

# Hakone Estate & Gardens

Approved by Saratoga City Council  
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THE  
PORTICO  
GROUP





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# Acknowledgements

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SECTION ONE

# Executive Summary





SECTION ONE

# 1. Executive Summary

This Master Plan Document for Hakone Estate & Gardens in Saratoga, California, is the result of a collaborative process spanning eight months—from February through August 2015—with staff, volunteers, and stakeholders participating in four workshops led by the design firm The Portico Group

## 1.1 Description of Hakone Estate & Gardens

The City of Saratoga has a treasure in the Hakone Estate & Gardens. This Master Plan outlines how to sustain the Gardens’ historical presence and strong sense of place while staying vital for visitors and the Saratoga community into the future.



## 1.2 Definition of Mission and Vision

**The Gardens’ mission served as the foundation** for the Master Planning process and describes why the Gardens exist:

To sustain the living and evolving spirit of the Gardens, nourishing understanding across time and cultures

**The Vision for the gardens**, also completed during this process, describes what the Gardens aspire to do:

As a living embodiment of Japanese garden principles, rooted in the California landscape, Hakone Gardens welcomes its community as a haven for reflection, rejuvenation, and cultural exchange.

## 1.3 Definition of Needs and Goals

The Master Planning process began by identifying the needs and related issues for the Gardens. This led to the development of broad long-term **goals** that define how Hakone Estate & Gardens will accomplish its mission.

1. Connect to the community.
2. Restore the legacy of the gardens, buildings, and structures to make this the best Japanese garden outside of Japan.
3. Expand interpretive and educational opportunities.

4. Enhance the visitor entry and arrival sequence.
5. Provide adequate space for staff.
6. Improve visitor services and amenities.
7. Create a sustainable organization.

## 1.4 Scope of Master Plan

The City of Saratoga asked The Portico Group and Hakone Gardens & Estate to develop a long-term vision for the restoration of existing structures, gardens, and future additions that complement and enhance this historic property. This Master Plan includes descriptions and drawings of the following components:

1. New arrival at the upper end of the entry drive, parking lot, and service drives
2. New entry courtyard, buildings and gardens, including accessible paths
3. New garden maintenance and operations yard
4. Renovation and repurposing of existing garden buildings
5. Repurposing and renovation of indoor meeting/event hall

Other smaller improvements:

- Enhancements to existing gardens
- Immediate, short-term improvements

## 1.5 Physical Recommendations

The focus of proposed physical improvements are an area encompassed by the current inner and main parking lot and the forecourt to the Mon Gate. The primary efforts beyond the Mon Gate are improving accessibility to the lower and upper courtyards, improving the definition and user experience of garden, courtyards, paths and plantings, improving the koi pond, and upgrading and repairing the historic district buildings and structures.

## 1.6 Business Recommendations

Hakone Estate & Gardens is a significant cultural and botanical attraction in the South Bay area and is unique in that it is not part of a larger facility such as a city park. The major findings related to business planning includes:

- There is substantial potential to increase its visibility and reputation and to increase attendance and revenue.
- Several other West Coast Japanese gardens have annual attendance of 65,000 to 300,000. For analysis purposes, Hakone Estate & Gardens attendance is projected to increase from the current 35,000 per year to 75,000 per year after the implementation of all phases of the Master Plan. Membership and event activity are projected to increase as well.
- Rename garden as “Hakone Japanese Garden” to publicize the design philosophy.





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*Visitors at Upper Pavilion*



# Garden Core Illustrative Site Plan







## Garden Layout & Building Massing–View West







## Garden Layout & Building Massing–View South











*Koi in the pond*



SECTION TWO

## Master Planning Process





## SECTION TWO

## Master Planning Process

Master Plans often comprise site and building work that is executed in phases over a long time period. The plan serves as a general framework that provides direction to current and future board, staff and designers. The most important elements in this Master Plan are:

- project needs and goal statements
- facility program
- site and building layout and adjacencies
- accessible circulation routes of travel

The plan, through its conceptual illustrations, shows one possible approach to building massing and materials and the layout of new courtyards, gardens and circulation routes. Whatever designs are implemented will reflect the refinement that naturally occurs with additional time and thought during subsequent design phases.

The Master Plan is also a useful guide for what not to do in the future. It provides a tool and reference for the city and foundation to turn down development proposals at odds

with the framework and recommendations embodied in the Master Plan.

The Improvements and Phasing Plan clusters similar improvements together into zones that have a strong integrity, linkage and complementary quality among parts. The actual phasing priorities will change and evolve with opportunities.

The Portico Group conducted four workshops from February through August 2015 to share goals, creative ideas, and concerns among City and Hakone Foundation staff, volunteers, and stakeholders.

Throughout the Master Planning process, the design team, City and Hakone staff worked with Japanese architectural historian, Professor Ken Tadashi Oshima, to ground this Master Plan in fundamental principles of Japanese garden design and to ensure that Hakone Estate & Gardens stays alive and vital.



*Workshop 1 (February 10–11, 2015) tour and discussion of the garden.*

The four design workshops provided opportunities to learn about these treasured Gardens and to develop alternative schemes before finalizing the Master Plan. Each workshop built upon the work of the previous one. In brief, the efforts of each workshop were:

- » Workshop 1 (February 10–11, 2015): evaluate the site, discuss greatest concerns and opportunities, define the needs the Master Plan should address, specify goals for financial and design success, define the audience.
- » Workshop 2 (April 28, 2015): review and refine new mission, vision, and goals; review

financially sustainable models, facility-programming options, and site alternatives.

- » Workshop 3 (July 13, 2015): review and refine the Master Plan requirements (or “program”), site and building plans, cost opinion, and business plan.
- » Workshop 4 (August 27, 2015): present the draft Master Plan, including Business Plan and Construction Cost Opinion.

This Master Planning effort recognizes the important work done in 2006 by Takao Donuma for the Gardens and the Hakone Foundation to develop an initial Master Plan.



*Workshop 1 (February 10–11, 2015) card exercise discussion*





*Workshop 1 (February 10–11, 2015) tour and discussion of the garden.*





Zen Garden





SECTION THREE

Site Context: History,  
Analysis, Landmark Status &  
Visitor Demographics





## SECTION THREE

## Site Context:

### History, Analysis, Landmark Status & Visitor Demographics

#### 3.1 History

Hakone Estate & Gardens is the oldest Japanese and Asian estate garden in the Americas and Europe. San Francisco cultural leaders Isabel and Oliver Stine bought 18 acres to found the garden in 1915 because the Pan-Pacific Exhibition inspired them. Isabel visited Japan and one of her favorite places was Fuji-Hakone-Izu National Park. It became the namesake for Hakone Estate & Gardens.

From 1917 to 1929 the Stines built this summer retreat in the hills overlooking what is today's Silicon Valley (it was then called the Santa Clara Valley). Architect Tsunematsu Shintani designed the Upper "Moon Viewing" house and landscape gardener Naoharu Aihara designed the gardens. The Stines brought master artisans from Japan to build their dream retreat.

Today, all the structures and gardens are designated as a "Save American Treasures" site as part of the Hakone Historic District, protected by the National Register of Historic Places of Historic Preservation. The Hakone property is designated as a City Landmark. This designation means that any changes to any structure on a City Landmark must go through the Heritage Preservation Commission (HPC) for review. Built structures and gardens fall into one of two protected categories: contributing and non-contributing. For contributing structures and gardens, the city and Foundation are allowed to restore the building exterior and make repairs and restorations to the interior. For non-contributing buildings, they are allowed to change the use of the building and its internal spaces while

maintaining the historic exterior, including the existing windows and doors.

**Principal contributing buildings:**

Upper (Moon Viewing) House  
Tea Waiting Pavilion

**Principal non-contributing buildings:**

Lower (Zen) House

**Other non-contributing buildings:**

Caretaker's Cottage  
Cultural Exchange Center (CEC)  
Tea Service (Pine Moon–Shogetsu-an)  
Gift Shop  
Barn Office

**Other contributing structures:**

Well Pump House  
Mon Gate  
Wisteria Pavilion  
Moon Bridge  
Upper Pavilion  
Wisteria Arbor

**Contributing gardens:**

Hill and Pond Garden  
Tea Garden  
Zen Garden

**Non-contributing gardens:**

Bamboo Garden (Muko Saratoga Sister City Garden)

## 3.2 Site Analysis

Hakone Estate & Gardens are situated in the Saratoga foothills, with native vegetation of valley oaks and tanoaks. Downtown Saratoga is just a few blocks away but at the Gardens you feel removed from the urban environment.

### Strengths of the site are:

- History of rich Japanese-inspired design for the garden and buildings
- Six existing gardens and ten buildings (all on the National Register of Historic Places)

### Challenges of the site are:

- Steepness
- Plantings require more water than climate supports
- Flat land has already been developed, leaving little room for expansion

**Gardens:** Hakone contains six significant gardens, each representing traditional Japanese garden types. In varying ways each can be strengthened by better edge definition and screening of views of the parking lot and service areas. The Hill and Pond Garden requires the most renovation work because of significant leaking: the main



Bamboo Garden

pool and waterfalls leak; irrigation and storm events create garden sediment runoff in to the pond.

The natural vegetation of the Gardens is reflective of the Saratoga foothill oak woodland and central California coast. Hakone contains four native heritage valley oaks and a number of coast redwoods planted at the garden's beginning. Any proposed garden modifications should protect and save these specimens. The hillside above and surrounding Hakone is a mix of valley oaks and tanoaks.

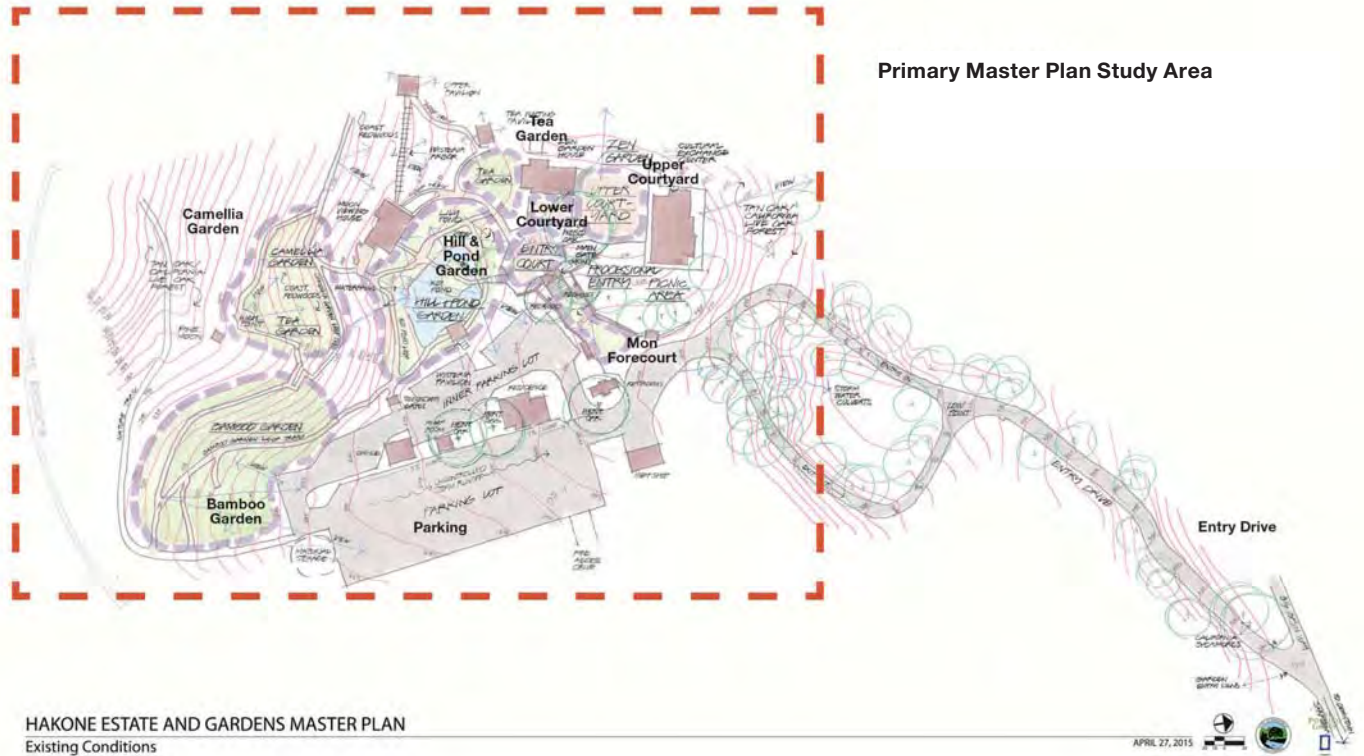
The evolution of the estate to a public garden developed piecemeal over time. This has resulted in a non-accessible, confusing, less than functional and potentially dangerous entry road, arrival, parking and entry experience.

**Access:** Along Big Basin Way, the route lacks a sidewalk connection to downtown Saratoga. The non-90 degree aligned intersection of the entry drive and Big Basin Way is somewhat obscure and easy to miss. The entry drive is very steep, particularly the one-way final approach. The lower portion of access trail from Big Basin Way to a point a hundred yards up the access drive is missing.

The main parking lot has non-conforming width to aisles and stalls. The existing slope 7 to 13% slope of the parking lot exceeds ADA accessible grades for parking and route of travel. Significant stormwater runoff from the Bamboo Garden and parking lot flows down entry road. The inner parking lot is inefficient in layout, exceeds ADA accessible grade, and visually intrudes on the garden experience.

**Visitor Access:** Much of the visitor processional and gathering areas lack spatial definition and enclosure, resulting in unintentional views and intrusion of roads and parking into the visitor experience; several spaces exceed ADA guidelines for slope. The processional entry to Mon Gate exceeds ADA slope guidelines, while the view from the stairs to the east is of an unsightly asphalt drive, passing cars and the backside of the restroom. The





Lower and Upper Courtyards also lack of edge definition. Most pathways within the Gardens also exceed ADA slope guidelines.

Stormwater: The existing stormwater management system for Hakone Estate & Gardens is inadequate:

- Stormwater flows over the pathways and into the koi pond in the upper portion of the site creating maintenance issues
- Accumulated flows on the lower end of the property clog and flood catch basins
- Runoff quickly overflows and drains through the vegetated collection basin between the entry driveways

- The site is likely contributing to erosion and increased suspended solids in Saratoga Creek
- Typical parking lot pollutants such as oil and metals as well as any fertilizers applied to the gardens may also be flowing from the site into Saratoga Creek.

Hakone should address these issues holistically for the primary Master Plan area as well as the full property through a variety of practices to harvest, slow, filter, and infiltrate stormwater on the site.

### 3.3 National Historic Landmark Status

The National Register of Historic Places for Historic Preservation lists Hakone Estate & Gardens as a historic district, and it falls under the guidelines of the National Park Service, California State Parks Office Historic Preservation and the city of Saratoga Heritage Preservation Commission. Three of the existing gardens are identified as contributing (C); one is listed as non-contributing (NC). Two of the existing buildings are identified as contributing (C); six are listed as non-contributing (NC). Six of the existing structures are identified as contributing (C), although repairs to the pavilions and arbor have used non-traditional lumber and joining, diminishing their historical attributes. Seven Lanterns, three Ritual Garden Stones, the Metal Crane sculpture and two Carved Stones are identified as contributing (C).

### 3.4 Visitor Demographics

The current audience is made up mostly of family groups and adults in groups and alone.

- Approximately 35 percent of visitors are from the Saratoga area
- Annual attendance is approximately 21,000

The potential audience is much greater than the current attendance.

- Hakone is easily accessible from a very large and prosperous market of over 4.2 million people
- The bulk of the primary market for Hakone lies outside the City of Saratoga
- The number of young people within the market area will grow only modestly, whereas boomers (45-64) and retired (65+) will grow substantially
- Tourists to the area are an excellent market for Hakone; these visitors look for a unique, authentic, good quality experience and are willing to pay relatively high fees



Tea Garden





Primary Market Area



Exhibits in Cultural Exchange Center



Visitor enjoying Hakone Estate & Gardens





*Tea Garden*





SECTION FOUR

Design Concept





## SECTION FOUR

## Design Concept

The Master Plan is grounded in the fundamental principles of Japanese garden design. The Gardens constantly refresh, refurbish, change and evolve as they build upon the past to stay alive and vital.



Metabolism  
新陳代謝  
Organic Renewal  
Keeping Tradition  
Alive and Vital

### 5.1 Japanese Garden Design Tenets

Gardens and building structures have metabolic life based on processes that build-up and breakdown substances through time. Gardeners and builders participate in the process of sustaining plants, landscapes and built structures, and thereby, further the garden's cultural heritage.

The approach to Master Plan site and building design develops from the following tenets:

- **Make Design Decisions Due to Circumstances**  
Additions to the gardens show growth, and each addition is a reaction to what was there before, and every time an addition is made, the whole is changed.
- **Journey and Focal Points**  
Very rarely are journeys made by following a straight path. The basis of Japanese gardens, shrines, and temples is that a turned path (combined with features spaced along the way) shows the way of life. It also provides a sequence of inner spaces along the journey that in turn shape or connect to gardens or buildings.
- **Seen and Hidden**  
Japanese garden design is inherently based on visitors seeing special natural, garden, or building feature from a vantage point. As they continue strolling, the recently revealed feature is hidden from sight! The gardens show more by revealing less.
- **Elements to Connect**  
Many gardens are organized around a sequence of movements and experiences that show the garden at its best. Elements such as stepping stones, paths, and plantings can suggest to a visitor a preferred route of exploration.
- **Elements to Cover**  
Gardens use a variety of ways to differentiate the relative importance of different spaces. Trellises, arbors, gates, pavilions, and building overhangs create spaces for movement, rest, and comfort. A vantage point creates a threshold between two larger spaces.
- **Framed Views**  
In Japanese art and aesthetics, a framed view is used to focus the viewer on a specific area, element or relationship. This heightens what is unusually significant or beautiful.
- **Elegant Simplicity/Energized Calm**  
Gardens can provide experiences of direct and simple beauty. Reduced noise and disturbance enhances self-awareness, focus, and attention.

## 5.2 Spatial Organization and Visitor Flow

The spatial organization is based on how people will move from the parking lot to new buildings and gardens, to the existing core gardens and buildings, up to the hillside gardens and structures, and then flowing down.

Throughout this flow of movement are multiple opportunities to pause and view the extended landscapes of Saratoga and the South Bay. Conceptually, the spatial organization moves visitors along a path from village center to natural garden, to hillside mountain shrine and back again.

- Visitors enter a village experience defined by structures and courtyard space that are arranged in a simple, direct manner. The sense of enclosure provides visitors with a feeling of being within an inner space that is important.

- The comfort of being within an inner space is juxtaposed with framed views to what is beyond or outside of the courtyard. These views are created by plantings and structures to partially reveal and partially hide the outer spaces.
- Visitors move beyond the village to a journey along a path that is marked by special gates, fences, paving materials, plantings and gardens.
- The path and garden experience is suggestive of calm, stillness, and elegant simplicity. As the visitors move through the garden, natural and made elements present a shifting focus that dynamically unfolds in a repeated rhythm of gaze, focus, perceive, and release.
- From the garden experience a path leads to a natural experience that reveals the beauty, harmony and asymmetry of nature.



Mon Gate



View from Cultural Exchange Center deck





SECTION FIVE

Walkthrough





SECTION FIVE

# Walkthrough

## 6.1 Overall Site Concept Plan

The new site plan incorporates the priority of a welcoming and cohesive arrival experience, with accessible pathways and new service functionality. The Master Plan achieves ADA accessibility for the parking lot, and the core garden experience, including the new Entry Courtyard, Buildings and Gardens, the Mon Forecourt, the lower and upper courtyards and the loop around the Hill and Pond Garden; and the new Garden operations yard.

Major components of the site plan include:

- Arrival and Parking Lot that achieves ADA accessible grades and safer and more functional layout
- New Entry Courtyard that is framed by new and renovated buildings housing visitor amenities and staff offices
- New Entry Garden and processional pathway
- Enhanced spatial definition to Mon Forecourt, Upper and Lower Courtyards
- Lessened slope of the loop pathway around the Koi Pond and the Mon Forecourt and Lower Courtyard to achieve ADA accessible grades
- New Garden Operations yard and building



*Heritage Valley Oaks at existing parking lot*



## Entry, Courtyard, Framed Views & Materials





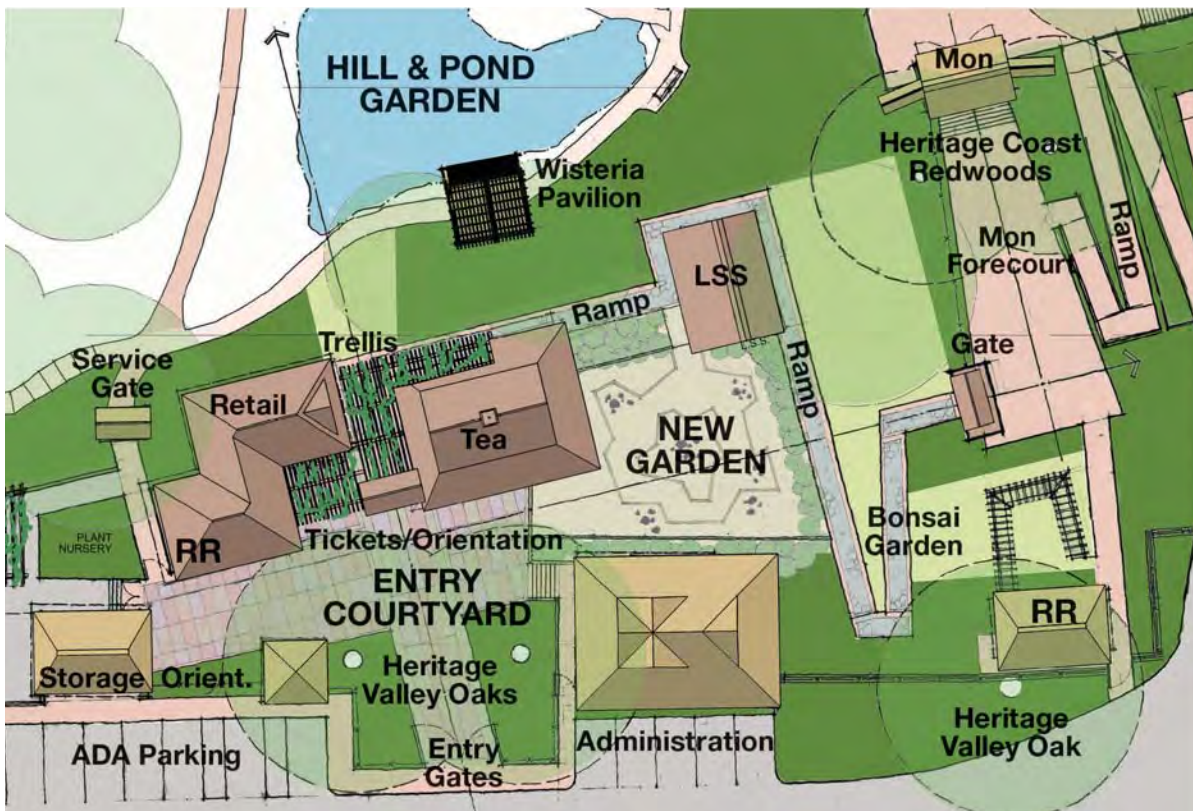




## 6.2 Arrival Road, Parking Lot, and Service Drives

The entire entry sequence—parking and service drives—will be re-graded and modified to create a more welcoming, clear, and safe arrival experience. The new design addresses the main issues of steep slopes and complex vehicle and pedestrian circulation. Specific changes include:

- Relocate a new arrival and entry uphill and south of the existing entry, framed by the two existing heritage valley oaks.
- Eliminate former driveways and excess asphaltic concrete paving across from the existing gift shop.
- Change parking lot layout to address steep grade and safety. The lot currently has a slope between 8-15 percent. By re-grading the parking lot through filling and cutting the ADA parking spots will have a slope of 2 percent and general parking spots will be at 6 percent slope.
- Reconfigure main parking lot to provide deeper parking stalls and wider aisles that meet development standards and provide better circulation.
- Maintain 77 of 78 existing parking spaces through a more efficient 90-degree orientation.
- Create a storm water bioswale down the middle of the parking area and create a rain garden at the north end. These drainages tie into the existing storm water collection and outfall system along the approach roadways.
- Modify service access drive to the lower level of the Cultural Exchange Center (CEC) to lessen visual presence from the Mon Gate and provide a small vehicle hammerhead turnaround.
- Enhance the existing service drive at the south end of the revised parking lot, leading uphill along the edge of the Bamboo Garden.



Entry Courtyard and Garden—Hakone Hiroba



### 6.3 Entry Courtyard, New Garden, and Buildings

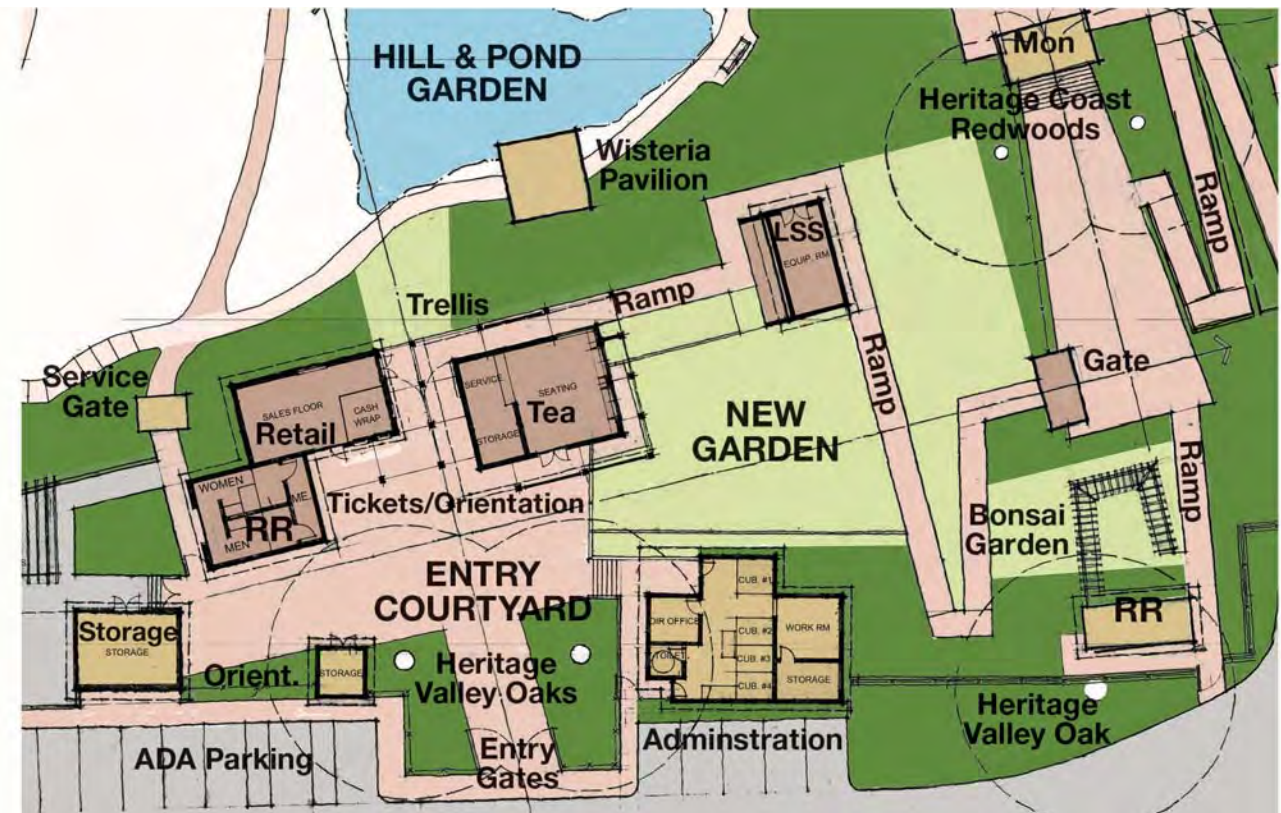
The most dramatic move of the Master Plan is the creation of a new entry courtyard that consolidates visitor services and organizes the entry experience. All of the new visitor facilities, gardens, and Garden Operations (yard and buildings) are located within the footprint of the existing upper parking lot.

Visitors arrive at the Entry Courtyard (hiroba) through the heritage valley oaks directly from the new parking lot. The courtyard sits at the intersection of two visual and organizing lines: the dominant axis follows from the valley oaks up to the Hill and Pond Garden beyond and Upper Moon Viewing House; the secondary axis is perpendicular to the primary, along a sightline that extends through

the Courtyard, Entry Garden and the gate to the Mon Forecourt.

The Entry Courtyard is a welcoming public space accessible to all visitors. The layout and function of the Courtyard is based on the Japanese tradition of hiroba spaces: it is a space for gatherings, celebrations of seasonal festivals, and special events. It is also a place to sit, relax, and enjoy watching and meeting people in a garden setting. The perimeter of the Courtyard limits the extent that visitors can wander before purchasing tickets or returning out the gate toward the parking lot.

The courtyard open space is defined by two magnificent towering oak trees near the entry, a gate between the parking lot and courtyard, a gate between the courtyard and the entry path leading to gardens. Three new buildings offer amenities to visitors, and the two existing buildings are repaired and reused.



Garden Core Lower Floor Building Plans-Entry

Upon entering between the oak trees, a sight line between the Gift Shop and Tea Room reveals a framed view uphill to the Upper Moon Viewing House. As visitors arrive and enter the Courtyard new features appear:

- A stone wall and garden overlook on the northern edge of courtyard.
- The Central Garden directly north of the entry courtyard and west of the Administrative Offices (remodeled caretaker's residence) and new Bonsai Garden west of existing restroom.

### New Buildings

The Gift Shop accommodates two functions:

1. Admission ticket purchase either within the Gift Shop at the merchandise sales countertop or from transaction windows facing the courtyard;
2. Display and sales of Hakone Estate & Gardens merchandise. The Gift Shop has windows on the west side of the sales floor that subtly reveal views of new garden plantings and the existing gardens beyond. The Gift Shop has two visitor entrances. The first entrance faces the publicly accessed Entry Courtyard and does not require purchase of an admission ticket. The second entrance opens to the path to or from the existing garden spaces that is accessed only after the purchase of an admission ticket.

The **Tea Room** faces the Entry Courtyard and is positioned slightly right-of-center as visitors enter the courtyard. Access to the Tea Room is from the west side of the Entry Courtyard. On the north side, the Tea Room opens to a balcony that overlooks the new Rock Garden. The Tea Room has two spaces:

1. Seating area for patrons wanting a restful and refreshing moment at the gardens;

2. Support and storage area for preparing and serving tea and cookies and other traditional Japanese snack finger foods.

The new **Restrooms** are located in the south portion of the Gift Shop building and accessed by visitors from the south side. The east and north walls of the restroom building face the Entry Courtyard. Exterior wall space contributes to the visitor experience through placement of interpretive panels that focus on the legacy of Hakone, the Stein family, and how the Gardens have changed through time. There's also space for information about upcoming events and donor recognition.

A new **Koi Filtration Building** and equipment will improve water quality and the health of the koi. The Koi Pond needs a completely new filtration system. The Koi building is located north of the Gift Shop and Tea Room along the path that brings visitors to the new gardens and eventually, the Mon Forecourt. The building houses equipment to filter, treat, and pump water to and from the Koi Pond. The south side of the Koi filtration building has a covered porch that presents small-scale temporary Art of the Garden objects such as pottery, ikebana, and paintings.

The existing **Caretaker's Residence** will be renovated to accommodate the Hakone Foundation's need for administrative space. The Caretaker's Residence is listed as a non-contributing building and allows the Foundation to change the use of the building and its internal spaces while maintaining the historic exterior (including the existing windows and doors). The renovated Administration Building has three main functions: provide work spaces for administrative employees (5), meeting/ work space, storage spaces and toilet. New power, data, and lighting will be installed. The exterior wall assembly, roof assembly, framing, windows and doors will be repaired as needed.



The existing **Well Pump House** will have the building exterior restored and the interior repaired and restored. The restored Pump House will include space for docents, orientation exhibits, and festival elements that spill out into the courtyard.

## 6.4 Mon Forecourt, Lower & Upper Courtyard, Koi Pond, Hill & Pond Garden

The two changes to the core garden are the provision for accessible pathways and garden enhancements that modify sightlines and edges. This area encompasses the Mon Gate, Lower and Upper Courtyards, Koi Pond, and Hill & Pond Garden.

### New Accessible Garden Pathways

The new pathways link together to create an accessible route to the core garden experiences of Hakone. All pathways create framed views and hidden and revealed sightlines for visitors. The new routes go from the base of the stairs at the Mon Gate up to the Lower Courtyard, continues to the Upper Courtyard and Cultural Exchange Center, and then goes around the Koi Pond.

The specific pathways are:

- **Mon Forecourt:** Re-grading and gravel fill raises the eastern end of the Forecourt so that it meets accessible slope requirements, creates an improved view of the historic Mon Gate and provides a level terrace for ceremonial gatherings and events.
- **Path to Lower Courtyard:** A series of ramps takes visitors from the Mon Forecourt up to the Lower Courtyard.
- **Path to Upper Courtyard:** Another series of ramps connects the Lower Courtyard to the Upper Courtyard and the Cultural Exchange Center, Lower House and Zen Garden.
- **Path around Pond:** Re-grading the path around the Koi Pond, providing access and views of the bridge, island and Upper House. As you make the loop, you have expanded views back to the Lower House, Mon Gate, and Cultural Exchange Building.

### Enhancements to Existing Garden Spaces

Changes to the existing gardens create more distinct spaces with unfolding views across the gardens. From a new view from the stairs and the Upper Courtyard near the Heritage Valley Oak, to plantings along the Zen Garden, these changes continue to hide and reveal views across the site.

Specific enhancements to the gardens are:

- **Lower Courtyard:** Added planting depth adjacent to the Zen Garden wall and the south side strengthens the spatial definition of the courtyard. This creates a tighter experience and controls the views toward the Hill and Pond and back to the Mon Gate. A glimpse of the Upper House and bridge entices visitors to move forward along the path where the Koi Pond and Hill and Pond Garden are only then revealed.
- **Upper Courtyard:** A fence and trellis will be added between the C.E.C. and the Lower (Zen) House. The fence will establish the west edge of the Upper Courtyard and will also help deflect and absorb sounds.
- **Pond:** The regraded pathway around the pond creates an accessible loop with views to the surrounding garden.



## Gates, Gardens, Journey & Forms Beyond









- **Wisteria Pavilion:** The pavilion will be rebuilt to enhance the serenity found at the pond’s edge. From the vantage of the pavilion, you can look across to controlled views of the Hill and Pond Garden and Upper House beyond.
- **Journey back:** As you leave the core garden experiences across the Mon Forecourt, you cross through the gate with a view of the New Garden and Entry Courtyard. This view completes the conceptual journey for visitors back from the “mountain sanctum” to the “village.”

**Existing Garden Pathways**

The greater portion of the garden walking surfaces require improvement and existing handrails need repair or replacement.

**Existing Buildings and Structures**

The following existing buildings require repair and limited upgrades: the Upper (Moon Viewing) House, Tea Waiting

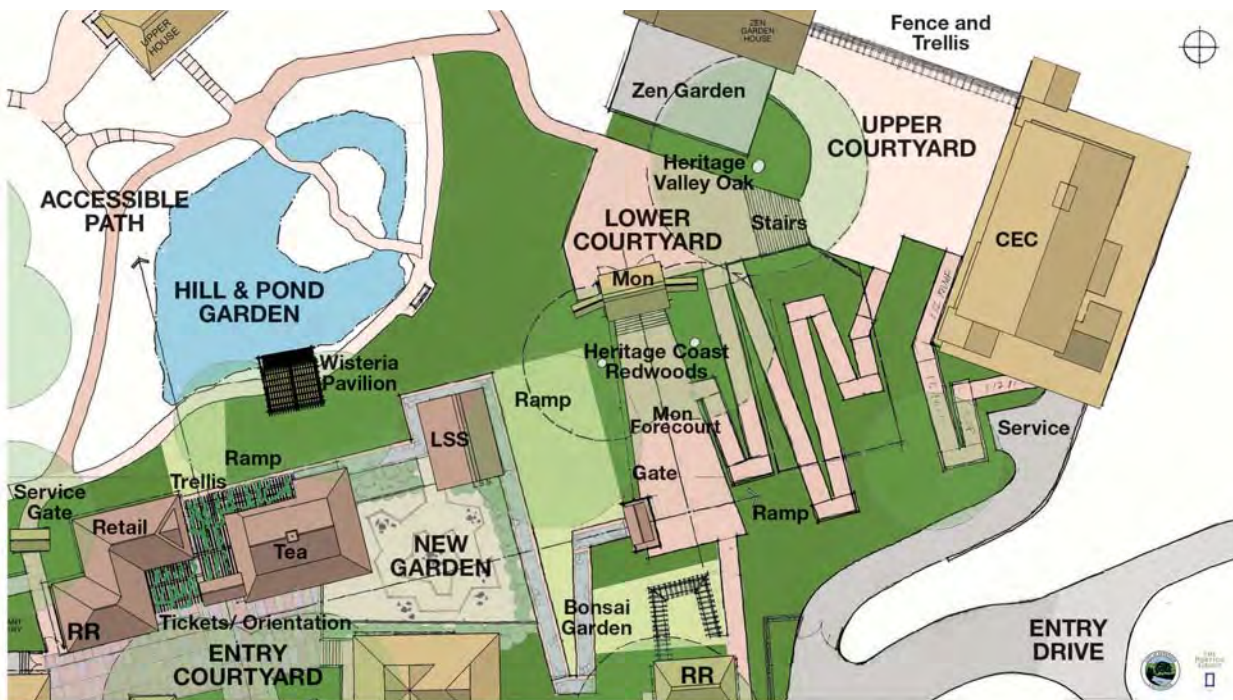
Pavilion (Hakone Azumaya), Mon Gate, Wisteria Pavilion, Upper Pavilion and the Wisteria Arbor.

The **Lower House** requires repair and kitchen upgrade to enhance its meeting and interpretive spaces. Specific actions include code upgrades to the existing small kitchen for tea service and light fare food catering services.

The **Cultural Exchange Center** requires repair, and may be renovated for a new use (see Section 6.5 Event Hall).

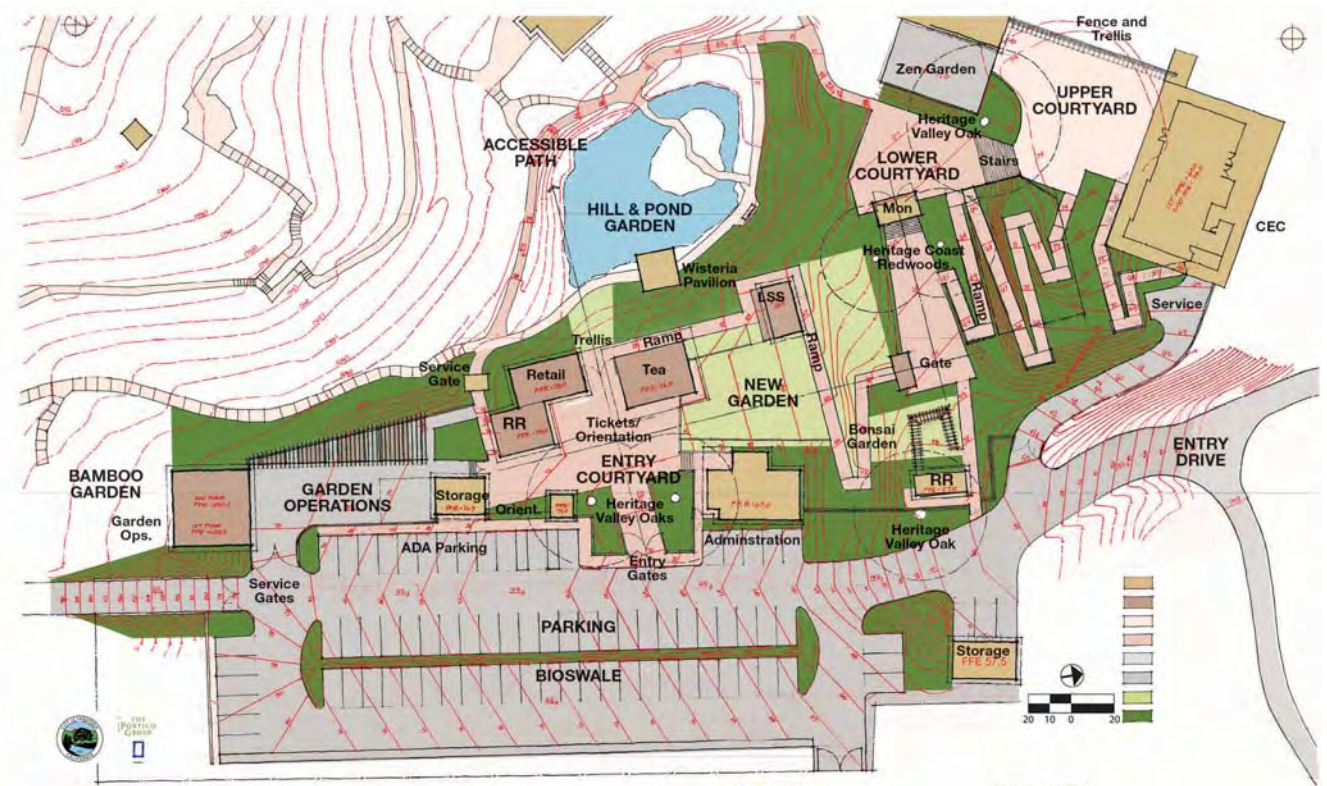
The **Pine Moon (Shogetsu-an)**—including the tea waiting enclosure and landscape—needs non-conforming elements removed, and construction completed.

