

BLU-SMART

System 180: Smart Stormwater Retention Roof Applications



SUSTAINABLU

ON STRUCTURE STORMWATER MANAGEMENT SYSTEMS

TABLE OF CONTENTS

Blu-Smart Introduction

Blu-Smart Retention/Flow Control System Overview [Page 3](#)

Blu-Smart Cost-Benefit Analyses:

 Blu-Smart vs. Underground Stormwater Construction Costs: [Page 4](#)

 Blu-Smart Percentage of Total Precipitation Managed: [Page 5](#)

 Blu-Smart vs. Other Stormwater BMP's Maintenance Costs: [Page 5](#)

Product Data Sheets

Blu-Smart - All-Climate Master Valve [181-ACH](#) [Page 6-7](#)

Blu-Smart - Warm-Weather Climate Master Valve [181-WCH](#) [Page 8-9](#)

Blu-Smart - Water Level Sensor Valve [182-WLS](#) [Page 10-11](#)

Blu-Smart - Satellite Valve [183-BVA](#) [Page 12-13](#)

Blu-Smart - Constant Monitoring Leak Detection [184-SMA](#) [Page 14-15](#)

Blu-Smart - Dashboard [185-SMD](#) [Page 16-17](#)

Blu-Smart - Assembly Standard Details

Conventional Roof - Drain Assembly [Page 18](#)

Conventional Roof - Scupper Assembly [Page 18](#)

Inverted Roof - Drain Assembly [Page 19](#)

Inverted Roof - Scupper Assembly [Page 19](#)

Planning & Installation Guides

Blu-Smart Planning Guidelines [Page 20](#)

Blu-Smart Installation Guidelines [Page 21](#)

Operations & Maintenance (O&M)

Blu-Smart Maintenance Guidelines [Page 22-23](#)

Warranty

Blu-Smart Materials Limited Warranty [Page 24](#)

Specification

Per roofing manufacturer's requirements, contact SustainABLU,LLC for further information

BLU-SMART RETENTION/FLOW CONTROL SYSTEM OVERVIEW

Blu-Smart is not that different from other Stormwater BMP's; it's just Smart in numerous ways that other BMP's are not. Blu-Smart is an **Elevated Retention/Detention Pond** that is placed on structure. Functionally, it operates fairly similar to how a normal Retention/Detention pond operates. It all starts with precipitation occurring. That precipitation flows to the pond and the pond retains and/or slows down the stormwater entering sewer systems. The only difference is that Blu-Smart's pond is on an approved "waterproofing" surface that is designed to "retain" ponding water; think clay liner of a retention pond. Yes, there are certain requirements that make this possible, but Blu-Smart has figured that all out:

- Approved by numerous waterproofing manufacturers
- Constant monitoring leak detection satisfying the most scrutinous roof warranties
- Meets **ALL** Health and Safety Codes for ponding water

Blu-Smart optimizes stormwater management. This is especially so in urban and dense communities that lack space for the common retention/detention pond. Meeting **ALL** volume stormwater management requirements, out of the box, the system manages roof retention depths of 2", 4", 6", 8" (Custom heights available). In dense urban areas or where land is sparse, Blu-Smart provides the safest and most cost competitive means to manage volume stormwater.

- 38-64% less than underground cisterns
- 26-75% less than permeable/porous pavements where low infiltrating or clay soils exist
- 31-48% less than even **Sustainablu's** high stormwater retention green roofs

Blu-Smart's maintenance costs are also extraordinarily low. Although maintenance of Blu-Smart is required, it is a fraction of the cost of other BMP's. It is also money well spent. The roof of your building is an asset, if you think about it or not. It keeps your building dry and is supposed to for 20 years or more if you purchase a good roofing/waterproofing system. Maintain it and it will last even longer. Blu Smart's maintenance program is about as simple as it gets.

- Blu-Smart is self monitoring with a Dashboard showing real-time roof conditions
- Physical maintenance requirement is two visits a year by your roofing installer
- An easy to fill out checklist is submitted and this maintains warranty

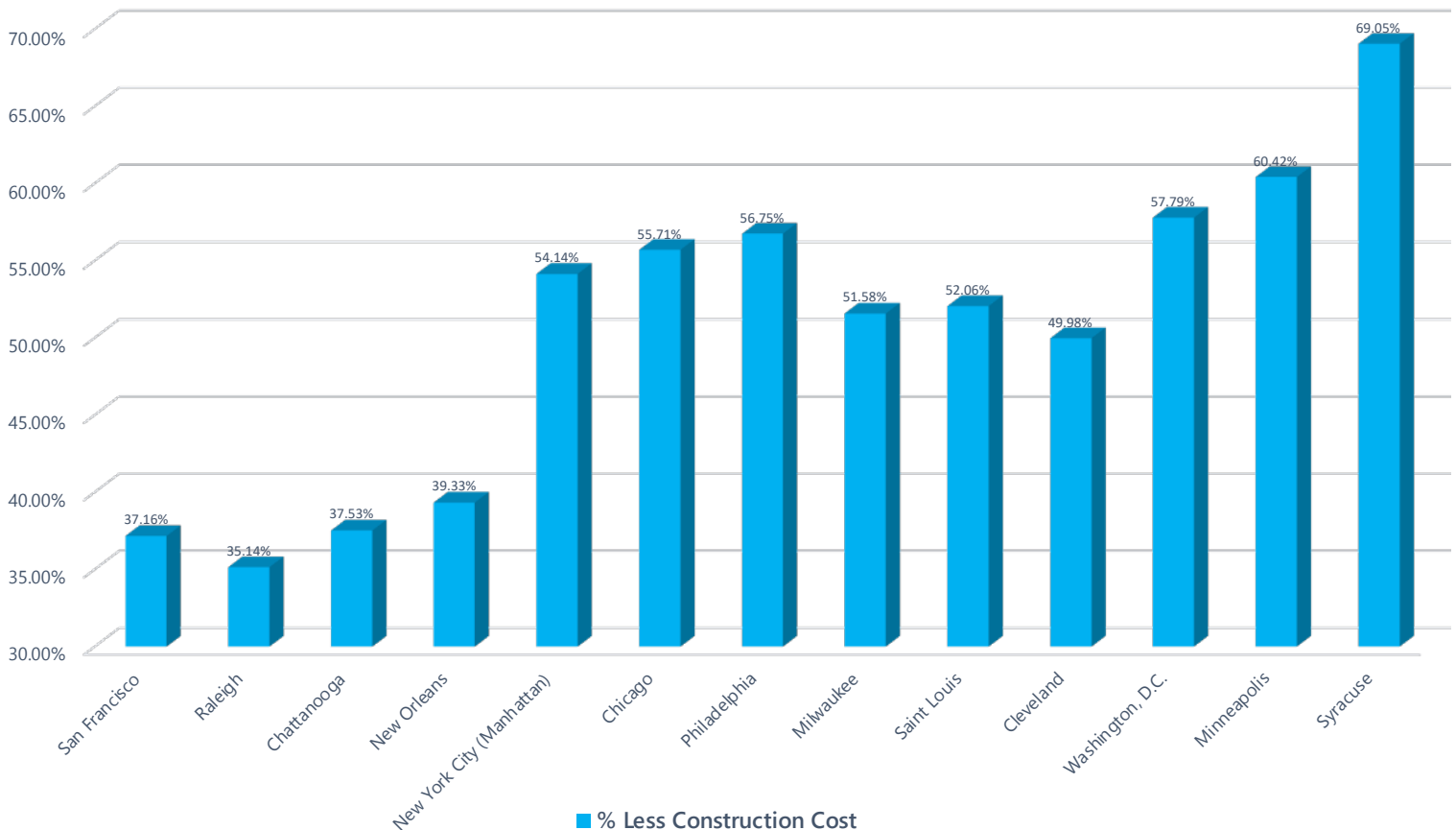
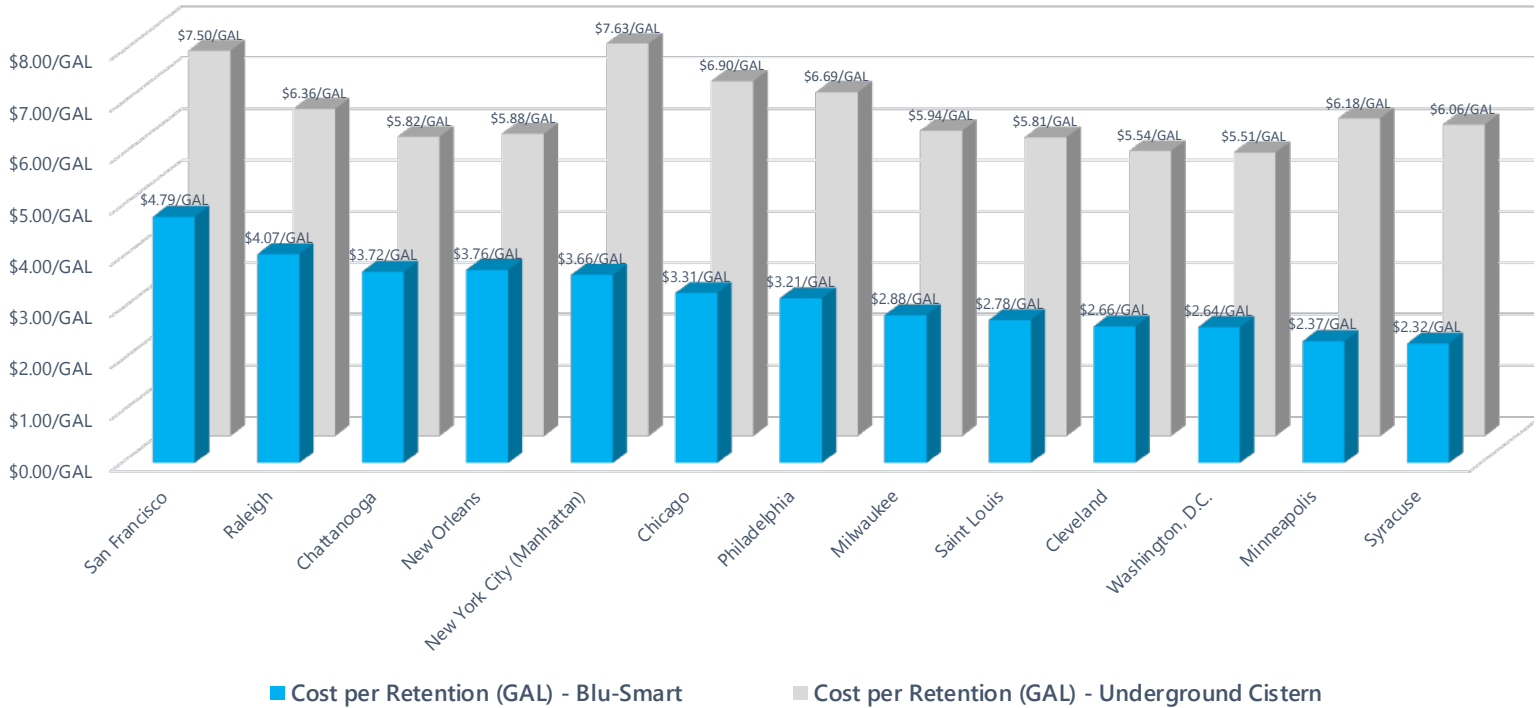
Being so simple, the maintenance of Blu-Smart eclipses the maintenance of all other BMP's.

