Green Roof and Cool Roof Drains

We have the right green roof drain for any drainage application.

The drainage off a green roof surface is a particularly important component:
• to maintain optimum growing conditions in the growth medium,
• to managing heavy rainfall without sustaining damage to growth media due to erosion or ponding of water, and
• to ensure the sound engineering and structural integrity of the roof.

Our green roof and cool roof drains are adaptable to:
• built-in-place design,
• modular tray design,
• pre-vegetated mat system design, and/or
• cool roof design applications.

We have a line of green roof and cool roof drains that are engineered to work on extensive, intensive, multifunctional, and cool roofs.
Green Roof and Cool Roof Drains

A green roof is a vegetated roof with growth media composition to support growing plants. It provides evaporative cooling, converts carbon dioxide to oxygen and reduces stormwater runoff. Green roofs can also include cool roofs (reflective roofs). Overall, green roofs offer a wide range of social, economic, and environmental benefits compared to typical commercial roof tops.

The drainage off a green roof surface is a particularly important component to maintain optimum growing conditions in the growth medium, to managing heavy rainfall without sustaining damage to growth media due to erosion or ponding of water, and to ensure the sound engineering and structural integrity of the roof.

Our line of engineered roof drains includes professional grade Area, Scupper, Overflow, Planter, Plaza, Siphonic, and Traditional roof drains for all types of conditions and aesthetics. Our cast iron and stainless steel roof drains can be furnished with a stainless steel gravel stop and dome; a bronze flashing clamp, dome, and standpipe; a fabricated stainless steel drain; or cold dipped galvanized cast iron body.

As an industry leading manufacturer of plumbing and drainage products, we have developed a line of green roof and cool roof drains that are engineered to work on extensive, intensive, multifunctional, and cool roofs.

What are extensive, intensive, multifunctional, and cool roofs?

**An extensive roof** planting features plants that require low maintenance such as decorative grasses and herbs. A low build-up in the form of a planting substrate is sufficient for them. A well-designed system contributes to improving the roof’s acoustic and thermal performance.

**An intensive roof** planting features a lawn and/or plants requiring regular maintenance such as bushes, trees and shrubs along with ground cover plants. These systems have a far greater depth of soil and require good drainage to ensure that the roof does not become water logged.

**A multifunctional roof** features intensive roof planting combined with roof paving. Various combinations of planting applications are possible: intensive roof plantings combined with footpaths, play facilities, or with vehicular traffic. Loading and drainage are considerably more significant with this roof design.

**A cool roof** features a roofing system that can deliver high reflect solar reflectance (the ability to reflect the visible, infrared, and ultraviolet wavelengths of the sun, reducing heat transfer to the building) and high thermal emittance (the ability to radiate absorbed or non-reflected solar energy). Most cool roofs are white but they can be other colors. They are also called reflective roofs. Cool roofs enhance roof durability and reduce both building cooling loads and the urban heat island effect.

A green roof and/or cool roof offer positive thermal benefits in the respect of controlling the temperature variations on the roof surface and underlying structure, in particular, they reduce loads on building air conditioning and heating systems. Protecting the roof membrane from sun and weather exposure with a natural green surface or coating/tiles/shingles can extend the lifespan of the roofing material, thus reducing long term maintenance costs.

Green Roof Photos Provided by GreenGrid® Green Roof Systems, Weston Solutions, Inc.
In addition to drainage, another important aspect of green roof design is irrigation; this is especially true for intensive and multifunctional roof areas. We can assist you in selecting the right components for capturing rainwater. The harvested rainwater can be used to irrigate either the green roof and/or in the surrounding landscape.

Drainage, water retention, and irrigation are key elements to consider when designing a green or cool roof. We know drains, we know roofs, and we know rainwater harvesting. We can help you achieve your rainwater drainage and harvesting needs through an aesthetic approach.

For more information about our rainwater harvesting products, resources, and to find one of our local representatives, visit www.jrsmith.com
Intensive Roof Design
(Built-In-Place System)

Intensive roof construction requires roof drains that will allow sufficient drainage yet protect the integrity of the growth media and vegetation. The roof drain must allow for sub-surface drainage while providing aesthetically pleasing grates and domes.

Growing Media

Thin Filter Sheet

Drainage Layer (Allows heavy rain to run off to the 1901 Roof Top Planter Drain yet still retain moisture in the growth media for dry periods.)

