What's Next?

Interpreting a New Garden Design through an Analysis of Existing Gardens

UCD Landscape Architecture
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What's Next?
Interpreting a New Garden Design Through an Analysis of Existing Gardens

A Senior Project presented to
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University of California Davis
in partial fulfillment of the requirement
for the degree of
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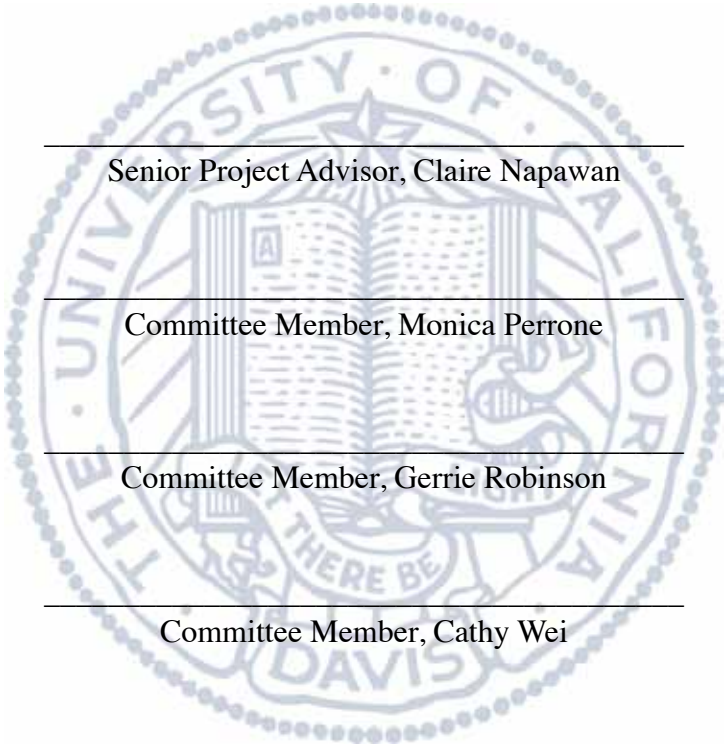
Accepted and Approved by



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Approval

Abstract

Since we cannot look into the future, it is something that we are always interested in. The history of gardens is a very long one, and garden design that has dated back to 2000 A.D. has evolved or changed quite a bit throughout history. While we may not be certain of what the next form of garden design is going to take, we can certainly predict the concept behind the new garden design based on examining the trend that existing gardens have taken.

In this document, I will examine the major gardens present throughout history, starting from the Egyptian Garden to the Contemporary Garden. Many of the gardens that I look at have not disappeared entirely, and have influenced each others' designs. After getting a general idea of the existing gardens, I will examine case studies of successful garden designs for private and public estates as well as a public park. The case studies will serve as better understanding to the different types of gardens that may be present instead of just the traditional general gardens. Lastly, with the analysis of the research portion, I will develop a prediction on a new garden concept and apply it to an actual site. The site was chosen to demonstrate what the new garden may look like, and some perspective drawings are utilized to further understand the spatial construction of the area.

Dedication

I dedicate this project to

My family for supporting me through everything I've done,

My friends for helping me out during tough times

and

Anyone who enjoys gardens.

Acknowledgement

Claire Napawan - for pointing me to the right direction at the very beginning.

Thank you, my committee members for everything you've helped me with.

Monica Perrone - for helping me find a suitable graphics and layout style.

Gerrie Robinson - for lending me your expertise in garden design.

Cathy Wei - for suggestions on design concepts and the encouragement along the way.

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All illustrations produced by author unless specified otherwise.

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Definitions

Garden Element - The materials used in the garden. Can include water, concrete, wood, etc. The elements often represent a different style and even a style from a different time period. An example may be a Chinese Garden and its usage of water and rocks.

Garden Theme - The overall concept that the garden design was based on. An example being a French Garden with its strong axis and formal clipped hedges, showcasing its demonstration of man's domination over nature.

Moon Gate - A circular opening in a garden wall, often present in Chinese Gardens, and used to frame views. The opening while inviting, also acts as a transition into a new space.

Hide and Reveal - A principle used in Japanese Gardens, which involves guiding viewers through a space. When looking in different spaces, the observer will usually find things that are different from a different view. An example being the Japanese dry garden, which places rocks strategically, so only from a certain view is a rock seen.

Kitchen Garden - A type of garden specifically serving kitchen needs. This type of garden often contains edible plants, herbs and maybe even fruit trees.

Fengshui - An ancient Chinese system of aesthetics believed to be governed by laws of both heaven and earth. It is often used to orient structures and buildings.

Allée - A straight route that is lined by trees or shrubs. It traditionally signifies an entrance to a landscape. It is one of the oldest features in the history of gardens. (Turner 2004)

Patte d'oie - Literally means goose foot, it is a feature present in French Gardens where three or five straight allées spreading outward from a single point.

Parterres - A feature found in formal gardens, consisting of tightly clipped hedges and planting beds in symmetric shapes.

Preface

When people think about landscape architecture, often times they think about gardens, courtyards, parks or backyards. My focus will be on gardens, because I feel that they are sites that most people can relate to at some point in their lives. Having spent my early childhood in urban Hong Kong, there were not many gardens around, yet I was lucky enough that my grandparent's house had its own garden. While this was a small garden, it was well-kept and had what you would expect in a garden, such as plants and trees. This perhaps marked the beginning of my interest in gardens and landscape architecture.

Fast forward a few years, and I was living in San Marino, a suburb in Los Angeles, California. There were trees planted everywhere in comparison to Hong Kong, but nobody looked at the trees or appreciated them. I slowly got used to the fact that the trees and plants were being taken for granted, and since everybody had their own backyards and/or front-yards, nobody was really interested in the palm tree that was swaying in the wind, or the giant oak tree that sits in the corner of a block. Later, in high school, a friend and I volunteered at Huntington Library to get some community service hours in, and that was when I first visited the Huntington Gardens. This was a place that people from different parts of the state came to visit, despite the entry fee. After I stepped in, I quickly realized why that was the case. The gardens were all very well maintained. Families visited on the weekends, retired couples would take walks through the gardens and photographers would go around looking for their next great shot. This was also when I first realized how comfortable and relaxing gardens can be.

Introduction

Gardens have existed for a long time, dating back to the ancient egyptian days. While they have served similar purposes such as providing a soothing environment for people, their designs have changed throughout the years. Different styles emerged and different gardening practices started to form. This research project aims to interpret the next type of garden that may come into play through analyzing existing gardens and their forms. Through examining how gardens have evolved over time, a trend in how certain elements and their forms may have changed over the years may be found.

Several public and private gardens will also be studied as case studies, and they will be beneficial in understanding how these gardens have stood the challenge of time, and maintained popularity and success. Among the different case studies, the Huntington Botanical Gardens is one of them, and by studying the different gardens currently there, we can also examine how the Huntington Gardens distill different historic periods.

The design for the new garden will mainly draw inspirations from existing gardens, successful open spaces, as well as historic gardens. The conceptual plan will mainly present certain elements that have survived throughout the times, and also new elements that have only been used in gardens in recent years but have proven successful.

As predicting a new type of design is fairly difficult to do and does not necessarily have a right or wrong answer, the new design will mainly be interpreted based on the elemental analysis and design concepts of existing gardens, and will be rather conceptual overall. An area that is not fully developed in the Huntington Gardens will be used for the basis of the design, and the conceptual design could possibly even lend itself to one day being built due to the nature of how the Huntington Gardens was not built at a single time period, but added onto throughout the years.

Egyptian Garden

According to Mirriam Webster, the etymology of the word garden refers to enclosure. The words yard, court, and hortus are all derived from the meaning of an enclosed space.

The term garden now refers to an outdoor planned space, usually set aside for display, and contains man-made and natural materials. While the most common form of garden today is perhaps the residential garden, there are also zoological gardens (now called *zoos*) and botanical gardens. Gardens have existed throughout at least 4000 years of human civilization, and the designs of them have changed over time. (Turner 2004).

Some of the earliest forms of garden date back to 1500 BC, as found on tomb paintings in Egypt. These tomb paintings depicted lotus ponds surrounded by rows of acacias and palm trees. Gardens were much cherished during the ancient Egyptian days, and were kept for secular purposes and usually attached to temple grounds. (Johnson 1999). There were also gardens at private houses and villas that were mostly used for growing vegetables and were often located close to the river of canals. Later on, most of the gardens were found surrounded by walls and were designed for pleasure and beauty while also being functional. While vegetables were still produced from gardens, flowers were also grown for festival decorations as well as medicinal purposes. (Wilkinson 1998).