- 15-35% less than bioswales
- 10-60% less than permeable/porous pavements
- 55-68% less than green roofs

On the next page of this technical guide we provide further data and charts of the multiple benefits of Blu-Smart in comparison to other stormwater BMP's. Please read through the entire guide and learn more about Blu-Smart options, planning, installation and our warranty.

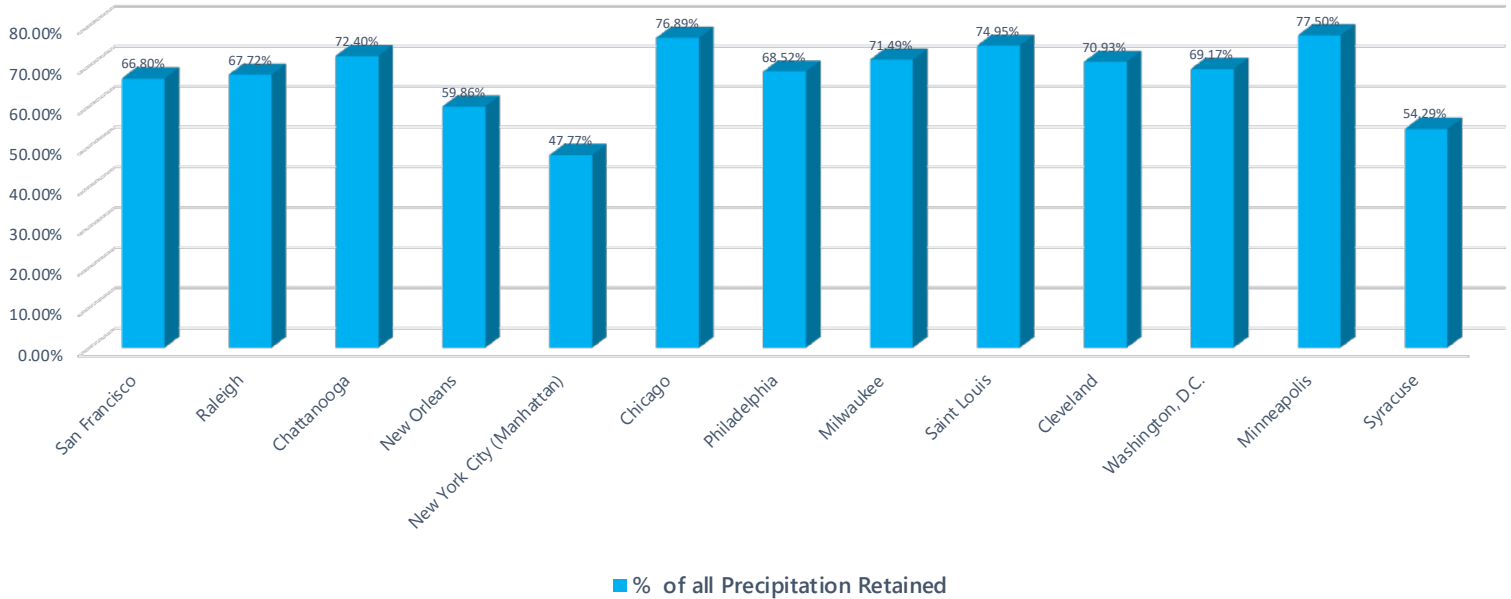
BLU-SMART COST-BENEFIT ANALYSIS

BLU-SMART VS. UNDERGROUND CISTERN CONSTRUCTION COSTS

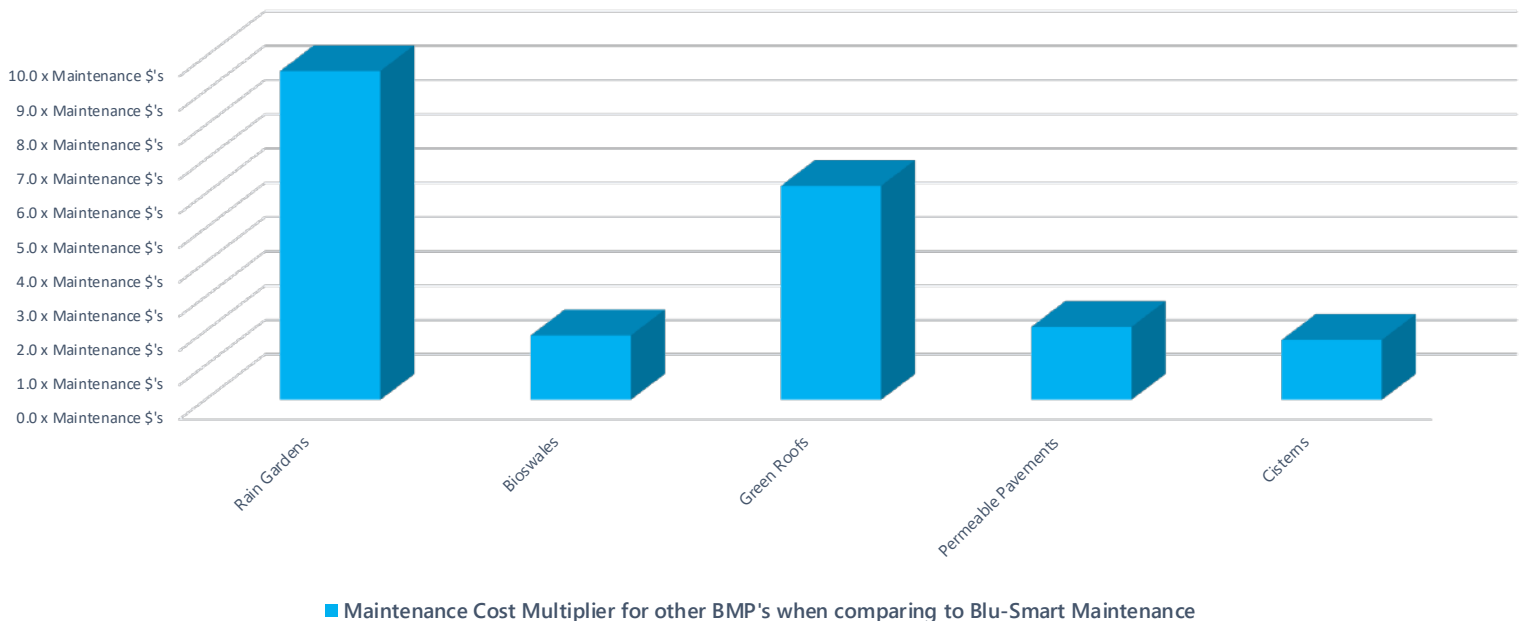


BLU-SMART COST-BENEFIT ANALYSIS

BLU-SMART PERCENTAGE OF TOTAL PRECIPITATION MANAGED



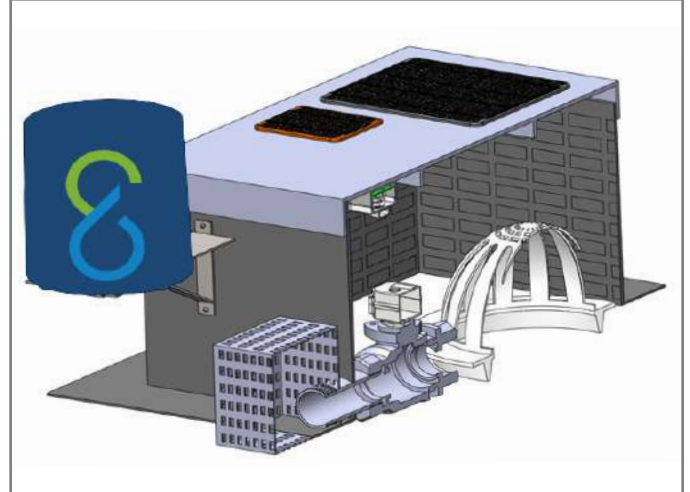
BLU-SMART VS. OTHER STORMWATER BMP'S MAINTENANCE COSTS



BLU-SMART - ALL CLIMATE MASTER VALVE

The Blu-Smart – All Climate Master Valve is the brain for Blu-Smart retention/flow control systems and may be used in all climates. From the All-Weather Master Valve, real time weather data and volume storage availability is transmitted to the main server. The data is deciphered to open and close valves and/or manage flow rate. The All-Climate system also offers a full array of atmospheric data that may be shared with commissioning agencies for compliance.

- Solar powered
- Wireless interface
- Measures and reports all atmospheric conditions
- Regulates stormwater volume detained and flow rate
- Integrated overflow integral to unit



• Special order product



• Per Unit



• Unlimited Satellite valves per control

TECHNICAL DATA

Materials:

- Stainless Steel and Aluminum

Power:

- DC (solar)

Unit Dimensions:

- 18" x 18" x 12" (26" x 26" x 12" with flanges)

Overflow heights available:

- 2", 4", 6", 8" (Custom heights available)

Valve Sizes Available:

- 2", 3", 4"

Operating Temperatures:

- To -20°F (-28°C)

Maximum Retention:

- Up to 12" (7.48 GAL/SF - 1 CF/SF)

Maximum Flow Rate:

- Programmable to local code requirements

Standard Kit:

- Drain Box & Cover
- Main Control Box
- Automated Valve
- Liquid Level Sensor
- Atmospheric Controls

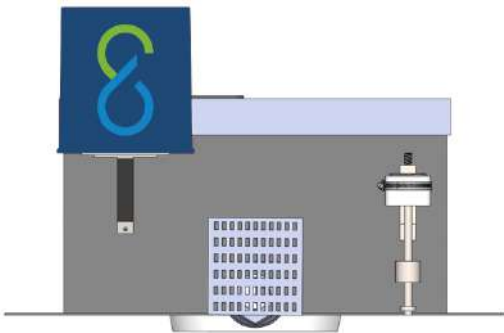
Additional Components & Accessories:

- Constant Monitoring Leak Detection
- Water Level Sensor Valve
- Satellite Valves
- Dashboard
- Mobile Device Application
- Building Operating System Integration