For many of the buildings and structures, the Capital Improvement—Small Projects summarizes the extent of the repairs required.

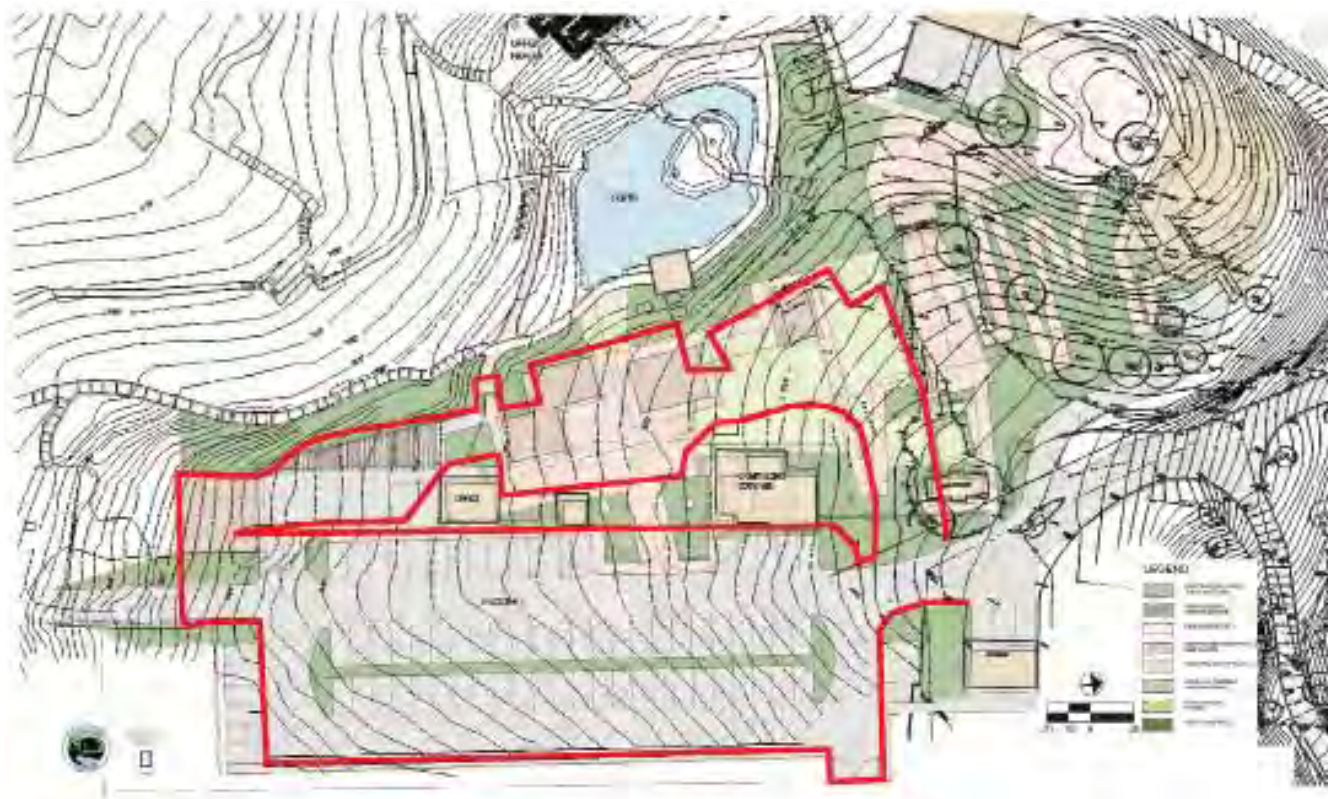


Lower and Upper Courtyard and Hill and Pond Garden





Garden Core Grading



Garden Core with Existing Parking

## 6.5 Event Hall

A priority of the master plan is to create more revenue from the rental of indoor space for events and meetings. A current problem is that the number of people at rental events exceeds the legal occupancy of existing indoor spaces to accommodate them. Events spill out into the exterior spaces and create noise impacts on visitors in the garden and neighboring houses.

In order to allow the garden to hold rental events, realize the revenue from the events, and alleviate negative impacts on visitors and neighbors, the master plan proposes two options:

1. Renegotiate the apartment lease at the Cultural Exchange Center (CEC) and convert the space to public use and event support. The event capacity of this space is approximately 160 people.
2. Create a new building, the Performance Hall, to the south of the CEC. The Hall sits along the east edge of the Upper Courtyard. It includes an elevator connecting the lower and upper courtyards, making them both accessible. The Performance Hall has an event capacity of approximately 160 people.

### **Option #1 – Renovate the CEC**

The CEC is listed as a non-contributing building and allows the foundation to change the use of the building and its internal spaces while maintaining the historic exterior, including the existing windows and doors. For this option, the main floor tea merchant display, raised floor tea waiting room, and the tea room are renovated to be a single flat floor space. The existing wood columns are to remain. The apartment is renovated to be a green room, and the existing kitchen area is renovated to function as a catering staging room. On the east side of the CEC an

exterior elevator is added to allow for catering access from the lower floor to the main floor.

The CEC lower floor is renovated to incorporate the catering elevator and its machine room, and an exterior space under the main floor footprint is enclosed for use as an art room.

### **Option #2 – Build a New Events Hall**

The proposed Events Hall is located on the downward slope of the wooded area between the Mon Gate, the existing picnic area, and the CEC building. The Events Hall main floor and entry doors open to the Upper Courtyard. The main floor sits over a lower floor that is below grade on the west (i.e. not seen from the Upper Courtyard) and opens to existing grade on the east for service access.

The main floor includes an entry foyer, an events space, a balcony off of the events space, and a stair and elevator from the main floor to the lower floor. The lower floor has a series of rooms that support events with guest restrooms, a bride's changing room, catering facilities, and building systems for electrical and mechanical.

In either option #1 or #2, the Master Plan maintains and enhances meeting and interpretive space within the Tea Garden House (Lower House) by providing code upgrades to an existing small kitchen for tea service and light fare catering services.

## 6.6 Garden Operations Courtyard

### **New Buildings**

A new **Garden Operations Building and Yard** is located at the southwest corner of main parking lot between the Entry Courtyard and the Bamboo Garden.



The building provides new interior and exterior space for garden operations, offices, and maintenance. The lower floor contains wood and metal storage areas, and a workshop. The upper floor accommodates a gardener desk, meeting and storage spaces. The upper floor has an exterior door that opens to the south and the bamboo garden. An internal stairs connects the lower and upper floors.

A vehicle service yard combines the Garden Operations building with materials bins holding woody debris, soil, and compost and wood chips. The bins are roofed to prevent water and soil runoff.

As a Master Plan option, the upper floor of the Garden Operations building could be designed for a Caretaker's Residence.

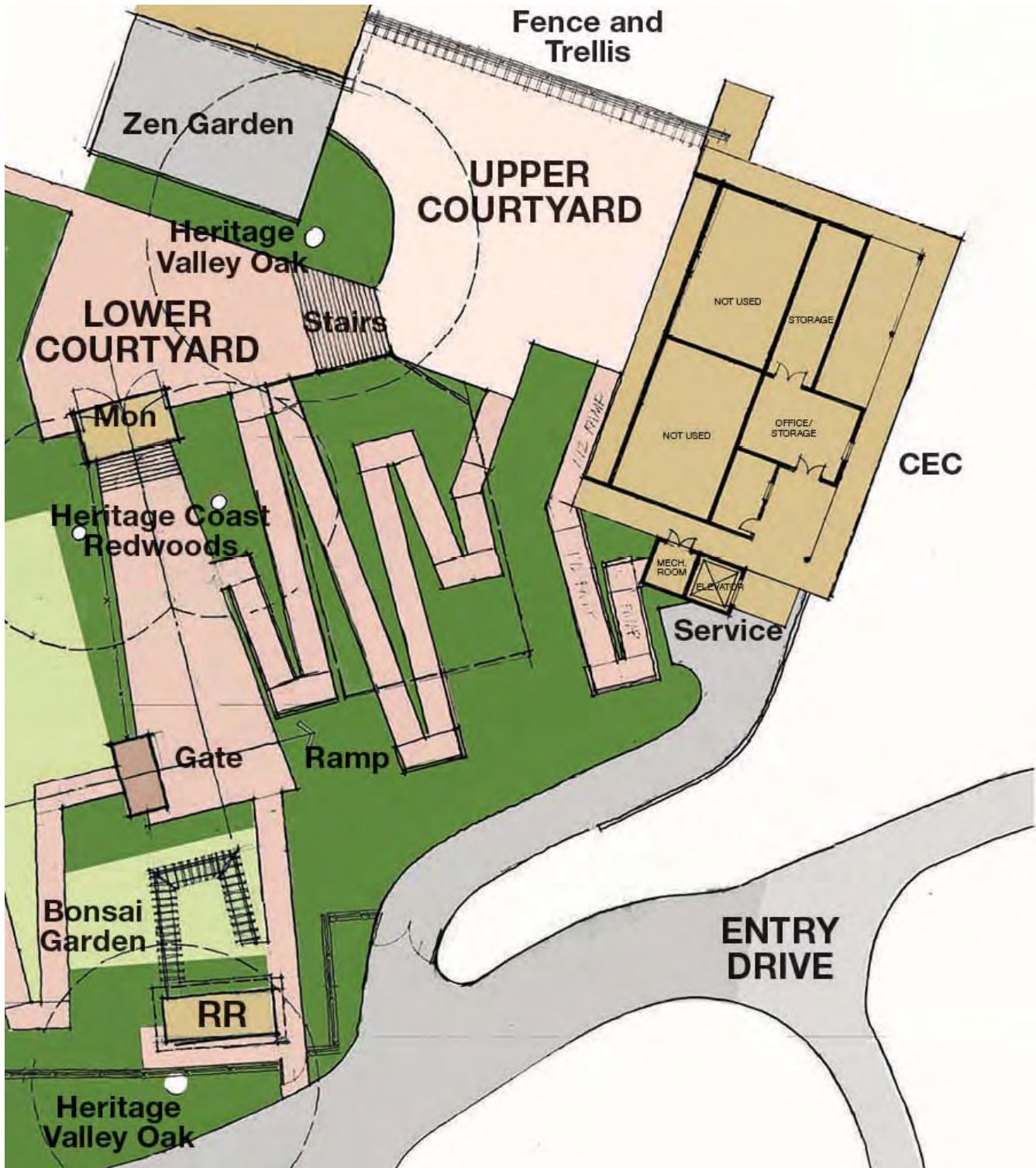
**Existing Buildings**

The existing **Barn** is listed as a non-contributing building and allows the Foundation to change the use of the building and its internal spaces while maintaining the historic exterior, including the existing windows and doors. The building interior and its wall and roof assembly are renovated to a maintenance storage use.

The existing **Gift Shop and Garage** is listed as a non-contributing building. Its interior wall assembly, roof assembly and interior finishes are renovated to an operations and storage use.

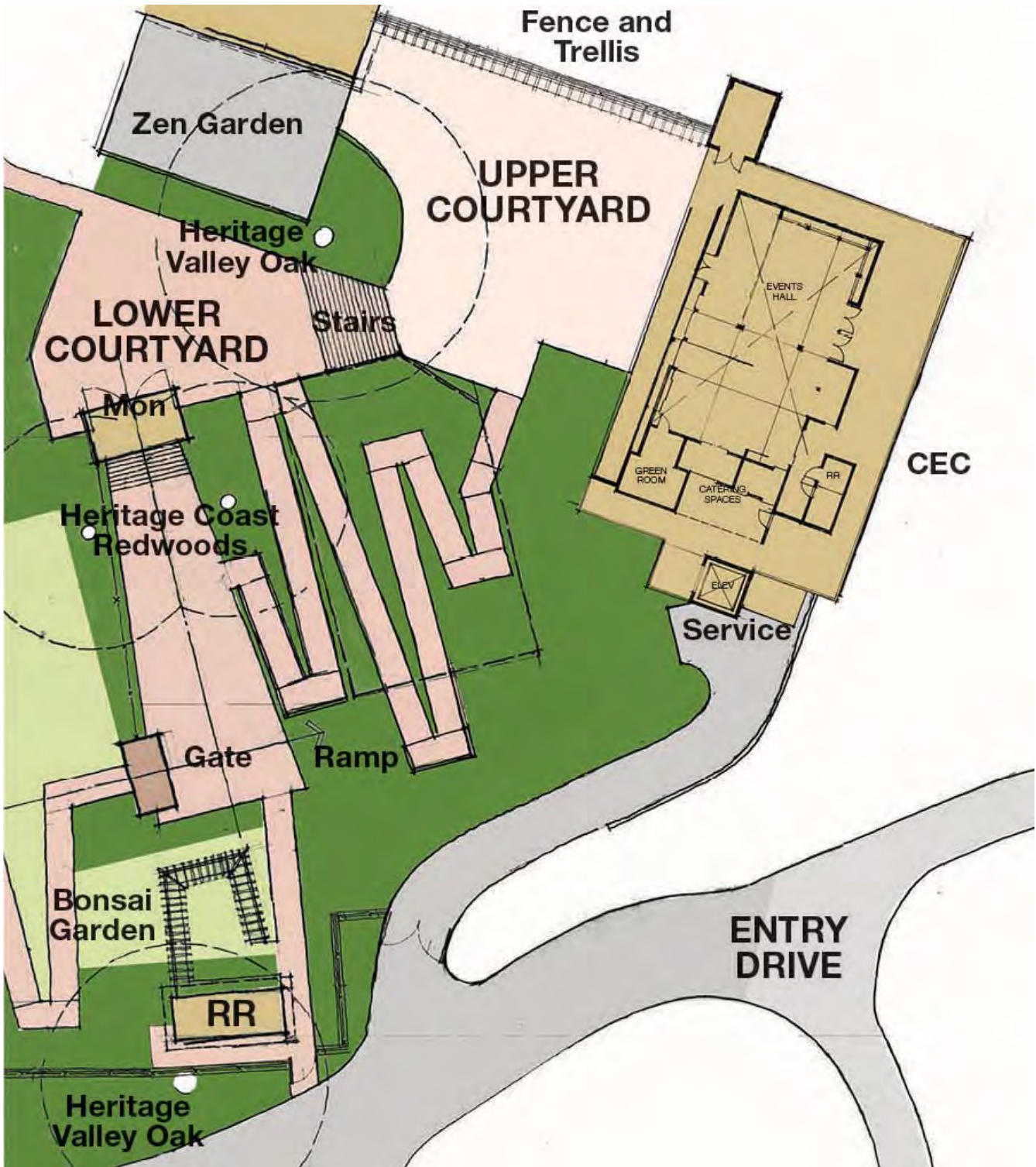


Garden Core Building Plans-M & O Yard

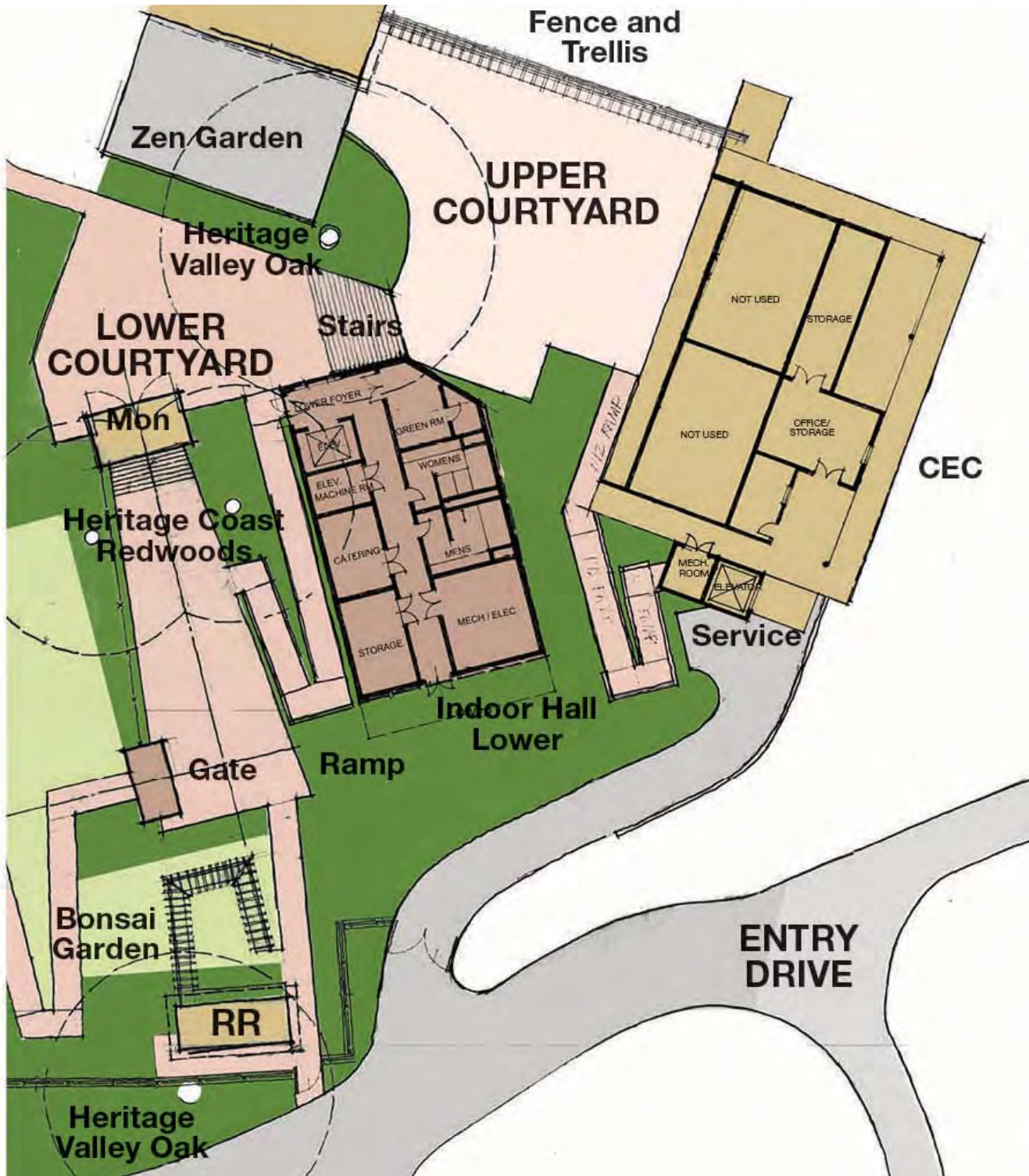


CEC Building Plan—Lower Floor



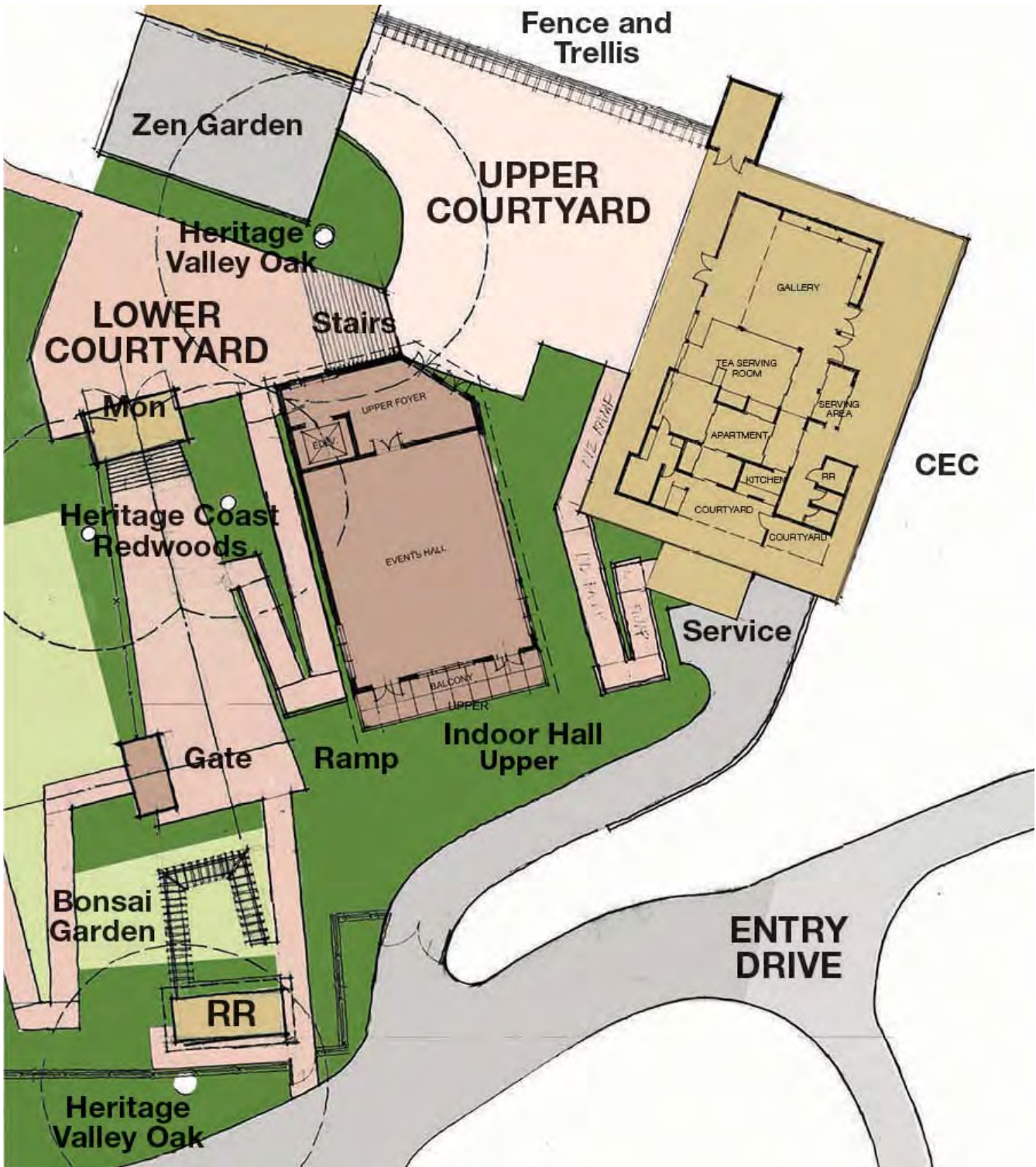


CEC Building Plan—Upper Floor



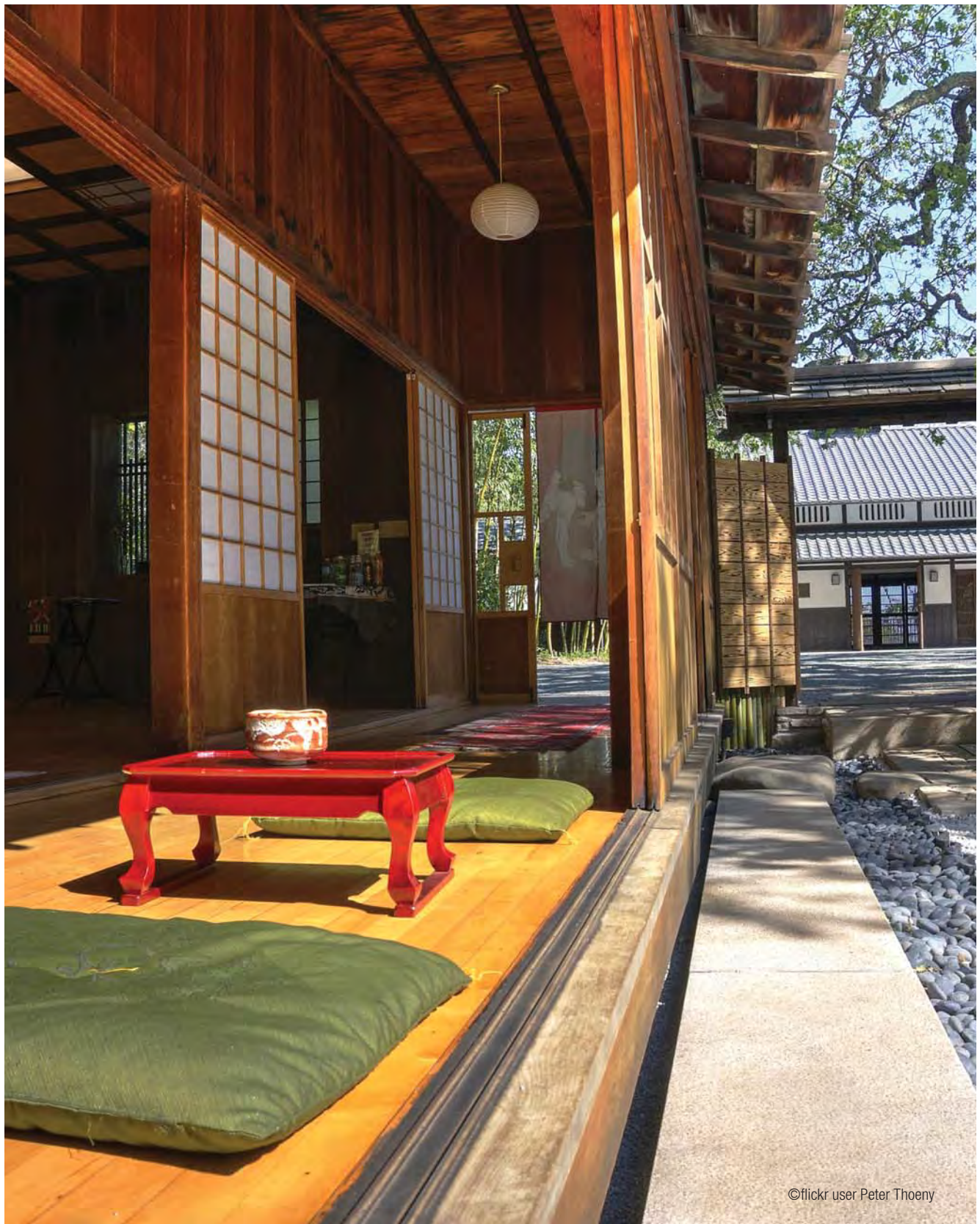
Hall Building Plan—Lower Floor





Hall Building Plan—Upper Floor





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Zen Garden House



SECTION SIX

## Design & Material Choices





## SECTION SIX

# Design & Material Choices

## 7.1 Forms and Materials

The new buildings and structures will:

- Blend in subtly with the existing gardens and their natural surroundings
- Activate new courtyards and gardens
- Reference and compliment the historic structures and gardens
- Respond to contemporary needs, functions and new ways of living

The new architecture draws on traditional Japanese architecture that created exterior and interior space through the use of fences, gates, lattices, screens, columns, overhangs, and roofs. The new structures and spaces become an ensemble of shared forms and materials.

An important aspect of forms and materials is the actual walking surface. As visitors journey from the village to the garden to the natural landscape, the paving changes from orthogonal cut stone to irregular stone to crushed stone. As the paving surface changes, so too visitor's experience changes – foot strike sounds, under-foot textures, and reflective light all contributes to revealing the character of the courtyard and gardens. This change in paving accentuates the conceptual journey from village to mountain shrine.

## 7.2 Koi Pond Life Support Systems

The Hakone Foundation and City of Saratoga staff requested that the Master Plan evaluate the current condition of the Koi Pond in terms of the functionality of the water filtration systems, water quality, koi health, and feeding schedule. The field assessment identified the following findings.

1. The pond requires a high level of fill water (estimated 11,000 gal/month) that comes from the potable water system, suggesting that the pond has significant leakage.
2. The water quality varies primarily due to garden surface water runoff, and overfeeding fish that results in an accumulation of organics and bacteria that are not processed by the water system.
3. The current filtration equipment is partially operating; existing pumps, pipe system and vacuuming system is inadequate; and the UV disinfection system is not working.
4. Currently, the koi have health problems and mortalities likely caused by water temperature fluctuations, and high levels of ammonia, nitrate and bacteria.

### Recommended Short Term Improvements

- Double the flow of water through the pond.
- Re-operate the pressure sand filter / UV system.

- Rigorous vacuuming with positive displacement pump rigid vacuuming procedures.
- Review feeding procedures
- Monitor temperature, ammonia and nitrates.
- Determine the exact cause of poor Koi health.

#### Recommended Long Term Improvements

- Replace the entire filter system with a bead filter/UV system and double the water flow.
- Rebuild entire pool and evenly distribute supply and return pipes.
- Deepen pool in at least one area to give fish a sanctuary from predators.
- Move LSS equipment away from public observation and access.
- Develop a full wastewater recycling system to allow complete utilization of backwash for soil amendment.
- Consider installing temperature controls (heat/chill) to reduce stress on fish.
- Monitor and flush pond nitrates to control buildup in system

2. Establish erosion and sediment control and monitoring during and after construction.
3. Implement site design measures, including:
  - a. Minimize land disturbed
  - b. Minimize impervious surfaces
  - c. Minimum-impact parking lot design
  - d. Cluster structures and pavement
  - e. Disconnect downspouts
  - f. Utilize pervious pavement
  - g. Incorporate green roofs
  - h. Direct runoff from impervious cover to pervious areas
  - i. Harvest and use rainwater
4. Implement source control measures, including:
  - a. Alternative (non-toxic/leaching) building materials
  - b. Cover wash areas, dumpsters, material storage and maintenance areas and drain to sanitary sewer
  - c. Provide proper maintenance (pavement sweeping, catch basin cleaning, etc.)
  - d. Incorporate beneficial planting – minimize irrigation, runoff, pesticides & fertilizers; use landscape areas for treatment and infiltration
5. Provide integrated stormwater treatment systems
  - a. Rainwater/stormwater harvesting and reuse
  - b. Infiltration/bio-infiltration (basin, trench, or other)
  - c. Bio-treatment/bio-retention
  - d. Retrofit of existing vegetated detention basin between the entry roads
  - e. Stabilize erosion occurring at the swale flowing under Highway 9 to Saratoga Creek

## 7.3 Proposals for Stormwater

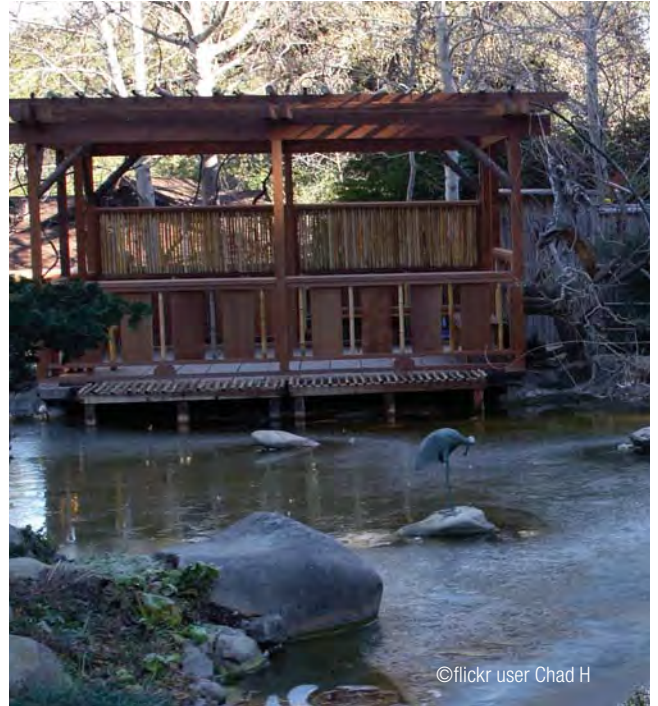
The State Construction General Permit will require development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). With some overlap in measures, the Municipal Regional Stormwater Permit (MRP) will require source control, site design, and treatment. To responsibly manage stormwater at Hakone the following strategies are recommended:

1. Account for stormwater flowing through and from the site to reduce maintenance and to responsibly protect the larger Saratoga Creek and San Francisco Bay Watersheds.





*Koi Pond*



*Wisteria Pavilion along east edge of Koi Pond*



*Existing filtration system at Koi Pond*





©flickr user Kei Noguchi

*Wisteria Pavilion*





SECTION SEVEN

## Improvements and Phasing Plan





## SECTION SEVEN

# Improvements and Phasing Plan

The Improvements and Phasing Plan clusters similar improvements together into four phasing zones that have a strong integrity, linkage and complementary quality among parts. The definition and boundaries of each phase was identified to be efficient with the construction monies, minimize construction periods and potential impact on existing garden operations and visitor use. Each zone is defined to maximize fundraising value by combining high visibility improvements with infrastructure improvements.

The execution of the Master Plan takes place over four phases. The phases divide the long-term improvements into discreet steps to allow for budgetary sequencing, fundraising, and ongoing operations.

The strategy is to renovate the inner garden first in **Phase 1**—the Koi Pond and surrounding Hill & Pond Garden—to revitalize the core garden and to give the visitor an authentic experience of Japanese gardens.

The main changes to be made are:

- Reconstruct the Koi Pond
- Rebuild existing wisteria pavilion
- Koi pond water systems building
- Site work to create an accessible grade around the pond
- Utilities

**Phase 2** tackles three significant built structures that are currently in some state of disrepair and are underutilized. These are: the Zen Garden House (Lower House), Moon

Viewing House (Upper House), and the Cultural Exchange Center (CEC).

The main changes to be made in this phase are:

- Renovate existing Upper Moon Viewing House
- Renovate existing Lower Zen House
- Renovate the Cultural Exchange Center
- Renovate Tea Waiting Pavilion
- Renovate Wisteria Upper Pavilion
- Interpretive renovations

**Phase 3** addresses the need for a welcoming and significant entry to complement the strength of the core garden and structures. It also creates an accessible path from parking to the Lower Courtyard. In this phase, amenities for visitors and staff that support an extended stay-time at the garden and more versatile use of all of Hakone are added. Finally it creates an accessible path from the Lower Courtyard to the Upper Courtyard.

The main changes to be made in this phase are:

- New gate at Forecourt Entry
- Retail & Restroom Building
- Tea Room
- Renovate existing Pump House for interpretation
- Renovate existing Caretaker's House for administration
- Renovate existing Restrooms
- Renovate Mon Gate

- New entry garden and bonsai garden
- Site work and utilities

**Phase 4** primarily creates an accessible (ADA-compliant) entry and parking area through grading and paving. These changes to the parking lot also address stormwater management. This phase also adds capacity for a dedicated space for garden operations, maintenance, and material storage.

The main changes to be made in this phase are:

- Re-grade and re-pave parking lot
- New Garden Operation buildings and yard
- Renovate existing barn for garden storage
- Renovate existing retail building for garden storage
- Renovate Pine Moon (Shogetsu-en)
- Complete the Shogetsu Machai
- Site work and utilities



Phasing Plan



SECTION EIGHT

## Business Plan Summary





## SECTION EIGHT

# Business Plan Summary

## Market Considerations

Hakone Estate & Gardens is easily accessible from a very large and prosperous market of over 4.2 million people.

The bulk of the primary market for Hakone Estate & Gardens lies outside the City of Saratoga. Reaching the entire South Bay area through networking, partnership development and marketing should be an organizational goal.

- There should be good potential for above average fees for admissions, event rentals and education programming, as well as for donations
- Access for those with lower incomes should also be an important consideration, particularly children
- The number of young people within the market area will grow only modestly, whereas boomers (45-64) and retired (65+) will grow substantially
- There should be substantial opportunities to encourage donations as family wealth increases and retirement approaches; there will also be a growing opportunity for building the volunteer pool
- Area tourists are an excellent market for Hakone Estate & Gardens; these visitors look for a unique, authentic, good quality experience and are willing to pay relatively high fees

## Projections and Recommendations

Hakone Estate & Gardens is a significant cultural and botanical attraction in the South Bay area and is unique in that it is not part of a larger facility such as a city park.

Hakone Estate & Gardens has a substantial potential

to increase its visibility and reputation, and to increase attendance and revenue.

- Several other West Coast Japanese gardens have annual attendance of 65,000 to 300,000; for analysis purposes, Hakone Estate & Gardens total attendance is projected to increase from the current 35,000 per year to 75,000 per year by Phase 4; membership and event activity are projected to increase as well
- Facility rentals for weddings and other events provide a substantial portion of the Garden's revenue
- While event revenue should be enhanced as the Master Plan is implemented, other sources, such as memberships, gate revenue, retail, donations and grants should be bolstered as well
- The Garden should pursue corporate and foundation grants to fund a more substantial educational program, focusing in particular on school-age children
- Budget projections corresponding to the three phases are provided, each showing projected increases in revenue, staff and other operating expenses
- The Garden should build an endowment to assist with operating expenses; this could be augmented with a sinking fund to assist with facility maintenance and renovation



*Mon Gate*





SECTION NINE

Construction Cost Opinion  
Summary





SECTION NINE

# Construction Cost Opinion Summary

The project budget (dated 27 August 2015) is based on the Master Plan conceptual site plan produced by The Portico Group from workshop three in July 2015, and as updated through the last week of August 2015. The budget includes the costs as defined on the project summary sheet including construction costs, soft costs and other project costs.

Construction costs in the budget include costs incurred by the contractor(s) in performance of the work. These include the general contractor’s costs and overhead / site management as well as the costs of the subcontractors.

The construction costs for the project are broken into four phases that are essentially the Hill & Pond Garden as phase one, Historic Building renovation phase 2, the Entry Courtyard, Buildings and new garden as phase 3 and the parking lot and Garden Operations as phase 4.

Soft costs include the non-construction costs. These include design fees, project management and administrative fees; permitting costs and agency fees (planning, utility, etc.); entitlement costs, including required consultants and legal support; an allowance for other fees and service which include non design consultants such as geotechnical, surveys; fixtures, furniture and equipment which are presumed to be purchased and installed by the owner directly.

The budget includes three separate contingencies: a design contingency included in the construction cost

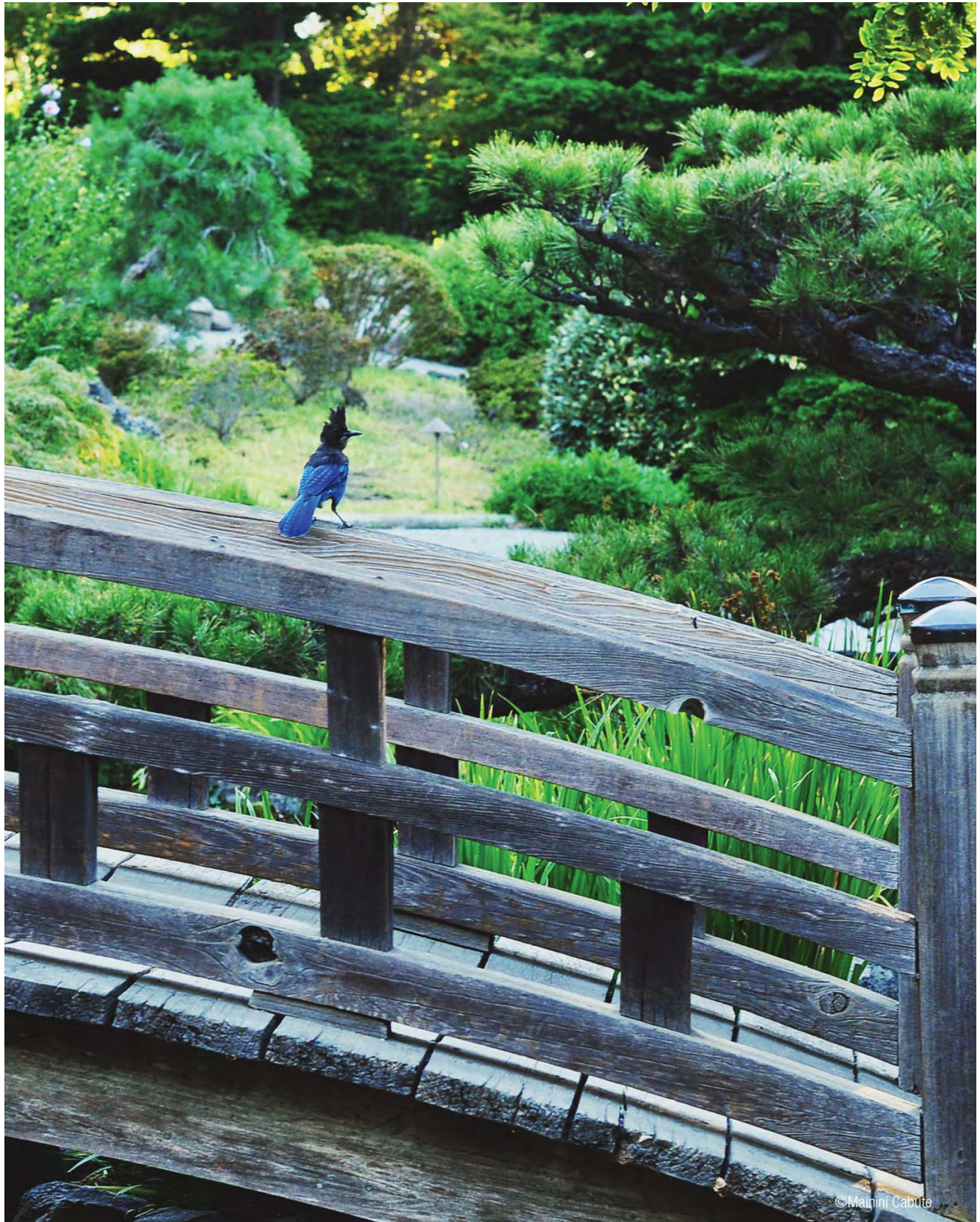
which is intended to cover changes during the design phases (i.e. before construction begins) brought on by conditions which are currently unknown; a construction contingency included in the soft costs which is intended to cover changes in cost after the construction contract is executed. The third contingency is a soft cost contingency, which is intended to cover any increases in the soft costs throughout the project duration.

The budget also includes a category of other project costs. These costs are institutional costs, not directly part of the construction project but necessary for its success. The budget includes allowances for fundraising, maintenance endowment, and for other owner costs. Escalation has not been included in the budget.

