

Jay R. Smith Mfg. Co.®

Green Roof and Cool Roof Drains

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

GreenGrid®@Green Roof Systems, Weston Solutions, Inc.

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.



JAY R. SMITH MFG. CO.
DIVISION OF SMITH INDUSTRIES, INC.



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.

Typical Features and Benefits of Green Roofs and Cool Roofs

Stormwater Management – A green roof design works by retaining water, in some cases as much a 75% to 90%, thereby significantly reducing stormwater runoff. The reduced runoff lessens the pressure on drainage facilities and flooding. *This applies to vegetated roofs only.*

Adds Protection for the Waterproofing Layer – The build up above the waterproofing membrane is proven to greatly increase life expectancy by reducing the impact of temperature fluctuations, thereby reducing thermal stress. Green roofs help moderate the roof's temperature swings throughout the year. These temperature extremes in summer and winter can cause the roof to expand and contract, which eventually causes the roof membrane to crack and need repair and replacement. Additionally, ultraviolet light degrades roof membranes not protected by green roofs. *This applies to vegetated roofs only.*

Reduced Energy Consumption and Maintenance – The roof top plants and/or cool roof materials increase the insulation in the building and reduce heat transfer into the building thus lowering utility rates. Green roofs can reduce energy consumption of a building by up to 20%. *This applies to green and cool roofs.*

Reduces Urban Heat Island Effect – This is where there is an increase in ambient temperature in cities because paved areas and buildings absorb more heat from the sun than natural landscape. Green roofs help insulate and shade buildings, and the plants can help cool the atmosphere around them. *This applies to green and cool roofs.*

Other Advantages of Green Roofs–

- Creates a living habitat for wildlife;
- Creates more accessible space in densely populated areas;
- Are more aesthetically pleasing than a traditional roof;
- Reduces noise transmission by upgrading acoustic performance;
- Improves ambient air quality; and
- Contributes to sustainability and enhances local biodiversity.



Rainwater Harvesting

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.

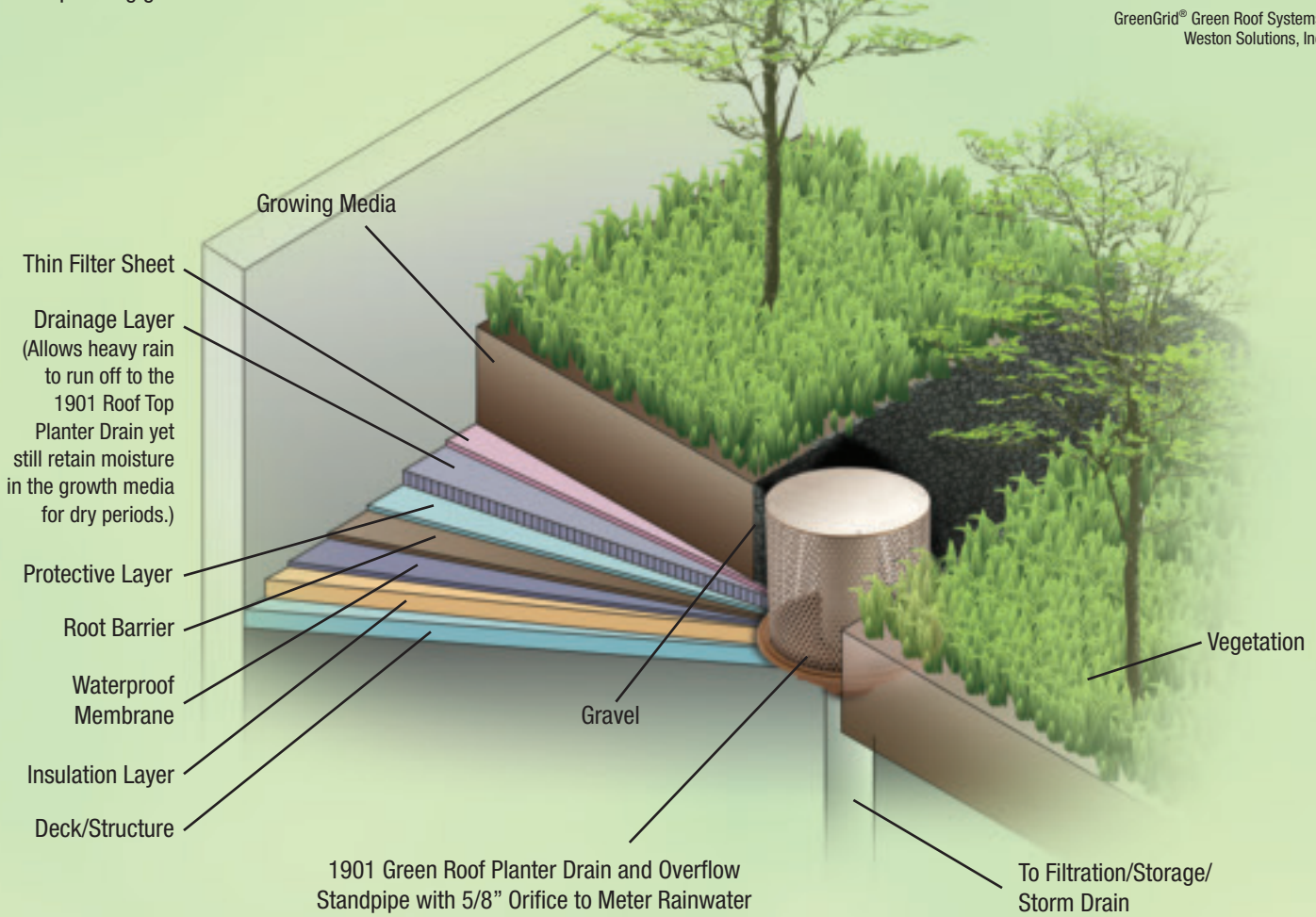
For more information about our rainwater harvesting products, resources, and to find one of our local representatives, visit www.jrsmith.com

