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Designing with Hosta

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INTRODUCTION

Since the fall of 2013, I have been working with Cornelia B. Holland of Franklin, Tennessee, to develop a hosta and shade garden at the University of Tennessee Gardens in Knoxville, Tennessee. To date, over 500 *Hosta* sp., hybrids, *Rohdea* and other Asian origin plants, shrubs and trees have been dug from Cornelia's garden and transported to Knoxville to establish the *Tranquility – Cornelia B. Holland Hosta Garden* at the University of Tennessee Gardens.

SITE CONDITIONS

The half-acre garden site was a basically a blank canvas. There are nine existing bald cypress (*Taxodium distichum*) and three post oak (*Quercus stellata*) to work with and incorporate the garden around. The site is also the low point of the garden. Standing water was a huge problem in the site, so raising the soil level became a requirement for the site.

THE DESIGN

The garden is divided into a series of areas separated by paths and surrounded by varying trees and shrubs - that create a sense of enclosure and privacy. Spaces for benches and large boulders provide seating throughout the garden. At the heart of the garden is large open lawn area that will serve as a venue for weddings and events. The area will eventually have a moon gate for guests to enter the room that will face a large pergola to serve as the stage for such events. The lawn area will comfortably hold 175 people. The lawn is surrounded by fragrant hostas near the lawn's edge with larger shrubs behind them to create privacy and enclosure. The garden also features a temple bell and several water features to add a sense of sound to the garden.

The garden location has presented many challenges. To address the issues of standing water, over 31 cm (12-in.) of topsoil and compost were added to the entire garden. The addition of berms raised beds and drainage trenches were needed to push water

out of the site and into the nearby drainage swell and wetland.

With a need to create additional shade for the garden for future garden expansion, the design required additional oaks and fast-growing tulip poplar (*Lirodendron tulipifera*) to increase the size of the above canopy (Figure 1).

Small trees, such as dogwood (*Cornus florida*) and various Asian maples (*Acer sp.*) were also planted throughout the garden. *Hosta sp.* are the main focus of the garden. Hostas provide a wide variety of colors and textures, as well as offer a diversity of habits and sizes.

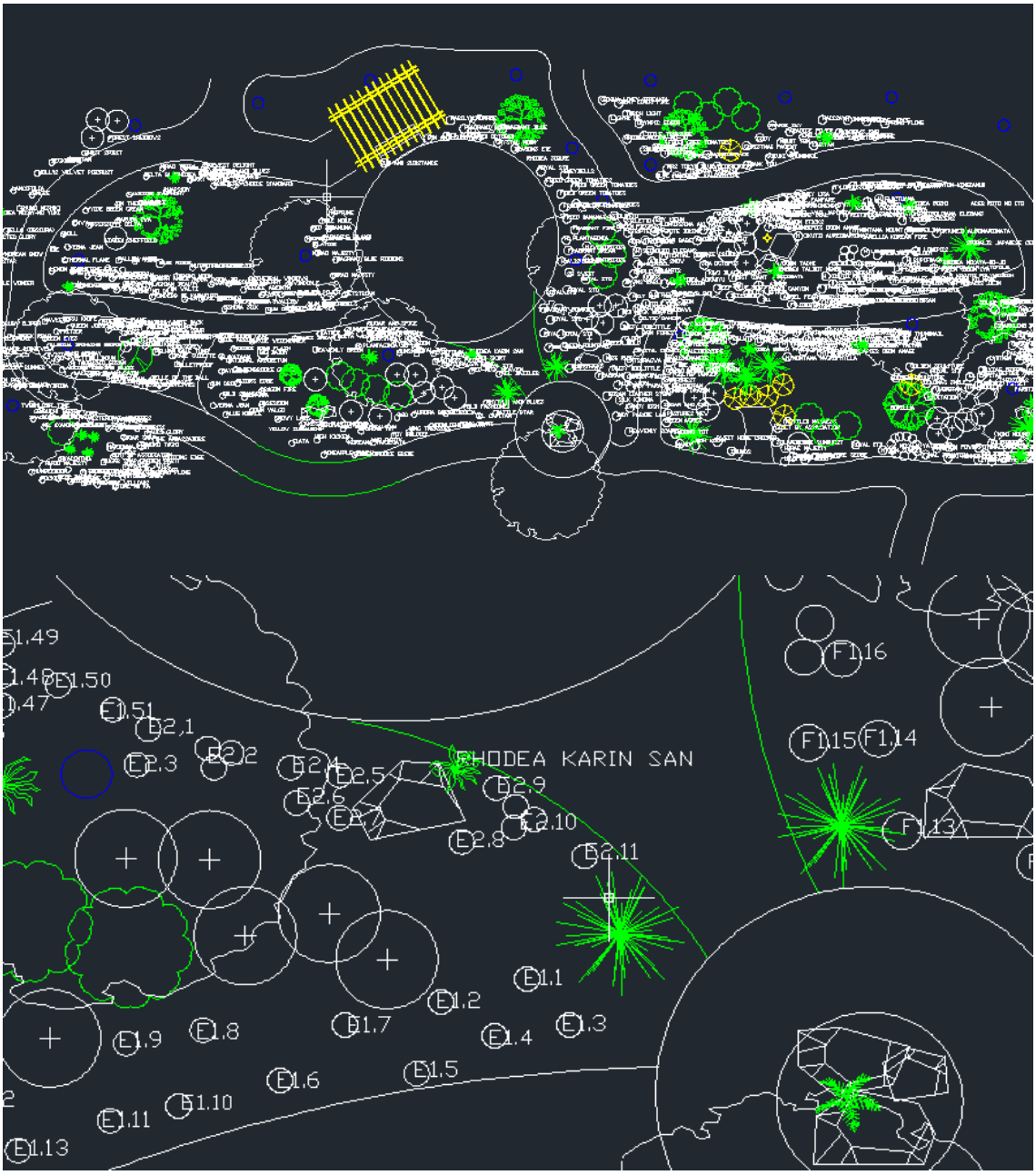

Figure 1. The design of the "*Tranquility – Cornelia B. Holland Hosta Garden"* at the University of Tennessee Gardens, Knoxville, Tennessee.