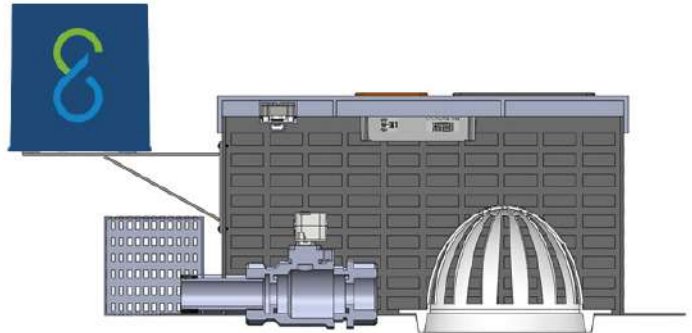
Product #

181-ACH

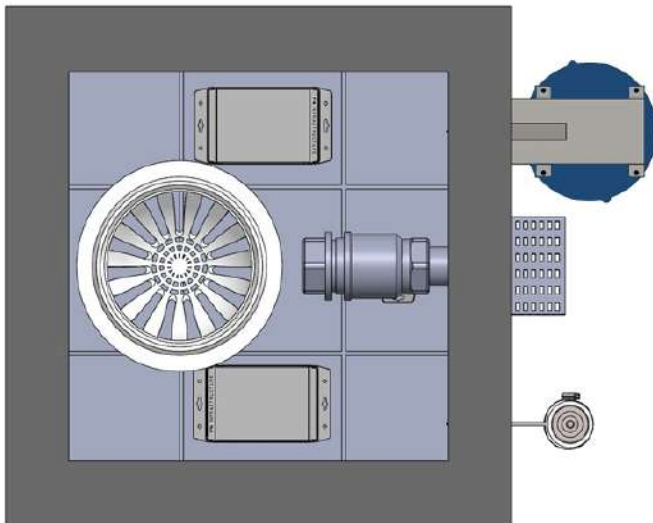
Front View



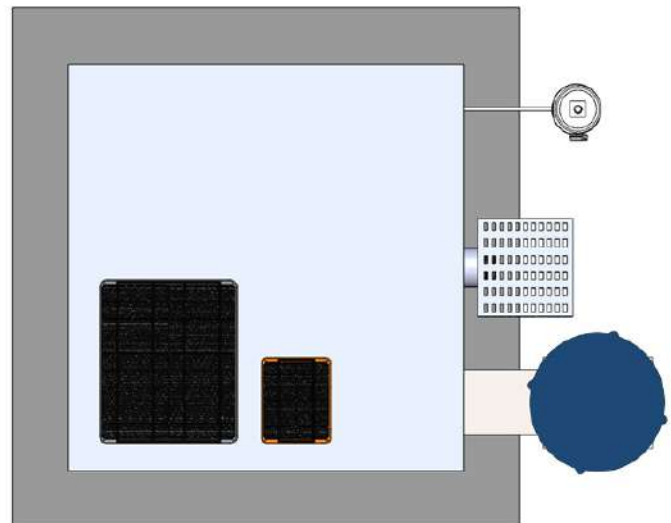
Section View



Bottom View



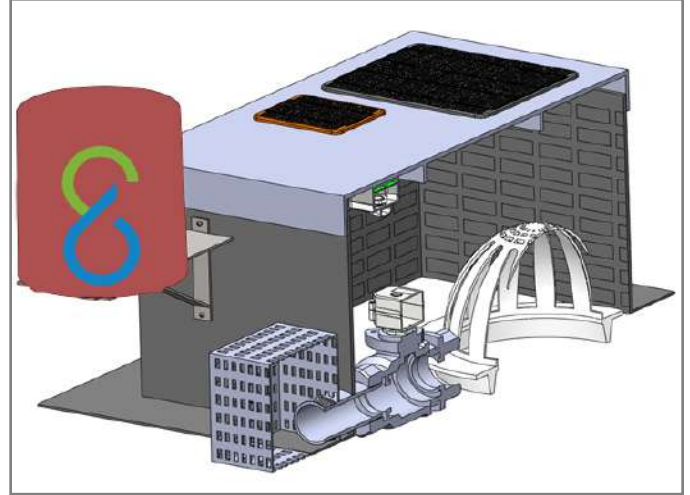
Top View



BLU-SMART - WARM WEATHER CLIMATE MASTER VALVE

The Blu-Smart – Warm-Weather Climate Master Valve is the brain for Blu-Smart retention/flow control systems operating in warm climates. At the Warm-Weather Master Valve, real time weather data and volume storage availability is transmitted to the main server. The data is deciphered to open and close valves and/or manage flow rate. The Warm Weather system also offers a limited array of atmospheric data that may be shared with commissioning agencies for compliance.

- Solar powered
- Wireless interface
- Measures and reports precipitation and volumes managed
- Regulates stormwater volume retained and flow rate
- Integrated overflow integral to unit
- Operates to temperatures as low as 20°F (-7°C)



• Special order product



• Per Unit



• Unlimited Satellite valves per control

TECHNICAL DATA

Materials:

- Stainless Steel and Aluminum

Power:

- DC (solar)

Unit Dimensions:

- 18" x 18" x 12" (26" x 26" x 12" with flanges)

Overflow heights available:

- 2", 4", 6", 8" (Custom heights available)

Valve Sizes Available:

- 2", 3", 4"

Operating Temperatures:

- To 20°F (-7°C)

Maximum Retention:

- Up to 12" (7.48 GAL/SF - 1 CF/SF)

Maximum Flow Rate:

- Programmable to local code requirements

Standard Kit:

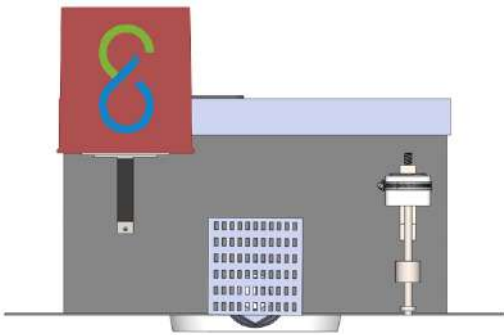
- Drain Box & Cover
- Main Control Box
- Automated Valve
- Liquid Level Sensor
- Atmospheric Controls

Additional Components & Accessories:

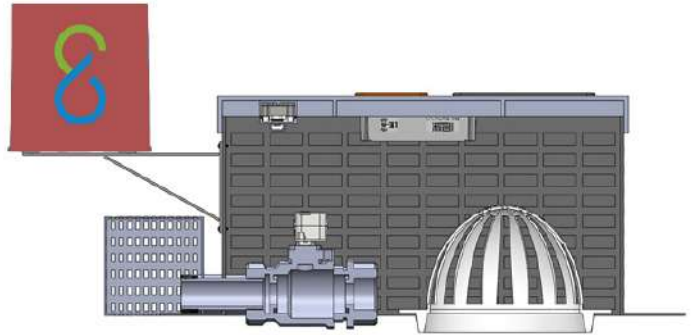
- Constant Monitoring Leak Detection
- Water Level Sensor Valve
- Satellite Valves
- Dashboard
- Mobile Device Application
- Building Operating System Integration

Product # 181-WCH

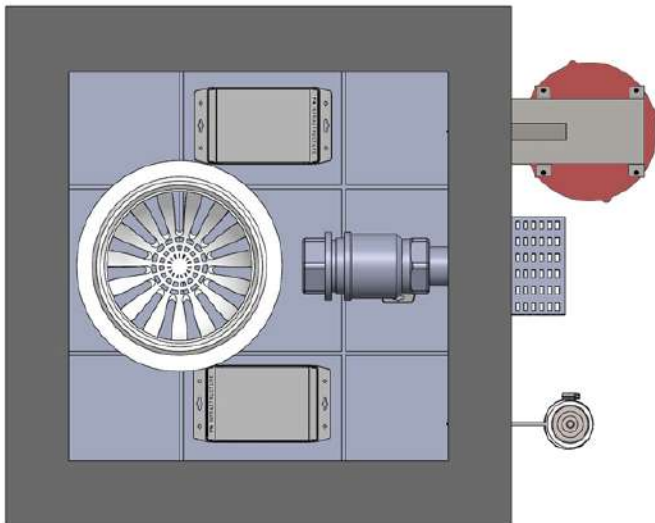
Front View



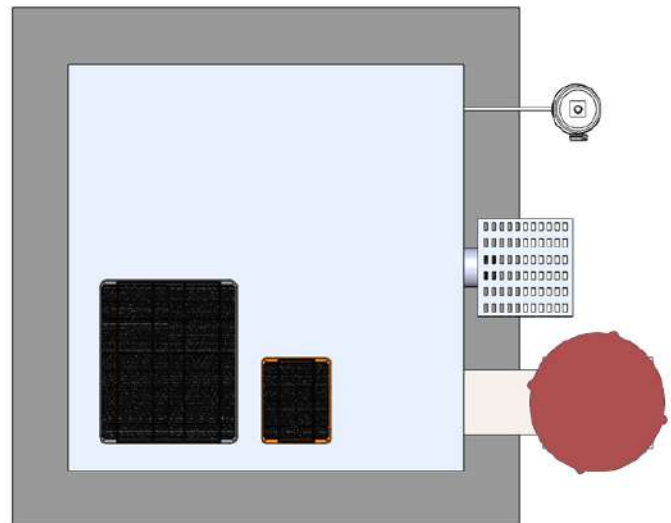
Section View



Bottom View



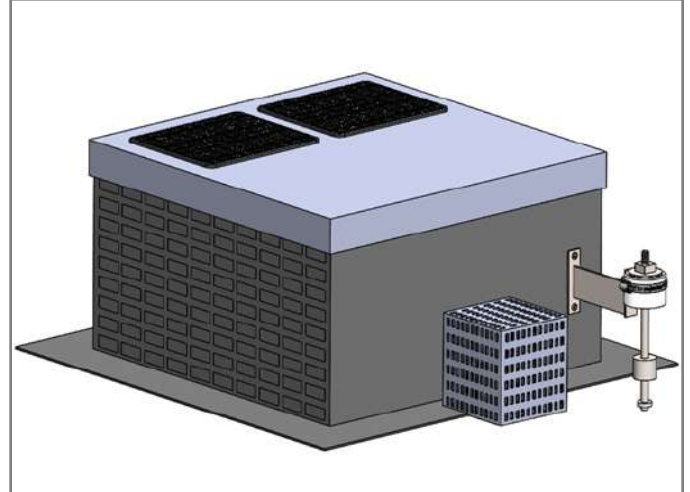
Top View



BLU-SMART - WATER LEVEL SENSOR VALVE

The Blu-Smart – Water Level Sensor Valve is used in conjunction with the appropriate Master Valve when there are multiple roof levels being managed. The Water Level Sensor Valve provides specific data to its roof's retention level that is transmitted to the server. This data is deciphered to open and close valves and/or manage flow rate specific to the conditions of each roof level surface integrated into a Blu-Smart Retention/Flow Control System.