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.



GreenGrid® Green Roof Systems,
Weston Solutions, Inc.



Intensive Roof - Specialized Green Roof Drains



1900 – Green Roof Main Area Drain with Standpipe



1901 – Green Roof Planter Drain & Overflow Standpipe

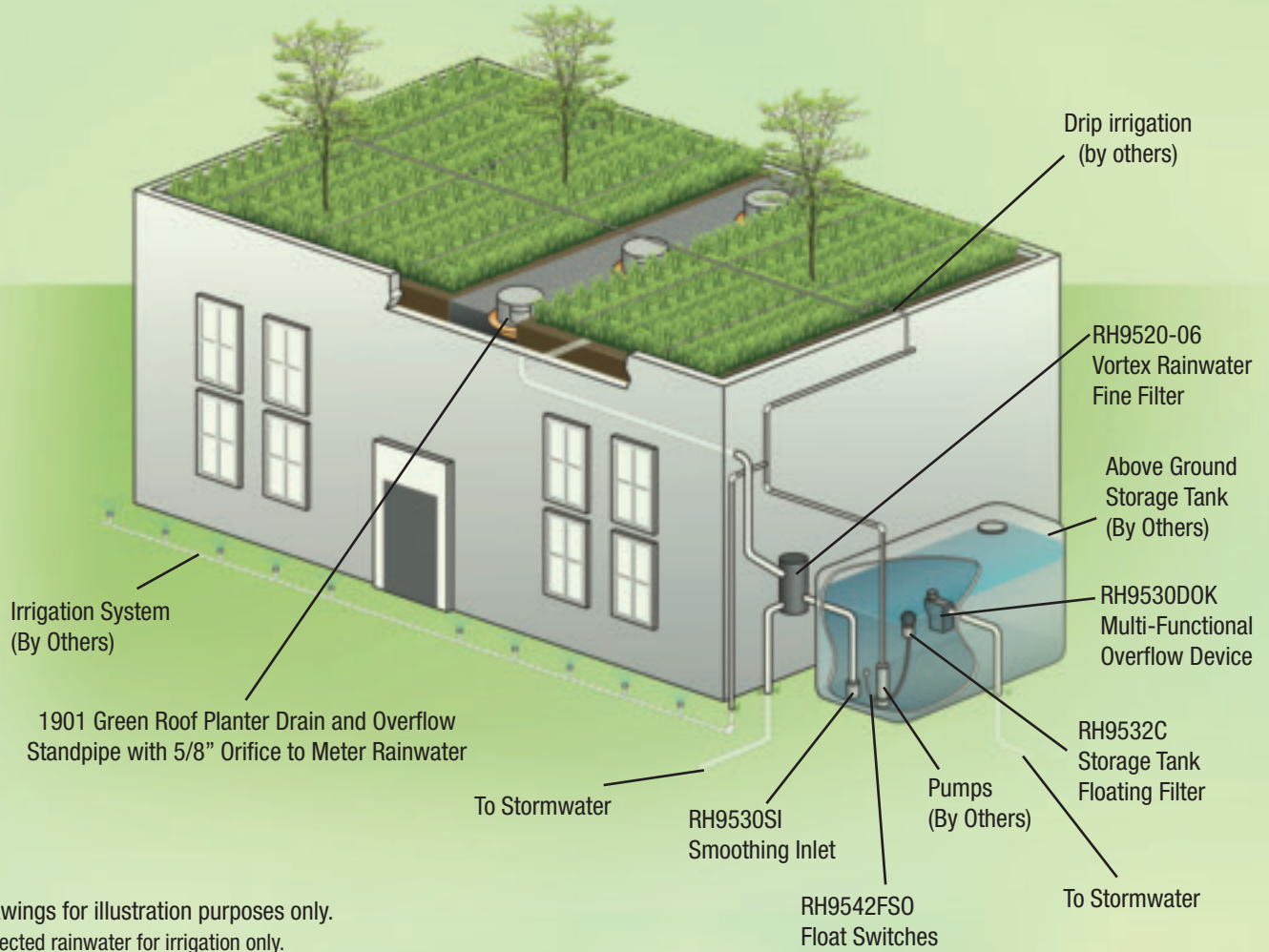


1905 – Multi-Level Planter Area Drain



1909 – Planter Area Drain for Multi-Levels

Intensive Roof Shown with a Rainwater Harvesting and Drip Irrigation System



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

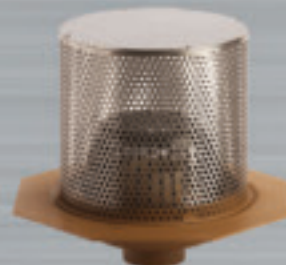
Rainwater Harvesting products in cooperation with WISY AG and Rainwater Management Solutions (RMS)
Jay R. Smith Mfg. Co. Copyright ©2010 All Rights Reserved