Total Project Cost inclusive of hard and soft costs in 2015 dollars totals \$26,870,000. By phase the subtotals are:

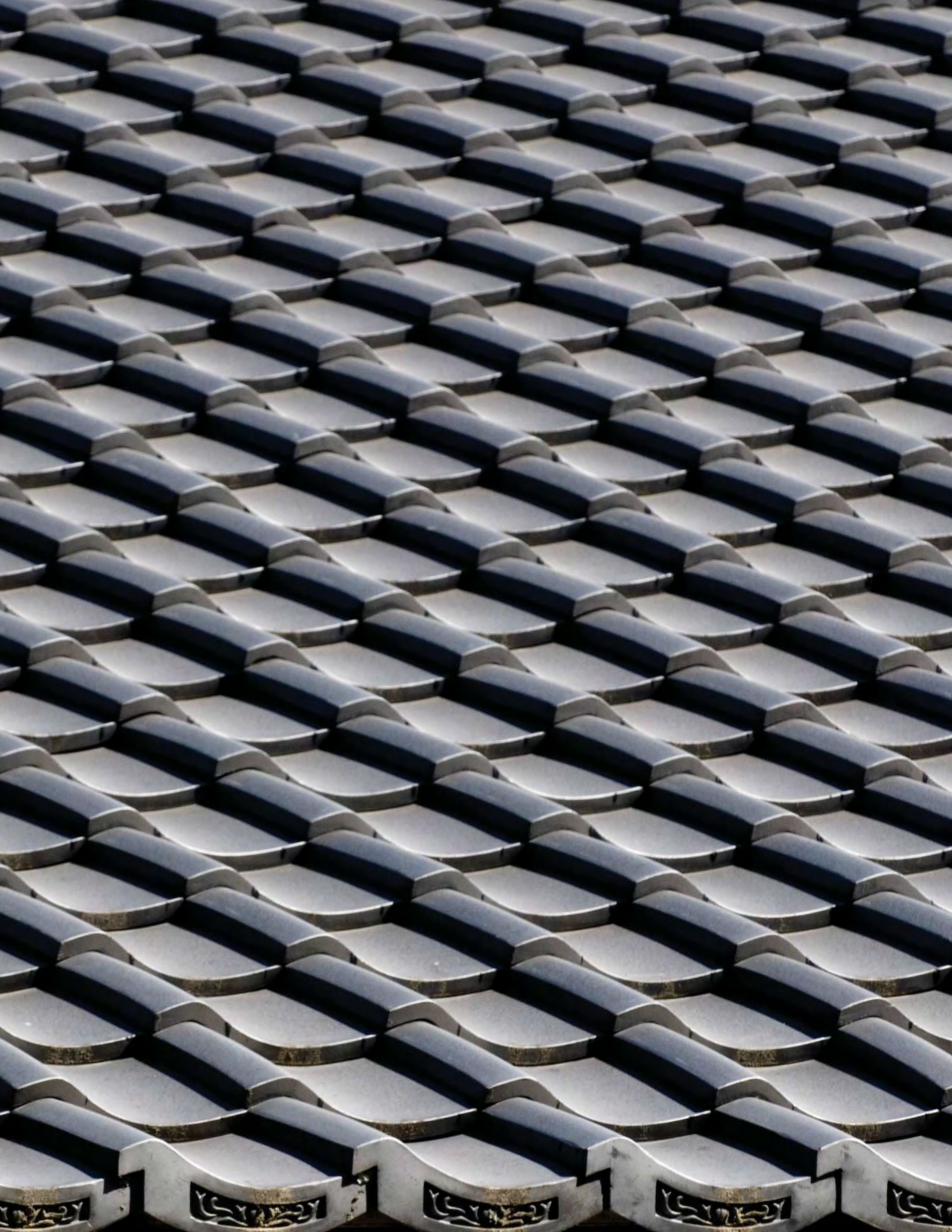
- Phase 1 Project Cost \$4,925,000
- Phase 2 Project Cost \$5,250,000
- Phase 3 Project Cost \$9,750,000
- Phase 4 Project Cost \$7,800,000

See the Preliminary Budget Estimate in the Appendix for additional detail.



*Moon Bridge*





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# Hakone Estate & Gardens

Approved by Saratoga City Council  
May 18, 2016



THE  
PORTICO  
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# Contents of Master Plan Volume 1 · Appendices

## **Volume 1 • Appendices**

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Appendix 2: Business Plan

Appendix 3: Construction Cost Opinion

Appendix 4: Facility Program

Appendix 5: Existing Structures Capital Improvements Projects - Small Projects

Appendix 6: Koi Pond Assessment

Appendix 7: Storm Water Assessment

## **Volume 2 • Appendix**

Appendix 8: California Environmental Quality Act (CEQA) Initial Study Draft Schedule







Site Analysis,  
Master Plan Goals, Needs

APPENDIX 1





## 1. Site Analysis

### A. National Trust for Historic Preservation

*The National Trust lists Hakone Estate & Gardens as a historic district, and it falls under the guidelines of the National Park Service, California State Parks Office Historic Preservation and the city of Saratoga Heritage Preservation Commission.*

#### 1. Gardens

*Three of the existing gardens are identified as contributing (C); one is listed as non-contributing (NC)*

- Hill and Pond Garden (C)
- Tea Garden (C)
- Zen Garden (C)
  
- Bamboo Garden (NC)

#### 2. Buildings

*Two of the existing buildings are identified as contributing (C); six are listed as non-contributing (NC)*

- Tea Waiting Pavilion (C)
- Moon Viewing House (Upper House) (C)
  
- Zen Garden House (Lower House) (NC)
- Residence (NC)
- Cultural Exchange Center (NC)
- Tea Service Room (NC)
- Gift Shop (NC)
- Office (Barn) (NC)

#### 3. Structures

*Six of the existing structures are identified as contributing (C), although repairs to the pavilions and arbor have used non-traditional lumber and joining, diminishing their historical attributes.*

- Pump House (C)
- Main Gate (“Mon”) (C)
- Wisteria Pavilion (C)
- Moon Bridge (C)
- Upper Pavilion (C)
- Wisteria Arbor (Fuji-dana) (C)
  
- Secondary Gates (from upper parking lot) (NC)
- Pine Moon (Shogetsu-an) (NC)

#### **4. Objects**

*Seven Lanterns, three Ritual Garden Stones, the Metal Crane sculpture and two Carved Stones are identified as contributing (C).*

#### **B. Gardens**

*Hakone contains six significant gardens each representing traditional Japanese garden types. In varying ways each can be strengthened by better edge definition and screening of views of the parking lot and service areas.*

1. Hill and Pond Garden (strolling garden)
2. Zen Garden (rock garden)
3. Tea Garden (ceremonial garden)
4. Camellia Garden
5. Tea Plantation
6. Bamboo Garden (Kizuna-en) / Muko Saratoga Sister City Garden

#### **C. Vegetation of the Saratoga Foothill Oak Woodland & Central California Coast**

*Hakone contains four native heritage California live oaks and a number of coast redwoods planted at the garden's beginning. Any proposed garden modifications should protect and save.*

1. Native Trees
  - a. Heritage California Live Oaks (*Quercus agrifolia*)
    - i. 3 alongside parking lot
    - ii. Anchor between Lower and Upper Courtyard
  - b. Tan oak (*Notholithocarpus densiflorus*)
2. Collection Trees
  - a. Coast Redwoods (*Sequoia sempervirens*)
    - i. Two trees framing Mon or Main Gate
    - ii. Multiple trees as backdrop to Koi Pond and water fall

#### **D. Water**

*The Koi Pond and its two waterfalls form a central component of the Hill and Pond garden; all require renovation and upgrade to enhance water quality.*

1. Garden Water Features
  - a. Koi Pond
  - b. Water falls (2) flowing into Koi Pond
  - c. Lily Pond
2. Stormwater runoff contributes sediment into the pond, diminishing water quality

#### **E. Parking and Access**

*The evolution of the estate to a public garden developed piecemeal over time. This has resulted in a non-accessible, confusing, less than functional and potentially dangerous entry road, arrival, parking and entry experience.*



1. Big Basin Way
  - a. Lack of sidewalk connection to downtown Saratoga
  - b. Intersection and garden entry sign somewhat obscure and easy to miss; the non-90 degree aligned intersection is awkward.
2. Entry Drive
  - a. Very steep, particularly the one-way final approach
  - b. Lower portion of access trail from Big Basin Way to a point a hundred yards up the access drive is missing
3. Main Parking Lot
  - a. Non conforming width to aisles and stalls – the current 60 degree angle parking is comprised of two 49 foot pair of parking bays, composed of an 18 foot wide outside stall, 15 foot aisle and 16 foot inside stall; recommended standards for safety and ease of use range from 60 to 64 foot wide parking bays
  - b. Exceeds ADA accessible grades for parking and route of travel, existing slope 7 to 13% slope; ADA stalls must be less than 2%, route of travel less than 5%
  - c. Significant stormwater runoff from Bamboo Garden and Parking Lot down entry road.
4. Inner Parking Lot
  - a. Inefficient layout
  - b. Exceeds ADA accessible grades
  - c. Visually intrudes on the garden

**F. Visitor Processional and Gathering Areas**

*Much of the visitor processional and gathering areas lack spatial definition and enclosure, resulting in unintentional views and intrusion of roads and parking into the visitor experience; several spaces exceed ADA guidelines for slope.*

1. Processional Entry to Mon
  - a. Exceeds ADA slope guidelines
  - b. View from stairs to the east is of unsightly asphalt drive and passing cars and the back side of restroom
2. Lower Courtyard (west of Mon)
  - a. Lack of edge definition
3. Upper Courtyard
  - a. Lack of edge definition
4. Picnic Area
  - a. Obscure location

**G. Pedestrian Paths**

*Most pathways exceed ADA slope Guidelines*

1. Koi Pond Loop
2. Tea Garden/Wisteria Arbor, Moonviewing House Loop
3. Camellia Garden Loop
4. Nature Trail

5. Bamboo Garden Loop

**H. Solar Access**

*The sun tracks from east (Parking Lot) in the morning to west (Pine Moon pavilion) in the afternoon creating range of sunny and shady areas throughout the day.*

## 2. Master Plan Goals

**1. Goal: Connect to the Community**

- Increase the role of Hakone Gardens as a valued, active member of the community
- Establish closer connections with the Saratoga business community and public schools
- Reinvigorate Foundation members, volunteers, docents and donors
- Expand the Gardens' audience to address both the growing retirement community and a younger generation

**2. Goal: Restore the Legacy of the Gardens and Buildings and Structures**

***Gardens***

- Improve the composition and experience of the core gardens
- Strengthen spatial definition “en” (the edge) of individual garden spaces
- Enhance the sequence of the visitor experience by controlling and framing views
- Upgrade koi pond, waterfalls and water filtration system
- Create a focal point garden at the Well southwest corner of the Moon Viewing House

***Buildings & Structures***

- Comply with requirements of National Trust for Historic Preservation District designation
- Provide accessibility improvements to the “Mon” and Moon Viewing House without compromising the character of the garden
- Identify and address functional deficiencies in the buildings (Kitchen, Structural, IT needs)
- Restore deteriorated structures and site features (Upper Pavilion, Wisteria Arbor, Wisteria Pavilion)

**3. Goal: Expand Interpretive and Educational Opportunities**

- Increase interpretive programs on site



- Promote year round festivals as special learning activities
- Develop a public outreach program for teachers highlighting links to the curriculum
- Create content emphasis exhibits about the history of Hakone Gardens, history of Japanese Gardens in Japan, principles underlying Japanese Gardens, and Japanese cultural influences
- Highlight the skills and techniques required to maintain an authentic Japanese garden like Hakone

**4. Goal: Provide Adequate Space for Staff**

- Increase administrative workspace to properly support garden operations and programs
- Upgrade Information Technology (IT) capability
- Provide additional grounds maintenance and material storage facilities

**5. Goal: Enhance the Visitor Entry and Arrival Sequence**

- Address American Disabilities Act (ADA) deficiencies in the parking lot, visitor arrival route, “Mon” stairs and Upper Courtyard
- Clarify visitor pathways, orientation and wayfinding
- Improve safety of pedestrian crossings and vehicle traffic
- Reduce visual clutter to create a clear and inviting entry

**6. Goal: Improve Visitor Services and Amenities**

- Provide new retail space and explore new merchandise offerings
- Add a simple food and beverage component to the retail space
- Upgrade restrooms to meet needs of visitation numbers and ADA requirements
- Add interior event and support space to minimize noise impacts in the surrounding neighborhood

**7. Goal: Create a Sustainable Organization**

- Ensure financial survival by examining a range of revenue sources
- Define and fulfill staffing needs for ongoing operations and programming
- Build a strong and dedicated volunteer pool
- Identify support for capital renewal and building projects
- Explore alternative uses for the Cultural Exchange Center apartment
- Highlight seasonality and the changing nature of the Gardens
- Explore rebranding and renaming possibilities (Hakone Japanese Garden)

### 3. Needs

#### 1. Connect to the Community

***Issue:***

- Current membership of 350 is a modest number and low for the community, market area and Hakone's peer public gardens; the low number of members and resulting low revenue is reflective of the garden's reliance on event revenue.

***Recommendation:***

- Expand membership program.
- Offer free admission one day a month; gather email addresses of all admittees, use for marketing.

***Issue:***

- Current donation and grant income is very low in relationship with peer public gardens.

***Recommendation:***

- Participate in and connect with local and regional civic and business organizations to build grant and foundation support.

***Issue:***

- Very few youth educational programs and activities on site

***Recommendation:***

- Connect with the local schools and encourage educational field trips to the garden.

#### 2. Restore the Legacy Gardens and Buildings

##### Gardens

***Issue:***

- Lack of edge definition allows spaces bleed into one another, diminishing sequence and surprise.

***Recommendation:***

- Define edges of Lower Courtyard through planting or fencing to add an element of surprise in discovering the Hill and Pond Garden.
- Define edges of Upper Courtyards to frame views of garden, hillsides beyond.

***Issue:***

- Unscreened views of parking intrude on garden experience, from the Hill and Pond Garden and the Moonviewing House deck.

***Recommendation:***

- Selectively plant or install fencing to obscure views of the parking areas.



- Replace the upper parking with gardens and compatible structures.

***Issue:***

- Framed views from windows of Tea Waiting Pavilion have been obscured by vegetation.

***Recommendation:***

- Selectively prune and plant to frame views within and beyond the garden.

***Issue:***

- Lack of space along the garden path inhibits enjoyment of the view of the Koi Pond and Moonviewing House from the Moon Bridge north landing.

***Recommendation:***

- Enhance viewpoint by widening the pathway, screening the view to the east of parking lot and of the Lower Courtyard; and consider elimination of stairway to Lower Courtyard.

***Issue:***

- Unattractive view from Mon (Main Gate) east toward entry road and driveways.

***Recommendation:***

- Enhance view by removing old driveway and replant to screen entry road and restroom building.

***Issue:***

- Koi Pond and connected waterfalls have low water quality and leaky bottoms.
- Shallow depth of koi pond may contribute to overheating and poor water quality.

***Recommendation:***

- Upgrade or replace water life support system.
- Replace stream and pond bottom with new waterproof liner and shotcrete bottom and reconstruct stream rockwork.

***Issue:***

- Path edging of inconsistent type and quality.

***Recommendation:***

- Replace round logs with stone or metal edging and enhance planting along edge of pathways.

***Issue:***

- The Well is a garden gem and can be enhanced as a garden experience

***Recommendation:***

- Expand moss and camellia collection as a backdrop to the Well.

## **Buildings & Structures**

### ***Issue:***

- The Hakone National Trust for Historic Preservation registration is silent on the type of recommended treatment (Preservation, Rehabilitation, Restoration or Reconstruction). The city of Saratoga Planning Department has made the assumption that if a structure is considered “contributing” then it is probably limited to Preservation and Restoration treatments. For “non-contributing” structures the city assumes that any of the four treatments are possible:
  - ***Preservation*** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.
  - ***Restoration*** depicts a property at a particular period of time in its history, while removing evidence of other periods.
  - ***Reconstruction*** re-creates vanished or non-surviving portions of a property for interpretive purposes.
  - ***Rehabilitation*** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.

### ***Recommendation:***

- Determine treatment options and recommendations for the overall district and individual gardens, buildings and structures.
- Prepare Cultural Landscape Report to document the development and evolution of the Historic District property overtime and provide guidance to restoration efforts.

### ***Issue:***

- Upper Pavilion and Wisteria Arbor and Wisteria Pavilion renovations used non-traditional dimensional lumber.

### ***Recommendation:***

- Reconstruct using traditional carpentry and joining.

### ***Issue:***

- Moon Viewing House deck railing is deteriorated.

### ***Recommendation:***

- Conduct and document structural condition of the building.

### ***Issue:***

- Kitchen facilities at the Zen Garden House (Lower House) are insufficient to meet the food service requirements of meetings and events.

### ***Recommendation:***

- Conduct code review and identify improvements to allow greater use of kitchen.

### ***Issue:***



- Moonviewing House deck is non-accessible.

***Recommendation:***

- Provide deck return to grade along northwest edge of Moonviewing House (Upper House).

**3. Expand Interpretive and Educational Opportunities**

***Issue:***

- Interpretive exhibits are modest and lack a comprehensive approach

***Recommendation:***

- Develop main message and delivery methods

***Issue:***

- Interpretive exhibits are located in dispersed locations in the Cultural Exchange Center and more limited temporary displays in the Moon Viewing House that are not readily apparent to the visitor.

***Recommendation:***

- Enhance on site interpretive program using docent tours, audio tours and by using limited amounts of signage, highlighting special views, buildings, cultural significance/history and people and plant connections or botany.

***Issue:***

- A range of special events interpreting Japanese culture would draw visitors and support the Gardens.

***Recommendation:***

- Interpretive exhibits are located in dispersed locations in the Cultural Promote year around festivals as special learning activities and opportunities for programming (tea ceremonies, ikebana flower arranging, ceramic and tea utensil exhibitions, Mochi rice cake making, Hina Doll festival, Boy's festival, Tanabata Star Festival, autumn moon viewing, cherry blossom viewing, night-time illumination of the garden, music and dance, lectures, soba buckwheat noodle workshops, Japan Fair, traditional Sado Ondeko demon drumming, Noh plays).

**4. Provide Adequate Space for Staff.**

***Issue:***

- Lack of adequate garden administrative workspace.

***Recommendation:***

- Provide new or remodeled administration spaces including an entry space, executive director's office, a staff workroom sized to include four to six work stations and a large project table, an office storage/supply room, equipment room, and kitchenette.

***Issue:***

- The existing Caretaker's House, Barn and Pump Structure appears to be substandard in terms of bug infestation, dry rot, and potential structural improvements.

***Recommendation:***

- Renovate as required.

***Issue:***

- Inadequate IT does not allow the garden to perform business tasks and internet-based community outreach

***Recommendation:***

- Upgrade the existing IT system. In addition, IT upgrades in CEC and Zen Garden House (Lower House) interior assembly rooms would provide additional capacity for and service to space rental meetings, special events and presentations.

***Issue:***

- Currently there is no dedicated, fenced ground for garden and facility maintenance, material storage lay-down, and nursery growing spaces. On-site spaces for these activities is limited and inconveniently located for garden access.

***Recommendation:***

- Public gardens typically include compost piles, material bins, head house, green house, and shade and propagation yards. Identify permanent location for garden support spaces and provide convenient access to garden spaces.

**5. Enhance the Visitor Entry and Arrival Sequence.**

***Issue:***

- Vertical curve profile of entry road limits visibility at existing gift shop / ticketing / turnstile making it a dangerous pedestrian crossing.

***Recommendation:***

- Relocate garden entry, new ticketing and gift shop at location further uphill that does not require crossing of automobile traffic.

***Issue:***

- Visitor arrival sequence is confusing because of multiple former driveways, parking and gates.

***Recommendation:***

- Remove remnant paving and replant landscape.
- Remove upper parking lot and convert to gardens and support structures as a logical sequence of visitor experiences.
- Locate new ticket booth and retail on garden side of parking at a new entry.



***Issue:***

- Parking lot and visitor route of travel exceeds maximum slopes defined by the American Disabilities Act (ADA).

***Recommendation:***

- Regrade parking lot to provide level accessible stalls less than 2% in each direction; and regrade lot at slope less than 5% to prevent car door swings into adjacent parked cars.
- Realign and regrade at slopes less than 5% the route of travel.
- Add accessible ramp at the Mon stairs to allow all visitors to enter at same location.
- Provide accessible ramp to the Upper Courtyard or possible elevator within a new building.

***Issue:***

- Rule, regulatory and directional signs at entry confusing and not inviting to visitors.

***Recommendation:***

- Redesign entry so that wayfinding is obvious, lessening need for signs.
- Reduce visual clutter; provide consistent wayfinding signs only where needed.

## **6. Improve Visitor Services and Amenities.**

***Issue:***

- Ticketing, retail and entry turnstile do not contribute to a gracious and holistic visitor arrival experience.

***Recommendation:***

- Provide safe and direct line-of-sight circulation to entry from parking lot and/or passenger drop-off.
- Co-locate visitor ticketing and retail in a new structure at the visitor entry.
- Design ticketing and retail so that a single staff member can service both ticket selling and retail transactions during low visitation periods and can staff up during high visitation periods.

***Issue:***

- Existing retail space is small and inadequate, not centrally located, lacks attractive finish, and the merchandise is crowded together.

***Recommendation:***

- Move retail so as to locate adjacent to primary visitor flow.
- Hire a retail consultant to design room finishes, lighting, displays and new merchandise offerings in a new or remodeled structure.
- Add plants to retail mix.

***Issue:***

- Little or no food service is provided to visitors to Hakone - only educational tea ceremonies and packaged food products sold in the retail space.

***Recommendation:***

- Add a simple food and beverage component to the retail space, including, at the beginning, hot beverages and a selection of snacks; expand in the future if demand and seasonality supports.

***Issue:***

- At Hakone, a full-service café will likely not generate revenue that could cover its operating costs.

***Recommendation:***

- The Tea Room should start as a low cost amenity that can provide visitors with simple hospitality, encourage an extended stay at the Gardens, and further develop a visitor's appreciation of the Japanese aesthetic of gardens, garden structures and tea culture.

***Issue:***

- The existing restrooms are not accessible from circulation paths that meet ADA accessibility criteria, and the restroom interior may not meet ADA criteria. On high attendance days the number of sinks, toilets and urinals are inadequate for the number of visitors.

***Recommendation:***

- Locate new restrooms near the new main visitor entry that meet ADA requirements for accessibility and use.

***Issue:***

- Weddings can generate vehicle traffic and noise that impacts neighbors.

***Recommendation:***

- If weddings are to continue being a significant revenue generator for the Gardens, then provide a new indoor space sized for 100 and 150 guests. In addition to the hall, supporting spaces should include an entry foyer, green room with restroom, storage of chairs and tables, catering staging room, and an outdoor shaded deck and garden space.

## **7. Create a Sustainable Organization.**

***Issue:***

- Insufficient staff to care for the estate & gardens: deferred maintenance has led to a deterioration of gardens and structures.

***Recommendations:***

- Examine a range of possible revenue sources to meet annual operating expenses that might include one or a combination of all of the following:
  - Consider full city funding of operations
  - Grow an endowment from private individuals or foundations.



- Enhance development activity so as to generate increased annual personal and corporate donations.
- Expand membership.
- Prepare foundation grants that support staff and other expenses, in particular for activities associated with education, children, services to the community and history.
- Expand earned revenue activities and programs at the Gardens, including retail sales, festivals, weddings, personal/family and business event rentals.
- Expand volunteer pool and its utilization so as to help cover maintenance and education activities.

***Issue:***

- Capital renewal and new building and grounds projects are required to provide adequate facilities for staff and visitors; funding sources not currently identified.

***Recommendations:***

- Examine a range of possible revenue sources including one or a combination of the following:
  - Public bond issues; other municipal support for individual projects
  - Individual and corporate donors
  - Foundation grants
  - Sponsorships
  - State and federal grant funding programs
  - Crowd sourcing

***Issues:***

- The apartment in the Cultural Exchange Center is an incompatible private use.

***Recommendations:***

- Renegotiate and tenant agreement and eliminate private use.
- Examine a range of possible other garden uses, including: public restrooms, kitchen facilities to serve garden events and activities, possible caretaker's residence.







# Business Plan

APPENDIX 2



# Business Plan Summary

## *Market Considerations*

Hakone Estate & Gardens is easily accessible from a very large and prosperous market of over 4.2 million people. The bulk of the primary market for Hakone Estate & Gardens lies outside the City of Saratoga. Reaching the entire South Bay area through networking, partnership development and marketing should be an organizational goal.

- There should be good potential for above average fees for admissions, event rentals and education programming, as well as for donations
- Access for those with lower incomes should also be an important consideration, particularly children
- The number of young people within the market area will grow only modestly, whereas boomers (45-64) and retired (65+) will grow substantially
- There should be substantial opportunities to encourage donations as family wealth increases and retirement approaches; there will also be a growing opportunity for building the volunteer pool
- Area tourists are an excellent market for Hakone Estate & Gardens; these visitors look for a unique, authentic, good quality experience and are willing to pay relatively high fees

## *Projections and Recommendations*

Hakone Estate & Gardens is a significant cultural and botanical attraction in the South Bay area and is unique in that it is not part of a larger facility such as a city park. Hakone Estate & Gardens has a substantial potential to increase its visibility and reputation, and to increase attendance and revenue.

- Several other West Coast Japanese gardens have annual attendance of 65,000 to 300,000; for analysis purposes, Hakone Estate & Gardens total attendance is projected to increase from the current 35,000 per year to 75,000 per year by Phase 4; membership and event activity are projected to increase as well
- Facility rentals for weddings and other events provide a substantial portion of the Garden's revenue
- While event revenue should be enhanced as the Master Plan is implemented, other sources, such as memberships, gate revenue, retail, donations and grants should be bolstered as well
- The Garden should pursue corporate and foundation grants to fund a more substantial educational program, focusing in particular on school-age children
- Budget projections corresponding to the three phases are provided, each showing projected increases in revenue, staff and other operating expenses
- The Garden should build an endowment to assist with operating expenses; this could be augmented with a sinking fund to assist with facility maintenance and renovation





# Market Review

The following are primary considerations regarding current and future market conditions that are pertinent with regard to attendance, events and the potential for generating revenue; a summary and selected recommendations appear at the end of the section.

## Demographics

Hakone Estate & Gardens is advantageously located in one of the most dynamic and desirable markets in the United States, offering valuable opportunities for growth and stability. Its primary market, which here is defined as the four-county area surrounding the southern portion of San Francisco Bay, includes over 4.2 million people, nearly all within 35 miles of the facility, a relatively easy day trip. This does not include the City of San Francisco. About 2.3 million within this area live within 20 miles of Hakone Estate & Gardens. The city of Saratoga, the immediate location of the facility, includes about 30,000 residents.

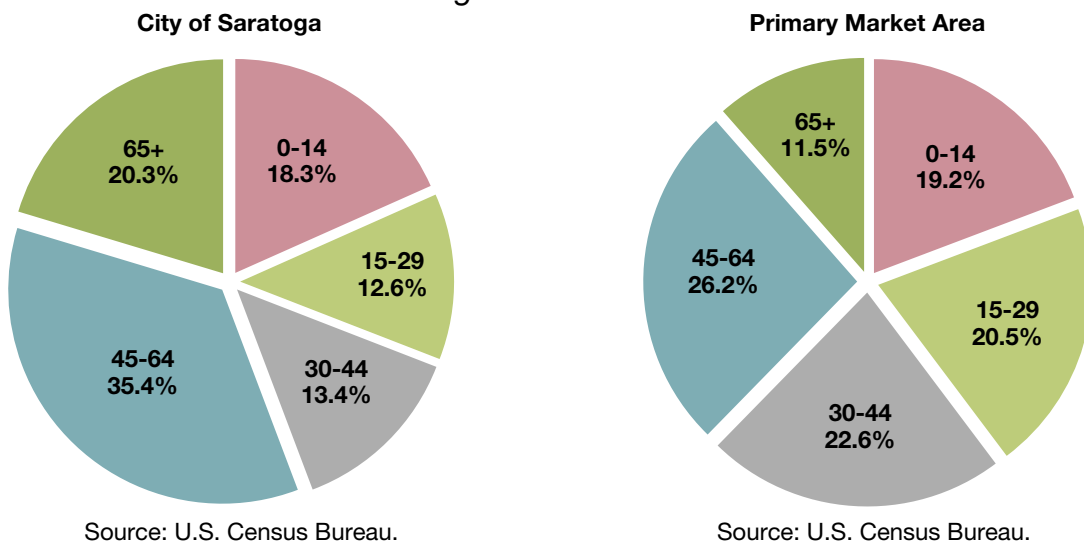


	Population 2010	% of State Population
20mi buffer	2,256,855	6.1%
35mi buffer	3,832,149	10.3%
City of Saratoga	29,926	0.1%
Santa Clara County	1,781,642	4.8%
Market Area	4,272,746	11.5%
California	37,253,956	100.0%

## Age

Within the City of Saratoga nearly one of five residents are age 65+, about double the average for the primary market area. See the figures below. Accordingly, the market area has a higher proportion of younger residents, in particular families with children. Residents of retirement age serve as a good pool for recruiting volunteers.

### Age Distribution

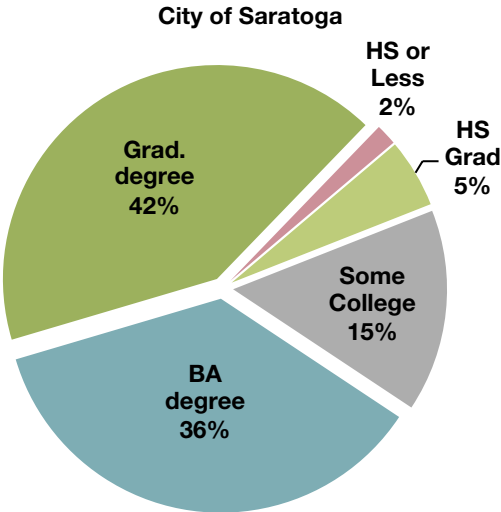


## Education

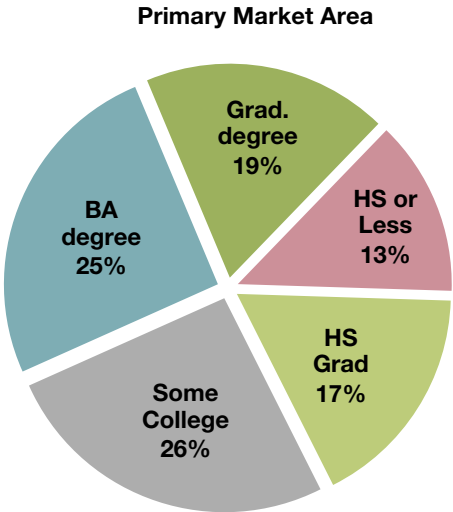
Saratoga residents are highly educated, with nearly four in five possessing a bachelors or advanced degree. See the figure below. Over two in five have a graduate or professional degree. While not so highly educated, the primary market area still includes a high proportion of residents with bachelors degrees or more – 44% -- and a substantial proportion with at least some college education.



*Education Attainment  
Population 25yo and older*



Source: U.S. Census Bureau.

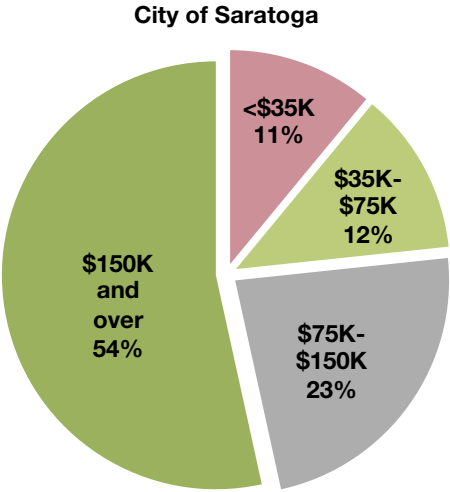


Source: U.S. Census Bureau.

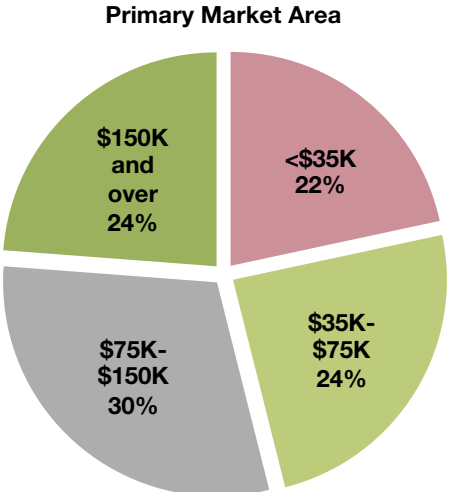
*Income*

Average household incomes in Saratoga are substantial, with over half earning \$150,000 or more per year. See the figure below. In comparison, market area households earn less, although still substantial by national standards.

*Income Distribution*



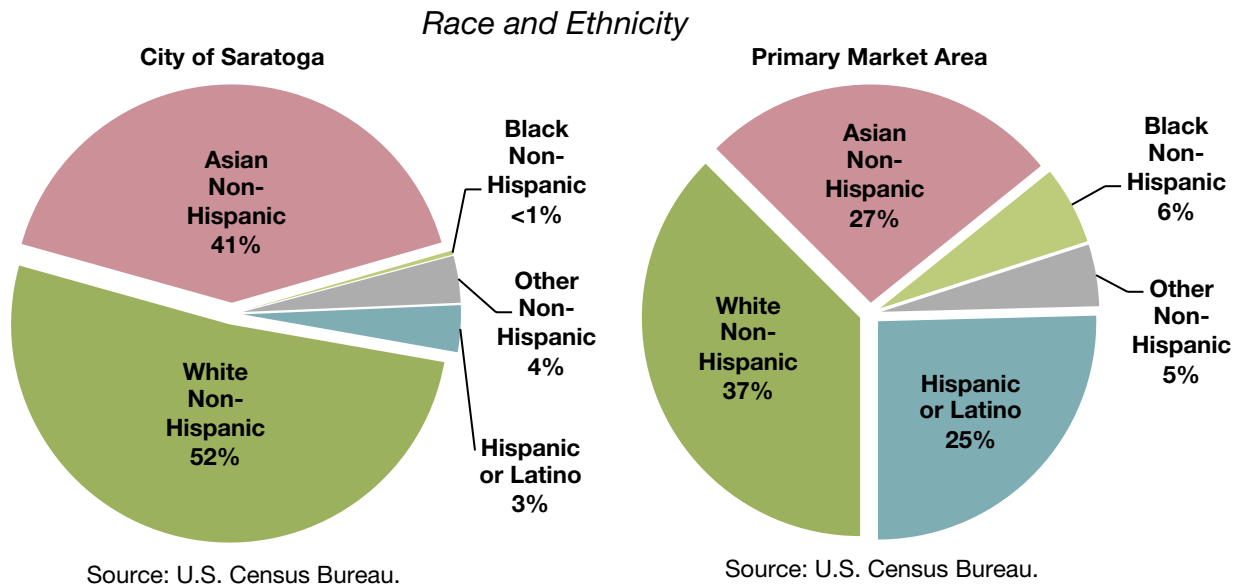
Source: U.S. Census Bureau.



Source: U.S. Census Bureau.

## Ethnicity

With regard to ethnicity, as defined by US Census categories, the City of Saratoga is about evenly split between white, non-Hispanic residents and others, with the bulk of the remaining residents being Asian non-Hispanic. See the figure below. In comparison, the primary market, while still including a substantial portion of residents with Asian ancestry, has a much higher proportion of Hispanic residents – one quarter of the total – and a higher proportion of African Americans. The high proportion of Asian ancestry residents in Saratoga and the primary market area suggests good potential for advancing the mission and objectives of Hakone Estate & Gardens.

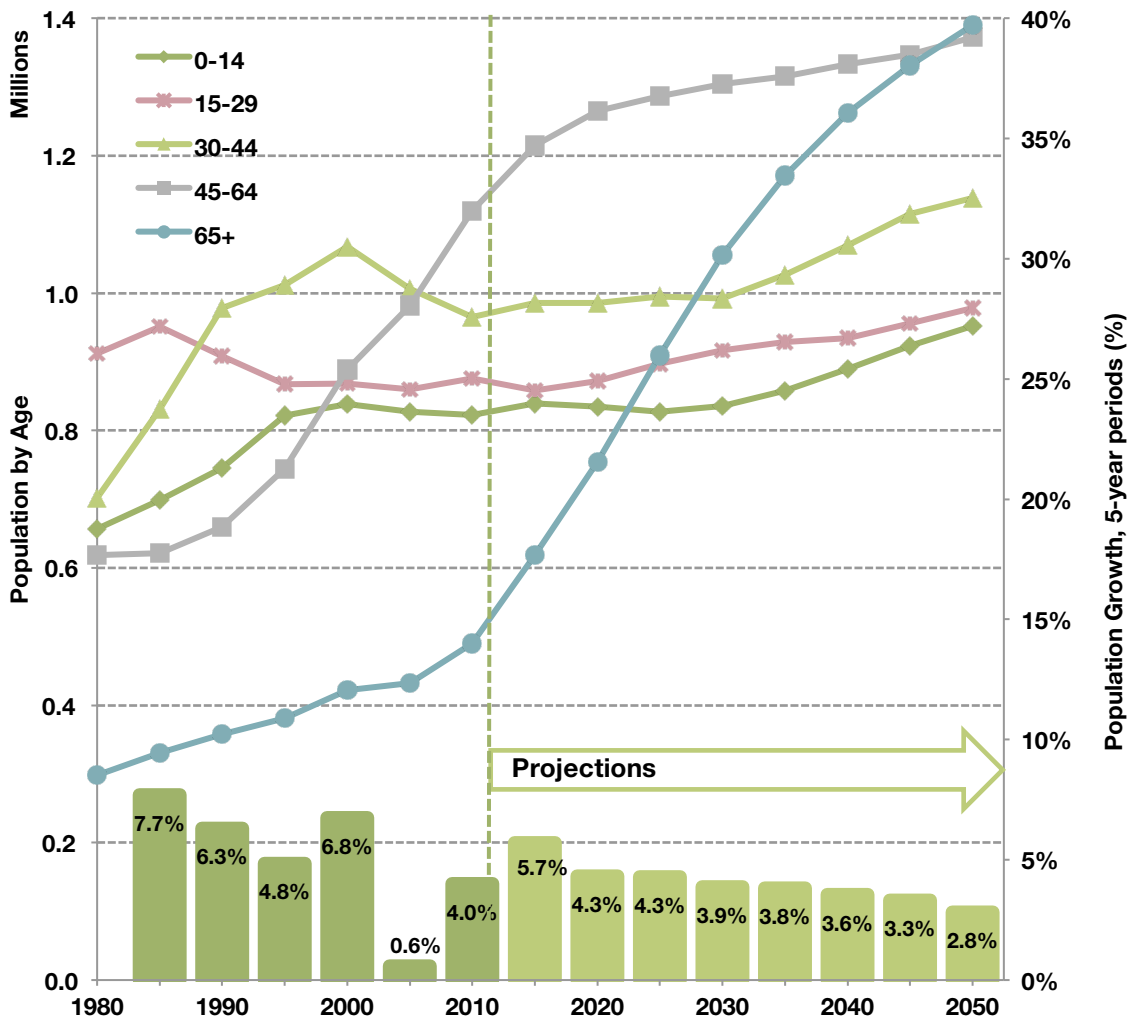


## Population Projection

Looking forward, population should increase in the primary market area, enhancing the opportunity for attracting more attendees to Hakone Estate & Gardens. The lower portion of the figure below shows population growth from 1980 to 2010 on the left-hand portion of the graphic, indicating growth rates of between 4% and 7% per five-year period, except for one. Projected population in the current period is over 5%, tapering down to around 3% over the next several decades.

Age dynamics within this population are particularly interesting, shown in the upper portion of the figure. The past several decades, shown to the left of the vertical dashed line, has been characterized by the rapid growth of the 45-64 age category, the “aging boomers.” Growth in younger age categories has been relatively flat in recent years, but growth in the 65+ category has been accelerating.

*Population by Age: 1980-2050p  
Primary Market Area*



Source: State of California, Department of Finance, State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 1970-1989, 1990-1999, 2000-2010, 2010-2060; U.S. Census Bureau; Census 2000 Summary File 1; Census 2010 Summary File 1

Looking forward, the boomer category will continue to grow, although more slowly, and will remain the largest single age category in the market area for some time. Those 65 and over, however, will increase rapidly, and within several decades will be the largest category in the market area. Younger categories will grow only modestly.

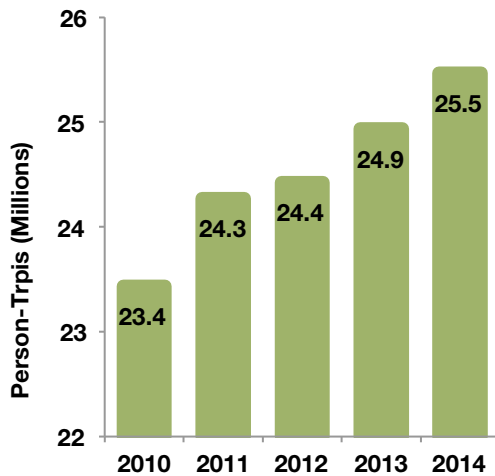
**Travel and tourism**

Travel to the South Bay area by visitors from elsewhere in California and from out of state represents a good market for Hakone Estate & Gardens, which is one of only a



few visitor destinations in the Santa Clara County area. This market has been growing steadily, as evident from the figure below. As Hakone Estate & Gardens develops further as a cultural, educational and recreational destination its visibility to visitors from out of the area will grow, increasing the potential for more attendance from this important segment. Area visitors are often less sensitive to admission and other fees than are residents, and can make good retail purchases.