VARIOUS HOSTA

Designing with a collection of plants can be quite the challenge (Figure 2). The hostas were incorporated into the design by color, size and habit. For example, hostas with red petioles were planted so visitors could see and enjoy the red stems. Fragrant hostas were planted in masse in a large common area of the garden where future events could be held.

Figure 2. The "*Tranquility – Cornelia B. Holland Hosta Garden"* at the University of Tennessee Gardens, Knoxville, Tennessee.

- Fragrant hosta and yellow hosta tend to be capable of tolerating more sun, whereas hosta with strong variegation tend to require dense shade. Hosta that feature blue foliage also require more shade to increase the time that the foliage remains blue. The hosta can sustain the blue hues in more shade but as the summer heat intensifies, the blue color gradually fades away to green.
- Empress Wu hosta - a giant dark green hosta that can reach a width of 1.2 m (4 ft) and a height of 76 cm (30-in.) (Fig. 3).
- Marylin Monroe hosta - a medium size hosta that can reach a width 30.5 cm (12-in.) and a height of 46 cm (18-in.). This plant features wavy leaves with white undersides that tend to grow erect. (Figure 3).
- Fire Island hosta - another medium size hosta that reaches a height of 31 cm (12-in.) and a width 71 cm (28-in.). This hosta features brilliant yellow leaves, which are extended from red petioles (a rare stem color in hosta).

Figure 3. 'Empress Wu' (top) and 'Marylin Monroe' (bottom) hosta.

- Jetstream hosta- a large hosta that grows can reach a height of 66 cm (26-in.) and a width of more than 102 cm (40-in.). This hosta creates a deep blue clump and features leaves that are heart shaped.

- Guacamole hosta- another large hosta that grows to a height of 61 cm (24-in.) and a width of 1.2 m (3.9 ft) (Figure 4). Light green centers bordered by dark green edges are a common characteristic of this hosta. This hosta is also fragrant!

The garden will also include a large selection of the original hosta species, which are the mother plants for today's vast selection of hybrids. Many of these hostas are rare and almost impossible to find. This large portion of the garden will be designated as a species area for housing and preserving the parents of today's hybrid varieties.

Figure 4. 'Guacamole' and 'First Frost' hostas.

A large collection of *Rohdea* (Sacred Lily) are also planted throughout the garden. In Japan, *Rohdea* are known as "o moto," which means large leaf base. *Rohdea* are rarely available in the plant industry. A handful of growers throughout the entire United States preserve these rare plants from Japan. The collection in the University of Tennessee Gardens will help educate others about these plants and help to preserve some of the rare cultivars that were donated to the collection.

RESEARCH AREA

An area to research foliar nematodes will also be designated in the garden. The primary goal of the research in the Knoxville garden will be to determine the *Aphelenchoides fragariae* (strawberry crimp nematode) lifecycle, and their seasonal movement among infected plants. The research will give a more detailed understanding of nematode movement and determining the best time to treat for nematodes. Integrated pest management

(IMP) techniques can then be implemented into management plans to help prevent nematode damage. In order to develop adequate management strategies for this nematode on hostas, cultivar susceptibility and existing chemical and cultural control options can be tested to determine more efficient ways to use and manage hosta in an environment.

In order to study nematodes, infected plant material will be required for examination. A quarantined area designated only for researching nematode infected hosta will be required. It will be best to water hosta with drip irrigation and prevent spread throughout the entire collection.

THE GARDEN'S MAINTENANCE

General Notes. Lightly use mulch. Never pile a large amount over the crown of the plant. Too much mulch will promote and set the stage for Southern stem blight **(***Hosta virus* X). Symptoms of the disease include collapsing of hosta leaves. The staff should be aware of and know how to recognize. Test plants and remove if infected.

February. Apply 3-month Osmocote.

April. Spray a 20% ammonia 80% water solution on hosta shoots as they emerge to reduce snail and foliar nematode damage. If slugs are an issue, scatter a light layer of sand throughout the garden to help keep the slugs away.

April, May and early June. Before temperatures reach above 32°C (90°F) - spray 1 or 2 times with Miracle Grow tomato food. Use per instruction on label. This will help increase the vigor of the hosta and provide magnesium.

June. Apply 3-month Osmocote.

July and August. Divide hosta every 3 to 4 years to maintain plant vigor.

October, November and December. Tree leaves should be removed to prevent slugs. Winter cleanup. Do not have to cut the hosta leaves. Let leaves die back and remove them.

CONCLUSION

The garden itself is an exciting opportunity for the University of Tennessee Gardens to further the research of nematodes. Many rare plants will be protected and preserved as well as fulfilling the University of Tennessee Garden's mission to teach people about plants.

HOSTA INFORMATION SOURCES

- Hosta Library http://www.hostalibrary.org/
- American Hosta Society http://www.americanhostasociety.org/index.htm
- American Hosta Society – *Hosta Virus* X http://www.americanhostasociety.org/Education/HostaVirusX.htm
- American Hosta Society – Diseases http://www.americanhostasociety.org/Education/Diseases.htm