into the cave which everyone has in himself, or into the darkness that lies behind consciousness, will find himself involved in an--at first--unconscious process of transformation. By penetrating into the unconscious he makes a connection with his unconscious contents. This may result in a momentous change of personality in the positive or negative sense. The transformation is often interpreted as a prolongation of the natural span of life or as an earnest of immortality. The former is the case with many alchemists, notably Paracelsus, and the latter is exemplified in the Eleusinian mysteries. (Jung 1990, 135-36).

Neumann enumerates the means of psychological and spiritual transformation which is in essence a "returning to the Mother Vessel, whether this be earth, water, underworld, urn, coffin, cave, mountain, ship, or magic caldron" (Neumann 1974, 291-92).

> . . . rebirth can occur through sleep in the nocturnal cave, through a descent to the underworld realm of the spirits and ancestors, through a journey over the night sea, or through a stupor induced by whatever means--but in every case, renewal is possible only through the death of the old personality. (Neumann 1974, 292)

The death of outmoded portions of the personality is inherent in the quest for wisdom and growth. This may be accomplished through the guide of religion or philosophy. The Allegory of the Cave in Plato's Republic echoes the mythological function of the cave as an archetypal symbol.

> Plato's allegory compares the passage of life to the sojourn in a natural cavern, from which the spirit emerges from the sensible world of illusion to the intelligible world--from the lowest state of unenlightenment to the knowledge of the Good. (Miller 1977, 177)

The emergence from ignorance necessitates a journey into a form of darkness, that of our own ignorance, for truth to reveal its essence in the daylight of consciousness. This crossing is amply studied within the field of depth psychology, philosophy, and spiritual teachings where it is often communicated through the metaphor of the cave. Jung aptly states:

> Another variation of the Hero and the Dragon is . . . the Descent into the Cave, the Nekyia. You remember in the Odyssey where Ulysses descends *ad inferos* to consult Tiresias, the seer. This motif of the Nekyia is found everywhere in antiquity and practically all over the world. It expresses the psychological mechanism of introversion of the conscious mind into the deeper layers of the unconscious psyche. (Jung 1968, 41)

Literature also conveys the significance of the cave motif. For example, the romance, "Hypnertomachia Poliphili" by Francesco Colonna, is full of references to nymphs, nymphaea, automata, and the underworld. This story was published in Venice at the turn of the sixteenth century and may have influenced the revival of ancient nymphaea during the Renaissance (Miller 1982, 35-36). The protagonist is thus described:

> Colonna's hero [Poliphilus] encounters the Mother of All Things, watering with her breasts a verdant landscape, only after he has emerged from an obscure cavern [one of fear, darkness, and dread]. . . whose labyrinthine ways remind him of the labors of Daedalus, Psyche, or the hero of Apuleius' "Metamorphoses." What he undergoes is an initiation, one that takes him in progressive states through the realm of the senses to the cosmic garden of Venus herself. This penetration into the fecund source of Nature leads Poliphilus to a discovery of his own true nature . . . Poliphilus is rewarded with the love of the nymph Polia – the image of himself whom he loves but has not hitherto possessed . . . (Comito 1978, 165)

Jung affirms that the passage of the psyche to the dark realms, involves suffering, but the reward is an unprecedented expansion of awareness. It is owing to this increase of consciousness that the descent into the cave becomes oceanic, of the waters, in essence, uterine.

> The meeting with oneself is, at first, the meeting with one's own shadow. The shadow is a tight passage, a narrow door, whose painful constriction no one is spared who goes down to the deep well. But one must learn to know oneself in order to know who one is. For what comes after the door is, surprisingly enough, a boundless expanse full of unprecedented uncertainty, with apparently no inside and no outside, no above and no below, no here and no there, no mine and thine, no good and no bad. It is the world of water, where all life floats in suspension; where the realm of the sympathetic system, the soul of everything living, begins . . . (Jung 1990, 21-22)

In looking at the concept of the underworld, there arises a complexity for there are many underworlds, not simply one. James Hillman is careful in his effort to distinguish between the underworld (*chthōn*) and the underground (*gē*) (Hillman 1979, 35). In referring to the chthon, Hillman states "This kind of deep ground is not the same as the dark earth" (Hillman 1979, 35). He goes on to say "The two worlds of *gē* and *chthōn* imply two worlds, the first of the earth and in it, the second below the earth and beyond it" (Hillman 1979, 36). Hillman then describes a more layered vision of this model:

> There are even three distinctions here which have been imagined as levels of earth: an earthed imagination in keeping with Ge herself, whose name we still find in ge-ography, ge-ology, and ge-ometry. The first of these distinctions is between Demeter's horizontal green plain with its activities of growth and Ge, the earth below Demeter. The second level, Ge, may be imagined as the physical and psychic ground of an individual or community, its 'place on earth,' with its natural rights, rituals, and laws. . .and then beneath these the third, chthon, the depths, the dead's world. (Hillman 1979, 36)

This third level is a nonphysical earth which lies below or beyond the earth we know in normal consciousness. The chthon is the realm of Hades, the deity who is invisible to our common understanding and leaves no suggestion of his presence on the surface world (Hillman 1979, 27-28). "Hades is not an absence, but a hidden presence--even an invisible fullness…Hades hides

invisibly in things" (Hillman 1979, 28). The realm of this god is an immaterial kingdom, in essence, a psychological territory (Hillman 1979, 30). The third level is thus:

> . . . [a] realm . . . conceived as the final end of each soul, Hades is the final cause, the purpose, the very telos of every soul and every soul process. If so, then all psychic events have a Hades aspect, and not merely the sadistic or destructive events that Freud attributed to Thanatos. All soul processes, everything in the psyche, moves towards Hades. . . Everything would become deeper, moving from the visible connections to the invisible ones . . . (Hillman 1979, 30)

In another passage, Hillman explains:

> The volatilization of the underworld contrasts it sharply with the ground under our feet. In the Alexandrian age, the netherworld lost its localization in the earth altogether--that is, it became free of natural literalism--and was geographically transposed to the underside of the world. . . The word subterranean (*hypogeios,* or "below ge") referred to the whole celestial hemisphere curved below our earth and which, like Hades, must necessarily be invisible from our perspective. It cannot be seen from our usual standpoint. Already then the dayworld and the nightworld, the two sides of the romantic soul, were conceived in a geographical theology of upperworld and netherworld. (Hillman 1979, 39)

The descent to the nether regions has been cited in literature and myth since antiquity through the present day. Explorations of the nekyia phenomenon continue, a recent study focusing on Modernist authors of the early twentieth century (Smith 2001, 7).

