

GROWING HERBS FOR THE KITCHEN



DESIGNING A SUSTAINABLE HERB GARDEN
FOR THE DIABLO COUNTRY CLUB

UC DAVIS LANDSCAPE ARCHITECTURE
SENIOR PROJECT
GABINO MARQUEZ III

GROWING HERBS FOR THE KITCHEN

DESIGNING A SUSTAINABLE HERB GARDEN FOR THE DIABLO COUNTRY CLUB

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Abstract

This project is about the research and design of an herb garden for the Diablo Country Club in Diablo, Ca. I will discuss the research involved, including site visits of case studies used to influence the design. The research analysis will be shared in outlining the design process take to develop three design option for the herbal garden. The three design options are briefly described and broken down into a set of illustrations that represent each design.

Acknowledgements

I would like to thank everyone who made the completion of this project possible.

To my comittee members for all of thier help and expert advice.

Arnold Koenig
Byron McCulley
Dave Fujino
Claire Napawan

To the Women's Garden Club and the Diablo Country Club for giving me this opportunity.

To mi familia, friends and to anyone who has cared about and believed in anything I've done in my life. Thank you.

Peace.

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Introduction

As the idea of going green is gaining popularity, many of the main issues surrounding this idea relate to food. The costs of food keeps rising and many are starting to look for alternative ways of obtaining their food products. This is the case for the Diablo Country Club's chef, Chef James. Chef James cooks a unique selection of recipes using a variety of fresh herbs, however the herbs used by Chef James are difficult to find at any local market. The purpose of this project is to design a sustainable herb garden for the Diablo Country Club that will be used by Chef James as a way to continue his use of fresh herbs in his distinctive recipes. In addition to creating a functional herb garden for the chef, this project will also include working with the Diablo Women's Garden Club to create an opportunity to educate the users of the club about where some of their food is coming from and to demonstrate how easy it is to start a garden for their own use. This herb garden project will include elements of sustainability such as using drought-tolerant plants, water-wise irrigation and possible reclaimed materials for the construction of raised planters.

Site

The selected site for the herb garden is located south of the country club's restaurant, which is located in the country club's main club house. The size of the site is approximately 2,100 square feet of an irregular shape on a hillside with a steep slope crossing most of the site. The challenge of this project was to design a garden that addressed the slope of the site and maintained its functionality as a productive and efficient garden for picking fresh herbs. The scope of this project includes three rendered conceptual designs illustrating different options for the site. Each design option includes a set of sections and perspective drawings, as well as a budget analysis, and planting list. After an option is selected, any revisions for a final design will be added in addition to any other documents necessary for implementation of the herb garden. All research regarding the design of this herb garden is also included.

Design Process

Site visit

I met with the Women's Garden Club members who showed me the initial site and addressed their concerns about the project. Since the club's board members make the final decisions, members of the Women's Garden Club serve as club representatives for the project which include communicating information between myself, the Chef and Club officials. After discussing the project scope and concerns about the project, I met with Chef James who elaborated on the plants he was specifically interested in for his herb garden, and some design ideas he had in mind for his herb garden. Weeks later, Dolores Geisler, a member of the Diablo Women's Garden Club, informed me that club officials had decided to change the location of the site. The original site was on the northwest side of the club house, located adjacent to the club's pool house, with only approximately 500 square feet of workable space (see figure 1). I then had to make an additional site visit to see the new location. Fortunately, the new site is in a better location and will function better than the original. The original site was not as optimal as the new location because of its size, orientation towards the sun, and traveling path to the garden. Since the original site was located in the pool vicinity, it would have been a conflict trying to walk to the garden with hundreds of pool users running in and out of the pool during the summer season, which is also a key season for blooming herbs. Not only did the original site have major circulation issues, but being tucked away



Figure 1. Original site, back right hand corner parallel to pool house.

in a corner next to a pool house meant having limited exposure, which in turn would limit any educational interest from club members. The new site is located adjacent to a main golf cart road near the main entrance of the club which has daily traffic by both golf carts and pedestrians (see figure 2). This location will allow plenty of exposure to club members and visitors. After taking measurements of the new site, I was able to conclude that the new site is nearly four times the size of the original site. In addition to its greater size, the new site faces south which means its solar intake will also be greater. After analyzing the new site, I was able to determine that the earlier research I had conducted could easily be used for the new site. The new site was an improvement because it gave more space to work with but also provided more of a challenge working with a slope.

Conducting Research

After the site visits and client consultations, I started my research for the project. The research conducted for this project was not typical research that is organized into statistical charts and graphs its more practical than just numbers. The research informed me about the different types of planters and materials that could be used to construct raised planters and how to make an herb garden effective with the planter choices. I learned a lot of my information by mainly having conversations with professionals that had some kind of experience in edible gardens, both vegetable and herb gardens. After discussing different ideas with such professionals I learned about the different techniques and practical approaches to designing a functional herb garden.



