MRP SUPPORTS

# Green Roofing & Accessories

**Affordable, low maintenance solutions; while adding style and function...**

Green Roof

3310 N. Benzing Road
Orchard Park, NY 14127

800.828.8424
mrpsupports.com

# Green Roof Trays

## VISTA 4” MODULE SYSTEM

The most compatible solution for a balance of weight, cost, storm water retention, ease of installation and extensive plant natural habitat. This is the ‘go to’ system.


| | |
|---|---|
| **DIMENSIONS** | 12” x 24” x 4” |
| **SOIL DEPTH** | 4” |
| **SOIL TYPE** | Extensive Engineered Soil |
| **SATURATED WEIGHT** | 23-28 psf |
| **WATER RETENTION** | 1.3 gal/sf |
| **WATER DISPERSAL** | 12 gal/min/lf |
| **IRRIGATION** | Built in Irrigation Channels |

## VISTA 6” MODULAR SYSTEM

A deeper system which allows for increased storm water retention, a more diverse plant selection, and lush aesthetic.


| | |
|---|---|
| **DIMENSIONS** | 12” x 24” x 6” |
| **SOIL DEPTH** | 6” |
| **SOIL TYPE** | Extensive or Intensive Engineered Soil |
| **SATURATED WEIGHT** | 35-41 psf |
| **WATER RETENTION** | 1.98 gal/sf *(using extensive soil)* |
| **WATER DISPERSAL** | 12 gal/min/lf |
| **IRRIGATION** | Built in Irrigation Channels |

## VISTA 8” MODULAR SYSTEM

Our deepest modular system which allows for greater storm water retention, a diverse plant selection and edibles, and a more lush aesthetic.


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|---|---|
| **DIMENSIONS** | 12” x 24” x 8” |
| **SOIL DEPTH** | 8” |
| **SOIL TYPE** | Extensive or Intensive Engineered Soil |
| **SATURATED WEIGHT** | 39-56 psf |
| **WATER RETENTION** | 2.6 gal/sf *(using extensive soil)* |
| **WATER DISPERSAL** | 12 gal/min/lf |
| **IRRIGATION** | Built in Irrigation Channels |

# Installation

## VISTA MODULAR SYSTEMS

Our Vista Modular Systems are designed for storm water control and cost effective installation. Features of the series MRP Vista Modular System includes: recycled plastic trays, built in reservoirs, irrigation channels, inset handles, root aeration vents, corner extensions for no soil-loss gaps, and sidewall gussets for added strength.

## PREPARATION:

Ensure that the rooftop is clean, and free of debris, with minimum of a 1" in 10' slope to divert water away from any structures. Measure and mark the area where the modules will be installed and snap chalk lines as guides. Ensure that chalk lines are square with any walls or edging.

## INSTALLATION:

**STEP #1:** *Add a layer of MRP Root Barrier as required over the roof's waterproof membrane.*

**STEP #2:** *Align MRP Vista Modules in rows next to each other abutting the long sides together. For corners areas and along walls, trim the Modules as needed.*

**STEP #3:** *Add irrigation as needed for plants and as recommended by manufacturer and/or installer.*

**STEP #4:** *Install restraint edging around modules per manufacturer's instructions and as required by project specifications.*

**STEP #5:** *Thoroughly water modules at the end of installation.*

## DELIVERY, STORAGE, AND HANDLING:

**A.** MRP Vista Modules shall be delivered in such a manner as to preserve the quality of the plants. Truck delivery will be conducted in a manner as to protect the modules from temperature or wind damage. For transport times less than 1 day, a closed or open trailer may be used. For longer duration transport times, MRP Vista Modules must be delivered in a climate-controlled trailer, weather and temperature dependent.

**B.** Upon arrival, MRP Vista Modules shall be immediately off-loaded and moved to a protected area. Ideally, the modules should be installed within 24 hours of arrival. If installation is not possible in this time frame, then a holding area shall be reserved to unpack and layout the modules for exposure to air and light until they can be installed. Once the modules are unpacked, water them thoroughly once every three days until they can be installed.

**C.** Protect the modules from weather extremes. If it is hot, move them to a shady location. If harsh winter conditions exist, set them out of the wind and protect them from frost.

# Turf Trays

**MRP Turf Tray**
Light weight 24" x 24" Turf Tray for pedestal set applications. Fastening Kit used for lock down to the pedestal for safety and wind applications. Artificial turf is mechanically fastened to tray to prevent uplift and can be set on structural trays. The Turf Tray can also be used with the green roof vegetative trays.