> The Modernist underworld can be seen as an ancestral crypt, an inferno, a temenos (i.e., a sacred site of initiatory transformation), or as a cornucopia . . . .
> . . . or granary, where the seed forms of the archetypal imagination are stored. (Smith 2001, 7,11)

Indeed, there are a multitude of underworlds and symbols pertaining to them, both physical and psychological. Subterranean chambers evoke these manifold representations of life below the surface, including the House of Hades. Undergrounds, that of Ge, include an endless array of domestic undergrounds in the form of cellars and basements, municipal transportation tubes and service ducts, metaphorical routes of escape, shelters for apocalyptic events, and finally the bone yards of past civilizations buried underneath our current habitations (Lesser

1987). What lies below exists in the jurisdiction of both science and myth. It is the tension between these two disciplines that allows the grotto to be a threshold for theoretical speculation. The grotto as cave as underworld exists both in physical and non-physical terms. It is from this wealth of meaning that possibilities for the grotto as a landscape element in post-modern societies may flourish.

The grotto as cave bears references as protective shelter, elemental home, temple, tomb, and transformational vessel. Grottoes join the inspirational waters of holy springs with the earth's underbelly where repose is found and adventures commence. The grotto cave is a place of renewal, a passage of metamorphosis, and a subversive underworld. Ancient literature attests to these functions. The poets wrote of caves as homes of deities as well as monsters and as sites of both leisure and horror:

> Aeneas' men were exhausted. They made for the nearest
> shore, changing course for the Libyan coastline.
> There in a deep lagoon was a place like a harbor,
> formed by an island's barriers. The surf was divided,
> broken here and there into ripple and eddy.
> On either side were high rocks menacing heaven-
> paired cliffs—the sea was quiet and harmless
> under their broad crowns. The heights were a picture of trembling
> leaves, darkly hanging trees and bristling shadow.
> Facing a cliff was a cave with stalactites hanging
> inside, a freshwater pool, and couches of living
> rock where Nymphs rested. (Virgil 1.157-168)

> Deep inside she sang, the goddess Calypso, lifting
> her breathtaking voice as she glided back and forth
> before her loom, her golden shuttle weaving.
> Thick, luxuriant woods grew round the cave,
> alders and black poplars, pungent cypress too,
> and there birds roosted, folding their long wings,
> owls and hawks and the spread-beaked ravens of the sea,
> black skimmers who make their living off the waves.
> And round the mouth of the cavern trailed a vine
> laden with clusters, bursting with ripe grapes.
> Four springs in a row, bubbling clear and cold,

> running side-by-side, took channels left and right.
> Soft meadows spreading round were starred with violets,
> lush with beds of parsley. Why, even a deathless god
> who came upon that place would gaze in wonder,
> heart entranced with pleasure. (Homer 5.68-83)

> At the harbor's head a branching olive stands
> with a welcome cave nearby it, dank with sea-mist,
> sacred to nymphs of the springs we call the Naiads.
> There are mixing-bowls inside and double-handled jars,
> crafted of stone, and bees store up their honey in the hollows.
> There are long stone looms as well, where the nymphs weave out
> their webs from clouds of sea-blue wool—a marvelous sight—
> and a wellspring flows forever. The cave has two ways in,
> one facing the North Wind, a pathway down for mortals;
> the other, facing the South, belongs to the gods,
> no man may go that way…
> it is the path for all the deathless powers. (Homer 13.115-126)

> With all that done they quickly followed the Sibyl's
> command: by a deep cave with enormous and jagged
> mouth, hoarded by oil-black pools and a nighttime of forest,
> where hardly a single bird could navigate safely
> or fly overhead—such was the vapor that seeped from
> the dark mouth and rose to the dome of the heavens
> Greeks called the place Aornos, "The Birdless." (Virgil 6.236-242)

The last quote denotes mantic powers that are frequently linked with grotto caves in antiquity, for prophecy is correlated with caverns as it is with water sources and the feminine archetype.

> Thus the woman is the original seeress, the lady of the wisdom-bringing waters of the depths, of the murmuring springs and fountains, for the original utterance of seerdom is the language of water. (Neumann 1974, 296)

The relationship between water and inspiration as a gift from the Muses was indeed celebrated in antiquity as well as during the Renaissance as part of grotto design and function. In fact, artificial grottoes were sometimes called 'musaea' by the Greeks which originally referred to grotto inspired shrines sacred to the Muses (Alvarez 1981, 12). The verses of Propertius and Martial heralded the grotto springs as inspirational fonts touched by the Muses where one's imagination could gain sustenance (Miller 1982, 27-28). Sculptural representations of Apollo

and the Muses were prolific at grotto sites during the Renaissance period, a mark of acceptance of the relationship between grottoes and poetic tranquility. The Muses also imparted wisdom; hence the association of the grotto with philosophical discourse and learning is generated.

> Homer calls on them [Muses] because they bestow Inspiration and know all things, while Virgil begs from the Muses, not the gift of poetry but the knowledge of cosmic laws. The Muses possess the knowledge which conquers the fear of death and the underworld. (Miller 1977, 204)

It is the affiliation with the Muses and nymphs which bond the grotto cavern to water, even when water is absent from the design, a characteristic which became common in the twentieth century. Water, like the earth, is a symbolic substance as much as a physical element. This may be observed through the arts of antiquity to the present-day genre of film. For instance, Van Leeuwen comments on the relationship between water and primeval themes while explicating how the pool, as a vessel for water, is portrayed in the cinema:

> The theme of Eros and Thanatos, of love--particularly carnal love--and death, is as old as the world. Its double-sidedness, effectively coupled to the similar ambiguity of water, has been thoroughly exploited by the moviemakers. On the one hand there is the erotic, life-giving element [of water], on the other the equally erotic but life-taking element. Bachelard observed that when man feels himself attracted to water, he will soon find himself in a state of vertigo. . . In the movies, at least, there is hardly a pool to be found that is not intrinsically connected to death and love. (1999, 156)

Grotto pools are loci for insight, while remaining places of mystery where the abyss of generative and mortal forces is envisaged. The primary acts of life are often consecrated by water and it is the power of this element in its emblematic aspect that further imparts allegorical significance to the grotto.

Water and earth are deified in the grotto sanctuary for "the fertility of the earth goes hand in hand with the creative powers of water" (Szafranska 1989, 79). The connection between these two elements has always been present within the course of the grotto's evolution. Although this association lingered, its connotation, as well as its architectural form and style of decorative

embellishment, underwent numerous modifications through time as attested by the grotto design chronology presented in the previous chapters.

The Grotto as Ambiguous Space

The challenge of contemporary grotto construction, like post-modern architecture in general, is to reference history but not to diminish innovation. The grotto form remains a viable architectural and landscape element. The challenge is to create context and engender meaning for the success of twenty-first century designs. What function could the grotto serve in the new millennium? Subterranean architecture provides an underpinning for environmental, economic, and aesthetic considerations. The history of grotto design itself demonstrates the tenacity of its appeal and the ability of the grotto to change through time, but also details its capacity to retain a basic integrity. Fundamental aspects remain including reference to the elements of earth and water within the grotto's structure that incorporates architecture and the surrounding landscape. The grotto is simultaneously a place that can be experienced as a retreat as well as a social enclave. It is not condemned to be a whimsical fancy of the economic elite, but could become a model of sustainable design suited for a variety of purposes.