- Solar powered
- Wireless Interface
- Measures and reports all atmospheric conditions
- Regulates stormwater volume detained and flow rate
- Integrated overflow integral to unit
- Operates down to -20°F (-28°C)



• Special order product



• Per Unit



• Unlimited Satellite valves per control

TECHNICAL DATA

Materials:

- Stainless Steel and Aluminum

Power:

- DC (solar)

Unit Dimensions:

- 18" x 18" x 12" (26" x 26" x 12" with flanges)

Overflow heights available:

- 2", 4", 6", 8" (Custom heights available)

Valve Sizes Available:

- 2", 3", 4"

Operating Temperatures:

- To -20°F (-28°C)

Maximum Retention:

- Up to 12" (7.48 GAL/SF - 1 CF/SF)

Maximum Flow Rate:

- Programmable to local code requirements

Standard Kit:

- Drain Box & Cover
- Main Control Box
- Automated Valve
- Liquid Level Sensor

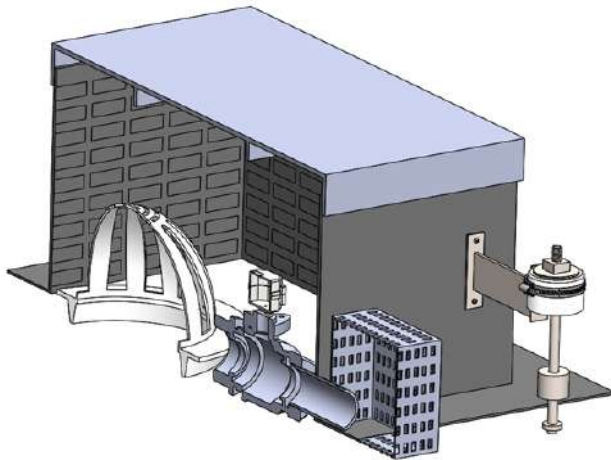
Additional Components & Accessories:

- Constant Monitoring Leak Detection
- Master Valve
- Satellite Valves
- Dashboard
- Mobile Device Application
- Building Operating System Integration

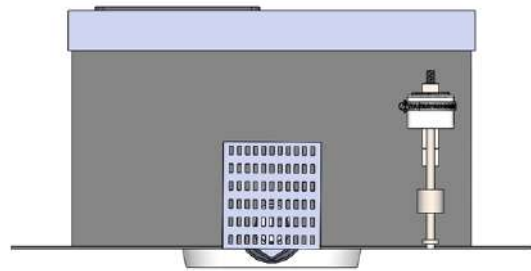
Product #

182-WLS

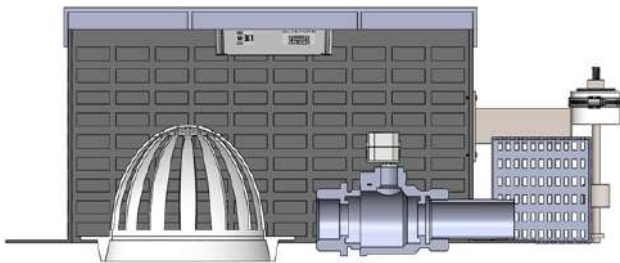
Isometric Section



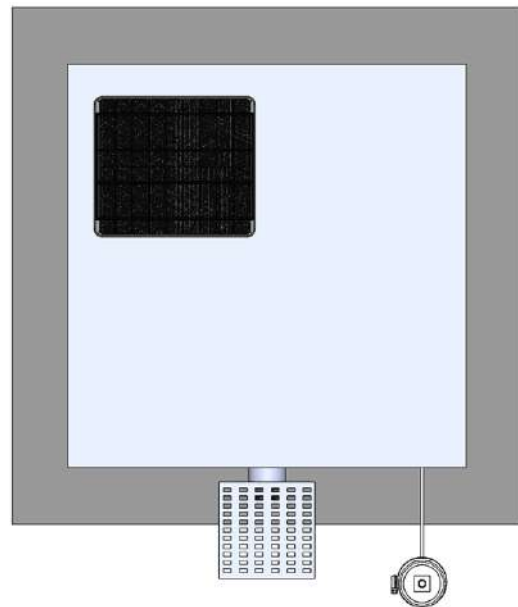
Front View



Section View



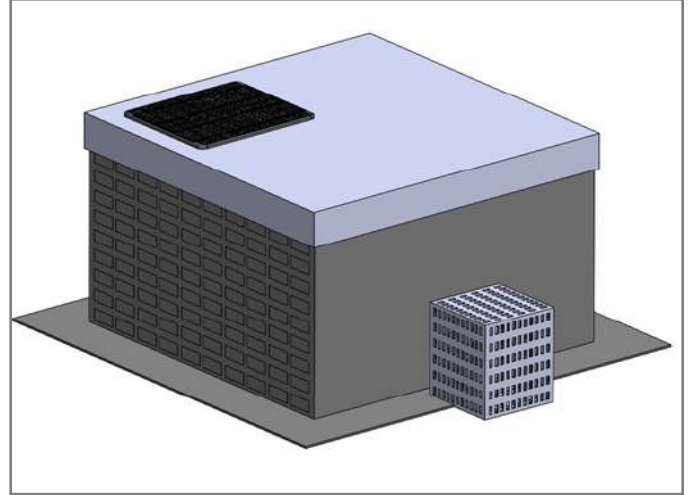
Top View



BLU-SMART - SATELLITE VALVE

Blu-Smart – Satellite Valves regulate the volume of stormwater retained and/or the management of flow rates from the roof surface(s). Satellite Valves are controlled by data accumulated from a Master Valve and/or a Water Level Sensor Valve (Multiple Roof Levels Only).

- Solar Powered
- Wireless interface
- Regulates stormwater volume detained and flow rate
- Integrated overflow integral to unit



• Special order product



• Per Unit



• Device is dependant on Master and/or Water Level Sensor Valve

TECHNICAL DATA

Materials:

- Stainless Steel and Aluminum

Power:

- DC (solar)

Unit Dimensions:

- 18" x 18" x 12" (26" x 26" x 12" with flanges)

Overflow heights available:

- 2", 4", 6", 8" (Custom heights available)

Valve Sizes Available:

- 2", 3", 4"

Operating Temperatures:

- To -20°F (-28°C)

Maximum Retention:

- Up to 12" (7.48 GAL/SF - 1 CF/SF)

Maximum Flow Rate:

- Programmable to local code requirements

Standard Kit:

- Drain Box & Cover
- Main Control Box
- Automated Valve

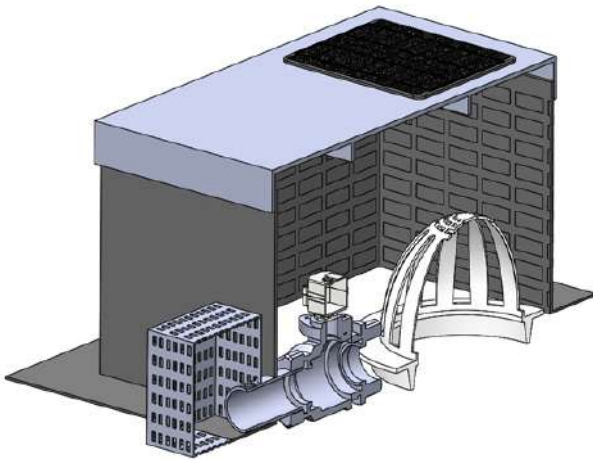
Additional Components & Accessories:

- Constant Monitoring Leak Detection
- Master Valves
- Water Level Sensor Valve
- Remote Desktop Controls
- Mobile Device Application
- Building Operating System Integration

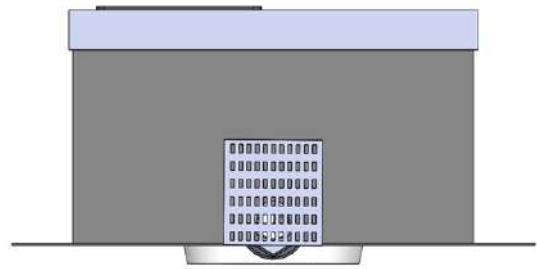
Product #

183-BVA

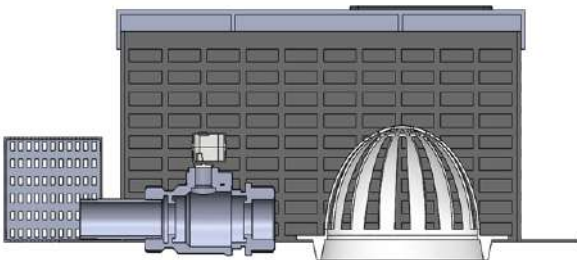
Isometric Section



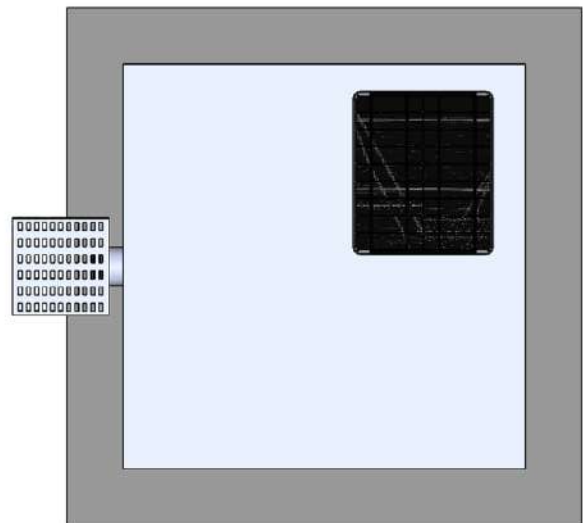
Front View



Section View



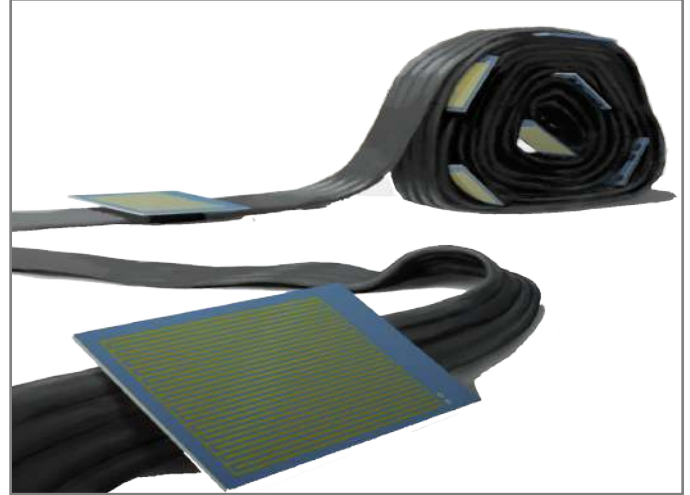
Top View



BLU-SMART - CONSTANT MONITORING LEAK DETECTION

Blu-Smart – Constant Monitoring Leak Detection constantly monitors the integrity of the water tightness of the roofing and/or waterproofing system. This product communicates directly to the Blu-Smart Dashboard on the water tightness of the roofing and/or waterproofing system. If there is ever a notification that a leak is occurring, the system server will open all Blu-Smart Valves to drain all retained water from the roofing/waterproofing surface.

