



TIMING IS EVERYTHING

WHAT TO KNOW ABOUT SEASONALITY IN LANDSCAPE INSTALLATION.

BY ANNETTE WILKUS, FASLA

ABOVE
Greenhouse with herbaceous plants being contract grown for the High Line.

As designers we tend to be optimists at heart. We take pride in carrying a design to fruition, knowing the end will bring pleasure and well-being to the users. We try to write specifications (yes, that other part of construction documents) to cover all the anticipated challenges that could happen during construction. In our practice, we consistently see the soil and planting specifications cut and pasted from project to project, specifications that are typically at odds with the project's construction implementation schedule. Our clients have specific time frames in which they expect the final product for the ribbon cutting, most of the time without any consideration of the sensitivity of the landscape installation. As a profession, we need to be thinking about the implementation as early as schematics to educate the client and the general contractor or construction manager about the seasonal aspects of implementing a landscape.

So much of a landscape design's implementation is driven by the construction schedule. However, planting installation, including soil amendments or placement, is tied to weather and a natural cycle, not financial models or owner-driven schedules. Traditional construction schedules create ambiguity and potential challenges during both construction and the plant establishment period. Climate change is pushing and pulling seasons in unusual ways, giving owners, construction managers, and general contractors a false sense of increased time during fall planting season. The traditional specification has definitive deadlines for planting, while the weather seems to indicate we have weeks beyond that specified date when planting may be successful. Because of progressively unpredictable weather patterns, this is a problem that is becoming increasingly common, and frankly disturbing, from the standpoint of ensuring the design's success.

Let's discuss for a moment the preferred windows for transplanting plants by category—deciduous, coniferous, and herbaceous. Table 1 (page 64) is a summary of the industry standard for planting times typically used in the temperate to cooler climates. Note that summer is not a time to plant given the heat and potential drought. What is most important is that the plants have time to overcome the shock of transplanting. This requires time for root regeneration, watering, and careful monitoring.

The ideal time to plant trees as stated by the International Society of Arboriculture is when they are dormant—just before their buds break in the spring or after they drop their leaves in the fall. Nurseries that have fields where they grow trees and shrubs in the ground will typically dig only during plant dormancy, as it is during this time that the trees experience less of a shock. This practice

TABLE 1: INDUSTRY STANDARD PLANTING TIMES

| PLANT TYPE | SPRING PLANTING | FALL PLANTING |
|-----------------------|------------------------|--------------------------------|
| Deciduous (Container) | March 1st to June 15th | September 1st to November 30th |
| Deciduous (B&B) | March 1st to June 15th | September 1st to November 30th |
| Evergreen (B&B) | March 30th to May 1st | October 1st to November 30th |
| Ground Covers (B&B) | April 1st to June 15th | September 1st to October 30th |
| Perennials | May 15th to June 30th | September 1st to October 30th |
| Wetland Plugs | April 1st to June 1st | August 15th to October 15th |

TABLE 2: SPRING PLANTING SEQUENCE

| | WINTER | | SPRING | | SUMMER | | |
|---------------|--------|------------|------------|------------|------------|-----|-----|
| | Feb | Mar | Apr | May | Jun | Jul | Aug |
| Deciduous | | ////////// | ////////// | ////////// | | | |
| Evergreens | | | //// | | | | |
| Ground Covers | | | ////////// | ////////// | ////////// | | |
| Perennials | | | | ////////// | | | |

Deciduous Trees and Shrubs: Dig before leaf out
 Evergreens: Dig prior to pushing candles
 Ground Covers and Perennials: Early May (when nurseries release them)

TABLE 3: FALL PLANTING SEQUENCE

| | SUMMER | | FALL | | | WINTER | |
|---------------|--------|-----|------------|------------|------------|--------|-----|
| | Jul | Aug | Sep | Oct | Nov | Dec | Jan |
| Deciduous | | | ////////// | ////////// | ////////// | | |
| Evergreens | | | | ////////// | ////////// | | |
| Ground Covers | | | ////////// | ////////// | ////////// | | |
| Perennials | | | ////////// | ////////// | ////////// | | |

Deciduous Trees and Shrubs: Dig after defoliation
 Ground Covers and Perennials: Plant prior to first frost

is essential for landscape architects to know, as is the list of plants that are fall digging hazards, or “no fall dig” plants. In the cold to temperate zones, that timing means digging trees out of the ground between late February and mid-March for the spring dig or from mid- to late November until the first freeze for the fall dig. These time frames vary by location and are all weather dependent—and potentially at odds with a construction schedule.

The standard specifications of landscape architects don’t address the most efficient and logical installation sequencing, which changes depending on the season. Assuming that disturbing the planting area as little as possible is a good thing, it makes sense to plant the larger trees before planting shrubs or herbaceous plants. It’s similar to painting yourself out of the room: You want to avoid damage to the work previously done.

In table 2, the spring planting sequence for all plant types is shown. Because you’re able to plant dormant trees first, all plant types can be planted before the heat of summer. Once installed, properly maintained, and watered, the plants have months until they return to dormancy for the

winter. This lets them send out roots and overcome the transplant shock over several months.