Figure 1

A tomb painting depicting an Egyptian Garden

As seen in the painting, there is a rectangular pond that is surrounded by various types of trees and plantings.

There are fish and ducks swimming in the pond, and different types of fruits on the trees and plants, indicating that perhaps the garden was mainly used for produce.

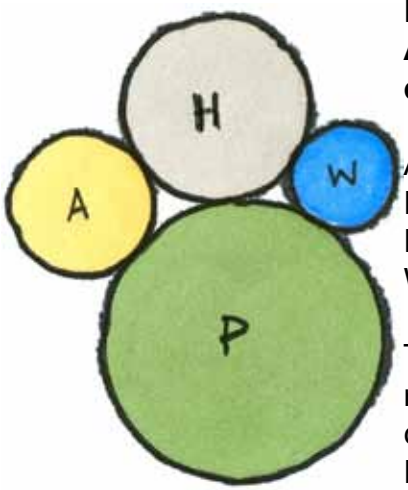

Figure 2
Areas covered by different elements

A -Architecture
H -Hardscape
P - Plants
W - Water

This chart shows a rough estimate of the composition of the Egyptian Garden.

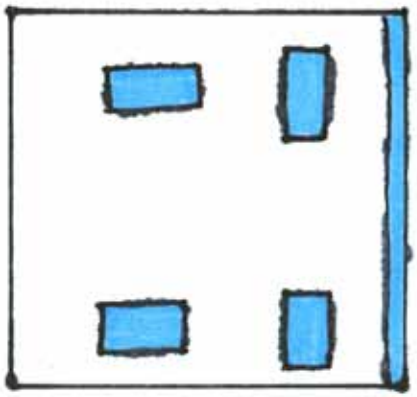

Figure 3
Water in Egyptian Garden

Water was a part of the gardens and was mainly used to raise livestock and perhaps irrigate trees.

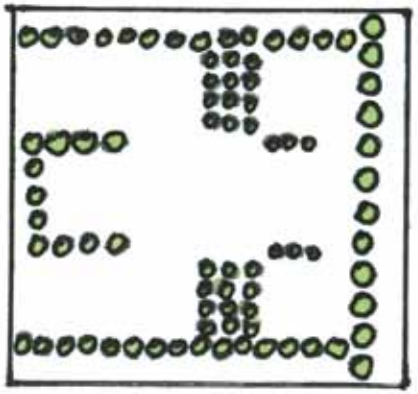

Figure 4
Plants in Egyptian Garden

Plants were in rows and were mainly planted to surround buildings and water.

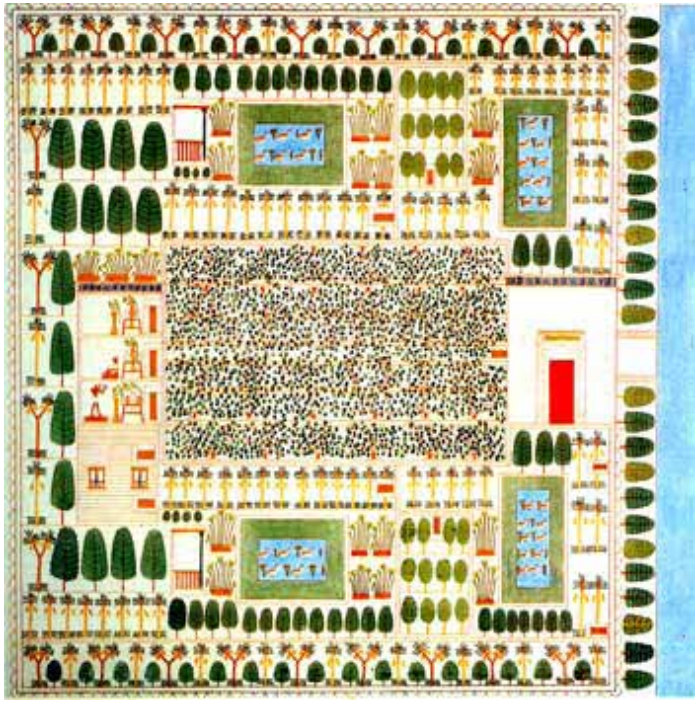

Figure 5
An old painting of an Ancient Egyptian Garden

One of the most famous paintings found depicting ancient Egyptian Gardens. The general forms of the water and plants shows how the people lived during that time period.

Egyptian Garden

Another ancient garden would be the Persian Garden. Among the many gardens, the Hanging Gardens of Babylon are perhaps one of the more well known, considering that it is renowned as a Wonder of the World.

Due to the climate of the area, all Persian Gardens from the ancient to the high class, have all been built in opposition of the harsh climate and landscape. Many of these gardens have been designed to imitate what a paradise would be like, and the lush gardens were able to exist due to underground aqueducts called *qanats* (Rogers 2001). Since Persian Gardens are often located in arid regions where water is scarce, many Persian Gardens are natural in comparison. Gardens are often enclosed in reaction to the harsh, open wilderness, fertile and rich with fruits and flowers. Also in comparison to the dry and unavoidable heat outside, there is shade and water in these gardens. (Thacker 1985).

Figure 6
Painting depicting a Persian Garden

The painting shows the form of an early Persian Garden, where there were four divisions of gardens.

Figure 7
The Gardens at Taj Mahal

The Taj Mahal gardens were designed based on Persian Gardens, there is a division of gardens with water running down the center.

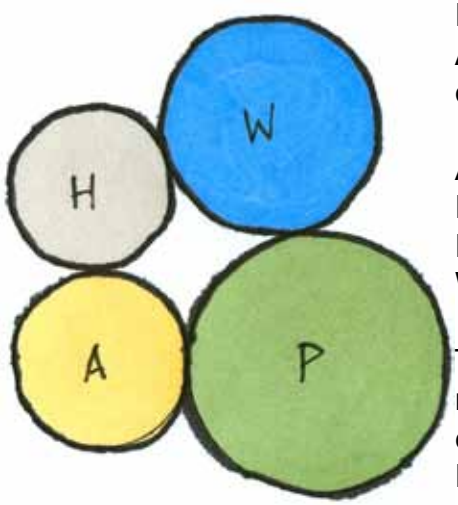

Figure 8
Areas covered by different elements

A -Architecture
H -Hardscape
P -Plants
W -Water

This chart shows a rough estimate of the composition of the Persian Garden.

The fourfold symbolic division of the garden by running water appears in countless Islamic Gardens. (Thacker 1985)

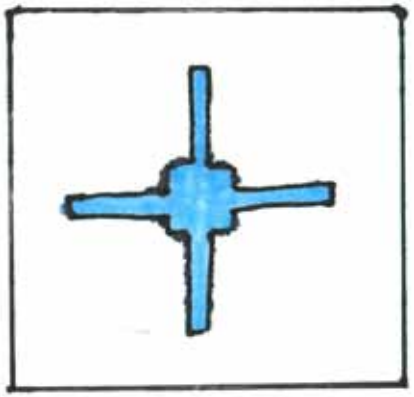

Figure 9
Water in Persian Garden

Water was an important element in Persian Gardens, and it reaches the entire garden through qanats.

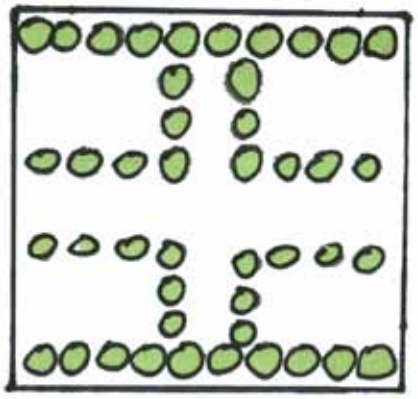

Figure 10
Plants in Persian Garden

Vegetation was planted in a more formal way, also surrounding buildings and water.

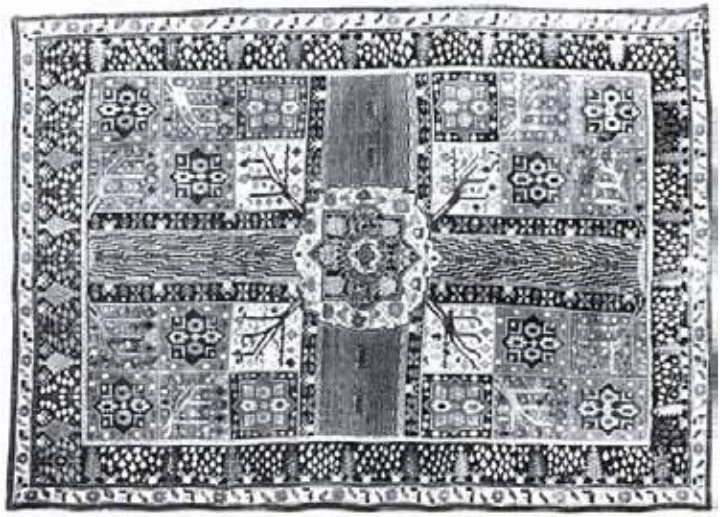

Figure 11
A Persian Carpet

Persian carpets often have patterns that are similar to that found in Persian Gardens, where two axes divide the area into four equal parts. There is also an outer band surrounding the carpet, representing how the Persian Garden is also an enclosed garden.

