INNOVATIVE GREEN ROOF TECHNOLOGY

Planted-in-Place Tray System
Columbia Green Technologies’ newest product, the Planted-In-Place green roof:
• simple to install
• minimizes labor, material and maintenance costs
• shortens lead time
• maximizes design possibilities

Utilizing a tray system as a base, the Planted-In-Place system is easy and efficient to install, as empty trays are first laid out, then filled with growing medium and planted on site. This installation process is designed to be cleaner, less wasteful, and require less labor than other options currently on the market.

While traditional Pre-Grown tray based systems have long lead times and must be installed at once, the Planted-In-Place system can be installed in phases and is available on demand making the most dynamic and flexible option available.

The Planted-In-Place system may include integrated drip irrigation, eliminating the need for hand watering and ensuring the lasting health of the green roof.

Additionally, the Planted-In-Place systems offer variable growing medium depth and more planting options than traditional pre-grown tray solutions allowing for greater design flexibility and a unique look for each installation.

Columbia Green Technologies’ Tray systems are designed with continuous troughs for maximum stormwater retention. They reduce both the amount and rate of stormwater run-off and are capable of retaining up to 70% of the precipitation that falls on them.

WHY COLUMBIA GREEN?

Columbia Green Technologies has a long history of innovation in the industry; our products are engineered specifically for the unique requirements of a roof environment, taking everything from wind uplift to irrigation into consideration. We offer comprehensive green roof solutions for a variety of situations: extensive, semi-intensive and intensive roof gardens. Designers appreciate the flexibility to use trays or layered assemblies, as the project requirements dictate. Building owners love the single source ‘Roof to Green Roof’ warranty options provided through our roofing partners.
**INSTALLING A PLANTED-IN-PLACE GREEN ROOF**

**Step 1**
Empty trays are delivered to the roof, laid out, and fit together.

**Step 2**
Drip irrigation and edging pieces are installed and everything is locked together.

**Step 3**
Growing medium is delivered to the roof by crane or blower truck and spread over the tray system.

**Step 4**
Plants are delivered to the rooftop as either sedum tiles, plugs, or cuttings and are installed and watered.

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**Planting Options for Step 4:**

**Tiles**
Lay out like sod, then water thoroughly.

**Plugs**
Plant rootballs evenly with top of growing media. Space per plans. Water Thoroughly.

**Cuttings**
Empty trays are delivered to the roof, laid out, and fit together.
# COMPARISON OF PRE-GROWN TRAYS VS PLANTED-IN-PLACE TRAY SYSTEMS

<table>
<thead>
<tr>
<th></th>
<th>PRE-GROWN TRAY</th>
<th>PLANTED-IN-PLACE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Availability</strong></td>
<td>• Multiple vendors</td>
<td>• Sold exclusively by Columbia Green Technologies</td>
</tr>
<tr>
<td><strong>Ease of Installation</strong></td>
<td>• Heavier, more cumbersome to install</td>
<td>• Lighter, more flexible installation</td>
</tr>
<tr>
<td></td>
<td>• Time sensitive</td>
<td>• Can be installed in phases</td>
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<tr>
<td></td>
<td></td>
<td>• Less mess, less waste</td>
</tr>
<tr>
<td><strong>Flexibility</strong></td>
<td>• Pre-set medium depth</td>
<td>• Variable 5”-8” medium depth</td>
</tr>
<tr>
<td></td>
<td>• Can’t combine with layered system</td>
<td>• Combines with layered system</td>
</tr>
<tr>
<td><strong>Material Cost</strong></td>
<td>• Varies</td>
<td>• Varies</td>
</tr>
<tr>
<td><strong>Labor</strong></td>
<td>• 100 sq. ft. installed per man hour</td>
<td>• 100 sq. ft. per man hour installation</td>
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<tr>
<td></td>
<td>• 6-8 man crew for installation</td>
<td>• 3-4 man crew for install</td>
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<tr>
<td><strong>Irrigation</strong></td>
<td>• Irrigate by hand</td>
<td>• Integrated drip irrigation</td>
</tr>
<tr>
<td><strong>Plant Options</strong></td>
<td>• Set number of tile varieties</td>
<td>• Tiles, plugs or cuttings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Greater variety of plant options</td>
</tr>
<tr>
<td><strong>Designed for maximum storm water retention</strong></td>
<td>• Maybe</td>
<td>• Yes, with retention estimates available</td>
</tr>
</tbody>
</table>

“Columbia Green Technologies provided the green roof systems for Snug Harbor Resort. We chose the planted-in-place tray system with integrated drip irrigation because the sedum tiles overlaid on the trays provides an instant completely grown in look and the irrigation will keep the roofs looking healthy year round with lower maintenance costs. The Columbia Green team helped us learn about the technology and make an informed choice for our green roof that is both beautiful and cost effective.”

—ERIK NELSON
Owner of Snug Harbor Resort Friday Harbor, WA

Contact:
79 SE Taylor, Suite 201 | Portland, OR 97214
503 327 8723 | info@columbia-green.com
www.columbia-green.com