**1913 – Stainless Steel Parapet
Green Roof Drain Basin**



**1930 – Planter Area Drain
for multiple waterproofing
membranes**



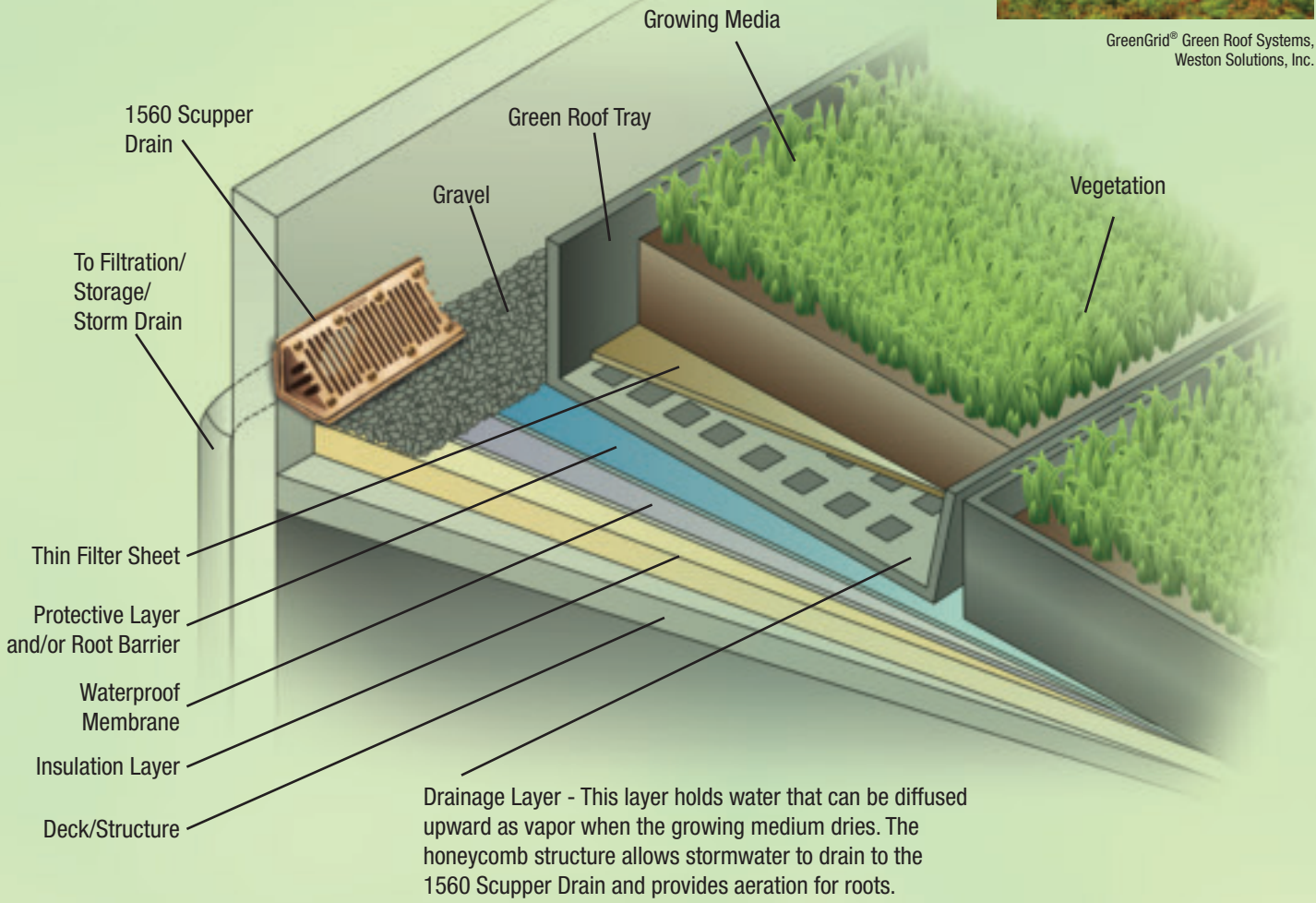
**1935 - Green Roof
Planter Drain Basin with
wide flange body**

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.



GreenGrid® Green Roof Systems,
Weston Solutions, Inc.