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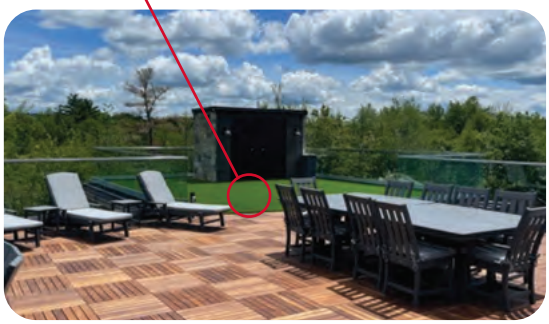
| **Weight** | 5.5 lbs. Each |
| **Yield Strength** | 15000 psi |
| **Ultimate** | 20000 psi |



*A beautiful display of SYNLawn Golf rooftop, located on the Mississippi River. Utilizing 1,310 2x2 Turf Trays & 1, 648 of our BS1 pedestals.*

*This lovely golf course is a great addition to the community; for years to come.*

# Accessories

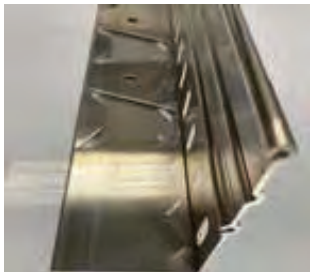
## ROOT BARRIER 20

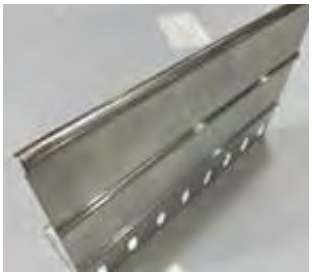
A smooth polyethylene geomembrane film that acts as a waterproof seal, protecting the soil from moisture loss, and redirects soil roots as needed. For use when a root barrier is required.

| | |
|---|---|
| **MATERIAL** | Black Polyethylene Geomembrane |
| **THICKNESS** | 20 mil *(Other thicknesses available)* |
| **DIMENSIONS & WEIGHT** | 53" x 175'; 773 ft/roll; 96 lbs<br>53" x 136'; 600 ft/roll; 85 lbs |
| **TENSILE STRENGTH @ BREAK** | 96 ppi (ASTM D6693) |
| **ELONGATION @ BREAK** | 900% (ASTM D6693) |
| **TEAR RESISTANCE** | 12 lbs (ASTM D1004) |
| **PUNCTURE RESISTANCE** | 60 lbs (ASTM D4833) |
| **CARBON BLACK CONTENT** | 2.4% (ASTM D4128) |
| **OXIDATIVE INDUCTION TIME** | 100 mins (ASTM D3895) |

## METAL EDGING

A strong yet lightweight, bendable restraint that provides a great finished look for both modular systems and/or intensive and extensive layered green roof systems. Our "L shaped" design retains green roof planting materials and can be an edging detail for paver and tiles on rooftop walkways. Our Metal Edging accommodates design curves and angles and is easy to install, making it a great alternative to structural curbing.





| | |
|---|---|
| **MATERIAL** | Aluminum Extruded 6063 Alloy |
| **DIMENSIONS** | Heights 4.5", 6.5" & 8.25"x 8' Lengths |
| **FINISH** | Mill Finish Anodized<br>Black DuraFlex Available |
| **TEMP. DISPLACEMENT** | Extruded Aluminum is Not Impaired by Exposure to Low Temperatures |
| **UV RESISTANCE** | Aluminum Reflects Ultraviolet Radiation and is Not Damaged by Harmful UV Rays |
| **COMBUSTIBILITY** | Extruded Aluminum Will Not Burn, Making it Safer than Many Materials, such as Wood, Paper, or Plastic in Design Applications. Extruded Aluminum also Does Not Emit Any Toxic, Hazardous Fumes when Exposed to High Temperatures |

# Maintenance

This reference guide is intended to be a practical manual used by building owners, homeowners, landscapers and in-house maintenance staff to properly maintain a vegetated green roof. This comprehensive information packet meets a broad range of maintenance objectives, however, some procedures may not be applicable to your roof. When possible, there is a list of alternate maintenance methods.

## LOW MAINTENANCE, NOT NO MAINTENANCE

Sedums plants are the predominant plant of choice in green roofs due to their low maintenance attributes. They are low growing, rapidly maturing perennials which are resistant to most drought and temperature fluctuations. Although these hardy plants reside on rooftops, maintenance is necessary as they can fall prey to weeds, pests and diseases. A minimal amount safeguarding will protect the quality and longevity of the plants and the long term survival of the green roof project.

## CUSTOM MAINTENANCE TO MEET ROOF USES

Green roofs are installed for various reasons. This may include the following:

- Lower energy bills
- Minimize storm-water run-off and rainwater pollutants
- Remove airborne pollutants and creating oxygen
- Mitigate the Heat Island Effect
- Obtain LEED Credits
- Create a gathering/natural park area on the roof of a building
- Reduce noise pollution on a building near an airport or construction
- Create aesthetics for increased work productivity and psychological wellness
- Green roof research
- Extend the life of the roof membrane

Building owners should consider their own objectives when choosing a maintenance plan. This guide is intended for optimal results and we encourage utilizing all recommendations.