Figure 2. 1. New site, Context Map



Figure 2. New site, left hand side of road



Figure 3. French Laundry Crop Row



Figure 4. French Laundry prepped rows and Green house in back.

Case Studies

In addition to my research in books, online articles, and other published sources, I visited three very different gardens as my case studies. The three case studies were the French Laundry in Yountville, Ca, Grant High School's Student Farm in Sacramento, Ca, and Delta Breeze Herb Farm in Fairfield, Ca. Each one of these case studies help influence some part of the actual design.

French Laundry

The French Laundry is a world famous high-end restaurant that is know for its quality food. It is a very extravagant place that provides exceptional service and as a way to keep up with the trend of sustainability and the practicality of running a restaurant business, The French Laundry decided to start its own culinary garden across the street to produce enough herbs and vegetables for itself and two other affiliated restaurants. I had the opportunity to speak with the master gardener who explained to me the importance of soil preparation in any kind of edible garden. The soil is key when it comes to growing any kind of plant whether its and herb or a carrot. He elaborated on soil importance by considering himself a soil farmer instead of a crop farmer. He made a great argument about soil because without quality soil, plants cannot grow healthy, and without healthy plants people cannot be healthy. In addition to the useful information on creating a successful edible garden, I closely observed the design of The French Laundry's garden. The gardens at the French Laundry are very clean-cut and formal (see figure 3). From the mowed lawns in between crop rows to the perfectly shaped crop rows, these gardens demonstrate anything but a traditional farm

garden. This was another point the master gardener brought to my attention. He claimed that according to the restaurant, a more traditional looking farm with overgrown cover crops, messy shaped rows, compost piles and dirt paths in between crops is just unacceptable for the name of the restaurants and for the residents who enjoy the gardens everyday. I was able to relate this to my project because the Diablo Country club is also a formal place which would need a clean-looking design such as the French Laundry. However, my analysis of the French Laundry showed that although the French Laundry gardens are extravagant, they are also extremely expensive to maintain. This made me realize that the herb garden design for the Diablo Country Club would have to combine both a nice appearance and program that would require low-maintenance.

Grant High School Student Farm

The Grant High Student Farm, is a school operated farm that grows mainly vegetables on campus. Grant high school started this student farm about ten years ago with the vision that a lot of students would learn about agriculture, but as time goes by there is less money to operate the farm thus negatively impacting the educational opportunity the farm provides for students. I decided to use this high school as a case study because I saw the educational opportunity that the Diablo Country Club herb garden presented. I realize that many people do not know where their food comes from, especially when eating at a restaurant. The idea of educating members and other visitors about



Figure 5. French Laundry crop row with lawn.



Figure 6. Grant High School Student Farm Planters



Figure 7 Grant High School Student Farm Sign

the herb garden can be easily expanded by simply creating a pamphlet that describes the fresh culinary herbs being used and other purposes those herbs may have. I learned in Grant that in order to get someone interested in a topic is to make it some how interactive. For example, Grant students can take classes that relate to using the farm, such as a cooking class. Students learn about the different vegetables that are being grown for the particular season and learn how to cook different healthy recipes (see figure 6) for images of school garden). Chef James and the Women's Garden Club suggested in creating the herb garden a private secluded garden that would not allow in any public visitors, however visiting Grant's student farm, made me realize that there is great amount of knowledge to be gained in a garden. After the garden establishment, I believe that country club should look to opportunities where the garden club can be involve in educating small groups of individuals interested in starting their own herb gardens at home.

Delta Breeze Herb Garden

When discussing my senior project idea with my committee member, Arnold Koenig, I learned that him and his wife had started their own herb garden at a location in Fairfield, Ca. Delta Breeze Herb Garden dedicates itself in sustainable growing practices, educating and in holistic health. This case study visit made a great impact on my design options. This is where I learned about re-using wine barrels as planters for growing herbs. While at Delta Breeze, I had a lengthy conversation with Mr. Koenig in regards of the practicality of simply organizing wine

barrels to create an herb garden. There he demonstrated the ease of setting up a wine barrel garden (see figure 8). I learned that half wine barrels hold a good quantity of soil for a plant to grow in abundance. The ease of prepping soil for an individual barrel and planting an individual plant per barrel made me realize that for a garden that is expected to be harvested regularly wine barrels seem very convenient when it comes to maintenance and control of the garden. Plants can be contained to a size that is manageable according to how much a certain species is used or on to control the plant's natural growing habit (see figure 9). For example, a mint is normally a fast spreading and invasive species, but in a wine barrel it can only grow to a manageable size.

After visiting my set of case studies, I was able to combine newly gained knowledge and combine it with my previous research I had conducted and apply it towards creating preliminary design drawings.