- Detects leaks immediately
- Flushes Blu-Smart system at 1st sign of a leak
- Provides continuous monitoring
- 24/7 Cloud Based access to integrity data



• Special order product



• Per Unit



• Integrated into Blu-Smart Controls

TECHNICAL DATA

Materials:

- PVC Coated Wire & Titanium Dioxide Sensors

Length:

- 328 feet (100 meter)

Coverage per Length:

- Approximately 1,500 SF of Roof Area

Power Source Requirement:

- 100-240V, 50-60Hz AC

Wired Internet Connection (Leak Detection Only):

- 10/100/1000 Mbps LAN, such as a hub or a switch

Wireless Internet Connection (Complete Blu-Smart System):

- 802.11b/g-compliant device

Optimal Operating Temperature (in insulated condition):

- 68°F (20°C)

Operating Temperature (Min/Max):

- -40°F (-40°C) to 158°F (70°C)

Standard Kit:

- Sensor Cable
- Connection Cable
- Communication Unit
- Dashboard

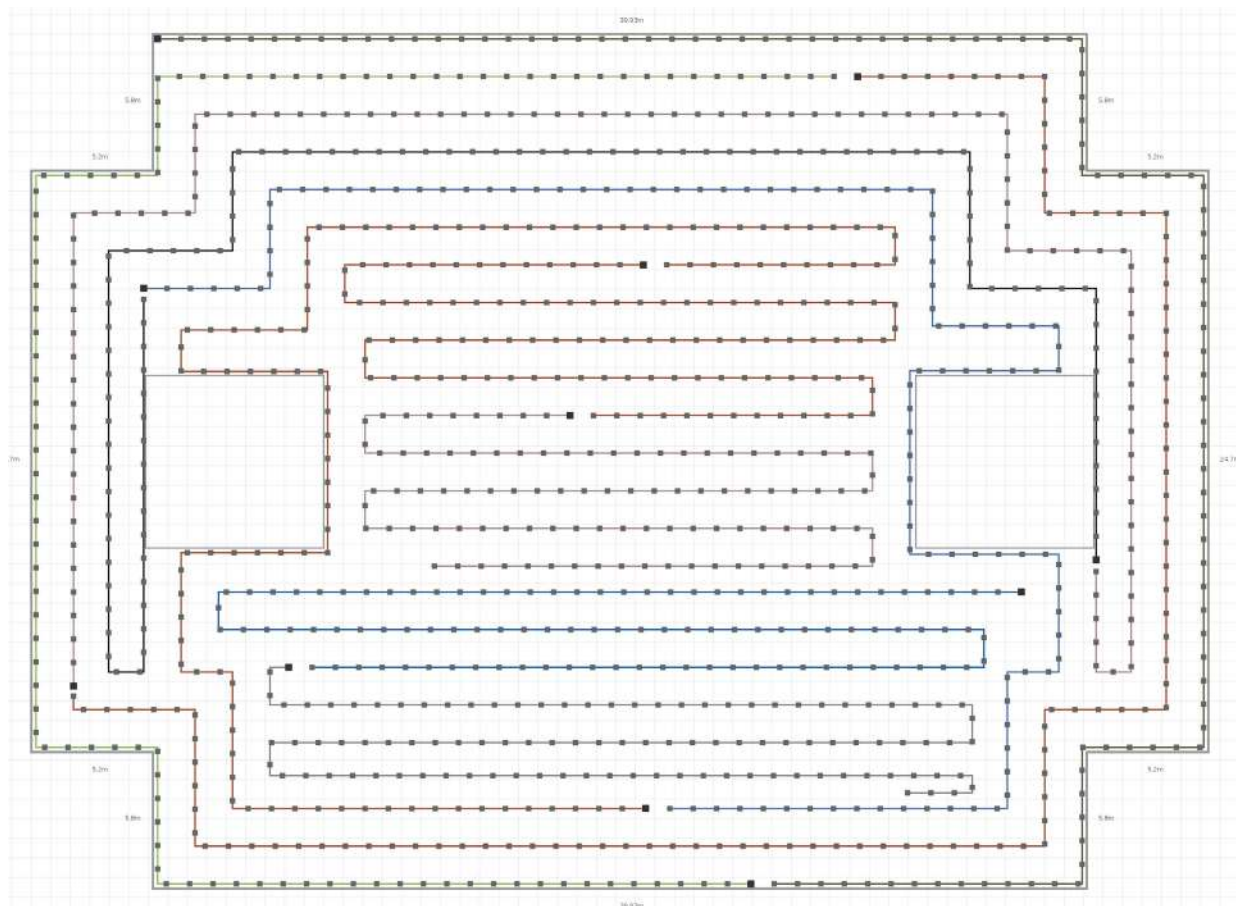
Additional Components & Accessories:

- Master Valve
- Water Level Sensor Valve
- Satellite Valves
- Mobile Device Application
- Building Operating System Integration

Product

St. Patrick's Center, 800 Tucker Boulevard, St. Louis, MO 63101

Zone	Article #	Control Device #	Connection #	Activation Code
Zone 1	SC018_100	CU1	4	0ur80EfHWX
Zone 2	SC018_100	CU1	3	0ur80EfHWX
Zone 3	SC018_100	CU1	2	0ur80EfHWX
Zone 4	SC018_100	CU1	1	0ur80EfHWX
Zone 5	SC018_100	CU2	4	BqO5Otm5pQ
Zone 6	SC018_100	CU2	3	BqO5Otm5pQ
Zone 7	SC018_100	CU2	2	BqO5Otm5pQ
Zone 8	SC018_100	CU2	1	BqO5Otm5pQ
Zone 9	SC018_100	CU3	3	WqBGmBduL9
Zone 10	SC018_100	CU3	2	WqBGmBduL9
Zone 11	SC018_100	CU3	1	WqBGmBduL9



BLU-SMART DASHBOARD

Blu-Smart – Dashboard provides historic and realtime data of the stormwater management efficiencies of the Blu-Smart System. Via a login and password encrypted website and an application that can be integrated into building management software, users are able to reap the full benefits of Blu-Smart. Whether you need to verify the total stormwater managed on your project to receive stormwater billing reductions, confirm to your stormwater utility or municipality that you are meeting your stormwater management requirements, sell stormwater credits or receive grant dollars for your project, the Blu-Smart Dashboard provides all the verification you will need.

The Dashboard provides the data how you need it, when you need it. The Dashboard is available on three platforms: Web Browser, Mobile Application, and through integration with your building operating system. The Dashboard is easy to navigate and your layout is able to be designed to meet your specific needs. Full integration is available with our Constant Monitoring Leak Detection System that provides a single place that both manages and informs you on how the system is performing.

■ Real Time Monitoring

■ Historic Data

■ Downloadable

■ Customizable for the data you need

■ Building Operating Systems API integration available



• Special order product



• Per Unit



• Provides data for all Blu-Smart components

TECHNICAL DATA

Wired Internet Connection:

- 10/100/1000 Mbps

Wireless Internet Connection (Complete Blu-Smart System):

- 802.11b/g-compliant device

Dashboard Options:

- Web Based
- Application
- API Development for Building Operating Systems

Application User Consoles:

- HTML
- Android
- iOS
- Symbian
- Tizen
- Windows phone OS

Conditions Tracked:

- Temperature (Optional)
- Humidity (Optional)
- Wind Speed (Optional)
- Barometric Pressure (Optional)
- Precipitation to date
- Storage Capacity
- Total Stormwater Managed
- Stormwater Managed Year-to-date
- Total Running % of Stormwater Managed
- % of Stormwater Managed Year-to-date
- Total Stormwater Released
- Stormwater Released Year-to-date
- Flow Rates at Release
- Releases during precipitation events
- Water tightness of waterproofing systems

Product #

185-SMD



[Systems](#) ▾ [Products](#) ▾ [About](#) ▾ [News & Media](#) ▾

800-333-5406

THE LAST HOTEL - SAINT LOUIS, MO

[GENERATE REPORT](#)

LATITUDE: 38°37'57"N
LONGITUDE: 90°12'01"W

SYSTEM CHARACTERISTICS

RETENTION AREA: 13,956 SF	PRECIPITATION/YEAR 375,224 GALLONS
AVERAGE RETENTION DEPTH : 3.43 INCHES	PROJECTED MANAGED PRECIPITATION/YEAR: 305,924 GALLONS
RETENTION VOLUME: 29,812 GALLONS	PROJECTED % MANAGED PRECIPITATION/YEAR: 82%
LEAK DETECTION: DRY	