Chinese Garden

The Chinese Garden came around during the 4th century, and the most popular and well known type is perhaps the Chinese Scholar's Garden, also known as the Chinese Classical Garden, where its associated garden culture are expressions of vernacular Chinese landscape architecture aesthetics." (Keswick 2003). Like many other gardens, the Chinese Gardens also plays on the relationship between man and nature, but nature is seen as a partner and an equal to man, instead of man's domination over nature like the French Gardens. (Keswick 2003).

The Chinese Scholar's Gardens, as their name suggests, were built by and for scholars, many of whom were also civil servants. Since they face immense pressure in their Confucian public lives, many of them prefer to live Daoist private lives. The gardens that they design and build draw from diverse fields of art, literature, peotry, architecture, botany and even fengshui. Therefore, simply observing or experiencing a Chinese Scholar's Garden can prove to enrich one's literary and artistic conventions involved in the garden's construction. (Wang 1998).

Figure 12
A Photo of Wangshi Yuan in Suzhou, China

Also known as the Master of the Nets Garden, the garden demonstrates the designer's synthesis of art, nature and architecture.

Figure 13
A Photo of the New York Chinese Garden

An example of a Chinese Scholar's Garden built outside of China. The garden is designed with traditional chinese elements in mind.

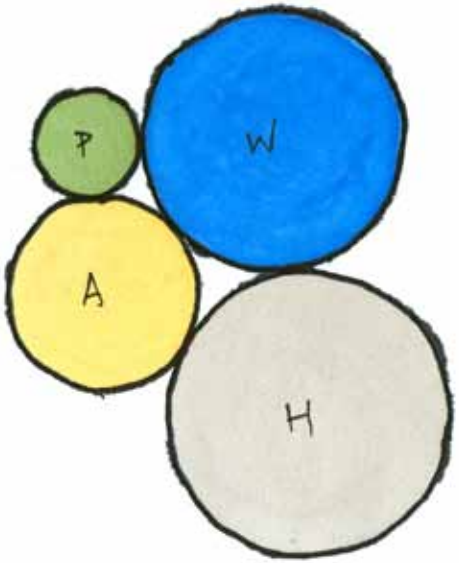

Figure 14
Areas covered by different elements

A -Architecture
H -Hardscape
P -Plants
W -Water

This chart shows a rough estimate of the composition of the Chinese Garden.

Figure 17
Rendered Site Plan of a Chinese Garden

An artist rendering of the Chinese Garden in the Huntington Gardens. The curving and almost zigzag paths simbolizes the passages of human life.

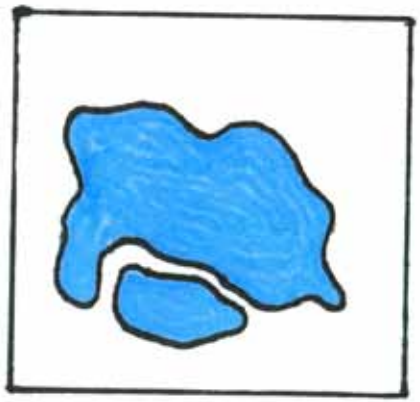

Figure 15
Water in Chinese Garden

Water takes a more natural form and imitates famous lakes found in China.

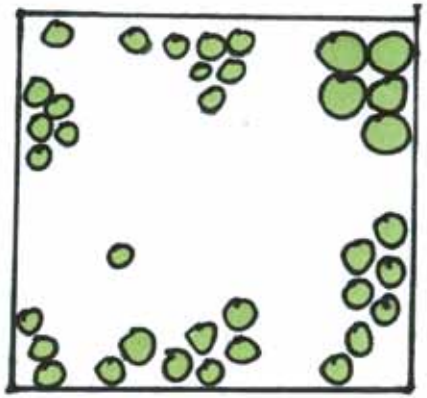

Figure 16
Plants in Chinese Garden

The vegetation takes a more natural form, and are planted like they would be in nature.

Figure 18
Moon Gate

The moon gate not only frame views but also act as a transition into a new space. Circle also portrays togetherness.

Japanese Garden

The Japanese garden, originally developed under the influences of the traditional Chinese Scholar Garden, can be found in private homes, city parks, and even Buddhist temples or old castles in Japan. While there are many types of Japanese Gardens, the most well known one in the west is perhaps the dry garden, also known as karesansui. Another form of Japanese Gardens is the Tsukiyama garden, where famous landscapes are copied and reproduced in a smaller space. (Rogers 2001).

Traditional Japanese Gardens also capture essence of the mountains and rivers, and while Chinese Gardens were designed to be viewed from within, Japanese Gardens are desiged to be viewed from the outside, or from within a house. (Young 2005). Moreover, similar to how Chinese Gardens were designed based on Daoist ideals, Japanese Gardens, especially dry landscape gardens were designed based on Zen Buddhism. (Rogers 2001).

Figure 19
A Photo of Ryoan-ji in Kyoto

One of the most well known dry gardens in Japan. It serves as only a viewing garden, and visitors view the garden from the house.

Figure 20
A Photo of the Japanese Garden at Golden Gatepark in San Francisco

An example of a *Tsukiyama* garden, the landscapes in the garden resembles those found in Japan.

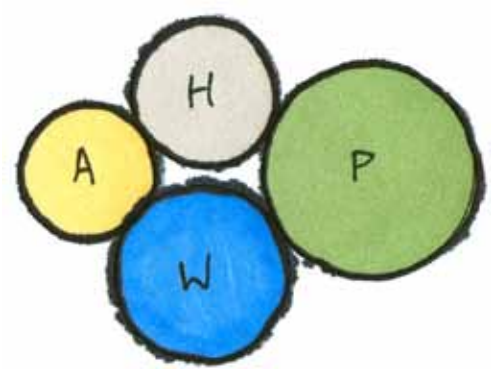

Figure 21
Areas covered by different elements

A -Architecture
H -Hardscape
P -Plants
W -Water

This chart shows a rough estimate of the composition of the Japanese Garden.

Figure 24
Rendered Site Plan of a Japanese Garden

This site plan gives an idea of how space is used in the Japanese Garden. It makes use of the small space while also having a variety of features.

Figure 25
A Photo of the Japanese Garden in the Huntington Gardens

The trees and shrubs are all arranged in a delicate manner.

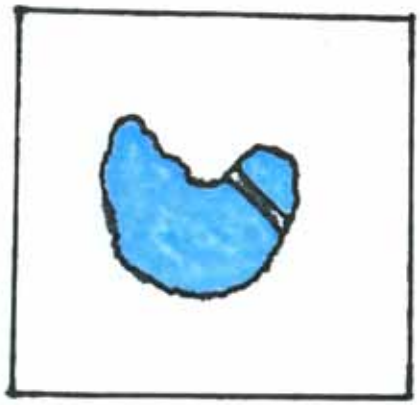

Figure 22
Water in Japanese Garden

Similar to that of the Chinese Garden, water takes the form of a lake here, but is more petite in size.

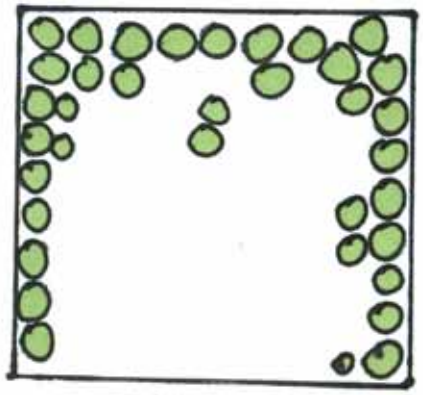

Figure 23
Plants in Japanese Garden

Vegetation in the Japanese Garden also mimic nature, but in a more controlled manner.

Figure 26
Karesansui

The dry garden portrays the aesthetics of the rocks, and raked pebbles symbolizes water.