Figure 8. Delta Breeze Herb Farm wine barrel garden



Figure 9. Delta Breeze Herb Farm, herb containment

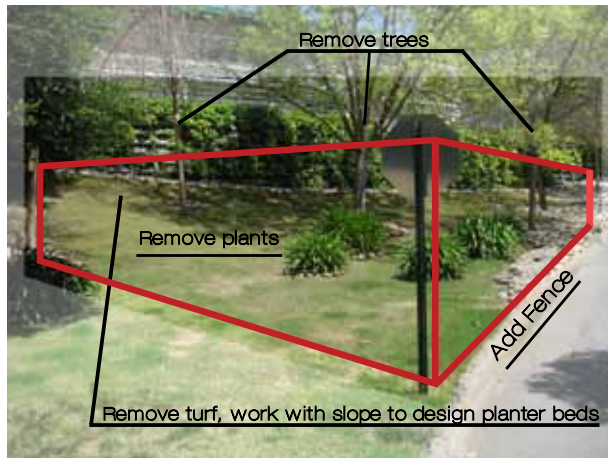


Figure 10. Demo/Site analysis

Site Analysis

As I went on my first visit to the new site, I kept a positive attitude and accepted any challenges that came with the new location. After being introduced to the new site, I quickly started to analyze. The first thing I noticed was the slope difference from the previous site. It was quite a difference since the original site was mostly flat and now the new site had close to an 18% grade at one part of the site. I walked throughout the site to get a feel of the terrain and noticed that walking more or less parallel to the contours of the site was not too much of a struggle. I could definitely tell that some minor re-grading was going to be necessary but if the design worked out, the re-grading would be minimal.

In order to do any re-grading the site would have to be completely cleaned out. The site's previous use was primarily just an area landscaped with ornamental plants, which included lawn, agapanthus, a small myrtle trees. To implement any design, all of these plants would have to be removed. The site analysis diagram basically shows the general demolition plan. (see figure 10)

The last but important observation I made during my site analysis visit, was the connection to irrigation. I was pleased to see irrigation line running through the site that were currently functioning. Although I was unable to find a valve to serve as a point of connection, the many irrigation heads throughout the site assured me that there is some kind of water supply to the site which means that the new irrigation should not be problematic.

Base Plans

Part of the research conducted, I looked into different types of raised planters to start collecting ideas for the a design of the herb garden. Visiting my different case studies gave me a perspective of what a functional and aesthetically pleasing garden can look like. I then started with layout diagrams, trying to find the best layout approach for the garden. I started this process by first drawing a base map (see figure 11) for the site since the garden site is in a small area with the actual country club, no actual base map drawings exist for such a relatively small area. As part of my design process, I measured out the site and took careful notes about any interesting information that would help me in my design. This information included grade changes, boundary marks and irrigation access. Of the actual measuring, the most important information was noting the elevation differences throughout the site. After being informed that topography maps did not exist for this particular site I decided to sketch out a topography map of my own. After consulting with one of my committee members, Arnold Koenig, who is an experienced landscape architect and contractor, I confirmed that 100% accuracy of topography lines was not crucial for a design that would not be complex. Furthermore, I used this topography sketch to help me layout a preliminary design. The site topography made me realize that the most ideal approach to a design for this site would be a terracing system that followed or went parallel to the topography contours as much as possible. Figure 12 shows the topography sketch that aided me in my design process.

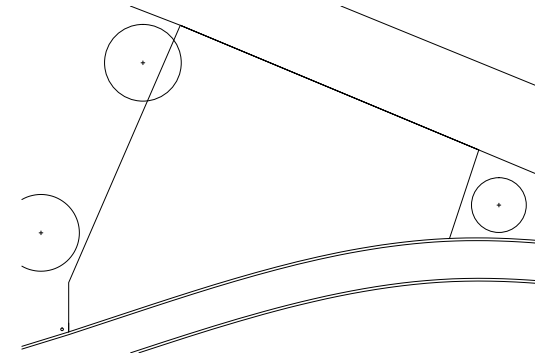


Figure 11. Herb Garden Base Plan

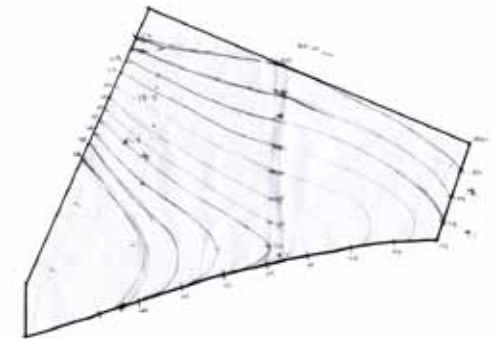


Figure 12. Diablo Country Club Herb Garden Topography Plan

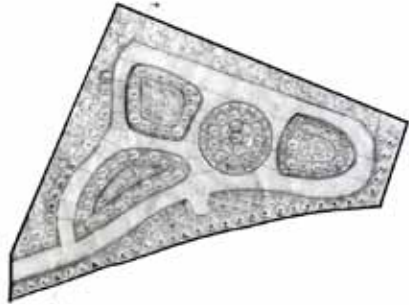


Figure 13. First Preliminary Plan



Figure 14.