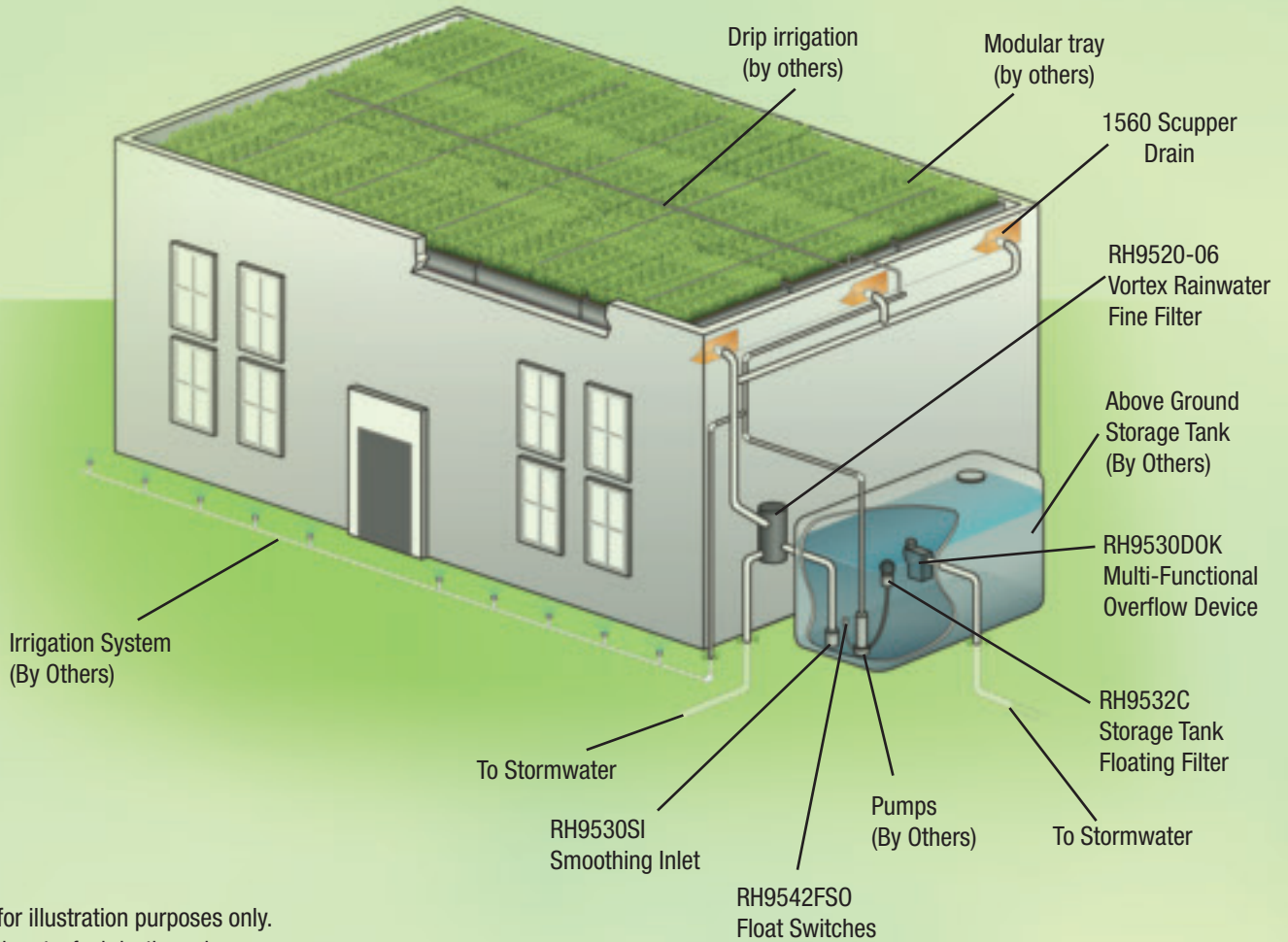


Extensive Roof - Specialized Green Roof Drains

Extensive Roof - Traditional Roof Drains



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)
Jay R. Smith Mfg. Co. Copyright ©2010 All Rights Reserved