Protective Layer

Root Barrier

Waterproof Membrane

Insulation Layer

Deck/Structure

Gravel

1901 Green Roof Planter Drain and Overflow Standpipe with 5/8” Orifice to Meter Rainwater

To Filtration/Storage/Storm Drain

Intensive Roof - Specialized Green Roof Drains

1900 – Green Roof Main Area Drain with Standpipe

1901 – Green Roof Planter Drain & Overflow Standpipe

1905 – Multi-Level Planter Area Drain

1909 – Planter Area Drain for Multi-Levels
Intensive Roof
Shown with a Rainwater Harvesting and Drip Irrigation System

1901 Green Roof Planter Drain and Overflow Standpipe with 5/8” Orifice to Meter Rainwater

RH9532C
Float Switches

RH9530SI
Smoothing Inlet

RH9530DOK
Multi-Functional Overflow Device

RH9542FSO
Pumps (By Others)

Above Ground Storage Tank (By Others)

RH9520-06
Vortex Rainwater Fine Filter

To Stormwater

Irrigation System (By Others)

Drawings for illustration purposes only.
Collected rainwater for irrigation only.
Rainwater Harvesting products in cooperation with WISY AG and Rainwater Management Solutions (RMS)
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Extensive Roof Design
(Modular tray System)

Extensive roof construction allows for both traditional and specialized green roof drains depending on tray arrangement. Multi-level or terraced areas may require 1915 or 1920 style green roof drains.

1. **Growing Media**
2. **Gravel**
3. **Green Roof Tray**
4. **Vegetation**

Drainage Layer - This layer holds water that can be diffused upward as vapor when the growing medium dries. The honeycomb structure allows stormwater to drain to the 1560 Scupper Drain and provides aeration for roots.

**Extensive Roof - Traditional Roof Drains**
- 1530 – Scupper Drain
- 1580 – Scupper Drain

**Extensive Roof - Specialized Green Roof Drains**
- 1915 – Plaza and Planter Drain
- 1920 – Plaza and Planter Drain
- 1560 – Scupper Drain

GreenGrid® Green Roof Systems, Weston Solutions, Inc.
Extensive Roof Shown with a Rainwater Harvesting and Drip Irrigation System

Drawings for illustration purposes only. Collected rainwater for irrigation only.

Rainwater Harvesting products in cooperation with WISY AG and Rainwater Management Solutions (RMS)
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1010 – Large General Purpose Roof Drain
DX1010 – Large General Purpose Roof Drain with wide flange body
1070 – Large Special Purpose Roof Drain, Overflow Drain-Standpipe Type
1080 – Large Special Purpose Roof Drain

1560 Scupper Drain
RH9520-06 Vortex Rainwater Fine Filter
Above Ground Storage Tank (By Others)
RH9530DOK Multi-Functional Overflow Device
RH9532C Storage Tank Floating Filter
To Stormwater
RH9530SI Smoothing Inlet
RH9542FSO Float Switches
To Stormwater

Drip irrigation (by others)
Modular tray (by others)

Irrigation System (By Others)
Cool Roof Design

Cool roof construction allows for traditional style roof drains to be used. This application is ideal for Siphonic Roof Drains and Rainwater Harvesting.

Reflective Surface
Protective Layer
Waterproof Membrane
Insulation Layer
Deck/Structure

1010 Roof Drain

To Filtration/Storage/Storm Drain

Cool Roof - Traditional Roof Drains

1005 – Siphonic Roof Drain
1010 – Large General Purpose Roof Drain
DX1010 – Large General Purpose Roof Drain with wide flange body
1070 – Large Special Purpose Roof Drain, Overflow Drain-Standpipe Type
Cool and/or Traditional Roof Shown with a Rainwater Harvesting System

Reflective Surface

1010 Roof Drain

Filtration System

RH9521-12 Vortex Rainwater Fine Filter and Extension

Below Grade Storage Tank (By Others)

RH9530DOK Multi-Functional Overflow Device

RH9532C Storage Tank Floating Filter

RH9530SI Smoothing Inlet

To Stormwater

RH9542FSO Float Switches

Pumps (By Others)

Drawings for illustration purposes only.

Rainwater Harvesting products in cooperation with WISY AG and Rainwater Management Solutions (RMS)

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1080 – Large Special Purpose Roof Drain

1310 – General Purpose Roof and Deck Drain

1330 – General Purpose Roof and Deck Drain

1510 – Scupper Drain

1530 – Scupper Drain

1580 – Scupper Drain
Green Roof and Cool Roof Drains Product Catalog

Intensive Roof - Specialized Green Roof Drains

1900 – Green Roof Main Area Drain with Standpipe
15 1/4" Diameter drain with perforated standpipe. Use in non-pedestrian areas of green roof systems.

1909 – Planter Area Drain for Multi-Levels
15 1/4" Diameter drain with perforated standpipe. Medium (8 1/2 Dia.) surface or planting area drain. Standpipe allows limited sub-surface drainage.

1901 – Green Roof Planter Drain & Overflow Standpipe
15 1/4" Diameter drain with standpipe and 5/8" orifice to meter rainwater. Use an overflowing drain in non-pedestrian areas of green roof systems.

1913 – Stainless Steel Parapet Green Roof Drain Basin
15 1/4" Diameter main area drain with auxiliary inlet for additional drains. Perforated gravel guard with removable cover for easy access.