## CUSTOM MAINTENANCE MATERIALS TO MEET CUSTOMERS/OWNERS NEEDS

In each chapter we will recommend certain nutrients and supplements, but these applications may not be appropriate for every roof or scenario. Please confer with the building owner as to which materials are acceptable.

## PREVENTIVE VERSUS REACTIVE MAINTENANCE MEASURES

As with any maintenance program, there are both preventive and reactive programs. We will outline a preventive program that minimizes cost and time in favor of the reactive approach.

## NUTRIENTS AND SUPPLEMENTS

Green roof plants use the rain and pollutants contained therein as a food source. However, before the green roof is fully established, the plants will need additional nutrition. Supplying the proper nutrition during the establishment period will enable the plants to grow more rapidly and fill in the green roof area. This slows weed growth, prevents wind and rain erosion and improves roof appearance.

## FERTILIZERS

Green roof plants do not require much fertilizer, but throughout the establishment period for newly planted plugs, they will need more nutrients than the rain can provide. A balanced slow release fertilizer that releases over a period of 3-12 months is best. Osmocote or Nutricote are examples of commercially available slow release fertilizers. Initially a 10-10-10 is good at supporting top growth, root growth and flowering (14-14-14 or similar can also be used). In the second and later years as the plants fill in and growth slows, the fertilizer ratio should be changed to more nitrogen (ex. 18-6-12) but still be of a slow release variety.

In addition to promoting growth, fertilizers also keep the plant healthy and more resistant to disease. If the green roof is to be used for aesthetic reasons, the fertilizer will keep the plants looking their best.

# Maintenance

## BIOLOGICALS

Most roof soils are comprised of a lightweight aggregate that is heated to very high temperatures (resulting in sterilization) and a small percentage of sterilized compost. Sterilization may cause the soil to be deficient in biologicals. Biological supplements such as compost teas, worm castings and worm casting teas (ex. VermaPlex), biological nutrients (OMRI Nutricast) and mycorrhixal injections (Mycorrhizal Application, Inc.) may be required in some instances. If the plants are not growing after they been fertilized and treated with fungicide, biologicals may be worth consideration.

## IRRIGATION

Poor irrigation and moisture management is the leading cause of damage to green roof plants. This is done by either ignoring irrigation during periods of extreme drought or more frequently, by over watering. Green roof plants are naturally drought tolerant, but they need periodical water to keep them healthy and growing well, especially during the first year when they are becoming established.

## DIFFERENT FROM OTHER PLANTS

Green roof plants differ from other plants in their photosynthesis process. Under conditions of sufficient water, they run photosynthesis in one step: they absorb carbon dioxide, water and sunlight, and give off oxygen during daylight hours. However, during periods of water deficiency, they shift the photosynthesis process into 2 steps: 1) reaction of carbon dioxide with water and sunlight during the day, and 2) expulsion of oxygen and uptake of carbon dioxide during the night. By doing this, the stoma (breathing holes) are only open during the cooler nights, thus conserving water. The key point is that this capability still requires water but not as much as a normal plant.

Another item to note is that they cannot tolerate having roots immersed in water for days at a time. Dry period are necessary for their health.

## RECOMMENDED IRRIGATION

Proper irrigation depends on soil depth, humidity, age of the plants and temperature. For 4 inch deep soil, here's the recommendations during spring/summer/fall, and a watering is considered a rain event or you manually soaking them with water: 1) Newly planted plugs: water every other day for first week, then twice a week for next 2 weeks and then once a week for next 2 weeks. Make sure they get water at least every other week from then on to look good. 2) Established plants/sedum mats: water twice a week for first 3 weeks, then once a week for next 2 weeks. Make sure they get water about once every two weeks after that to always look good.

More frequent watering will make the plants grow slightly faster but will also make them more susceptible to diseases.

Established plants can get by with water every month as a minimum, but will not look as good as those that get it at least once every couple weeks.

***We can't stress enough --- OVERWATERING KILLS PLANTS!***

## SUMMARY

### YEAR 1

- For newly planted plugs, weed every month or as needed to keep them in check
- For established plants/sedum mats, weed quarterly or as needed
- Apply slow-release fertilizer (for newly planted plugs) in spring and fill in plants as needed
- Clean debris & leaves from around modules and drains quarterly
- Irrigate as recommended above, except if rain occurs

### YEAR 2

- Weed quarterly or as needed to keep them in check
- Apply slow-release fertilizer in spring and fill in plants as needed
- Clean debris & leaves from around modules and drains quarterly
- Irrigate as recommended above, except if rain occurs

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Green Roof Systems • Turf Trays
Root Barrier • Edging • & More!

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GREEN COMPLIANT PRODUCTS · GREEN TOP.co · contributes to SS C6.1 e C6.2, GA C1, EA P2, EA C1 MR C4, MR C5, QI P3 e C9 (Schools) CREDITS

QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV·GL ISO 14001

SOCIAL ACCOUNTABILITY SYSTEM CERTIFICATION DNV·GL SA 8000