The ambiguity of its form and meaning provides infinite possibilities for designers. The grotto fascinates precisely because of its indistinct boundaries between "outside and inside, between reality and illusion, between nature and art" (Miller 1982, 123). The sense of remoteness and elusiveness give rise to various fantasies of the grotto's function. The plasticity of material and the proposal of infinity within the grotto's shadowy chambers likewise provoke the imagination. The grotto presents challenges for the designer at every level from form to

function to décor. It is the premise of this research to demonstrate that the grotto is a legitimate landscape element worthy of investigation for future use.

In looking towards the future, guiding principles for grotto design should refer to essential qualities that have endured through its evolution. The inherent ambiguities can provide a design focus for a grotto's form, meaning, and purpose. It is precisely the cusp between the elementary dichotomies found in grotto design that make it a fascinating design element. The grotto is ultimately a site of fusion, making an evaluation of the divisions which create the fluidity of a grotto's interpretation indispensable in an effort to produce a catalyst for ideas related to physical structure and function. Although meaning cannot be dictated, the richness of significance attached to the grotto will most likely persist in contemporary societies given its depth of psychological connotations.

To emphasize the possibility of using the grotto as a vessel of ambiguity, a chart (Table 8-1) has been generated to address the relationships between the grotto as an architectural type and psychological symbol and how this is related to the form, meaning, and purpose of grotto construction. This chart was created through a series of steps, the first of which involved a careful review of each chapter to find terms which represented inherent polarities of grotto design and production from antiquity to the present day. A table was then established based on the original thesis statement that proposed an analysis of grottoes according to form, meaning, and purpose. The table was also fashioned upon the research provided by this chapter regarding the subject of the cave which ultimately produced a total of six categories as indicated by the rows and columns of the chart. These six categories provided the means by which each dichotomy was evaluated and then placed.

It should be emphasized that the dichotomies simultaneously represent divergence and conjunction. The chart is meant to accentuate juxtaposition and imply relationships based on a gradient rather than underscoring a mutual exclusion of terms. Primary dichotomies revealed by the chart such as architecture and landscape, art and nature, interior and exterior, and water and earth would be incorporated into every grotto design. Other categories would be integrated as needed and desired. The chart represents an endless variety of characteristics for present-day structures while maintaining the grotto's deep-rooted attributes that have survived since classical antiquity.

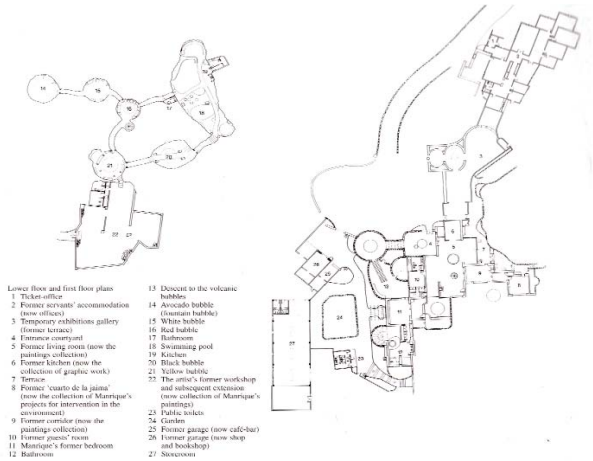
The dichotomies do not dictate specifics, but lend a theoretical groundwork for twenty-first century designs. The range of interpretation is indeterminate between the divisions which indicate a stunning potential for contemporaneous models. Through an analysis of the dichotomies and the interface that links them, a kaleidoscope of opportunity unfolds for the designer. A grotto's emphasis should be decided upon and pursued through the primary categories of architecture, landscape, nature, art, inside, outside, cave, and sea. Rather than proposing defined limits, this thesis suggests the bases that will allow the custom to persevere.

The revival and reinvention of the grotto is obliged to look at historical antecedents, but then ought to reappear in new guise for it to properly seduce and transform. The grotto has yet to make a significant reappearance within the field of landscape architecture yet times past confirm that its existence and evolution represent an important facet of environmental design. The dichotomies chart organizes the vital traits that have marked the grotto with the intention of advising designers on matters that may hopefully lead to novel and fresh approaches. It is through originality based on the veracity emanating from tradition that the grotto will re-emerge as an important subterranean landscape component. Eclecticism will most likely prevail as it did

in the twentieth century and it is through the phenomena of collection that the grotto's story continues.

Table 8-1: Dichotomies of the Grotto

	Form		Meaning		Purpose	
Architectural Type	Architecture	Landscape	Science	Myth	Sacred spring	Municipal water source
	Interior	Exterior	Ordinary	Fantastic	Decorative	Utilitarian
	Natural Formation	Artifice	Order	Chaos	Sanctuary	Pleasure ground / garden
	Sea	Cave	Familiar	Strange	Whimsical fancy	Sustainable design model
	Chamber	Passage	Tangible	Elusive	Social enclave	Retreat
	Architectural (classical)	Naturalistic (rustic)	Protection	Subversion of Safety	Leisure	Labor
	Beautiful	Grotesque				
	Accessible	Remote				
	Discloses	Obscures				
Psychological Symbol	Art	Nature	Illusion	Reality	Sacred	Profane
	Water	Earth	Divine	Earthly	Portal	Destination
	Within	Without	Beginning (birth)	End (death)	Festivity	Contemplation
	Above	Below	Attraction	Repulsion	Extroversion	Introversion
	Womb	Crypt	Safety	Danger		
	Bounded	Infinite	Knowledge	Ignorance		
	Reveals	Conceals	Paradise (pleasure)	Hell (suffering)		
			Integration (being)	Initiation (becoming)		
			Ge (underground)	Chthon (underworld)		
			Renewal	Stagnation		



Lower floor and first floor plans
1 Ticket-office
2 Former servants' accommodation (now offices)
3 Temporary exhibitions gallery (former terrace)
4 Entrance courtyard
5 Former living room (now the paintings collection)
6 Former kitchen (now the collection of graphic work)
7 Terrace
8 Former 'cuarto de la jaima' (now the collection of Manrique's projects for intervention in the environment)
9 Former corridor (now the paintings collection)
10 Former guests' room
11 Manrique's former bedroom
12 Bathroom
13 Descent to the volcanic bubbles
14 Avocado bubble (fountain bubble)
15 White bubble
16 Red bubble
17 Bathroom
18 Swimming pool
19 Kitchen
20 Black bubble
21 Yellow bubble
22 The artist's former workshop and subsequent extension (now collection of Manrique's paintings)
23 Public toilets
24 Garden
25 Former garage (now café-bar)
26 Former garage (now shop and bookshop)
27 Storeroom

Fig. 8-1: Plan of the House and studio of César Manrique, Lanzarote, Spain (Galfetti 1999, 168)

Fig. 8-2: House and studio of César Manrique, Red Bubble, Lanzarote, Spain (Galfetti 1999, 175)