Italian Renaissance Garden

The Italian Renaissance Garden was a new gardening style that emerged in Rome and Florence around the 15th century, and very much like renaissance art and architecture, it was mostly influenced by Roman villas and gardens. This garden was often found in private estates, and there were also many scenes from ancient mythology and allusions. Water was an important element in the Italian Renaissance Gardens, and symbolized fertility and abundance in nature. (Attlee 2005).

Early Italian Gardens were similar to Roman Gardens, where they were enclosed by walls, and were mainly used to grow vegetables and herbs. Then, Italian Renaissance Gardens broke down that enclosed style and the wall that separated the house and the landscape. But like all the other gardens in the past, the Italian Renaissance Gardens were also designed to be a space for serenity and relaxation. (Attlee 2005). During the late Renaissance, gardens became larger and grander in scale, and were also more symmetrical. This was later spread to other countries in Europe, such as France and England. In the late Renaissance Gardens, there were often fountains, statues and grottoes placed in them in order for owners to showcase their gardens as well as to impress guests. (Hunt 1996).

Figure 27
A Photo of Villa d Este in Tivoli, Italy

It is a fine example of an Italian Renaissance Garden. The gardens are situated on a central axis, and creates a grandiose impression.

Figure 28
A Photo of Villa della Torre in Verona, Italy

This villa was designed in the late Renaissance period, and symmetry was a major part of the design. There were also fountains and grottoes.

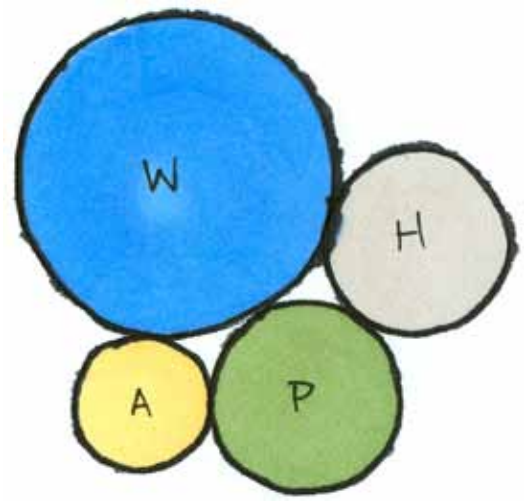

Figure 29
Areas covered by different elements

A -Architecture
H -Hardscape
P -Plants
W -Water

This chart shows a rough estimate of the composition of the Italian Garden.

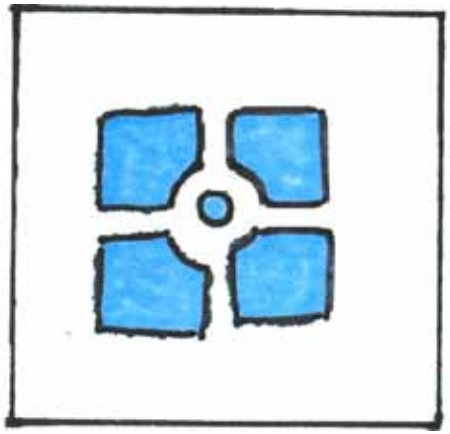

Figure 30
Water in Italian Renaissance Garden

Water is very symmetric in the Italian Garden, and is mostly for viewing.

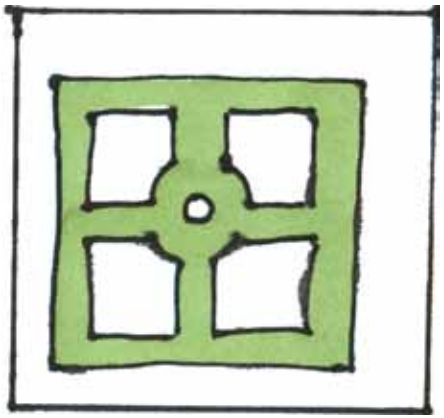

Figure 31
Plants in Italian Renaissance Garden

Vegetation was planted surrounding buildings and water features.

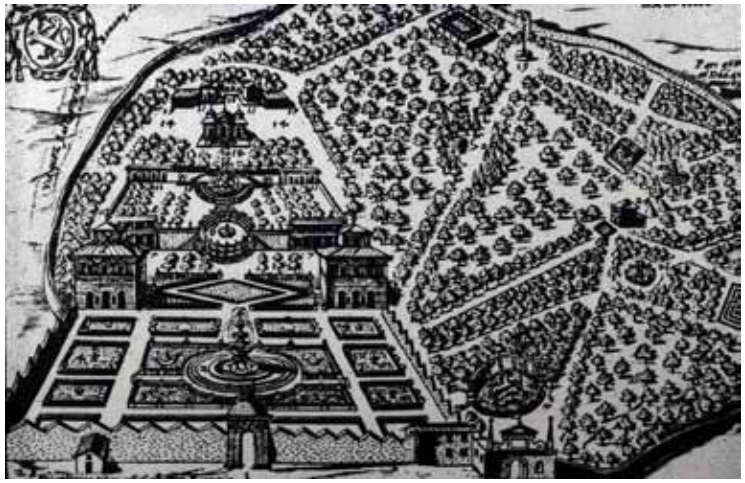

Figure 32
A Site Plan of Villa Lante

The plan shows a very strong symmetry of the villa itself, and the rest of the vegetation and plants are found surrounding the villa itself.

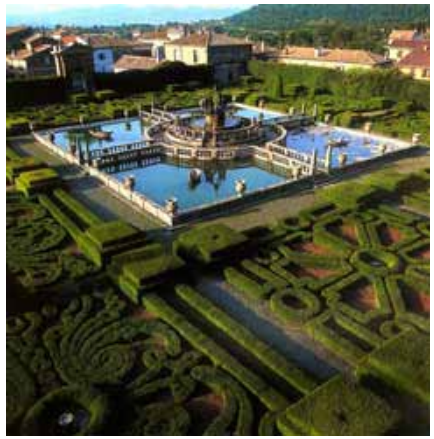

Figure 33
A Photo of Villa Lante in Viterbo, Italy

This photo shows the grandiose water center piece and the hedges surrounding it.

French Garden

The classical French Garden also known as *jardin la fran aise*, and a style of garden based heavily on symmetry as well as the principle of imposing order over nature, asserting man's dominnce over nature. (Rogers 2001). One of the most well known gardens with this style is perhaps the Garden of Versailles, designed for Louis XIV in the 17th century by landscape architect André le Nôtre, and this style of gardening was used in many other courts and estates throughout Europe. (Rogers 2001).

One of the major influences on French Garden design is the Italian Renaiisance Garden, where planting beds known as *parterres* in geometric shapes were used. Early French Gardens, also known as French Renaissance Gardens differed from the classical French Gardens in the sense that the gardens were situated on more terrained landscapes rather than flat land. (Leveque 1995). Similar to previous mentioned gardens, the French Garden was also created for its aesthetic pleasures that it provides spectators with. The French also treated their gardens as architecture, and with the house set as the central point, everything else was seen as ornamental. (Boyceau 1638).

Figure 34
Garden of Versailles in France

As seen in the image, there is a very strong central axis that runs through the entire site, and the gardens are also very symmetric. The site is seemingly touching the horizon.

Figure 35
A Photo of Vaux-le-Vicomte in Maincy, France

Another example of French Gardens, where the gardens are built on a central axis and strong symmetry.

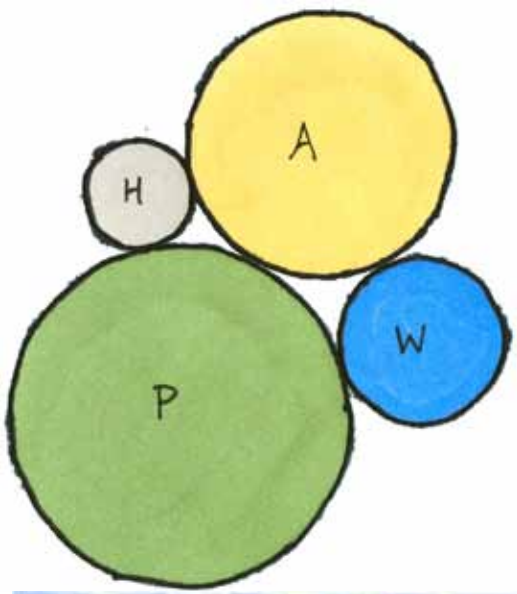

Figure 36
Areas covered by different elements

A -Architecture
H -Hardscape
P -Plants
W -Water

This chart shows a rough estimate of the composition of the French Garden.