1010 – Large General Purpose Roof Drain



DX1010 – Large General Purpose Roof Drain with wide flange body



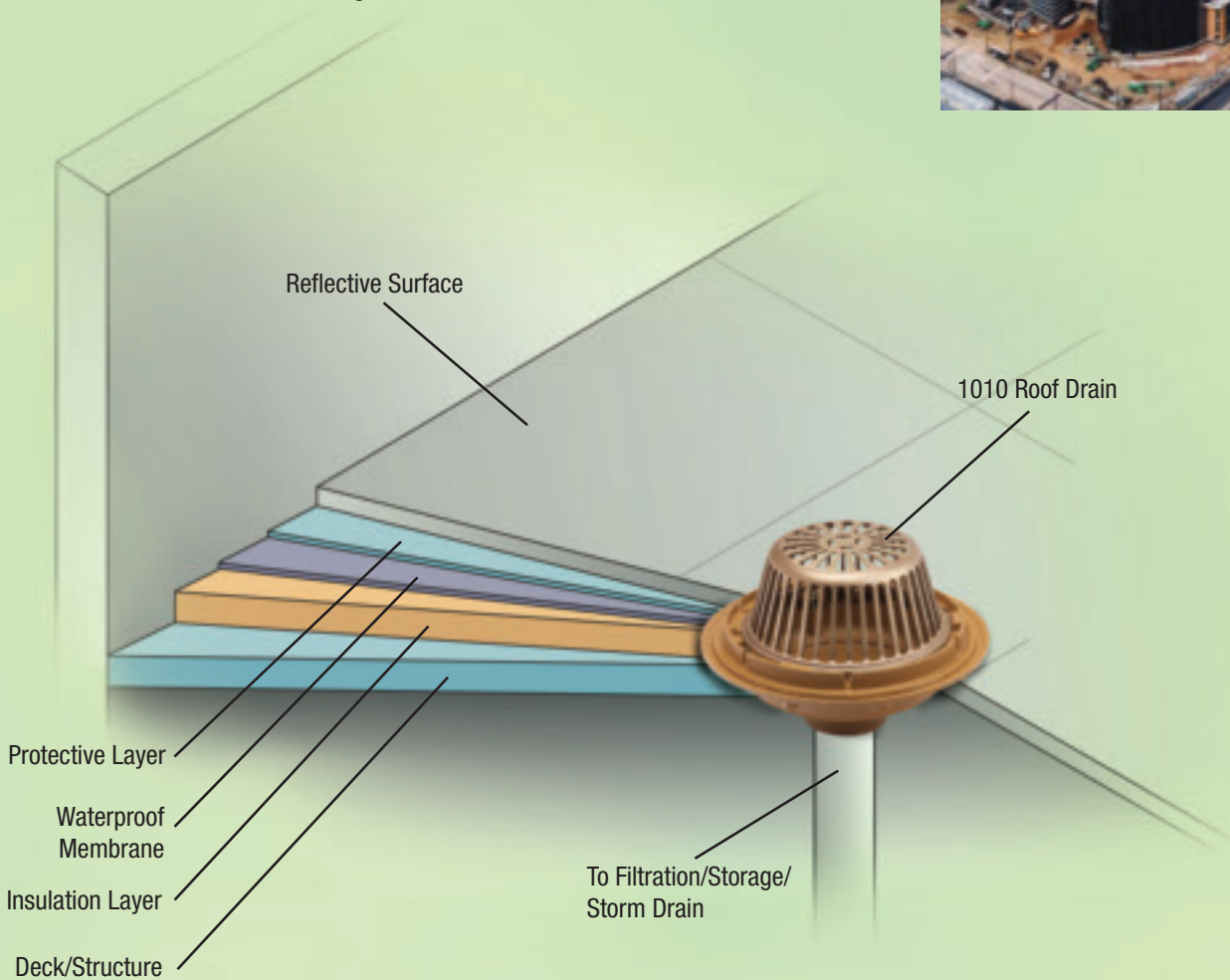
1070 – Large Special Purpose Roof Drain, Overflow Drain-Standpipe Type



1080 – Large Special Purpose Roof Drain

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.