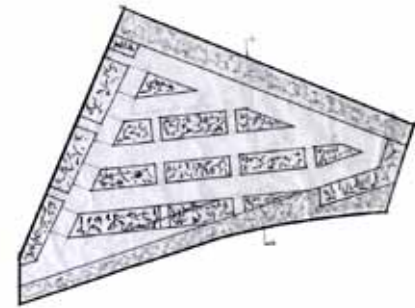
Preliminary Designs

Option 1

Once the major portion of my research was done, I was able to decide on that I was going to present at least two different design options. As I stated before, the visits to my case studies had an influence on the design options and materials selected for each design. Figure 13 shows my first preliminary design. After visiting Delta Breeze Herb Farm and discussing the benefits of using barrels as planters with Mr. Koenig I decided that one of my design options would be a free-form curvilinear design that would have more of an intense organization of reclaimed wine barrels. The irregular shapes made up of wine barrel clusters were intended to represent the irregular shapes on a golf course, such as in putting greens. The paths were then laid out based on the same idea of keeping the design curvilinear and giving the overall site efficient circulation. The paths are approximately four feet wide to provide enough access for maintenance carts and wide enough to walk through the garden comfortably. The barrels were then placed along the edge of the path. In this preliminary design, there were approximately 350 wine barrels of different sizes and heights. Figure 14 show a perspective and section sketch of the same design. The idea of using reclaimed wine barrels is to create a sustainable garden that can be considered sustainable not only because it uses little water but it also practices sustainability by using reclaimed material.

Option 2

Option 2 came from the influence at the French Laundry. This design would focus more on its formal layout. Working with the grade at the site, I placed typical raised planters according to the topography. The planters would have different terracing levels that would accommodate the elevation changes. Design option 2 is a rectilinear design that gives the site a clean edge look with straight planters built of wood. The challenge of this design is that it is difficult to find reclaimed materials that would go function with this design. Most, if not all of the wood used in a design such as this would be new clean cut wood. Although this design is more formal it loses its ability to be truly sustainable.



Final Conceptual Designs

The final conceptual designs consist of the refinement of the two preliminary designs. In addition to the two initial preliminary designs I developed a third option that essentially takes the layout design of option 2 but use the materials of option 1. After discussing my design concepts with experienced designers and builders, I was able to go over my preliminary drawings and research to develop the final conceptual designs. These designs are still conceptual and will be presented to the Diablo Country Club in order to receive feedback from the client. Furthermore, the designs are still flexible and will be revised before any implementation of the project. The following designs are organized in order starting with design option 1 and ending with design option 3. There is no personal preference with any of the design nor the number order in which the designs are presented. Each design has an 11x17 master plan that folds into this document, please review carefully.