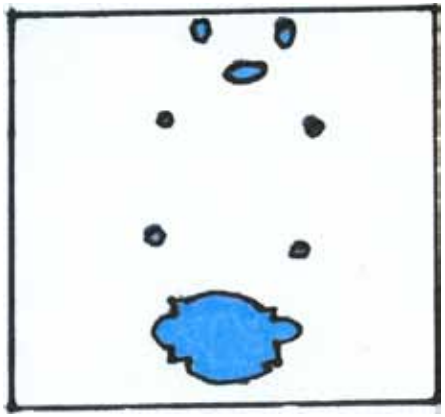

Figure 37
Water in French Garden

Water features are scattered throughout the garden while maintaining symmetry.

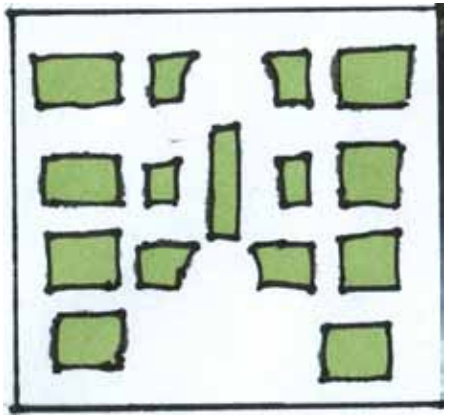

Figure 38
Plants in French Garden

Vegetation is found in the form of *parterres* and trimmed hedges.

Figure 39
A Photo of the Garden in Versailles, France

Parterres were used for vegetation and were very well maintained. *Patte d oie* was a strong design feature used in French Gardens.

Figure 40
Water Fountain

Hydraulics technology was advanced, and would turn on when the king entered. (Prevot 2006)

English Garden

English Gardens started emerging in the 18th century, and consisted of two main types of gardens. There were the picturesque gardens and the ‘Gardenesque’ gardens. The picturesque gardens were mainly influenced by landscape paintings, where rolling hills, lakes, trees and even allegorical temples were sculpted into the land. (Rogers 2001). Gardenesque gardens involved more shrubberies with gravelled paths, planted trees for botanical curiosity as well as flower beds there also similar to the parterres present in French Gardens. (Hunt 1975).

Influenced by early Roman Gardens, British gardening became more important for the nation throughout the years. (Jennings 2006). English picturesque gardens were later imitated by the French for the creation of the French landscape gardens which replaced the more formal and symetrical classical French Gardens. (Allain 2006). The picturesque garden design also paved the way to many public park designs in the 19th century.

Figure 41
A Photo of the Palladian Bridge at Stowe, Buckinghamshire, England

Stowe is a classic example of an English Garden, and architecture is carved into the picturesque landscape.

Figure 42
A Photo of Stourhead in Wiltshire, England

One of the most famous views of a picturesque English Garden. The bridge is carved into the landscape, creating a painting like image.

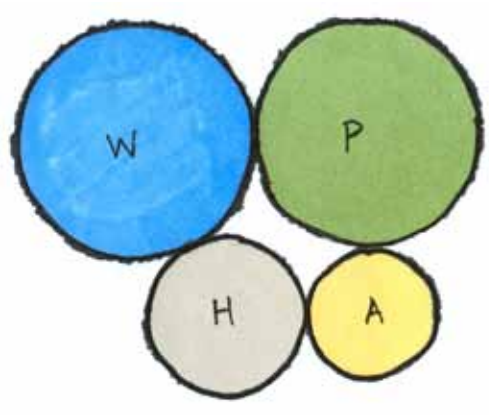

Figure 43
Areas covered by different elements

A -Architecture
H -Hardscape
P -Plants
W -Water

This chart shows a rough estimate of the composition of the English Garden.

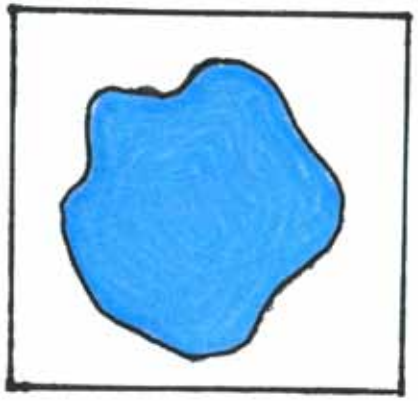

Figure 44
Water in English Garden

Water takes a more natural form in English Gardens, maintaining the picturesque landscape.

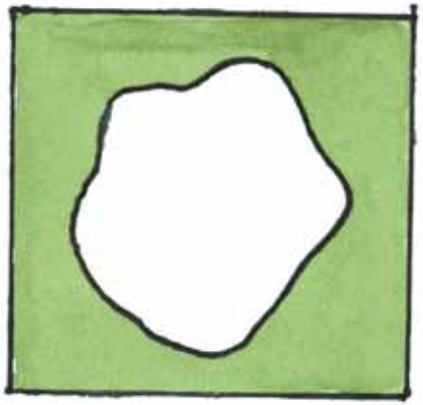

Figure 45
Plants in English Garden

Plants are not very much altered and also take on a more natural and picturesque form.

Figure 46
Before proposed landscaping
A painting done by Humphry Repton showing before the proposed landscaping at Wentworth, South Yorkshire.

Figure 47
After proposed landscaping
The same painting done by Humphry Repton, but with a fold up showing the changes after the proposed landscaping at Wentworth, South Yorkshire.

Contemporary Garden

Contemporary Gardens emerged in the 20th century with the introduction of modernism. This modern style of garden design compliments modern style architecture, and can even be seen as an integration of modern art and landscape. (Conan 2007). The modern garden design was perhaps pioneered by Garrett Eckbo, Dan Kiley and James Rose while studying traditional landscape architecture in Harvard. (Goedeken 2002).

One of the most iconic modern gardens is perhaps The Donnell Garden, designed by Thomas Church, where it features a mix of curves and architectonic designs, including abstract geometric shapes and sculpture. (Treib 2002).

Newer concepts in modern garden designs include sustainable practices where water usage is kept to a minimal, and drought tolerant native plants are used.

Figure 48
A Photo of Donnell Garden in Sonoma, California

An iconic modern garden designed by Thomas Church. The organic shaped pool and the abstract sculpture are some of the features found in modern design.

Figure 49
A Photo of Fallingwater in Pittsburgh

Designed by Frank Lloyd Wright, it is an example of fushion between modern architecture and modern landscape architecture.

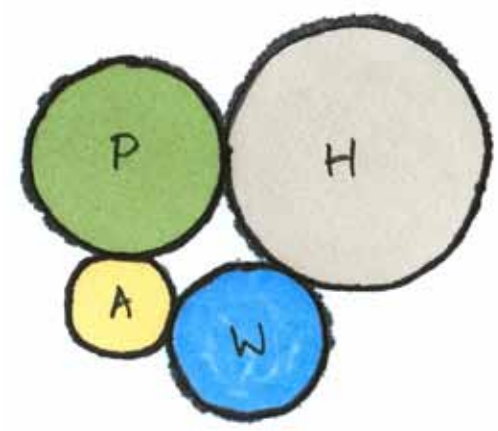

Figure 50
Areas covered by different elements

A -Architecture
H -Hardscape
P -Plants
W -Water

This chart shows a rough estimate of the composition of the Modern Garden.

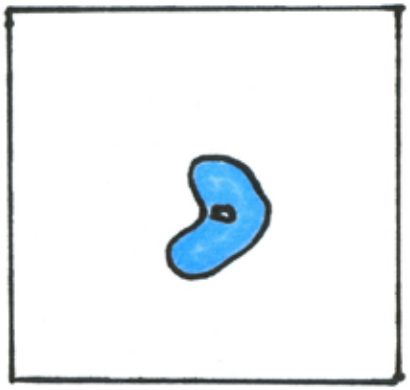

Figure 51
Water in Contemporary Garden

Water features no longer imitate nature, but are designed to be more organic shaped.

Figure 53
A Photo of a Keyhole Garden

A new type of garden design that emphasizes on sustainability.

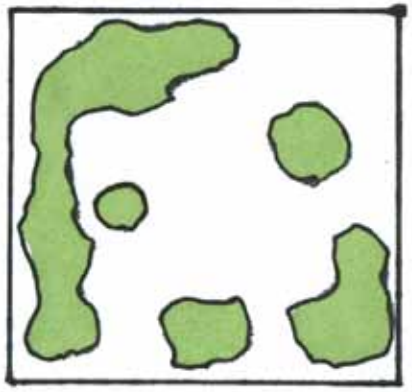

Figure 52
Plants in Contemporary Garden

Trees and shrubs are positioned to around existing features and to take a more natural form.

Figure 54
A Photo of a Contemporary Garden

An example of what a Contemporary Garden may look like.