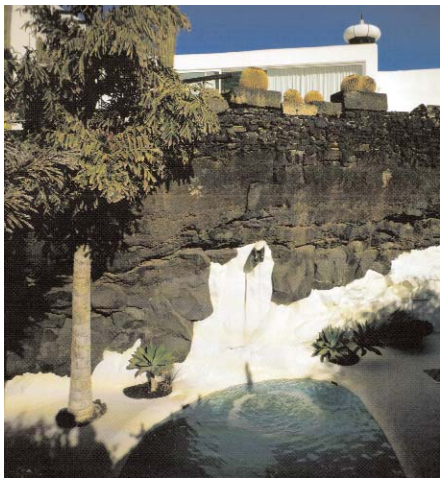


Fig. 8-3: House and studio of César Manrique, View of the swimming pool and volcanic wall, Lanzarote, Spain (Galfetti 1999, 171)

Fig. 8-4: House and studio of César Manrique, White Bubble, Lanzarote, Spain (Galfetti 1999, 172)

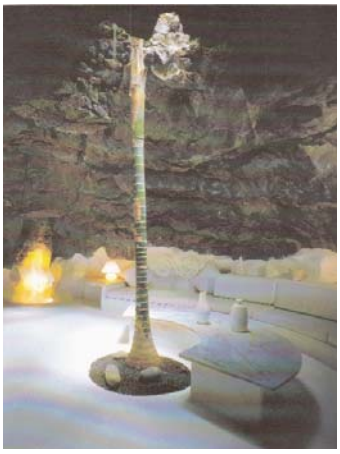


Fig. 8-5: House and studio of César Manrique, White Bubble, Lanzarote, Spain (Galfetti 1999,

Fig. 8-6: Villa of Prince Vittorio Emmanuel and Princess Marina Doria, View of the transitable

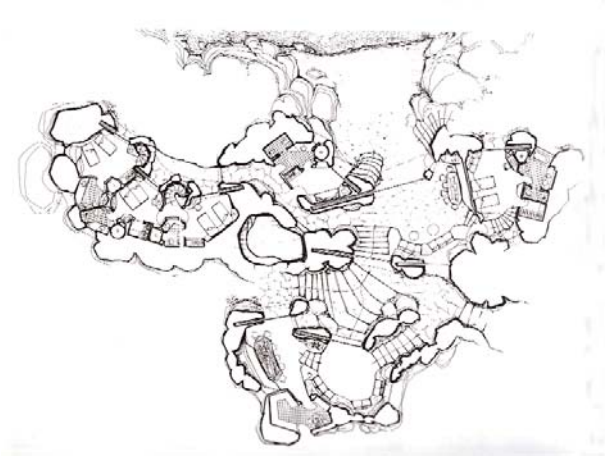


Fig. 8-7: Plan of the Villa of Prince Vittorio Emmanuel and Princess Marina Doria, Cavello, Italy (Galfetti 1999, 178)

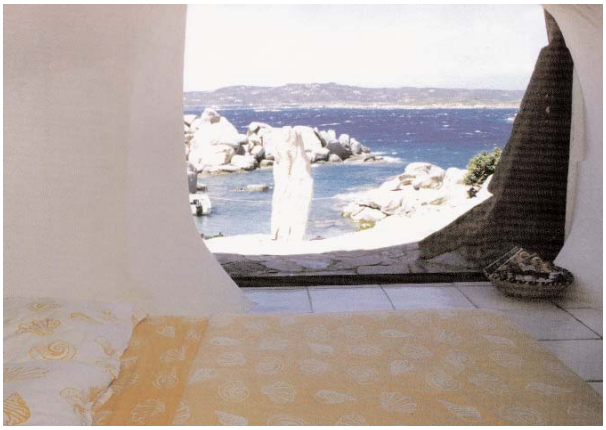


Fig. 8-8: Villa of Prince Vittorio Emmanuel and Princess Marina Doria Interior, Cavello, Italy (Galfetti 1999, 181)

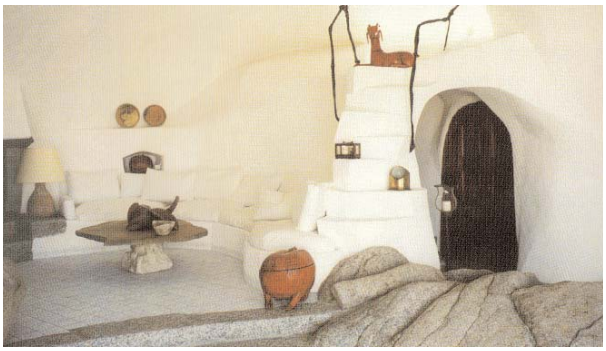


Fig. 8-9: Villa of Prince Vittorio Emmanuel and Princess Marina Doria Interior, Cavello, Italy (Galfetti 1999, 188)

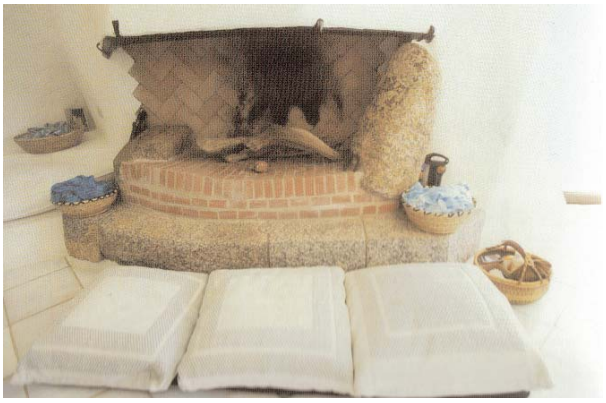


Fig. 8-10: Villa of Prince Vittorio Emmanuel and Princess Marina Doria Interior, Cavello, Italy (Galfetti 1999, 188)

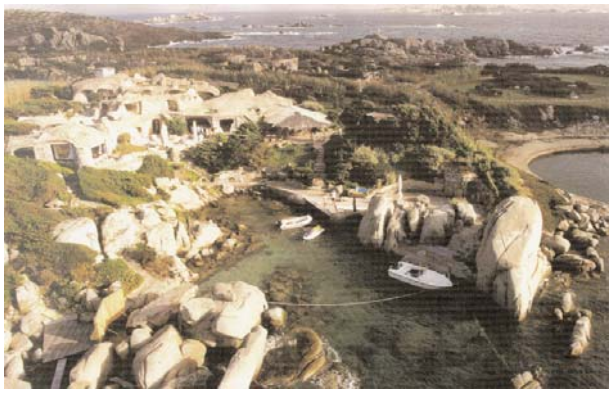


Fig. 8-11: Villa of Prince Vittorio Emmanuel and Princess Marina Doria, View from the sea, Cavello, Italy (Galfetti 1999, 179)

Fig. 8-12: Haw Par Villa Tiger Balm Gardens, Primitive cave replication, China (Galfetti 1999, 119)

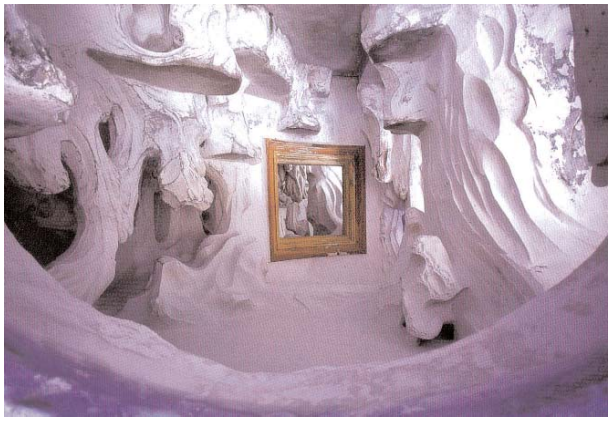


Fig. 8-13: Haw Par Villa Tiger Balm Gardens, Primitive cave replication detail, China (Galfetti 1999, 118)