CURRENT CONDITIONS

THURSDAY MAY 5, 2022, 18:15 CDT

TEMPERATURE

62.6°F

HUMIDITY

72.42%

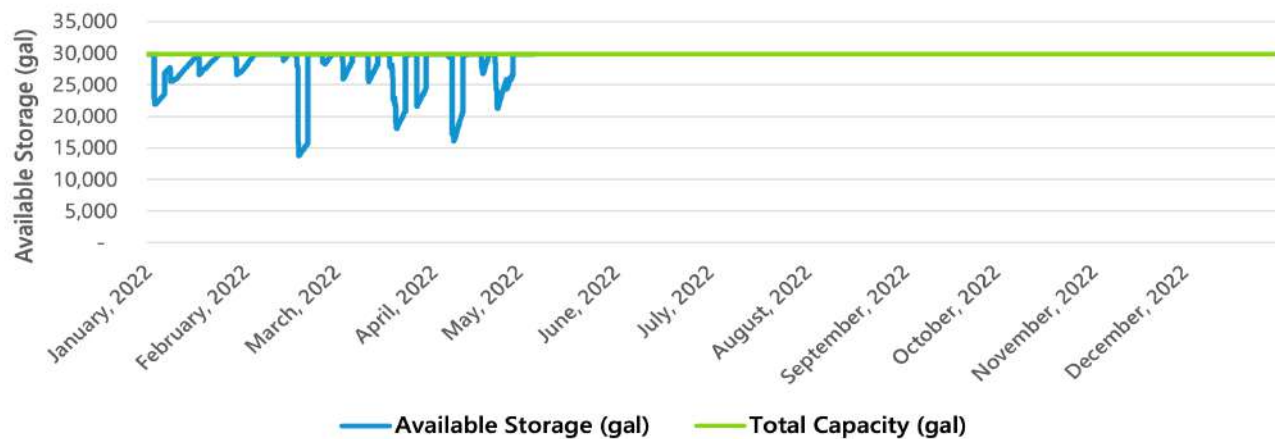
WIND SPEED

NW 8 Mph

PRESSURE

29.83 IN HG

Year 2022: Daily Available Storage to date



Precipitation to Date

124,944 Gallons

Managed to Date

89,815 Gallons

Released to Date

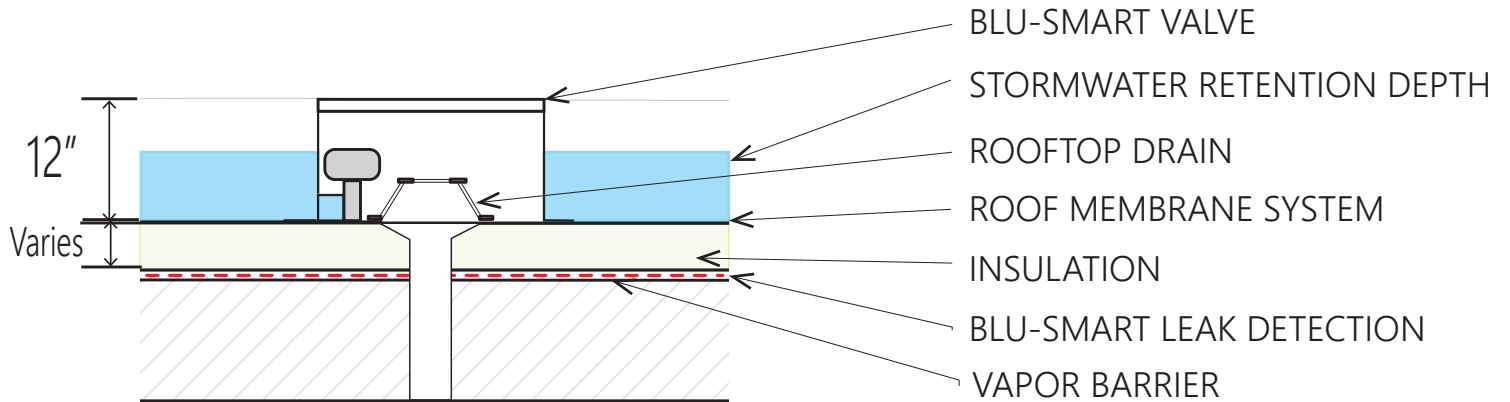
35,129 Gallons

% Managed to Date

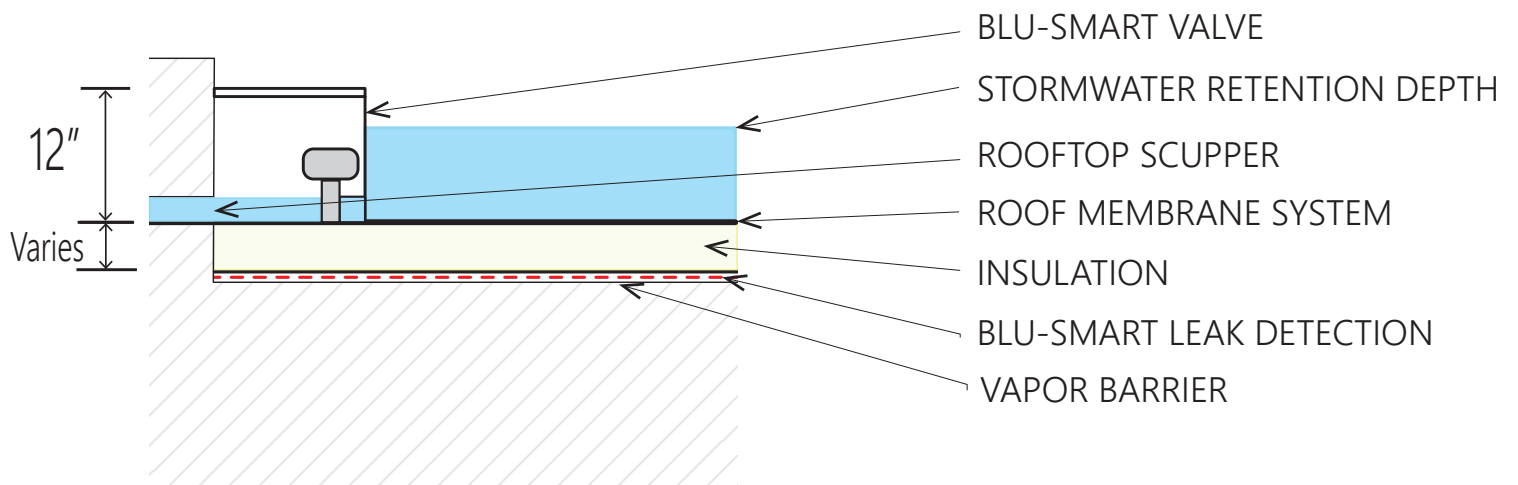
71.8%

BLU-SMART - CONVENTIONAL ASSEMBLIES

DRAIN ASSEMBLY

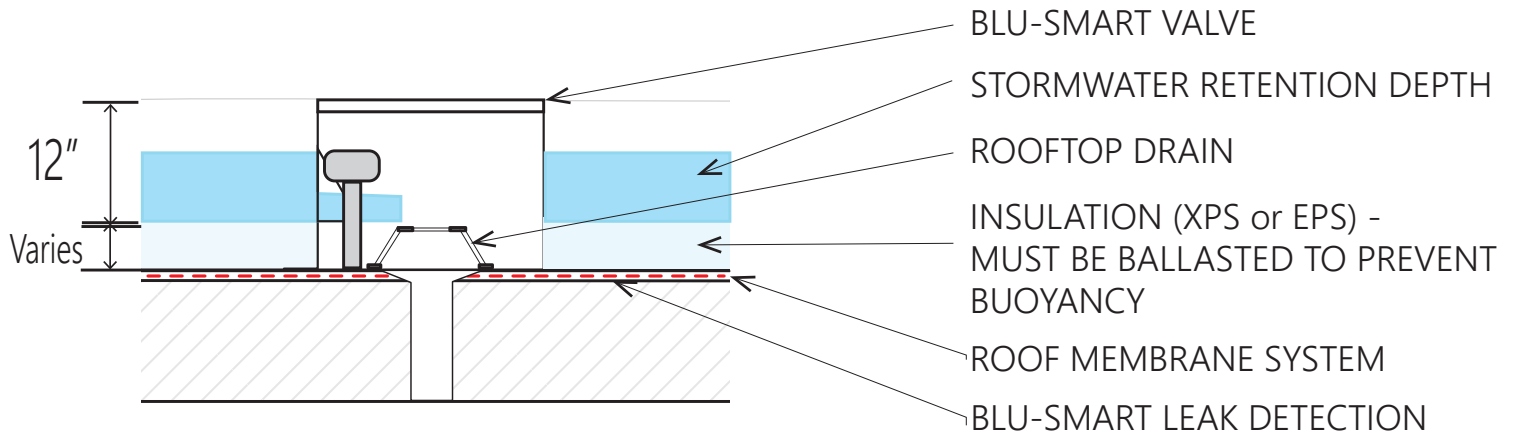


SCUPPER ASSEMBLY

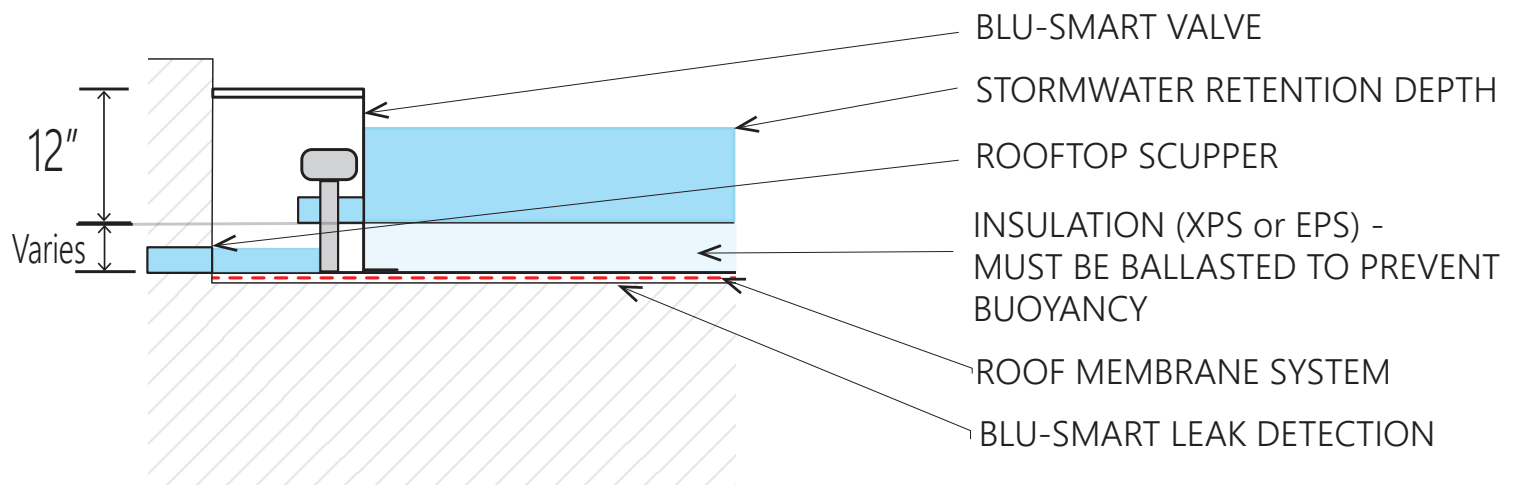


BLU-SMART - INVERTED ASSEMBLIES

DRAIN ASSEMBLY



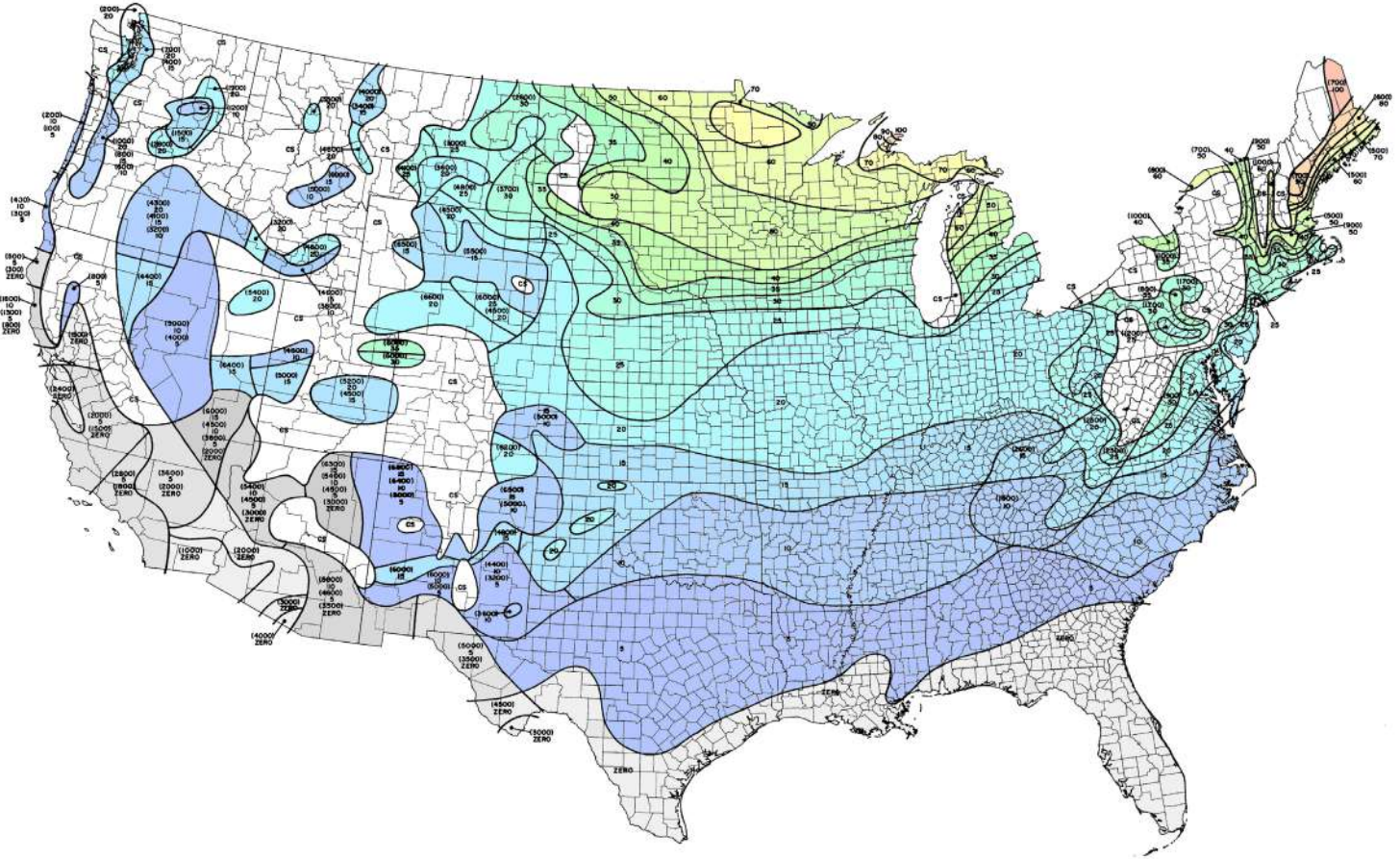
SCUPPER ASSEMBLY



[180] BLU-SMART PLANNING GUIDELINES

1 Determine Structural Load Capacity (Dead Load + Snow Load):

United States Snow Load Design Calculation



- 2 Calculate the remaining availability of Dead Load (X) and add that to the applicable Snow Load, i.e. for Philadelphia, PA
 $X + 30 \text{ PSF} = Y$
- 3 Multiply Y by a factor of safety of .85 and divide by 5.2 (The weight of 1" of water) or $(Y * .85) / 5.2 = Z$
- 4 Determine the amount of stormwater in gallons that needs to be managed. A Civil or Environmental Engineer or Municipal Contact will be able to provide this information if it is not already available.
- 5 Contact Sustainablu, LLC at ve@sustainablu.us and provide a project address, a roof plan with section details, the value of "Z" in inches and the total amount of stormwater that needs to be managed.
- 6 Sustainablu, LLC will provide (3) three approved installers from our approved roofing/waterproofing manufacturers that will provide budget pricing for your project.
- 7 If pricing is approved, a downpayment on the product will be required. Once the downpayment is received, a tentative schedule will be provided and the project will then complete as quickly as possible.

[180] BLU-SMART INSTALLATION GUIDELINES

- 1** If Blu-Smart Leak Detection is used, a Vapor Barrier is required. Install per manufacturer's requirements.
- 2** If Blu-Smart Constant Monitoring Leak Detection is used, install per Sustainablu's project specific shop drawings for the project. Please allow (30) thirty days for shop drawings prior to installation date.
- 3** If Blu-Smart Constant Monitoring Leak Detection is used, a minimum of R-20 insulation is required for a (20) twenty year warranty. If R-20 is not possible, contact Sustainablu, LLC for alternate warranty options.
- 4** Install waterproofing and/or roofing system as designated by Sustainablu Waterproofing and/or Roofing manufacturing partner.
- 5** Install Blu-Smart Systems per Shop Drawings and Sustainablu Waterproofing and/or Roofing Partners Requirements. Allow (30) thirty days for shop drawings prior to the installation of the Blu-Smart System.
- 6** Press activation buttons on the valve side of the Blu-Smart System. These buttons will activate all units.
- 7** Email ve@sustainablu.us when activated. A response e-mail will be provided to confirm receipt.
- 8** An email will be sent within (5) five business days to owner with instructions on how to set up their Dashboard (if Subscription is current).



2" Master Valve with 4" overflow example

BLU-SMART OPERATIONS & MAINTENANCE GUIDELINES

BLU-SMART SYSTEM DEFINITION AND STANDARD DISCLAIMER:

Sustainablu's Blu-Smart System collects runoff, on a Sustainablu' approved roofing or waterproofing system to meet all volume stormwater regulations. All Blu-Smart systems are powered by Sustainablu Technology. With Sustainablu Technology, the system bypasses the retention roof during non-critical times and uses the storage for periods when the storm is at its most intense, when the runoff is at its peak. Sustainablu' Blu-Smart System is optimized for climatic conditions and building codes. This ensures storage is designed for the specific location. This maximizes stormwater retention quantities through a calculated method to optimize evaporation, thus providing exponentially more management capacity than passive collection systems.

Blu-Smart Systems qualify for specified warranties through our manufacturing partners. System design must be approved by either an engineer or architect. There are no exceptions to this disclaimer.

BLU-SMART SYSTEM OPERATIONS:

Sustainablu's Blu-Smart System remotely opens and closes valves that regulate stormwater to drains and scuppers, per the system design. Valve(s) are controlled by master control valve that can act alone or communicate with multiple valves for larger roofs or buildings that have roofs on multiple planes:

BASE DESIGN:

- Optimized retention designs are provided per project capacity.
- Exceeds all health code requirements.
- Checks atmospheric data, water level, and roof cavity dryness every ten minutes.
- Provides cumulative stormwater retention data and proof of roof integrity.

BLU-SMART SYSTEM GOALS:

- Optimizes system capacity for each storm event.
- Prevents stormwater from entering sewer systems during storm events.
- Only releases stormwater in dry conditions.

PURCHASER RESPONSIBILITIES:

Ensure any activities, unrelated to Blu-Smart maintenance, do not negatively impact any parts of the Blu-Smart system. Outside of Blu-Smart maintenance activities, it is the purchaser's responsibility to inspect roof areas for damage. Any roof damage resulting in partial roof replacement is responsibility of owner, not Sustainablu.

MAINTENANCE INSPECTIONS

GENERAL:

All site visits to be documented.

ANNUAL INSPECTIONS

ELECTRICAL COMPONENTS:

Annual inspections are defined as arms-length inspections of the electronic components. These inspections should be conducted once per year at a time immediately preceding the spring season. This activity should include (at a minimum):

- Inspection of the solar panels. Solar panels should be wiped and cleaned of dust and other sediment that could inhibit sunlight reaching the photovoltaic cells in the panel. Examine panels for fractures in the urethane protective layer.
- Inspection of the cellular antenna "pucks". Examine the antenna for the presence of damage.