Figure 55
A Plan of the Donnell Garden

Designed by Thomas Church, this garden showcases many modern features.

Case Studies

1. Huntington Gardens (San Marino, California)

The Huntington Gardens cover 120 acres of land, and contain themed gardens with rare plants from all around the world. The gardens were established by Henry E. Huntington along with William Hertrich, who was the garden curator.

Figure 56

Desert Garden

Built in the 1907, it is one of the largest and oldest collection of desert plants in the world (Bernal 2009). There is a newer part in the garden called the Heritage Walk. Many of the plants were acquired by Huntington and Hertrich in trips to several countries in North, Central and South America, and it one of the Huntington's most botanically important gardens (Hertrich 1998).

Figure 57

The garden is filled with succulents, and has no mulch covering the surface. It is mostly a dry garden with rocks, and drought tolerant plants. There are a variety of plants with scientific names on signs for educational purposes. There is a distinct path throughout the entire garden, and visitors are restricted from wandering off of the concrete path into the dirt paths.

Figure 58

Subtropical Garden

Ground covers and low shrubs. Plants here receive the most sun out of all the other gardens in the area, due to the south facing slope that the garden is located on.

Figure 59

Figure 60

Australian Garden

This garden is right next to the Subtropical Garden and it is a large area with meadow, tree groves and manicured lawns. Orange trees used to be inhabit the area, but by the 1940's many of them were in decline, and were replaced by eucalyptus trees as an experiment for their viability as timber. By the 1960's the area became a fire hazard due to the density of the trees, and only the more interesting and attractive specimens were kepy. This garden was opened to the public since 1964. (Huntington 2011).

Figure 61

Figure 62

Japanese Garden

One of America's oldest Japanese Gardens, this garden was constructed in 1912, and featured a tea house and many mature Japanese plants. In 1968, a walled courtyard that contained a rock and sand garden with a bonsai exhibition opened to the public. The garden is intended to demonstrate tranquility in nature. It is perhaps the only garden among the Huntington Gardens that makes use of the topography on site, and everything is very manicured and picturesque. Many of the garden elements are also hands-off and only for viewing (Bernal 2009).

Figure 63

Figure 64

Chinese Garden

The Chinese Garden is privately funded, and was in discussion since the 80's. It began it's construction in 2001. The garden itself is named Liu Fang Yuan, and it was inspired by private Chinese Gardens that scholars built and owned. There is a man-made lake, constructed in the middle of the garden. The three main elements present in a Chiense Garden are the architecture , water, rocks and plants , and literature and art .

The garden is connected to the Japanese Garden and, while they are both considered gardens that showcase tranquility, the Chinese Garden is on more of a human scale. Many parts of the garden are meant to be reachable by visitors, and nearly every inch of the area is covered by either planting or granite tiles. (Huntington 2011).

Figure 65

Children s Garden

This interactive garden provides young children with the opportunity to learn about the four ancient elements (Fire, Water, Earth and Air) in different ways. These four elements fuel the planet, hence it is both interesting and educational for children. The interactive elements range from crawling through a tunnel to reach a prism of light as the end, to feeling the effects of sound waves moving through water in a sonic pool. (Huntington 2011).

2. Dumbarton Oaks (Georgetown, Washington DC)

The garden portion of the site comprises of about 10 acres of land, and it was designed by landscape architect Beatrix Farrand from 1922 to 1947.

The gardens are designed and built after the estate, and they comprise of terraces built on a hill behind the estate, and the surrounding landscape laid out informally (Pariser 1978).

Enclosed Gardens

Figure 66

The Green Garden

This garden sits at the highest point on the site, and was converted into a garden from the original barn. There are different paths leading from this garden to other gardens (Dumbarton Oaks 2010).

Figure 67

The Star Garden

This garden is to the immediate west of the Green Garden, and is also one of the smallest enclosed gardens on site. It is decorated with astrological figures, hence the name Star Garden (Dumbarton Oaks 2010).

Figure 68

The North Vista

This terrace garden was first designed in the 1920s, but the design has been changed many times throughout the years. As the name suggests, it is a north-facing vista. There were tall hedges of Boxwoods planted on the site originally, but when they started to decline, a wall was put in instead. (Tamulevich 2001).

Figure 69

The Pebble Garden

This garden was originally designed by Farrand to be a tennis court, but was later converted into a pebble garden. The garden is surrounded by walls draped with wisterias, and contains pebbles imported from Mexico, forming different patterns that resemble Italian gardens. The overall form of this garden is similar to that of a Renaissance garden. (Tankard 2009).

Informal Gardens

Figure 70

Crabapple Hill

This is a casual garden on the hillside. As the name suggests, Crabapple trees were used, and mainly medium to large sized ones were chosen so the area would not become too crowded. Deciduous shrubs are used to edging, and evergreen shrubs such as boxwoods are used for screening the garden. (Dumbarton Oaks).

Figure 71

Cherry Hill

As the name suggests, this is an area on a hill slope that showcases different cherry species. Cherry trees usually blossom during a specific time of the year, and it was Farrand's decision to group all the cherry trees in this area so it becomes and area ... devoted to a display beautiful at a specific time of year and yet not a conspicuous part of the design in constant view. (Dumbarton Oaks 2010).

Figure 72

The Lover s Lane Pool

This site used to be a former natural pond, and is about fifty-five feet lower than the elevation of the other gardens on the hillside. The pool is surrounded by an amphitheater that seats about fifty people. Farrand designed the area and modeled it after the theater at the Accademia degli Arcadi Bosco Parrasio in Rome. The surrounding baroque cast-stone columns are covered by deciduous and evergreen vines, so the area is well screened from the outside. (Dumbarton Oaks 2010).

Figure 73

The Prunus Walk

This is an allée of flowering plums. The area has a strong axis running through it, and the ground cover consists of pink and yellow Epimedium. Plums replaced the original yew in the area in 1954. (Dumbarton Oaks 2010).

3. Filoli Gardens (Woodside, California)

The Filoli gardens take up about 16 acres of land, and was planned by Bruce Porter in collaboration with the Bourns. The area was designed to be a series gardens that open up from one to another. Each of the gardens provide long axial views, and the general theme for the gardens is relatively formal yet traditional English style. William Bourn named the estate Filoli as a composite of credo, “fight for a just cause, love your fellow men, live a good life.” (McCormick 2000).

Compared to many country places being built on the San Francisco Peninsula, Filoli was more of a gentleman’s farm.” (Filoli 2011)

Figure 74

Figure 75

English Renaissance Style Garden

This garden contains features such as a garden pavilion, bowling green, formal sunken garden, walled garden, woodland garden, tennis court, and even a rose garden, designed for leisure and recreational uses. (McCormick 2000).

There are many English style elements present here, including clipped hedges, and brick walls. Formal hedges include copper beech, English holly, English laurel, English boxwood, myrtle, Grecian bay and yew hedges. These hedges and brick wall divide the garden up into compartments. (Filoli 2011).

Other English garden features include the manicured lawns, the formally pruned Irish yew trees, box lined flower parterres and reflecting pools. (Richardson 2009).

Gentlemen s Orchard

Figure 76

Restored in 1997, it features the largest private collection of heirloom fruit in North America. The orchard was placed along the main entrance to the property, and was used to grow fresh fruits for the house.
The orchard has a strong linear axis to the design and layout. The orchard and the house were linked by two parallel axes, which was unusual because most of the other country estate gardens have one axis or a perpendicular axis to the house. (Filoli 2011).

West Terraces

Figure 77

A terrace garden that was on the same level as the public rooms of the house. The terraces mainly served as a year round entertainment area for guests. Plants here are mostly drought tolerant and deer resistant due to the lack of fencing to the area. (Filoli 2011).
Shrubs and hedges are well pruned to maintain the views created by them. The verticality of many hedges in this garden frame views such as the Crystal Springs Lake to the north.

Knot Garden

Figure 78

This is perhaps one of the most intriguing places at Filoli due to the complex interweaving of rich colors and textures. It is designed in the traditional style of English knot gardens, where interlocking patterns and serpentine hedges are used. The garden features a sea of soft fragrant herbs, such as germander, lavender, and santolina as well as shrubs such as dwarf red Japanese barberry and myrtle. (McCormick 2000).

4. Biltmore Gardens (Asheville, North Carolina)

The Biltmore Gardens were designed by landscape architect Frederick Law Olmsted, for George Washington Vanderbilt's Biltmore Estate between 1889 and 1895. The gardens mostly comprise of French Formal Garden (Garden à la française) and English Landscape Garden styles. The Garden à la fran aise style was used for the gardens immediate to the house, and English Landscape Garden style was used for those beyond.