*Travel and Tourism Volume, Four-County Region*



**Summary of primary market considerations:**

**Primary Finding**

**Implications**

Hakone Estate & Gardens is easily accessible from a very large and prosperous market of over 4.2 million people; the bulk of the primary market for Hakone Estate & Gardens lies outside the City of Saratoga

Networking, partnership development and marketing should focus on the entire South Bay area; the bulk of population growth will occur outside the City of Saratoga

The market area population, particularly that which is located in Saratoga, on the average is highly educated and enjoys good incomes; there is a substantial portion with relatively low incomes however

There should be good potential for above average fees for admissions, event rentals and education programming, as well as for donations; access for those with lower incomes should also be an important consideration, particularly children

The number of young people within the market area will grow only modestly

While young people are a particularly important segment for the Garden’s education programming, the objective should be to penetrate those that are

---

there, rather than rely on growth of the market

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Boomers (45-64) and retired (65+) will grow substantially

There should be substantial opportunities to encourage donations as family wealth increases and retirement approaches; there will also be a growing opportunity for building the volunteer pool

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South Bay visitors will continue to increase

Area tourists are an excellent market for Hakone Estate & Gardens; these visitors look for a unique, authentic, good quality experience and are willing to pay relatively high fees

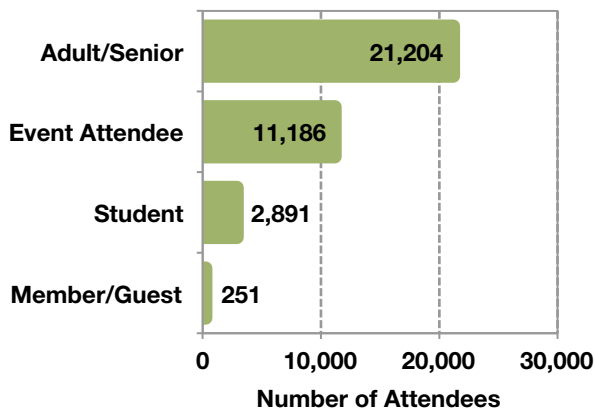
# Operations Analysis

In order to assess current operations at Hakone Estate & Gardens, focusing particularly on attendance and events, we analyzed an available activities database of Fiscal Year 2014, allowing a detailed look at event patterns and associated revenues. Other data on calendar 2014 attendance was available as well. This information is useful for preparing financial and other projections.

## Attendance

Total attendance amounted to about 35,000 people, the largest portion (about 21,000) was gate attendance and about 11,000 were event attendees. The 2,900 or so students appear to be a mix of students in groups and student-age gate admissions. The data show little attendance by members; this may be due to members counted among gate attendees or simply entering the garden on their own.

**Annual Attendance by Category  
2014**



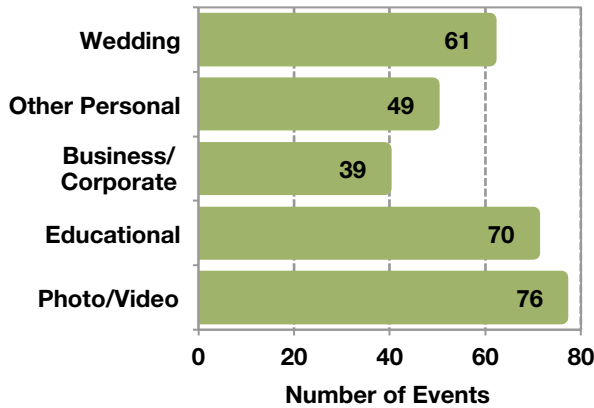
## Events

Total events for the year amount to 225, including 70 educational events. The most common are photo or video visits, typically associated with a wedding. These are relatively simple activities that require only limited staff effort. Personal, wedding and corporate events are much more complex and, if a reception is involved, require extensive staff time. Educational events consist of a variety of tours, demonstrations and workshops, often conducted by docents or by contracted staff.

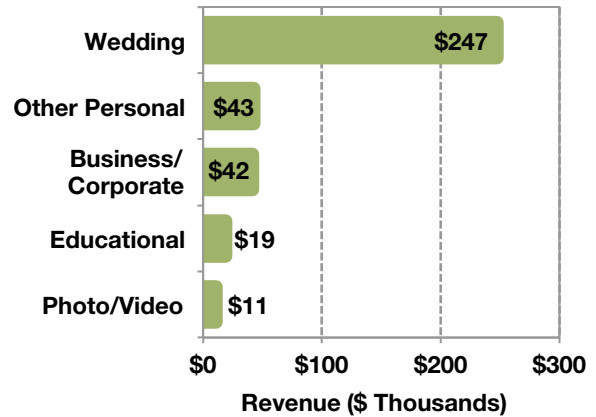
Event revenue derives primarily from weddings, due substantially to the relatively high fees involved. Educational events contribute relatively little revenue, which is appropriate given the significant role these events play in fulfilling the Garden's mission.



**Number Events by Type  
FY 2014**



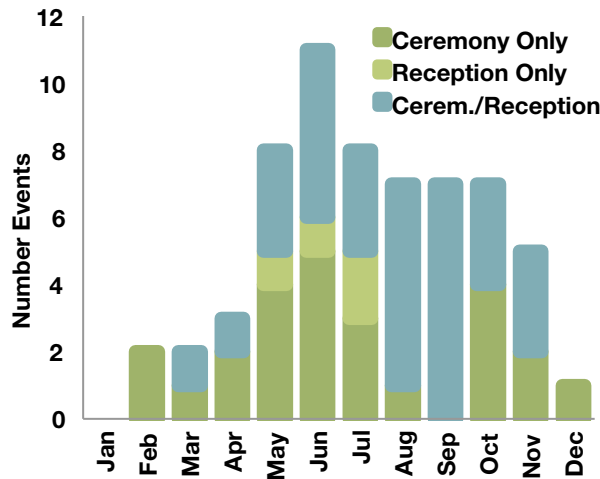
**Revenue by Event Type  
FY 2014**



## Weddings

Weddings occurred in all but one month, with the largest portion in May, June and July, with continuing activity through October. Weddings during June averaged about 2.5 per week, or nearly one per day for Friday through Sunday. If wedding activity is to increase it should be spread to other months to the extent possible. Increased capacity for indoor events would allow more events during the remainder of the year.

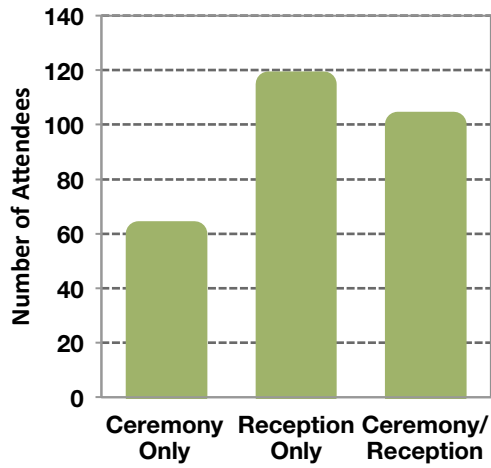
**Wedding Events by Month  
FY 2014**



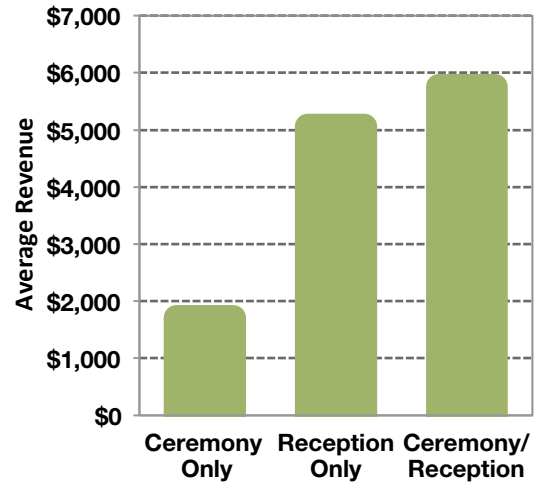
Average size for weddings and receptions is between 100 and 115, or 60 for a wedding only. Some of these are larger events however, ranging as high as 180 people. A number of larger events are around 150, which seems like a workable size for the facilities Hakone Estate & Gardens can offer. Revenue for weddings is good, particularly for those that include a reception.



**Average Attendance  
FY 2014**



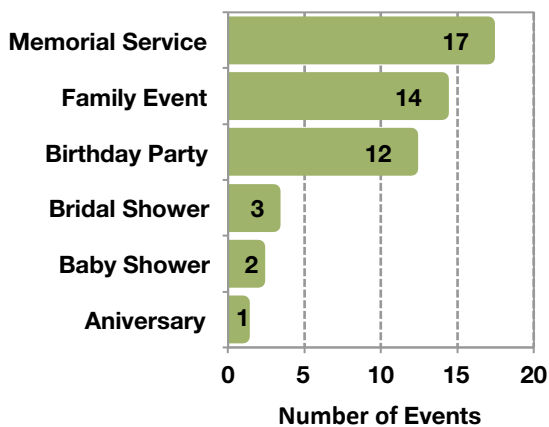
**Average Revenue  
FY 2014**



### Personal Events

The most common personal events are memorial services, family events such as reunions, and birthday parties. Average attendance for these events ranges from about 50 to 80, size that is consistent with the indoor space available at Hakone Estate & Gardens.

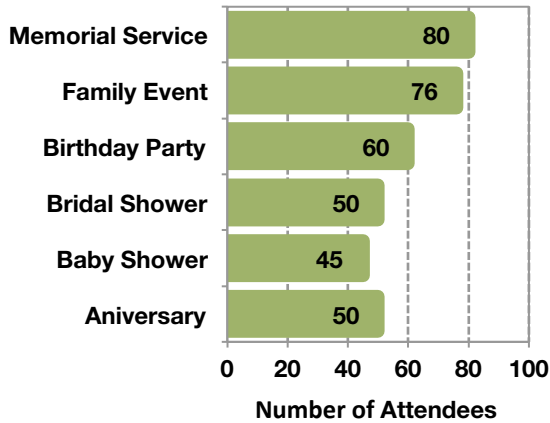
**Personal Events  
FY 2014**



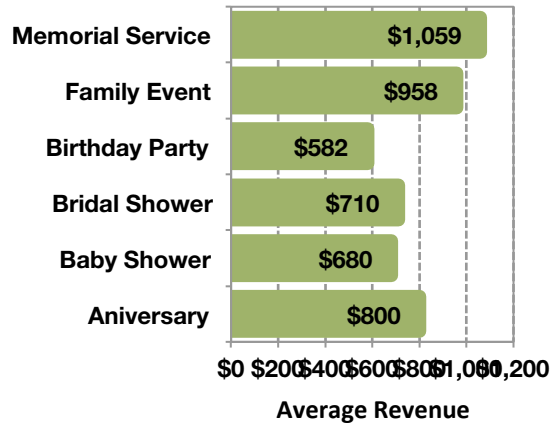
Average revenue ranges from about \$600 to somewhat over \$1,000 per event; note the comparison with average revenue for weddings.



**Personal Event Average Attendance  
FY 2014**



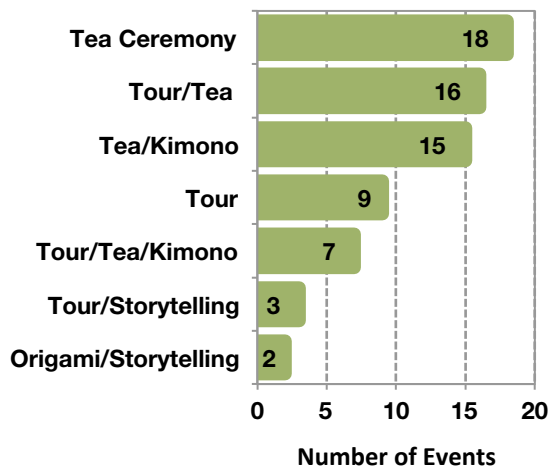
**Personal Event Average Revenue  
FY 2014**



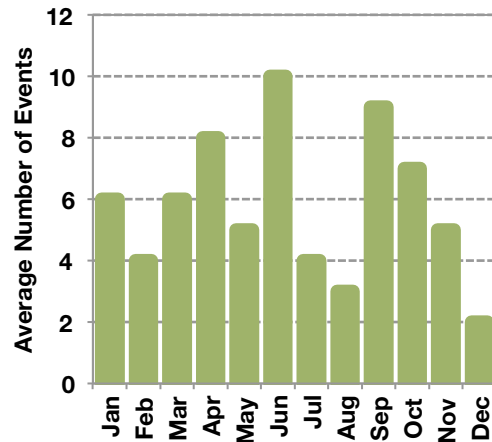
## Educational Events

These events range from tea ceremonies, garden tours, demonstrations, workshops and storytelling, often combined in various ways. These events occur throughout the year – more so than weddings – and show a low point in July and August.

**Educational Events  
FY 2014**

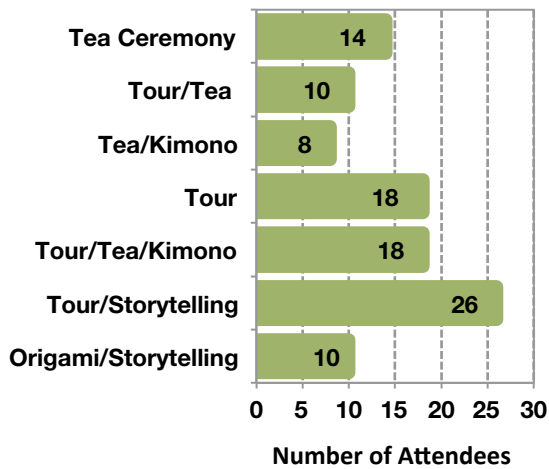


**Educational Events by Month  
FY 2014**

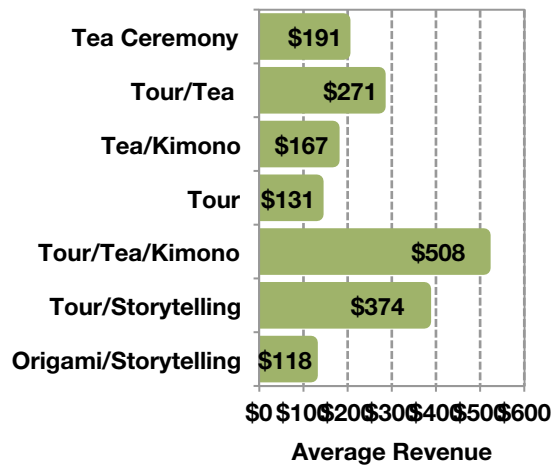


Average attendance at education events is much smaller than at other events, ranging from seven to about 25. Revenue is modest.

**Educational Events Average Attendance  
FY 2014**



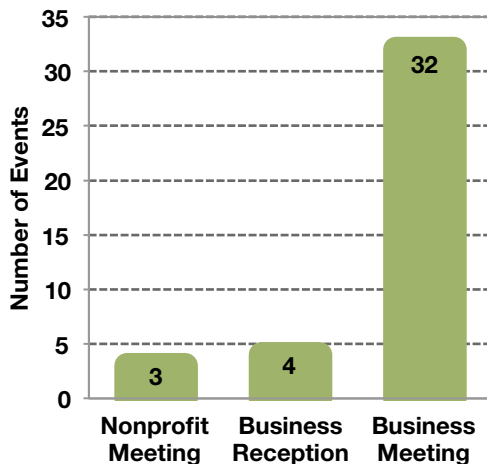
**Educational Events Average Revenue  
FY 2014**



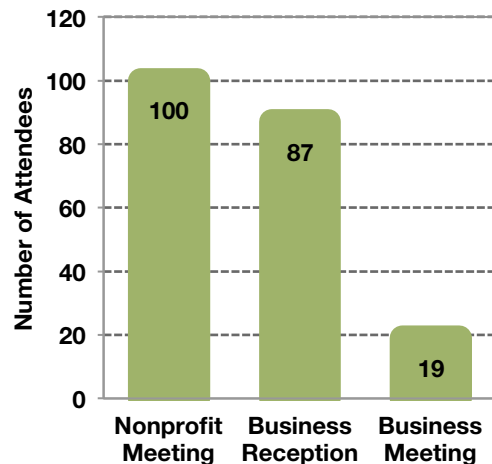
## Business Events

The bulk of business meetings are indoor events averaging about 20 people, with some larger and involving an outdoor reception of around 100. Several nonprofit organization meetings are included in this category, which are about the same size as the average business reception but typically do not involve food service.

**Business Events  
FY 2014**

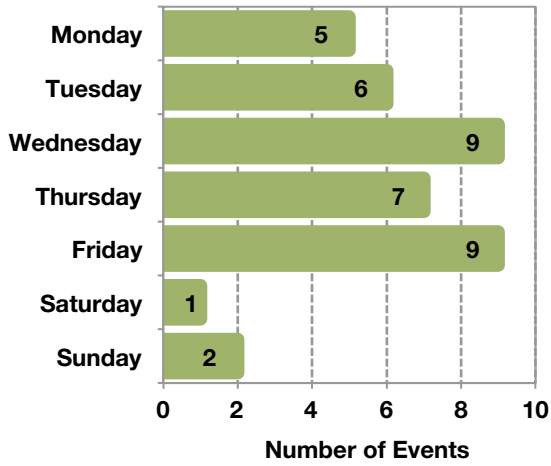


**Business Events Average Attendance  
FY 2014**



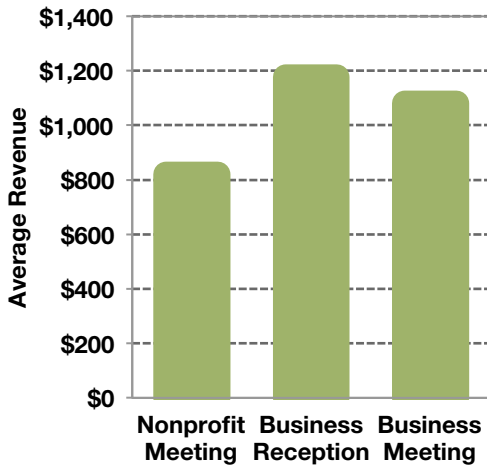
Most business meetings occur during the week, a useful complement to weddings, which are largely weekend affairs.

**Business Events by Day of Week  
FY 2014**

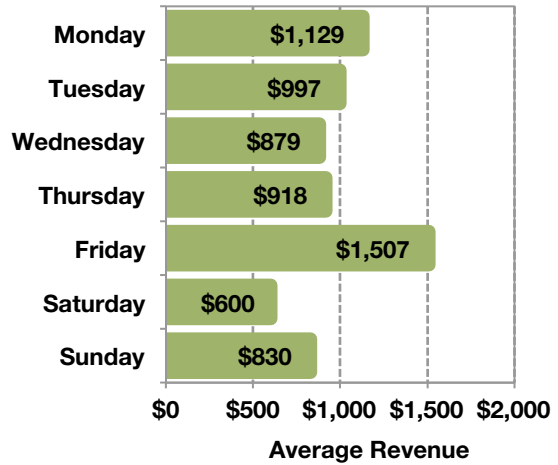


Average revenue is between \$800 and \$1,200, somewhat higher than is typical for personal events but substantially lower than for weddings.

**Business Events, Average Revenue  
by Event Type, FY 2014**



**Business Events, Average Revenue  
by Day of Week, FY 2014**





## Comparable Facilities

While Hakone Estate & Gardens is unique in many respects, reviewing other comparable garden facilities provides useful perspective on operations, finances and pricing. The review takes three perspectives: Japanese gardens specifically, public gardens in general, and facilities that offer space rental for weddings. For the first two the focus extends to the West Coast; comparable wedding facilities are limited to those in the immediate San Jose and Santa Clara area, including Saratoga.

### **Japanese Gardens**

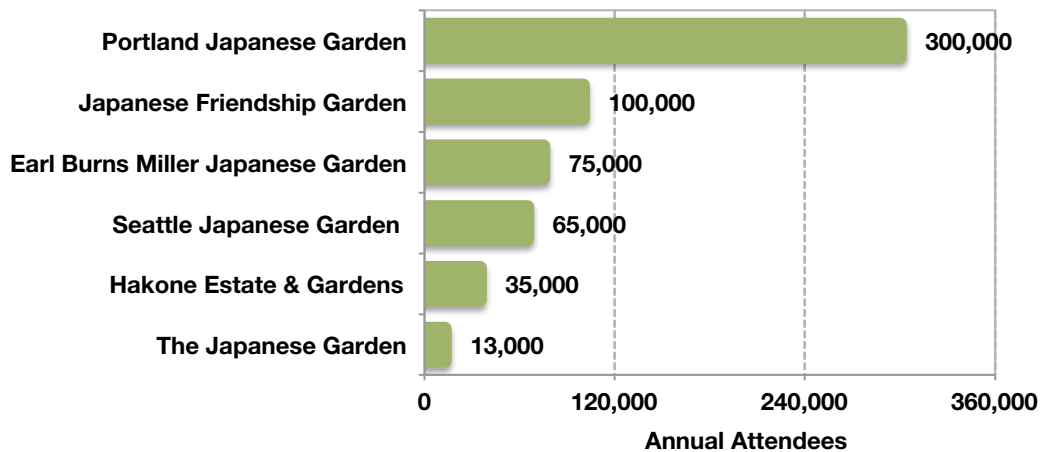
West Coast Japanese gardens range from well established, stand-alone public facilities such as the Portland Japanese Garden and Hakone Estate & Gardens, to a variety of facilities that operate as a portion of larger facilities, including public gardens and parks, universities and community facilities. The Seattle Japanese Garden, for example, is situated as part of the Washington Park Arboretum, and the Japanese Friendship Garden in San Diego is part of Balboa Park. One popular facility, the Japanese Tea Garden, is a commercial concession within Golden Gate Park in San Francisco. In addition, some larger public Gardens, such as Huntington Botanical Gardens and Descanso Gardens in the Los Angeles area, have Japanese garden sections. The selection of gardens selected for this project appears in the table below.

## Comparable Japanese Gardens

Facility	Location	Ownership	Founded	Size (acres)	Unique Features
Portland Japanese Garden	Portland OR	Private nonprofit	1967	6	Pavilion, expansion planned
Japanese Friendship Garden	San Diego CA	Private nonprofit	1979	11	Within Balboa Park; amphitheater; expansion underway
Earl Burns Miller Japanese Garden	Long Beach CA	CA State Univ., Long Beach	1981	1.3	Sculpture; university and cultural events
Seattle Japanese Garden	Seattle WA	Private nonprofit	1960	4	Located within Washington Park Arboretum
Hakone Estate & Gardens	Saratoga CA	Private nonprofit	1966	17	Multicultural focus
The Japanese Garden	Van Nuys CA	City of Los Angeles	1984	7	Tea house; cultural and educational events; movie settings
Japanese Friendship Garden	San Jose CA	Municipal	1965	6	Within a city park
Japanese Gardens	Hayward CA	Rec. and Park District	1980	4	Tea house, associated with a senior center
Japanese Tea Garden	San Francisco CA	City of San Francisco; concession	1894	5	Japanese garden within Golden Gate Park; operated as a concession
Shoseian Japanese Teahouse	Glendale CA	Private nonprofit	1974	NA	Tea house; located in Brand park

Attendance at most of these gardens is modest, under 100,000 per year. The figures from gardens that have data are shown below. A number of gardens are free and/or part of larger parks and no separate attendance figures are available. The Portland Japanese Garden sees 300,000 people per year, demonstrating that, under the right circumstances, a Japanese garden can be a major garden attraction.

**Annual Attendance, selected Japanese Gardens  
2014**



Facility	Commercial Elements	Annual Attendance	Adm. Fee	Staff	Volunteers
Portland Japanese Garden	Retail, limited events	300,000	\$9.50 adult, \$7.50 youth	33 FT, 6 PT	600
Japanese Friendship Garden	Weddings, events; café, online retail	100,000	\$6 adult, \$5 youth	7 FT, 9 PT	5
Earl Burns Miller Japanese Garden	Weddings, events	75,000	Free	4 FT, 32 PT	500
Seattle Japanese Garden	Meeting room rental	65,000	\$6 adult, \$4 youth	5 FT, 3 PT	80
Hakone Estate & Gardens	Retail; weddings, events	35,000	\$8 adult, \$6 youth	5 FT, 16 PT	400
The Japanese Garden	Retail, event rentals; movies	13,000	\$5 adult, \$3 youth	4 FT, 2 PT	70
Japanese Friendship Garden	Weddings, events	NA	Free	NA	
Japanese Gardens	Weddings	NA	Free	NA	
Japanese Tea Garden	Retail, café; photo opportunities	NA	\$8 adult, \$6 youth; res. discounts	NA	NA
Shoseian Japanese Teahouse	Tea ceremony	NA	Associated with events	NA	NA



## Other Public Gardens

The West Coast includes a number of other public gardens that offer some useful illustrations. The table below includes the primary public gardens within this region, excluding the largest gardens that are not suitably comparable to Hakone Estate & Gardens.

Most of these gardens have larger attendance than Hakone Estate & Gardens, although a few are similar. See the figure below. Most also have a substantially larger footprint, some extending over 100 acres.

## Comparable Public Gardens

Facility	Location	Ownership	Founded	Size (acres)	Unique Features
Rancho Santa Ana Botanical Garden	Claremont CA	Private nonprofit	1927	86	Native plant garden, classes, musical events; research orientation
San Diego Botanic Garden	Encinitas CA	Private nonprofit	1960	35	Botanical garden; auditorium, bird sanctuary
Filoli Center	Woodside CA	Private nonprofit	1976	16	Historic house, botanical garden and nature preserve
Santa Barbara Botanic Garden	Santa Barbara CA	Private nonprofit	1926	78	Botanical garden; extensive education and research facilities and activities
South Coast Botanic Garden	Palos Verdes CA	Los Angeles County	1960	87	Botanical garden
Sherman Gardens	Corona del Mar CA	Private nonprofit	1951	2	Historical research institute and botanical garden, auditorium
Mendocino Coast Botanical Gardens	Fort Bragg CA	Private nonprofit	1961	47	Botanical garden and arboretum
Arboretum at UC Santa Cruz	Santa Cruz CA	Univ. of California Santa Cruz	1964	135	Arboretum and botanical garden; extensive education and research activity
University of California Botanical Garden	Berkeley CA	University of California	1890	34	Botanical garden, conference center, amphitheater, classroom, picnic area
Ganna Walska Lotusland	Montecito CA	Private nonprofit	1993	37	Botanical garden, estate

Fullerton Arboretum	Fullerton CA	Municipal, University	1972	26	Arboretum and garden, historic house and collections
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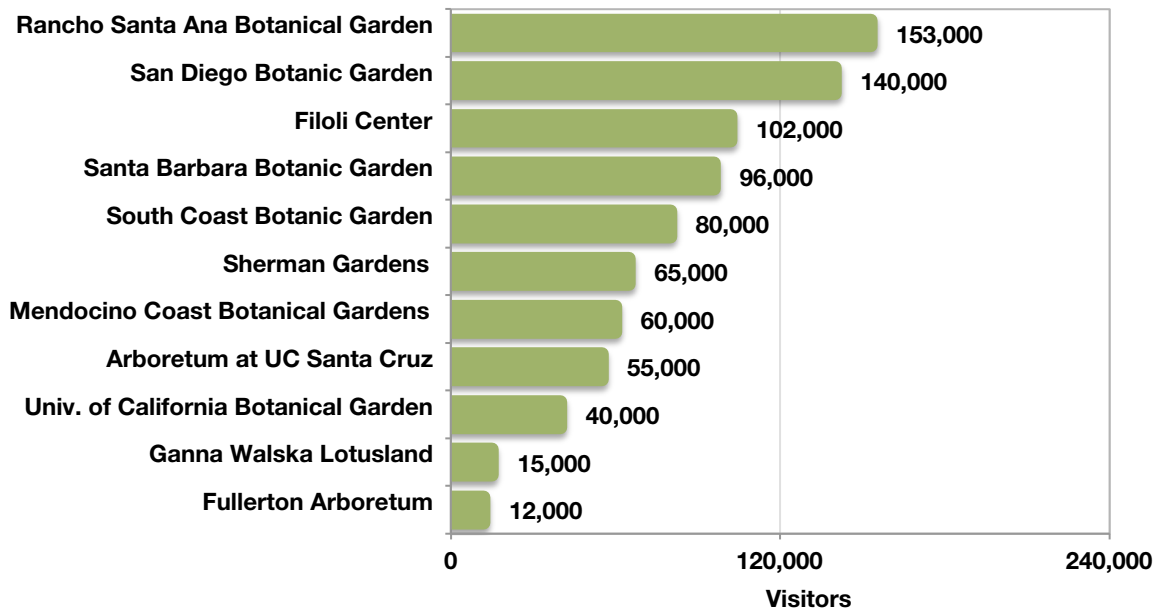
A useful consideration of these gardens is on the ‘commercial’ features they include, in particular rentals for weddings and other events and food service. It is apparent that nearly all of the gardens offer facilities for weddings and other events. Few, however, include food service in the form of a café or restaurant. The two that do are modest in size – Mendocino Coast at 60,000 annual attendance and Sherman at 65,000 – suggesting that large attendance is not necessarily required to support this service. The Filoli Center (102,000) offers an afternoon tea.

Several of the facilities have free admission. For those that charge, admission fees range from around \$5 for an adult to \$15, with one facility operated only on the basis of more expensive tours.

Facility	Commercial Elements	Annual Attendance	Adm. Fee	Staff	Volunteers
Rancho Santa Ana Botanical Garden	retail; tours, classes; native plant nursery; weddings, corporate events	153,000	\$8 adult, \$4 youth		
San Diego Botanic Garden	retail; classes, tours; weddings and corporate events	140,000	\$14 adult, \$8 youth	21 FT, 4 PT	19
Filoli Center	Afternoon tea; art access days; classes, tours	102,000	\$15 adult, \$5 student	36 FT, 31 PT	1,300
Santa Barbara Botanic Garden	Retail; events including weddings; tours, classes; day trips, travel	96,000	\$8 adult, \$4 youth	25 FT, 19 PT	300
South Coast Botanic Garden	Retail; classes, tours; weddings and corporate events	80,000	\$8 adult, \$3 youth		
Sherman Gardens	Classes; café; weddings, corporate events	65,000	\$3 adult, \$1 youth	9 FT, 9 PT	150
Mendocino Coast Botanical Gardens	Retail, café; classes, tours; weddings	60,000	\$14 adult, \$10 youth	10 FT, 6 PT	150
Arboretum at UC Santa Cruz	Retail, classes, special days, tours, amphitheater events	55,000	\$5 adult	4 FT, 14 PT	200
University of California Botanical Garden	retail; classes, tours; weddings and corporate events	40,000	\$9 adult, \$5 youth	24 FT, 8 PT	260
Ganna Walska Lotusland	Retail; tours, classes	15,000	\$45 adult (as a tour)		

Fullerton Arboretum	Retail; tours, classes; weddings, corporate events	12,000	Free	10 FT, 12 PT	600
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Annual Attendance by Public Garden  
2014



## Wedding Venues

A number of venues operate in the general Saratoga area that offer garden-oriented wedding rentals. They represent the primary competition for Hakone Estate & Gardens for this type of activity and offer useful information regarding rates and services. A selection of these facilities appears in the table below.

Most venues offer only packages that include a catered meal, although several also provide for wedding ceremonies with no reception. Prices for ceremony-only rentals range from about \$700 to \$4,500 for Montalvo, the closest facility to Hakone Estate & Gardens. Weddings that include catered receptions, assuming an event of 150 guests, range up to \$22,000. The most expensive facility charges are at Montalvo, with space rental charges of \$10,000 for a Friday event and \$12,000 for Sunday.



Venue (Location)	Description	Ceremony Fee	Reception Fee	Min. Venue Rental Fee	Mandatory in-house catering
Ainsley Gardens (Campbell)	ceremony and reception capabilities for 150 outside of the 1925 Tudor Revival Ainsley House	\$1,250.00	\$2,100.00	\$2,345	No
Cinnabar Hills Golf Club (San Jose)	ceremony capabilities on the terrace and in the club house for up to 250 guests	\$1,275.00	\$1,995.00	\$15,270	Yes
Elizabeth F. Gamble Garden (Palo Alto)	indoor and garden capabilities for 50 guests	-	-	\$1,200	No
Freedom Hall and Gardens (Santa Clara)	outdoor garden ceremonies with receptions in Freedom Hall	\$695.00	-	\$12,145	Yes
Montalvo Arts Center (Saratoga)	ceremony, reception and dinner venues across the sweeping center grounds	\$4,500.00	-	\$18,500	Yes
Mountain Winery (Saratoga)	indoor and outdoor ceremony and reception venues with views of the Santa Cruz Mountains	\$3,500.00	\$2,000.00	\$22,000	Yes
Ranch at Little Hills (San Ramone)	an intimate outdoor setting for 250 wedding guests in the Las Trampas Regional Wilderness	-	-	\$3,995	No
Saratoga Country Club (Saratoga)	ceremony and reception venues with views of the Santa Clara Valley for 250 guests	\$2,000.00	\$2,000.00	\$11,800	Yes
Saratoga Foothill Club (Saratoga)	an outdoor courtyard and vaulted ceiling indoor facility	\$1,800.00	-	\$11,745	Yes
Saratoga Springs (Saratoga)	wooded outdoor ceremony and reception venue near running water and soaring redwoods	-	\$2,100.00	\$8,243	Yes

Notes: Some venue fees are not applicable based on venue restrictions, such as mandatory in-house catering with reception rental. Minimum venue rental fee for a Saturday wedding with 150 guests. Includes all applicable ceremony and reception fees.

## Attendance and Revenue Projections

The following projections of attendance and revenue show a baseline represented by Fiscal Year 2015 (ended in June 2015), with projected figures for the four phases of development proposed in the Master Plan. Figures for each phase represent conditions after the proposed development phase is completed and the new capacity that each creates is available to support additional activity and revenue generation. Since no specific timeline is available for implementation of each phase, all figures are in constant 2015 dollars, with no consideration of inflation. Over the coming years inflation will most likely occur, increasing expenses and requiring increases in revenue.

For analysis purposes the first two phases are combined, comprised of repairs to the existing pond and associated path and garden areas, plus renovation of the CEC and repairs to several of the other existing structures. Completion of this phase will enhance the garden experience substantially and provide additional event capacity in the renovated buildings.

Phase 3 consists primarily of new construction and renovation focused on the entry area, which will further enhance the visitor experience and provide for additional event capacity. Phase 4 focuses on parking lot reconstruction, plus maintenance and administrative facility renovations, which will have some effect on the visitor experience but less so than the previous phases. However during this phase the Gardens will continue to build program, marketing, development and other capacity, increasing its potential to build attendance and revenue.

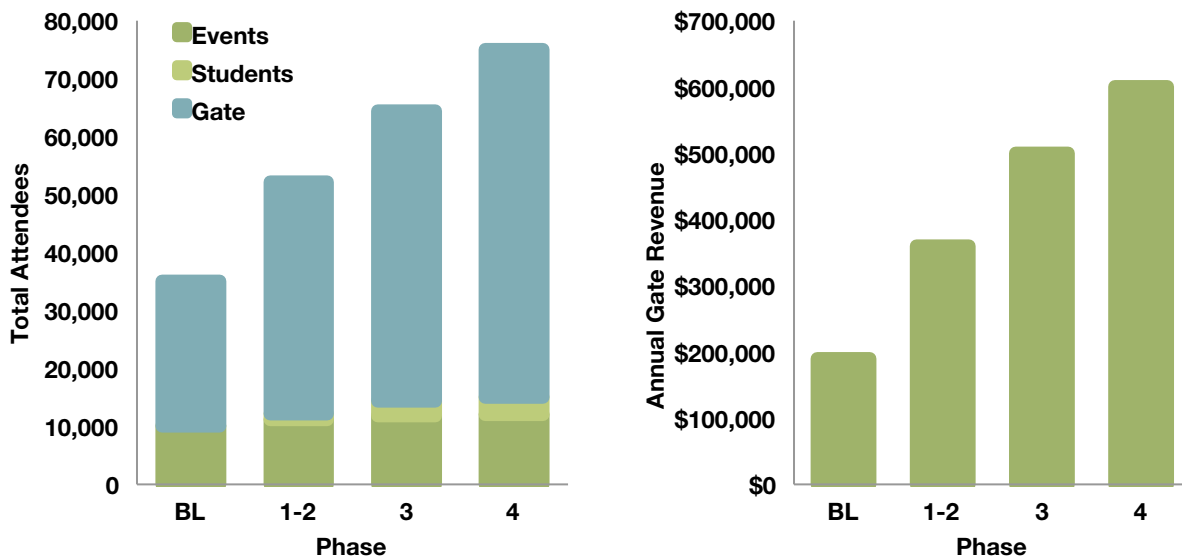
### **Gate admissions**

Gate admissions are projected to increase steadily as the quality of the garden experience increases and additional membership, marketing, event and other programs are put in place. Current attendance is quite low given the size of the South Bay market, so considerable growth is possible if the garden can be properly positioned as an attraction and more effectively promoted.

Gate admissions are projected to increase from the current 25,000 to 40,000 in Phase 1-2, rising to 60,000 by Phase 4. Total attendance, which includes students and event attendees, rises from 35,000 to 75,000. Education program attendees are considered part of gate admissions. Admissions revenue is collected only from gate attendees.

#### **Annual Attendance by Category**

#### **Annual Gate Revenue by Phase**



Average admission charge rises from the current \$7.60 – which is a combination of adult, student and senior rates – to \$9 for Phase 1-2 and \$10 for Phases 3 and 4.

### Event Revenue

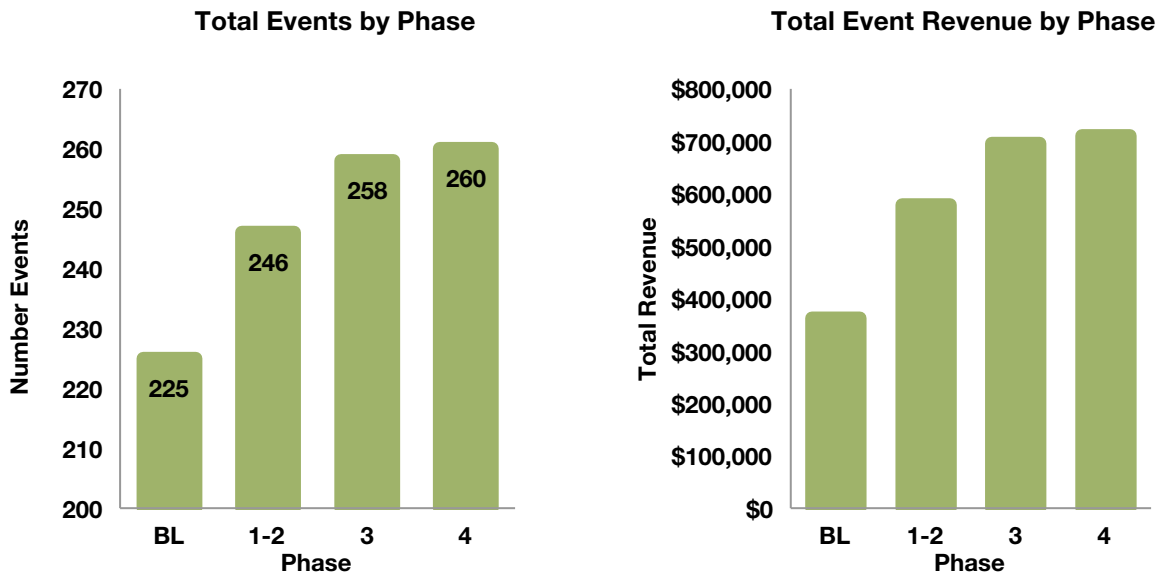
The projections for event numbers and the associated revenue are summarized here, with more detailed data included in the Appendix. For projection purposes separate figures appear for the following six event categories:

- Photo/Video shoots – typically wedding parties holding their events elsewhere but wanting a unique location for photographs; sometimes shoots for advertisements and other purposes
- Wedding ceremonies – ceremonies only, reception held elsewhere; can occur in a number of locations in the Garden, depending on size
- Weddings including reception – ceremony and reception typically held in a combination of the lower and upper courtyards, but can occur inside if the size is modest; expansion of CEC capacity will allow larger inside events
- Personal events – a combination of birthday parties, reunions and other family events, typically involving a meal; includes also memorials and other events that may use theater seating
- Corporate/Business events – a variety of meetings typically held inside, may include limited food service; upgrades of the Lower House and the CEC will provide increased capacity and quality, supporting increased fees
- Corporate/Business receptions – larger events involving good quality food service, often of the same size as large wedding receptions

The total number of events is projected to increase from the current level of 225 to 246 in Phase 1-2 and ultimately to 260 in Phase 4. Increases are a combination of weddings, family and corporate events and are described in more detail below. The increased number of events will occur in part due to more active programming and



marketing, as well as an increase in event capacity, occurring in particular during Phase 3.



Event revenue will increase from the current level of \$360,000 to about \$580,000 in Phase 1-2, rising to somewhat over \$700,000 in Phase 4. Revenue increases are due in part to increased event fees and to the increase in the number of events. Upgrading the quality and presentation of the garden will be very important with regard to the ability to increase event and other fees.

### *Weddings*

Weddings are the most significant event revenue category for Hakone Estate & Gardens, and also require substantial staff effort and heavy use of Garden facilities. Currently there are about 25 wedding ceremony-only events per year, and about 35 weddings with receptions. Fees average about \$1,900 and \$6,000 respectively.