Cool Roof - Traditional Roof Drains



1005 – Siphonic Roof Drain



1010 – Large General Purpose Roof Drain

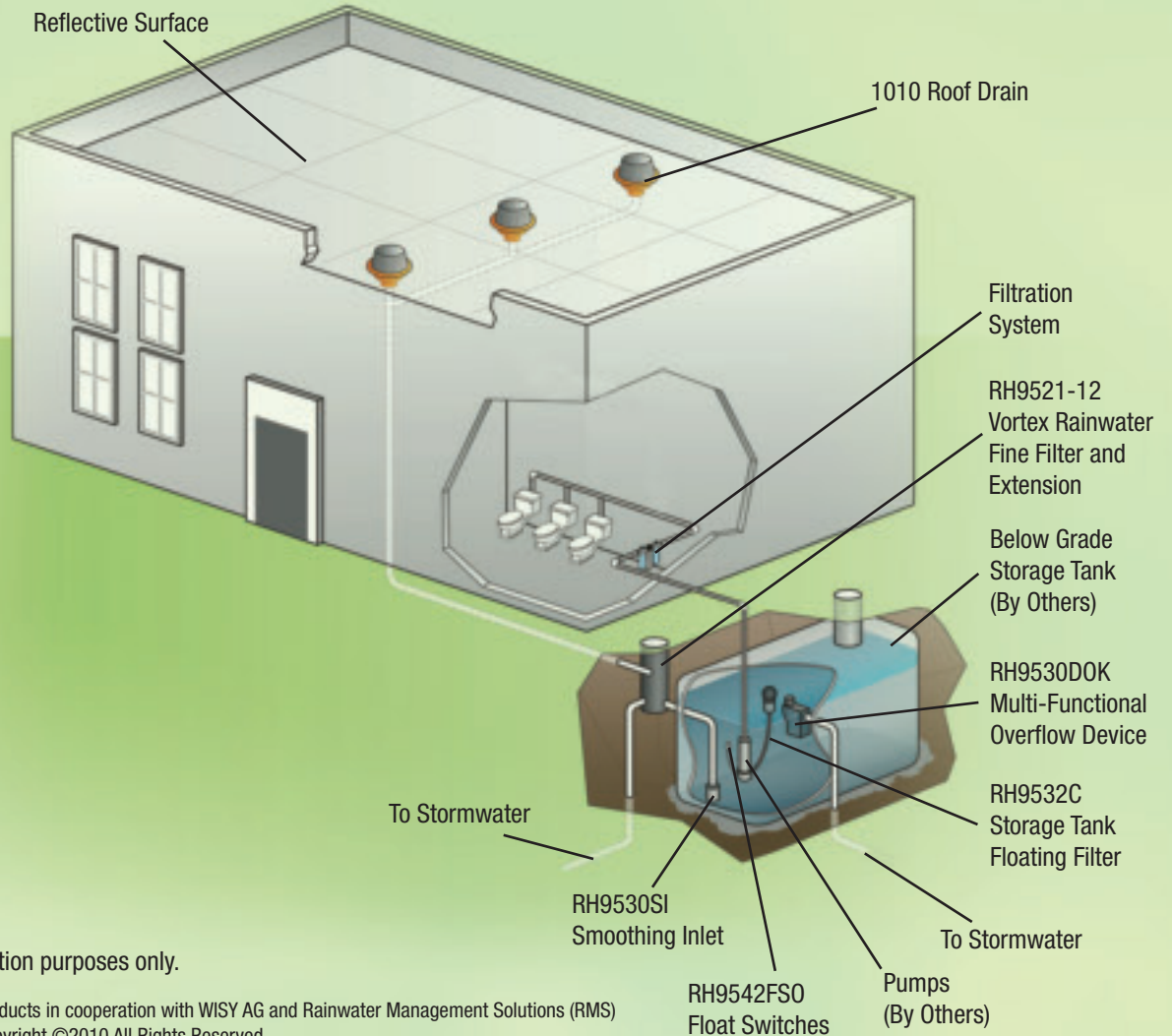


DX1010 – Large General Purpose Roof Drain with wide flange body



1070 – Large Special Purpose Roof Drain, Overflow Drain-Standpipe Type

Cool and/or Traditional Roof Shown with a Rainwater Harvesting System



Drawings for illustration purposes only.

Rainwater Harvesting products in cooperation with WISY AG and Rainwater Management Solutions (RMS)
Jay R. Smith Mfg. Co. Copyright ©2010 All Rights Reserved



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 overflow 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.



1905 – Multi-Level Planter Area Drain
15 1/4" Diameter drain with perforated standpipe. Use in multi-level planting areas requiring sub surface drainage and a small (6" Dia.) planting level drain.



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 - Specialized Green Roof Drains



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 drain. Upper level drain furnished with grate for pedestrian traffic.

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.



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.



1310 – General Purpose Roof and Deck Drain
12" Diameter, Low Profile Dome. Used on flat roof of any construction where a medium sized drain is required.



1330 – General Purpose Roof and Deck Drain
8 1/2" Diameter, Low Profile Dome. Used in flat roofs, gutters or valleys of any construction.



1510 – Scupper Drain
90° Threaded Outlet. Used at junction of roof and parapet.



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 water-proofing 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.

Green Roof and Cool Roof Drains

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.



**1906 – Roof Top Planting
Area Drain**



**1910 –Roof Drain with
Standpipe, Large Area
Planter Type**

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.



This brochure was printed on recycled paper.



SPM 0526
05/10



Mixed Sources
Product group from well-managed forests, controlled sources and recycled wood or fibre

Cert no. SW-COC-003392
www.fsc.org
© 1996 Forest Stewardship Council



JAY R. SMITH MFG. CO.
DIVISION OF SMITH INDUSTRIES, INC.
POST OFFICE BOX 3237
MONTGOMERY, ALABAMA 36109-0237 (USA)
TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com