Figure 79

Approach Road

This three-mile winding road that leads to the estate was designed by Frederick Law Olmsted with the intention to create a pleasant and relaxing experience while driving through the naturalistic landscape. Different types of bamboos were used for their different textures and heights, creating the effect that visitors are being closer to the sun. The bamboos vary from one to forty feet in height. (Biltmore 2011).

Figure 80

Azalea Garden

This is one of the largest gardens in the Biltmore estate. As the name suggests, it is renowned for its extensive collection of different azalea species. This garden was largely the work of horticulturist Chauncey Beadle. Now there are over 1000 azaleas growing in the garden, along with some magnolias, dogwoods and conifers. (Biltmore 2011).

Italian Garden

Figure 81

The Italian garden, designed by Frederick Law Olmsted, was planned to be an outdoor room for the Vanderbilts and their guests. It is perhaps one of the least naturalistic gardens on the property, but it features many Italian garden styles, such as an emphasis on architecture and symmetry. There are three symmetrical pools in the garden, which also features manicured lawns and classical statuary. There are paths that cut through the lawn areas leading the visitors toward a stone stairway (Biltmore 2011).

Rose Garden

Figure 82

The Rose Garden is situated at the lower half of the Walled Garden, and features over 2,300 roses grown at the end of the 19th century. There is even a collection of All-America Roses where there are labels showing the year the rose was chosen as a winner (Biltmore 2011).

Spring Garden

Figure 83

The Spring Garden veers off on its own path and is sheltered by a colorful array of plants, including a grove of white pines and hemlocks, as well as some of the brightest spring blooming plants such as azaleas, forsythias, spirea and deutzia. This was also an area where visitors and guests could relax on the lawn and enjoy the colorful blooming plants (Biltmore 2011).

Figure 84

Walled Garden

The Walled Garden originally intended by Frederick Law Olmsted to be a kitchen garden with mixed fruits, vegetables and potted flowers, became a formal garden with symmetrical flower beds. This 4 acre garden is one of the largest in America, and is supposed to give off a secret garden feel. Many of the plants in the garden bloom in progression from spring till fall, hence creating a lively environment throughout the year (Biltmore 2011).

5. Millennium Park (Chicago, Illinois)

Millennium Park is a public park in the Loop community area of Chicago. The park is about 24.5 acres, located southwest of Grant Park. Prior to the completion of the park, the area was used for parkland, rail yards and parking lots.

The planning of the park began in October 1997, and finally completed in July 2004.

Figure 85

Figure 86

Crown Fountain

This public art and video sculpture piece was designed by Catalan artist Jaume Plensa, and is composed of a black granite reflecting pool sitting in between a pair of glass brick towers. The towers are both 50 feet tall, and plays on the theme of dualism. (Patterson 2005). The towers feature LEDs that display videos on the inner faces, and there is a nozzle on the front faces that shoot out water. (Sharoff 2004)

This has led to this area to become a tourist attraction as well as a gathering spot for people to interact with the fountains. While this interactivity surprised even Plensa himself. (Golfoyle 2006), it shows that an interactive piece in a public space is often appreciated and also shows that a water feature could be fun and not just for decorative purposes.

Figure 87

Figure 88

Figure 89

Cloud Gate

Also known to many as The Bean , this public sculpture created by artist Anish Kapoor, is the center piece of the AT&T plaza in Millennium Park. This shiny sculpture is constructed by stainless steel plates that have been wielded together and then polished to create a seamless shiny exterior. (Gilfoyle 2006). The design was inspired by liquid mercury (Sharoff 2004), and the sculpture's surface reflects and distorts the city skyline surrounding the area.

The sculpture is a popular tourist attraction and is well known both domestically and internationally. The shiny surface of the sculpture acts like a fun-house mirror and allows visitors to interact with it. The piece is also named Cloud Gate because three-quarters of the sculpture's external surface reflects the sky and the name refers to it acting as a type of gate that bridges the space between the sky and the viewer. (Gilfoyle 2006).

The popularity of Cloud Gate further reinforces the idea that art pieces can be fun and interactive to the visitors while also provoking imagination.

Figure 90

Figure 91

Figure 92

BP Pedestrian Bridge

Designed by architect Frank Gehry, the BP Bridge connects visitors from Daley Bicentennial Plaza to Millennium Park. The bridge was designed to be able to bear a heavy load while also maintaining structural stability due to its own weight. The bridge is well known for its aesthetics and it's curving form. (Gilfoyle 2006).

The BP Bridge has sheet metal covering the exterior of the bridge, and it was also designed without handrails, using stainless steel parapets instead. The bridge sits on a concealed concrete base and the deck is covered by hardwood floor boards. (Sharoff 2004).

While the bridge was described as snakelike due to its curving form. (Nance 2005), I thought that the form of the bridge also seems to mimic a river or a water stream. When thought of that way, the bridge seems to include the element of water into the park, flowing from one site to another.

Figure 93

Lurie Garden

This five-acre garden was designed by Kathryn Gustafson, Piet Oudolf and Robert Israel. The garden's concept is quite simple, and is based on the city's motto, "Urbs in Horto", which means "City in a Garden, referring to Chicago's transformation from its flat marshy origins to the bold and powerful city it is today. (Lurie Garden 2011).

Figure 94

Lurie Garden is bisected by a boardwalk that symbolizes the natural Lake Michigan seawall that still bisects Grant Park. The garden is divided into two parts, one of which contains bright colors, while the other has muted colors (Freeman 2004). The side with the muted colors represents the early landscape history of the site, while the side with bright colors represents the landscape of the future. (Rojas).

Analysis

After studying each of the gardens in the case studies listed, it can be concluded that gardens in the estates have been more traditional and are quite similar to the general gardens of their genres. Like all of the gardens throughout history, these gardens were designed for two main purposes: for relaxation and for produce.

As most of the gardens in the case studies were designed to accomodate the owners' tastes, the gardens themes reflected on the time periods. For example, since all of the estates that were examined were built before the 21st century, none of them contained any sort of modern gardens. Whereas Millennium Park was opened in 2004, hence many elements found in it were relatively modern. Moreover, art pieces and sculptures played a more major role in decorating open spaces, and these art pieces were not only for viewing but were also interactive for the viewers.

Breaking down the gardens to their most basic elements (water, plants and hardscape), the usage of these elements were examined. Water has been a prominent feature in gardens throughout the time period. Water was viewed as a symbol of fertility and abundance in one time period, while it was seen as a symbol of tranquility in Chinese and Japanese Gardens. While sustainable practices seek to minimize the usage of water, a water feature will not likely disappear in future gardens.

Plant usage has gone from a more natural state from back in Egyptian gardens to more of creating a sense of paradise in Persian gardens, to finding peace and zen like tranquility in Chinese and Japanese gardens, to the more formal and well trimmed hedges in Italian and French gardens, to the more picturesque English gardens. While the trend is not clear, plants have been clearly present in all kinds of gardens throughout history. While plant usage will not disappear in future gardens, they will perhaps change a little in form and function. Plants could work in junction with sculptures or art pieces and serve as more than just simple decorations and ornaments.

Rocks make up most of the hardscapes, and are a part of nature and have been present in the different types of gardens as well. They were more prominent in the Chinese and Japanese gardens, and less so in the Italian or French gardens because they did not look formal enough. It is hard to predict whether rocks will stay as a garden element in the future, but it can definitely be considered.

Based on the elemental analysis, I think that the new type of garden will still contain many of the existing elements and will mainly change in concept and theme. The basic elements such as water, plants and hardscape have all changed slightly throughout the years, moving from formal to more natural but were present in all kinds of gardens. Many of the existing gardens also focus on a specific theme and is applied to the entire garden, there may be cases where opposition is contrasted but it is often not a major part of the design. An example being the Japanese *karesansui* garden and the *tsukiyama* garden contrasting each other. Another example would be the idea and concept behind the Crown Fountain in Millennium Park. There are a pair of towers and they face each other and in some ways interact through the projected faces.

My prediction for a new type of garden is based on the concept of ***dualism***. The term dualism can be interpreted in many different ways, and while some form of dualism can be found in gardens, it has not become a major garden design concept. Many of the existing gardens that were looked at all had wonderful concepts behind their designs, but none of them focused on dualism or the duality of elements. I will attempt to address how dualism can be used for a garden design in the next section.

Look Forward, Walk through the Past.

This is a simple garden design that showcases how the concept of dualism can be applied to a specific site in the Huntington Gardens.

This plan is meant to show the geometric shapes certain elements may take, as well as how the basic elements such as water, plants and hardscape can be used.