- Inspection of water level sensors. The water level sensors are mounted to the outside of the Sustainablu enclosure. Remove the sensor from the PVC shell and ensure that the float is free to move vertically along the stainless-steel rod. Clean the PVC shell, as required, to remove leaves and other organic or inorganic debris. Inspect the water level sensor wiring for presence of damage.
- Inspection of electrical connections. While Sustainablu cover is removed, inspect all electrical plugs/connections for damage.
- Re-boot computer. While the Sustainablu cover is removed, power down computer using the on/off button switch. Leave the power off for 1 minute and then power up the device. Replace the Sustainablu cover and re-insert and tighten the screws to secure the top.

BLU-SMART OPERATIONS & MAINTENANCE GUIDELINES

BI-ANNUAL INSPECTIONS

RETENTION ROOF INSPECTIONS:

- Inspect roof for visible damage of or clogging of any Blu-Smart Valves and/or ancillary drain or scupper outlets.
- Inspect for damage to roof, inc. but not limited to granular loss, stretching, holes, punctures, blisters, etc.
- Make note of accumulation and any progression of debris and dirt
- Inspect for color fading or chalking.
- Inspect all chimneys, vents, skylights, fascia, drip edges, and decking for water migration.
- Inspect all interior roofing components, such as rafters and roof trusses, for signs of mold, mildew & rot.
- Inspect interior walls and ceilings for signs of water damage.
- Inspect expansion joints should be checked for excessive movement.
- Inspect exterior walls should be inspected for signs of leakage.
- Inspect roof edges for deterioration.
- Inspect lap joints for discoloration.
- Evaluate substrate firmness.
- Any penetrations should be filled and patches as required.
- Clear all gutters and drainage systems.
- Check all roof-mounted HVAC systems.
- Inspected for deposits, ponding, growths, vandalism, and wear and tear.

ELECTRICAL COMPONENTS:

Bi-annual inspections are defined as arms-length inspections of the electronic and other components. These inspections should be conducted twice per year at a time immediately preceding the spring season and following the fall season. This activity should include (at a minimum):

- Inspection of valve. Remove the cover of the Sustainablu enclosure by unscrewing screws that secure the cover. Using the dashboard software, manually open/close the valve to ensure operation. Verify valve operation using indicator on the valve. Inspect the inlet screen on the outside of the Sustainablu enclosure and ensure that the screen is free from debris preventing the flow of water into the valve.
- Inspection of the tipping bucket rain gauge. Unscrew and remove the bucket enclosure from the sensor. Three screws release the bucket. Clean the screen at the bottom of the bucket and inspect the bucket for damage. Inspect the "crown of thorns" on the bucket and replace missing spikes as required. Ensure that the spikes are force-fit in their receivers by simply ensuring that the spikes are pushed in place.

WEEKLY INSPECTIONS

ELECTRICAL COMPONENTS:

Weekly inspections are defined as cursory inspections done at a distance exceeding the arms-length requirement. This includes a simple "walk-around" examination of the electrical components. These inspections can be limited to the spring, summer, and fall. These inspections should include (at a minimum):

- Examination of all electrical components visible on the outside of the Sustainablu enclosures. Look for obvious signs of damage and take appropriate action.
- Examination of tipping bucket and "crown-of-thorns". Look for obvious signs of damage and take appropriate action.

DOCUMENTATION SUBMITTAL FOR WARRANTY:

Documented inspections are necessary for all warranty claims. Written and photographic evidence will be required.

SUSTAINABLU SUPPORT:

We understand that the maintenance of blue roofs may require additional support from an expert in the industry. If there are any questions or concerns while completing the maintenance inspections, we encourage contacting Sustainablu for assistance.

If there are any further questions or concerns regarding the maintenance of the project, please contact our technical support team at 800-333-5406 or e-mail for a quick a 24-hour response to ve@sustainablu.us.

BLU-SMART MATERIALS LIMITED WARRANTY

The offer to sell Sustainablu, LLC products is expressly limited to acceptance of the warranty terms set forth in this LIMITED WARRANTY. By purchasing a Sustainablu, LLC product, you accept the LIMITED WARRANTY terms herein. THIS LIMITED WARRANTY AND REMEDIES HEREIN ARE EXCLUSIVE AND INSTEAD OF ALL OTHER WARRANTIES AND REMEDIES, WHETHER ORAL, WRITTEN, STATUTORY, LEGAL OR EQUITABLE, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AS WELL AS WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS. ALL WARRANTIES ARE EXCLUDED EXCEPT THOSE EXPRESS WARRANTIES STATED ON THE FACE OF THIS LIMITED WARRANTY. REMEDIES FOR ANY BREACH OF THIS LIMITED WARRANTY ARE LIMITED TO SUSTAINABLU' ABSOLUTE OPTION TO REPAIR OR REPLACE THE DEFECTIVE PRODUCT AND THERE IS NO OTHER REMEDY AVAILABLE. SUSTAINABLU, LLC SHALL NOT BE LIABLE FOR DAMAGE TO PROPERTY BEYOND SUSTAINABLU' PRODUCT; AND, SUSTAINABLU, LLC IS NOT LIABLE FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES FOR ANY CLAIMS, INCLUDING BUT NOT LIMITED TO TORT, STRICT LIABILITY, STATUTORY, BREACH OF EXPRESS WARRANTY, BREACH OF IMPLIED WARRANTY, AND BREACH OF CONTRACT. NO PERSON IS AUTHORIZED TO MAKE ADDITIONAL STATEMENTS, PROMISES, GUARANTIES, WARRANTIES OR REPRESENTATIONS REGARDING PERFORMANCE OF SUSTAINABLU' PRODUCTS. Terms that are either additional to, conflicting with or different from those herein are excluded unless specifically agreed to in a separate writing and signed by a corporate officer of Sustainablu, LLC. This LIMITED WARRANTY is for the benefit of the original purchaser of the Sustainablu, LLC product who may transfer this LIMITED WARRANTY to the owner of the real estate where the warranted product is originally installed.