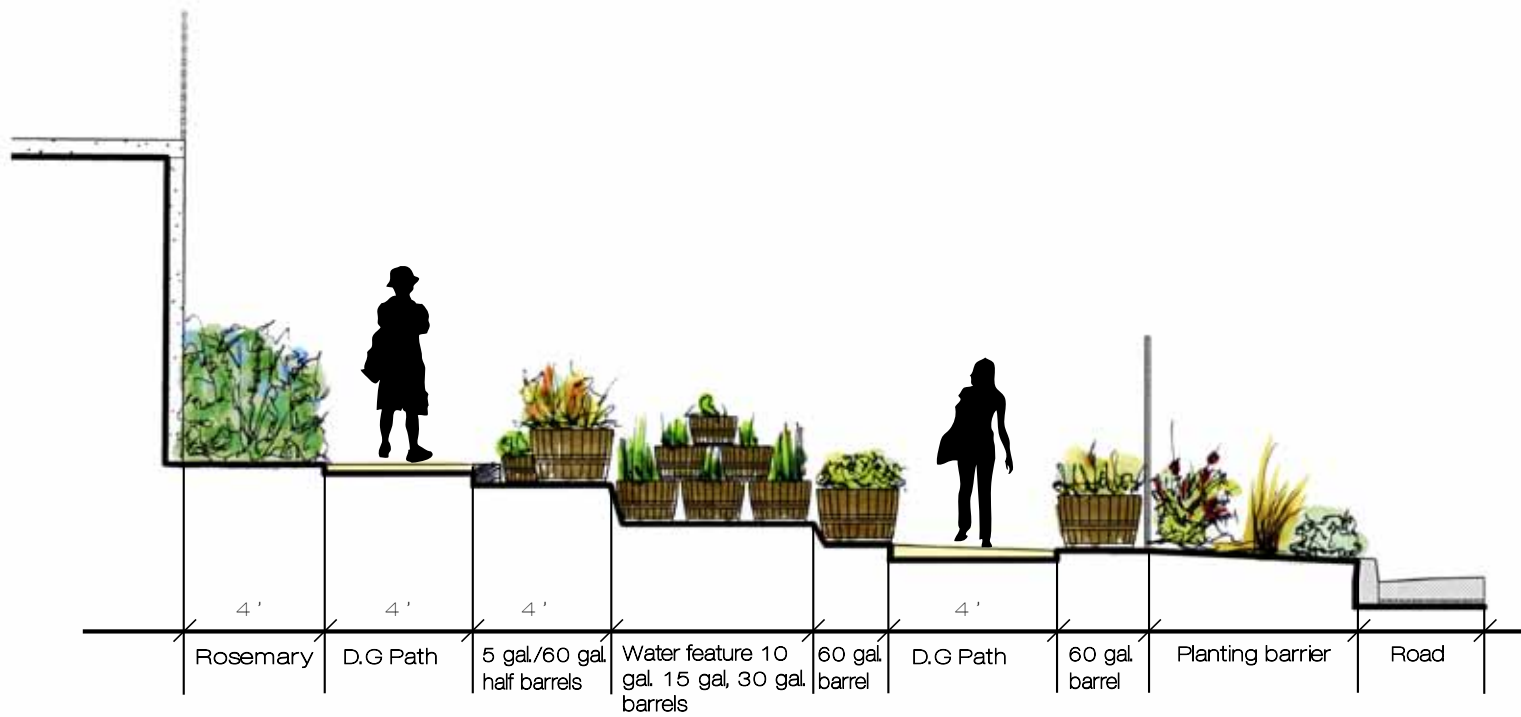
Final Conceptual Designs

Option 1

Option one took the same concept idea of the initial preliminary design, however it is now refined. The number of wine barrels were reduced from 350 to about 150 wine barrels of different sizes. Design option 1 includes a wine barrel water feature as a way to add a distinctive element to the design and a barrier of ornamental plants to protect the herbs from any pollutions from the adjacent road. In order to address the slope of the site, long and shallow steps framed with reclaimed railroad ties gradually step down towards the lowest