Weddings are projected in Phase 1-2 to increase modestly, to 30 and 40 respectively, as well as increases in the average fee, to \$2,000 and \$7,500 respectively. Further modest increases in the number of events are projected for the subsequent phases, with more substantial increases in the average fee. Increased fees will be supported by the uniqueness and quality of Hakone Estate & Gardens and as a wedding venue, enhanced in particular by the Phase 1-2 and 3 improvements.

**Wedding Events by Phase**

**Average Wedding Event Revenue by Phase**

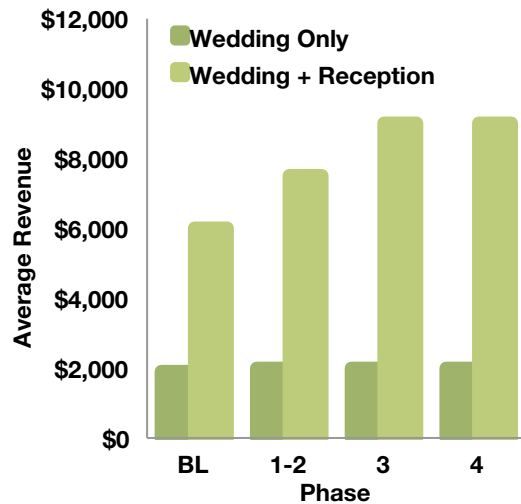
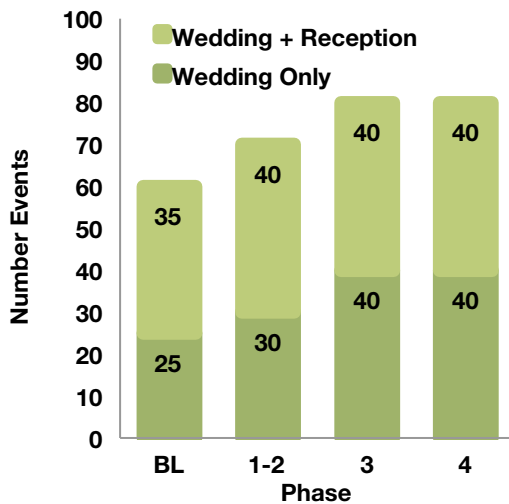


Photo and video shoots, which most often are associated with wedding activities, are assumed to remain constant in the years ahead. These are relatively simple to arrange and manage, but do not represent a very significant revenue source. If the Phase 3 improvements substantially increase the demand for shoots, perhaps fees can be increased.

#### *Personal events*

Hakone Estate & Gardens currently hosts about 50 personal events per year, with fees averaging \$950. This level of activity is projected to remain constant, with average fees rising modestly to \$1,000. While these are good events for cementing relationships within the community, the potential for increased revenue is limited, and increased capacity is better dedicated to events with more revenue potential.

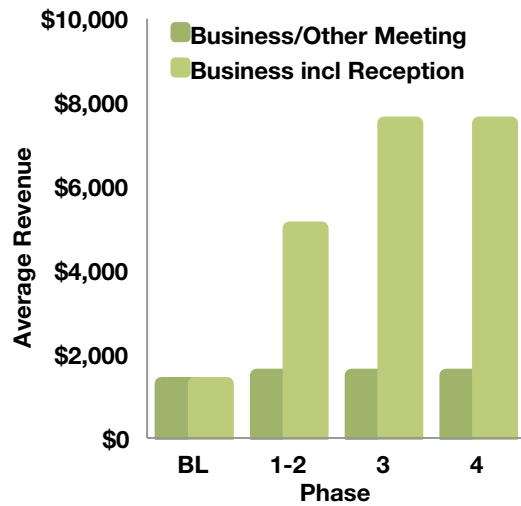
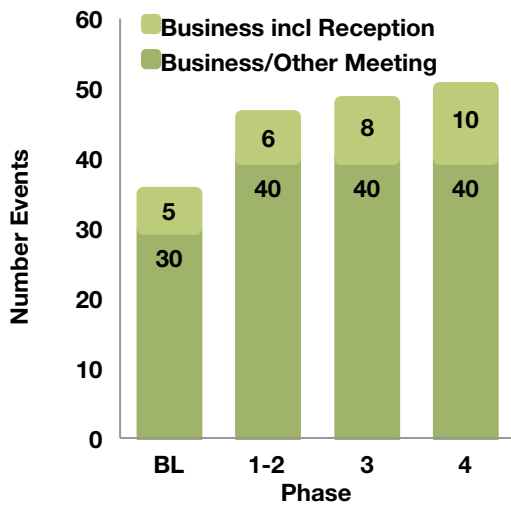
#### *Corporate/Business events*

At present Hakone Estate & Gardens hosts about 30 business/corporate events per year, plus another five that consist of receptions or larger meetings that make use of theater seating. Average fees are \$1,300, the same whether a reception is included or not.

In Phase 1-2 the number of business meetings is projected to increase to 40 per year, plus six receptions. Improvements in both the CEC and Lower House will provide valuable new capacity for these meetings, and additional marketing can promote the improved outside spaces for these clients. In addition average fees should increase, to \$1,500 for a meeting and \$5,000 for a reception, with receptions rising further to \$7,500 in Phase 3.

**Business Events by Phase**

**Average Business Event Revenue by Phase**

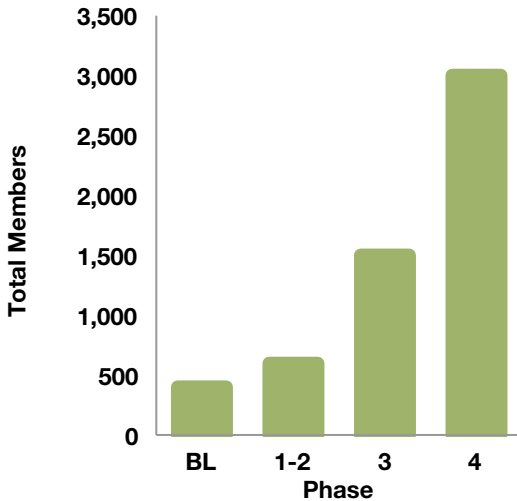


## Membership

Membership is a good indicator of the connection the Garden enjoys with the local and regional community. Enhancing membership helps boost attendance, volunteer recruitment and financial support and should be a high priority for the Garden. From the current level of about 400, membership is projected to increase to 600 for Phase 1-2 and further to 3,000 for Phase 4. Current cost structure is retained; consideration should be given to increasing membership fees if it seems appropriate, but building the number of members should remain a high priority.



**Membership by Phase**

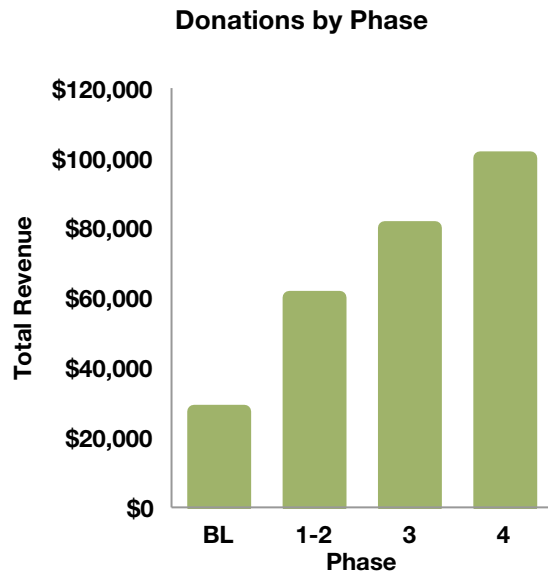


### **Education Programs**

Education is fundamental to the Garden’s mission and educational programming is another high priority. Revenue from education activity is limited for most gardens, particularly if children are a primary segment. For purposes of projections, education program revenue is assumed to remain the same as a proportion of gate revenue. Any substantial increases in programming for organized school groups, for example, will probably not be associated with much revenue growth. This activity, if possible, should be covered by foundation and other grant income.

### **Donations**

Donation levels are another indication of connection with the local and regional community. Successful gardens attract personal and corporate donations via annual campaigns, fundraising events, and through special appeals for particular projects. Hakone Estate & Gardens has seen some success with regard to donations, but there is potential for more. From the current level of about \$27,000 per year, donations are projected to increase to \$60,000 for Phase 1-2 and ultimately to \$100,000 for Phase 4. The process of implementing the Master Plan will be instrumental for presenting the Garden’s plans for the future and illustrating how good an investment is represents for individuals and corporations in the community.



## Foundation Grants

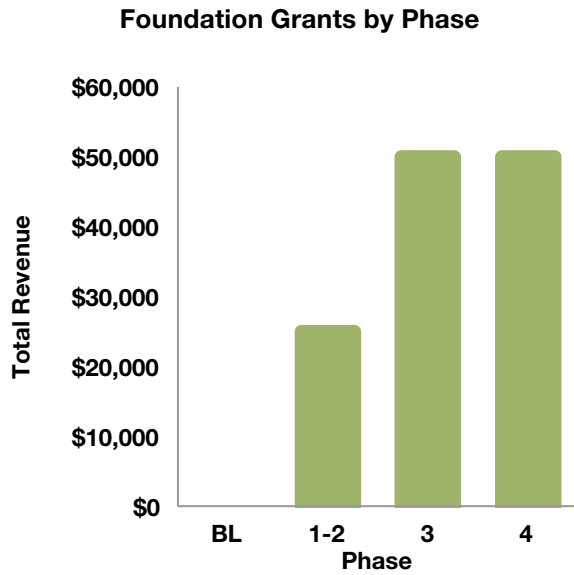
Hakone Estate & Gardens is in a good position to apply for foundation and corporate grants that support organizations with cultural and educational missions and that are in a position to enhance the services they can offer.

Two topic areas are good priorities. First, educational activities at Hakone Estate & Gardens can be enhanced, particularly those focusing on school-age children. Charitable foundations in particular often place high priorities on programs oriented to children and education. These can be priorities for corporate foundations as well. Financial support of this kind can help Hakone Estate & Gardens and fund additional staff and other resources and build a notable education program that represents a valuable asset for the community.

The other type of grant focuses on capacity building – assistance to an organization that is poised to “move to the next level” but needs an infusion of money in order to do so. Examples of activities that can be funded in this manner include:

- Hiring of staff focusing on development, volunteer recruitment and marketing, all oriented to building capacity for generating additional revenue and enhancing self-sufficiency; funds for enhanced administrative staff can be considered as well
- Building an educational program; enhancing connections to the community that funnel children and families to Hakone Estate & Gardens
- Topical programs, oriented to education/outreach and/or research, on current topics such as climate and habitat change, water use, culinary and sensory plants, plant conservation and plant-related cultural expression

Grant income is assumed to increase to \$25,000 per year in Phase 1-2, increasing to \$50,000 by Phase 4.



### City maintenance

The current level of City of Saratoga maintenance at the Garden is assumed to continue. One-time City contributions to building and other projects would be in addition to this amount.



## Preliminary Operating Budget

The preliminary operating budget that appears below represents a balance of anticipated revenue and operating expense associated with implementation of each phase of the master plan. All figures are in constant 2015 dollars.

	Baseline	Phase 1-2	Phase 3	Phase 4
<b>Projections</b>				
Non-school Attendance	25,000	40,000	50,000	60,000
Organized School Groups	0	1,000	2,500	3,000
Events	10,060	11,140	11,900	12,060
<b>Total</b>	<b>35,060</b>	<b>52,140</b>	<b>64,400</b>	<b>75,060</b>
Membership	400	600	1,500	3,000
<b>Revenue</b>				
Admissions	\$190,310	\$360,000	\$500,000	\$600,000
Fundraising events	\$30,418	\$50,000	\$80,000	\$100,000
Weddings	\$282,564	\$416,000	\$492,000	\$492,000
Other facility rentals	\$110,514	\$162,000	\$203,660	\$218,900
Retail sales	\$59,706	\$100,000	\$150,000	\$180,000
Memberships	\$27,070	\$40,605	\$101,513	\$203,025
Adult education programs	\$6,394	\$12,095	\$16,799	\$20,159
Donation	\$27,491	\$60,000	\$80,000	\$100,000
Foundation	\$0	\$25,000	\$50,000	\$50,000
City maintenance	\$15,000	\$15,000	\$15,000	\$15,000
Other	\$247	\$0	\$0	\$0
<b>Total Revenue</b>	<b>\$749,714</b>	<b>\$1,240,700</b>	<b>\$1,688,971</b>	<b>\$1,979,084</b>
<b>Expenses</b>				
Staff	\$473,464	\$756,206	\$1,007,736	\$1,183,080
Fringe @ 15% (20%)	\$71,292	\$113,431	\$201,547	\$236,616
Administration	\$17,607	\$23,160	\$28,844	\$34,427
General operations	\$139,077	\$206,830	\$255,464	\$297,750
Garden operations	\$11,189	\$16,784	\$22,378	\$22,378
Education	\$0	\$10,000	\$15,000	\$15,000
Retail	\$23,025	\$50,000	\$75,000	\$90,000
Event expenses	\$17,840	\$28,433	\$34,221	\$34,971
Maintenance/Repair	\$5,774	\$20,000	\$30,000	\$40,000
City maintenance	\$15,000	\$15,000	\$15,000	\$15,000
Other	\$0	\$0	\$0	\$0
<b>Total Expenses</b>	<b>\$774,268</b>	<b>\$1,239,844</b>	<b>\$1,685,190</b>	<b>\$1,969,221</b>
<b>Net Revenue</b>	<b>-\$24,554</b>	<b>\$856</b>	<b>\$3,782</b>	<b>\$9,862</b>

Notes: Organized school groups admitted at no cost. Retail sales of \$2.25 per adult visitor.

Several overriding assumptions underlie these projections:

- Increased attention to design and maintenance of the Gardens, including plantings, pond, buildings and circulation
- Additional attention to building and maintaining connections to the community which will foster attendance, membership, volunteers, event attendance and donations
- preparation of new grant proposals to cover costs of educational programming, historic facility renovation, services to special needs populations, and other programs of interest to foundations
- positioning Hakone Estate & Gardens as a particularly unique, high quality destination, which can support ongoing requests for donations and other support and good fees for event rentals
- Development of a volunteer program that includes people oriented to education and gardening, thereby assisting with garden maintenance

## **Staff**

Staff represent the primary expense for the Garden and are discussed separately here. Current staff amount to 10.5 FTE (Full Time Equivalents), with a staff budget of about \$475,000. Staff overhead costs, such as employment taxes and insurance, are not included in this amount. This number represents conditions around the end of the fiscal year; average staff for all of FY15 was somewhat lower.

Staff are projected to increase to 15 FTE as part of Phase 1-2, rising to 23 FTE by Phase 4. Detail regarding staff by department and phase appears in the Appendix.

## **Budget Projection Assumptions**

The following additional assumptions underlie the projections for operating expenses, which appear below in the preliminary operating budget:

- Staff expense is as described above
- The current percentage for employee overhead expense (15%) is used for the Phase 1-2 projections; this amount is increased to 20% for Phases 3 and 4 to allow for an increase in health insurance coverage and other expenses
- Administrative costs (materials and services primarily) increase in the same proportion as administrative salaries
- General operations expenses increase in proportion to total attendance
- Garden operations expense increase by 50% for Phase 1-2 to represent additional attention to pond, plantings and garden infrastructure; expenses double over current levels for Phase 3 and 4 to represent increased garden area and attention to quality; larger expenditures on garden operations may be justified in order to enhance garden quality and presentation

- Education expense increases to cover anticipated new education programming; these amounts should be covered by foundation grants, if possible
- Retail cost of sales taken as 50% of gross receipts
- Event expenses increase in the same proportion as event revenue
- Maintenance/repair expenses increased to \$20,000 per year to represent increased attention to building and other maintenance

Total revenue for Phase 1-2 increases from baseline of about \$750,000 to somewhat over \$1.2 million, based largely on increases in gate and event revenue and additional foundation and donation support. Increases in expenses result largely from staff increases and the associated overhead, plus increases in operating costs due to increased levels of activity. Facility maintenance costs increase substantially, albeit from a low base. The City of Saratoga contribution for maintenance remains the same.

Revenue increases to nearly \$1.7 million by Phase 3 and to nearly \$2.0 million by Phase 4. Operating expenses increase as well, with the projected budget in balance.

Potential costs not included are a sinking fund for major building repair and renovation costs as well as a variety of potential capital costs.

In addition, there will be transition costs associated with the construction phase, which will disrupt facility operations and potential revenue. To the extent possible such costs should be capitalized as part of the construction budget.

## **Endowment**

Hakone Estate & Gardens should build as large an endowment as possible with the objective of supporting operating costs in the years ahead. Typically, endowments are built from donations; endowment campaigns are often associated with capital campaigns for facility enhancements.

In the early years, while the endowment principal is building, withdrawals are often limited or curtailed completely in order to build capacity as quickly as possible. When withdrawals are initiated they typically are limited to an amount representing no more than the return on endowment investments, averaged over several years. In the past a rule of thumb annual withdrawal of 5% of principal was common. Currently, with available returns on capital as limited as they are, lower percentages are prudent.

An example for establishing an endowment goal for the Phase 1-2 project is as follows. This phase, which focuses on rebuilding the pond and its maintenance systems, improving the surrounding pathways and gardens to ADA standards, and renovating the CEC and other major buildings, will greatly enhance the associated areas of the garden when completed. Additional gardening staff allocated to these portions of the Garden can capitalize on the investments by upgrading plantings and other aspects of the area.



The cost of an additional full-time gardener, including direct overhead, and also including increased materials and other costs plus administrative overhead, might be taken as \$100,000 per year. With an assumption of 4% per year available from principal, an endowment amount of \$2.5 million is necessary to support this expense.

An alternative objective for the use of endowment funds could involve increased educational programming that the upgraded facility would support. An endowment contribution request could be submitted to corporate or charitable foundations, or to individuals, to support a proposed education program enhancement.

## **Sinking Fund**

A sinking fund is one means of accumulating money that will be necessary for facility reconstruction or replacement. An annual revenue stream is set aside, often in an investment account similar to that used for an operating endowment, with the annual amount calculated to correspond to the ultimate revenue goal, the time period involved and an assumed annual return on investment. For example, accumulating an account principal of \$1 million 15 years in the future, assuming an annual return of 5% on investments and annual compounding, would require an annual deposit of about \$46,300.

Sinking fund contributions can be incorporated into a garden's operating budget, however for practical reasons they are rarely seen. Operating revenues for many gardens are often limited in light of necessary operating costs, leaving little room for such investments. In addition, large capital expenses are most often funded via capital campaigns rather than from savings.

That said, gardens should include expected costs for periodic repairs, perhaps including upgrades and relate improvements, as part of their annual budget. Such amounts are included in the budget forecasts here.

## **Branding**

The limited gate attendance of Hakone Estate & Gardens indicates its current low visibility and appeal within the local and regional market. As investments are made in enhancing the Garden and its ability to provide a good visitor experience, attention should also be paid to its image within the market area. While the current name represents the Garden's significant history as a private estate it does not represent its Japanese character, one of its primary strengths from a branding perspective. In addition, an "estate" is not typically an important aspect of a visitor destination and adds little to the brand.

As the Garden moves forward we suggest that a name change be considered, to the Hakone Japanese Garden. This name retains the Garden's historic family connection and identity, and otherwise represents the primary attributes of the Garden today and as it will appear in the future. Such a change could take place in conjunction with initial

implementation of the first phase of the Master Plan, or at a later time as part of Phase 1-2 or later phase completion. In any event such renaming should be carefully planned and implemented as part of a marketing campaign that aims to significantly increase the Garden's visibility and appeal within the South Bay and larger markets.

# Appendix



## Hakone Estate & Gardens: Preliminary Event Projections

Factor	Photo Session	Wedding Only	Wedding + Reception	Personal Event	Corp. Meeting	Corp incl Reception	Total
<b>2015 Baseline</b>							
Events/year	80	25	35	50	30	5	225
Fee/event	\$152	\$1,900	\$6,000	\$950	\$1,300	\$1,300	
Total fee revenue	\$12,160	\$47,500	\$210,000	\$47,500	\$39,000	\$6,500	\$362,660
Attendees/event	7	60	100	70	20	80	
Total attendees	560	1,500	3,500	3,500	600	400	10,060
Total revenue	\$12,160	\$47,500	\$210,000	\$47,500	\$39,000	\$6,500	\$362,660
<b>Phase 1-2</b>							
Events/year	80	30	40	50	40	6	246
Fee/event	\$200	\$2,000	\$7,500	\$1,000	\$1,500	\$5,000	
Total fee revenue	\$16,000	\$60,000	\$300,000	\$50,000	\$60,000	\$30,000	\$516,000
Attendees/event	7	60	100	70	20	80	
Total attendees	560	1,800	4,000	3,500	800	480	11,140
Catering charge/attendee	\$0	\$0	\$100	\$40	\$40	\$100	
Total catering charges	\$0	\$0	\$400,000	\$140,000	\$32,000	\$48,000	
Catering commission	10%	10%	10%	10%	10%	10%	
Catering revenue	\$0	\$0	\$40,000	\$14,000	\$3,200	\$4,800	\$62,000
Total revenue	\$16,000	\$60,000	\$340,000	\$64,000	\$63,200	\$34,800	\$578,000
<b>Phase 3</b>							
Events/year	80	40	40	50	40	8	258
Fee/event	\$200	\$2,000	\$9,000	\$1,000	\$1,500	\$7,500	
Total fee revenue	\$16,000	\$80,000	\$360,000	\$50,000	\$60,000	\$60,000	\$626,000
Attendees/event	7	60	100	70	20	80	
Total attendees	560	2,400	4,000	3,500	800	640	11,900
Catering charge/attendee	\$0	\$0	\$60	\$60	\$10	\$10	
Total catering charges	\$0	\$0	\$240,000	\$210,000	\$8,000	\$6,400	
Catering commission	15%	15%	15%	15%	15%	15%	
Catering revenue	\$0	\$0	\$36,000	\$31,500	\$1,200	\$960	\$69,660
Total revenue	\$16,000	\$80,000	\$396,000	\$81,500	\$61,200	\$60,960	\$695,660
<b>Phase 4</b>							
Events/year	80	40	40	50	40	10	260
Fee/event	\$200	\$2,000	\$9,000	\$1,000	\$1,500	\$7,500	
Total fee revenue	\$16,000	\$80,000	\$360,000	\$50,000	\$60,000	\$75,000	\$641,000
Attendees/event	7	60	100	70	20	80	
Total attendees	560	2,400	4,000	3,500	800	800	12,060
Catering charge/attendee	\$0	\$0	\$60	\$60	\$10	\$10	
Total catering charges	\$0	\$0	\$240,000	\$210,000	\$8,000	\$8,000	
Catering commission	15%	15%	15%	15%	15%	15%	
Catering revenue	\$0	\$0	\$36,000	\$31,500	\$1,200	\$1,200	\$69,900
Total revenue	\$16,000	\$80,000	\$396,000	\$81,500	\$61,200	\$76,200	\$710,900

## Staff Projection: Preliminary Estimated Annual Average

	FY 2015			Phase 1-2		Phase 3		Phase 4	
Position	Salary	FTE	Budget	FTE	Budget	FTE	Budget	FTE	Budget
<b>Administration</b>									
Executive Director	\$90,000	1	\$90,000	1	\$99,000	1	\$108,000	1	\$108,000
Bookkeeper	\$62,400	0.45	\$28,080	0.5	\$34,320	0.5	\$37,440	1	\$74,880
Reception	\$40,000	0	\$0	0.5	\$22,000	1	\$48,000	1	\$48,000
<b>Subtotal</b>		<b>1.45</b>	<b>\$118,080</b>	<b>2</b>	<b>\$155,320</b>	<b>2.5</b>	<b>\$193,440</b>	<b>3</b>	<b>\$230,880</b>
<b>Marketing/Membership</b>									
Marketing/Communications Director	\$60,000	0	\$0	0.5	\$33,000	1	\$72,000	1	\$72,000
Membership Coordinator	\$35,000	0	\$0	0.5	\$19,250	0.5	\$21,000	1	\$42,000
<b>Subtotal</b>		<b>0</b>	<b>\$0</b>	<b>1</b>	<b>\$52,250</b>	<b>1.5</b>	<b>\$93,000</b>	<b>2</b>	<b>\$114,000</b>
<b>Development</b>									
Development Director	\$60,000	0	\$0	0.5	\$33,000	0.5	\$36,000	1	\$72,000
Staff	\$35,000	0	\$0	0	\$0	0.5	\$21,000	1	\$42,000
<b>Subtotal</b>		<b>0</b>	<b>\$0</b>	<b>0.5</b>	<b>\$33,000</b>	<b>1</b>	<b>\$57,000</b>	<b>2</b>	<b>\$114,000</b>
<b>Events Management</b>									
Event Coordinator	\$52,000	1.25	\$65,000	1.5	\$85,800	1.5	\$93,600	1.5	\$93,600
Event Consultant	\$40,000	0.25	\$10,000	0	\$0	0	\$0	0	\$0
Event Office Assistant	\$31,200	0.25	\$7,800	0.5	\$17,160	0.5	\$18,720	1	\$37,440
Event staff	\$26,000	1.5	\$39,000	1.5	\$42,900	2	\$62,400	2	\$62,400
<b>Subtotal</b>		<b>3.25</b>	<b>\$121,800</b>	<b>3.5</b>	<b>\$145,860</b>	<b>4</b>	<b>\$174,720</b>	<b>4.5</b>	<b>\$193,440</b>
<b>Education</b>									
Education Coordinator	\$40,000	0	\$0	0	\$0	0.5	\$24,000	0.5	\$24,000
Volunteer Coordinator	\$40,000	0	\$0	0.5	\$22,000	0.5	\$24,000	0.5	\$24,000
<b>Subtotal</b>		<b>0</b>	<b>\$0</b>	<b>0.5</b>	<b>\$22,000</b>	<b>1</b>	<b>\$48,000</b>	<b>1</b>	<b>\$48,000</b>
<b>Garden Operations</b>									
Head Japanese Garden Specialist	\$58,240	1	\$58,240	1	\$64,064	1	\$69,888	1	\$69,888
Assistant Gardener	\$45,760	1.75	\$80,080	2.5	\$125,840	3	\$164,736	3.5	\$192,192
<b>Subtotal</b>		<b>2.75</b>	<b>\$138,320</b>	<b>3.5</b>	<b>\$189,904</b>	<b>4</b>	<b>\$234,624</b>	<b>4.5</b>	<b>\$262,080</b>
<b>Buildings and Security</b>									
Housekeeping	\$31,200	2	\$62,400	2	\$68,640	2	\$74,880	2	\$74,880
Security	\$35,000	0	\$0	0	\$0	0.5	\$21,000	0.5	\$21,000
<b>Subtotal</b>		<b>2</b>	<b>\$62,400</b>	<b>2</b>	<b>\$68,640</b>	<b>2.5</b>	<b>\$95,880</b>	<b>2.5</b>	<b>\$95,880</b>
<b>Retail</b>									
Gift Shop Manager	\$58,240	0.25	\$14,560	1	\$64,064	1	\$69,888	1	\$69,888
Admissions/Retail staff	\$22,880	0.8	\$18,304	1	\$25,168	1.5	\$41,184	2	\$54,912
<b>Subtotal</b>		<b>1.05</b>	<b>\$32,864</b>	<b>2</b>	<b>\$89,232</b>	<b>2.5</b>	<b>\$111,072</b>	<b>3</b>	<b>\$124,800</b>
<b>Total</b>		<b>10.5</b>	<b>\$473,464</b>	<b>15</b>	<b>\$756,206</b>	<b>19</b>	<b>\$1,007,736</b>	<b>23</b>	<b>\$1,183,080</b>

Notes: All salaries increased 10% in Phase 1, 20% in Phases 2 and 3. Fringe taken as 15% in Phase 1, 20% in Phases 2 and 3.







APPENDIX 3

# Construction Cost Opinion





Hakone Estate and Gardens  
Preliminary Budget Estimate

13 October 2015

Prepared for The Portico Group



**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Project Cost Summary**

Phase 1		
Buildings & Structures	\$507,052	
Sitework	2,258,698	
Water Systems Allowance	750,000	
Soft Costs	1,406,300	
	<hr/> <hr/>	
Subtotal Phase 1		\$4,922,050
Phase 2		
Buildings & Structures	\$3,006,992	
Sitework	742,072	
Soft Costs	1,499,626	
	<hr/> <hr/>	
Subtotal Phase 2		\$5,248,690
Phase 3		
Buildings & Structures	\$3,010,147	
Sitework	3,952,809	
Soft Costs	2,785,182	
	<hr/> <hr/>	
Subtotal Phase 3		\$9,748,138
Phase 4		
Buildings & Structures	\$2,491,029	
Sitework	3,080,067	
Soft Costs	2,228,438	
	<hr/> <hr/>	
Subtotal Phase 4		\$7,799,534
<b>Total Project Cost in July 2015 Dollars</b>		<hr/> <hr/> <b>\$27,718,411</b>

Notes:

Additional cost to provide a new building for events in lieu of renovating the Cultural Exchange Center.	\$4,760,000
Additional cost to provide new utilities from Big Basin Way to the site if required.	\$500,000

## **Hakone Estate and Gardens Preliminary Budget Estimate**

### **Estimate Assumptions and Definitions**

This cost estimate dated 13 October 2015 is based on the master plan conceptual site plan produced by The Portico Group and its consultants from workshop three in July 2015 and updated through the end of August 2015. The estimate is also informed through site walks and meetings with the Hakone Estate and Gardens team. The estimate includes both construction costs and soft costs.

Construction costs in the estimate include costs incurred by the contractor(s) in performance of the work. These include the general contractor's costs and overhead / site management as well as the costs of the subcontractors. The construction costs for the project are broken into four phases which have been established by the design team as one possible methodology for constructing the project while maintaining operations in a manageable manner. The four phases are essentially Hill and Pond Garden; Historic Building Renovations; the Entry Courtyard, buildings and new garden; and the Parking Lot and Garden Operations. The phasing will need to be reviewed and approved by the Owner.

Soft costs include the non-construction costs. These include design fees, project management and administrative fees; permitting costs and agency fees (planning, utility, etc.); entitlement costs, including required consultants and legal support; an allowance for other fees and service which include non design consultants such as geotechnical, surveys, etc.; fixtures, furniture and equipment which are presumed to be purchased and installed by the owner directly, and for this project may include equipment for the maintenance of the newly installed elements or initial consumables for the garden. Soft costs are included as an allowance at 40% of hard costs.

The estimate includes three separate contingencies: first, a design contingency included in the construction cost which is intended to cover changes during the design phases (i.e. before construction begins) brought on by conditions which are currently unknown; second, a construction contingency included in the soft costs which is intended to cover changes in cost after the construction contract is executed. The third contingency is a soft cost contingency which is intended to cover any increases in the soft costs throughout the project duration. These changes may be due to changes in scope which require additional fees for a consultant or the need for a consultant on the project which is not currently foreseen.

There are other costs that are not direct development costs and not included in the estimate, but will still be incurred by Hakone Estate and Gardens. These include costs for fundraising and/or financing the project; an allowance for any maintenance or program endowment; any interruption of operations or loss of revenue during construction; and an allowance for other miscellaneous owner costs (misc. printing costs to support events directly related to the project, the cost of materials or food for workshops, travel for staff directly related to the project).

The cost estimate is in July 2015 dollars and no escalation to a future start date has been included.

The following abbreviations are used in the estimate:

Allow Allow is used when the scope is not known and the line item is simply an allowance.

CY Cubic Yard

Ea Each

FF&E Fixtures, furnishings & equipment which are part of the soft costs

Flt Flight, as for Stairs

LF Linear Foot

LS Lump Sum is used to capture the cost of an element or system in its entirety

Lvs Leaves for doors

SF Square Foot

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 1 Buildings & Structures Summary**

Rebuild Existing Wisteria Pavilion		\$100,000
Koi Pond Water Systems Building		<u>276,050</u>
<b>Subtotal</b>		<b>\$376,050</b>
General Conditions	10.0%	37,605
Bonds & Insurance	2.0%	8,273
Contractor's Fee	4.5%	<u>18,987</u>
Subtotal		<b>\$440,915</b>
Design Contingency	15.0%	66,137
Escalation to Construction Start	0.0%	<u>0</u>
<b>Total Construction Cost</b>		<b>\$507,052</b>



**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 1 Buildings & Structures**

**Koi Pond Water Systems Building**

Foundations	18 CY	700.00	\$12,600
Slab on Grade	430 SF	20.00	8,600
Pads & Curbs	1 LS		12,000
Walls - Concrete	1200 SF	50.00	60,000
Wall Finish	1200 SF	50.00	60,000
Louvres	50 SF	80.00	4,000
Exterior Doors	1 Pr	5,000	5,000
Roof Structure	430 SF	40.00	17,200
Roofing	430 SF	20.00	8,600
Interior Construction			
Partitions	None		
GWB & Insl @ Exterior Wall	None		
Finishes - Paint Walls & Ceilings	1630 SF	5.00	8,150
Millwork	None		
Specialties	430 SF	8.00	3,440
Plumbing			
Hose Bibbs	2 Ea	1,000	2,000
Sink	1 Ea	2,500	2,500
Drains	2 Ea	1,000	2,000
Roof Drainage	430 SF	12.00	5,160
Rough In for Water Systems	1 LS		10,000
Mechanical System - Exhaust Only	430 SF	20.00	8,600
Fire Sprinkler System	None		
Electrical			
Power			
Panelboard	1 Ea	3,600	3,600
Equipment Power	12 Ea	1,500	18,000
User Power	8 Ea	600.00	4,800
Lighting	8 Ea	900.00	7,200
Telephone/Data	4 Ea	1,000	4,000
Fire Alarm	430 SF	10.00	4,300
Security	430 SF	10.00	4,300

Subtotal Koi Pond Water Systems Building

\$276,050

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 1 Sitework**

1.0 Demolition and Earthwork		\$133,060
2.0 Mechanical Systems		140,600
3.0 Electrical Systems		59,800
4.0 Paving		18,750
5.0 Landscape & Irrigation		293,430
6.0 Other Sitework		<u>1,029,500</u>
<b>Subtotal</b>		<b>\$1,675,140</b>
General Conditions	10.0%	167,514
Bonds & Insurance	2.0%	36,853
Contractor's Fee	4.5%	<u>84,578</u>
Subtotal		<b>\$1,964,085</b>
Design Contingency	15.0%	294,613
Escalation to Construction Start	0.0%	<u>0</u>
<b>Total Construction Cost</b>		<b>\$2,258,698</b>

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

<b>Phase 1 Sitework</b>	Quantity	Unit Price	Extension	Subtotal
<b>1.0 Demolition &amp; Earthwork</b>				
Demolition				
General Site Clearing	14560 SF	1.00	\$14,560	
Remove Existing Pond	5500 SF	7.00	38,500	
Remove Misc Structures & Obstacles	1 LS		15,000	
Tree & Landscape Removal			Included in General Clearing Above	
Tree Protection			Included in Div 5.0	
Erosion Control - Allow		Allow	7,500	
Barricades & Fencing for Staging & Access		Allow	5,000	
Miscellaneous	1 LS		5,000	
Earthwork				
Cut, Fill, and Recontouring - Allow	1000 CY	30.00	30,000	
Premium to Offhaul	500 CY	25.00	12,500	
Create Pads for Buildings/Structures	1 LS		5,000	
				\$133,060
<b>Subtotal 1.0 Demolition &amp; Earthwork</b>				
<b>2.0 Mechanical Systems</b>				
Sewer System				
Pump-Sewage Ejector		None		
Pipe-Sewer				
Remove Existing		None		
New Piping	200 LF	50.00	10,000	
Relocations		None		
Connection to Existing Sewer	1 LS		2,500	
Manholes	1 Ea	3,000	3,000	
Cleanout-Grade	2 Ea	750.00	1,500	
Potholing	1 LS		2,500	
Barricades & Protection	1 LS		5,000	
Misc. Valves & Accessories	1 LS		5,000	
Test & Clean	1 LS		5,000	
Grey Water System		None		
Storm Drainage System				
Pipe-Storm				
Remove Existing		None		
New Piping	300 LF	50.00	15,000	
Relocations		None		
Storm Inlet	4 Ea	2,000	8,000	
Manhole	1 Ea	3,000	3,000	

## 2.0 Mechanical Systems (Continued)

Catchbasin	4 Ea	900.00	3,600
Cleanout-Grade	2 Ea	1,000	2,000
Bio Retention System Connections	1 LS		15,000
Connect to Exist Storm System	1 LS		10,000
Barricades/Protect Utilities	1 LS		2,000
Potholing	1 LS		2,000
Misc Accessories	1 LS		2,000
Test & Clean	1 LS		2,000

## Domestic &amp; Fire Water

Remove Existing	None		
New Piping	300 LF	50.00	15,000
Relocations	None		
Water Meters	2 Ea	2,500	5,000
RPBFP	1 Ea	2,500	2,500

Fire Hydrants	None		
Misc. Valves & Accessories	1 LS		2,500
Fire Dept Connections	None		
Misc Manholes & Structures	1 LS		1,500

Premium for Crossovers/Temporary	1 LS		2,500
Barricades/Protect Utilities	1 LS		2,000
Potholing	1 LS		1,500
Misc Accessories	1 LS		1,500
Test & Clean	1 LS		1,500

## Irrigation Connections

Pipe - Irrigation Mains	100 LF	35.00	3,500
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Misc. Rough-Ins	1 LS		2,500
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## Subtotal 2.0 Mechanical Systems

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 \$140,600

## 3.0 Electrical Systems

## Power

Demolition & Safe off	1 LS		\$3,500
New Switchgear & Transformers	None		
New Feeders to Existing POC	300 LF	75.00	22,500
Relocations	None		
Grounding	1 LS		5,000
Maintenance Outlets and Handholes Onsite	2 Ea	1,000	2,000

## Low Voltage

New Feeders to Existing POC	300 LF	40.00	12,000
Relocations	None		
Security Devices on Site	None		

Manholes and Handholes	2 Ea	2,400	4,800
Testing & Inspection	1 LS		5,000
Misc. Connections & Coordination	1 LS		5,000

## Subtotal 3.0 Electrical Systems

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 \$59,800



4.0 Paving				
AC Paving		None		
Concrete		None		
Crushed Gravel Paving	2500 SF		7.50	18,750
Curb & Gutter		None		
Subtotal 4.0 Paving				<u><u>\$18,750</u></u>
5.0 Landscape & Irrigation				
Tree Protection at Existing		Allow		\$12,000
New Trees	20 Ea		1,500	30,000
Planting				
Edge Planting	8000 SF		16.00	128,000
Bio Retention	1000 SF		15.00	15,000
Remaining	4110 SF		8.00	32,880
Soil Preparation	13110 SF		1.50	19,665
Irrigation	13110 SF		3.50	45,885
Allow for Repairs to Edges / Adjacent Areas	1 LS			10,000
Subtotal 5.0 Landscape & Irrigation				<u><u>\$293,430</u></u>
6.0 Other Sitework				
Lighting	1 LS			\$35,000
Trench Drain		None		
Fencing				
Decorative		None		
Chain Link		None		
Gates				
Pedestrian		None		
Vehicle		None		
New Pond				
Concrete Slab	5500 SF		40.00	220,000
Concrete Walls	2000 SF		50.00	100,000
Shotcrete Shell	5700 SF		35.00	199,500
Rockwork Edges & Waterfall	3000 SF		70.00	210,000
Skimmers, Weirs & Misc	1 LS			50,000
Stairs		None		
Retaining Walls & Foundations	2000 SF		70.00	140,000
Railings		None		
Shade Structures		None		
Trash Receptacles		Included in FF&E		
Bicycle Racks		None		
Interpretive Including Signage & Wayfinding	1 LS			75,000
Subtotal 6.0 Other Sitework				<u><u>\$1,029,500</u></u>

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 2 Buildings & Structures Summary**

Renovate Existing Upper House		\$292,025
Renovate Existing Zen House		275,320
Renovate Tea Waiting Pavilion		75,000
Renovate Wisteria Upper Pavilion		75,000
Cultural Exchange Center (CEC)		1,362,760
Allow for Interpretive		150,000
<b>Subtotal</b>		<b>\$2,230,105</b>
General Conditions	10.0%	223,011
Bonds & Insurance	2.0%	49,062
Contractor's Fee	4.5%	112,598
Subtotal		<b>\$2,614,776</b>
Design Contingency	15.0%	392,216
Escalation to Construction Start	0.0%	0
<b>Total Construction Cost</b>		<b>\$3,006,992</b>

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 2 Buildings & Structures**

Existing Upper House			
Demolition	625 SF	30.00	\$18,750
Shoring	120 LF	200.00	24,000
Foundations	Existing to Remain		
Slab on Grade - Refinish/Reseal Existing	625 SF	10.00	6,250
Walls - Replace Exist Struct as Required	300 SF	50.00	15,000
Remove & Reset Existing Siding & Patch	1500 SF	35.00	52,500
Roof Structure - Replace Exist Struct as Required	625 SF	40.00	25,000
Roofing - Remove & Reset	625 SF	35.00	21,875
Painting / Sealing	625 SF	10.00	6,250
Finishes	625 SF	25.00	15,625
Millwork	Allow		25,000
Specialties	430 SF	10.00	4,300
Plumbing	625 SF	25.00	15,625
Mechanical	625 SF	30.00	18,750
Fire Sprinkler System	None		
Electrical			
Power			
Panelboard	1 Ea	3,600	3,600
Equipment Power	6 Ea	1,000	6,000
User Power	10 Ea	500.00	5,000
Lighting	10 Ea	800.00	8,000
Telephone/Data	8 Ea	1,000	8,000
Audio Visual Rough In	None		
Fire Alarm	625 SF	10.00	6,250
Security	625 SF	10.00	6,250
Subtotal Existing Upper House			\$292,025
Existing Zen House			
Demolition	865 SF	10.00	\$8,650
Shoring	130 LF	200.00	26,000
Foundations	Existing to Remain		
Slab on Grade - Refinish/Reseal Existing	865 SF	6.00	5,190
Walls - Replace Exist Struct as Required	200 SF	50.00	10,000
Remove & Reset Existing Siding & Patch	800 SF	35.00	28,000
Roof Structure - Replace Exist Struct as Required	865 SF	30.00	25,950
Roofing - Remove & Reset	865 SF	25.00	21,625
Painting / Sealing	865 SF	6.00	5,190
Finishes	865 SF	25.00	21,625
Kitchen Allowance	1 LS		25,000
Plumbing	865 SF	20.00	17,300
Mechanical	865 SF	30.00	25,950
Fire Sprinkler System	None		