Blu-Smart Valve (181-183) products are generally open to the environment and with that will be in contact with airborne debris, e.g., leaves, dust, etc., and in the case of combo roofs such as Blu-Terrace and Blu-Garden, etc. can be in contact with man-made debris, such as garbage, etc. Maintaining and inspecting the roof valves from clogging as damage are the responsibility of the owner. Sustainablu, LLC will issue from time-to-time electronic correspondence to the owner about routine maintenance check that will need to take place. These maintenance checks can be random or with imminent purpose. Owner needs to follow all maintenance directives, otherwise this warranty will be immediately voided.

- Product Line 181 - Blu-Smart Master Valves are warranted for (5) five years if properly installed according to specifications and maintenance is adhered to.
- Product Line 182 - Blu-Smart Water Level Sensor Valves are warranted for (5) five years if properly installed according to specifications and maintenance is adhered to.
- Product Line 183 - Blu-Smart Satellite Valves are warranted for (5) five years if properly installed according to specifications and maintenance is adhered to.
- Product Line 184 - Blu-Smart Constant Monitoring Leak Detection is warranted for (20) twenty years if properly installed per specifications and maintenance is adhered to.
- Product Line 185 - Blu-Smart Dashboard is not a warrantable product as it is a subscription-based. The guarantee of this product is that the data provided will be accurate within a 95% confidence interval. Furthermore, although a requirement for system warranties, the inclusion of a Blu-Smart Dashboard subscription will extend the warranties of product lines 181, 182 and 183 from five (5) years up to twenty (20) years as long as upgrades are completed and subscriptions remain current.

NOTE: As part of operations and maintenance of Product Lines 181-183, optional system upgrades every (5) five years will extend these warranties an additional (5) years with each upgrade.

NOTE: Placing any Blu-Smart System on an unapproved roofing or waterproofing product voids this LIMITED WARRANTY.

If any Sustainablu, LLC product fails to perform due to a defect in workmanship or materials within the applicable warranty period, then Sustainablu, LLC, at its sole option, will either repair or replace the defective product. The dollar amount of warranty coverage under this LIMITED WARRANTY shall not exceed the invoiced price for the defective product itself, excluding, installation, sales tax and freight. This LIMITED WARRANTY is void if the product is not maintained as recommended by Sustainablu, LLC. Sustainablu, LLC's warranty does not cover cosmetic scratches, dents, normal discoloration or fading. Due to inherent properties of aluminum and stainless-steel products, it is normal for variations in shading or color to be present in a finished product or occur over time due to sunlight exposure or other environmental factors and such variations in shading or color are not covered by this LIMITED WARRANTY. Sustainablu, LLC's LIMITED WARRANTY does not cover the disconnection, cracking, or unsealing from membrane or damage caused as a result of, by: (a) settling or other foundation movement or failures regardless whether caused by man-made or natural environmental (such as flood, hurricane, earthquake, lightning, fire, et al) and environmental conditions (such as air pollution, mold, mildew, et al), (b) Improper installation of Sustainablu, LLC's products and/or failure to abide by Sustainablu, LLC's installation guidelines, including but not limited to failure to install the Blu-Smart Systems as approved by Sustainablu's approved roofing and waterproofing partners, (c) failure of non-Sustainablu, LLC products, (d) Use of Sustainablu, LLC's products in an application not recommended by Sustainablu, LLC's guidelines and local building codes, (e) Improper storage or handling after delivery, (f) Ordinary wear and tear, AND FOR ANY PRODUCT IN WHICH SUSTAINABLU, LLC HAS NOT BEEN PAID IN FULL (This will be based on Sustainablu, LLC's records). There is no warranty for damage caused by impact, neglect, and vandalism; acts of third parties or natural disaster. Alteration of Blu-Smart Systems voids this LIMITED WARRANTY. Removal or alternation of Blu-Smart Systems without prior written approval from Sustainablu voids this LIMITED WARRANTY.

It is not Sustainablu, LLC's responsibility to determine the effectiveness, fitness, suitability and safety of the Sustainablu LLC's products in connection with its use in any application. No person or entity is authorized by Sustainablu LLC to make any statement or representation as to the quality or performance of Sustainablu LLC products other than as contained in this warranty and Sustainablu LLC shall not be bound by any such statements or representations. This warranty may not be altered or amended except by means of a written document signed by both Sustainablu LLC and owner of said warranty. As a precondition to validate any warranty claim, purchaser must present written notice of a warranty claim to Sustainablu, LLC within 30 days after a warranty claim accrues or within 30 days after purchaser first notices an alleged defect, whichever is earlier. If purchaser or its installer believes a defect exists, do not install the product; instead, contact Sustainablu, LLC within 24 hours after notice of alleged defect and make a warranty claim to Sustainablu, LLC. While this LIMITED WARRANTY is in effect, Sustainablu, LLC and its agents shall have free access to inspect, test, repair or remedy the warranted product and Sustainablu shall have the first opportunity to remedy any alleged defect.

In any dispute as to the LIMITED WARRANTY or defective product, the purchaser or Owner making a claim (Claimant) has the burden of proving all elements under applicable law plus: (1) the product was installed according to applicable industry and project specifications, (2) the product was maintained according to applicable maintenance recommendations, and (3) the product was defective within the meaning of this LIMITED WARRANTY. In the event a civil action is filed, Sustainablu, LLC and Claimant shall attempt mediation facilitated by a mutually agreed upon neutral mediator before conducting formal discovery. At mediation, Sustainablu, LLC and Claimant shall each have a designated representative attend who has full authority to settle the civil action. Sustainablu, LLC and Claimant shall be responsible for their own attorney fees and any other expense associated with mediation as well as paying for an equal share of the mediator's fee. To obtain installation or maintenance recommendations, request information on extended warranties or make a warranty claim contact: Sustainablu, LLC, c/o Chief Financial Officer, by mail at 531 S. Water Street, Milwaukee, WI 53204.

This warranty shall only be applicable and enforceable in the United States of America and Canada.



SUSTAINABLU FOCUSES ON DESIGN INTEGRATION, PROJECT DELIVERY, AND PRODUCTS FOR ON STRUCTURE STORMWATER MANAGEMENT AND GREEN INFRASTRUCTURE. CAPABILITIES RANGE FROM **AMENITY DECKS, GREEN ROOFS, BLUE ROOFS, SOLAR ROOFS AND SMART LEAK DETECTION SYSTEMS**, PROVIDING THE MOST COMPLETE LINE FOR EFFECTIVE ON STRUCTURE STORMWATER MANAGEMENT SYSTEMS AND PRODUCTS AVAILABLE.

WITH ON-STAFF DESIGNERS AND A NETWORK OF LANDSCAPE ARCHITECTS, CONTRACTORS, ARCHITECTS, ENGINEERS, AND DEVELOPERS, SUSTAINABLU IS THE COMMON THREAD FROM IDEA CONCEPTION TO COMPLETION. THE COMPANY PROVIDES PRODUCTS FROM TOP VENDORS AROUND THE WORLD, TAILORING PRODUCTS TO EACH UNIQUE DESIGN. PRODUCT LINES OFFERED INCLUDE PAVER PEDESTALS, CONCRETE ROOF PAVERS, WOOD DECK TILES, PORCELAIN TILES, GREEN ROOFING SOLUTIONS, SMART DRAINS AND LEAK DETECTION SYSTEMS.

SUSTAINABLU HAS COMPLETED PROJECTS IN CITIES ACROSS NORTH AMERICA AND HAS REPRESENTATION AND WAREHOUSES THROUGHOUT THE UNITED STATES.

SUSTAINABLU

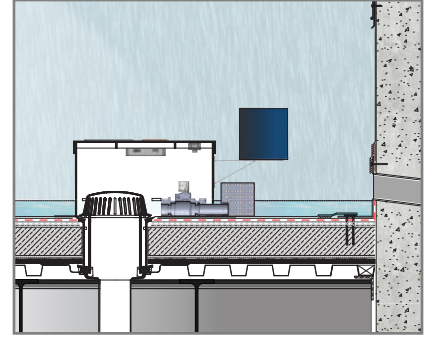
800.333.5406

ve@SUSTAINABLU.us

www.SUSTAINABLU.us

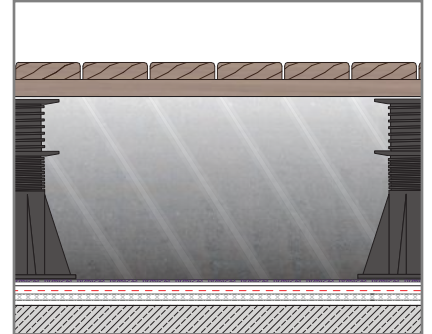
BLU-SMART

[180] - BLU-SMART SYSTEMS



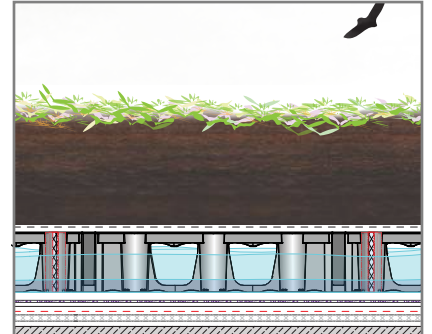
BLU-TERRACE

[300] - BLU-TERRACE SYSTEMS



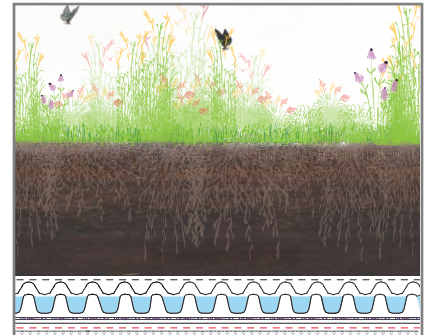
BLU-VAULT

[350] - BLU-VAULT SYSTEMS



BLU-GARDEN

[400-2400] - BLU-GARDEN SYSTEMS



BLU-SOLAR

[5000] - BLU-SOLAR SYSTEMS