Fig. 8-14: Haw Par Villa Tiger Balm Gardens, Primitive cave replication detail, China (Galfetti 1999, 118)

CHAPTER 9

GROTTOES FOR THE NEW MILLENNIUM

The Grotto as Story

Grottoes provide an allegory for a descent or journey to another perspective from the common everyday world of thought. The grotto as cave is ultimately a symbol representing a passage of metamorphosis where we are held in safety while simultaneously being stripped of ordinary understandings of ourselves and the world in which we live. This process is sacred in that it transcends the past and offers a new prospect for living and relating to life. It requires relinquishment of our attachments, whatever they may be, so that our intellectual and emotional capacities will be able to expand to a wider awareness. This process is true for individuals as well as communities, since it is a path of human development. With these thoughts in mind, three stories will be proposed that illustrate the grotto as a passage and crucible for transformation. The stories involve the progression through seven thresholds or gateways in which the subject is asked to address the inherent dichotomies of the grotto which also signify basic dualities within existence. This process of entering and moving through the grotto necessitates a surrender of outmoded thoughts and behaviors, and their attendant suffering, but ultimately provides an opportunity for growth.

The three vignettes are comprised of a subject and seven thresholds through which the protagonist passes in the course of a journey. The subjects, the thresholds, and the nature of the change which occurs, vary within each story. What remains consistent is that the grotto provides

the vessel for each descent and the attendant dichotomies of the grotto comprise the thresholds through which the subject passes during a process of change. The result is a design; a consequence of moving across the thresholds into a new awareness. Each design is a conceptual piece created within the parameters of a written vignette and collage of visual images.

The Grotto Beckons

He is simply himself, an everyday man in an ordinary world. Moving from home to work to play, he spends his time on customary pursuits. His name is familiar as is his dress, his manner, and his associates. Nothing exceptional but the inner pull felt in his belly to begin the unconventional. So the lure of the unfamiliar becomes a pastime and with this interest, he is pressed up against an opportunity for more than he has hitherto become. The first gate appears before his consciousness, that of attraction and repulsion. He is drawn to enter, but is also repelled by the possibility for change. This leads to a fight between two impulses; to go or stay within his established shell of being. He finds himself in his basement, the cellar grotto of his dreams. Caught within his contradictory desires, he is divided within by the force of his attraction to the familiar that somehow allows his repulsion to the strange to continue to exist. A day comes where he decides not to emerge from the basement until the business is through, this tug of war within that furnishes a mild, but pervasive discomfort. He dares to risk as he passes through the first door only to be required to look again at the next gate.

The second gate is more defined than the first. He is getting the idea that this is going to be more difficult than he ever imagined. The door is locked in the face of his doubt. The threshold is giving him the choice between protection and the subversion of safety. It is a warning that to go further is not merely a diversion, but a commitment that he cannot abandon if he chooses to continue. The second gate is harder than the first, for he was fed by bravado when

he walked through the first entrance, but the second gives him reason to ponder. He hesitates with the realization that if he opens this second gate, he will be doing the irreparable. How can he go on, but, then, how can he stop? He realizes that either way, he cannot go back to the beginning. So, he pushes forth knowing that all bets are off. There are no guarantees except that none will be the same as before. He has entered the process of initiation where the cellar walls begin to enclose his being in the posture of a sentinel. Yet another gate rises and he sees that the voyage has just begun.

The third gate demands that he gives up his knowledge of the past and enter the realm of ignorance. This is the first test of the initiate once the commitment to endure transformation has been made. He says yes, what else is there to do, but then the consequence of this thought moves him to the fourth gate. This one bears the burden of the choice between pleasure and suffering. He is obliged to forgo pleasure and encounter suffering in this descent. The suffering entails looking into the mirror of his making, provided by the interior pools of the cellar chamber. To see beyond the mask of the acceptable to what lies beneath and assume responsibility for the found. The cellar is the world of true shadow now; the murky recesses are strong and threatening. He drops to the floor, not knowing if he can go on with the task. It asks too much he fears, but already he is halfway in, so what prospect of return exists either way? He crawls to the fifth gate and here he is offered strength to continue.

The fifth gate marks what is sacred and profane. He is asked to let the profane aspects of existence fall away so that the sacred is awakened from which he can garner strength. He cannot keep on this path without opening to the divine within himself. To see only the dark is to remain separated from the light, so he is requested to surrender to the greatness within himself and let this be his guide. So he allows this transfer of power within himself. It is easier than he believed

and yet this step takes the longest for he must release his pride and find another way to advance his purpose. It is only when he has done so, that the sixth gate comes into view.

The sixth gate is one of discernment. It is the threshold that divides illusion from reality. With the potency of divine understanding, he sees life for what it is and lets the distortions fall from vision. They glide unto the cellar floor where they filter into the purifying waters of those ever-mysterious pools. It is at this point that he begins to realize that re-emergence is not only possible, but an essential part of the commitment to living a vibrant life.

The seventh and final gate is the one that stands between initiation and integration. It is where the remnants of stagnation are cleared so that renewal is experienced. It ushers the process of re-emergence where the crossing that originated within the inner recesses of one's being starts to extend outwards into the community. From the introverted procedures of reflection to the extraverted attempts of reaching out to another, the journey brings one back into life, but from a standpoint not attained until now. The cellar is no longer just the basement and he is not who he was when he stood at the threshold of the first gate. He is more himself and less the shell of what he supposed himself to be.

He finds himself in the downstairs of his house and as he climbs the stairs, he thinks that where he has been should be honored just as where he is now should be claimed. It occurs to him that he was held in what felt like a womb-like basin, where he touched the deeper parts of himself that still border the realms of secrecy. He vows to keep such a sanctuary as this in his home, a mark of earthly and divine inspiration. As he ascends the stairs, it comes to his mind that he will create a small temple within the walls of where he sleeps and dreams. It will hold personal things of value and will suggest glimpses of what is not yet known. It isn't a religious shrine, but it speaks to that part of him that is wider than his preconceptions. It is the bigness of

himself that he wants to show and praise, not through a false sense of pride, but in the knowing that his inner parts are what allows an extension outside himself to others. It is precisely this transfer within the personality that makes the ordinary into the fantastic possible.

A Designer's Paradise

She has worked for a few years doing what she does according to what she has learned and what others tell her to do. She wants to design and she does well enough to be employed by someone who values her competence. She has been offered a new project, a restoration of an old garden, which pleases her abilities for this venture will challenge her skill in novel ways. The work is about to commence and she finds herself pouring over studies of garden plans and details from long ago in preparation for her contribution. The day comes when she embarks on the project and she is quickly drawn to what others consider the estate's ultimate folly, the grotto cave, built into one of the terraces. It is known that these were expensive garden elements that are usually in a horrible state of disrepair due to damp interiors and vandalism. Yet it is precisely the grotto that calls to her over and over amidst the other garden features. So, she clears her mind and begins the work. The gateway soon appears before her in tantalizing guise.