## Existing Zen House (Continued)

## Electrical

## Power

Panelboard	1 Ea	3,600	3,600
Equipment Power	6 Ea	1,500	9,000
User Power	16 Ea	600.00	9,600

Lighting	12 Ea	900.00	10,800
Telephone/Data	8 Ea	1,000	8,000
Audio Visual Rough In	None		
Fire Alarm	865 SF	8.00	6,920
Security	865 SF	8.00	6,920

## Subtotal Existing Zen House

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 \$275,320

## Cultural Exchange Center

## Foundations

## No New Work

Slab on Grade - Cut & Patch As Required	3200 SF	7.00	22,400
Seismic Upgrade / Structural Alterations	Allow		75,000
Repairs to Existing Deck	2350 SF	20.00	47,000
Exterior Walls Patch as Required	4500 SF	25.00	112,500
Windows	Included in Walls Above		
Doors - Replace Hardware	8 Lvs	1,500	12,000
Roofing	4000 SF	35.00	140,000
Interior Construction Renovation	5340 SF	40.00	213,600
Stairs & Elevator	1 LS		250,000
Plumbing	5340 SF	8.00	42,720
Mechanical	5340 SF	25.00	133,500
Fire Sprinkler System	5340 SF	7.00	37,380

## Electrical

## Power

Switchboard	1 Ea	20,000	20,000
Distribution Panels	2 Ea	9,000	18,000
Panelboard	4 Ea	3,600	14,400
Equipment Power	12 Ea	1,000	12,000
User Power	60 Ea	500.00	30,000

Lighting	75 Ea	900.00	67,500
Telephone/Data	40 Ea	1,000	40,000
Audio Visual Rough In	5340 SF	4.00	21,360
Fire Alarm	5340 SF	5.00	26,700
Security	5340 SF	5.00	26,700

## Subtotal Cultural Exchange Center

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 \$1,362,760



**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 2 Sitework**

1.0 Demolition and Earthwork		\$27,500
2.0 Mechanical Systems		186,550
3.0 Electrical Systems		156,300
4.0 Paving		25,000
5.0 Landscape & Irrigation		40,000
6.0 Other Sitework		115,000
<b>Subtotal</b>		<b>\$550,350</b>
General Conditions	10.0%	55,035
Bonds & Insurance	2.0%	12,108
Contractor's Fee	4.5%	27,787
Subtotal		<b>\$645,280</b>
Design Contingency	15.0%	96,792
Escalation to Construction Start	0.0%	0
<b>Total Construction Cost</b>		<b>\$742,072</b>

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

<b>Phase 2 Sitework</b>	Quantity	Unit Price	Extension	Subtotal
<b>1.0 Demolition &amp; Earthwork</b>				
Demolition				
General Site Clearing	1500 SF	5.00	\$7,500	
Barricades & Fencing for Staging & Access	Allow		5,000	
Miscellaneous	1 LS		5,000	
Earthwork	Allow		<u>10,000</u>	
Subtotal 1.0 Demolition & Earthwork				\$27,500
<b>2.0 Mechanical Systems</b>				
Sewer System				
Pump-Sewage Ejector	None			
Pipe-Sewer				
Remove Existing	None			
New Piping	300 LF	50.00	15,000	
Relocations	None			
Connection to Existing Sewer	1 LS		2,500	
Manholes	1 Ea	3,000	3,000	
Cleanout-Grade	3 Ea	750.00	2,250	
Potholing	1 LS		2,500	
Barricades & Protection	1 LS		5,000	
Misc. Valves & Accessories	1 LS		5,000	
Test & Clean	1 LS		5,000	
Grey Water System	None			
Storm Drainage System				
Pipe-Storm				
Remove Existing	None			
New Piping	250 LF	50.00	12,500	
Relocations	None			
Storm Inlet	4 Ea	2,000	8,000	
Manhole	1 Ea	3,000	3,000	
Catchbasin	4 Ea	900.00	3,600	
Cleanout-Grade	2 Ea	1,000	2,000	
Bio Retention System	Allow		50,000	
Connect to Exist Storm System	1 LS		10,000	
Barricades/Protect Utilities	1 LS		2,000	
Potholing	1 LS		2,000	
Misc Accessories	1 LS		2,000	
Test & Clean	1 LS		2,000	

## 2.0 Mechanical Systems (Continued)

## Domestic &amp; Fire Water

Remove Existing	None		
New Piping	350 LF	50.00	17,500
Relocations	None		
Water Meters	2 Ea	2,500	5,000
RPBFP	1 Ea	2,500	2,500

Fire Hydrants	1 Ea	2,800	2,800
Misc. Valves & Accessories	1 LS		2,500
Fire Dept Connections	1 Ea	2,400	2,400
Misc Manholes & Structures	1 LS		1,500

Premium for Crossovers/Temporary	1 LS		2,500
Barricades/Protect Utilities	1 LS		2,000
Potholing	1 LS		1,500
Misc Accessories	1 LS		1,500
Test & Clean	1 LS		1,500

Irrigation Connections			
Pipe - Irrigation Mains	100 LF	35.00	3,500

Misc. Rough-Ins	1 LS		2,500
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Subtotal 2.0 Mechanical Systems \$186,550

## 3.0 Electrical Systems

## Power

Demolition & Safe off	1 LS		\$3,500
New Switchgear	1 LS		25,000
Transformers	1 Ea	15,000	15,000
New Feeders	650 LF	100.00	65,000
Relocations	None		

Grounding	1 LS		5,000
Maintenance Outlets and Handholes Onsite	2 Ea	1,000	2,000

## Low Voltage

New Feeders	650 LF	40.00	26,000
Relocations	None		
Security Devices on Site	None		

Manholes and Handholes	2 Ea	2,400	4,800
Testing & Inspection	1 LS		5,000
Misc. Connections & Coordination	1 LS		5,000

Subtotal 3.0 Electrical Systems \$156,300

## 4.0 Paving

Patch As Required	1 LS		\$25,000
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Subtotal 4.0 Paving \$25,000

5.0 Landscape & Irrigation			
Patch As Required Incl Bioswale Area	1 LS		<u>\$40,000</u>
Subtotal 5.0 Landscape & Irrigation			\$40,000
6.0 Other Sitework			
Lighting	1 LS		\$15,000
Trench Drain	None		
Fencing			
Decorative Wood @ Upper Court	100 LF	250.00	25,000
Chain Link	None		
Gates			
Pedestrian	None		
Vehicle	None		
Stairs	None		
Retaining Walls & Foundations	None		
Railings	None		
Shade Structures	None		
Trash Receptacles	Included in FF&E		
Bicycle Racks	None		
Interpretive Including Signage & Wayfinding	1 LS		<u>75,000</u>
Subtotal 6.0 Other Sitework			\$115,000



**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 3 Buildings & Structures Summary**

Renovate Existing Caretaker's House for Administration		\$324,150
Renovate Mon Gate - Allow		50,000
New Gate at Forecourt Entry		125,000
Tea Room		448,200
Retail & Restroom Building		1,057,120
Renovate Existing Pumphouse for Interpretive Node		83,760
Renovate Existing Restrooms		144,215
<b>Subtotal</b>		<b>\$2,232,445</b>
General Conditions	10.0%	223,245
Bonds & Insurance	2.0%	49,114
Contractor's Fee	4.5%	112,716
Subtotal		<b>\$2,617,519</b>
Design Contingency	15.0%	392,628
Escalation to Construction Start	0.0%	0
<b>Total Construction Cost</b>		<b>\$3,010,147</b>

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 3 Buildings & Structures**

Renovate Existing Caretaker's House for Administration

Demolition	120 SF	20.00	\$2,400
Shoring	165 LF	150.00	24,750
Foundations	Existing to Remain		
Slab on Grade - Refinish/Reseal Existing	1120 SF	10.00	11,200
Walls - Replace Exist Struct as Required	500 SF	50.00	25,000
Remove & Reset Existing Siding & Patch	2000 SF	35.00	70,000
Roof Structure - Replace Exist Struct as Required	1200 SF	40.00	48,000
Roofing - Remove & Reset	1200 SF	35.00	42,000
Painting	None		
Plumbing	1120 SF	20.00	22,400
Mechanical	1120 SF	30.00	33,600
Fire Sprinkler System	None		
Electrical	1120 SF	40.00	44,800
			\$324,150
Subtotal Existing Caretaker's House			

Tea Room

Foundations	28 CY	600.00	\$16,800
Slab on Grade	825 SF	15.00	12,375
Roof Structure	1000 SF	50.00	50,000
Exterior Walls			
Framing & Finish	1400 SF	70.00	98,000
Windows	400 SF	125.00	50,000
Doors	6 Lvs	2,500	15,000
Roofing	1000 SF	35.00	35,000
Interior Construction			
Partitions	800 SF	18.00	14,400
Finishes	825 SF	40.00	33,000
Interior Doors	3 Lvs	2,500	7,500
Millwork	Allow		25,000
Specialties	825 SF	10.00	8,250
Kitchen	None		
Plumbing	825 SF	20.00	16,500
Mechanical	825 SF	35.00	28,875
Fire Sprinkler System	None		
Electrical			
Power			
Switchboard	Included in Cultural Exchange Center		
Distribution Panels	None		
Panelboard	1 Ea	3,600	3,600
Equipment Power	6 Ea	1,000	6,000
User Power	10 Ea	500.00	5,000

## Tea Room Continued)

Lighting	10 Ea	900.00	9,000
Telephone/Data	4 Ea	1,000	4,000
Fire Alarm	825 SF	6.00	4,950
Security	825 SF	6.00	4,950

## Subtotal Tea Room

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\$448,200

## Retail &amp; Restroom Building

Foundations	38 CY	600.00	\$22,800
Slab on Grade	1810 SF	15.00	27,150
Roof Structure	2200 SF	50.00	110,000
Exterior Walls			
Framing & Finish	2000 SF	70.00	140,000
Windows	400 SF	125.00	50,000
Doors	8 Lvs	2,500	20,000

Roofing	2200 SF	35.00	77,000
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## Interior Construction

Partitions	1400 SF	18.00	25,200
Finishes	1810 SF	40.00	72,400
Interior Doors	10 Lvs	2,500	25,000
Millwork	Allow		40,000
Specialties	1810 SF	10.00	18,100
Retail Buildout	1245 SF	150.00	186,750

Plumbing	1810 SF	25.00	45,250
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Mechanical	1810 SF	40.00	72,400
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Fire Sprinkler System	None		
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## Electrical

## Power

Switchboard		Included in Cultural Exchange Center	
Distribution Panels		None	
Panelboard	2 Ea	3,600	7,200
Equipment Power	8 Ea	1,000	8,000
User Power	35 Ea	500.00	17,500

Lighting	35 Ea	900.00	31,500
Telephone/Data	12 Ea	1,000	12,000
Audio Visual Rough In	1810 SF	6.00	10,860
Fire Alarm	1810 SF	6.00	10,860
Security	1810 SF	15.00	27,150

## Subtotal Retail &amp; Restroom Building

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\$1,057,120

## Renovate Existing Pumphouse for Interpretive Node

Demolition	145 SF	100.00	\$14,500
Shoring	50 LF	200.00	10,000
Foundations	Existing to Remain		
Slab on Grade - New	145 SF	25.00	3,625
Walls - Replace Exist Struct as Required	144 SF	50.00	7,200

Remove & Reset Existing Siding & Patch	576 SF	35.00	20,160
Roof Structure - Replace Exist Struct as Required	145 SF	40.00	5,800
Roofing - Remove & Reset	145 SF	35.00	5,075
Painting / Sealing	145 SF	20.00	2,900

## Existing Pumphouse (Continued)

Plumbing - Hose Bibbs & Roof Drainage	145 SF	50.00	7,250
Mechanical	None		
Fire Sprinkler System	None		
Electrical	145 SF	50.00	7,250
Subtotal Existing Pumphouse			<u>\$83,760</u>

## Renovate Existing Restrooms

Foundations	None		
Slab on Grade - Cut & Patch as Required	275 SF	10.00	2,750
Roof Structure	400 SF	50.00	20,000
Exterior Walls -Patch & Repair as Required	950 SF	35.00	33,250
Doors - Replace Hardware	3 Lvs	1,500	4,500
Roofing	400 SF	35.00	14,000
Interior Construction			
Partitions	180 SF	18.00	3,240
Finishes - Patch & Paint	275 SF	40.00	11,000
Interior Doors	None		
Millwork	Allow		3,500
Specialties	275 SF	15.00	4,125
Kitchen	None		
Plumbing	275 SF	70.00	19,250
Mechanical	275 SF	50.00	13,750
Fire Sprinkler System	None		
Electrical			
Power			
Switchboard	Included in Cultural Exchange Center		
Distribution Panels	None		
Panelboard	None		
Equipment Power	2 Ea	1,000	2,000
User Power	4 Ea	500.00	2,000
Lighting	9 Ea	900.00	8,100
Telephone/Data	None		
Fire Alarm	275 SF	10.00	2,750
Security	None		
Subtotal Existing Restrooms			<u>\$144,215</u>



**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 3 Sitework**

1.0 Demolition and Earthwork		\$251,970
2.0 Mechanical Systems		344,100
3.0 Electrical Systems		240,050
4.0 Paving		455,075
5.0 Landscape & Irrigation		383,365
6.0 Other Sitework		<u>1,257,000</u>
<b>Subtotal</b>		<b>\$2,931,560</b>
General Conditions	10.0%	293,156
Bonds & Insurance	2.0%	64,494
Contractor's Fee	4.5%	<u>148,014</u>
Subtotal		<b>\$3,437,225</b>
Design Contingency	15.0%	515,584
Escalation to Construction Start	0.0%	<u>0</u>
<b>Total Construction Cost</b>		<b>\$3,952,809</b>

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

<b>Phase 3 Sitework</b>	Quantity	Unit Price	Extension	Subtotal
<b>1.0 Demolition &amp; Earthwork</b>				
Demolition				
General Site Clearing	36860 SF	2.00	\$73,720	
Remove Misc Structures & Obstacles	1 LS		35,000	
Tree & Landscape Removal			Included in General Clearing Above	
Tree Protection			Included in Div 5.0	
Erosion Control - Allow		Allow	15,000	
Barricades & Fencing for Staging & Access		Allow	10,000	
Miscellaneous	1 LS		10,000	
Earthwork				
Cut, Fill, and Recontouring - Allow	2200 CY	35.00	77,000	
Premium to Export	850 CY	25.00	21,250	
Create Pads for Buildings/Structures	1 LS		10,000	
				\$251,970
<b>Subtotal 1.0 Demolition &amp; Earthwork</b>				
<b>2.0 Mechanical Systems</b>				
Sewer System				
Pump-Sewage Ejector	None			
Pipe-Sewer				
Remove Existing	None			
New Piping	600 LF	50.00	30,000	
Relocations	None			
Connection to Existing Sewer				
Manholes	1 LS		2,500	
Cleanout-Grade	1 Ea	3,000	3,000	
	8 Ea	750.00	6,000	
Potholing				
Potholing	1 LS		2,500	
Barricades & Protection	1 LS		5,000	
Misc. Valves & Accessories	1 LS		5,000	
Test & Clean	1 LS		5,000	
Grey Water System				
Storm Drainage System				
Pipe-Storm				
Remove Existing	None			
New Piping	1100 LF	50.00	55,000	
Relocations	None			
Storm Inlet				
Storm Inlet	6 Ea	2,000	12,000	
Manhole	2 Ea	3,000	6,000	
Catchbasin	6 Ea	900.00	5,400	

## 2.0 Mechanical Systems (Continued)

Cleanout-Grade	4 Ea	1,000	4,000
Bio Retention System	1 LS		55,000
Connect to Exist Storm System	1 LS		15,000
Barricades/Protect Utilities	1 LS		4,000
Potholing	1 LS		4,000
Misc Accessories	1 LS		4,000
Test & Clean	1 LS		4,000

## Domestic &amp; Fire Water

Remove Existing	None		
New Piping	950 LF	50.00	47,500
Relocations	None		
Water Meters	4 Ea	2,500	10,000
RPBFP	5 Ea	2,500	12,500
Fire Hydrants	1 Ea	2,800	2,800
Misc. Valves & Accessories	1 LS		5,000
Fire Dept Connections	1 Ea	2,400	2,400
Misc Manholes & Structures	1 LS		3,000
Premium for Crossovers/Temporary	1 LS		5,000
Barricades/Protect Utilities	1 LS		4,000
Potholing	1 LS		3,000
Misc Accessories	1 LS		3,000
Test & Clean	1 LS		3,000

## Irrigation Connections

Pipe - Irrigation Mains	300 LF	35.00	10,500
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## Misc. Rough-Ins

1 LS			5,000
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## Subtotal 2.0 Mechanical Systems

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 \$344,100

## 3.0 Electrical Systems

## Power

Demolition & Safe off	1 LS		\$7,000
New Switchgear & Transformers	1 LS		75,000
New Feeders	1150 LF	75.00	86,250
Relocations	None		
Grounding	1 LS		5,000
Maintenance Outlets and Handholes Onsite	2 Ea	1,000	2,000

## Low Voltage

New Feeders	1000 LF	40.00	40,000
Relocations	None		
Security Devices on Site	None		

## Manholes and Handholes

2 Ea	2,400		4,800
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## Testing &amp; Inspection

1 LS			10,000
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## Misc. Connections &amp; Coordination

1 LS			10,000
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## Subtotal 3.0 Electrical Systems

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 \$240,050

4.0 Paving			
AC Paving	None		
Concrete	1400 SF	16.00	22,400
Stone over Concrete	9115 SF	45.00	410,175
Crushed Gravel Paving	3000 SF	7.50	22,500
Gravel	None		
Curb & Gutter	None		
Subtotal 4.0 Paving			<u><u>\$455,075</u></u>
5.0 Landscape & Irrigation			
Tree Protection at Existing	Allow		\$22,000
New Trees	30 Ea	1,500	45,000
Planting			
Existing Planting to Remain	2855 SF	2.00	5,710
Bonsai Garden	1000 SF	25.00	25,000
Bio Retention	5000 SF	15.00	75,000
Remaining	11170 SF	9.00	100,530
Soil Preparation	20025 SF	1.50	30,038
Irrigation	20025 SF	3.50	70,088
Allow for Repairs to Edges / Adjacent Areas	1 LS		10,000
Subtotal 5.0 Landscape & Irrigation			<u><u>\$383,365</u></u>
6.0 Other Sitework			
Lighting	1 LS		\$100,000
Trench Drain	None		
Fencing			
Decorative Wood	720 LF	250.00	180,000
Chain Link	None		
Gates			
Pedestrian			
Single	2 Ea	6,500	13,000
Double	3 Pr	12,000	36,000
Double	1 Pr	30,000	30,000
Vehicle	None		
Stairs - Stone	2 Flt	50,000	100,000
Stairs - Stone	2 Flt	17,500	35,000
Retaining Walls & Foundations w/ Stone	5100 SF	100.00	510,000
Railings	180 LF	225.00	40,500
Roof Between Retail & Tea Room	500 SF	125.00	62,500
Trash Receptacles	Included in FF&E		
Bicycle Racks	None		
Interpretive Including Signage & Wayfinding	1 LS		150,000
Subtotal 6.0 Other Sitework			<u><u>\$1,257,000</u></u>



**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 4 Buildings & Structures Summary**

Renovate Existing Barn for Garden Storage		\$174,675
Renovate Existing Retail Building for Garden Storage		204,750
Renovate Existing Pine Moon (Shogetsu-en)		25,000
New Shogetsu Machai at Existing Pine Moon		100,000
Renovate Existing Tea Waiting Pavilion (Azumaga)		100,000
Renovate Existing Upper Pavilion		100,000
Renovate Existing Wisteria Arbor		100,000
New Garden Operations Building		1,043,021
<b>Subtotal</b>		<b>\$1,847,446</b>
General Conditions	10.0%	184,745
Bonds & Insurance	2.0%	40,644
Contractor's Fee	4.5%	93,278
Subtotal		<b>\$2,166,112</b>
Design Contingency	15.0%	324,917
Escalation to Construction Start	0.0%	0
<b>Total Construction Cost</b>		<b>\$2,491,029</b>

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 4 Buildings & Structures**

Renovate Existing Barn for Garden Storage			
Demolition	415 SF	80.00	\$33,200
Shoring	80 LF	200.00	16,000
Foundations	Existing to Remain		
Slab on Grade - Refinish/Reseal Existing	415 SF	10.00	4,150
Walls - Replace Exist Struct as Required	300 SF	50.00	15,000
Remove & Reset Existing Siding & Patch	1200 SF	35.00	42,000
Roof Structure - Replace Exist Struct as Required	415 SF	40.00	16,600
Roofing - Remove & Reset	415 SF	35.00	14,525
Painting	None		
Plumbing - Hose Bibbs & Roof Drainage	415 SF	50.00	20,750
Mechanical	None		
Fire Sprinkler System	None		
Electrical	415 SF	30.00	12,450
			\$174,675
Subtotal Existing Barn			
Renovate Existing Retail Building for Garden Storage			
Demolition	450 SF	80.00	\$36,000
Shoring	100 LF	200.00	20,000
Foundations	Existing to Remain		
Slab on Grade - Refinish/Reseal Existing	450 SF	10.00	4,500
Walls - Replace Exist Struct as Required	440 SF	50.00	22,000
Remove & Reset Existing Siding & Patch	1500 SF	35.00	52,500
Roof Structure - Replace Exist Struct as Required	450 SF	40.00	18,000
Roofing - Remove & Reset	450 SF	35.00	15,750
Painting	None		
Plumbing - Hose Bibbs & Roof Drainage	450 SF	50.00	22,500
Mechanical	None		
Fire Sprinkler System	None		
Electrical	450 SF	30.00	13,500
			\$204,750
Subtotal Existing Retail Building			
Garden Operations Building			
Foundations	50 CY	600.00	\$30,000
Slab on Grade	1163 SF	15.00	17,445
Retaining Walls	1500 SF	50.00	75,000
Second Floor Framing	1163 SF	40.00	46,520
Roof Structure	1500 SF	40.00	60,000
Exterior Walls			
Framing & Finish	2500 SF	60.00	150,000
Windows	600 SF	115.00	69,000
Doors	8 Lvs	2,500	20,000
Doors - Overhead	1 Ea	15,000	15,000

## Garden Operations Building (Continued)

Roofing	1500 SF	20.00	30,000
Interior Construction			
Partitions	2000 SF	18.00	36,000
Finishes	2326 SF	30.00	69,780
Interior Doors	8 Lvs	2,500	20,000
Millwork	Allow		25,000
Specialties	2450 SF	10.00	24,500
Stairs (No Elevator)	1 LS		50,000
Plumbing	2326 SF	17.00	39,542
Mechanical	2326 SF	35.00	81,410
Fire Sprinkler System	2326 SF	8.00	18,608
Electrical			
Power			
Switchboard	1 Ea	20,000	20,000
Distribution Panels	2 Ea	9,000	18,000
Panelboard	5 Ea	3,600	18,000
Equipment Power	20 Ea	1,000	20,000
User Power	30 Ea	500.00	15,000
Lighting	30 Ea	900.00	27,000
Telephone/Data	10 Ea	1,000	10,000
Audio Visual Rough In	2326 SF	4.00	9,304
Fire Alarm	2326 SF	6.00	13,956
Security	2326 SF	6.00	13,956
Subtotal Garden Operations Building			<u>\$1,043,021</u>

**Hakone Estate and Gardens  
Preliminary Budget Estimate**

**Phase 4 Sitework**

1.0 Demolition and Earthwork		\$294,400
2.0 Mechanical Systems		280,550
3.0 Electrical Systems		59,800
4.0 Paving		498,500
5.0 Landscape & Irrigation		214,800
6.0 Other Sitework		<u>936,250</u>
<b>Subtotal</b>		<b>\$2,284,300</b>
General Conditions	10.0%	228,430
Bonds & Insurance	2.0%	50,255
Contractor's Fee	4.5%	<u>115,334</u>
Subtotal		<b>\$2,678,319</b>
Design Contingency	15.0%	401,748
Escalation to Construction Start	0.0%	<u>0</u>
<b>Total Construction Cost</b>		<b>\$3,080,067</b>



**Hakone Estate and Gardens  
Preliminary Budget Estimate**

<b>Phase 4 Sitework</b>	Quantity	Unit Price	Extension	Subtotal
<b>1.0 Demolition &amp; Earthwork</b>				
Demolition				
General Site Clearing	47950 SF	2.00	\$95,900	
Remove Misc Structures & Obstacles	1 LS		25,000	
Tree & Landscape Removal			Included in General Clearing Above	
Tree Protection			Included in Div 5.0	
Erosion Control - Allow		Allow	7,500	
Barricades & Fencing for Staging & Access		Allow	5,000	
Miscellaneous	1 LS		5,000	
Earthwork				
Cut, Fill, and Recontouring - Allow	3600 CY	35.00	126,000	
Premium to Export	1000 CY	25.00	25,000	
Create Pads for Buildings/Structures	1 LS		5,000	
				\$294,400
<b>Subtotal 1.0 Demolition &amp; Earthwork</b>				
<b>2.0 Mechanical Systems</b>				
Sewer System				
Pump-Sewage Ejector	None			
Pipe-Sewer				
Remove Existing	None			
New Piping	250 LF	50.00	12,500	
Relocations	None			
Connection to Existing Sewer	1 LS		2,500	
Manholes	2 Ea	3,000	6,000	
Cleanout-Grade	1 Ea	750.00	750	
Potholing	1 LS		2,500	
Barricades & Protection	1 LS		5,000	
Misc. Valves & Accessories	1 LS		5,000	
Test & Clean	1 LS		5,000	
Grey Water System	None			
Storm Drainage System				
Pipe-Storm				
Remove Existing	None			
New Piping	500 LF	50.00	25,000	
Relocations	None			
Storm Inlet	4 Ea	2,000	8,000	
Manhole	1 Ea	3,000	3,000	
Catchbasin	4 Ea	900.00	3,600	
Cleanout-Grade	2 Ea	1,000	2,000	

## 2.0 Mechanical Systems (Continued)

Bio Retention System	1 LS		60,000
Improvements to Stormwater Pond & Basins	1 LS		70,000
Barricades/Protect Utilities	1 LS		2,000
Potholing	1 LS		2,000
Misc Accessories	1 LS		2,000
Test & Clean	1 LS		2,000

## Domestic &amp; Fire Water

Remove Existing	None		
New Piping	600 LF	50.00	30,000
Relocations	None		
Water Meters	2 Ea	2,500	5,000
RPBFP	1 Ea	2,500	2,500

Fire Hydrants	1 Ea	2,800	2,800
Misc. Valves & Accessories	1 LS		2,500
Fire Dept Connections	1 Ea	2,400	2,400
Misc Manholes & Structures	1 LS		1,500

Premium for Crossovers/Temporary	1 LS		2,500
Barricades/Protect Utilities	1 LS		2,000
Potholing	1 LS		1,500
Misc Accessories	1 LS		1,500
Test & Clean	1 LS		1,500

## Irrigation Connections

Pipe - Irrigation Mains	100 LF	35.00	3,500
Misc. Rough-Ins	1 LS		2,500

## Subtotal 2.0 Mechanical Systems

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 \$280,550

## 3.0 Electrical Systems

## Power

Demolition & Safe off	1 LS		\$3,500
New Switchgear & Transformers	None		
New Feeders to Existing POC	300 LF	75.00	22,500
Relocations	None		
Grounding	1 LS		5,000
Maintenance Outlets and Handholes Onsite	2 Ea	1,000	2,000

## Low Voltage

New Feeders to Existing POC	300 LF	40.00	12,000
Relocations	None		
Security Devices on Site	None		

Manholes and Handholes	2 Ea	2,400	4,800
Testing & Inspection	1 LS		5,000
Misc. Connections & Coordination	1 LS		5,000

## Subtotal 3.0 Electrical Systems

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 \$59,800

## 4.0 Paving

AC Paving - Permeable	34630 SF	12.50	\$432,875
Concrete - Permeable	300 SF	20.00	6,000
AC Paving @ Material Yard	2550 SF	10.00	25,500
Crushed Gravel Paving	1350 SF	7.50	10,125
Curb & Gutter	1000 LF	24.00	24,000

Subtotal 4.0 Paving \$498,500

## 5.0 Landscape &amp; Irrigation

Tree Protection at Existing	Allow		\$12,000
New Trees	30 Ea	1,500	45,000
Planting			
Bio Retention	6740 SF	15.00	101,100
Remaining	1000 SF	8.00	8,000
Soil Preparation	7740 SF	1.50	11,610
Irrigation	7740 SF	3.50	27,090
Allow for Repairs to Edges / Adjacent Areas	1 LS		10,000

Subtotal 5.0 Landscape & Irrigation \$214,800

## 6.0 Other Sitework

Lighting	1 LS		\$100,000
Trench Drain	None		
Fencing			
Decorative Wood	200 LF	250.00	50,000
Chain Link	None		
Gates			
Pedestrian	3 Ea	4,000	12,000
Pedestrian	5 Pr	8,500	42,500
Vehicle	3 Pr	18,000	54,000
Stairs	None		
Retaining Walls & Foundations	3400 SF	70.00	238,000
Allow for Shoring/Underpinning @ East Edge	1 LS		75,000
Allow for Repairs to Path System	1 LS		75,000
Allow for Repairs to Perimeter Fencing	1 LS		50,000
Railings	None		
Soil Bins	535 SF	100.00	53,500
Trellis @ Soil Bins	1150 SF	75.00	86,250
Trash Receptacles	Included in FF&E		
Bicycle Racks	None		
Interpretive Including Signage & Wayfinding	1 LS		100,000

Subtotal 6.0 Other Sitework \$936,250



# Facility Program



APPENDIX 4





Hakone Estate and Gardens  
Master Plan - Facility Program

**HISTORIC DISTRICT BUILDINGS**

**Improvements**

<b>Zen Garden House (Lower House)</b>	<b>Add area</b>
General Improvements	
** Treat dry rot & mold	
** Renovate kitchen to meet building code	
** Add high speed data link	
** As needed - Repair exterior wall finish & paint/stain	

<b>Moon Viewing House (Upper House)</b>	<b>Add area</b>
** Repair and upgrade foundations, structural system, at stairs & viewing balcony	
** Treat dry rot & mold	
** As needed - Repair exterior wall finish & paint/stain	

<b>Restrooms</b>	<b>Net Area</b>	<b>Gross Area</b>
Women's	120	
Men's	120	
	includes circulation & walls	<b>155</b>
General Improvements		
** Replace existing fixtures and accessories		
** Repair existing cracks in ceiling, walls & slab		
** Treat dry rot & mold		
** As needed - Paint or stain exterior wall finishes		

**Interior Renovation & Change in Use**

<b>Cultural Exchange Center - Renovate For Events Space</b>	<b>Net Area</b>	<b>Gross Area</b>
Upper Floor		
Event Space	Remove raised floor tatami space & tatami room - expand events space	2,533
Green Room	Convert apartment spaces to expanded exhibit/event space	345
Catering Space	Renovate existing kitchen and patio for catering space	512
Restrooms	Renovate existing restrooms for (2) new restrooms	144
Lower Floor		
Existing Office		220
Existing Storage Space		520
Existing Storage Space		492
New Multi-Use Space	Expand lower floor spaces under viewing deck outward at north east corner	574
New Support Spaces	Add elevator & elevator machine room at east side of the CEC deck	210
	includes circulation & walls	<b>5,340</b>
Viewing Deck	West, north & east sides	2,357
General Improvements		
** Add new partition interior walls, finishes, electrical system & lighting		
** As needed - Replace roofing / flashing to eliminate water intrusion		
** Repair exterior deck to eliminate water leaks		
** As needed - Paint or stain exterior wall finishes		

Hakone Estate and Gardens  
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<b>Caretaker's Residence - Renovate For Administration Building</b>	<b>Net Area</b>	<b>Gross Area</b>
Director's Office	110	
Staff Workspace (4)	200	
Workroom / Breakroom	160	
Files, Storage, Equipment	110	
Toilet	50	
Front/Rear Entry & Central Aisle	230	
	includes circulation & walls	<b>1,120</b>
General Improvements		
** Repair/Upgrade of building structural system		
** Treat of infestations, dry rot & mold		
** Add new interior partition walls, finishes, electrical system, lighting & AC with on-grade heat pump		
** As needed - Replace exterior wood siding & flooring		
** As needed - Replace roofing material		
** As needed - Replace windows & doors		
<b>Pump House - Renovate for Interpretive Node</b>	<b>Net Area</b>	<b>Gross Area</b>
Exhibit Room	145	
	includes circulation & walls	<b>145</b>
General Improvements		
** Treat of infestations, dry rot & mold		
** Add electrical system & lighting		
** As needed - Repair structural system		
** As needed - Replace exterior wood siding & flooring		
** As needed - Replace roofing material		
** As needed - Paint or stain exterior wall finishes		
<b>Barn - Renovate For Garden Storage</b>	<b>Net Area</b>	<b>Gross Area</b>
Garden Storage	415	
	includes circulation & walls	<b>415</b>
General Improvements		
** Treat of infestations, dry rot & mold		
** Add electrical system & lighting		
** As needed - Repair structural system		
** As needed - Replace exterior wood siding & flooring		
** As needed - Replace roofing material		
** As needed - Paint or stain exterior wall finishes		
<b>Gift Shop - Retail Storage / Garden Storage</b>	<b>Net Area</b>	<b>Gross Area</b>
Garden Storage	225	
Garden Storage	225	
	includes circulation & walls	<b>450</b>
General Improvements		
** Treat of infestations, dry rot & mold		
** Replace existing sliding doors with solid secured doors		
** Add electrical system & lighting		
** As needed - Repair structural system		
** As needed - Replace exterior wood siding & flooring		
** As needed - Replace roofing material		
** As needed - Paint or stain exterior wall finishes		

Hakone Estate and Gardens  
Master Plan - Facility Program

**HISTORIC DISTRICT STRUCTURES**

**Improvements**

Repair/Upgrade/Replace structural system  
Treatment of infestations, dry rot & mold  
Replacement of exterior wood siding & flooring as needed  
Replacment of roofing material as needed  
Aesthetic Improvements

<b>Wisteria Arbor</b>	<b>Gross Area</b>
** Rebuild entire pavilion	<b>284</b>
<b>Tea Waiting Pavilion (Azumaya)</b>	<b>300</b>
** Renovate structure, walls, flooring & aesthetic improvements	
<b>Wisteria Upper Pavilion</b>	<b>394</b>
** Renovate structure, walls, flooring & aesthetic improvements	
<b>Shogetsu</b>	<b>95</b>
** Renovate structure, walls, flooring & aesthetic improvements	
<b>Mon Gate</b>	<b>Add</b>
** As needed - Replace wood elements	
<b>Service Gate</b>	<b>Add</b>
Rebuild gate using existing elements	



Hakone Estate and Gardens  
Master Plan - Facility Program

**NEW BUILDINGS**

<b>Gift Shop</b>		<b>Net Area</b>	<b>Gross Area</b>
	Ticketing Space	80	
	Cashwrap	80	
	Sales Floor	840	
		<hr/>	
		includes circulation & walls	<b>1,245</b>

<b>Restrooms</b>		<b>Net Area</b>	<b>Gross Area</b>
	Women's 2 toilets, 2 lavatories	160	
	Men's 1 toilets, 1 urinal, 2 lavatories	160	
	Mech / Elect Room	100	
		<hr/>	
		includes circulation & walls	<b>565</b>

<b>Tea Room</b>		<b>Net Area</b>	<b>Gross Area</b>
	Entry & Seating	460	
	Patron Ordering Space	110	
	Storage & Janitor Closet	100	
		<hr/>	
		includes circulation & walls	<b>825</b>

<b>Koi Water Treatment</b>		<b>Net Area</b>	<b>Gross Area</b>
	Water Process Room	240	
	Tokonoma Alcove	150	
		<hr/>	
		includes circulation & walls	<b>430</b>

<b>Garden Operations</b>		<b>Net Area</b>	<b>Gross Area</b>
Upper Floor			
	Gardener's Desk Space	320	
	Files Room	125	
	Special Tool Storage	145	
	Support Room	90	
	Interior Stairs	175	
Lower Floor			
	Work Shop	270	
	Tool Storage	270	
	Lumber Storage	270	
	Interior Stairs	175	
		<hr/>	
		includes circulation & walls	<b>2,325</b>

**NEW STRUCTURES**

<b>Garden Material Storage</b>		<b>Net Area</b>	<b>Gross Area</b>
	Woody Debris	120	
	Compost	120	
	Top-soil	80	
	Mulch	80	
	Gravel/Crushed Stone	80	
		<hr/>	
			<b>480</b>

<b>New Gate to Mon Forecourt</b>		<b>Net Area</b>	<b>Gross Area</b>
	Gate		128

Hakone Estate and Gardens  
Master Plan - Facility Program

**NEW BUILDING ALTERNATE TO RENOVATING THE CEC FOR EVENT SPACES**

<b>Event Hall</b>	<b>Net Area</b>	<b>Gross Area</b>
Upper Floor		
Entry Foyer	320	
Events Hall	2200	
Elevator	100	
Storage	200	
Lower Floor		
Lower Foyer	180	
Green Room	200	
Women's	250	
Men's	250	
Catering Kitchen	200	
Set-up Storage	240	
Events Storage	180	
Elevator	100	
Elevator Machine Room	120	
Mech/Elect Room	540	
		<hr/>
		5,080





APPENDIX 5

Existing Structures Capital  
Improvements Projects–  
Small Projects





## **Capital Improvements – Small Projects**

Hakone Azumaya – Restore covered outdoor seating structure.

Auxiliary Entry Gate Repair – Repair entry gates to provide additional access to the garden.

Bamboo Garden Access Road – Upgrade accessibility of maintenance vehicles to Shogetsu and the Bamboo Gardens.

Cultural Exchange Center – Replace deck railing around CEC.

Cultural Exchange Center – Restore exterior material and finish of CEC.

Cultural Exchange Center – Enclose the inner courtyard on the deck of the CEC.

Cultural Exchange Center – Repair and patch water leaks in the inner courtyard and ceiling of office space below.

Cultural Exchange Center – Repair and patch roof water leaks to the interior of the building.

Garden Fixtures – Purchase and install a variety of site fixtures such as signage, drinking fountains and benches.

Garden Lighting – Purchase and install lighting fixtures to provide safety and improve garden aesthetics.

Hakone Gardens Gift Shop – Renovate the gift shop structure, make improvements that incorporate ADA requirements, and improve its general appearances.

Hakone Loading Ramp – Improve the flow of materials and equipment from the roadway to the upper courtyard.

Lower House – Rebuild the entire roof ridge, refinish interior walls in the inner hall and in the Engawa, and rewire and install telecommunications.

Moon Viewing House – Rebuild and structure the exterior railing facing the garden.

Hakone Gardens Office Attic – Evaluate improvements for building for structural, accessible and usable space.

Parking Lot Gate – Replace two access/service gates: one from the road and one from the parking lot.

Hakone Gardens Path System – Improve walking surfaces, control storm runoff, and make a greater portion of Gardens ADA accessible.

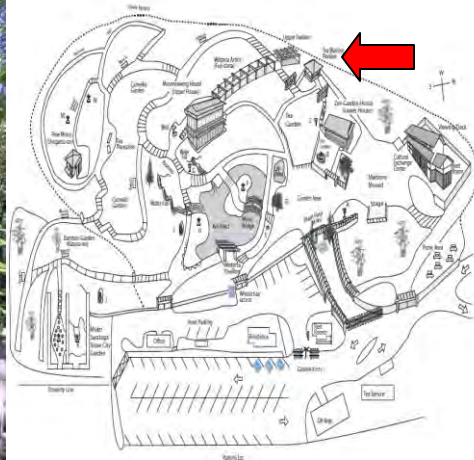
Hakone Garden Perimeter – Upgrade perimeter fencing to preserve the inner gardens from pests, foraging animals, and vandals.

Wood Structures – Enact a maintenance plan that treats wooden structures and buildings for termites, carpenter ants, and other pests

Public Restrooms – Repair restroom plumbing, fixtures and accessories, and remodel building exterior to update its appearance and authenticity.

Shotgetsu-en Finishing – Repair the exterior and interior of the structure, provide electrical power, renovate the landscape surrounding the Shogetsu-en, and build a tea waiting enclosure.

Hakone Gardens Wisteria – Restore the pavilion and viewing deck in its entirety.



**Project Name** Hakone Azumaya

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**Description** This project will restore the covered outdoor seating structure.

**Location** This structure is located on the north western garden ridge, adjacent to the Lower House.

**Project Background** The Azumaya is a covered structure designed to serve as a waiting area for guests of Japanese tea ceremony. This Azumaya is constructed in a very basic style, using widely available materials. Much of the building is still very much intact and structurally sound. This project would focus on redoing the shake material on top of the roof. It will include minor foundation work, replacement of original shoji windows, redoing of the steps that lead around the exterior, adding a small portion to the deck, removing the concrete path along the front of the structure, and minor aesthetic work.

This structure is contributing, so all work must be approved and adhere to the original design, and craftsmanship.