point. Wine barrels vary from size and height, also in efforts to avoid drastic grading. To mark the garden boundary and protect the herb garden from unwanted visitors, a custom curvilinear rebar fence flows through the site. This design represents sustainability at its finest by reclaiming materials that are easy found in the area and working with drought-tolerant plants. In addition to being sustainable, the design provides an authentic look with its unique combination of materials that represent the history of the area.

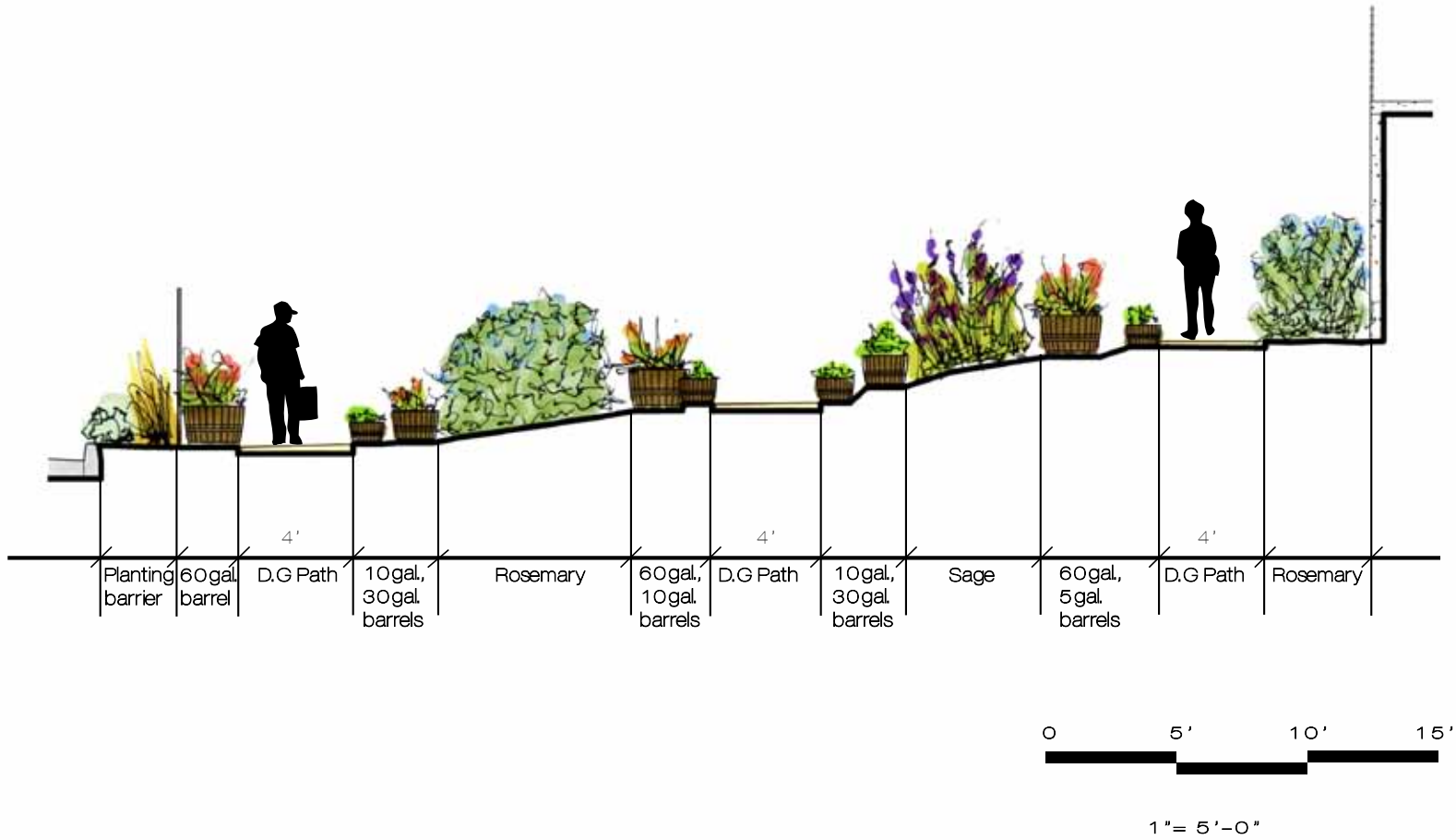
To the right are inspirational images for the design.