This first gate entreats her to leave the surface world, that which lies above the deep, and go below into the as yet unfamiliar interior. In typical grotto fashion, the gate is imploring her to enter the hollow. She willingly leaves the surface for the allure of the earth's cavity. Once inside, she begins to observe another gate within the room. This one offers the choice between the grotto as chamber and that of passage. In essence, it is a choice between the solidity of earth and the fluidity of water. She understands that she must pay close attention to the ambiguities if she is to understand the nature of what she is working with. Form, meaning, and purpose are somehow related to the apparent contradictions she is beginning to witness.

Within the form of the cave chamber and sea passage, she starts to perceive spatial qualities. Hence, the third gate offers visions of order and chaos, tangibility and elusiveness, and disclosure and obscurity. She is gaining insight into why she was drawn to a mere garden's folly. The grotto isn't some antiquated charm, but is an inherent richness of possibility lending excitement to the project. The sight of the fourth gate feels anticipatory. This gate exposes the duality between architecture and the landscape. Conceptualized in another way, it is the dichotomy between art and nature. At this gateway she swiftly moves, and as she passes through, she feels the fusion of humanity's will to build and the environs of the earth in a powerful experience of integration. It isn't an either-or conundrum, but the interplay of these often contrary ideals that is essential to grotto design.

The experience of fusion leads directly to the fifth gate, that of ge (underground) and chthon (underworld). She has been taken to a lower depth, for to wrestle with mythological conceptions is normally beyond her breadth of design. Yet the metaphorical wealth of the grotto demands this aspect be addressed if it is going to honor tradition. This is a more difficult threshold to cross, what does she know about the underworld? How can she possibly integrate notions of Hades and suffering into a garden element? Should she even try? Well, if she wants to learn, she figures she better just breathe and walk through the gate.

The sixth gate is more in line with her experience. It encompasses design decisions in the mode of classic issues such as accessibility and remoteness, a sense of boundedness and infinity, as well as concepts of the beautiful and grotesque. As an outcome of the fifth gate, she has better judgment regarding how to base these decisions. Coming from the deep, where the roots dwell, and then ascending to higher ground breeds a wisdom not otherwise discovered.

The final gate, that of the seventh, is ultimately one that speaks to the topic of the grotto's status in landscape history. This gateway presents the dichotomy between the grotto as a whimsical fancy and a sustainable model of design. She realizes that her understanding, gained through a willingness to enter the grotto metaphorically, allows her design approach to sport innovation. Her design concept will be in keeping with current trends in landscape design such as environmental sensitivity, economic feasibility, and multipurpose functionality, but will not lose connection with tradition.

As she returns to the surface world, her thoughts turn not only to the restoration of the estate grotto, but to other work where these principles may be applied. She envisions a grotto-inspired design that will serve as a municipal resource of some sort, whether that be for water or transportation or storage, to name but a few. She glimpses the possibility of implementing a post industrial adaptive re-use strategy with a grotto motif. It becomes obvious that the grotto has much wider implications than a simple garden feature. The grotto as a landscape element can be applied, in principle, to a multitude of design projects. Although she never thought that a grotto could be more than a relic, she now comprehends their potential value. She realizes that the dichotomies found within the grotto may be suited for many design applications. Perhaps the grotto can be that springboard she has been looking for to pitch other ideas within her office.

The Grotto as Community Focus

They gathered to direct their attention on the donated greenspace along the lake that was recently given to the city by a private landowner. So many ideas came to envelop the site, rallying residents to participate in a community design workshop in order to come to agreement for the future of the proposed park. The first meeting came to be and the way it transpired can be related as a succession of doors that opened as everyone contributed to the discussion.

The first door was this idea that the community wanted something that would generate both leisure and labor. They wanted a place for residents to relax, but everyone present believed the community should contribute their time to creating the park. The first door was easy to walk through for all were in agreement. Then the second door appeared and it seemed like the group was approaching a portal, more formidable than an ordinary door, since it was the start of these people working together to create a new public space. There was a sense of the destination and it was this impression of a satisfying end product that helped others to become active from the beginning with enthusiasm and trust.

The third door began to gather excitement because the possibilities of meeting the community needs became the heart of the dialogue. Ideas of the park's purpose carried the discussion. There were suggestions that it become a place of rest and relaxation, some type of sanctuary, while others wanted it to be a setting for parties and large social gatherings with plenty of recreational opportunities. I think the arguments began at this door, but hey, everyone was passionate about it and each voice was given a chance to speak.

The fourth door brought the residents deeper into the design process through exhibiting the elements of earth and water and how their relationship is fundamentally linked to environmental concerns. This got the entire community wondering how to protect the natural resources of the site. Through this door, the fifth emerged. The fifth door was the most theoretical because it presented the themes of science and myth. The nuts and bolts of designing a successful park through proper site planning was allied with an idea that the park will inevitably generate meaning based on metaphor or allusions to other things. Well, some of the community members initially thought that the myth part was just a waste of time, but others believed that the park should convey some intended significance beyond its obvious contribution

to the city's leisure resources. Perhaps this meaning could be a commemoration of something the community valued that would serve as a legacy for future generations. That is when the purpose of the park got into the debate once again. This led to some more heated talk, but then the room became quiet as people thought about what the park could become in the lives of those who call this city home.

The idea of purpose took everyone to the sixth door. This door focused on the actual product of what the residents were creating through the community process work. Was the park just to be a decoration for the city or could it also serve a broader utilitarian function? That was the crux of this step. Purpose and function were the most difficult to address within the community process. It is so important since form and meaning tend to follow suit.

The seventh door finally presented them with the 'end as beginning' theme. The conjunction between the beginning and end in any project remains an indistinct enterprise. The community noticed this aspect of design when they realized that what they had learned by going through each door could be shared with others in the context of the park. It was a cyclical loop based on the notion of education via feedback and adaptability to meet the needs of current and future residents. The community members saw that they had a responsibility not only to have a hand in the construction of the park, but also to remain active in the park's heritage by means of education. It also occurred to them that they initially gathered with an anticipatory enthusiasm that would need nurturance throughout the park's construction and ongoing maintenance. It was therefore decided that an appropriate means to keep interest in the park was to have regular gatherings, celebratory in nature, to foster community pride and connection. The park would host these festivities and would be the first 'activity tradition' for the site.

The community came to use the model of the grotto dichotomies as a way to connect with the design process via group dialogue and participation. At the end of the process, they proposed some basic objectives. They believed that the environmental resources of the site should be emphasized while maximizing recreational space. They also wanted art to be a part of the park through community sculptures and mural projects. It became apparent that the relationship between art and nature was a crucial concern in their desire to create a unique park that was both beautiful and fulfilling as a community resource. The idea of commemoration was also significant to community members. This led to the notion that the park should pay tribute through design to the community's dedication to environmental sustainability, support of the arts, and participatory inclusion of residents.