Currently this structure shows evidence of carpenter ants, termites, improper footings, and leaking roof

**Budget** Staff estimates a total budget of \$25,000 to complete the project, which includes \$20,000 for construction costs, and a 25% contingency of \$5,000.

**Project Name**      Auxiliary Entry Gate Repair

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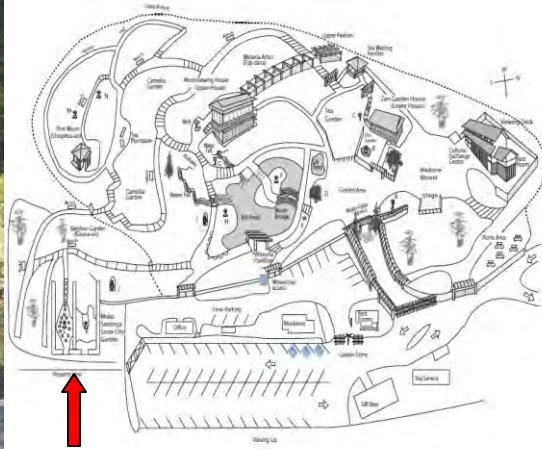
**Description**      Repair of two auxiliary entry gates providing guests additional access to the garden. One of the gates is ADA compliant.

**Location**          Hakone Gardens near parking lot.

**Project Background**      The support beams and structures on both gates have started to decay. They are both wooden gates designed and built using authentic Japanese woodworking techniques. The supports need to be replaced, while maintaining much of the original design and aesthetic. The gate doors themselves can be reused.

**Budget**              Staff estimates a total budget of \$9,375 to complete the project, which includes \$7,500 for the gate construction costs, and a 25% contingency of \$1,875.





**Project Name**      Bamboo Garden Access Road

**Description**      This project is intended to upgrade the accessibility of maintenance vehicles to Shogetsu and the Bamboo Gardens.

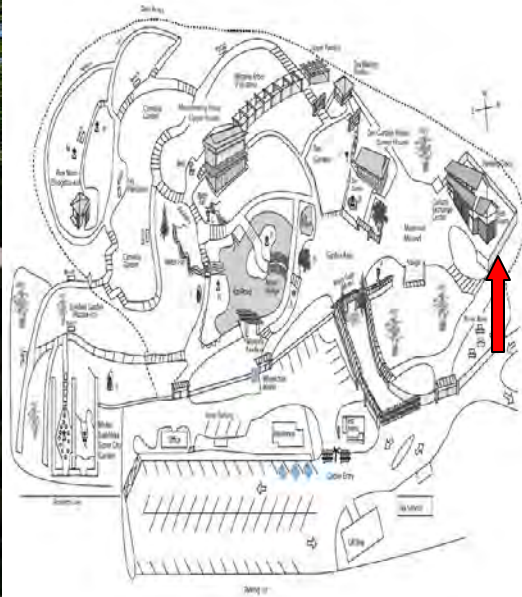
**Location**      The existing trail begins at the South end of Hakone's parking lot and continues up the slope along the perimeter fence line.

**Project Background**      The 400 linear feet length of this trail is currently only accessible by 4x4 vehicles. The safe and efficient use of this route is critical to the proper maintenance of the gardens higher in elevation than the Moon Viewing House. This route will also be used to move materials for future projects.

The edges of the trail should be edged with a bamboo resistant material to a depth of at least 2'. The driving surface should be consistently wide enough for a dump truck to navigate the slope. A turn around should be added at the highest elevation. Drainage will need to be considered as the storm runoff from neighboring properties runs the steepest portion of the slope. A rain water collection plan needs to be established before construction of this project begins to ensure that it works in unison with rain water collection throughout the garden. Permeable concrete was mentioned.

A metal gate should be installed separating the inner and outer parking lots in this area. This gate should be motorized, and remotely controlled from as far away as the barn office which is approximately 90'.

**Budget**      Staff estimates a total budget of \$56,250 to complete the project, which includes \$25,000 for grading costs, \$20,000 for edging/retaining walls/gate costs, and a 25% contingency of \$11,250.



**Project Name** Cultural Exchange Center deck railing

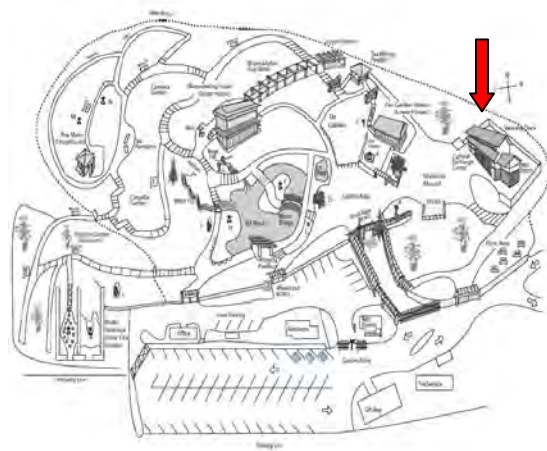
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**Description** This project will replace the deck railing around the Cultural Exchange Center.

**Location** The Deck railing encompasses all of the upper level of the building save for the South East. Located in the Northwest corner of the Garden.

**Project Background** The railing was constructed with the rest of the CEC over 20 years ago. Termite damage and dry rot have contributed to its decay. The bolts anchoring the posts to the concrete deck may also need to be replaced in places as the old posts are removed. Total railing length is approximately 210'. The style does not need to be identical to what is currently in place, but should have continuity with the rest of the building it surrounds.

**Budget** Staff estimates a total budget of \$20,125 to complete the project, which includes \$15,000 for rail work, \$1,500 for design, and a 25% contingency of \$4,125.



**Project Name** Cultural Exchange Center Exterior Refinishing

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<b>Description</b>	This project will restore the exterior of the CEC. It will include stripping, finishing, painting, and repairing damages in the stucco of the exterior walls and on the support beams of the CEC.
<b>Location</b>	The Cultural Exchange Center (CEC) is located at the North-eastern corner of the garden directly across from the Lower House and to the right of the Main gate.
<b>Project Background</b>	The exterior walls of the existing structure needs to be stripped and the damaged areas repaired. The exterior of the building as a whole needs to be repainted with the appropriate paint for both location and purpose of building. Japanese building experts should be consulted for stucco repair, and support beam repair.
<b>Budget</b>	Staff estimates a total budget of \$12,500 to complete the project, which includes \$8,000 to restore exterior work, \$2,000 for design, and a 25% contingency of \$2,500.

**Project Name** Cultural Exchange Center Inner Courtyard

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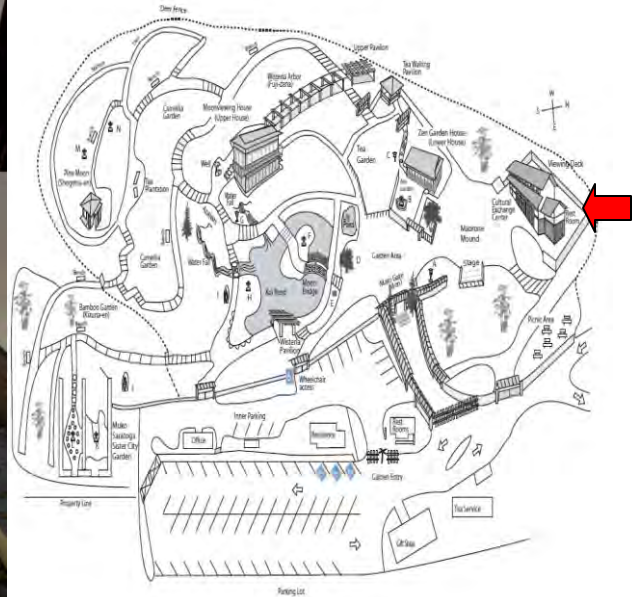
**Description** Closed courtyard on the deck of the CEC.

**Location** CEC.

**Project Background** The courtyard is just outside the artist in residence apartment in the Cultural Exchange Center. It is approximately 6' x 18'. It is currently a simple concrete courtyard, but was intended to be a type of dry landscape garden. The original designers of the building should be contacted about their intent with the space. Authentic Japanese designs and building practices need to be used to ensure continuity with the rest of the building.

**Budget** Unknown estimate for budget construction costs until design is complete.  
An estimated budget of \$5,000 for Design costs.





**Project Name** Cultural Exchange Center Office Leak

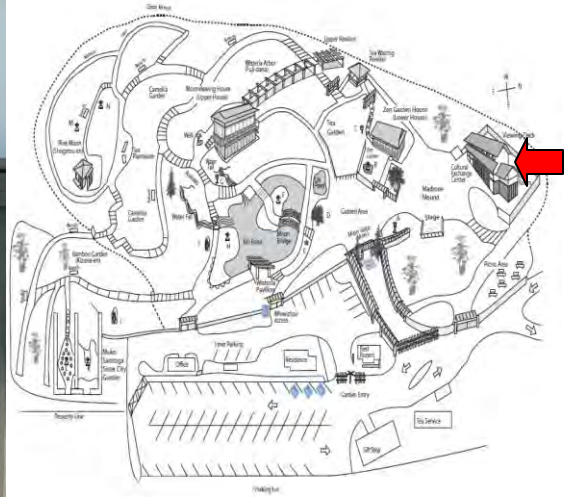
**Description** This project will find the source of the leak, repair any damaged/corroded areas of the building or drainage piping, and patch the concrete both in the inner CEC courtyard and the ceiling of the bookkeeper's office.

**Location** The area of damage is located on the South side of the building at the exterior of the tea preparation room within the courtyard.

**Project Background** Water is leaking from the inner courtyard on the upper level of the CEC down into the bookkeeper's office below the courtyard. First step is to locate the leak, then repair any water damage, repair corroded pipes, and repair the concrete.

**Budget** Staff estimates a total budget of \$18,750 to complete the project, which includes \$15,000 for leak repair costs, and a 25% contingency of \$3,750.





**Project Name** Cultural Exchange Center Roofing Leak

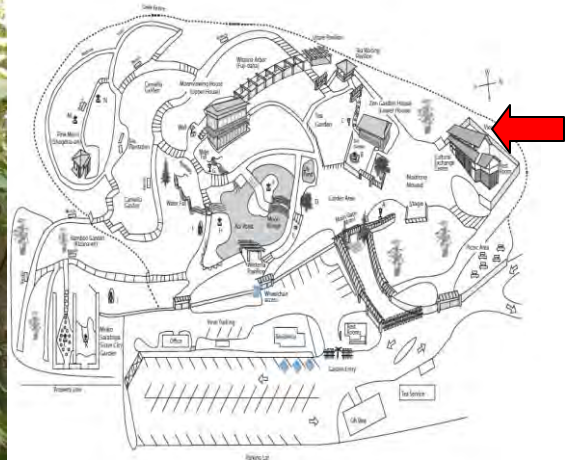
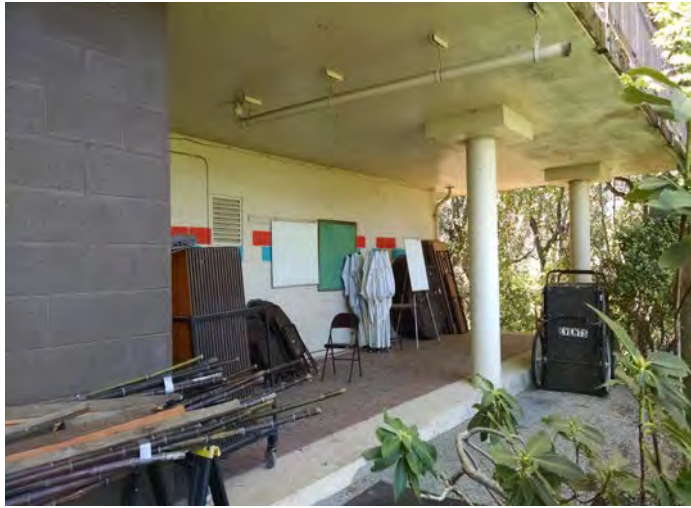
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**Description** This project will find the source of and repair a leak causing damage to the interior of CEC.

**Location** The area of damage is located on the South side of the building at the exterior of the tea preparation room within the courtyard.

**Project Background** This repair may require specialty contractors including Japanese stucco and Shoji screen repair.

**Budget** Staff estimates a total budget of \$6,250 to complete the project, which includes \$5,000 for leak repair and a 25% contingency of \$1,250.



**Project Name**      Hakone Gardens Craft Area

**Description**      This project will enclose and finish an underutilized space at the CEC.

**Location**          The space is located underneath the Cultural Exchange Center’s deck on the north east side of the building.

**Project Background**      The purpose of this project is to increase usable office, rental, and storage space. Currently the area is used for craft classes during the summer months, but during the winter months it is unused.

Staff recommends repurposing this space for other uses, such as a bridal changing suite, a small business meeting “break out” space, class room, or offices. To accommodate these new uses, a toilet, hand washing sink, and heat should be installed in conjunction with enclosing the North Eastern sides and finishing the two existing walls.

**Budget**              Staff estimates a total budget of \$48,125 to complete the project, which includes \$3,500 for design costs, \$35,000 for construction costs, and a 25% contingency of \$9,625.

**Project Name**      Garden Fixtures

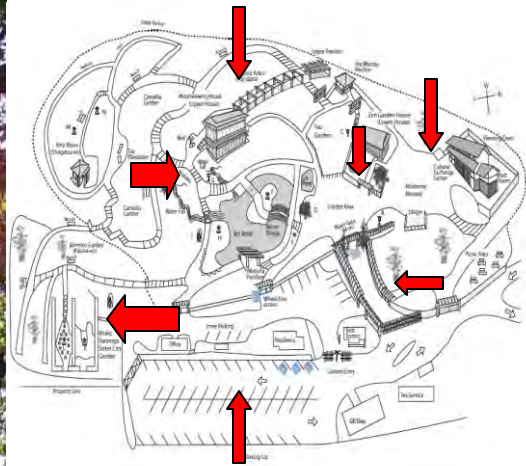
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**Description**      A variety of fixtures need to be designed and installed in the garden that includes signage, drinking fountains, and bench program.

**Location**          Various locations within the Gardens.

**Project Background**      The project will develop a new bench program, including design and installation at various locations in the garden, new drinking fountains, and new signage. The new signage program will adhere to our marketing brand and convey all required information in a practical, aesthetic, and non-distracting way.

**Budget**              Staff estimates a total budget of \$46,875 to complete the project, which includes \$2,500 for signage design costs, \$7,500 for signs, \$8,000 for 2 drinking fountains, \$5,000 for plumbing costs, \$12,000 for 8 benches, \$2,500 for program development and a 25% contingency of \$9,375.



**Project Name** Garden Lighting

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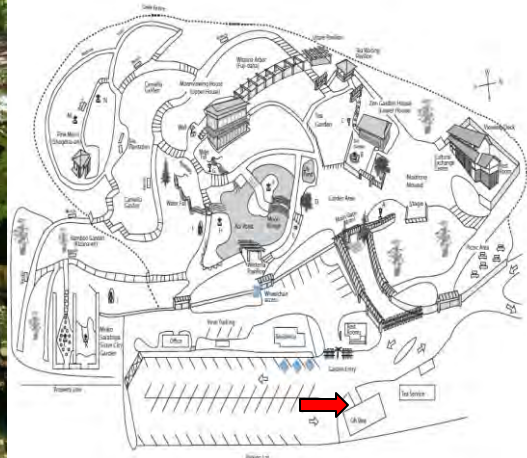
**Description** This project is intended to safely, aesthetically, and professionally light Hakone Gardens

**Location** Outdoor lighting throughout Hakone Gardens.

**Project Background** The existing lighting at Hakone Gardens is in need of upgrading. Much of the infrastructure is still useful, but the fixtures need to be replaced and relocated.

A lighting designer with experience with Japanese Gardens must be hired to plan the aesthetics of this project. Special attention should be given to safety concerns in event spaces.

**Budget** Staff estimates a total budget of \$68,750 to complete the project, which includes \$5,000 for design work, \$50,000 for the lighting installation, and a 25% contingency of \$13,750.



**Project Name** Hakone Gardens Gift Shop

**Description** This project is for the renovation of Hakone’s Gift shop building. Goals are to ensure structural stability, accommodate ADA requirements, and improve general appearance and flow.

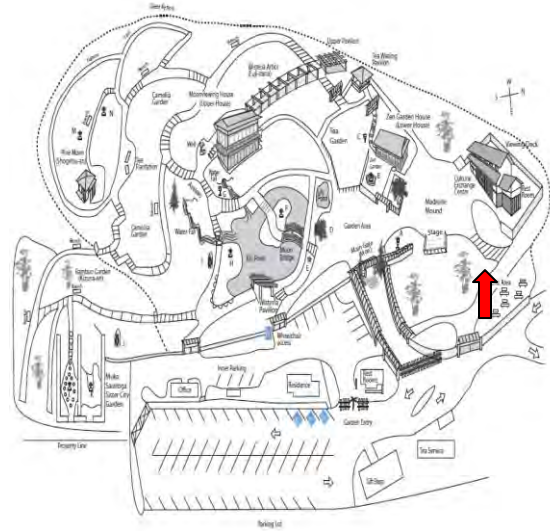
**Location** This structure is located at the entrance to the main parking lot, and across from the Garden entrance.

**Project Background** This structure was originally built as a garage. It was remodeled and purposed as a Gift shop which it continues to serve as today.

The structure’s integrity should be evaluated and much of the original remodel should be updated. A circuit breaker panel should be installed, the ceiling should be replaced or removed, lighting and flooring should be updated, a more secure door locking mechanism and easier to open doors should be included, and an ADA compliant ramp should be installed. A portion of the building may be repurposed for office space.

**Budget** Staff estimates a total budget of \$35,625 to complete the project, which includes \$2,500 for Design work, \$20,000 for the roof, \$3,00 for interior refinish, \$3,000 for electrical work and a 25% contingency of \$7,125.

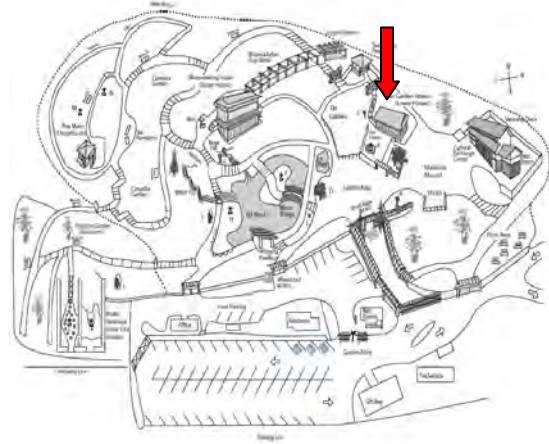




**Project Name** Hakone Loading Ramp

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<b>Description</b>	This project will allow materials and equipment to be moved from roadways to event spaces safely.
<b>Location</b>	The ramp is located between the Mound area and the Cultural Exchange Center basement.
<b>Project Background</b>	The existing ramp has steps making it difficult to use carts to carry items to and from event spaces. The steps should be removed and the grade evened out. Widening the ramp would accommodate carts and small vehicles. This project should also include the replacement of the loading gate at the bottom of the loading drive way. The gate should be metal, motorized, and remotely controlled from both the CEC and gift shop. The ramp is 5-8" wide at various points, and has about 85" of linear run.
<b>Budget</b>	Staff estimates a total budget of \$27,500 to complete the project, which includes \$2,000 for Design costs, \$20,000 for ramp construction costs, and a 25% contingency of \$5,500.



**Project Name** Lower House

---

**Description** The ridge on the roof of the lower house needs to be rebuilt entirely. The floors need to be refinished and there is water damage along the walls around the inner hall and in the Engawa. Telecommunications in this building need to be addressed.

**Location** The Lower House is located in the north eastern area of the garden directly across the mound from the CEC.

**Project Background** The roof ridge has become increasingly damaged from water and pest exposure. It needs to be demolished and rebuilt as is. The design should remain the same. The water damage throughout the building is coming from several leaks. Telecommunications needs rewiring throughout the building. New wiring and metal conduit are required to complete the project. The inner walls need restoring from the water damage once the roof leaks are addressed. The building should also be treated for pests.

**Budget** Staff estimates a total budget of \$37,500 to complete the project, which includes \$20,000 for the roof ridge repairs, \$2,500 for floor repairs, \$7,500 for utility repairs and a 25% contingency of \$7,500.

**Project Name** Moon Viewing House (MVH) Railing

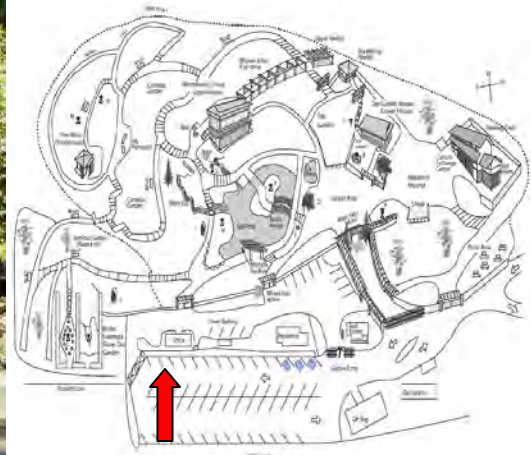
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**Description** The railing on the Moon Viewing House needs work to be structurally sound. The original materials can be reused.

**Location** Moon Viewing House.

**Project Background** The stairs and railing reach an approximate linear footage of 120'.. The MVH is a contributing structure, so the replacement needs to be restored and made to the same design as originally intended.

**Budget** Staff estimates a budget of \$11,250 to complete the project, which includes \$8,000 for rail work, \$1,000 for design work and a 25% contingency of \$2,250.



**Project Name** Hakone Gardens Office Attic

---

**Description** This project will include a full evaluation of the building's supporting structure, and converting the attic into a safely accessible and usable space.

**Location** This structure is located near the top of the parking lot.

**Project Background** This building is original to the site and was constructed as a horse barn. It was remodeled to be used as office space on its lower level by the Hakone Foundation.

After the structure is evaluated for the new use, the ceiling and walls should be insulated and finished with adequate ventilation in the attic. Soil needs to be pulled away from the wooden base and the foundation repaired. It will need a new interior staircase to be ADA compliant if the upper level is to be an office space. A new entrance door and telecommunication closet to house network switches, routers, and pbx system is desired.

**Budget** Staff estimates a total budget of \$61,250 to complete the project, which includes \$35,000 for construction costs, \$10,000 for utility upgrades, \$4,000 for design, and 25% contingency in the amount of \$12,250.

**Project Name**      Parking Lot Gate Replacement

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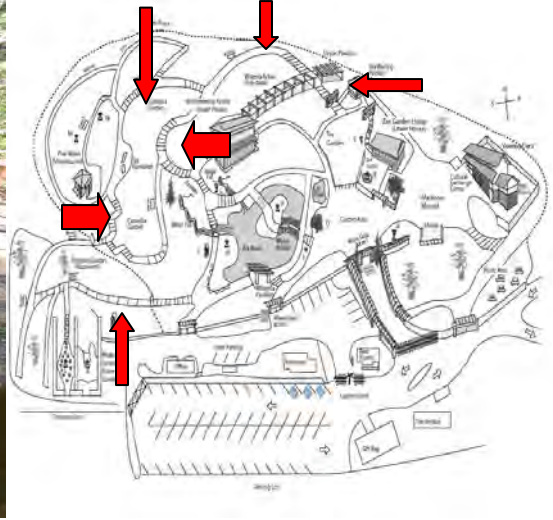
**Description**      Replacement of the two access gates: one for the inside parking lot and a second one to allow access to the loading ramp beneath the CEC.

**Location**          Parking Lot.

**Project Background**      The gates have been in disrepair for a number of years. They are both simple wooden gates on hinges with a latch lock. Both are falling apart and have reached the end of their lifespan. Hakone should have new motorized steel gates on a track which are controlled remotely.

**Budget**              Staff estimates a total budget of \$33,750 to complete the project, which includes \$25,000 for gate construction, \$2,000 for design, and a 25% contingency of \$6,750.





**Project Name** Hakone Gardens Path system renovation

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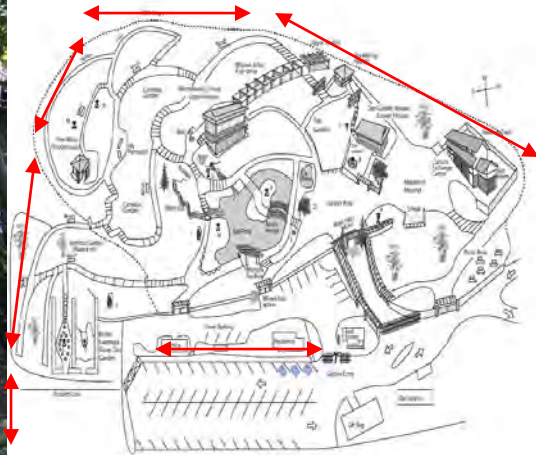
**Description** This project is intended to improve walking surfaces, control storm runoff and make a greater portion of the Gardens ADA accessible.

**Location** Most of the pathways in need of upgrading are located on the slope above the Moon Viewing House (in elevation). Others are located in the Bamboo Garden.

**Project Background** About 800 linear feet of pathways are in need of edging on both sides (1600' edging) at varying heights. The lack of edges leaves them subject to erosion. Also the approximately 170 steps currently made from rail road ties should be built with matching stone. Many are not properly compacted and in some areas lack handrails. Hakone's Head of Grounds Maintenance is recommending dry stacked boulders as a retaining edge in conjunction with about 350' of French drainage in some areas. The steps should be made using mortar and matching stone.

The possibility of re-grading/re-directing routes, 235' of new handrails, and surfaces will need to be accessed by an architect to determine the possibility of ADA compliance.

**Budget** Staff estimates a total budget of \$43,750 to complete the project, which includes \$10,000 for rail work, \$15,000 for edging, \$10,000 for grading, and a 25% contingency in the amount of \$8,750.



**Project Name** Perimeter Fencing

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**Description** Upgrade perimeter fencing to preserve the inner gardens from pests, foraging animals, and vandals.

**Location** Hakone Garden perimeter.

**Project Background** Deer fencing is currently in use around the perimeter of the garden to keep it secure from pests and foraging animals. This fence is failing. The fence should be sturdier and require little maintenance as some areas are difficult to get to and maintain. Aesthetics should be considered as a portion of the fence will be facing the main parking lot. The fence should be uniform, practical, and aesthetically authentic to a Japanese garden setting. The length of the fence is approximately 1,500 LF.

**Budget** Staff estimates a total budget of \$30,000 to complete the project, which includes \$1,500 for design costs, \$22,500 for construction and a 25% contingency of \$6,000.

**Project Name**      Pest Control and Extermination

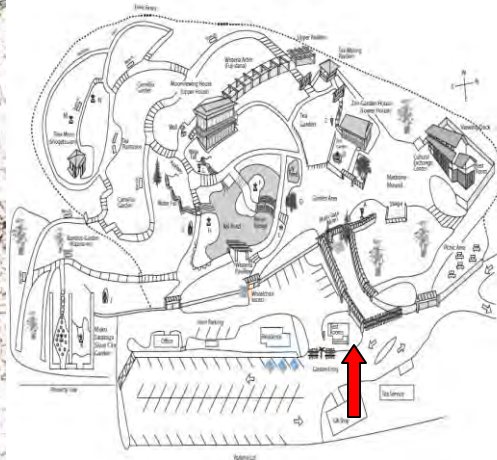
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**Description**      The existing wooden structures in the garden suffer from termite, carpenter ants, and/or some other form of pest. Pests need to be addressed routinely.

**Location**      Various locations within the Gardens.

**Project Background**      The main eight buildings that are used on a regular basis should be the priority of pest treatment and prevention. Those buildings include: CEC, lower house, Moon viewing house, Barn office, Gift shop, tool shed, caretaker's cottage, and Shogetsu-en. The ten other wooden structures that need to be addressed are: Mon, Upper pavilion, Lower pavilion, auxiliary entry gates (2), wisteria trellis, bridges spanning ponds (2), and wisteria arbor.

**Budget**      Staff estimates a total budget of \$18,750 to complete the project, which includes \$15,000 for termite/pest extermination, and a 25% contingency of \$3,750.



**Project Name**      Public Restroom Repair

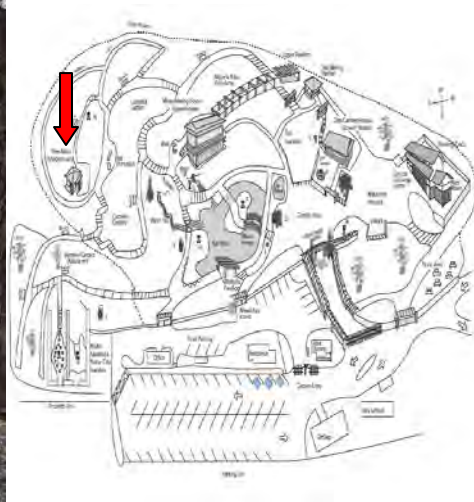
**Description**      The Public Restroom Building is in need of remodeling.

**Location**      The bottom of the main parking lot, directly across from the gift shop.

**Project Background**      The bathrooms need to be remodeled to update appearance and authenticity. This needs to include upgrades in both plumbing and fixtures in addition to outside appearance. Currently, the bathroom walls and the ceiling have numerous cracks running throughout. Additional storage is needed for cleaning supplies. Water heaters need to be enclosed or moved outside the building.

**Budget**      Staff estimates a total budget of \$25,625 to complete the project, which includes \$15,000 for renovation costs, \$3,500 for plumbing work, \$2,000 for fixtures and a 25% contingency of \$5,125.





**Project Name** Shogetsu-en Finishing

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**Description** There are three projects that are required to make Shogetsu-en a fully functional and traditionally authentic tea ceremony room. Proper Japanese Tea Garden landscaping needs to be completed in the area surrounding Shogetsu-en. A machai, or tea waiting enclosure, needs to be constructed. Electricity needs to be ran to Shogetsu-en at the top of the hill.

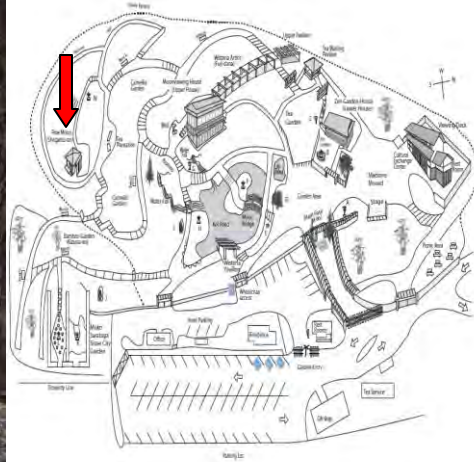
**Location** Shogetsu is located at the top of the Garden, behind the Moon Viewing house.

**Project Background** The space around Shogetsu is unfinished. An expert Japanese tea garden consultant should be brought into develop a landscaping plan appropriate for this specific type of tea house in its current location. Moreover, the structural construction phase of Shogetsu-en is incomplete. It can be finished by providing a waiting structure for the tea ceremony room. Shogetsu-en is a tea room originally built in Japan then transferred to Hakone. It is used to host tea ceremony: a centuries old practice of great discipline. Prior to entering the tea room guests are asked to wait in a partially enclosed, covered structure called Machai to contemplate the surrounding gardens. When Shogetsu was installed a Machai was planned, but was never completed. An expert to consult on the structures design and construction methods will be retained.

Staff intends to electrify the tea room (Shogetsu-en) by running approximately 250” of conduit and wire from the Moon Viewing House. A circuit breaker and wiring exist inside Shogetsu. Electricity will be used for light and a hot plate during tea ceremony. An electrician will need to be consulted to evaluate the electrical capacity at the Moon Viewing House source. A trench and conduit will need to be installed between the two structures, and wire will need to be pulled and connected. The trench will likely need to be dug by hand. We will need a minimum of 120 volts to be pulled to Shogetsu, if possible without changing capacity going into Moon Viewing House.

**Budget** Staff estimates a total budget of \$56,250 to complete the project, which includes \$30,000 for construction costs, \$7,500 for electrical work, \$7,500 for design, and a 25% contingency of \$11,250.





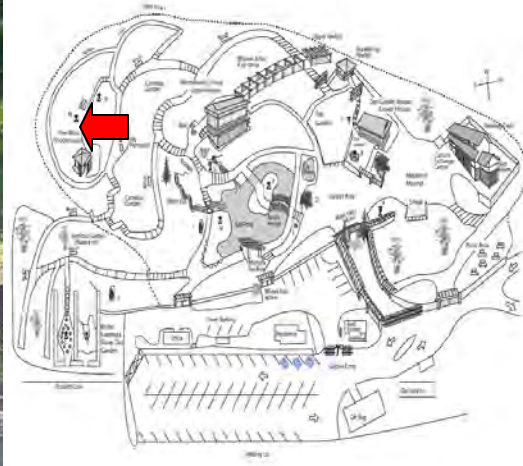
**Project Name** Shogetsu-en Landscape

**Description** Proper Japanese Tea Garden landscaping needs to be completed in the area surrounding Shogetsu-en

**Location** Shogetsu is at the top of the Garden, behind the Moon Viewing House.

**Project Background** The space around Shogetsu is unfinished. An expert Japanese tea garden consultant should be brought into develop a landscaping plan appropriate for this specific type of tea house in its current location.

**Budget** Staff estimates a total budget of \$11,875 to complete the project, which includes \$1,500 for design costs, \$8,000 for landscape work and a 25% contingency of \$2,375.



**Project Name** Shogetsu Machai- Tea waiting structure

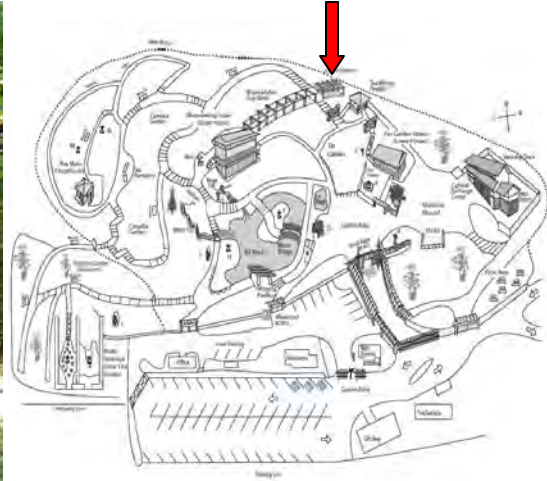
**Description** This project will complete the structural construction phase of Shogetsu-en by providing a waiting structure for the tea ceremony room.

**Location** Shogetsu-en is located near the top of the slope at Hakone Gardens.

**Project Background** Shogetsu-en is a tea room originally built in Japan then transferred to Hakone. It is used to host tea ceremony: a centuries old practice of great discipline. Prior to entering the tea room guests are asked to wait in a partially enclosed, covered structure called Machai to contemplate the surrounding gardens.

When Shogetsu was installed a Machai was planned, but was never completed. The Hakone Foundation will be responsible for finding an expert to consult on the structures design and construction methods.

**Budget** Staff estimates a total budget of \$10,625 to complete the project, which includes \$7,500 for construction, \$1,000 for design, and a 25% contingency in the amount of \$2,125.



**Project Name** Hakone Gardens Wisteria- Upper Pavilion

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**Description** This project will restore the pavilion/viewing deck at Hakone Gardens.

**Location** The Upper wisteria pavilion is located at the end of the wisteria arbor opposite the Moon Viewing House.

**Project Background** The existing structure should be completely rebuilt with stable footings. The attached arbor was reconstructed in 2012. The design should be uniform with the other out structures in the garden, and outside the concrete footings. The design and construction should follow authentic Japanese building techniques.

**Budget** Staff estimates a total budget of \$41,250 to complete the project, which includes \$30,000 for construction, \$3,000 for design, and a 25% contingency of \$8,250.





APPENDIX 6

# Koi Pond Assessment







Intelligent Design & Process Management

# FIELD ASSESSMENT REPORT AND RECOMMENDATIONS

Based on Koi Pond Life Support Systems Site Visit – April 29, 2015

Project Name: Hakone Gardens	Site Location: Saratoga, California	Date: 6/30/2015
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GN	GENERAL NOTES
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### Introduction:

Mr. Paul Cooley, National Aquatics Leader of PCA, completed a site visit of the Hakone Gardens Koi Pond on April 29, 2015.



Based on discussions with staff Jacob Kellner, Gardner for Hakone Gardens, we have developed a flow schematic, which illustrates the current system. (See Figure I)

SUM	Summary of Recommendations
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We have reviewed the design and operation of the system and have the following recommendations:

1. Immediate and Shortterm (See Alternative 1 Schematic)

Based on our current understanding we recommend the following shortterm improvements.

- a. Double the Flow through the Pond. Increase the flow rate through the pond by doubling the flow through the gravity gravel filters. We believe the filters can handle twice the flow they are currently operating. This would require a redesign of the pumps, sizing the system and validating the pipe sizes. Hopefully this can be done without significant piping changes. If the Hakone Gardens wants to accomplish this without major engineering costs we could probably increase individual pumps one-at-a-time until the piping sizes are maxed out. PCA would be willing to work with the staff to accomplish this. Now as the flow increases, the gravel filters will probably need to be cleaned more frequently, but that is the purpose, to get more solids out of the system at a more rapid rate. This will require more operator time.
- b. Re-operate the pressure sand filter/UV system. The system is probably not really adding any benefit to the pond water quality. We would recommend checking the filter media (size, quality), rebuilding the filter, if necessary, remove the pump suction from the sump and connecting it to the gravel filter discharge, increase the flow (doubling it), increase the size of the UV unit and develop a budget and preventative maintenance on the UV bulb replacement, develop a method of correctly backwashing this filter by either installing a separate backwash pump that connects to the gravel filter discharge and wastes to a storage tank (this water can be used for irrigation) or try and utilize the waterfall pump to double duty as the filter backwash pump. Validation of using the waterfall pump would require some investigation into the actual size of this pump and the hydraulics to and from the pump location to the pressure filter site. The cost of a new pump vs. using the waterfall pump would need to be compared.
- c. Get a rigorous vacuuming in place. The staff has an improved vacuuming pump on order. The existing pump is inadequate. A new positive displacement (preferably a diaphragm pump) needs to be used and the vacuuming procedure needs to be developed and rigidly provided until the water system can be improved.
- d. Review feeding procedures. We believe the poor fish health is a result of high levels of bacteria in the system caused by overfeeding and an inadequate filtration to remove the accumulated organics and subsequent bacteria. Either the system will need to be upgraded or the amount of feed needs to be reduced (or both) to improve water quality and fish health. The adjustment of the feeding procedures needs to occur in conjunction with a fish (Koi) expert.

- e. Monitor temperature, ammonia and nitrate. We believe the nitrate test is not measuring correctly. Either the test kit needs to be upgraded or samples should be sent out to an outside lab. It would be nice to know the nitrate level. In addition, it would be nice to measure total bacteria in the pond. This could be sent out to an outside lab.

## 2. Long Term Solutions

Once money is available we would recommend the following long term solutions (See Alternative 2 Schematic)

- a. Replace the entire filter system with a bead filter/UV system. Double the flow.
- b. Redesign the entire pool by installing supply and return pipes that distribute the flow more evenly through the pond (eliminating dead spots and short circuiting).
- c. Deepen the pool in at least one area to give the fish a sanctuary from predators.
- d. Move the LSS equipment away from the current location to allow for adequate space and isolation from the public. (Location to be determined)
- e. Develop a full wastewater recycling system within the water system to allow complete utilization of the bead filter backwash for soil amendment on the Garden site.
- f. Consider (after carefully monitoring the temperatures) installing temperature control on the system to reduce stress on the fish. This might include heating and/or chilling.
- g. Monitor pond nitrates to determine the buildup of nitrate in the system. Adjust the flushing to control nitrates below acceptable levels.

GN	GENERAL NOTES
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Basically, the system consists of the following components:

1. A return sump
2. Five filter and recirculating pumps
3. Four gravity gravel filters
4. One pressure sand filter
5. An Ultraviolet Disinfection system (currently not functional)
6. Blower
7. A waterfall pump
8. Vacuum pump (currently not working very well)
9. Well. The system can be supplied from a small 2gpm well. This operated only intermittently. Most of the fill is done off the potable water system.

Water currently leaves the pond through a single pipe outlet located in one corner of the pond and gravity flows to a return sump. This return sump is 95-inches x 45-inches and approximately 12 feet deep (18.5 gallons/inch). The sump is cleaned yearly (4 hours/year).





GN	GENERAL NOTES
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Water is drawn out of the sump with five small fractional horsepower pumps (1/4HP/pump, 2-inch line, measured flow approximately 27gpm/each by timing the drop in the sump level with the pond outlet blocked).