1" = 4'-0"

SECTION A-A



SECTION B-B





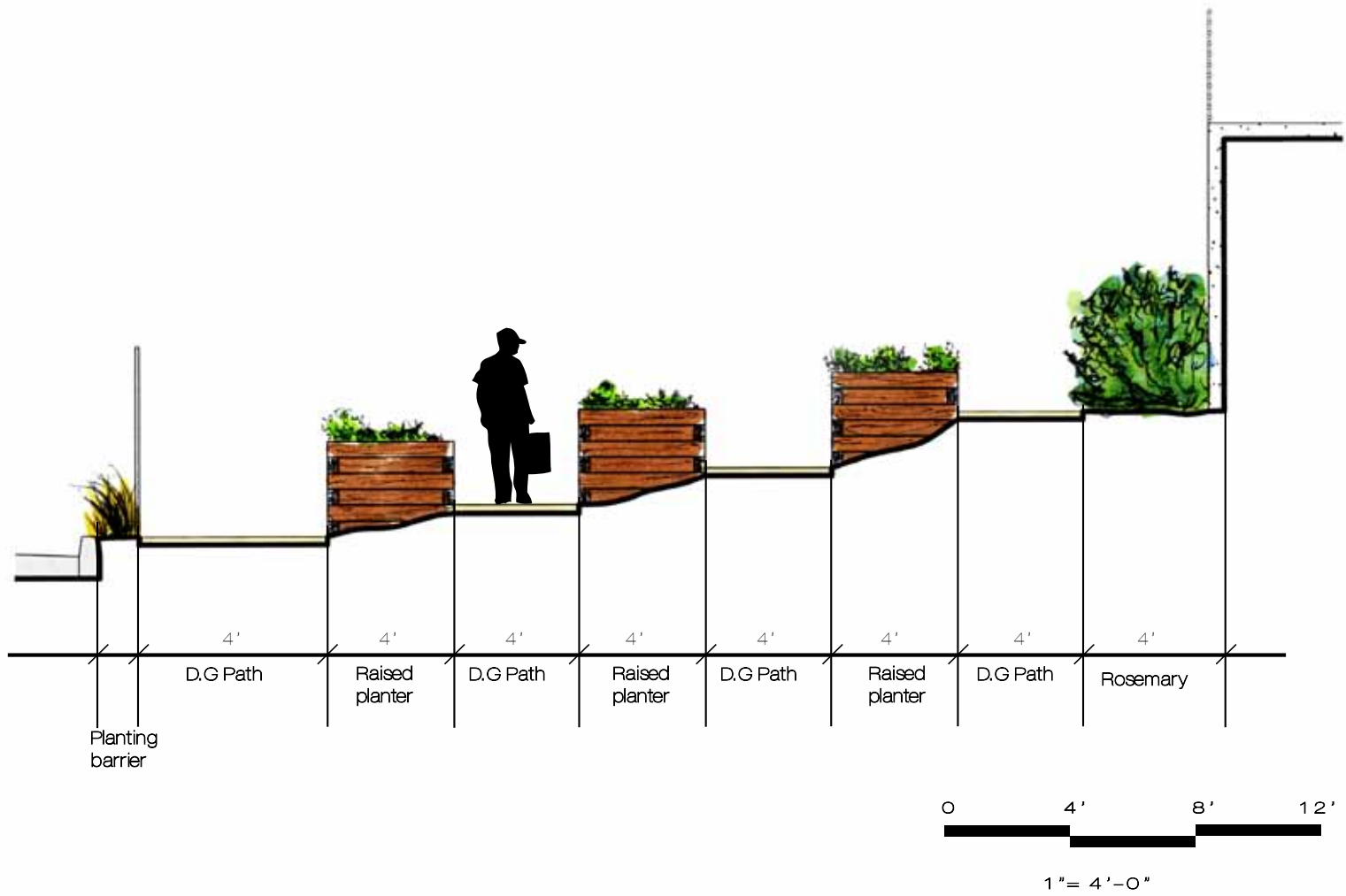


Final Conceptual Designs

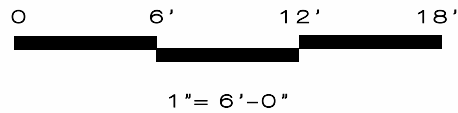
Option 2

Option two, like option one is a refined design from the preliminary drawings. The design kept the clean formal appearance using wood raised planters. The choice of wood for this design varies from a simple douglas fir wood to something more luxurious such as redwood or cedar. To address the slope, this design has the planters cut into the hillside serving as both a planter and a soil retention system. The layout for the entire site relates to the layout of the planters as all the paths and fence are also in straight lines. As mention before in the site analysis, the planters will be placed parallel to the contour line of the slope. The planters can also easily vary in height and in the size of wood used to build the walls of the planter. After researching raised planters, I concluded that the typical planter is four feet wide by twelve feet long. This is a good size to aid in maintaining the plants grown within the planter.

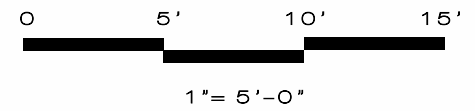
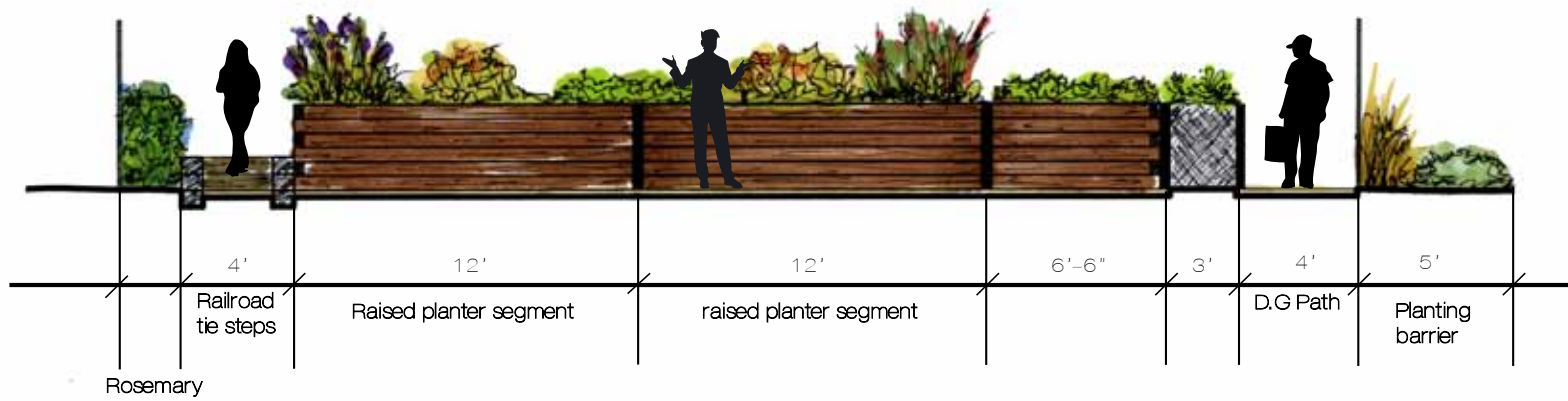