Interplay of Past and Present

The stories come to conclusion through the process of dichotomous play between selected pairs from the grotto dichotomy chart presented in chapter eight. The first vignette's outcome was that of a domestic sanctuary that would acknowledge the personal transformation of the subject while the second vignette resulted in the idea of a municipal resource design that would incorporate characteristics of historical grottoes. The third vignette's response was that of a commemorative ecological art park for a small city community. All three of these grotto functions, the domestic sanctuary, the municipal resource, and the public shrine, may be linked to the sacred grotto fountain of the Greeks. It is from this antiquarian creation that innovation continues to be generated in relation to grotto design. The stories are representative of ways that the grotto dichotomy chart may be used to craft new roles and forms for the grotto in the twenty-first century. They are meant to provoke thought and discussion surrounding the legitimacy of the grotto and how this landscape element may be integrated into contemporary environments.

Collage

Images are an essential raw material for designs. It is through the potency of visual symbol that we are swayed to reject or support designs, whether architectural or landscape oriented. It is the vibrancy, juxtaposition, and essence of each figure and outline that draws us in or evokes our resistance. In keeping with the idea that the grotto is both an authentic and provocative landscape component, the stories are coupled with a collage of images that propose their respective functions: domestic sanctuary, municipal resource, and public shrine. The suggestion of form is given rather than a rendering of a literal, structural depiction. This is particularly exemplified in the third collage which portrays community process as a means of memorial in the form of a graphic, transitory temple.

Each collage is related to the grotto as a landscape element and as a theoretical springboard for subterranean design. The collages are meant to elicit associations that will nourish the grotto design process for present day constructions. This is accomplished through woven patterns linking what the grotto has been and what it could become since contemplations of the future are as critical as analyses of the past.

Grotto as Sanctuary

This collage represents the conjunction of earth and water in the suggestion of a small interior niche with a vessel of water placed underneath the alcove (Fig. 9-1). In this manner, it is reminiscent of countless domestic and small public shrines found throughout the world in a variety of traditions and is certainly reflective of the ancient grotto sanctuary of the Greeks. The images used in the upper portion of the collage represent the earth through land patterns as seen through aerial photography with the central portion of the niche image taken from photographs of a desert landscape. The lower section emphasizes the depths and fluidity of an oceanic

environment. The diver symbolizes the quest for a more comprehensive awareness of the psyche. An interior figure is placed in the niche, that of an archeological specimen, that provides a reflection of the transpersonal or spiritual aspect of human existence. This shrine is not religious per say, but is certainly a reverential space devoted to the externalization of personal aspirations while bestowing tribute to an individual's past and present. It is a landscape of devotion, designed in miniature, for the benefit of an individual's sense of self and connection to the world.

Grotto as Industry

This collage corresponds to the adaptive re-use of an industrial facility, in this case, a water storage and treatment plant (Fig. 9-2). The idea behind this collage is to illustrate how industrial landscapes most resemble the scale of Renaissance and Baroque nymphaea as well as suggesting the ways in which education and leisure could be incorporated into adaptive re-use design strategies. The images in the collage were taken from actual water facilities in both the United States and Europe. Through these photographs, the similarity of form between industrial architecture and nymphaea from the past are proposed as well as an emphasis on the control of water signified by the giant wheel at the top of the collage. Examples of architectural similarity include structures that resemble niche nymphaea, spillways that mimic impressive water cascades, chamber nymphaea that may be envisioned as triclinia, and potential façade nymphaea as well as the juxtaposition between portal-tunnels and destination chambers. The inclusion of rustication, water features, and decoration through the traditional methods of painting and mosaics could be applied to the architectural fabric of these industrial features thereby alluding to the conventions of grotto design. The function of such a facility could focus on water as a life giving element and the manipulation of this resource through history. Education would perform

the task of linking the past with the present and combining myth with science around the theme of water and its role in human civilization. These sites might serve as museums while also being places for subterranean recreation since the industrial chambers researched for this collage often have a cave-like atmosphere regardless of their actual surface locale. The possibilities for the conversion of industrial facilities into educational facilities and architecturally oriented parks are endless. The collage merely suggests the prospect for joining the history of water engineering with the pleasure that this element has supplied in ways that reference the classical past.

Grotto as Process

The final collage characterizes the process described under the story centering on community design that resulted in a proposal to build a commemorative ecological art park. Rather than referencing the park's form, this collage seeks to represent the design process itself with the idea that such an endeavor is a form of memorial in the spirit that the park hopes to evoke among its users (Fig. 9-3). The background for the collage is an organic form that holds the dichotomies addressed in the third story including the following pairs: leisure/labor, portal/destination, sanctuary/pleasure ground, water/earth, science/myth, decorative/utilitarian, end/beginning. Each of these dichotomies is portrayed through carefully selected visual images, set side by side to show the contrast as well as the blending between each polarity. Words are placed along the outside of the collage to indicate the corresponding dichotomies with an overall effect of unity through movement. This collage offers the essence of process rather than a particular form of shrine. The design of grottoes replicates other design practices and it is the presence of the dichotomies that allow the grotto to extend outwards from its specific history to enter a wider relevance within the field of design.

Thoughts toward the future

Grottoes continue to be an enigmatic facet of the landscape that has survived centuries of revision and even neglect. They are resurrected across varying environments and according to prevailing stylistic inclinations. Grottoes offer a pleasant setting for a range of activities, both individual and communal. Some of their unique contributions as a landscape feature include temperature and humidity regulation given their characteristic subterranean enclosure as well as a general sense of sublimity and wonder. Their penchant for adaptation to the preferences of the builder and demands of the site points to the likelihood of success in the twenty-first century. Most significantly, the grotto's capacity for joining seemingly opposing qualities as outlined in the proposed dichotomies, extend its range of influence to a myriad of design scenarios. The dichotomies simultaneously stress the legitimacy of the grotto as a landscape element while offering a framework for novel design proposals in contemporary times. The grotto remains a beckoning structure that deserves recognition and respect among designers of the landscape. It is the hope of this thesis to further a dialogue between the tradition of grotto construction and the potential for their resurgence in future landscape projects.