By contrast, table 3 illustrates the planting sequence for fall, based on the understanding that the new trees won’t be dug until dormant. It clearly depicts planting times for the herbaceous plants and shrubs *before* the trees will be dug. By waiting for the trees to go dormant, you’ve lost the window to plant the understory. The extended warmer weather, even after the trees have gone dormant, may lead the client to push for continuing to plant. The potential danger here is that the plants have less time to acclimate, and with the arrival of a fall or early winter freeze/thaw cycle, the understory can actually heave up, exposing roots to the eventual colder weather and jeopardizing their survival.

How do we moderate the differences between the construction schedule, our client’s needs, and the need to protect the design intent? For the sheer success of the design, planting in the early spring before the heat of summer is the optimum choice when the design includes trees, shrubs, and herbaceous plants. But what can be done if the construction schedule won’t allow that? The



ABOVE
Hoop house with ground covers and grasses for the High Line.

WE CAN ADDRESS SEASONAL PLANTING CHALLENGES, BUT WE NEED TO EXPLAIN THE ISSUES EARLY IN THE DESIGN PROCESS.

key is early communication to the client and construction team and monitoring the construction schedule throughout the project. If the schedule won't accommodate a spring planting, the following options are available.

Prepurchase or Contract Grow the Plants

Prepurchasing the plants early in the project ensures you'll have the plants available when needed. However, there are several things to consider before moving forward with this strategy.

With contract growing, the nursery dedicates a portion of its facility to accommodate your project. Nurseries generally have an intricate growing strategy that needs space, and should the construction schedule slip, they may lose production space for the rest of their inventory. This affects

their cash flow, leading to a change order cost to the client. Additionally, depending on the length of time they need to hold the plants, the plants may need to be up-potted to the next container size. Again, should the construction schedule slip and planting doesn't happen as planned, the nursery holding the plants may submit for a change order.

One way to avoid this scenario is to suggest that the client contract directly with the growing nursery. This may come with some pushback from the client because a separate contract will be needed, but costs could be better controlled by avoiding construction manager or landscape contractor markups. Designers also need to be clear about how the plants are transported and transferred to the contractor, and when the contractor takes on the warranty. Our firm has the landscape architect and contractor review the plants as they arrive and executes a sign-off between the grower and contractor at that time.

Fabric Bag, Containerized, or Predug Plants

If you're lucky enough to have access to the size of trees and shrubs you need in a container, you'll be able to alleviate most of the planting restrictions I've mentioned.

When plants are in containers, they are affected less by shock and can be planted as long as it's not too hot—or predicted to be hot—or the ground isn't frozen. By being able to plant the larger plants first, you'll be able to avoid damage to any of the previously planted areas and avoid transplant shock.

There are, of course, considerations and precautions to be taken when using containerized plants, not the least of which is girdling roots. When the contractor is planting, you'll want to make sure they comb the roots out and/or cut the root ball coming out of the container vertically and across the bottom at least four times. This loosens the roots and allows them to grow outward rather than circling. Another solution is to use fabric bag pots and other more advanced pot types to mitigate girdling roots.

Predug plants are another option, provided you specify that the warranty for the plants remains with the landscape contractor. Here, the nursery digs the plants within the appropriate harvesting time and keeps them aboveground, either balled-and-burlapped or in containers. This option requires preplanting and early discussion with the



LEFT
Governors Island:
Bare-root trees potted
to accommodate the
delayed construction
schedule.

RIGHT
Bare-rooted *Bucida
buceras* 'Shady Lady'
after three months in
the Missouri Gravel
Bed method, showing
fibrous root growth.

client and construction manager or contractor. Either the nursery will hold the plants or the landscape contractor may have a facility to keep them. We've done this on multiple projects, and it can be very successful if you make sure to check on the plants periodically to ensure they remain healthy and are taken care of properly.

On-Site Nursery with Bare-Root Missouri Gravel Bed Method

Recently, we've been working with the Missouri Gravel Bed method of growing trees on several projects, and we're seeing some great results. This method involves bare rooting the tree, placing the roots into a pea gravel mix, and basically growing it hydroponically until ready to plant. By doing this, the plant develops a fibrous root system (see "The Bare-



Root Cause," *LAM*, June 2011, and "Slope Style," *LAM*, April 2018), which can reduce installation costs and potentially increase the labor efficiency during planting owing to the lighter weight of the plants without a soil root ball. When working with a potential fall planting, this bare-root planting approach allows for planting trees while in leaf. This allows the fall planting schedule specified for the project to be met.

Putting the plants in the Missouri Gravel Bed requires space and maintenance, which is a cost consideration, but one that can be balanced by less cost in transportation and labor to install the plants. Generally, this method is used with smaller trees, say, up to two-inch caliper, a factor that will need to be considered during the design process. The benefits of better root systems for planting, less labor to move the plants, and easier acclimation for the plants appear to outweigh the maintenance during the holding period in Missouri Gravel.

As a profession we rely on innovative designs, pushing the envelope for hardscapes and plantings. However, we also need to be innovative thinkers for the implementation of the design—wrapping this into the design process itself. We use a medium (soil and plants) that has a long lead time and, as such, needs to be thoughtfully addressed early in construction scheduling. This is critical so that team members who don't prioritize plant performance begin to understand how the construction schedule relates to the overall long-term success of the design.

As designers, we can address seasonal planting challenges, but we need to explain the issues early in the design process to help those who don't appreciate the seasonality of our medium. Along with the methods explained here, relationships with nurseries and landscape contractors are important. By understanding their production and installation methods, we can engage a new set of skills to enable the seasonality of soil and plants to come to the forefront of the project's construction schedule. ●

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