SECTION A-A



SECTION B-B



SECTION C-C





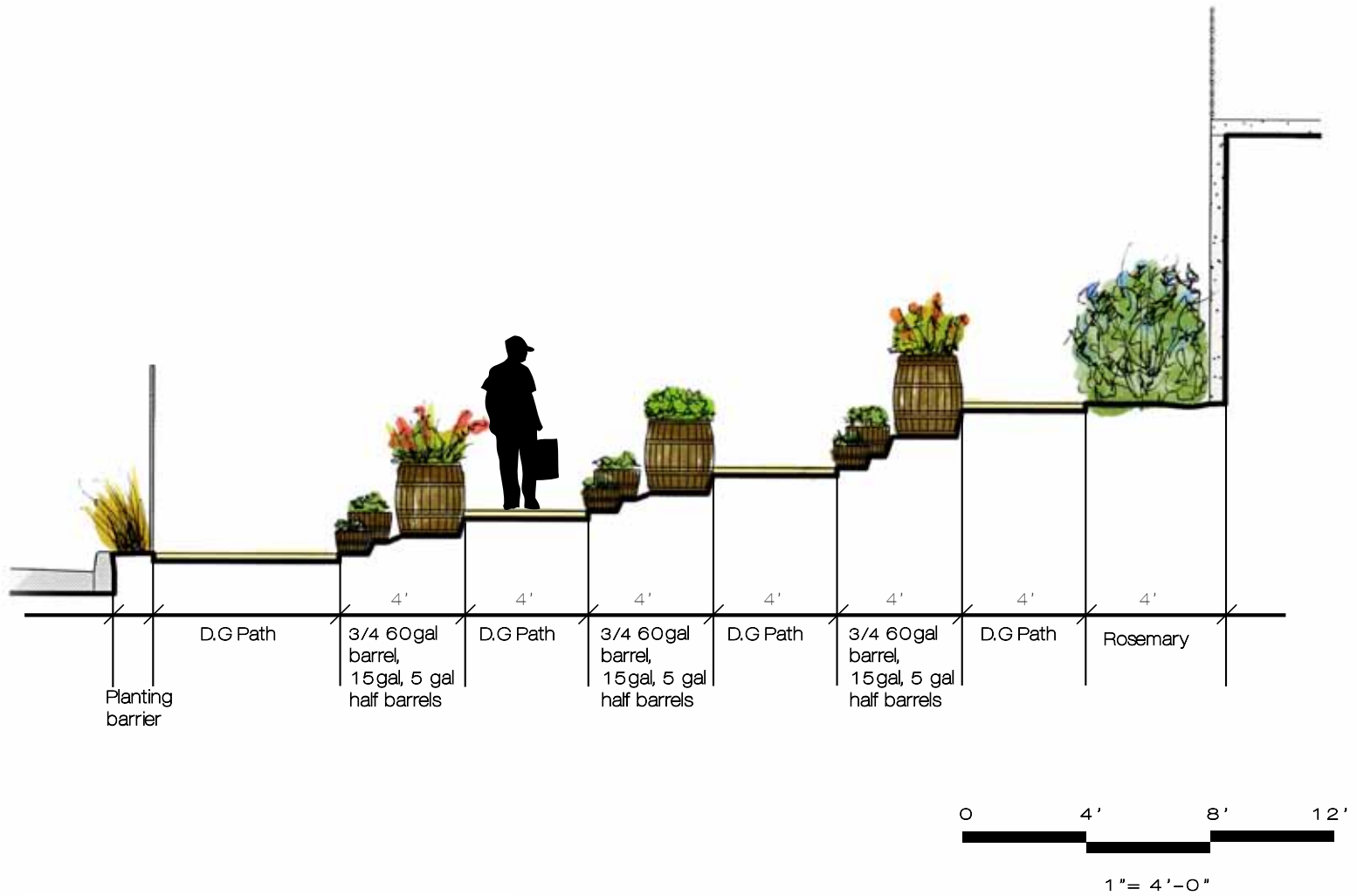


Final Conceptual Designs

Option 3

Option three was a combination of both option one and two. It has the formal appearance of the clean straight lines of option two while using the planter material from option one. It allows for compromise if there is a split decision on the design choices. This design give the client the option of having the authenticity and sustainable measures while keeping a smooth rectilinear appearance.





SECTION A-A



SECTION C-C







Plant List

Requested Plant Species

Tuscan blue rosemary, *Rosmarinus officinalis* 'Tuscan Blue'

Arugula 'roquette arugula' *Eruca vesicaria* var. *sativa*

Pineapple sage, *Salvia elegans*

Cat mint *Repeta labiatae*



Plant List

Additional Plant Species

Yarrow	Onions, assortment
Lavender	Summer Savory
Winter Savory	Mustard Greens
Parsley	Celery
Chives	Sorrel
Lemon Basil	Sweet Dani Basil
Lamb's ears	Lemon Grass
Artemisia	Garlic
Russian Sage	Bergamot
other Sage wide assortment	Viola
Black cumin	and others...
Cilantro, assortment	

Conclusion

This project was very interesting since it had a very unique location for an herb garden. Most would have thought twice about creating an herb garden on what is essentially a hillside. However, since space is limited in such an established country club, the site choice could not have been better. There are still possibilities that the client may not be satisfied with any of the three options; however providing three options gives the client a clear vision of what can be done on the site of their future herb garden. Now the Diablo Country Club can make an informed decision on how to create a garden that not only will function but can also essentially be an opportunity for promoting sustainable herb gardens and educate its members.

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