1915 – Plaza and Planter Drain
Medium size (12") multi-level domed drain for non pedestrian areas.

1920 – Plaza and Planter Drain
Medium size (12") multi-level domed drain. Upper level drain furnished with grate for pedestrian traffic.

1930 – Planter Area Drain
Wide flange (20" Dia.) lower drain with 15 1/4" Dia. upper level drain designed to accept multiple waterproofing membranes. Grate on upper drain allows installation in pedestrian areas.

1935 – Green Roof Planter Drain Basin
Wide flanged (20" Dia.) body for main green roof system drainage areas. Flange allows acceptance of waterproofing membranes.

Extensive Roof - Traditional Roof Drains

1530 – Scupper Drain
45° Threaded Outlet. Used at junction of roof and parapet.

1560 – Scupper Drain
90° Threaded Outlet. Used at junction of roof and parapet or in metal lined gutters.

1580 – Scupper Drain
Used at specific angles of junction of roof and parapet with connection to outside conductor.

Extensive Roof - Specialized Green Roof Drains

1935 – Green Roof Planter Drain Basin
Wide flanged (20" Dia.) body for main green roof system drainage areas. Flange allows acceptance of waterproofing membranes.

1010 – Large General Purpose Roof Drain
16" Diameter, Low Profile Dome. Used in flat roofs of any construction.
**Extensive Roof - Traditional Roof Drains**

**DX1010 – Large General Purpose Roof Drain**
Wide Flange Body with Secured Dome. For use on promenade roof deck and rooftop recreational areas where traffic bearing roof deck covering is to be applied.

**1070 – Large Special Purpose Roof Drain, Overflow Drain-Standpipe Type**
Used in flat roofs of any construction where a constant height of water is desired on the roof.

**1080 – Large Special Purpose Roof Drain**
Overflow Drains-Water Dam Type. Used in flat roofs of any construction where a constant height of water is desired on the roof.

**Cool Roof - Traditional Roof Drains**

**1005 – Siphonic Roof Drain**
15 1/4" Diameter, Low Profile Dome. For use in engineered Siphonic roof drainage system.

**1010 – Large General Purpose Roof Drain**
16" Diameter, Low Profile Dome. Used in flat roofs of any construction.

**DX1010 – Large General Purpose Roof Drain**
Wide Flange Body with Secured Dome. For use on promenade roof deck and rooftop recreational areas where traffic bearing roof deck covering is to be applied.

**1070 – Large Special Purpose Roof Drain, Overflow Drain-Standpipe Type**
Used in flat roofs of any construction where a constant height of water is desired on the roof.

**1080 – Large Special Purpose Roof Drain**
Overflow Drains-Water Dam Type. Used in flat roofs of any construction where a constant height of water is desired on the roof.

**1530 – Scupper Drain**
45° Threaded Outlet. Used at junction of roof and parapet.

**1580 – Scupper Drain**
Used at specific angles of junction of roof and parapet with connection to outside conductor.

**Specialized Planter Drains**

**1906 – Roof Top Planting Area Drain**
Medium size (12") lower drain body with small (6") surface level drain. Lower body designed to accept waterproofing membrane.

**1910 – Roof Drain with Standpipe, Large Area Planter Type**
Medium size (12") drain body with perforated standpipe designed for large planting areas. Clamping collar will accept waterproofing membrane.
INDEX

Green Roof and Cool Roof Drains ................................................................................................................. 1
What are extensive, intensive, multifunctional, and cool roofs? .................................................................. 1
Features and Benefits of Green Roofs and Cool Roofs .................................................................................. 2
Rainwater Harvesting ........................................................................................................................................ 2
Intensive Roof Design ..................................................................................................................................... 3-4
Extensive Roof Design .................................................................................................................................. 5-6
Cool Roof Design ........................................................................................................................................... 7-8
Product Catalog ............................................................................................................................................... 9-10
Specialized Planter Drains .............................................................................................................................. Back Cover
LEED Credits .................................................................................................................................................. Back Cover

Specialized Planter Drains

Roof top planters may require a specialized green roof drain.

LEED Credits

The installation of a green roof can help a facility earn as many as 13 credits toward LEED certification.

- **Reduced Site Disturbance** - Potential Rating: 1 point.
  This applies to a green roof.

- **Storm-Water Management** - Potential Rating: 1 to 2 points.
  This applies to a green roof.

- **Heat Island Effect** - Potential Rating: 1 point.
  This applies to green and cool roofs.

- **Water-Efficient Landscaping** - Potential Rating: 1 to 2 points.
  This applies to a green roof.

- **Optimize Energy Performance** - Potential Rating: 1 to 8 points.
  This applies to green and cool roofs.

For more information on our products or to contact your local Jay R. Smith Mfg. Co. representative, visit www.jrsmith.com.