The design features a traditional garden on the southern part of the site, as well as a modern garden on the northern part of the site. Many of the features resemble those found in existing gardens. While visitors enter and walk through the traditional garden on the south, they will notice that everything is very formal and linear (as indicated by the round trees), and as they move towards the modern garden, everything turns more curvy and organic, trees are positioned in more natural forms. Lastly, at the northern tip of the site is a sculpture piece that exerts the concept of dualism while also being interactive to the visitors. The shape of this area is also shaped like an arrow to symbolize how garden design for the future is still unknown.

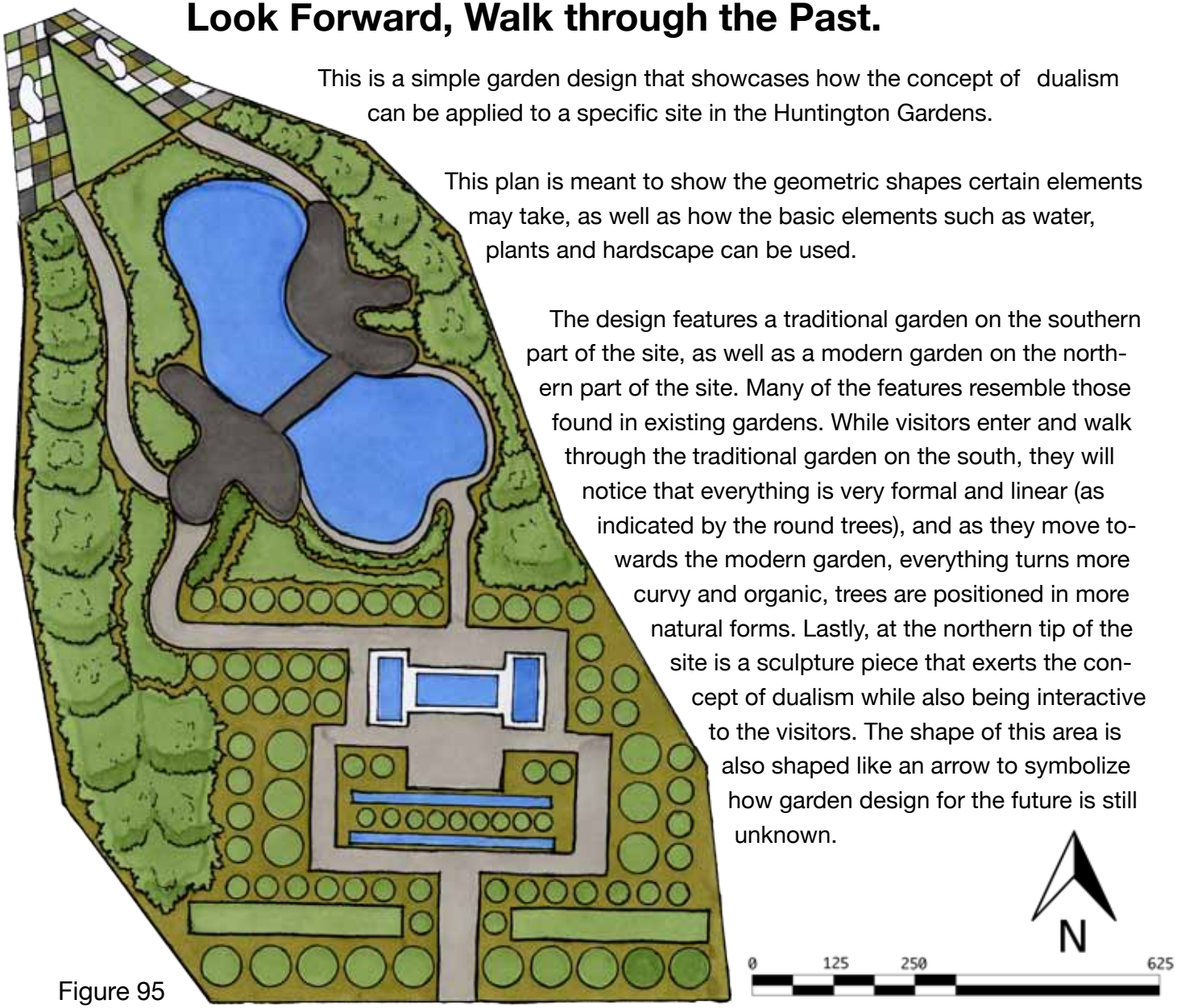

Figure 95

Figure 96

Perspective drawing of southern entrance with formal allée of trees.

Figure 97

Perspective drawing of formal water fountain.

Figure 98

Perspective drawing of water feature in the modern garden.

Figure 99

Perspective drawing of art piece at northern tip of site.


Figure 100


Figure 101


Figure 102


Figure 103


Figure 104

Since this project aims to predict a new type of garden design, there is not a specific site to work on, hence I have chosen to use a less developed area in the Huntington Gardens. After coming up with the concept of *dualism* through the analysis of existing gardens, applying the concept to the site in a design was the challenge.

Fig. 100 shows the general location of the site. Fig. 101 and 102 show some of the early design concepts. Fig. 103 and 104 are before and after renderings.

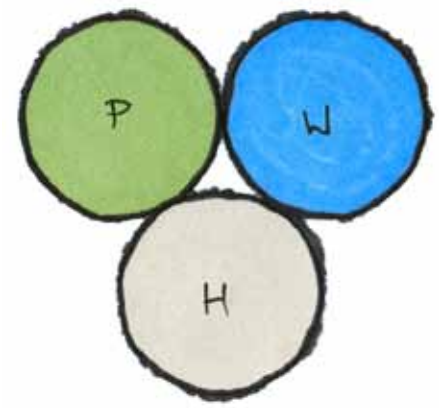

Figure 105
Elemental breakdown of new garden
The new garden design strives to balance the usage of plants, hardscape and water.

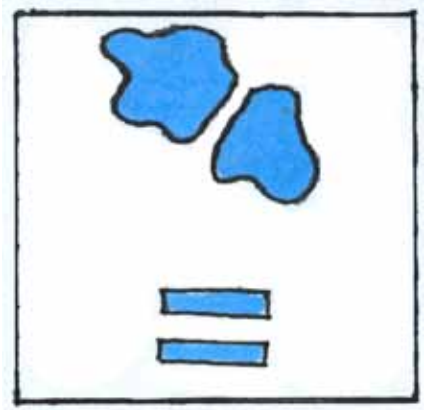

Figure 106
Water in new garden

Water features come in pairs to reflect the concept of *dualism*.

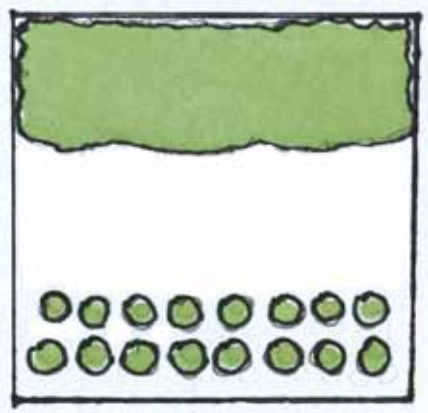

Figure 107
Plants in new garden

Plants contrast each other with one side being more formal and the other being more natural.

Conclusion

Through examining existing gardens, the elements present in them, as well as the general pattern that they take, I was able to gain a better understanding of the existing gardens and the concepts behind their designs.

Then through studying the case studies and the gardens present in the study sites, I was able to analyze the types of gardens present in private properties as well as public properties. I was also able to draw some conclusions on the similarities they share and the differences that separate them from one another.

By combining the two research portions, I came up with the concept of *dualism* in gardens. The concept and term itself is not a new one, and there have been hints of it in traditional Japanese and Chinese Gardens, but creating a type of garden that is based on dualism and the duality of elements was not very common in the past.

One of the inspirations behind the concept of dualism was the Crown Fountain in Millennium Park, where a pair of towers facing each other project art works as well as water. This is a largely popular attraction at the public park, and while the towers themselves are intriguing to look at, the interactive element of it was one of the main reasons behind the attraction.

Drawing from this inspiration, the concept of dualism was applied to the chosen site, and a simple site plan that demonstrates how certain elements may look in the garden was produced.

While there is not way currently to tell whether this prediction is correct or not, it is certainly one possible direction that garden design could be heading towards.

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There is simply too much to cover regarding gardens in this two quarter long project. Some of the things related to gardens that are also very interesting include plant selection, psychology behind what feelings different gardens evoke, and construction of a garden. That will perhaps be another project for the future.