GN	GENERAL NOTES
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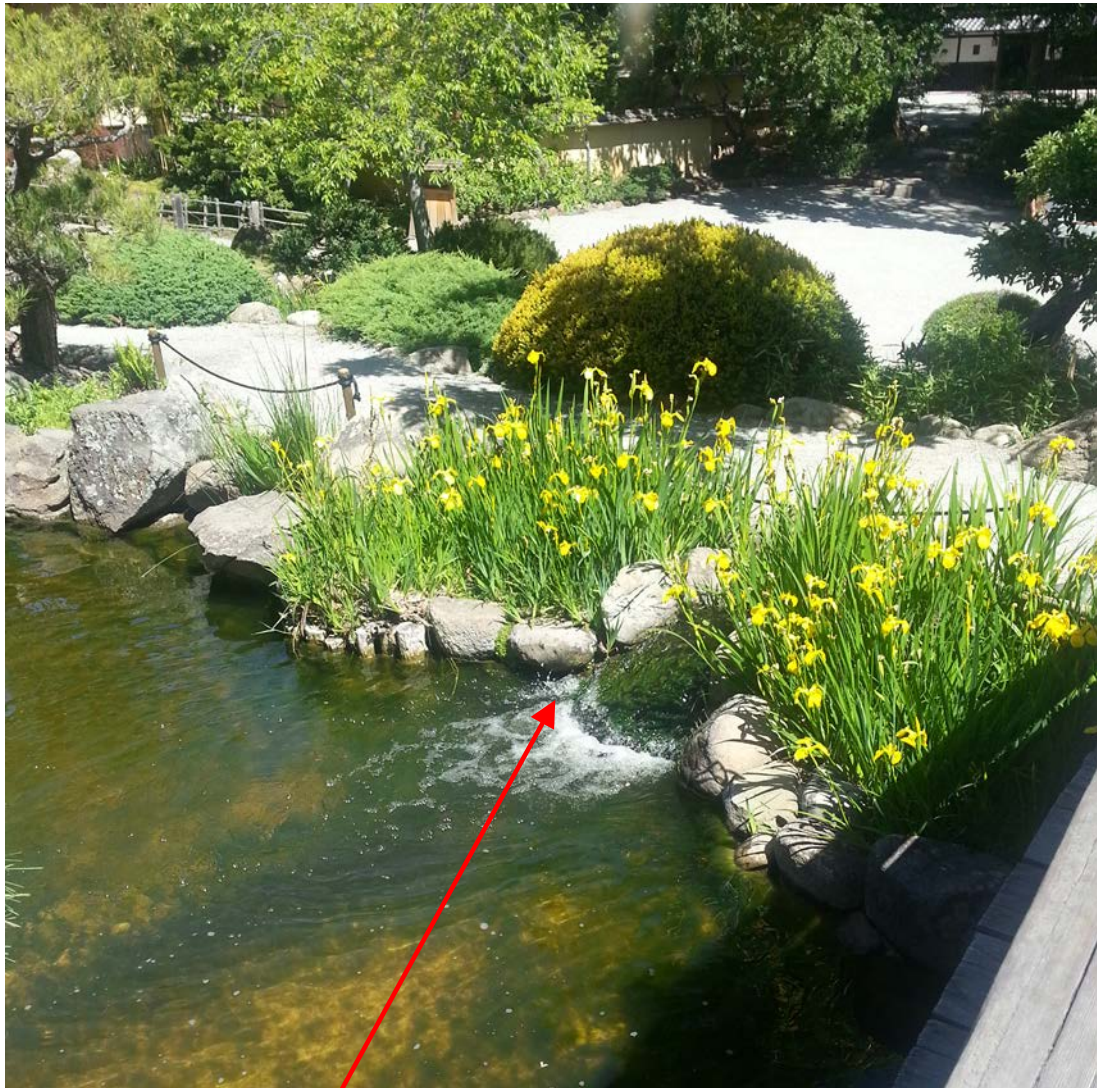
Four of the recirculating pumps discharge to four gravity gravel filters. The filters are backwashed by stopping the flow, draining the water back into the sump, refill from the bottom and aerate, drain back into the sump, scrape the detritus off the top of filter (along with some gravel), separate the gravel, put gravel back into the filter, dump the remaining detritus into the garden, turn on filter pump. This is done weekly and it takes about 30 minutes/filter x 4. Every year the entire media is removed and cleaned and replaced into the filter. This takes about 2 hours/filter x 4. The filter's media is usually pretty clean in the yearly cleanings.





GN	GENERAL NOTES
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Water flows by gravity from the gravity gravel filters back to the pond through a single inlet.



Pond Inlet Flow



GN	GENERAL NOTES
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One of the recirculating pumps flow from the return sump to a single 36-inch pressure filter. The pressure filter is backwashed once or twice a week to the storm drain. The blower is operated to assist backwashing.





GN	GENERAL NOTES
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Discharge from the pressure filter returns to the common discharge from the gravity filters through an in-line UV unit, which is currently not operational. The staff said that the cost of replacement bulbs was excessive and no observed benefit was observed when the UV was operational.



UV Unit



001	COMMENTS
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**General Animal Loadings:**

Currently there are approximately 30 large Koi, 20 small Koi and 8 turtles in the pond. There are also one Heron and a couple of migratory ducks on a regular basis. The loading is low.

**General Water Quality Testing:**

The day of the site visits, the exhibit water quality was observed. Fish were visible and water clarity was viewed as adequate. The operators said that they clean the pond daily (probably 4-5 days a week) by brushing the pond using a swimming pool brush and then netting the floating algae using a swimming pool net. This usually yields one to two buckets of algae per cleaning (depending on the time of year). Algae grows considerably faster in the summer time when temperatures and lighting are higher. If the cleaning doesn't occur the algae grows up, preventing the fish viewing.

pH, ammonia, nitrite and nitrate were measured and showed:

1. pH above 8.8 (exceeded to range of the test)
2. Ammonia, nitrite and nitrate were all reading near zero. Note: it is highly unlikely that the nitrate is zero in this system.



002	COMMENTS
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### Vacuum System

The system currently has a portable vacuum system that consists of a pump with attached strainer and bag filter. This system doesn't work because the bag filter clogs quickly. This needs to be replaced with a diaphragm pump and hose that can discharge into the gravity filters.



003	COMMENTS
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### Water Supply

Water is supplied to the pond through either a small well (which only operates intermittently and shuts down automatically on low level) or from the potable water system. The majority of the fill water is coming from the potable water system. The potable water for the entire garden comes from a private water system which receives water by tanker trucks. The cost of this water was unknown. The Garden needs to get the cost of this water to PCA. Currently, the majority of the water entering the system is needed to make up for backwash of the pressure filter and leakage/evaporation. The Garden has estimated this to be approximately 11000 gal/month.

### Pond Feeding Schedule

Currently the Koi pond is fed from three sources:

1. Guest Purchase Feed. Visitors are allowed to purchase fish food (\$1/half cup) and allowed to feed to Koi. Feeding quantities vary seasonally but staff estimate the total food at 150-200 lbs/year. When water temperature drops below 50 degree F, zero cups. When water temperature is between 50 and 60 Degrees F, 7 cups per day (depending on sales). When temperature is above 60 Degree F feed rate is 10 to 11 cups/day.
2. Supplement from staff. When sales are low, the staff supplements the feed.
3. Public uncontrolled. The public are discouraged from bringing their own feed but some violate this request.

Staff adjust the feeding based on the foraging activity of the fish. When the fish show less interest the feed is reduced.

### Animal Health

Currently, the Koi present have considerable health problems and mortalities are observed throughout the year. The cause of the health problem is unknown but it assumed that it is related to water quality. PCA recommends that a biologist be utilized to determine the exact cause of poor animal health. Causes could be:

1. Water quality
  - a. Temperature Fluctuations. The pond has no positive temperature control and reaches high temperatures in the summer (when ambient temperatures rise above 100°F) to low temperatures during the winter when air temperature drops below freezing. There are times when the top of the pond actually freezes.
  - b. pH Fluctuations
  - c. Algae
  - d. DO
  - e. Pathogens
2. Nutritional
3. Husbandry
  - a. Feeding Methods
4. Predators



004	COMMENTS
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### Dechlorination

The operators currently are using Crystal Clear for dechlorination of the potable water when water is added. Crystal Clear is a sodium thiosulphate based material and is therefore a reducing agent. The procedure for adding this material needs to be reviewed and adjusted.





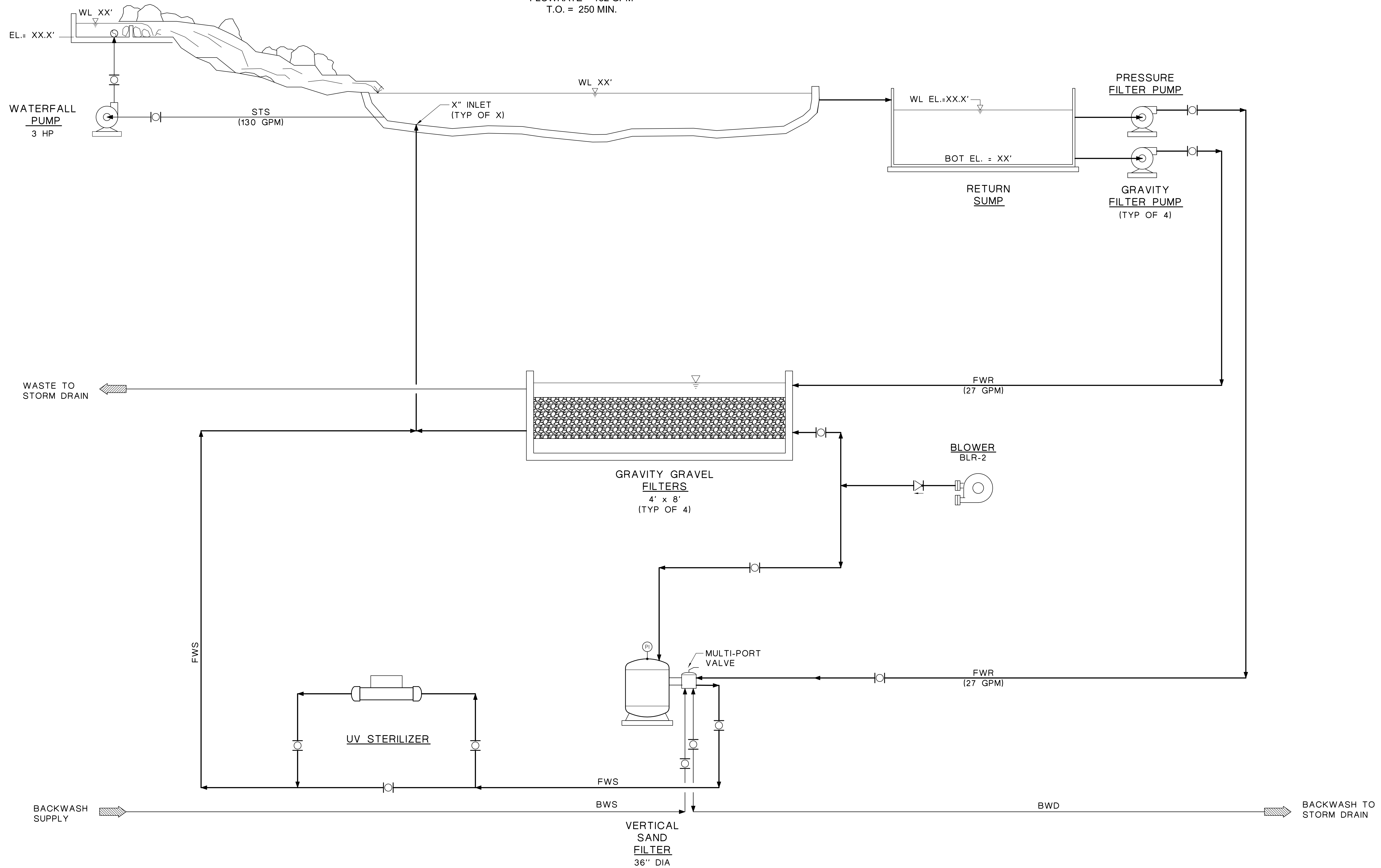
005	COMMENTS
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### Waterfall

The waterfall is important to the operation of the pond. It provides for circulation and aeration. The system consists of a 3HP pump which is variable speed. The pump was indicating a flow of 130gpm. This wasn't verified. Flow out of waterfall seems closer to 250gpm. The piping is designed to allow for a smaller side river located adjacent to the water fall. It is currently not working because of leakage.



**HAKONE GARDENS KOI POND**  
 TOTAL VOLUME = 33,000 GALLONS  
 FLOWRATE = 132 GPM  
 T.O. = 250 MIN.



**HAKONE GARDENS KOI POND - LSS PROCESS FLOW DIAGRAM**  
**EXISTING CONDITIONS**

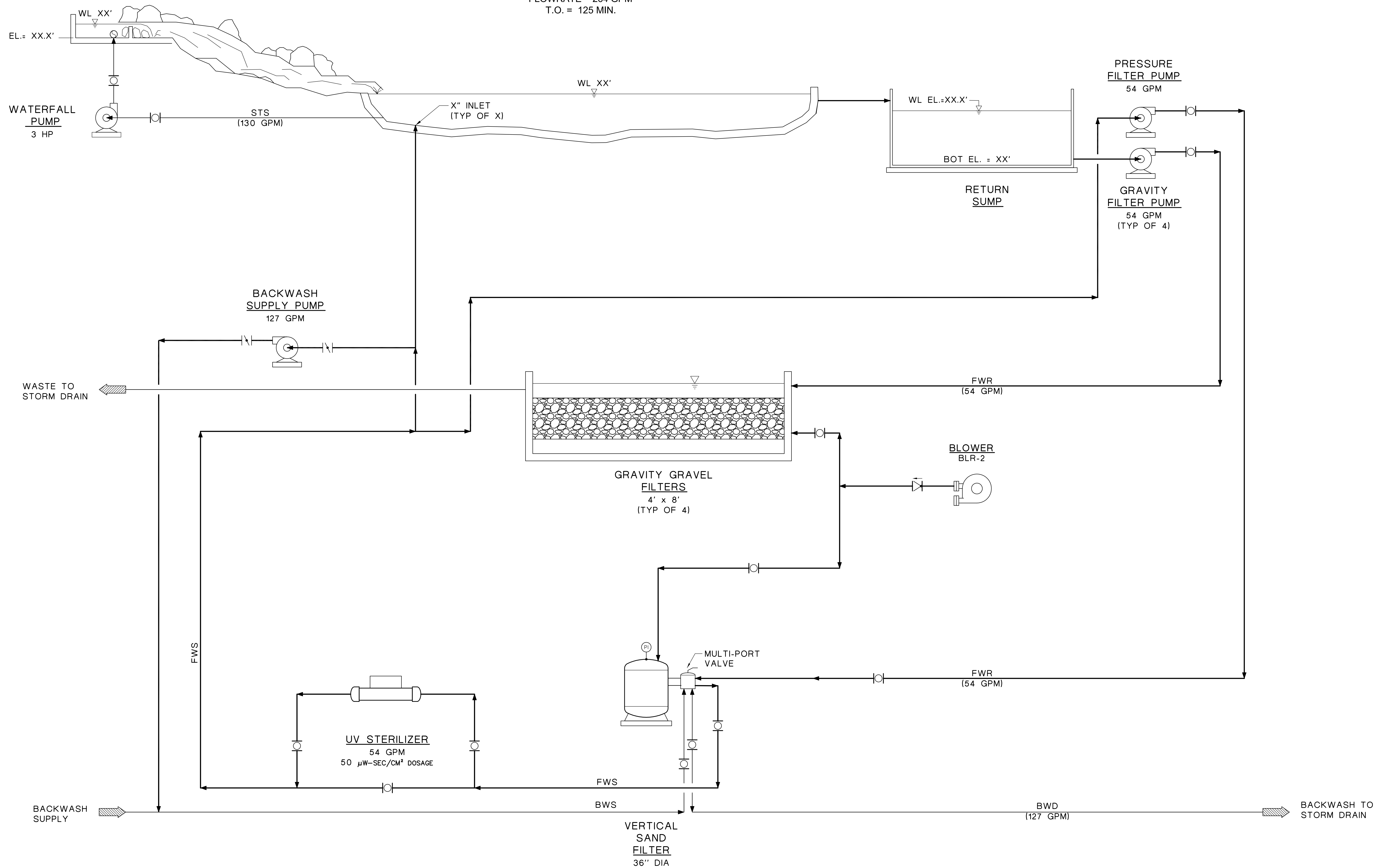
Figure 1

Date of Last Update: 05-16-15

PRELIMINARY  
 NOT FOR CONSTRUCTION

ALTERNATIVE 1 MODIFICATION

HAKONE GARDENS KOI POND  
 TOTAL VOLUME = 33,000 GALLONS  
 FLOWRATE = 264 GPM  
 T.O. = 125 MIN.



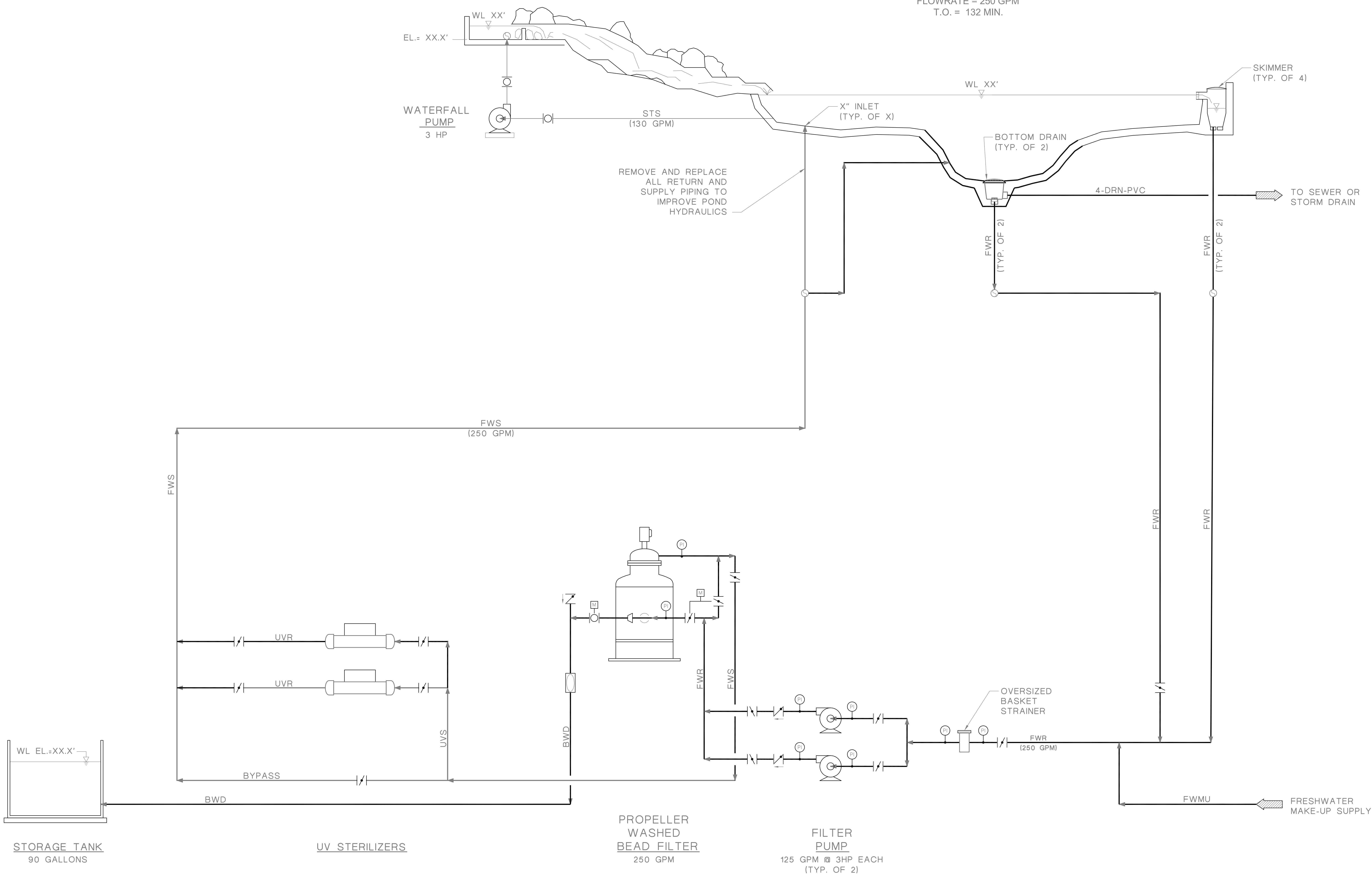
HAKONE GARDENS KOI POND - LSS PROCESS FLOW DIAGRAM  
 ALTERNATIVE 1 MODIFICATION

Date of Last Update: 06-16-15

PRELIMINARY  
 NOT FOR CONSTRUCTION

ALTERNATIVE 2 MODIFICATION

HAKONE GARDENS KOI POND  
 TOTAL VOLUME = 33,000 GALLONS  
 FLOWRATE = 250 GPM  
 T.O. = 132 MIN.



HAKONE GARDENS KOI POND - LSS PROCESS FLOW DIAGRAM  
 ALTERNATIVE 2 MODIFICATION

Date of Last Update: 06-16-15

PRELIMINARY  
 NOT FOR CONSTRUCTION







APPENDIX 7

# Storm Water Assessment





3600 Cerrillos Road, Suite 1102  
Santa Fe, NM 87507  
505.988.7453  
www.biohabitats.com

**MEMORANDUM**

Date: 8/23/15  
To: Paul Sorensen and Dennis Meyer, The Portico Group  
From: Nicole Stern, Biohabitats, Inc.  
RE: **Hakone Estate & Gardens  
Stormwater Management**

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**A. EXISTING CONDITIONS**

Hakone Estate & Gardens, a historic Japanese garden and National Trust for Historic Preservation site, is located in the foothills of the Santa Cruz Mountains within the City of Saratoga. The property is owned by the City of Saratoga and leased to the Hakone Foundation.

Biohabitats' landscape architect, Nicole Stern, visited the site and met with Jacob Kellner, Head of the Grounds Maintenance, on July 5<sup>th</sup>, 2015. The following existing condition observations related to stormwater management are based on this site visit.

*Upper Site*

The Hakone Estate & Gardens property sits on a steep hillside slope. The Hakone site receives stormwater runoff from the mostly forested slope uphill of the gardens as well as from neighboring residential properties. (Biohabitats has not analyzed the extent of the sub-watershed or the runoff flowing onto the site but could perform this analysis in the future given more extensive topographic map data from the City of Saratoga). The upper elevations of the property are predominantly permeable gardens with gravel or stabilized pathways. While much of the stormwater runoff presumably infiltrates into the permeable garden areas, there is no formal stormwater management system for the upper gardens and some stormwater runoff enters the koi pond. According to Jacob Kellner, Head of the Grounds Maintenance, while storm events are infrequent during the current drought, when it does rain, stormwater from uphill flows through the gardens, cutting gullies into pathways.

*Lower Site*

Stormwater which doesn't infiltrate in the upper gardens flows to the parking lots and entry area. There are catch basin storm drains near the entry, restrooms, and at the low point where the parking lot meets the entry road in front of the gift shop. One gated, residential road accessed through the main parking lot drains runoff from hardscape of multiple



residences into the Hakone parking lot. Jacob Kellner relays that the combined runoff from the upper site, entry, parking lot, and neighboring residential property areas clog and flood the main catch basin drain in front of the gift shop. Surface stormwater runoff leaving the parking lot which is not drained through the catch basin system is conveyed via curb and gutter down the entry road. The City of Saratoga installed a series of newer curb cuts and catch basins along the upper exit road (the entry/exit road splits into two, one-way lanes). The catch basin system (as well as at least one other exposed culvert from residential areas and the direct road drainage) drains to a vegetated basin between the entry and exit roads. Jacob Kellner observed that the retention capacity of this basin is minimal with most of the stormwater quickly overflowing through a culvert under the entry road. (Further analysis is needed to determine the functionality of this basin as well as potential retrofit opportunities to improve this function). This culvert drains to an eroding gully on a steep slope, into another culvert flowing under Highway 9/Big Basin Way and into Saratoga Creek.

### *Larger Watershed Context*

The Saratoga Creek watershed is part of the San Tomas Aquino watershed, within the Santa Clara Basin sub watershed to the larger San Francisco Bay Watershed.

## **B. MASTER PLAN**

The Portico Group is currently working with the Hakone Foundation to develop a new master plan for the estate and gardens. The plan includes renovation of existing structures and addition of new structures and buildings to improve the function, event capacity, maintenance facilities, and visitor experience on the site. Some issues to be resolved through the master plan include clarifying the arrival experience, ADA accessibility, and stormwater management on the site. Most of the new structures and buildings are planned to replace the inner parking lot and will therefore replace existing impervious cover. Some new structures may replace pervious cover while some impervious cover may be replaced with new permeable garden area. The existing main parking lot may also be regraded and resurfaced to reduce steep slopes and improve ADA access.

## **C. STORMWATER REGULATION BACKGROUND**

Properties within the City of Saratoga and the County of Santa Clara, must comply with all relevant stormwater permitting requirements (see Appendix A for an expanded explanation of these regulations). The Hakone Estate & Gardens property is owned by the City of Saratoga (leased to the Hakone Foundation) and also a National Trust for Historic Preservation site. Therefore, the site may or may not be subjected to the same stormwater regulations as other sites would be. In order to determine this, more specific discussions with the City and County are needed which are beyond the scope of Biohabitats' preliminary analysis.

The three regulatory stormwater permits and their stormwater management requirements which could apply to the site, based on the County of Santa Clara Department of Planning and Development Clean Water Questionnaire, include:

1. **State Construction General Permit** - applies if disturbed area is  $\geq 1$  acre
2. **Municipal Regional Stormwater Permit (MRP) Provision C.3** – applies if project adds or replaces more than 10,000 sq. ft. of impervious cover
3. **Hydromodification Management (HM)** – applies if project adds or replaces  $\geq 1$  acre of impervious cover AND has a net total increase of impervious cover.

#### **D. DESIGN SCENARIOS & RECOMMENDATIONS**

Based on Biohabitats' initial analysis and regardless of applicable regulations, the existing stormwater management for the Hakone Estate & Gardens property appears inadequate – anecdotally, stormwater flow through pathways and into the koi pond in the upper portion of the site create maintenance issues; accumulated flows on the lower end of the property clog and flood catch basins; and runoff quickly overflows and drains through the vegetated collection basin between the entry driveways. Further analysis beyond this scope would be required to determine actual stormwater runoff quantity and quality. However, based on preliminary observation of the outfall for the property, the site is likely contributing to erosion and increased suspended solids in Saratoga Creek. Typical parking lot pollutants such as oil and metals as well as any fertilizers applied to the gardens may also be flowing from the site into Saratoga Creek. Biohabitats recommends that Hakone address these issues holistically for the master plan area as well as the full property through a variety of practices to harvest, slow, filter, and infiltrate stormwater on the site.

##### *Scenarios*

The Portico Group has developed two potential Master Plan scenarios:

1. The Ramp Concept without the parking lot improvement
2. The Ramp Concept with the parking lot improvement

##### *Recommendations for Scenario 1: Ramp Concept without parking lot improvement*

Based on Portico's preliminary calculations, the Ramp Concept version of the Master Plan concept design would add/replace approximately **15,000** sq. ft. of impervious cover.

Since the Limit of Disturbance (LOD) is greater than 1 acre, the State Construction General Permit is required. The new and replaced impervious cover is over 10,000 sq. ft. Therefore, the Municipal Regional Stormwater Permit (MRP) Provision C.3 applies. The percent replacement of impervious cover within the LOD is greater than 50%. Hence, the MRP stormwater management measures (source control, site design, and treatment) will be required for all area within the LOD (not just for the new/replaced impervious area). The total area of new and replaced impervious cover for this scenario greater than 1 acre but the total post-project impervious cover is less than the existing impervious cover area.

Therefore, the Hydromodification Management (HM) regulations do not apply. See the table below for estimated areas for Scenario 1:

<b>a. Total Site Area: 18 acres</b>	<b>b. Total Site Area Disturbed: 1.4 acres</b> (including clearing, grading, or excavating)			
	Existing Area (sq. ft)	Proposed Area (sq. ft)		Total Post-Project Area (sq. ft)
		Replaced	New	
<b>Impervious Area</b>				
<i>Roof</i>	2436	0	1173	3609
<i>Parking</i>	50346	0	0	34009
<i>Sidewalks and Streets</i>	6664	3303	10555	15769
<b>c. Total Impervious Area</b>	59446	3303	11728	53387
<b>d. Total new and replaced impervious area</b>		15031		
<b>Pervious Area</b>				
<i>Landscaping</i>	44595	20726	7544	54039
<i>Pervious Paving</i>	0	0	0	0
<i>Other (e.g. Green Roof)</i>	0	0	0	0
<b>e. Total Pervious Area</b>	44595			54039
<b>f. Percent Replacement of Impervious Area in Redevelopment Projects</b> (Replaced Total Impervious Area / Existing Total Impervious Area) x 100% = 63.37%				

The State Construction General Permit will require development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). With some overlap in measures, the MRP will require source control, site design, and treatment. To responsibly manage stormwater on the Hakone Estate & Gardens Master Plan improvements site, Biohabitats recommends the following strategies:

1. While regulations presumably only require managing stormwater from within the LOD area, Biohabitats recommends accounting for stormwater flowing through the site as well to reduce maintenance on the site and to responsibly protect the larger Saratoga Creek and San Francisco Bay Watersheds.
2. In accordance with a SWPPP, Biohabitats recommends erosion and sediment control and monitoring during and after construction.
3. Biohabitats recommends implementing as many of the site design measures recommended by the County as possible (see Appendix A). Some likely measures from this list which could apply to the Hakone project include:
  - a. Minimize land disturbed
  - b. Minimize impervious surfaces
  - c. Minimum-impact parking lot design

- d. Cluster structures/pavement
  - e. Disconnected downspouts
  - f. Pervious pavement
  - g. Green roof
  - h. Directing runoff from impervious cover to pervious (planting areas or other permeable surfaces)
    - Microdetention in landscape
    - Other self-treating and/or self-retaining area
  - i. Rainwater harvesting and use
4. Biohabitats recommends implementing as many of the source control measures recommended by the County as possible (see Appendix A). Some likely measures from this list which could apply to the Hakone project include:
- a. Alternative (non-toxic/leaching) building materials
  - b. Wash areas, dumpsters, material storage and other pollutant contributing maintenance areas drain to sanitary sewer and are covered
  - c. Proper maintenance (pavement sweeping, catch basin cleaning, etc.)
  - d. Beneficial landscaping – minimize irrigation, runoff, pesticides & fertilizers; use of landscape area for treatment and infiltration
5. Biohabitats recommends Treatment Systems in accordance with the County’s requirements. Further analysis is needed to select and determine sizing for stormwater LID and Biotreatment practices. However, Biohabitats initially recommends the following integrated system of practices (pursued in this order):
- a. Rainwater/Stormwater Harvesting and Reuse.** Harvest rainwater from structures in above or below ground rainwater cisterns and/or surface stormwater at low points in underground stormwater cisterns; reuse harvested rainwater and stormwater for garden irrigation.
  - b. Infiltraton/Bioinfiltration (Basin, Trench, or other).** Soil testing in specified areas will be needed to determine the ability of existing soil to infiltrate stormwater (a key factor in sizing these practices). If soil allows sufficient infiltration, grading should direct runoff to pervious infiltration areas. These areas can be planted or gravel/rock surfaces with sub-surface media to encourage infiltration.
  - c. Biotreatment/Bioretenion.** If soil infiltration capacities are insufficient or harvesting and infiltration practices are infeasible, stormwater runoff may be treated and retained in bioretention areas (similar to bioinfiltration but with piped under drains and overflow strategies).
  - d. Retrofit of existing vegetated detention basin.** If the above strategies are insufficient to manage the regulated runoff volumes, the existing vegetated detention basin between the entry roads may be given credit for detention. This would likely require a retrofit (excavated/regraded for more depth/detention capacity and revegetated with appropriate planting). Ideally the overflow swale



flowing under Highway 9 to Saratoga Creek would be stabilized with rock work and planting to address erosion as well.

*Recommendations for Scenario 2: Ramp Concept with parking lot improvement*

Based on Portico’s preliminary calculations, the Ramp Concept with parking lot improvement version of the Master Plan concept design would add/replace approximately **53,000** sq. ft. of impervious cover.

Like Scenario 1, Scenario 2 also has an LOD of over 1 acre, adds and replaces over 1 acre of impervious cover, but the total proposed impervious cover is less than the total existing impervious cover. Therefore, the State Construction General Permit and MRP Provision C.3 apply for the LOD area. See the table below for estimated areas for Scenario 2:

<b>a. Total Site Area: 18 acres</b>	<b>b. Total Site Area Disturbed: 2.4 acres</b> (including clearing, grading, or excavating)			
	<b>Existing Area (sq. ft)</b>	<b>Proposed Area (sq. ft)</b>		<b>Total Post-Project Area (sq. ft)</b>
		<b>Replaced</b>	<b>New</b>	
<b>Impervious Area</b>				
<i>Roof</i>	2436	0	1173	3609
<i>Parking</i>	50346	34370	3206	37,576
<i>Sidewalks and Streets</i>	6664	3303	10555	15769
<b>c. Total Impervious Area</b>	59446	37673	14934	56954
<b>d. Total new and replaced impervious area</b>		52607		
<b>Pervious Area</b>				
<i>Landscaping</i>	44595	20726	9444	54039
<i>Pervious Paving</i>	0	0	0	0
<i>Other (e.g. Green Roof)</i>	0	0	0	0
<b>e. Total Pervious Area</b>	44595			54039
<b>f. Percent Replacement of Impervious Area in Redevelopment Projects</b> (Replaced Total Impervious Area / Existing Total Impervious Area) x 100% = 63.37%				

Recommendations for Scenario 2 are the same as for Scenario 1. However, with the significant addition of replacing the main parking lot area impervious cover, treatment practice sizing will likely be larger and retrofitting the existing detention basin will most likely be required.

## References

1. California State Water Resources Control Board. *Storm Water Program: Construction Storm Water Program*. [http://www.swrcb.ca.gov/water\\_issues/programs/stormwater/construction.shtml](http://www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml). Accessed Aug. 7, 2015.
2. County of Santa Clara Department of Planning and Development. *Clean Water Questionnaire*. [https://www.sccgov.org/sites/dpd/DocsForms/Documents/Water\\_Questionnaire\\_Worksheets%28LID%29.pdf](https://www.sccgov.org/sites/dpd/DocsForms/Documents/Water_Questionnaire_Worksheets%28LID%29.pdf). Dec. 2011. Accessed Aug. 7, 2015.
3. Santa Clara Valley Urban Runoff Pollution Prevention Program. <http://www.scvurppp-w2k.com>. Accessed Aug. 7, 2015.
4. Santa Clara Valley Urban Runoff Pollution Prevention Program. *C.3 Stormwater Handbook: Guidance for Implementing Stormwater Requirements for New Development and Redevelopment Projects*. [http://www.scvurppp-w2k.com/pdfs/1112/C3\\_Handbook\\_Chapters-042012-Web.pdf](http://www.scvurppp-w2k.com/pdfs/1112/C3_Handbook_Chapters-042012-Web.pdf). April 2012. Accessed Aug. 7, 2015.
5. West Valley Clean Water Program. <http://www.cleancreeks.org/>. Accessed Aug. 7, 2015.

## **APPENDIX A: STORMWATER REGULATION BACKGROUND**

Properties within the City of Saratoga and the County of Santa Clara, must comply with all relevant stormwater permitting requirements.

### *Regulatory Background*

Stemming from the 1987 amendment to the federal Clean Water Act, the resulting US EPA's National Pollutant Discharge Elimination System (NPDES) stormwater and Municipal Separate Storm Sewer System (MS4s) programs, storm sewer systems serving populations of 100,000 or greater are required to obtain a permit and implement a stormwater management program to control pollutants conveyed through storm sewers into the larger watershed and waterbodies.

The San Francisco Bay Regional Water Quality Control Board, a subset of the California EPA State Water Resources Control Board, has issued NPDES permits to Counties and Cities within the San Francisco Bay Watershed since the 1990s. The most recent Bay Area Municipal Regional Stormwater Permit (MRP) was issued in 2009. Provision C.3 of the MRP requires post-construction stormwater controls for development and redevelopment projects.

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), an association of fifteen agencies in the Santa Clara Valley (including the City of Saratoga) with a common discharge permit for the South San Francisco Bay, formed in 1990 to facilitate compliance with the NPDES requirements. SCVURPPP prepared the 2012 C.3 Stormwater Handbook which provides guidance on implementing the MRP provision C.3. More locally, The West Valley Clean Water Program, a cooperative between the Cities of Campbell, Monte Sereno, Saratoga, and the Town of Los Gatos, also collaborates to control pollutant discharge into local creeks and the larger San Francisco Bay watershed.

The State Construction General Permit also stems from NPDES and was also issued in 2009 for construction sites which disturb one acre or more. This permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

The State Water Resources Control Board also issues Hydromodification Management (HM) permits for sites with one or more acres of impervious cover. HM focuses on preventing impacts to receiving channels, such as Saratoga Creek, by stormwater runoff. Practices required for HM are aimed at flow duration control such as larger retention and detention areas.

The County of Santa Clara Department of Planning and Development summarizes applicability of these three permit types through their Clean Water Questionnaire, a document to be completed as part of project permitting for development and redevelopment projects within the County.

*Regulatory Requirements*

Specific stormwater management requirements are based on quantity of impervious surface cover within the site LOD. Impervious surfaces include any surface which does not allow stormwater to infiltrate into the soil such as buildings and other structures, paved walkways, driveways, parking lots, and other hardscape. Square footage of interior remodeling or re-paving as part of typical maintenance, as in the case of retrofitting existing buildings or re-paving (without regrading) parking lots, does not count towards this area.

The County of Santa Clara Department of Planning and Development Clean Water Questionnaire uses the following table to determine applicability of regulatory requirements:

<b>a. Total Site Area:</b> _____ acre	<b>b. Total Site Area Disturbed:</b> _____ acre (including clearing, grading, or excavating)			
	<b>Existing Area (ft<sup>2</sup>)</b>	<b>Proposed Area (ft<sup>2</sup>)</b>		<b>Total Post-Project Area (ft<sup>2</sup>)</b>
		<b>Replaced</b>	<b>New</b>	
<i>Impervious Area</i>				
Roof				
Parking				
Sidewalks and Streets				
<b>c. Total Impervious Area</b>				
<b>d. Total new and replaced impervious area</b>				
<i>Pervious Area</i>				
Landscaping				
Pervious Paving				
Other (e.g. Green Roof)				
<b>e. Total Pervious Area</b>				
<b>f. Percent Replacement of Impervious Area in Redevelopment Projects</b> (Replaced Total Impervious Area ÷ Existing Total Impervious Area) x 100% = _____ %				

*Scenarios of applicability of regulations to project:*

1. State Construction General Permit
  - a. If the Total Site Area Disturbed (Limit of Disturbance) is equal to or greater than 1 acre (cell b in the table above), the project must apply for a State Construction General Permit.
2. MRP Provision C.3
  - a. If project creates or replaces less than 10K sq ft of impervious cover (cell d in the table above) → MRP C.3 regulations likely don't apply (but still need to confirm with local agency)
  - b. If project creates or replaces more than 10K sq ft of impervious cover (cell d in the table above) → MRP C.3 regulations apply.
    - i. Percent replacement of Impervious area (cell f) is equal to 50% or more → Source control, site design, and treatment requirements apply for entire site (LOD) area

- ii. Percent replacement of Impervious area (cell f) is less than 50% → Source control, site design, and treatment requirements only apply to impervious area created and/or replaced
- 3. Hydromodification Management (HM)
  - a. If project creates and/or replaces 1 acre or more of impervious surface AND the total post-project impervious area is greater than pre-project (existing) impervious area → continue to b below (if not, the project is exempt from HM).
  - b. If project is located in area of HM applicability on the HM Applicability Map (areas with less than 65% impervious cover → HM requirements apply (Hakone is located in one of these areas)

Page 3 of the County of Santa Clara Department of Planning and Development Clean Water Questionnaire form lists potential stormwater control measures to meet applicable regulations:



**6. Selection of Specific Stormwater Control Measures:**

**Site Design Measures**

- Minimize land disturbed
- Minimize impervious surfaces
- Minimum-impact street or parking lot design
- Cluster structures/pavement
- Disconnected downspouts
- Pervious pavement
- Green roof
- Microdetention in landscape
- Other self-treating area
- Self-retaining area
- Rainwater harvesting and use (e.g., rain barrel, cistern connected to roof drains)<sup>1</sup>
- Preserved open space: \_\_\_\_\_ ac. or sq. ft. (circle one)
- Protected riparian and wetland areas/buffers (Setback from top of bank: \_\_\_\_\_ft.)
- Other \_\_\_\_\_

**Source Control Measures**

- Alternative building materials
- Wash area/racks, drain to sanitary sewer<sup>2</sup>
- Covered dumpster area, drain to sanitary sewer<sup>2</sup>
- Sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain<sup>2</sup>
- Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)
- Outdoor material storage protection
- Covers, drains for loading docks, maintenance bays, fueling areas
- Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)
- Storm drain labeling
- Other \_\_\_\_\_

**Treatment Systems**

- None (all impervious surface drains to self-retaining areas)

***LID Treatment***

- Rainwater harvest and use (e.g., cistern or rain barrel sized for C.3.d treatment)
- Infiltration basin
- Infiltration trench
- Exfiltration trench
- Underground detention and infiltration system (e.g. pervious pavement drain rock, large diameter conduit)

***Biotreatment***<sup>3</sup>

- Bioretention area
- Flow-through planter
- Tree box with bioretention soils
- Other \_\_\_\_\_

***Other Treatment Methods***

- Proprietary tree box filter<sup>4</sup>
- Media filter (sand, compost, or proprietary media)<sup>4</sup>
- Vegetated filter strip<sup>5</sup>
- Dry detention basin<sup>5</sup>
- Other \_\_\_\_\_

**Flow Duration Controls for Hydromodification Management (HM)**

- Detention basin
- Underground tank or vault
- Bioretention with outlet control
- Other \_\_\_\_\_

<sup>1</sup>Optional site design measure; does not have to be sized to comply with Provision C.3.d treatment requirements.

<sup>2</sup>Subject to sanitary sewer authority requirements.

<sup>3</sup>Biotreatment measures are allowed only with completed feasibility analysis showing that infiltration and rainwater harvest and use are infeasible. Fill out Forms 1, 2 and 3 to determine feasibility, as applicable.

<sup>4</sup>These treatment measures are only allowed if the project qualifies as a "Special Project".

<sup>5</sup>These treatment measures are only allowed as part of a multi-step treatment process.







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