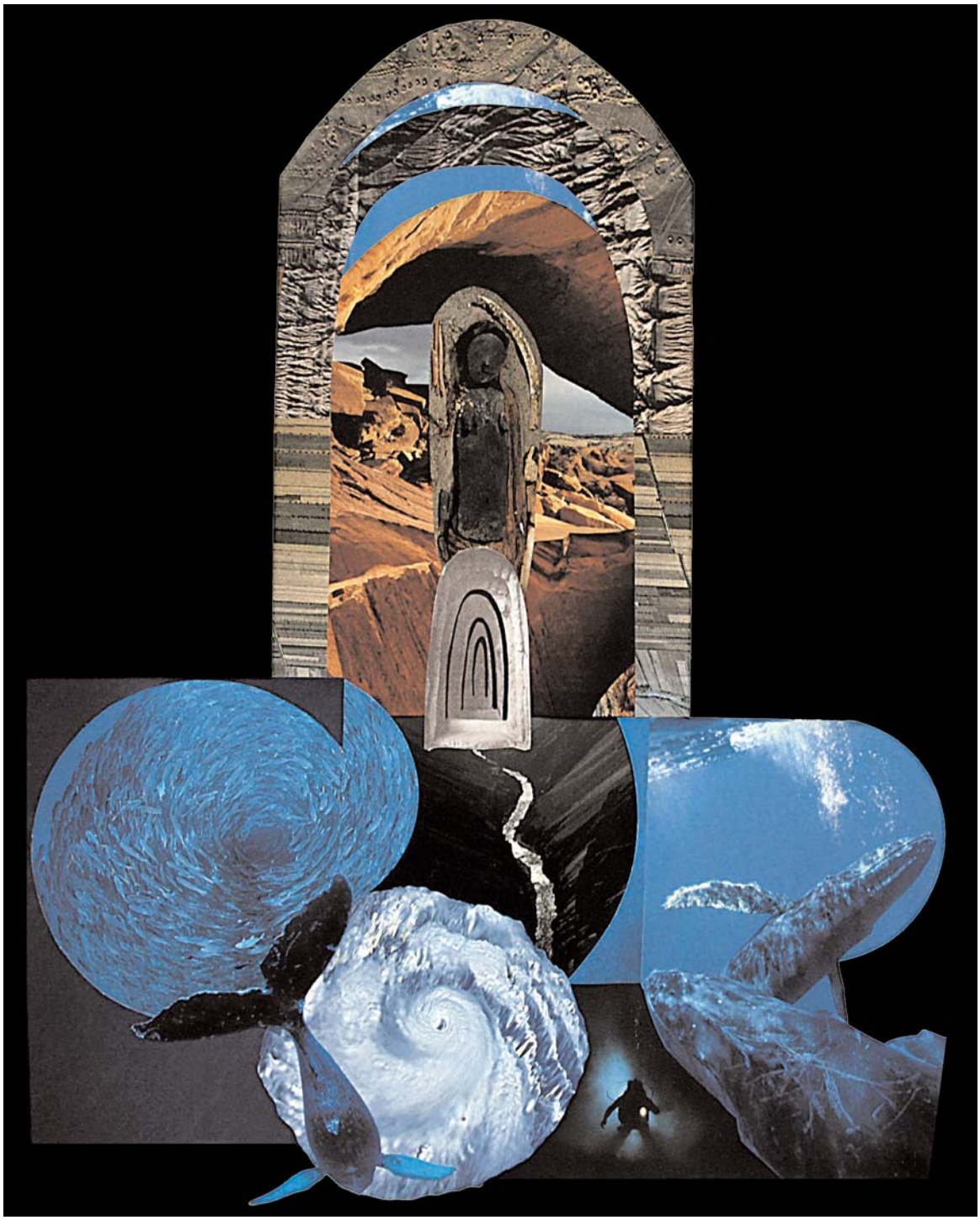


Fig. 9-1: Grotto as Sanctuary

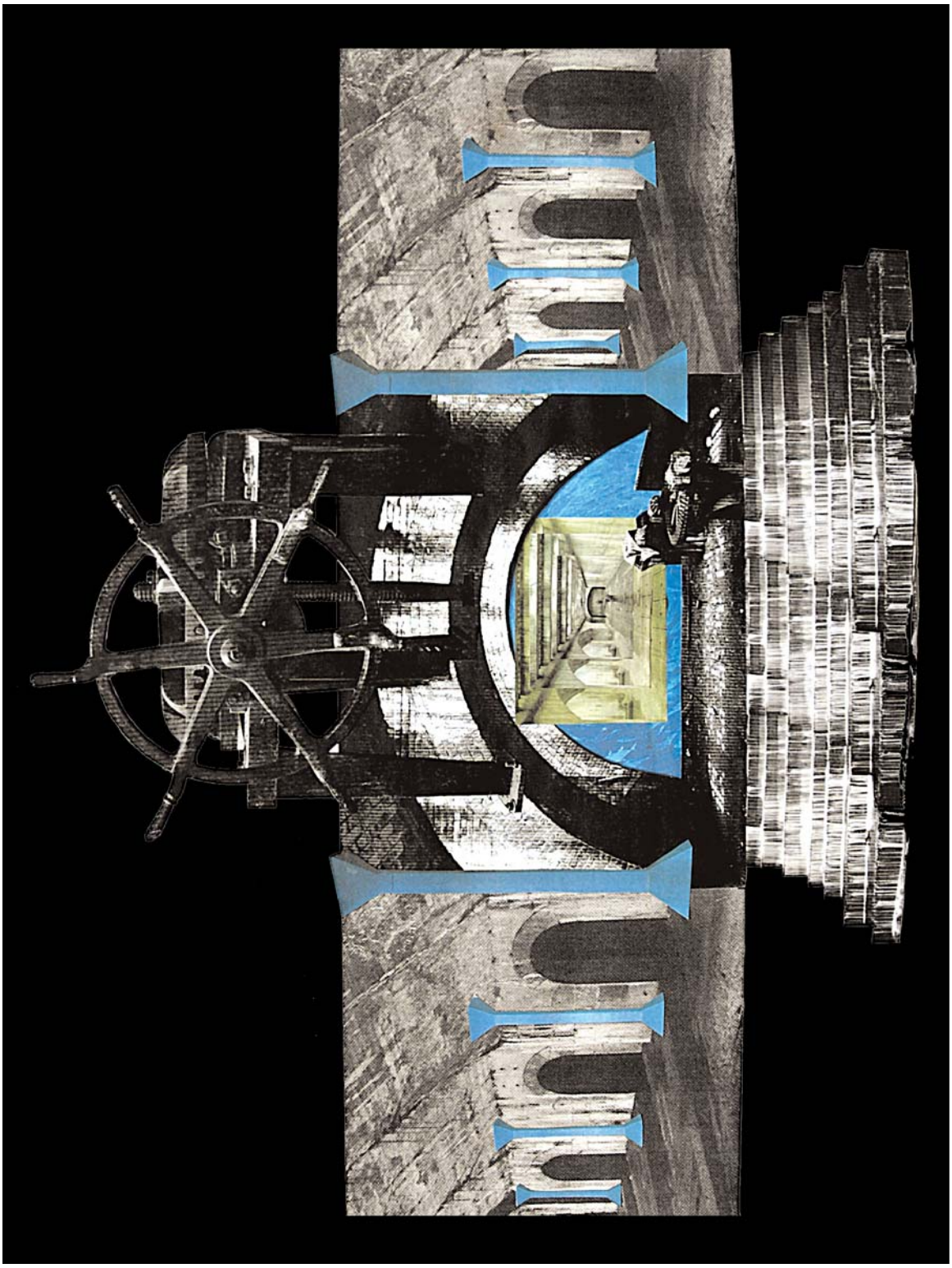


Fig. 9-2: Grotto as Industry

Fig. 9-3: Grotto as Process

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